DRAFT ENVIRONMENTAL IMPACT STATEMENT for the

PROPOSED MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

June 15, 2007

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PROPOSED SPECIAL ZONING DISTRICT TEXT AND CONCEPTUAL ANALYSIS

APPENDIX A.1 SPECIAL ZONING DISTRICT TEXT



Proposed Special Manhattanville Mixed Use District

Matter in Graytone or <u>Underlined</u> is new, to be added; Matter in <u>Strikeout</u> is old, to be deleted; Matter within ## is defined in Section 12-10; * * * indicate where unchanged text appears in the Zoning Resolution [5 18 07]

11-12 Establishment of Districts

Establishment of the Special Madison Avenue Preservation District

Establishment of the Special Manhattanville Mixed Use District

In order to carry out the special purposes of this Resolution as set forth in Article X, Chapter 4, the #Special Manhattanville Mixed Use District# is hereby established.

12-10 Definitions

Special Madison Ave Preservation District

The "Special Manhattanville Mixed Use District" is a Special Purpose District designated with the letters "MMU" in which regulations set forth in Article X, Chapter 4, apply. The #Special Manhattanville Mixed Use District# appears on #zoning maps# superimposed on other districts and, where indicated, its regulations supplement, modify and supersede those of the districts on which it is superimposed.

Special Zoning Districts Where Certain Sidewalk Cafes are Permitted

#Enclosed# or #unenclosed sidewalk cafes# shall be permitted, as indicated, in the following special zoning districts, where allowed by the underlying zoning. #Small sidewalk cafes#, however, may be located on #streets# or portions of #streets# within special zoning districts pursuant to the provisions of Section 14-43 (Locations Where Only Small Sidewalk Cafes Are Permitted).

Manhattan	#Enclosed Sidewalk Cafe#	#Unenclosed Sidewalk Cafe#
Battery Park City District	Yes	Yes
Clinton District	Yes	Yes
Limited Commercial District	No	No*
Lincoln Square District	No	Yes
Little Italy District	No	Yes
Lower Manhattan District	No	Yes**
Manhattanville Mixed Use District	<u>No***</u>	<u>Yes</u>
Transit Land Use District	Yes	Yes
Tribeca Mixed Use District	Yes	Yes
United Nations Development District	No	Yes

[#]Unenclosed sidewalk cafes# are allowed on Greenwich Avenue

* * *

ALL TEXT IN ARTICLE X, CHAPTER 4, IS NEW

Article X: SPECIAL PURPOSE DISTRICTS

Chapter 4 Special Manhattanville Mixed Use District

^{** #}Unenclosed sidewalk cafes# are not allowed on State, Whitehall or Chambers Streets or Broadway

^{*** #}Enclosed sidewalk cafes# are allowed in Subdistrict B only.

104-00 GENERAL PURPOSES

The "Special Manhattanville Mixed Use District" established in this Resolution is designed to promote and protect public health, safety and general welfare. These general goals include, among others, the following specific purposes, to:

- (a) encourage the development of a mixed use neighborhood that complements a revitalized community-oriented waterfront;
- (b) support a variety of community facility, commercial and manufacturing uses;
- (c) provide opportunities for the expansion of large academic, scientific and mixed use facilities in a manner that benefits the surrounding community;
- (d) strengthen the retail and service character and economic vitality of the neighborhood by encouraging active ground floor uses along Broadway, West 125th Street and 12th Avenue;
- (e) facilitate the maximum amount of design flexibility while fulfilling the goals of the mixed use district;
- (f) improve the physical appearance of the streetscape by providing and coordinating harmonious open space, sidewalk amenities and landscaping within a consistent urban design;
- (g) strengthen the visual corridors along West 125th Street and other east-west corridors that connect the community to the waterfront;
- (h) expand local employment opportunities;
- (i) recognize, preserve and promote the existing historic transportation infrastructure of the neighborhood;
- (j) promote the most desirable use of land in this area and thus conserve the value of land and buildings, and thereby protect the City's tax revenues.

104-01 Definitions

Definitions specifically applicable to this Chapter are set forth in this Section. The definitions of other defined terms are set forth in Section 12-10 (DEFINITIONS).

Lower street wall

"Lower street wall" is that portion of the #street wall# of a #building# that extends from grade to a minimum prescribed height above the highest elevation of the #street# frontage of the #building# on each #street#.

Mandatory widened sidewalk

A "mandatory widened sidewalk" is a paved area along the #front lot line# of a #zoning lot# at the same elevation as the adjoining sidewalk and directly accessible to the public at all times. Mandatory widened sidewalks are shown on Map 3 (Widened Sidewalk Lines) in Appendix A to this Chapter.

Mandatory widened sidewalk line

A "mandatory widened sidewalk line" is the boundary line of the #mandatory widened sidewalk# shown on Map 3 in Appendix A of this Chapter.

Upper street wall

"Upper street wall" is that portion of the #street wall# of a #building# that extends from the #lower street wall# to the maximum #building# height set forth for each Parcel in the Base Plane and Building Height Table in Appendix B of this Chapter, or the height of the #building#, whichever is less.

104-02

General Provisions

In harmony with the general purposes and content of this Resolution and the general purposes of the #Special Manhattanville Mixed Use District#, the regulations of this Chapter shall apply to all #developments#, #enlargements#, #extensions#, alterations and changes of #use# within the #Special Manhattanville Mixed Use District#. The regulations of all other Chapters of this Resolution are applicable, except as superseded, supplemented or modified by the provisions of this Chapter. In the event of a conflict between the provisions of this Chapter and other regulations of this Resolution, the provisions of this Chapter shall control.

104-03

District Plan and Maps

The regulations of this Chapter are designed to implement the #Special Manhattanville Mixed Use District# Plan.

The District Plan includes the following maps and illustrative diagrams in Appendix A of this Chapter:

- Map 1 Special Manhattanville Mixed Use District and Subdistricts
- Map 2 Subdistrict A Block Plan
- Map 3 Widened Sidewalk Lines
- Map 4 Street Wall Types and Locations
- Map 5 Parcel Designation and Maximum Building Heights
- Map 6 Ground Floor Use and Frontage
- Map 7 Mandatory Open Areas

The District Plan includes the following table in Appendix B of this Chapter:

Base Plane and Building Height Table

These maps, diagrams and table are hereby incorporated and made part of this Resolution for the purpose of illustrating requirements or specifying locations where the special regulations and requirements set forth in the text of this Chapter apply.

104-04 Subdistricts

In order to carry out the provisions of this Chapter, three subdistricts are established, as follows:

Subdistrict A - Academic Mixed Use Area

Subdistrict B - Waterfront Area

Subdistrict C – Mixed-Use Development Area

The location of the Subdistricts of the #Special Manhattanville Mixed Use Special District# are specified on Map 1 in Appendix A of this Chapter.

104-05 Applicability of Article I, Chapter 1

Within the #Special Manhattanville Mixed Use District#, Section 11-15 (Environmental Requirements) shall apply, except that prior to issuing a building permit for any #development#, or for an #enlargement#, #extension# or a change of #use#, on a lot that has an (E) designation for hazardous material contamination, noise or air quality, the Department of Buildings shall be furnished with a report from the Department of Environmental Protection (DEP) of the City of New York stating:

- (a) in the case of an (E) designation for hazardous material contamination, that environmental requirements related to the (E) designation have been met for that lot; or
- (b) in the case of an (E) designation for noise or air quality, that the plans and drawings for such #development# or #enlargement# will result in compliance with the environmental requirements related to the (E) designation.

104-10 SPECIAL USE REGULATIONS

The #use# regulations of the underlying C6 Districts are modified in Sections 104-11 through 104-18, inclusive:

Residential Use Modifications

The #residential use# regulations of the underlying C6-1 District are modified as follows:

- (a) In Subdistrict A, a #residential use# may locate in, or share a common wall with, a #building# containing a #use# listed in Section 104-132 (Use Groups 16, 17 and 18) only in accordance with the certification provisions of Section 104-14; and
- (b) In Subdistrict B, no #residential use# shall be permitted.

104-12

Community Facility Use Modifications

The #community facility use# regulations of the underlying C6-1 District are modified as follows:

(a) In Subdistrict A, a #community facility use# with sleeping accommodations, as listed in this Section, may locate in, or share a common wall with, a #building# containing a #use# listed in Section 104-132 (Use Groups 16, 17 and 18), only in accordance with the certification provisions of Section 104-14:

College or school student dormitories or fraternity or sorority student houses

Domiciliary care facilities for adults

Nursing homes and health-related facilities

Philanthropic or non-profit institutions with sleeping accommodations

Monasteries, convents or novitiates

Non-profit hospital staff dwellings without restriction as to location on the same #zoning lot#

Non-profit or voluntary hospitals and related facilities;

(b) In Subdistrict B, #uses# listed in Use Groups 3 and 4 are limited to 5,000 square feet of #floor area# per establishment.

104-13

Commercial and Manufacturing Use Modifications

In Subdistricts A, B and C, the #commercial# and #manufacturing use# regulations of the underlying C6 Districts are modified as set forth in Sections 104-131 (Use Group 14) and 104-132 (Use Groups 16, 17 and 18):

104-131

Use Group 14

In Subdistrict B, #uses# listed in Use Group 14 are permitted.

Use Groups 16, 17 and 18

In Subdistricts A, B and C, the following #uses# in Use Groups 16, 17 and 18 are permitted, subject to the performance standards for an M1 District set forth in Section 42-20 (PERFORMANCE STANDARDS).

Such #uses# may locate in, or share a common wall with, a #building# containing a #residential use# or a #community facility use# with sleeping accommodations listed in Section 104-12 (Community Facility Use Modifications), only in accordance with the certification provisions of Section 104-14:

From Use Group 16A:

Animal hospitals or kennels

Automobile, motorcycle, trailer or boat sales, enclosed only

Carpentry, custom woodworking or custom furniture making shops

Motorcycle or motor scooter rental establishments, enclosed only

Trade schools for adults

From Use Group 16B:

Automobile, truck, motorcycle or #trailer# repairs

Automobile laundries, provided that the #zoning lot# contains reservoir space for not less than ten automobiles per washing lane

#Automotive service stations#, open or enclosed, provided that facilities for lubrication, minor repairs or washing are permitted only if located within a completely enclosed building

From Use Group 16C:

Commercial or public utility vehicle storage, open or enclosed, including accessory motor fuel pumps

Public transit yards, open or enclosed, including accessory motor fuel pumps

From Use Group 16D:

Moving or storage offices, with no limitation as to storage or #floor area# per establishment Warehouses

Wholesale establishments, with no limitation on #accessory# storage

From Use Group 17A:

Produce or meat markets

From Use Group 17B:

Advertising displays

Apparel or other textile products, from textiles or other materials, including hat bodies or similar products

Ceramic products, including pottery, small glazed tile or similar products Food products, except slaughtering of meat or preparation of fish for packing Leather products, including shoes, machine belting or similar products Luggage

Musical instruments, including pianos or organs

Optical equipment, clocks or similar precision instruments

Perfumes or perfumed soaps, compounding only

Printing or publishing, with no limitation on #floor area# per establishment

Scenery construction

Textiles, spinning, weaving, manufacturing, dyeing, printing, knit goods, yarn, thread or cordage

Toys

Wood products, including furniture, boxes, crates, baskets, pencils, cooperage works or similar products

From Use Group 17C:

Public transit, railroad or electric utility substations, open or enclosed, with no limitation as to size

From Use Group 18A:

Manufacturing of beverages, alcoholic or breweries

104-14 Certification Requirements

In Subdistrict A, a #use# listed in Section 104-132 (Use Groups 16, 17 and 18) and a #residential use# or a #community facility use# with sleeping accommodations listed in Section 104-12 (Community Facility Use Modifications) may locate in the same #building# or share a common building wall only upon certification by a licensed architect or a professional engineer to the Department of Buildings stating that the #commercial# or #manufacturing use#:

- does not have a New York City or New York State environmental rating of "A,"
 "B" or "C" under Section 24-153 of the New York City Administrative Code for
 any process equipment requiring a New York City Department of Environmental
 Protection operating certificate or New York State Department of Environmental
 Conservation state facility permit; and
- (b) is not required, under the City Right-to-Know Law, to file a Risk Management Plan for Extremely Hazardous Substances.

104-15 Ground Floor Use and Frontage Regulations

For the purposes of this Section, ground floor level shall mean the floor of a #building#, the level of which is located at, or within five feet of, the finished level of the adjacent sidewalk. In the locations specified on Map 6 (Ground Floor Use and Frontage) in Appendix A of this Chapter, the ground floor #use# and frontage regulations of this Section shall apply to any #development#

or change of #use# located on the ground floor level of a #building or other structure#, or any #enlargement# that increases the #floor area# of the ground floor level of a #building# by more than 25 percent.

A minimum of 75 percent of the length of a #street wall# on the ground floor level measured to a depth of at least 30 feet, or the depth of the #building#, whichever is less, shall be limited to #uses# listed in Section 104-16 (Use Group MMU). Such #uses# shall be located at the #street wall#. In no event shall the length of #street# frontage occupied solely by lobby space or entryways exceed, in total, 40 feet.

All such #developments#, #enlargements# and changes of #use# on the ground floor of a #building or other structure# (other than a change of #use# on the ground floor of a #building# located on Parcels E2 or G2, as shown on Map 5 in Appendix A) shall comply with the transparency requirements of Section 104-41.

104-16 Use Group MMU

Use Group MMU comprises a group of #uses# selected from Use Groups 3, 4, 6, 7, 8, 9, 10, 12 and 17, as modified, including any of such #uses# that are #accessory# to a college or university and open to the public.

From Use Group 3 Libraries, museums or non-commercial art galleries

From Use Group 4A Community centers or settlement houses Ambulatory diagnostic or treatment health care facilities Non-commercial recreation centers

From Use Group 6A

Bakeries, provided that #floor area# used for production shall be limited to 750 square feet per establishment

Barber shops

Beauty parlors

Drug stores

Dry cleaning or clothes pressing establishments or receiving stations dealing directly with ultimate consumers, limited to 2,000 square feet of #floor area# per establishment, and provided that only solvents with a flash point of not less than 138.2 degrees Fahrenheit shall be used, and total aggregate dry load capacity of machines shall not exceed 60 pounds

Eating or drinking establishments, including those which provide outdoor table service or have music for which there is no cover charge and no specified show time

Food stores, including supermarkets, grocery stores, meat markets or delicatessen stores Hardware stores

Laundry establishments, hand or automatic self-service

Liquor stores, package

Post offices

Shoe or hat repair shops

Stationery stores

Tailor or dressmaking shops, custom

Variety stores, limited to 10,000 square feet of #floor area# per establishment

From Use Group 6B

Veterinary medicine for small animals, provided all activities are conducted within a completely #enclosed building#

From Use Group 6C

Antique stores

Art galleries, commercial

Artists' supply stores

Automobile supply stores, with no installation or repair services

Banks

Bicycle sales

Book stores

Candy or ice cream stores

Carpet, rug, linoleum or other floor covering stores, limited to 10,000 square feet of #floor area# per establishment

Cigar or tobacco stores

Clothing or clothing accessory stores, limited to 10,000 square feet of #floor area# per establishment

Clothing rental establishments, limited to 10,000 square feet of #floor area# per establishment Dry goods or fabrics stores, limited to 10,000 square feet of #floor area# per establishment Eating or drinking establishments with entertainment, but not dancing, with a capacity of 200 persons or less

Eating or drinking establishments with musical entertainment, but not dancing, with a capacity of 200 persons or less

Electrolysis studios

Fishing tackle or equipment, rental or sales

Florist shops

Furniture stores, limited to 10,000 square feet of #floor area# per establishment

Furrier shops, custom

Gift shops

Interior decorating establishments, provided that #floor area# used for processing, servicing or repairs shall be limited to 750 square feet per establishment

Jewelry or art metal craft shops

Leather goods or luggage stores

Loan offices

Locksmith shops

Medical or orthopedic appliance stores

Millinery shops

Music stores

Newsstands, open or enclosed

Optician or optometrist establishments

Paint stores

Pet shops

Photographic equipment or supply stores

Photographic studios

Picture framing shops

Record stores

Seed or garden supply stores

Sewing machine stores, selling household machines only

Shoe stores

Sporting or athletic stores

Stamp or coin stores

Telegraph offices

Television, radio, phonograph or household appliance stores, limited to 10,000 square feet of #floor area# per establishment

Toy stores

Travel bureaus

Typewriter stores

Wallpaper stores

Watch or clock stores or repair shops

From Use Group 7B

Bicycle rental or repair shops

Moving or storage offices, with storage limited to items for retail sale and to 1,500 square feet of #floor area# per establishment

Refreshment stands

Sign painting shops, limited to 2,500 square feet of #floor area# per establishment Venetian blind, window shade or awning shops, custom, limited to 2,500 square feet of #floor area# per establishment

Use Group 8A (all uses)

From Use Group 8B

Lumber stores, limited to 5,000 square feet of #floor area# per establishment, exclusive of that #floor area# used for office and display area, and provided that not more than 400 square feet of #floor area# shall be used for cutting of lumber to size

Television, radio, phonograph or household appliance repair shops Upholstering shops dealing directly with consumers

From Use Group 9A

Automobile, motorcycle, #trailer# or boat showrooms or sales, with no repair services and with no preparation of vehicles or boats for delivery

Clothing or costume rental establishments

Musical instrument repair shops

Plumbing, heating or ventilating equipment showrooms, without repair facilities

Printing establishments, limited to 2,500 square feet of #floor area# per establishment for production

Public auction rooms

Studios, art, music, dancing or theatrical

Typewriter or other small business machine sales, rental or repairs

Umbrella repair shops

From Use Group 10A

Clothing or clothing accessory stores, limited to 20,000 square feet of floor area per establishment

Office or business machine stores, sales or rental

Variety stores, limited to 20,000 square feet of floor area per establishment

From Use Group 12B

Antique stores

Art gallery, commercial

Book stores

Candy or ice cream stores

Cigar and tobacco stores

Delicatessen stores

Drug stores

Gift shops

Jewelry or art metal craft shops

Music stores

Newsstands

Photographic equipment stores

Record stores

Stationery stores

Toy stores

From Use Group 17A

Produce or meat markets, wholesale

From Use Group 17B

Ceramic products, including pottery, small glazed tile, or similar products

#Accessory uses# to all the above uses are permitted.

#Physical culture or health establishments# are subject to a special permit, pursuant to Section 73-36.

104-17

Modification of Article VII, Chapter 4 (Special Permits by the City Planning Commission)

The provisions of Section 74-48 (Scientific Research and Development Facility) shall not apply in the #Special Manhattanville Mixed Use District#.

104-20 SPECIAL BULK REGULATIONS

In Subdistricts A, B and C, the #bulk# regulations of the underlying C6 Districts, as modified in this Chapter, shall apply to any #development#, #enlargement# and change of #use# pursuant to Section 104-26 (Change of Use).

The #floor area ratio#, #open space ratio# and #lot coverage# regulations applicable in the underlying C6 Districts are modified as set forth in Sections 104-21 through 104-25. No #floor area# bonuses shall be permitted.

Special provisions regulating change of #use# in #non-complying buildings# are set forth in Section 104-26.

The height and setback regulations of the underlying C6 Districts are superseded as set forth in Sections 104-30 through 104-34, inclusive.

104-21

Maximum Floor Area Ratio, Open Space Ratio and Lot Coverage for Residential Uses

In Subdistricts A and C, the #bulk# regulations for #residential use# are modified in accordance with the provisions of this Section.

For all #zoning lots#, or portions thereof, the maximum #floor area ratio#, #open space ratio# and #lot coverage# regulations shall not apply. In lieu thereof, the provisions of this Section shall apply:

In Subdistrict A, the maximum #floor area ratio# for #residential use# shall be 3.44.

In Subdistrict C, the maximum #floor area ratio# for #residential use# shall be 6.02

For #interior# or #through lots#, or portions thereof, the maximum #lot coverage# shall not exceed 70 percent. For #corner lots#, the maximum #lot coverage# shall not exceed 80 percent. However, there shall be no maximum #lot coverage# for any #zoning lot# comprising a #corner lot# of 5,000 square feet or less.

The provisions of Section 23-70 (MINIMUM REQUIRED DISTANCES BETWEEN TWO OR MORE BUILDINGS ON A SINGLE ZONING LOT) shall not apply.

Maximum Floor Area Ratio and Lot Coverage for Community Facility Uses

In Subdistricts A and C, the maximum #floor area ratio# permitted for #community facility uses# shall be 6.0.

In Subdistrict B, the maximum #floor area ratio# permitted for #community facility uses# shall be 2.0.

#Lot coverage# requirements for #community facility uses# shall not apply.

104-23

Maximum Floor Area Ratio for Commercial Uses

In Subdistricts A and C, the maximum #floor area ratio# permitted for #commercial uses# shall be 6.0, except that the maximum #floor area ratio# for #uses# in Use Group 16 listed in Section 104-32 (Use Groups 16, 17 and 18) shall be 2.0.

In Subdistrict B, the maximum #floor area ratio# permitted for #commercial uses# shall be 2.0.

104-24

Maximum Floor Area Ratio for Manufacturing Uses

In Subdistricts A, B, and C, the maximum #floor area ratio# permitted for #manufacturing uses# shall be 2.0.

104-25

Maximum Floor Area Ratio for Mixed Buildings

When more than one #use# is located on a #zoning lot#, the maximum #floor area ratio# permitted for any #use# on a #zoning lot# shall not exceed the maximum permitted for such #use# as set forth in Sections 104-21 through 104-24, inclusive, provided the total of all such #floor area ratios# does not exceed the maximum #floor area ratio# permitted for any such #use# on the #zoning lot#.

104-26

Change of Use

(a) Change to Residential

Notwithstanding the provisions set forth in Section 34-222 (Change of use) and in the last paragraph of Section 35-31 (Maximum Floor Area Ratio for Mixed Buildings) regarding the applicability of #floor area ratio# and #open space ratio# regulations to a change from a non-#residential use# to a #residential use# in a #building# in existence on December 15, 1961, such conversions of non-#residential buildings# shall be permitted

only if such #buildings# comply with all of the #bulk regulations for #residential# or #mixed buildings#.

(b) Change to Non-Residential

In Subdistrict A, the provisions of Section 54-31 (General Provisions) shall not apply. In lieu thereof, a #use# listed in Use Groups 16, 17 or 18 located in a #non-complying building or other structure# may be changed to:

- (1) a #use# listed in Section 104-132 (Use Groups 16, 17 and 18), subject to the performance standards for an M1 District set forth in Section 42-20 (PERFORMANCE STANDARDS), and subject to Section 104-14 (Certification Requirements), if applicable, or
- (2) a #community facility use# or an office #use# listed in Use Group 6B.

The #bulk# regulations of the underlying C6 District as modified by the #Special Manhattanville Mixed Use District# and the regulations set forth in Section 104-40 (SPECIAL URBAN DESIGN REGULATIONS) shall not apply to the changes of #use# set forth in paragraph (b) of this Section.

The provisions of paragraph (b) of this Section, shall apply to Blocks A and C, as shown on Map 2 (Subdistrict A Block Plan) in Appendix A to this Chapter and to Parcel D4, as shown on Map 5 (Parcel Designation and Maximum Building Height) through December 31, 2015, and to all other Parcels and Blocks in Subdistrict A through December 31, 2030. Beginning on January 1, 2016, with respect to Blocks A and C and Parcel D4, and beginning on January 1, 2031, with respect to Parcels D1, D2, and D3, as shown on Map 5, and Blocks E, F, G, and H, as shown on Map 2, the provisions of paragraph (b) of this Section shall lapse, and the #bulk# regulations of the underlying C6 District as modified by the #Special Manhattanville Mixed Use District# and the requirements set forth in Section 104-40 (SPECIAL URBAN DESIGN REGULATIONS), shall apply to the changes of #use# set forth in paragraph (b) of this Section.

104-30 SPECIAL HEIGHT AND SETBACK REQUIREMENTS

In the #Special Manhattanville Mixed Use District#, the height and setback regulations of the underlying C6 Districts shall not apply. In lieu thereof, the height and setback provisions of this Section 104-30, inclusive, shall apply in C6 Districts.

In Subdistrict A, the height of all #buildings or other structures# shall be measured from #base planes#. However, the provisions for establishing #base planes# set forth in Section 12-10 (DEFINITIONS) shall not apply. In lieu thereof, #base planes# are specified for each Parcel as shown on Map 5 (Parcel Designation and Maximum Building Height), in Appendix A of this Chapter. The level of the #base plane# is designated for each such Parcel in Appendix B.

Wherever a #mandatory widened sidewalk line# is shown on Map 3 (Widened Sidewalk Lines), such line shall be used instead of the #street line# for all purposes of Section 104-30 et seq.

The City Planning Commission may modify, by special permit, the special height and setback requirements of this Section pursuant to Section 104-60 (MODIFICATION OF SPECIAL BULK REQUIREMENTS AND TRANSFER OF FLOOR AREA BY SPECIAL PERMIT).

104-31 Maximum Building Height

In Subdistrict A, the maximum #building# height, by Parcel, is shown on Map 5 in Appendix A and specified in Appendix B. In Subdistricts B, C and the Other Area East of Broadway, the maximum #building# heights are shown on Map 5 in Appendix A. No #building# shall exceed the maximum #building# height set forth in such Map or Appendix B.

104-32 Rooftop Regulations

104-321 Mechanical equipment

Mechanical equipment, open or enclosed, may be located on the roof of a #building# in accordance with the following provisions:

- (a) Mechanical equipment shall not exceed the maximum height of mechanical equipment specified for each Parcel as set forth in Appendix B to this Chapter and shall be measured from the roof level of the highest #story# of the #building#. Such mechanical equipment may penetrate the maximum #building# height specified for each Parcel as set forth in Appendix B.
- (b) Such mechanical equipment shall be set back at least 10 feet from the #upper street wall# of the #building#. In addition, such equipment shall not penetrate a #sky exposure plane# that begins at the point of intersection of the roof and the #upper street wall# of the #building#, and rises over the #building# at a slope of 2.7 feet of vertical distance for each foot of horizontal distance, except for permitted obstructions set forth in Section 104- 322. Where portions of the #upper street wall# are located at different distances from the #street line# or #mandatory widened sidewalk line#, whichever is applicable, the portion used to establish such reference line shall be the portion that occupies the greatest area of such #upper street wall#.
- (c) Such mechanical equipment shall not overhang any recess in the #building wall# that is open to the sky.

104-322 Permitted Obstructions

The following shall not be considered obstructions and thus may penetrate the applicable maximum #building# height and the applicable maximum height for mechanical equipment set forth in Appendix B to this Chapter, and may also penetrate the #sky exposure plane# set forth in Section 104-311 (Mechanical equipment). Within 50 feet of the #upper street wall#, the width of such obstructions shall be limited in total to 10 percent of the #aggregate width of street walls# of a #building#, per #street# frontage, at any level above the maximum level of mechanical equipment as set forth in Section 104-311. Beyond 50 feet from the #upper street wall#, the permitted obstructions may occupy an area not to exceed 30 percent of the #building# coverage at the ground level. Where portions of the #upper street wall# are located at different distances from the #street line# or #mandatory widened sidewalk line#, whichever is applicable, the portion used to establish such reference line shall be the portion that occupies the greatest area of such #upper street wall#. However, in no event shall such obstructions be located within 10 feet of the #upper street wall#.

Flagpoles or aerials;

House of worship towers, ornamental, having no #floor area# in portion of tower penetrating such #sky exposure plane#;

Parapet walls, not more than four feet high;

Spires or belfries;

Wire, chain link or other transparent fences;

Antennae and structural support thereto;

Railings;

Chimneys, flues, intake and exhaust vents limited to a #lot coverage# of 900 square feet with neither length nor width of any single such obstruction, nor the total length or width of all such obstructions, greater than 30 feet;

Pipes and supporting structures;

Window washing equipment; and,

Elevator and stair bulkheads to a maximum height of 15 feet above the permitted maximum height of mechanical equipment.

104-33 Mandatory Street Walls

Eight types of mandatory #street walls# are established in the #Special Manhattanville Mixed Use District#, the regulations for which are set forth in Sections 104-331 through 104-338. Map 4 (Street Wall Types and Locations) and Map 5 (Parcel Designation and Maximum Building Height), in Appendix A to this Chapter, specify locations where such regulations apply. The mandatory #street wall# requirements shall apply to any #development# and the #enlarged# portion of an existing #building#, except as set forth in paragraph (c) of this Section.

In Subdistrict A, the mandatory #street walls# specified as Street Wall Types 1, 3 and 4 consist of a #lower street wall# and an #upper street wall#, except that for #buildings# fronting on a #wide street# that do not exceed a height of 85 feet, and for #buildings# fronting on a #narrow street# that do not exceed a height of 60 feet , such #street wall# may in its entirety comply with the rules for an #upper street wall# .

(a) #Lower Street Wall#

- (1) For Parcels D1, E1, F1, G1, G2 and H, the #lower street wall# is that portion of the #street wall# that extends from grade to a minimum height of 15 feet above the highest elevation of the #street# frontage of the #building# on Broadway and a maximum height of 55 feet above such elevation for each #street# frontage. For #buildings# without frontage on Broadway, the #lower street wall# shall be measured from the highest elevation of each such #street# frontage of such #building#;
- (2) For Parcels A, C1, C4, D4, E4 and F4, the #lower street wall# of each #street# frontage of a #building# is that portion of the #street wall# that extends from grade to a minimum height of 20 feet and a maximum height of 55 feet above the highest elevation of such #street# frontage of such #building#;
- (3) For Parcels C2, C3, D2, E2, E3, F2 and F3, the #lower street wall# of each #street# frontage of a #building# is that portion of the #street wall# that extends from grade to a minimum height of 20 feet and a maximum height of 45 feet above the highest elevation of such #street# frontage of such #building#. For the purposes of this Section, Parcel C2 shall be considered to have frontage only on West 130th Street.

(b) #Upper Street Wall#

For all Parcels, the #upper street wall# is that portion of the #street wall# that extends from the #lower street wall# to the maximum #building# height set forth in Appendix B, or the height of the #building#, whichever is less.

(c) The mandatory #street wall# requirements shall not apply to vertical #enlargements# of one #story# not exceeding 15 feet in height.

104-331 Type 1 Street Wall Location

Type 1 #street walls#, as shown on Map 4, shall comply with the provisions of this Section:

- (a) The #upper street wall# shall be located anywhere within five feet of the #street line# for at least 70 percent of the #street frontage# of the Parcel and shall rise without setback to a minimum height of 85 feet above #curb level#, or the height of the #building#, whichever is less.
- The #lower street wall# shall be set back at least 2 feet but no more than 10 feet from the #upper street wall# required pursuant to paragraph (a) of this Section and shall extend along at least 70 percent of the #street# frontage of the Parcel. For Parcels D1, E1, F1, G1, G2 and H, the height of the #lower street wall# shall be not less than twice the depth of the setback of the #lower street wall# from the #upper street wall#, but not less than 15 feet.

- (c) No #street wall# location regulation shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.
- (d) At least 20 percent of the area of an #upper street wall# facing Broadway shall be recessed to a minimum depth of 10 feet.
- (e) The #street wall# provisions of this Section 104-331, may apply along a #narrow street# within 100 feet of its intersection of a #wide street#.

Type 2 Street Wall Location

Type 2 #street walls#, as shown on Map 4, shall comply with the provisions of either paragraphs (a) or (b) of this Section:

- (a) For #street walls# fronting on #wide streets#, the #street wall# shall be located within five feet of the #street line# or the #mandatory widened sidewalk line#, whichever is applicable. For #street walls# fronting on #narrow streets#, the #street wall# shall be located between two and five feet of the #mandatory widened sidewalk line#. All such #street walls# shall rise without setback to a minimum height of 45 feet, or the height of the #building#, whichever is less, and shall extend along at least 70 percent of the length of the #street line# or the #mandatory widened sidewalk line# of the Parcel, as applicable; or
- (b) Where the #lower street wall# is set back from the #upper street wall#, the provisions of Section 104-334 (Type 4 Street Wall Location) shall apply to #street walls# facing West 130th Street, and the provisions of Section 104-331 (Type 1 Street Wall Location) shall apply to #street walls# facing West 125th Street.
- (c) No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of the Parcel.

104-333

Type 3 Street Wall Location

Type 3 #street walls#, as shown on Map 4, shall comply with the provisions of this Section:

- (a) The #upper street wall# shall be located within two feet of the 12th Avenue #mandatory widened sidewalk line#, and shall extend along no more than 70 percent of the length of the #mandatory widened sidewalk line# of the Parcel. Any #upper street wall# located on the remaining portion of the #street# frontage of the Parcel shall be set back from the 12th Avenue #widened sidewalk line# by a minimum distance of either:
 - (1) 20 feet, if such setback area faces both 12th Avenue and a #narrow street#, or
 - (2) 10 feet if such setback area faces only 12th Avenue.

- (b) The #lower street wall# shall be located at the same distance from the #mandatory widened sidewalk line#, or set back not more than ten feet from the #upper street wall# required pursuant to paragraph (a) of this Section, and shall extend along at least 80 percent of the length of such required #upper street wall#. No #street wall# location regulations shall apply to that portion of the #lower street wall# frontage that exceeds 56 percent of the #street# frontage of a Parcel.
- (c) The #street wall# provisions of this Section 104-333, may apply along a #narrow street# within 100 feet of its intersection of a #wide street#.

Type 4 street wall location

Type 4 #street walls#, as shown on Map 4, shall comply with the provisions of this Section:

- (a) The #upper street wall# shall be located within five feet of the #street line# or #mandatory widened sidewalk line#, as applicable. Such #street wall# shall extend along at least 50 percent of the length of the #street line# or #mandatory widened sidewalk line# of the Parcel, as applicable and shall rise without setback to a minimum height of 60 feet above #curb level#, or the height of the #building#, whichever is less.
- (b) The #lower street wall# shall be set back at least two feet but no more than ten feet from the #upper street wall# required pursuant to paragraph (a) of this Section and shall extend along at least 50 percent of the #street line# or #mandatory widened sidewalk line# of the Parcel, as applicable.
- (c) No #street wall# location regulation shall apply to that portion of the #street# frontage that exceeds 50 percent of the #street# frontage of a Parcel.

104-335

Type 5 street wall location

Type 5 #street walls#, as shown on Map 4, shall comply with the provisions of paragraphs (a) or (b) of this Section:

- (a) The #street wall# shall be located within two feet of the #street line# or the #mandatory widened sidewalk line#, as applicable, and shall rise without setback to a minimum height of 45 feet or the height of the #building# whichever is less. Such required #street walls# shall extend along at least 50 percent of the length of the #street line# or the #mandatory widened sidewalk line# of the Parcel, as applicable; or
- (b) Where the #lower street wall# is set back from the #upper street wall#, the provisions of Section 104-334 (Type 4 Street Wall Location) shall apply.
- (c) No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 50 percent of the #street# frontage of a Parcel.

Type 6 street wall location

#Street wall# Type 6 shall be located at or within three feet of the #street line# and shall extend along at least 70 percent of the length of the #street line# of the Parcel, and may rise to a maximum height of 60 feet. No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-337

Type 7 street wall location

On Parcel 1 in Subdistrict B, #street wall# Type 7 shall be located at or within three feet of the #street line# and shall extend along at least 70 percent of the length of the #street line# of the Parcel, and may rise to a maximum height of 130 feet. No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-338

Type 8 street wall location

#Street wall# Type 8 shall be located at or within 10 feet of the #street line# and shall extend along at least 70 percent of the length of the #street line# of the Parcel, and may rise to a maximum height of 120 feet. No #street wall# location regulations shall apply to that portion of the #street# frontage that exceeds 70 percent of the #street# frontage of a Parcel.

104-34 Street Wall Recesses

Recesses are permitted for architectural, decorative or functional purposes, provided that such recesses comply with the provisions of this Section:

For portions of the #lower street wall# required pursuant to the provisions of Section 104-33, the maximum area of recesses shall not exceed 30 percent of the area of such required #lower street wall# and the maximum depth of such recesses shall not exceed three feet.

For that portion of the #upper street wall# required pursuant to the provisions of Section 104-33, and located below a height of 85 feet on a #wide street# and 60 feet on a #narrow street#, the maximum area of recesses shall not exceed 30 percent of the area of such portion of the #upper street wall# and the maximum depth of such recesses shall not exceed three feet. However, the regulation limiting the maximum depth of such recesses to three feet set forth in this paragraph, shall not apply to the recesses required in paragraph (d) of Section 104-331.

104-40 SPECIAL URBAN DESIGN REGULATIONS

The special urban design regulations of this Chapter include ground floor transparency requirements. and requirements for six different types of open areas that are accessible to the public, as described below, and shown on Maps 3 (Widened Sidewalk Lines) and 7 (Mandatory

Open Areas), in Appendix A of this Chapter.

104-41

Street Wall Transparency Requirements

Within Subdistricts A and B, the transparency requirements of paragraph (a) of this Section, subject to the modifications of paragraph (b) of this Section, as applicable, shall apply to #developments#, changes of #use# on the ground floor of a #building or other structure#, and #enlargements# that increase the #floor area# of the ground floor by more than 25 percent, but shall not apply to a change of #use# on the ground floor of a #building# located on Parcels E2 or G2, as shown on Map 5 in Appendix A of this Chapter.

- (a) On all #streets#, at least 70 percent of the surface of the #street wall# shall be glazed, and at least 50 percent of the area of each such #street wall# shall be transparent to a minimum height of the ceiling of the ground floor, or not less than 15 feet above the finished level of the adjacent sidewalk, whichever is lower. The glazing material shall be highly transparent, with low reflectivity. Above this height, and to the top of the #lower street wall#, the #street wall# surface shall be 50 percent glazed and 30 percent transparent. Door or window openings within such walls shall be considered as transparent. Each such opening shall have a minimum width of two feet.
 - (b) For #street walls# where the provisions of Section 104-332 (Type 2 Street Wall Location) apply, the required glazing at the ground floor shall apply to the minimum height of the ceiling of the ground floor, or not less than 20 feet above the finished level of the adjacent sidewalk, whichever is lower.
 - (c) For #street walls# in Subdistrict B, the transparency requirements of paragraph (a) of this Section shall apply to a height not more than 15 feet above the finished level of the adjacent sidewalk.

104-42 Open Areas

All mandatory open areas as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter and all open areas adjacent thereto up to the #street wall# required pursuant to the provisions of Section 104-33 (Mandatory Street Walls) shall comply with the urban design regulations of Section 104-42 through 104-43, inclusive, and shall be open and unobstructed except as specified.

104-421 Mandatory widened sidewalks and adjacent areas

(a) Map 3 (Widened Sidewalk Lines) in Appendix A of this Chapter, specifies the locations of #mandatory widened sidewalks#. The depth of such #mandatory widened sidewalks#

shall be as indicated on Map 3 and specified in this Section, and shall be measured perpendicular to the #street line#. #Mandatory widened sidewalks# shall be constructed at the same level as the adjoining public sidewalks and shall be accessible to the public at all times. The portions of all #mandatory widened sidewalks# used for pedestrian circulation shall be improved as sidewalks to Department of Transportation standards.

- (b) Within #mandatory widened sidewalks#, landscaping and other amenities shall be permitted. However, no fences shall be permitted, no planters shall be higher than 2½ feet above the finished level of the adjacent sidewalk, and all trees shall be planted flush to grade.
- (c) Adjacent area at grade between lower street wall and sidewalk

Where the #lower street wall#, or the #street wall# if no #lower street wall# is required, is set back from the #mandatory widened sidewalk line# or the #street line#, whichever is applicable, the entire surface area of the ground located between the #street wall# and the public sidewalk shall comply with the standards of paragraphs (a) and (b) of this Section. Such areas may be covered and may include columns and other elements not specifically excluded pursuant to paragraph (b) of this Section.

- (d) Additional regulations shall apply to the following areas and conditions:
 - (1) Narrow #streets#

The #mandatory widened sidewalks# located along #narrow streets# shall be five feet wide. A paved walking path not less than 10 feet wide, which may include the public sidewalk, shall be provided. The paving surface shall be of a non-skid material, whether wet or dry.

(3) 12th Avenue

The #mandatory widened sidewalks# located along 12th Avenue, as shown on Map 7, shall be 30 feet wide and include a 15 foot wide area adjacent to the #street line# for the provision of an open market and a walking surface with a minimum clear path of 15 feet adjacent to the market area. The walking surface shall be of a non-skid material, whether wet or dry.

- (i) Permanent, fixed elements, such as landscaping and seating, with a minimum coverage of five percent of the market area, shall be required.
- (ii) The following obstructions shall be permitted:

Temporary, moveable elements with a maximum coverage of 30 percent of the market area per #zoning lot#, such as:

Market umbrellas;

Carts, kiosks or pavilions, open or enclosed;

Retail structures, open; Seating and other street furniture.

104-422 Midblock Open Areas

Midblock Open Areas shall be provided as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter. However, no Midblock Open Area is required on any #block# that is not developed as a single #zoning lot#. The Midblock Open Areas shall have a minimum width of 50 feet clear and open to the sky, except that the Midblock Open Area located adjacent to Parcel C3 may have a width of 45 feet above a height of 20 feet above the grade of such Midblock Open Area. Below a height of 20 feet, awnings attached to #buildings# may project up to five feet into the Midblock Open Area.

All Midblock Open Areas shall have a minimum clear path of 15 feet and shall be improved as paved surfaces of a non-skid material, whether wet or dry. A minimum of ten percent and a maximum of 50 percent of each Midblock Open Area shall be improved with landscape treatment, including planting and other amenities. No fences shall be permitted. No walls or planters shall be higher than 2 ½ feet above the finished level of the adjacent sidewalk.

The full width of each Midblock Open Area shall be improved and open to the public prior to applying for and receiving a temporary certificate of occupancy for any #development# adjacent to such area. However, up to 10 feet of the length of a Midblock Open Area may be temporarily enclosed within a construction fence for the shortest period of time reasonably necessary to permit construction in the adjacent area.

For #buildings# adjacent to the Midblock Open Areas, other than a #building# located on Parcel E2 as shown on Map 5 in Appendix A, building walls fronting on such Open Areas shall be transparent for 50 percent of the area of each such wall, measured from the finished level of the adjacent pavement to the height of the ceiling of the second #story#. Door or window openings within such wall shall be considered as transparent. Each such opening shall have a minimum width of two feet.

104-423 East/West Open Area

An East/West Open Area shall be provided as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter. The East /West Open Area shall have:

- (a) a minimum width of 60 feet and shall be open to the sky;
- (b) a minimum clear path of 15 feet, which shall be improved as a paved surface of a non-skid material, whether wet or dry; and
- (c) a minimum of ten percent of its area improved with landscape treatment, including

planting and other amenities. No walls or planters shall be higher than $2\frac{1}{2}$ feet above the finished level of the adjacent sidewalk.

Exhaust shafts with a minimum height of 15 feet, and stair bulkheads with a maximum height of 20 feet, shall be permitted, provided such obstructions do not exceed 10 percent of the area of the East/West Open Area.

The full width of the East/West Open Area shall be improved and open to the public, prior to applying for and receiving a temporary certificate of occupancy for any new #development# adjacent to such area.

104-424 The Square

Area of the Square

If Block D is developed as a single #zoning lot#, an open area known as "the Square," with a minimum area of 40,000 square feet, shall be provided, connecting West 130th and West 131st Streets, as shown on Map 7 (Mandatory Open Areas) in Appendix A of this Chapter. This minimum area shall not include either the Midblock Open Area on Block D, or the area of the #mandatory widened sidewalks# on the West 130th and 131st Street frontages adjacent to the Square.

The Square shall be used for open space accommodating both passive recreation and limited active recreation.

Building Transparency

The bounding building wall on the west side of the Square shall be transparent for 50 percent of the area of such wall, measured from the finished level of the adjacent pavement to the height of the ceiling of the second #story#. Door or window openings within such wall shall be considered as transparent. Each such opening shall have a minimum width of two feet.

Circulation and Access

No fences or gates shall be permitted anywhere in the Square.

An unimpeded pedestrian access, with a minimum width of 15 feet, shall be provided across the Square in a generally diagonal direction in the north/south orientation, connecting the two narrow streets, with both ends located a minimum of 100 feet from the Midblock Open Area on Block D.

The Square shall provide minimum unobstructed access from the adjoining sidewalks for at least 50 percent of the length of each street frontage of the Square. No single fixed element, within 15 feet of the #street line# of the Square, shall have a dimension greater than 15 feet or be higher than 30 inches, measured from the finished level of the adjacent sidewalk. The clear path between obstructions shall be at least three feet; however, to qualify as an unobstructed access that contributes to the 50 percent requirement set forth in this paragraph, a minimum width of five feet is required.

Elevation of the Square

The elevation of the Square shall generally follow the adjacent topography. Within fifteen feet of the #street line#, the elevation of the Square, for a minimum of 50 percent of the length of each frontage on a #street#, shall have a maximum slope of 1:15. Beyond fifteen feet from the #street line#, all open areas in the Square, including rolling or bermed lawn areas, may vary but shall not be more than five feet above or one foot below the level of the adjoining sidewalk or natural topography. Paved areas shall not be higher than $2\frac{1}{2}$ feet above the level of the nearest adjoining sidewalk.

Permitted Obstructions

No walls or planters shall be higher than $2\frac{1}{2}$ feet above the finished level of the adjacent sidewalk. No planters or planter walls shall be higher than 18 inches above the level of the adjacent grade.

Permanent structures, such as food or information kiosks, pavilions or public restrooms, may be placed in the Square, provided they do not exceed a height of 20 feet, or occupy more than three percent of the area of the Square.

Temporary or movable amenities, including elements such as trellises, movable tables, game tables, play equipment and performance facilities, are permitted, not to exceed 10 percent of the area of the Square.

Seating

Seating shall be provided for no fewer than 200 people. A minimum of 75 percent of the required seating shall be fixed; up to 25 percent may be movable. Every $2\frac{1}{2}$ linear feet of fixed seating shall be considered as seating for one person.

The following standards shall apply to all required seating:

- (a) fixed seating may be provided in the form of double-sided benches;
- (b) 50 percent of the fixed seats shall have backs; such backs shall be not less than 14 inches high;
- (c) fixed seating shall be between 16 inches and 18 inches in height, with a minimum depth of 18 inches measured from the edge to the back; and
- (d) All seating shall be made of durable material and shall be comfortable to sit on, with rounded edges of at least 1 inch radius.

However, other types of seating, such as the top of natural stones and rocks and edges of planters and fountains, may count toward the required amount of seating if such seating has a minimum depth of 22 inches and is between 16 and 18 inches in height.

At least 20 percent of the required seating shall be provided within 15 feet of the #street line# of the Square fronting all #streets# and the adjacent Midblock Open Area, and arranged to

encourage a variety of uses. If such Midblock Open Area is provided with seating, that frontage of the Square may be exempt from this requirement. Seating provided in the adjacent Midblock Open Area may count towards the required seating for the Square.

General Requirements for Trees and Planting

A minimum of 50 percent of the Square shall be landscaped with soft ground cover. Soft ground cover shall include trees, grasses, shrubs and other ornamental planting material. The remaining 50 percent of the Square may be paved as hard surface.

At least 30 percent of the area of the Square shall contain a continuous planting area, with minimum soil depth of five feet. Berming is allowed provided that the height of the berm is not greater than five feet above the level of the adjoining sidewalk.

Trees

A minimum of 30 trees is required. Such trees shall measure at least four inches in caliper at the time of planting, except that trees which are multi-stem varieties shall have a minimum height of eight feet. Trees shall be planted in continuous planted areas that have a minimum depth of four feet and a minimum area of 500 square feet of soil. All trees shall be planted flush to grade.

Planting

Seasonal planting is encouraged but not required. When planting beds are provided, they can be counted towards meeting the requirement for soft ground cover. Planting beds shall have a minimum soil depth of two feet for grass or other similar ground cover and three feet for shrubs.

Other Required Amenities

Racks shall be provided for a minimum of 100 bicycles. Such racks shall be located in the Square within 10 feet of the #street line# or, if outside the Square, on any open area facing the Square.

Four drinking fountains, two of which shall be fully accessible for children and people with disabilities, shall be provided in the Square or on the sidewalks, #mandatory widened sidewalks# or Midblock Open Area adjacent to the Square.

Not less than 40 cubic feet of trash receptacles shall be provided. Individual containers shall not be smaller than $2\frac{1}{2}$ cubic feet each. However, there shall be no fewer than ten containers, at least three of which shall be for used for recycling paper, plastic and metal waste. Such recycling containers shall be located in the Square within 10 feet of the #street line# or, if outside the Square, on any open area facing the Square.

Permitted Amenities

Permitted amenities include such elements as artwork and water features, which may occupy up to 10 percent of the area of the Square.

Public Space Signage

At least four entry and two information plaques shall be provided. The content and design of such #signs# shall comply with the standards for public space #signs# set forth in the Zoning Resolution. Information about the Square may be provided on the entry plaques.

Vents Facing the Square

On any building wall adjacent to and facing the Square, exhaust or air intake vents shall be located higher than 15 feet above the level of the Square.

Vents and Stairs in the Square

Exhaust or air intake vents and stair bulkheads shall not be permitted in the Square, except as authorized by the City Planning Commission, subject to the following conditions:

- (a) The top of the exhaust or intake vent shall be a minimum of 20 feet above the adjacent grade;
- (b) No single element shall be more than 200 square feet; and
- (c) The aggregate area occupied by all vents and stair bulkheads shall not exceed one percent of the area of the Square.

In order to grant such authorization, the Commission shall find that:

- (1) placement of such elements cannot be reasonably accommodated elsewhere on the #zoning lot#; and
- (2) such vents and stair bulkheads are located so as to minimize impact on the visibility, accessibility and public use and enjoyment of the Square.

The Commission may prescribe appropriate conditions and safeguards to minimize adverse effects on the character of the Square.

104-425

The Small Square

If Block C is developed as a single #zoning lot#, an open area known as the "Small Square," with a minimum area of 10,000 square feet, shall be provided as a passive open space, connecting West 129th and West 130th Streets. It shall be improved with paved surfaces of a non-skid material, whether wet or dry. No fences or walls shall be permitted in the Small Square.

The bounding building walls on all #buildings# abutting the Small Square shall be transparent for 50 percent of the area of the portion of each such wall measured from the finished level of the adjacent pavement to the height of the ceiling of the second #story#.

The Small Square shall be landscaped with a minimum of eight trees. Such trees shall measure at least four inches in caliper at the time of planting, except that trees which are multi-stem varieties shall have a minimum height of eight feet, and shall be planted in soil with a minimum

depth of four feet. All trees shall be planted flush to grade.

A minimum of 30 moveable seats shall be provided at all times; additional moveable or fixed seating may be provided.

104-426 The Grove

If Block A is #developed# as a single #zoning lot#, an open area known as "the Grove," with a minimum area of 400 square feet, shall be provided as a passive open space connecting West 125th and West 129th Streets. It shall contain a grove of trees and seating at the western portion of the Block.

The Grove shall be improved with paved surfaces of a non-skid material, whether wet or dry. It shall be landscaped with trees planted flush to grade and may include additional planting. The Grove may contain fixed or moveable seating.

No fences, walls, or planters are permitted in the Grove.

104-43 Open Area Standards

104-431

Access and hours of public accessibility

All open areas shall be accessible directly from an adjoining public sidewalk, except as otherwise provided in this Chapter. No fences or gates shall be permitted anywhere within the open areas, except as permitted in this Section.

All open areas except the Square and the East West Open Area shall be accessible to the public twenty-four hours per day, seven days a week. The Square and the East West Open Area shall be accessible to the public seven days per week, from the hours of 7:00 a.m. to 7:00 p.m., from November through April, and from 7:00 a.m. to 11:00 p.m. from May through October. All open areas may be closed not more than one day each year, on a non-holiday weekend day in January, to preserve the private ownership of such areas, except the Square and the East West Open Area may each be closed by its respective owner for private events and activities for a maximum of 12 days in each calendar year, which days shall not include public holidays. Advance notice of such closing shall be posted at the perimeter of the Square and the East West Open Area and shall be provided to the Chair of the City Planning Commission not less than 24 hours prior to each such closing.

104-432 Lighting All paved areas shall be illuminated with a minimum level of illumination not less than two horizontal foot candles (lumens per foot) throughout. All other areas shall have a minimum level of illumination not less than 0.5 horizontal foot candles (lumens per foot). Such level of illumination shall be maintained from sunset to sunrise. Electrical power shall be supplied by one or more outlets furnishing a total of at least 1,200 watts of power for every 4,000 square feet, or fraction thereof, of the area of the open space.

104-433

Maintenance and operation

The owner of each open area within Subdistrict A shall be responsible for its maintenance and operation. Maintenance shall include, but not be limited to, necessary repairs, litter control and the care and replacement of vegetation. The owner of an open area may temporarily close the smallest portion reasonably necessary for the shortest period of time reasonably necessary to make repairs or to mitigate hazardous or emergency conditions, or in connection with construction on adjacent Parcels. The owner may establish and enforce rules of conduct for the use of the open areas and standards for permits for events and activities in an open area. Rules and regulations for the open areas will be subject to review and approval by the Chairperson of the City Planning Commission.

No vehicles shall be stored on any of the open areas.

104-44

Street Trees on Narrow Streets and Broadway

On #narrow streets# and Broadway, #street trees# with a minimum caliper of four inches, or, for trees which are multi-stem varieties, with a minimum height of eight feet, shall be provided for the entire length of the #street# frontage of the #zoning lot#, except adjacent to the Square, the Small Square and the Midblock Open Areas. Such trees shall be planted at maximum intervals of 25 feet on center, except where the Commissioner of Parks and Recreation determines that such tree planting would be infeasible. All trees shall be planted flush to grade and in accordance with the applicable standards of the Department of Parks and Recreations, and shall be located within a soft surface, landscaped strip at least five feet wide adjacent to the curb, which landscape strips need not be continuous. Other planted landscape treatment and amenities may be permitted within such planting strip. Such trees shall be maintained by the owner of the adjacent #development# or #enlargement#.

104-50 PERMITTED TRANSFER OF FLOOR AREA

Transfers of #floor area# may be made from granting sites to receiving sites, within Subdistrict A, subject to the requirements of this Section.

For the purposes of this Section, a "granting site" shall mean any #zoning lot# in Subdistrict A that comprises a #block# as identified by letter on Map 2 in Appendix A, or the portion of the #block# identified as Block H on Map 2 (Subdistrict A Block Plan) in Appendix A in this

Chapter, from which #floor area# is to be transferred pursuant to the provisions of this Section, and a "receiving site" shall mean a #zoning lot# in Subdistrict A that comprises a #block#, as identified by letter on Map 2, or the portion of the #block# identified as Block H on Map 2, to which #floor area# is transferred.

#Floor area# may be transferred as follows:

- (a) by Notice, in accordance with the provisions of Section 104-52 (Transfer of Floor Area by Notice);
- (b) by authorization, in accordance with the provisions of Section 104-53 (Transfer of Floor Area by Authorization); or
- by special permit in accordance with the provisions of Section 104-60 (MODIFICATION OF SPECIAL BULK REQUIREMENTS AND TRANSFER OF FLOOR AREA BY SPECIAL PERMIT), provided that the proposed #development# on the receiving site requires modification of the #bulk# regulations of Section 104-30 (SPECIAL HEIGHT AND SETBACK REQUIREMENTS).

104-51

General Requirements for Transfer

For any transfer of #floor area# by notice or by authorization pursuant to Section 104-50, inclusive, the requirements of this Section shall apply:

(a) Notification

Prior to any transfer of #floor area#, pursuant to Sections 104-52 (Transfer of Floor Area by Notice) or 104-53 (Transfer of Floor Area by Authorization), the owners of the granting site and the receiving site(s) shall jointly notify or apply to the Department of City Planning, as applicable, in writing, of such intent to transfer #floor area#. Such notification or application shall be signed by the owners of the granting site and the receiving site(s) and shall include site plans.

(b) Notices of Restriction

Notices of restrictions shall be filed by the owners of the granting site and the receiving site(s) in the Office of the Register of the City of New York, indexed against the granting site and the receiving site(s), certified copies of which shall be submitted to the Department of City Planning. Notice by the Department of City Planning of its receipt of certified copies thereof shall be a condition to issuance by the Commissioner of Buildings of a building permit for a #building# on the receiving site containing any such transferred #floor area#.

(c) #Floor area#

The amount of #floor area# to be transferred from a granting site shall not exceed the maximum amount of #floor area# permitted on the #block# containing the granting site for #community facility uses#, pursuant to Section 104-12 (Community Facility Use Modifications), less the total floor area of all existing buildings on such #block#. The transfer of #floor area#, once completed, shall irrevocably reduce the maximum #floor area# permitted on the granting site for any #use# by the amount of #floor area# transferred.

(d) #Use#

#Floor area# transferred pursuant to the provisions of Section 104-50 through 104-53, inclusive, shall only be used for #community facility uses# and shall be in addition to the #floor area# permitted for #community facility uses# on the receiving site.

(e) Height and Setback

Any #building# on a receiving site that uses the #floor area# so transferred shall comply with the special #bulk# regulations of this Chapter.

104-52 Transfer of Floor Area by Notice

For any transfer of #floor area# from a granting site which comprises any of Blocks A, C or D to one or more receiving sites on Blocks B, E, F, G or H, the general requirements of Sections 104-50 and 104-51 shall apply as well as the following:

- (a) the site plan submitted for the granting site under the provisions of paragraph (a) of Section 104-51 shall show the conditions and #floor area# calculations for the granting site and the receiving site, before and after the transfer;
- (b) no building permit shall be issued by the Department of Buildings for a #building# on a receiving site containing any such transferred #floor area# until the Chairperson of the City Planning Commission has certified to the Department of Buildings that plans submitted to the Department of City Planning for the Square, the Small Square or the Grove, as applicable, on the granting site, conform with the requirements of Section 104-40 (SPECIAL URBAN DESIGN REGULATIONS); and
- (c) no temporary certificate of occupancy shall be issued by the Department of Buildings for any portion of a #building# utilizing the transferred #floor area# unless and until the Chairperson of the City Planning Commission certifies to the Department of Buildings that the public open area which is required to be provided on the granting site pursuant to the provisions of Sections 104-424 (The Square), 104-425 (The Small Square) or 105-426 (The Grove), as applicable, has been constructed substantially in accordance with the plan certified by the Chairperson of the City Planning Commission pursuant to paragraph (a) of this Section and is substantially complete and may be opened to the public, and no

permanent certificate of occupancy shall be issued by the Department of Buildings for any portion of a #building# utilizing the transferred #floor area# unless and until the Chairperson of the City Planning Commission certifies to the Department of Buildings that construction of the public open space which is required to be provided on the granting site is complete.

104-53 Transfer of Floor Area by Authorization

Within Subdistrict A, the City Planning Commission may authorize the transfer of #floor area# from a granting site other than Blocks A, C or D to a receiving site, subject to the general requirements of Sections 104-50 and 104-51, provided the Commission finds that:

- (a) such transfer will permit better site planning; and
- (b) such transfer will not unduly increase the #bulk# of #buildings# in any #block#, to the detriment of the occupants or users of #buildings# on #blocks# outside Subdistrict A.

In granting such authorization, the Commission may prescribe additional conditions and safeguards to minimize adverse effects on the character of the surrounding area.

104-60 MODIFICATION OF SPECIAL BULK REQUIREMENTS AND TRANSFER OF FLOOR AREA BY SPECIAL PERMIT

The City Planning Commission may, by special permit,

- (a) modify the special height and setback requirements of Section 104-30 (SPECIAL HEIGHT AND SETBACK REQUIREMENTS) inclusive, provided the Commission finds that such modifications are necessary to:
 - (1) meet programmatic and mechanical requirements;
 - achieve a better distribution of #bulk# on the #zoning lot# and will not adversely affect access to light and air for surrounding public access areas, streets, #buildings# and properties;
 - (3) provide flexibility of architectural design and encourage more attractive building forms; and
 - (4) result in a #development# or #enlargement# that is compatible with #development# in the surrounding area.

- (b) permit the transfer of #floor area# from any granting site to a receiving site for a #development# that requires modification of the special height and setback requirements of Section 104-30 (SPECIAL HEIGHT AND SETBACK REQUIREMENTS), inclusive, provided the Commission finds:
 - (1) such transfer complies with the general requirements set forth in paragraphs (a), (b), (c) and (d) of Section 104-51;
 - (2) the distribution of #floor area# on the receiving site does not adversely affect the character of the surrounding area by unduly concentrating #floor area# in any portion of Subdistrict A; and
 - (3) where such transfer is from a granting site on Blocks A, C or D, it shall also comply with the provisions of paragraphs (b) and (c) of Section 104-52 (Transfer of Floor Area by Notice).

The Commission may prescribe additional conditions and safeguards to minimize adverse effects of the development or enlargement on the character of the surrounding area.

104-70 PARKING AND LOADING REGULATIONS AND CURB CUT LOCATIONS

In the #Special Manhattanville Mixed Use District#, the #accessory# off-street parking and loading regulations of the underlying zoning districts shall apply except as set forth in this Section, inclusive.

104-71 Accessory Off-Street Parking

In Subdistrict A, the #accessory# off-street parking and loading regulations in Article III, Chapter 6, pertaining to the underlying C6 District shall be modified, as follows:

- (a) #accessory# parking spaces at or above grade shall be completely enclosed;
- (b) #accessory# parking garages at or above grade shall not be located:
- (1) within sixty (60) feet of the #lot line# on Broadway of any #zoning lot# or within ninety (90) feet of the #lot line# on 12th Avenue of any #zoning lot;
 - (2) on Parcels E2 or G2; or
- (3) on any Mandatory Open Area as shown on Map 7 in Appendix A of this Chapter or within ten (10) feet of any such Mandatory Open Area; and
- (c) Section 36-12 (Maximum Size of Accessory Group Parking Facilities) shall not apply to parking spaces provided below grade.

104-711

Accessory parking below grade

Required and permitted #accessory# off-street parking spaces may be located below grade, without regard to #zoning lot lines#.

(a) Such #accessory# group parking facilities shall not exceed the following maximum number of spaces:

For Blocks C, D and E combined up to 1,800 spaces in total up to 1,000 spaces in total up to 600 spaces in total up to 600 spaces in total

- (b) Such #accessory# group parking facilities are subject to the following requirements:
 - (1) the location of the curb cuts is subject to the provisions of Section 104-73;
 - (2) such #accessory# off-street parking spaces shall not be located further than 1,000 feet from the nearest boundary of the #zoning lot# to which they are accessory; and
 - (3) such #accessory# off-street parking facilities shall provide adequate reservoir spaces at the vehicular entrances to accommodate either ten automobiles or five percent of the total parking spaces provided by the #use#, whichever amount is greater, but in no event shall such reservoir spaces be required for more than 50 automobiles at each entrance.

104-72 Public Parking Garages

In Subdistrict A, public parking garages shall not be located:

- (a) within sixty (60) feet of the #lot line# on Broadway of any #zoning lot# or within ninety (90) feet of the #lot line# on 12th Avenue of any #zoning lot;
 - (b) on Parcels E2 or G2; or
- (c) on any Mandatory Open Area as shown on Map 7 in Appendix A of this Chapter or within ten (10) feet of any such Mandatory Open Area..

104-73

Permitted Curb Cut Locations

The following curb cut regulations shall apply to any #development# or #enlargement#:

(a) Existing curb cuts on #wide streets# may remain until such time as a #community facility use# is located on that portion of the #zoning lot#.

- (b) No new curb cuts are permitted on #wide streets# or within 50 feet of the intersection of any two #street lines#. Furthermore, no curb cuts are permitted on Block B. However, curb cuts may be permitted in such areas where the Commissioner of Buildings determines there is no alternative means of access to off-street parking spaces or required loading berths from other streets bounding the #block# or #zoning lot#.
- (c) New curb cuts shall not be greater than 30 feet in width.
- (d) There shall be no more than two new curb cuts per #street# frontage on a #zoning lot#, except on Block F where three curb cuts per #street# frontage are permitted, and except as provided in paragraph (f) of this Section;
- (e) There shall be a minimum distance of 30 feet between curb cuts on a #street# frontage of a #zoning lot#.
- (f) In order to access the Square, as described in Section 104-425, one curb cut, not to exceed 15 feet in width, shall be permitted along each #street# frontage of the sidewalk adjacent to the Square. Such curb cuts shall be in addition to the two curb cuts permitted on Block D, pursuant to paragraph (d) of this Section.

Special Manhattanville Mixed Use District

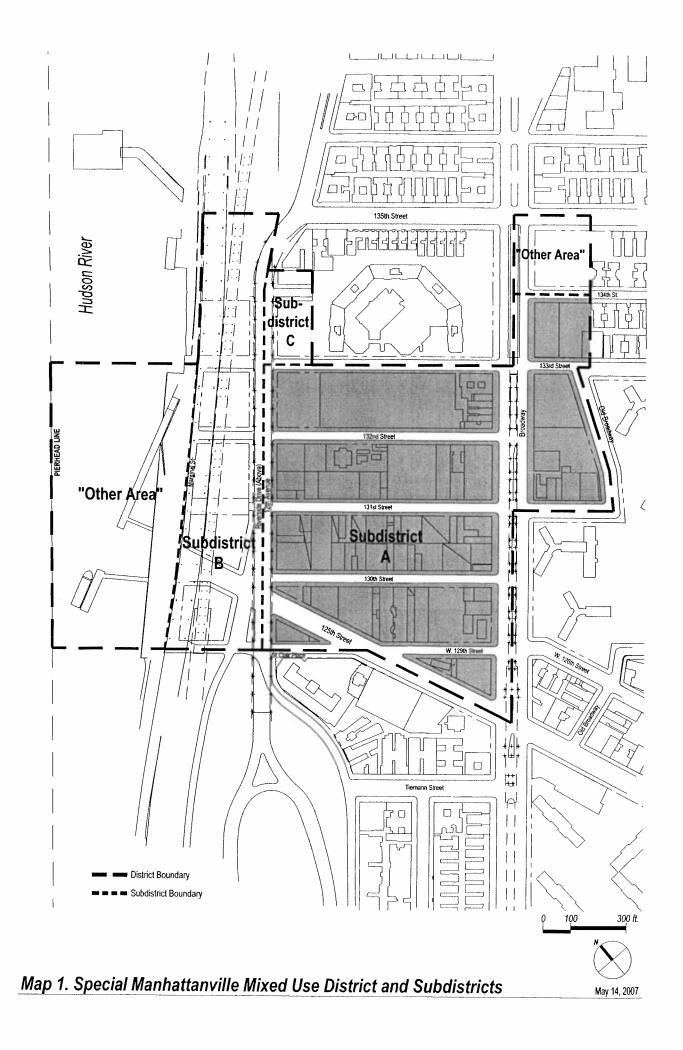
Appendix A District Maps

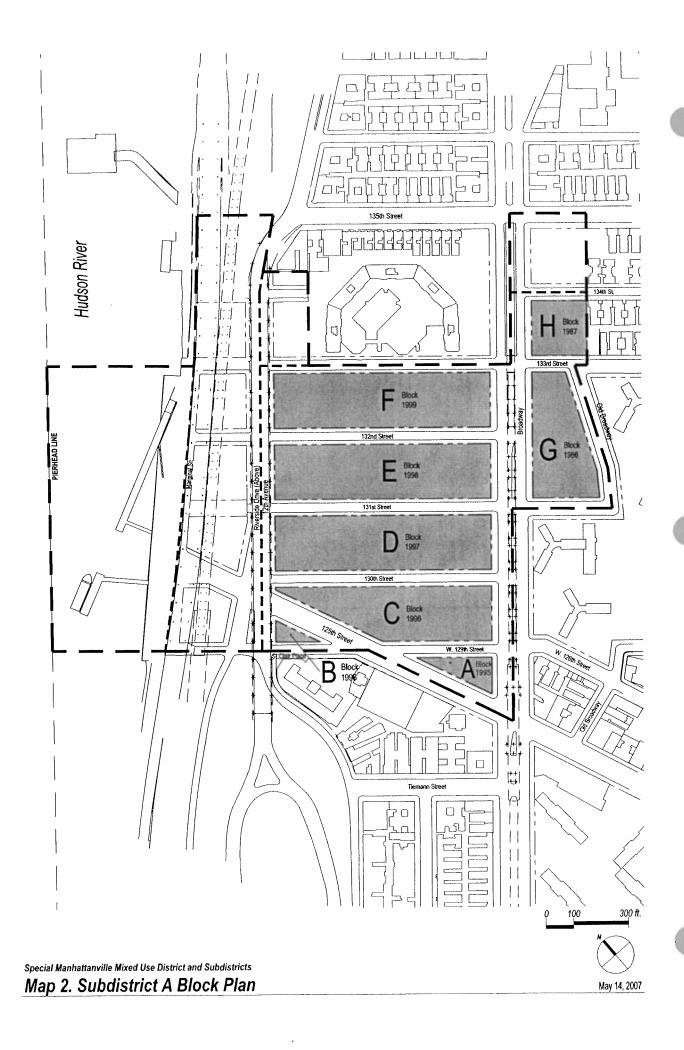
Map 1	Special Manhattanville Mixed Use District and Subdistricts
Map 2	Subdistrict A Block Plan
Map 3	Widened Sidewalk Lines
Map 4	Mandatory Street Walls
Map 5	Parcel Designation and Maximum Building Heights
Map 6	Ground Floor Use and Frontage

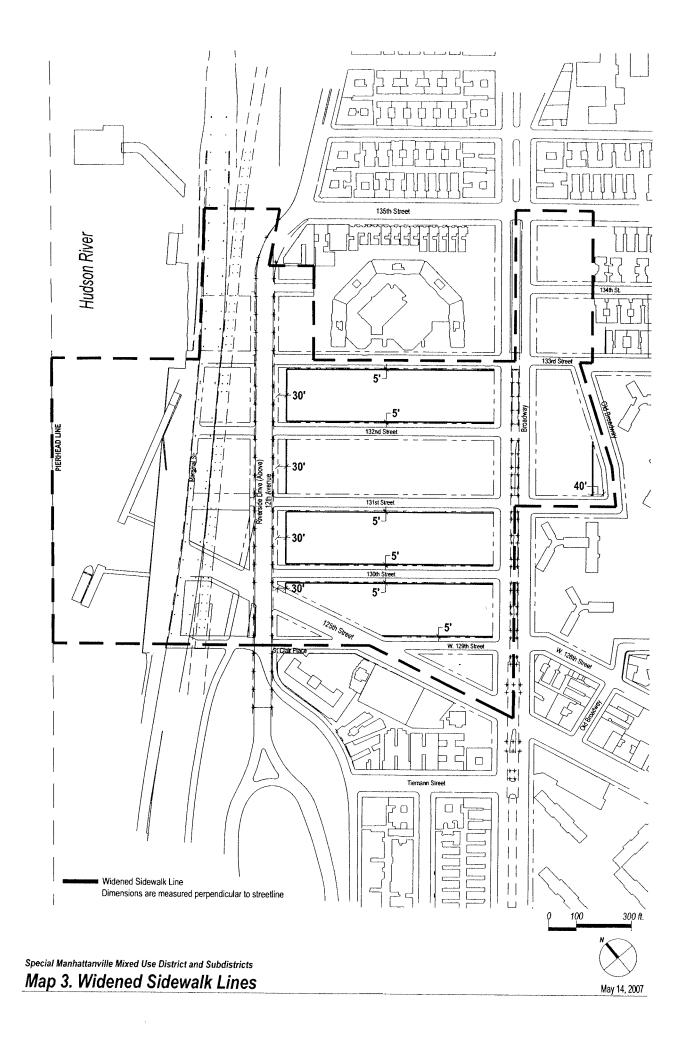
Appendix B

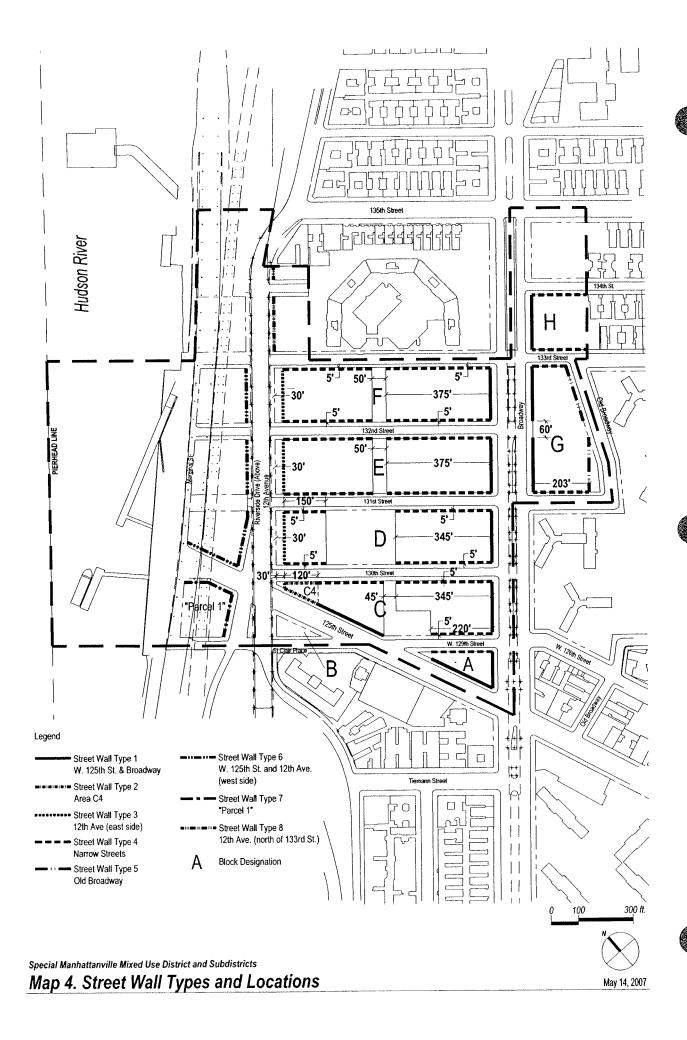
Base Plane and Building Height Table

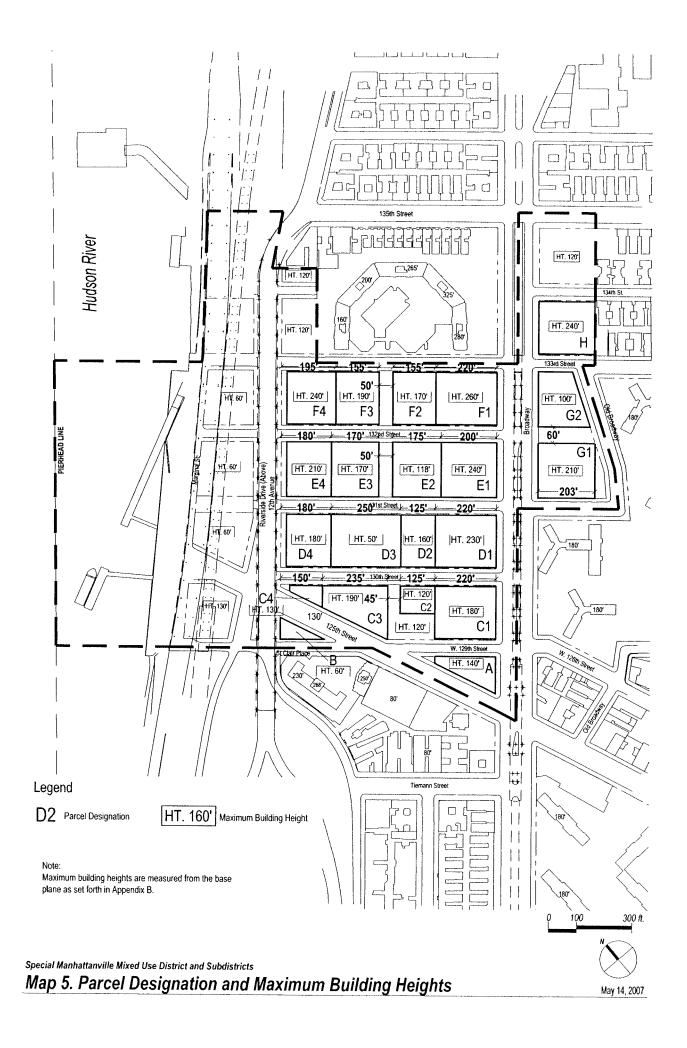
Map 7 Mandatory Open Areas

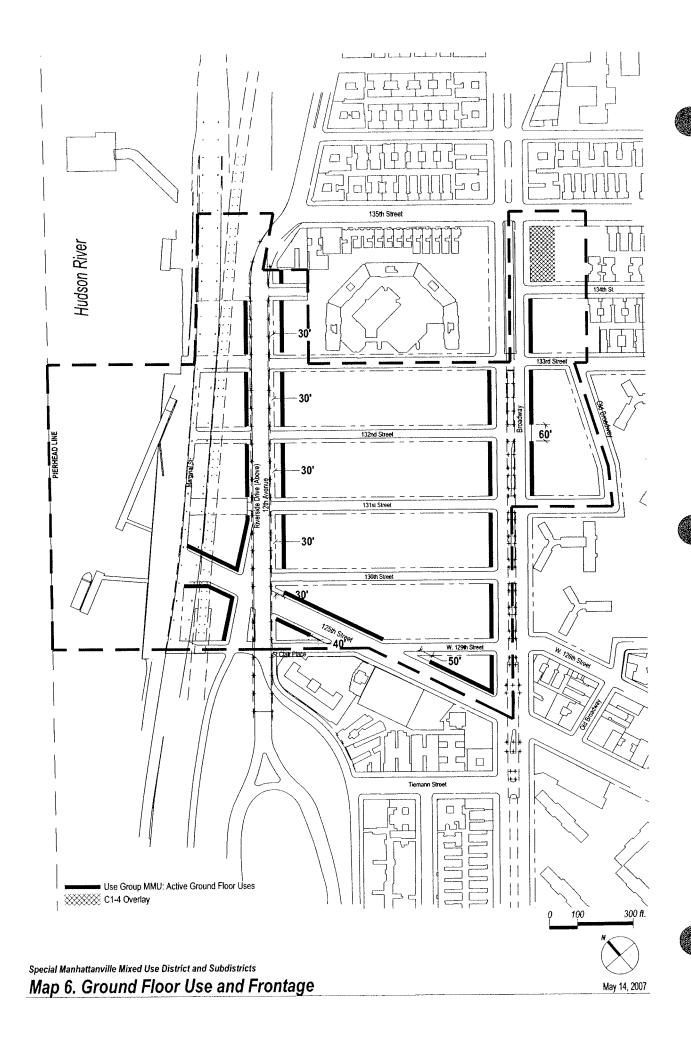


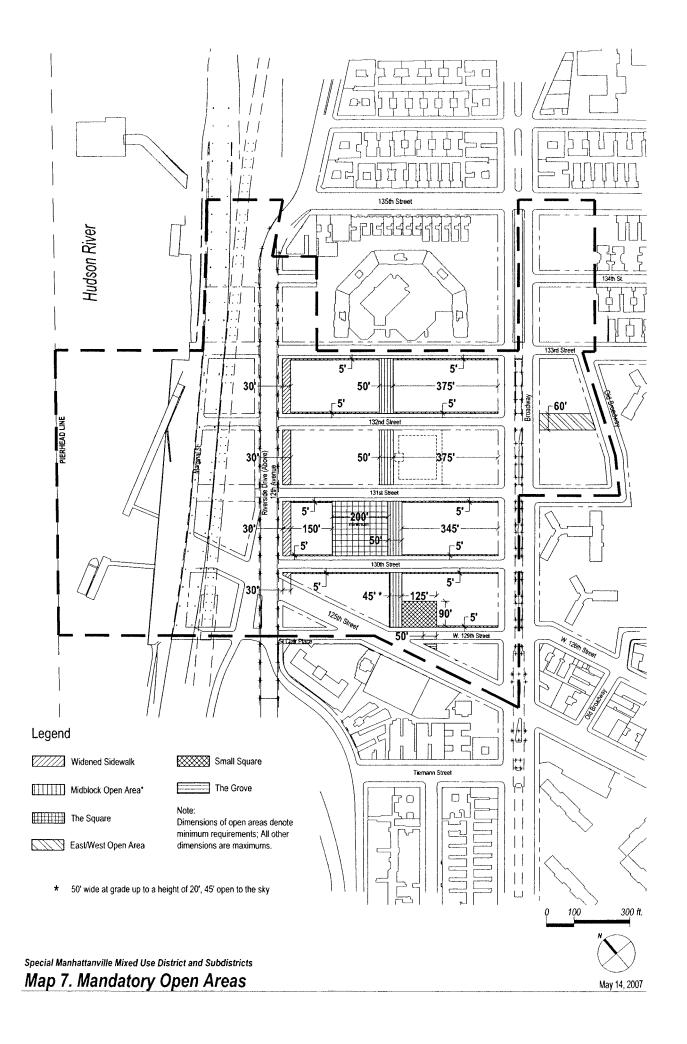












APPENDIX B
Base Plane and Building Height

Parcel*	Base Plane	Maximum Building Height, Above Base Plane	Maximum Height of Mechanical Equipment
A	21.6'	140'	40'
В	10.37'	60'	20'
C1	20.74'	180'	60'
C2	19.29'	120'	40'
C3	15.19'	190'	40'
C4	9.36'	130'	40'
D1	26.68'	230'	60'
D2	23.25'	160'	60'
D3	15.85'	50'	NA
D4	9.05'	180'	40'
E1	32.42'	240'	60'
E2	23.38'	118'	40'
E3	14.82'	170'	60'
E4	10.11'	210'	60'
F1	43.25'	260'	60'
F2	34.92'	170'	60'
F3	25.63'	190'	60'
F4	11.97'	240'	60'
G1	44.92'	210'	60'
G2	55.62'	100'	40'
Н	66.61'	240'	60'

NOTE: These numbers reflect measurement in feet above Manhatttan Datum, which is 2.75' above Sea Level.



^{*} Parcels shown on Map 5, Appendix A

APPENDIX A.2

CONCEPTUAL ANALYSIS OF PROPOSED SPECIAL ZONING DISTRICT TEXT

Appendix A.2: Conceptual Analysis of the Proposed Zoning Text Provisions that Allow the Transfer of Floor Area and the Modification of Height and Setbacks within Subdistrict A

A. INTRODUCTION

The Proposed Actions would amend the New York City zoning map and create the Special Manhattanville Mixed-Use Zoning District, thereby facilitating Columbia University's development of an Academic Mixed-Use plan (the "Academic Mixed-Use Development") on approximately 17 acres (the "Academic Mixed-Use Area" or "Subdistrict A") within the 35-acre Project Area, as well as commercial and residential development in other portions of the Project Area. The new zoning text would set forth use, density, and bulk requirements, as described in Chapter 1, "Project Description." The proposed Special Manhattanville Mixed-Use Zoning District text is provided in Appendix A.1.

Columbia's Academic Mixed-Use plan would consist of an estimated 6.8 million gross square feet (gsf) of new space in the Academic Mixed-Use Area. Academic research; academic instruction; housing for graduate students, faculty, and other employees; and related support space would comprise the 6.8 million gsf. These uses are illustrated in Figure 1-12 of Chapter 1; taken together, these sites and uses constitute an Illustrative Plan, which is analyzed in the Draft Environmental Impact Statement (DEIS). The Illustrative Plan represents the maximum 6.0 floor area ratio (FAR) equivalent for the Academic Mixed-Use Area and Columbia's current concept of its planned future development for the Academic Mixed-Use Area. The DEIS also considers a reasonable worst-case development scenario for sites within Subdistrict B, C, and the Other Areas, which is described in Chapter 2 and is shown in Figure 1-11.

The Special Manhattanville Mixed-Use Zoning District text-specifically, the provisions of Sections 104-50 (Permitted Transfer of Floor Area) and 104-60 (Modification of Special Bulk Requirements and Transfer of Floor Area by Special Permit)—allows flexibility in the build-out of the Project Area by permitting the transfer of floor area within Subdistrict A and the modification of bulk requirements within the entire Special District (coterminous with the Project Area). Those transfers to be made from the three open spaces (the Square, the Small Square, and the Grove) delineated in the proposed Special District would be "as-of-right" by notice and would require certification by the Chairperson of the New York City Planning Commission (CPC) that the open space be built to the specifications in the zoning. All other transfers of floor area within Subdistrict A that would stay within the design "envelopes" set forth in the proposed Special Manhattanville Mixed-Use Zoning District for each site would be subject to a CPC Authorization. The Authorization would require City Environmental Quality Review (CEQR) review. If the transfer would create a building within Subdistrict A that would not conform to the height, setback, and streetwall regulations in the proposed Special Manhattanville Mixed-Use Zoning District (Section 104-30 [Special Height and Setback Regulations]), a CPC Special Permit would be required. The Special Permit would be subject to both the City's Uniform Land Use Review Procedure (ULURP) and CEQR review. A

development anywhere within the Special District with a modification of special bulk requirements (Section 104-30) that does not require a transfer of floor area would be subject to the same CPC Special Permit. Development that would make use of transfers of floor area by notice (with the accompanying certification that the open space is built to the specifications in the zoning) is analyzed in the DEIS as part of the development scenario under the Illustrative Plan. Development within Subdistrict A that would make use of an Authorization or Special Permit would be assessed under a future site-specific environmental review.

This appendix provides a description of Sections 104-50 and 104-60 and an analysis that considers generically how use of the Special Permit (with or without a transfer of floor area) could affect development options, and whether their use could result in significant adverse impacts. The conceptual analysis provided in this appendix is not intended to serve as the CEQR review for future Authorizations or Special Permit applications.

DESCRIPTION OF SECTION 104-50 (PERMITTED TRANSFER OF FLOOR AREA)

The proposed Special Manhattanville Mixed-Use Zoning District text contains provisions that permit the transfer of floor area within Subdistrict A only (Section 104-50 [Permitted Transfer of Floor Area]). As detailed in Section 104-51 (General Requirements for Transfer), transfers would be permitted for community facility uses only, and for any transfer, the maximum floor area transferred could not exceed the floor area permitted on the granting site less any floor area that is to remain on the granting site. Therefore, transfers would not result in any change in the maximum FAR for community facilities in Subdistrict A as a whole (6.0 FAR). The proposed Special Zoning District text would allow for three types of floor area transfers within Subdistrict A—a transfer by notice or by Authorization or, when a transfer would occur in connection with a building that would also require the modification of special bulk requirements, Special Permit.

TRANSFERS BY NOTICE

Those transfers within Subdistrict A to be made from the three open spaces (the Square, the Small Square, and the Grove) delineated in the proposed Special District would be "as-of-right" by notice and would require certifications by the Chairperson of CPC that the open space is designed and built to the specifications in the Zoning Resolution. (The foregoing would apply only if the buildings on the receiving site stay within the design "envelopes" of the height, setback, and streetwall regulations in the zoning. If any of the buildings on the receiving sites do not stay within the design "envelopes" of the height, setback, and streetwall regulations, then transfer from any of the three open spaces would be subject to Special Permit.) The Illustrative Plan discussed in Chapter 1 and analyzed throughout the DEIS assumes that these transfers within Subdistrict A are made. It is anticipated that Columbia will apply for such certifications at the time of development of either the open space or the receiving site, whichever comes first.

Section 104-52 (Transfer of Floor Area by Notice) outlines the requirements for the certifications, and states that:

- The site plan submitted for the granting site shall show the conditions and floor area calculations for the granting site and the receiving site, before and after the transfer;
- No building permit shall be issued by the New York City Department of Buildings (DOB)
 for a building on a receiving site containing any such transferred floor area until the
 Chairperson of CPC has certified to DOB that plans submitted to the New York City
 Department of City Planning (DCP) for the Square, the Small Square, or the Grove, as

- applicable, on the granting site, conform with the requirements of Section 104-40 (Special Urban Design Regulations);
- No temporary certificate of occupancy shall be issued by DOB for any portion of a building utilizing the transferred floor area unless and until the Chairperson of CPC certifies to DOB that the public open area required to be provided on the granting site pursuant to the provisions of Sections 104-424 (The Square), 104-425 (The Small Square), or 105-426 (The Grove), as applicable, has been constructed substantially in accordance with the plan certified by the Chairperson of CPC and is substantially complete, and may be opened to the public; and
- No permanent certificate of occupancy shall be issued by DOB for any portion of a building utilizing the transferred floor area unless and until the Chairperson of CPC certifies to DOB that construction of the public open space required to be provided on the granting site is complete.

TRANSFERS BY AUTHORIZATION

All other transfers of floor area that would stay within the design "envelopes" set forth in the zoning's height, setback, and streetwall regulations for each site (Section 104-30 [Special Height and Setback Requirements]) would be subject to a CPC Authorization that would be subject to CEQR review. Within Subdistrict A, CPC may authorize the transfer of floor area (subject to the general requirements of Sections 104-50 and 104-51), provided that the Commission finds that:

- Such transfer will permit better site planning; and
- Such transfer will not unduly increase the bulk of buildings in any block to the detriment of the occupants or users of buildings on blocks outside Subdistrict A.

If the transfer would create a building that would not conform to the height, setback, and streetwall regulations in the zoning (Section 104-30), a CPC Special Permit subject to both ULURP and CEQR review would be required. Section 104-60 (Modification of Special Bulk Requirements and Transfer of Floor Area by Special Permit) is described below, as are CPC findings for the granting of a Special Permit.

DESCRIPTION OF SECTION 104-60 (MODIFICATION OF SPECIAL BULK REQUIREMENTS AND TRANSFER OF FLOOR AREA BY SPECIAL PERMIT)

Section 104-60 would allow the modification of the special bulk requirements of Section 104-30 (Special Height and Setback Requirements) by Special Permit for buildings anywhere within the Special Manhattanville Mixed-Use Zoning District. Such modifications could occur in connection with a transfer of floor area pursuant to Section 104-50 (see above) or for buildings in which there is no transfer of floor area. Specifically, CPC may, by Special Permit, allow the modification of special height, setback, and streetwall requirements of Section 104-30, inclusive, provided that CPC finds that such modifications are necessary to:

- Meet programmatic and mechanical requirements;
- Achieve a better distribution of bulk on the zoning lot that would not adversely affect access to light and air for surrounding public access areas, streets, buildings, and properties;
- · Provide flexibility of architectural design and encourage more attractive building forms; and
- Result in a development or enlargement that is compatible with development in the surrounding area.

In addition, CPC may, by Special Permit, permit the transfer of floor area from any granting site to a receiving site for a development that requires modification of the special height, setback, and streetwall requirements of Section 104-30, inclusive, provided that CPC finds:

- Such transfer complies with the general requirements set forth in paragraphs (a), (b), (c), and (d) of Section 104-51;
- The distribution of floor area on the receiving site does not adversely affect the character of the surrounding area by unduly concentrating floor area in any portion of Subdistrict A; and
- Where such transfer is from a granting site on Blocks A, C, or D (these blocks are identified in Map 2 of Appendix A), it shall also comply with the provisions of paragraphs (b) and (c) of Section 104-52 (Transfer of Floor Area by Notice).

CPC may prescribe additional conditions and safeguards to minimize adverse effects of the development or enlargement on the character of the surrounding area.

PURPOSE AND NEED FOR THE PROPOSED TEXT PROVISIONS

Recognizing that build out of the Project Area, by both Columbia University and other project sponsors, would occur over time, Sections 104-50 and 104-60 of the Special Manhattanville Mixed-Use District zoning provisions provide flexibility by allowing the redistribution of community facility floor area within Subdistrict A and the modification of height and setback requirements and mandated streetwall requirements in the Project Area. (As stated above, the transfer of floor area could occur only within Subdistrict A of the Special Manhattanville Mixed-Use Zoning District, while the modification of special bulk requirements could occur anywhere within the Special District.) The Special Manhattanville Mixed-Use District zoning provisions would allow Columbia University to develop the Academic Mixed-Use Development to meet its long-term needs for modernization and expansion of the institution's facilities. Sections 104-50 and 104-60 would provide flexibility in site specific design, allowing Columbia University to develop their facilities in response to evolving needs while addressing site-specific constraints. Specifically, the zoning text provisions provide Columbia University with the flexibility to make changes to the illustrative development assessed in the DEIS while requiring City approval and environmental review of specific development proposals that would make use of the floor area transfer (by Authorization) and/or the modification of bulk requirements (by Special Permit). Section 104-60 of the zoning text provisions also provides flexibility in site-specific design by allowing the modification of height, setback, and streetwall regulations for project sponsors other than Columbia University in connection with development in Subdistricts B, C, and the Other Areas.

B. METHODOLOGY

This conceptual analysis of these zoning provisions considers whether there could be any environmental impacts from the use of the zoning text provisions. For the reasons discussed below, the analysis in this appendix is limited to an assessment of the effects of the use of the Special Permit (with or without a transfer of floor area) pursuant to Section 104-60 (Modification of the Special Bulk Requirements and Transfer of Floor Area by Special Permit), as described below.

An analysis of the potential for impacts from the transfer of floor area under Section 104-52 (Transfer of Floor Area by Notice) is not warranted in this appendix, since these transfers of floor area are already analyzed in the DEIS. Specifically, Section 104-52 allows a transfer of

floor area to receiving sites upon certification by the Chairperson of CPC that plans have been submitted for the provision of open space on the granting site. As stated previously in Chapter 1, the DEIS analyzes an Illustrative Plan for the Academic Mixed-Use Development that assumes the use of this provision to transfer floor area from the Square, the Small Square, and the Grove to various sites in the remaining blocks in Subdistrict A. Under these regulations, development on these sites would conform to height, setback, and streetwall regulations. As stated above, it is anticipated that Columbia will apply for such certifications at the time of development of either the open space or the receiving site, whichever comes first.

An analysis of the potential for impacts from the transfer of floor area under Section 104-53 (Transfer of Floor Area by Authorization) in which the height, setback, and streetwall provisions of Section 104-30 are met is not warranted in this appendix because the Illustrative Plan for the Academic Mixed-Use Development and reasonable worst-case development scenarios analyzed in the DEIS already take into account the maximum heights and bulks of buildings. Use of this type of transfer of floor area would also not affect other environmental analysis areas that are influenced by a development's use or floor area because it would not result in a change of use or an increase in the amount of development analyzed in the DEIS. These areas include land use, socioeconomic conditions, community facilities, open space (indirect effects; i.e., open space ratios would be unaffected because there would be no change to the overall amount of development and therefore no change in study area populations), natural resources, infrastructure, solid waste and sanitation services, energy, traffic and parking, air quality (mobile sources), and noise.

Shifts in density within Subdistrict A resulting from transfer of floor area would not affect traffic because traffic patterns would remain essentially unchanged; Section 104-70 (Parking and Loading Regulations and Curb Cut Locations) sets forth requirements related to parking, including restrictions on the location of parking facilities and curb cuts, which would continue to apply. As a consequence, mobile air quality would also be unaffected. It is unlikely that a transfer of floor area would affect pedestrians, as the zoning text provisions require that sidewalks be widened. In terms of the transit analysis, a transfer of floor area by Authorization would not change the number of people expected to use transit services; therefore, it is unlikely that transit conditions would be substantially affected.

The transfer of floor area by Authorization would also not affect those environmental areas that relate to subsurface disturbance. In terms of archaeological resources, the Project Area, which includes Subdistrict A, was determined not to be sensitive for archaeological resources (see New York City Landmarks Preservation Commission [LPC] comments dated September 23, 2004, and the New York State Office of Parks, Recreation and Historic Preservation [OPRHP] letter dated June 6, 2005, in Appendix D). In terms of hazardous materials, significant adverse hazardous materials impacts would be avoided—i.e., potential contaminants identified in the Academic Mixed-Use Area on lots currently owned or controlled by Columbia University would be remediated (cleaned up) in accordance with Restrictive Declarations placed against the Columbia properties. Use of the floor area transfer would therefore not affect hazardous materials.

This appendix therefore assesses generically the potential for use of the Special Permit (with or without a transfer of floor area) under Section 104-60 to result in significant adverse impacts. As stated above, such Special Permit applications would be subject to both a site-specific CEQR and ULURP review; therefore, the analysis provided in this appendix is generic. Site-specific effects would be determined as part of the proposals' CEQR and ULURP review.

A Special Permit (with or without a transfer of floor area) would be required if a proposed building would require changes in maximum height, setbacks, streetwalls, or bulk waivers, or similar relief that would break the design "envelope" examined for the Proposed Actions in the DEIS. (As noted above, a transfer of floor area could occur only with Subdistrict A, while the modification of special bulk regulations could occur anywhere within the Project Area. This appendix considers use of the Special Permit with or without a transfer of floor area within Subdistrict A and use of the Special Permit within the entire Project Area).

Because the maximum FAR for community facilities in Subdistrict A as a whole would not exceed 6.0, use of the Special Permit with a floor area transfer would not result in an increase in the amount of development analyzed in the DEIS. Use of the Special Permit to modify special bulk requirements (without the transfer of floor area) would also not result in an increase in the amount of development analyzed in the DEIS. Therefore, use of the Special Permit would not affect those environmental analysis areas that are influenced by a development's use or floor area; these areas include land use, socioeconomic conditions, community facilities, open space (indirect effects), natural resources, infrastructure, solid waste and sanitation services, energy, traffic and parking, transit and pedestrians, air quality (mobile sources), and noise.

As discussed above, shifts in density within Subdistrict A resulting from floor area transfers would not affect traffic as Section 104-70 (Parking and Loading Regulations and Curb Cut Locations) sets forth requirements related to parking, including restrictions on the location of parking facilities and curb cuts; as a consequence, mobile air quality would also be unaffected. It is unlikely that use of the Special Permit would affect pedestrians, as the zoning text provisions require that sidewalks be widened within Subdistrict A, and the Special Permit cannot be used to waive these provisions (Section 104-421 [Mandatory Widened Sidewalks and Adjacent Areas]).

In terms of the transit analysis, a transfer of floor area (with or without the modification of bulk requirements) would not change the number of people expected to use transit services; therefore, it is unlikely that transit conditions would be substantially affected. As is the case of transfers by Authorization, use of the Special Permit with or without transfer of floor area is also unlikely to affect those environmental areas that relate to subsurface disturbance (archaeology, hazardous materials). In terms of hazardous materials, E-designations to ensure that sites are properly investigated and remediated prior to development, if necessary, would be placed on lots where the potential for contamination was found on lots not owned or controlled by Columbia University.

C. ASSESSMENT OF THE POTENTIAL ENVIRONMENTAL EFFECTS OF THE PROPOSED SPECIAL PERMIT

Those environmental areas in which use of the Special Permit may result in significant adverse impacts are discussed in more detail in the following sections.

OPEN SPACE (DIRECT EFFECTS)

As part of the Special Permit allowing the modification of special bulk requirements, CPC would have to make certain findings relating to open space prior to granting a Special Permit. These findings include the following: that the modifications will not adversely affect access to light and air for surrounding public access areas, streets and properties. As such, the proposed text provisions allowing the modification of special bulk requirements are not likely to result in significant adverse open space impacts.

The potential for open spaces to be affected by shadows is assessed in the following section.

SHADOWS

Shadow impacts are site specific and dependent not only on the bulk and massing of a proposal, but on the sun-sensitive resources within reach of new shadows. Chapter 7, "Shadows," of the DEIS identified the following resources of concern: sun-sensitive historic resources, which include the Old Broadway Synagogue and St. Mary's Church, Parish House, and Sunday School; and open spaces, which include the West Harlem Waterfront park, the I.S. 195 Playground, the Broadway Malls, Manhattanville Houses open spaces, and Riverside Park. The Proposed Actions as analyzed in the DEIS would have a significant adverse impact on the I.S. 195 Playground in 2030 during the March and December analysis periods, when large incremental shadows would cover the playground for long durations; there would not be significant adverse impacts on other open spaces.

Use of the Special Permit (with or without a transfer of floor area) could result in the redistribution of the bulk and massing of certain developments in the Special Manhattanville Mixed-Use District. This conceptual analysis uses the information provided in the DEIS as a basis to determine whether modifications in bulk and height (with use of the Special Permit) could result in significant adverse shadows impacts. As discussed above, use of the Special Permit would be subject to both ULURP and CEQR review.

As described in Chapter 7, "Shadows," a building has a maximum shadow length factor of 4.3 times its height. This occurs at the beginning and end of the analysis period on December 21, when shadows are cast to the northwest and northeast, respectively. Toward midday, when the sun is higher in the sky, the shadow length factor is 2.07. Shadow length factors for the remainder of the analysis periods are shorter than they are in December.

Because of their location to the south of the Project Area, the Old Broadway Synagogue and St. Mary's Church, Parish House, and Sunday School would not be affected by shadows no matter how bulk is redistributed within the Special Manhattanville Mixed-Use District (see Figure 7-2 in Chapter 7). Only a very small portion of the Hudson River, a natural feature, is in the study area. Therefore, no significant adverse impacts would occur to historic resources or natural features due to shadows from use of the Special Permit. The potential for use of the Special Permit to affect shadows on open spaces identified in the DEIS is discussed below and is organized by open space resource.

WEST HARLEM WATERFRONT PARK

The DEIS concludes that buildings in Subdistrict B and the Academic Mixed-Use Area (Subdistrict A) would cast incremental shadows on the West Harlem Waterfront park between St. Clair Place and West 133rd Street for around an hour in the early morning throughout the year. These incremental shadows would be very small and would add to shadows already cast by the elevated Route 9A and Amtrak viaducts. They are not considered significant adverse impacts to the West Harlem Waterfront park because the park would receive full sunlight from late morning to evening for most of the year.

With the Special Permit, the buildings in the Special Manhattanville Mixed-Use District could be taller than those analyzed in the DEIS. An increase in height in buildings within Subdistrict B or on Sites 10 or 14 (the westernmost sites within Subdistrict A and therefore, the buildings that could potentially affect the West Harlem Waterfront park) are not likely to result in significant

adverse shadow impacts. As shown in Figures A.2-1 through A.2-3, the West Harlem Waterfront park is either already in shadow from existing buildings or from the buildings analyzed in the DEIS within the early morning period. An increase in height of the buildings on Sites 10 or 14 could remove sunlight from remaining small sections of the westernmost areas of the park during some analysis periods (March 21 at 10:00 AM, May 6 at 8:30 AM, or June 21 at 8:30 AM); however, as can be seen in these diagrams, any increase in shadow increment would be small—the circled areas on Figures A.2-1 through A.2-3 indicate the approximate area where additional shadow could be cast by a taller building. As seen in these figures, the small sections where shadow could be cast are limited to the small area between the shadow that would be cast under the Proposed Actions and the Hudson River. Shadows would be limited to the early morning hours throughout the year, and the park would receive full sunlight from late morning to evening for most of the year. Therefore, significant adverse impacts on this open space are unlikely with the Special Permit. As stated above, use of the Special Permit would be subject to both ULURP and CEQR review; therefore, a site-specific analysis of a development using the Special Permit would be undertaken at that time.

I.S. 195 PLAYGROUND

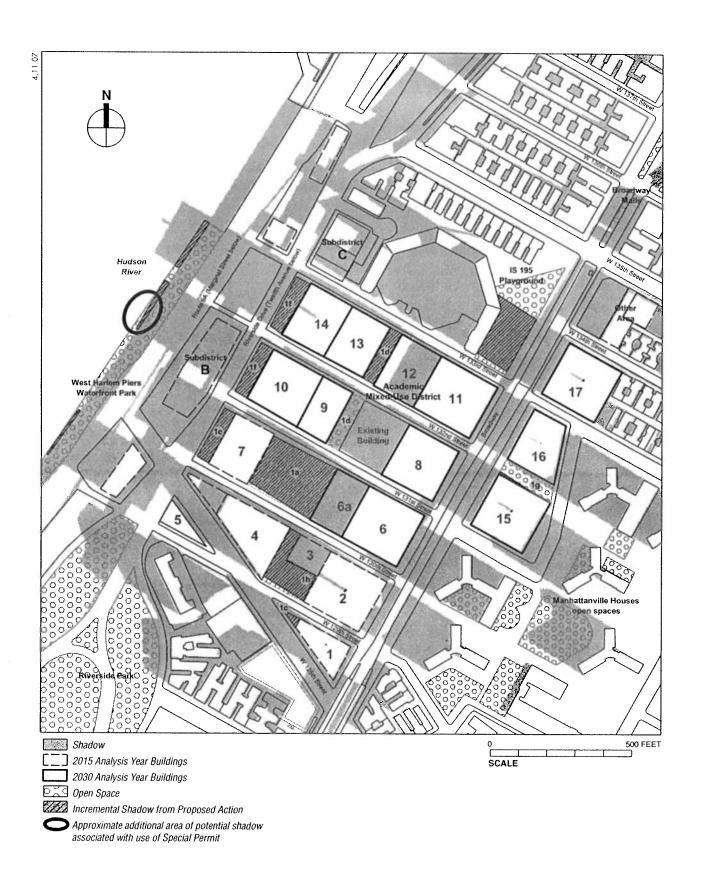
The DEIS concludes that the combined shadows from the buildings in the Other Area east of Broadway and the buildings in the Academic Mixed-Use Area would increase shadows on the playground on all four analysis days. Significant adverse impacts are expected to occur in 2030 during the March and December analysis periods, when large incremental shadows would cover the playground for long durations.

With the Special Permit, if the buildings in the Academic Mixed-Use Area were taller (specifically, on Sites 11 and 17), additional shadows would be cast on this open space in the midday period during the March analysis period (see Figures A.2-4 through A.2-7) and in the mid-morning to early afternoon period during the May analysis period (see Figures A.2-8 through A.2-10). In the June analysis period at 10:00 AM, a very small increase in shadows could occur with use of the Special Permit (see Figure A.2-11). In all three analysis periods, no additional shadow increments would be cast in the early morning hours or in the later afternoon. During the December analysis period, an increase in building height on Site 15 could result in additional shadow increments on the playground in the late morning and just after noon (see Figures A.2-12 and A.2-13). Depending on the site-specific design of the buildings on these different sites, these incremental increases could result in significant adverse shadow impacts on this open space similar to the impacts under the Proposed Actions. An increase in height of the buildings located in the Other Area east of Broadway could also result in some additional shadow increments during the early morning periods of the March, May, and June analysis periods. These increases would be limited to small areas for approximately 15 to 30 minutes on these analysis periods, and it is unlikely that this additional shadow would result in significant adverse impacts. Use of the Special Permit would be subject to both ULURP and CEQR review; therefore, a site-specific analysis of a development using the Special Permit would be undertaken at that time and the potential for significant adverse impacts determined in connection with that analysis.

THE BROADWAY MALLS

The DEIS concludes that buildings in the Academic Mixed-Use Area and the Other Area east of Broadway would cast shadows on portions of Broadway's landscaped median between West 135th and West 136th Streets for most of the December 21 analysis day. There would be no





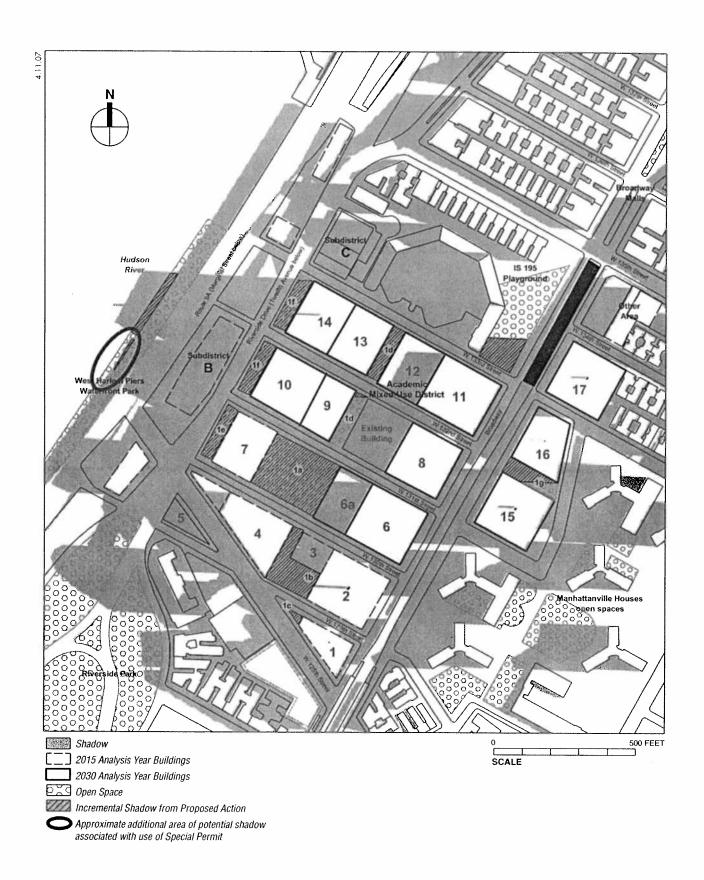
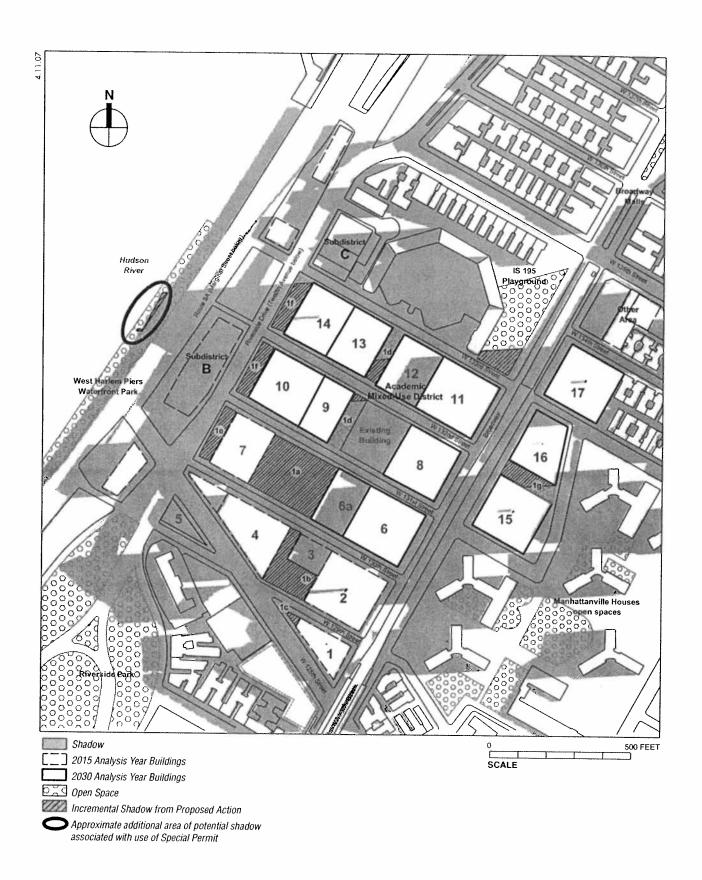


Figure A.2-2
EIS Figure 7-32
Shadow Diagram - 2030 Analysis Year
May 6 - 8:30 AM DST



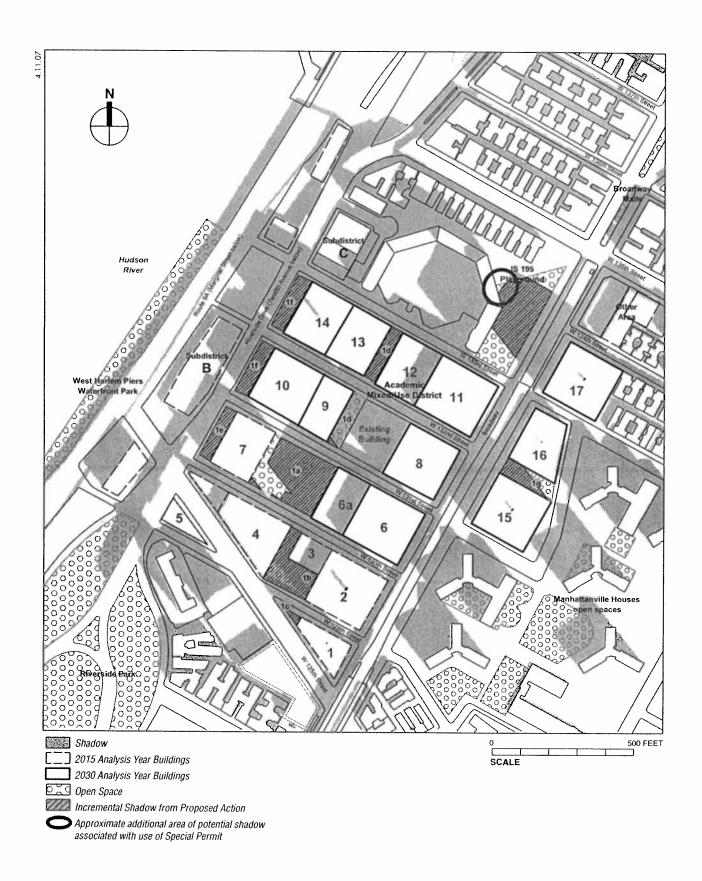


Figure A.2-4
EIS Figure 7-25
Shadow Diagram - 2030 Analysis Year
March 21 - 11:15 AM DST

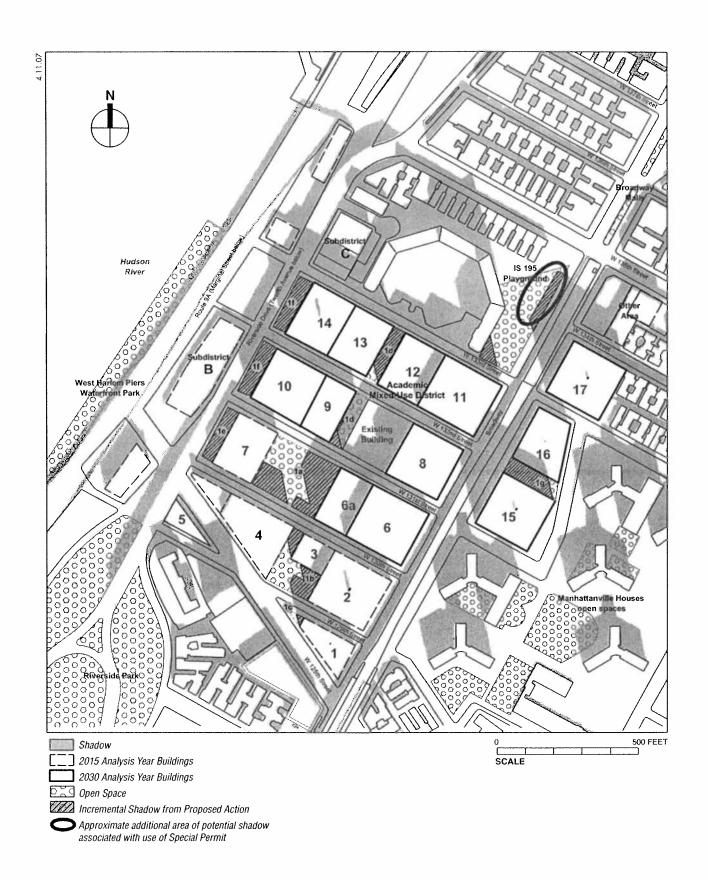


Figure A.2-5
EIS Figure 7-26
Shadow Diagram - 2030 Analysis Year
March 21 - 12:30 PM DST

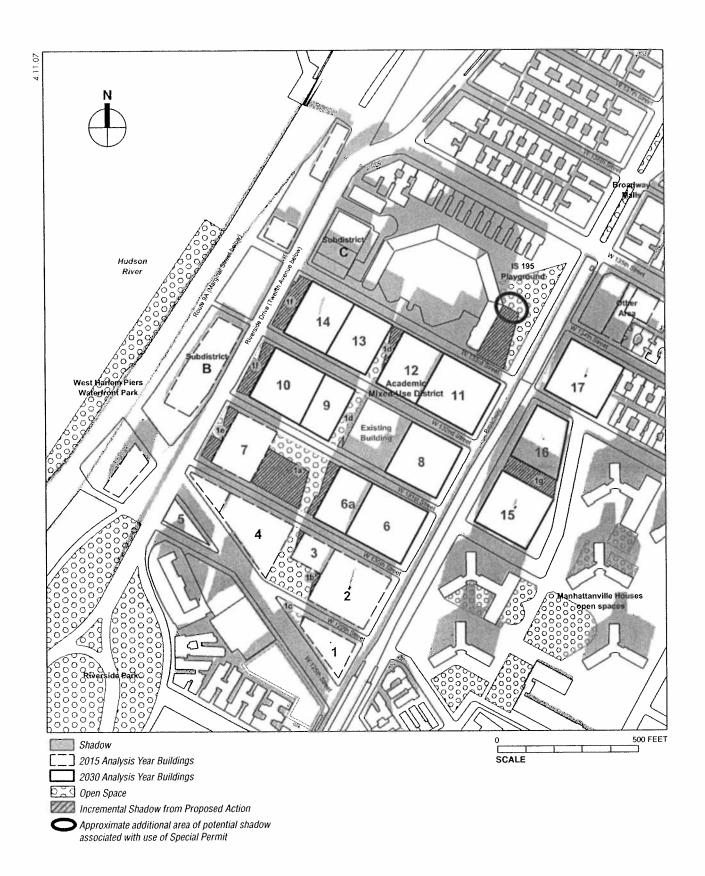


Figure A.2-6
EIS Figure 7-27
Shadow Diagram - 2030 Analysis Year
March 21 - 1:45 PM DST

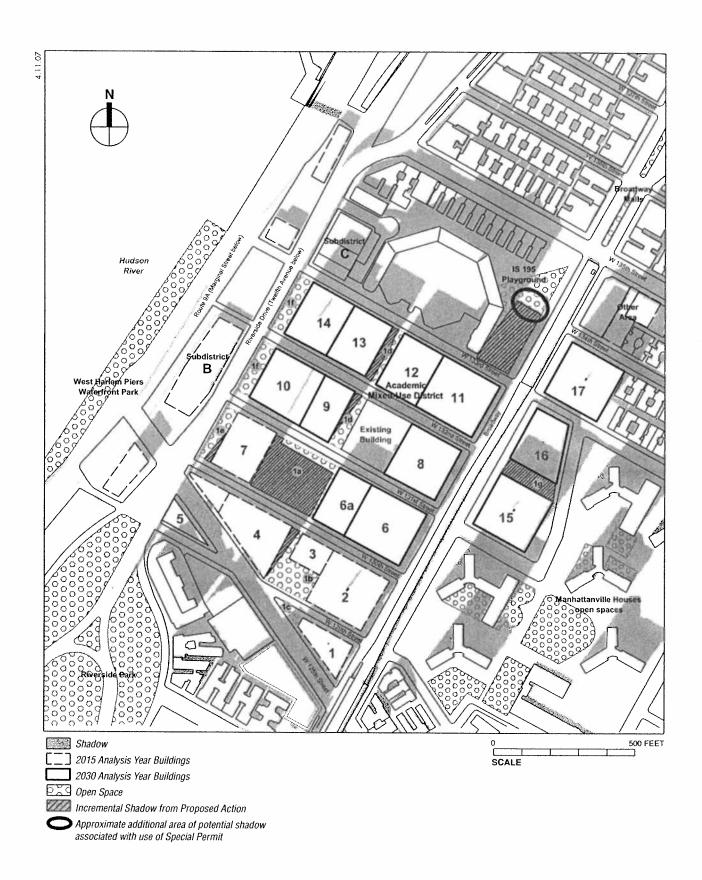


Figure A.2-7
EIS Figure 7-28
Shadow Diagram - 2030 Analysis Year
March 21 - 2:45 PM DST

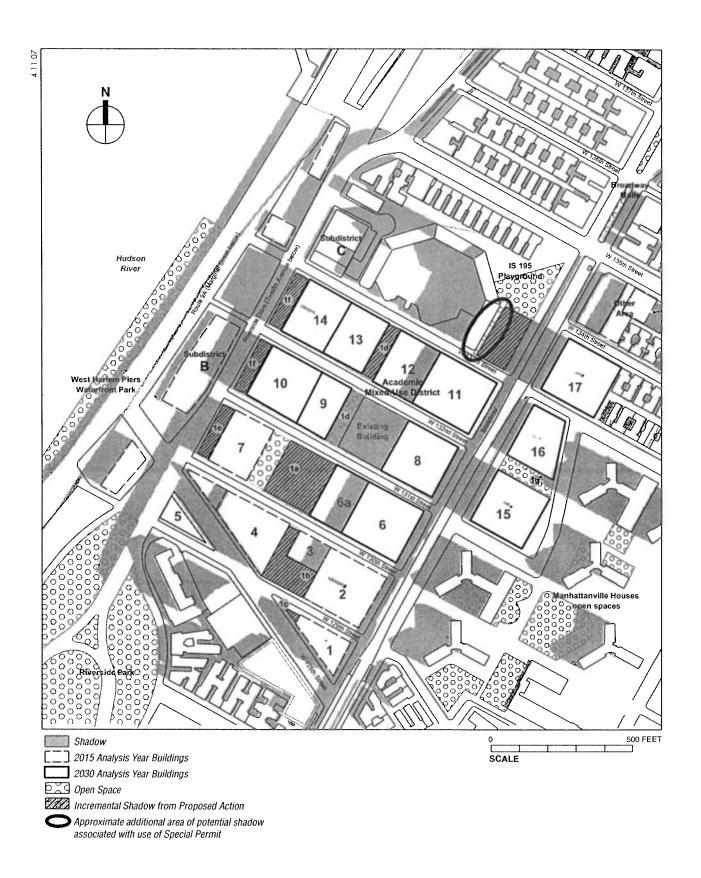


Figure A.2-8
EIS Figure 7-33
Shadow Diagram - 2030 Analysis Year
May 6 - 10:30 AM DST

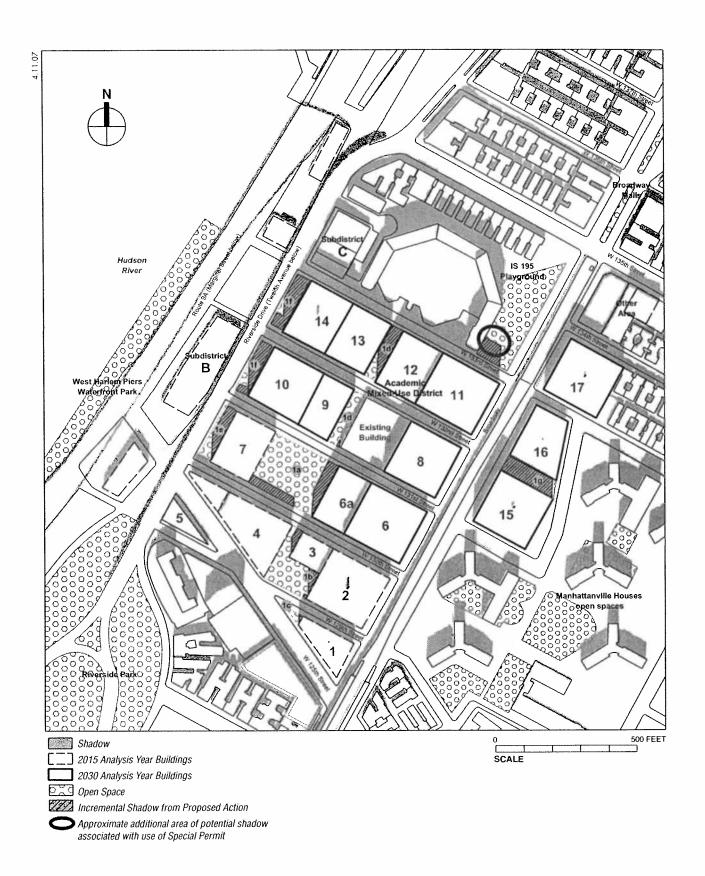


Figure A.2-9
EIS Figure 7-34
Shadow Diagram - 2030 Analysis Year
May 6 - 1:00 PM DST

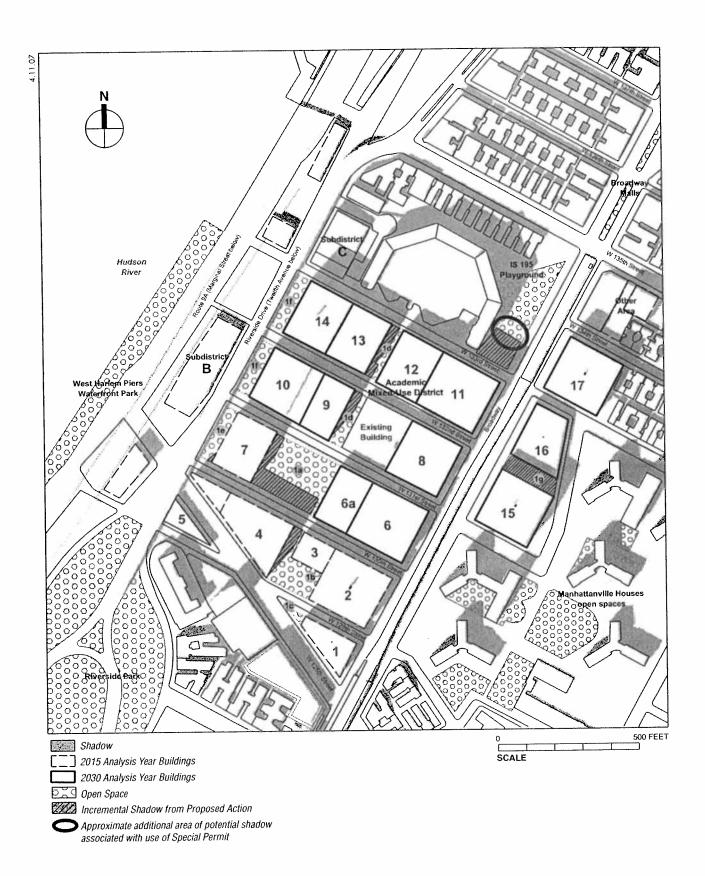


Figure A.2-10
EIS Figure 7-35
Shadow Diagram - 2030 Analysis Year
May 6 - 2:15 PM DST

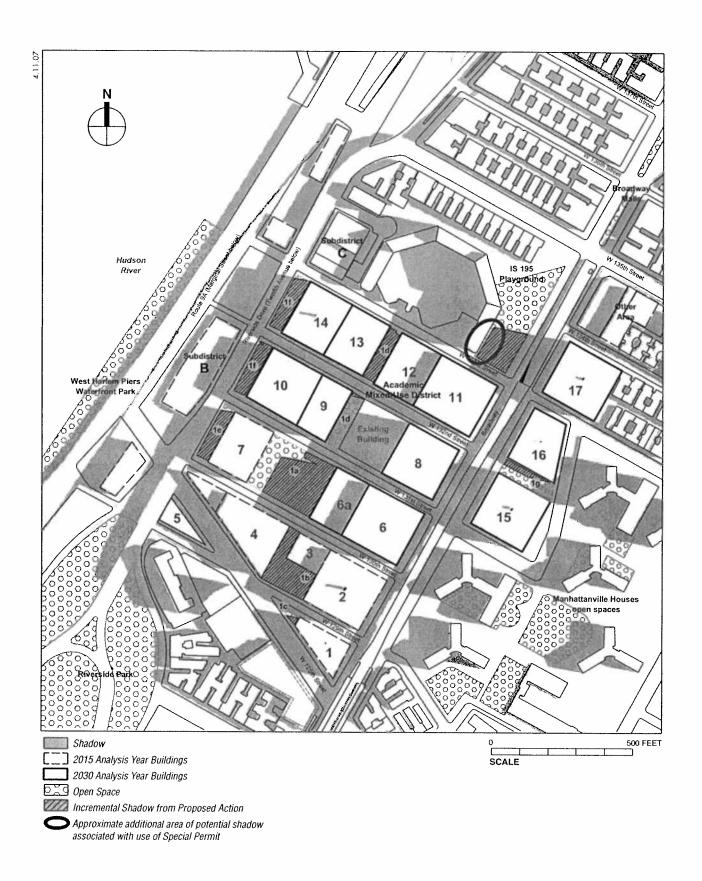
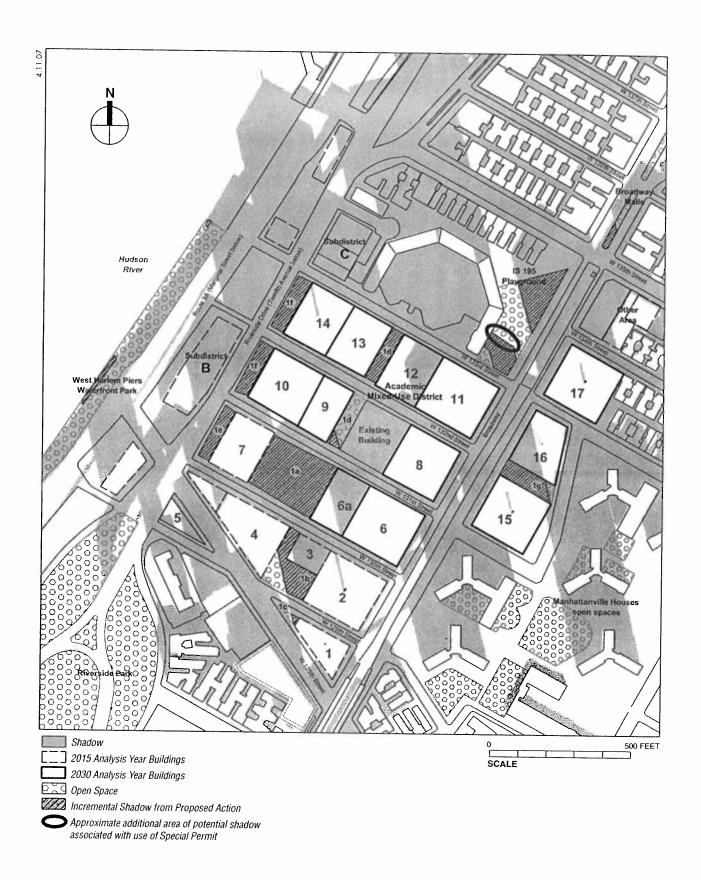
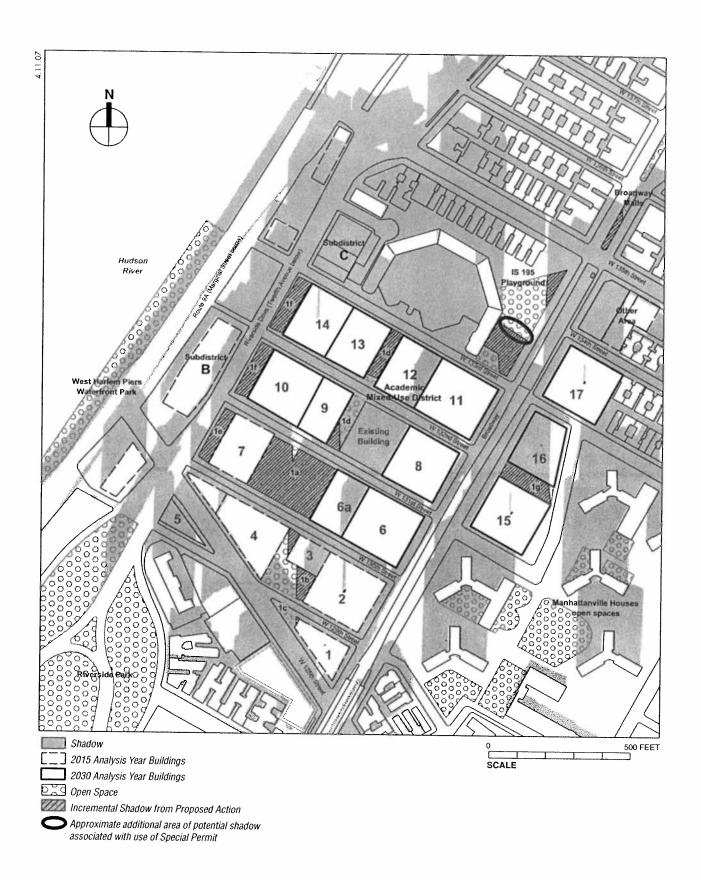


Figure A.2-11
EIS Figure 7-39
Shadow Diagram - 2030 Analysis Year
June 21 - 10:00 AM DST





significant adverse impacts on the Broadway Malls with the Proposed Actions because the adjacent malls to the north between West 136th and West 137th Streets and between West 137th and West 138th Streets would be mostly or completely in sunlight during the same period. These adjacent malls are visible and accessible to any users of the malls between West 135th and West 136th Streets that would be affected by the incremental shadows. Therefore, the incremental shadows would not reduce the overall usability of the Broadway Malls due to their limited effects over the course of the year.

With the Special Permit, if the building on Site 17 could be taller, the shadow increments on the December analysis day could fall on an additional portion of the Broadway Malls (see Figure A.2-14). However, this potential incremental increase in shadow is not likely to result in a significant adverse impact because the size of the increment would be small, and the duration of the coverage would be short (approximately 1 hour). Furthermore, as stated in the DEIS, adjacent malls to the north would be mostly or completely in sunlight during the same period. These adjacent malls are visible and accessible to any users of the malls between West 135th and West 136th Streets that would be affected by the incremental shadows. Therefore, the incremental shadows would not reduce the overall usability of the Broadway Malls due to their limited effects over the course of the year. An increase in height in the Other Area east of Broadway would not result in any additional shadow increments on the Broadway Malls.

MANHATTANVILLE HOUSES OPEN SPACES

The DEIS concludes that from March through September in the late afternoon, the Proposed Actions' buildings in the Academic Mixed-Use Area would cast shadows on the open spaces of the Manhattanville Houses located east of Broadway. The incremental shadows, which would be relatively small, would last for ½ to 2¼ hours, depending on the analysis day. No significant adverse impacts on the open spaces at the Manhattanville Houses during any of the analysis periods are anticipated, because of the short duration and small size of the incremental shadows. Although the Proposed Actions would remove the last of the sunlight on two areas of the open spaces during the late afternoon hours between September and March, the largest, centrally located open space would remain unaffected by the Proposed Actions.

If the buildings in the Academic Mixed-Use Area could be taller (with use of the Special Permit), there would be some additional small incremental shadows cast on the Manhattanville Houses open spaces in the March and May analysis periods from a building on Site 1 (see Figures A.2-15 and A.2-16). These additional increments are unlikely to result in any significant adverse shadow impacts on the Manhattanville Houses open spaces, as the potential combined increments would be limited to a short duration and small size. As with the Proposed Actions, the largest, centrally located open space would remain unaffected by use of the Special Permit.

RIVERSIDE PARK

The DEIS concludes that Riverside Park, which is southwest of the Project Area, would receive incremental shadows in the early morning from March through September from the buildings in the Academic Mixed-Use Area. The largest incremental shadows would occur in the beginning of the analysis period in the early morning. However, they would still be very small considering the total size of Riverside Park. Further, these shadows would decrease in size rapidly and move off the open space by 9:00 AM, and Riverside Park would receive ample sunlight for the remainder of the day. Therefore, with the Proposed Actions, no significant adverse impacts would occur on Riverside Park.

With use of the Special Permit, additional shadow increments could be cast on Riverside Park during the early morning in the May analysis period (see Figure A.2-17). The additional increment is unlikely to result in significant adverse impacts on this open space, as the shadow would cover only a very small portion of the park for a limited period in the AM hours.

PROPOSED OPEN SPACES

The Proposed Actions would create a series of open spaces linking West 125th to West 133rd Streets, along Twelfth Avenue and along the line of West 132nd Street between Broadway and Old Broadway. The DEIS noted that these open spaces would receive incremental shadows from the Academic Mixed-Use Development buildings for long durations throughout the year for most or all of the analysis periods. The incremental shadows are not considered a significant adverse impact because these open spaces would not exist without the Proposed Actions. Although the final landscape design of these proposed open spaces has not yet been determined, it is anticipated that the plan would consider these shadow conditions, and vegetation would be selected for its shade tolerance.

The redistribution of bulk within the Academic Mixed-Use Area by Special Permit could result in different shadow increments on these project-created open spaces. In addition, use of the Special Permit could occur after construction of the open spaces is complete. Therefore, use of the Special Permit could result in significant adverse impacts on the open spaces to be created as part of the Proposed Actions. However, as noted above, it is anticipated that the landscape design of the proposed open spaces would take into account the shadow conditions, and vegetation would be selected for its shade tolerance.

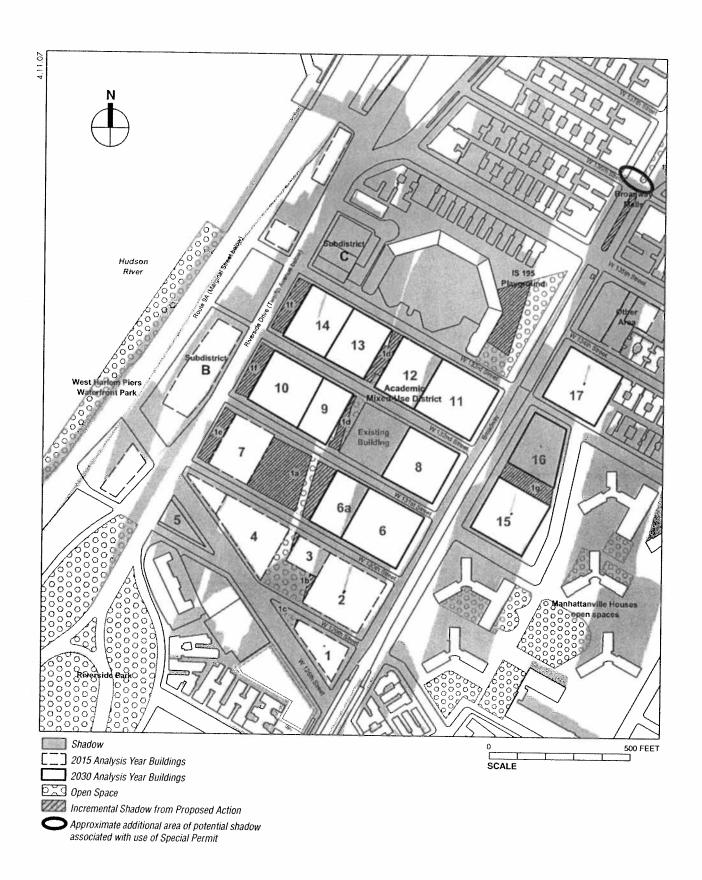
HISTORIC RESOURCES (ARCHITECTURAL RESOURCES)

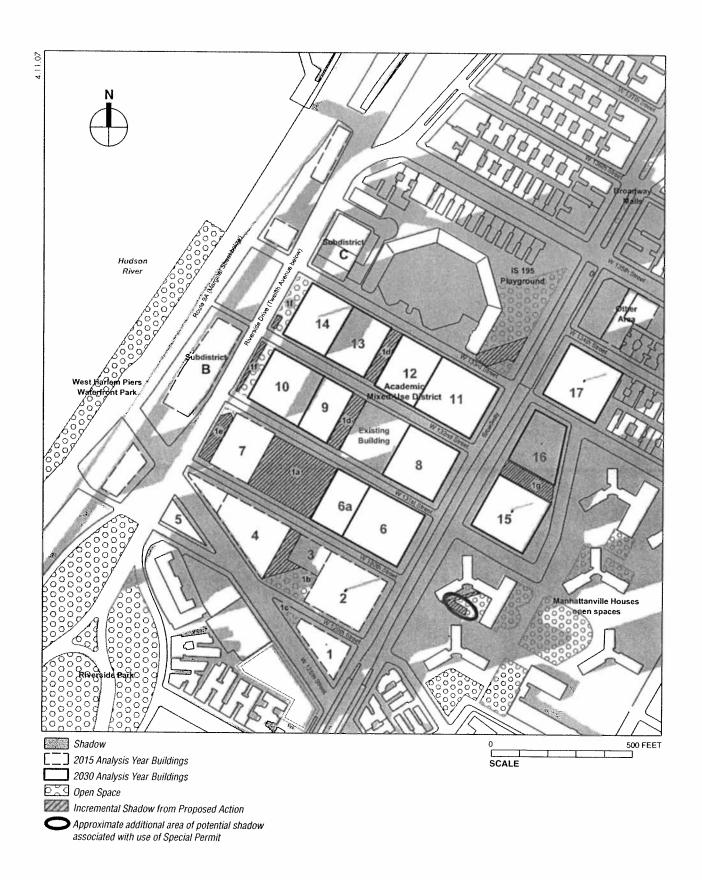
Architectural impacts are site specific and depend not only on the bulk and massing of a given proposal, but on the presence or absence of architectural and historic resources on or in proximity to the development site. Architectural resources are identified in Chapter 8, "Historic Resources," of the DEIS.

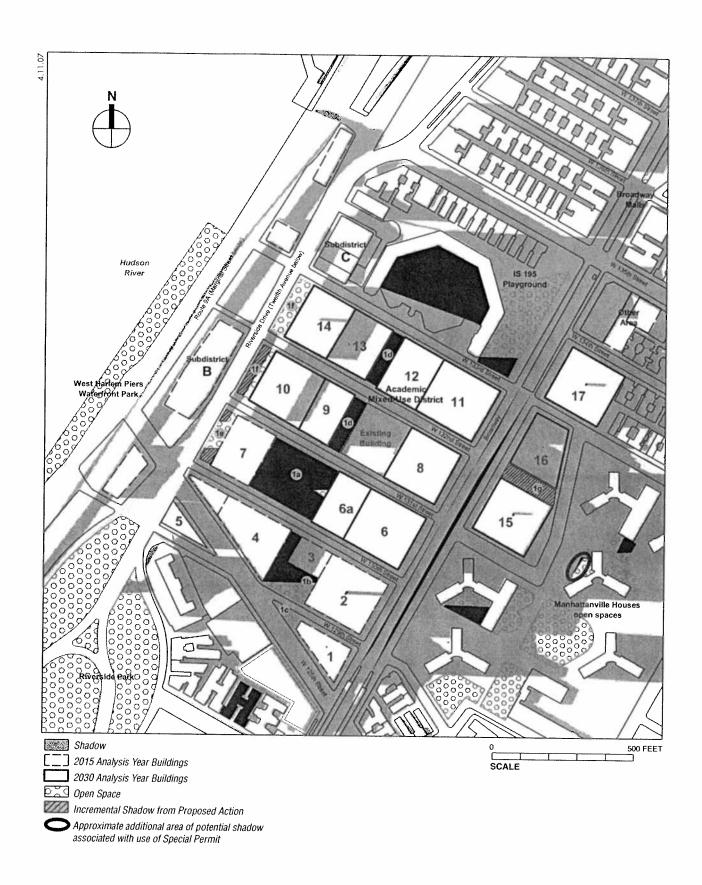
The Proposed Actions as analyzed in the DEIS would result in the incorporation of the former Warren Nash Service Station building into the Academic Mixed-Use Development. In addition, the Studebaker Building is currently being renovated. The 1948 dining car of the West Market Diner would be relocated to a new site in the Project Area or study area and restored to the extent practicable. Significant adverse impacts on the former Sheffield Farms Stable at 3229 Broadway, which would be demolished, would occur. Use of the Special Permit would not change these conclusions.

Because a proposal that makes use of the Special Permit could result in a different distribution of building bulk than as analyzed in the DEIS, it is possible that such a proposal would result in different contextual impacts on adjacent or nearby architectural resources. The use of the Special Permit would require that certain findings are met (see Appendix A.1 for the proposed Special Manhattanville Mixed-Use Zoning District text), specifically, that such modifications are necessary to:

- Meet programmatic and mechanical requirements;
- Achieve a better distribution of bulk on the zoning lot that would not adversely affect access to light and air for surrounding public access areas, streets, and properties;
- Provide flexibility of architectural design and encourage more attractive building forms; and







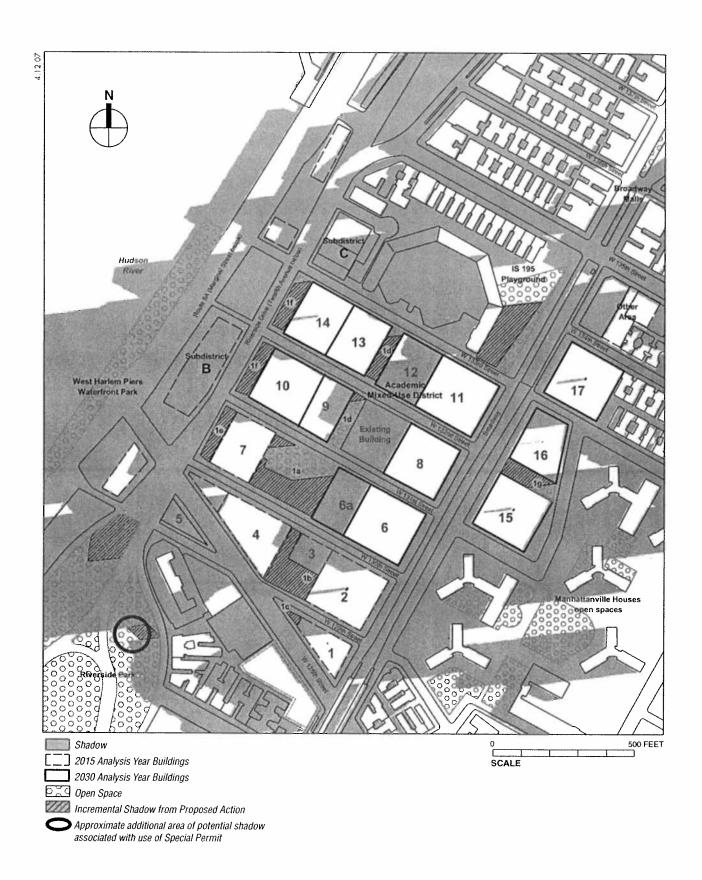


Figure A.2-17 EIS Figure 7-31 Shadow Diagram - 2030 Analysis Year May 6 - 7:27 AM DST

 Result in a development or enlargement that is compatible with development in the surrounding area.

For a Special Permit in which there is a transfer of floor area (in addition to the modification of special bulk requirements), it is also required that CPC find that the distribution of floor area on the receiving site does not adversely affect the character of the surrounding area by unduly concentrating floor area in any portion of Subdistrict A. With these findings, it is unlikely that any development that makes use of the Special Permit (with or without a transfer of floor area) would result in adverse contextual impacts on architectural resources.

URBAN DESIGN AND VISUAL RESOURCES

Urban design and visual resource impacts are site specific and depend not only the bulk and massing of a given proposal but on the urban design of the surrounding area and the presence or absence of visual resources within that area. Chapter 9, "Urban Design and Visual Resources," of the DEIS considers the potential of the Proposed Actions to impact the urban design characteristics and visual resources of the Project Area and surrounding study area. The Proposed Actions as analyzed in the DEIS would enhance urban design and visual resources.

Because use of the Special Permit could result in a different distribution of building bulk within the Special Manhattanville Mixed-Use District, it is possible that such a proposal would result in different effects on urban design and visual resources than those identified in the DEIS. A general assessment of how use of the Special Permit could affect the different elements of urban design and visual character is provided below.

URBAN DESIGN

- Building bulk, use, or type. The Special Permit would result in differences in how a development's bulk is massed on a site. The Special Permit would not result in any changes to a development's use or type.
- Building arrangement. As with building bulk, the Special Permit could result in a different arrangement of a development's buildings on a site and could result in a different overall distribution of bulk than as analyzed in the DEIS.
- Block form and street pattern. Block form and street pattern relate to the shape and arrangement of blocks and surrounding streets. Use of the Special Permit would allow greater flexibility in distributing a development's bulk on a site. It is not expected to result in any changes to block form and street patterns. The Square, the Small Square, and the Grove would have to conform to the requirements of Section 104-40 of the proposed Special Manhattanville Mixed-Use Zoning District text; therefore, the Special Permit would not affect these elements of block form and street pattern.
- Streetscape elements. Streetscape elements include street trees, curb cuts, streetwalls, building entrances, and other elements. These elements are related to how a building's bulk is distributed, and therefore use of the Special Permit would affect this element of urban design.
- Street hierarchy. This element of urban design is related to the streets that surround a site. Therefore, the Special Permit would not affect street hierarchy.
- Natural features. Natural features include vegetation and geologic, topographic, and aquatic
 features, such as rock outcroppings, steep slopes, or varied ground elevation, beaches, or
 wetlands. The Proposed Actions would not alter the area's topography or natural features,

and use of the Special Permit, which would be specific to changes in height, setback, and streetwall (with or without a transfer of floor area), would also not alter the area's topography or natural features.

The proposed zoning would preserve the Project Area street pattern, and all projected development would be laid out within the existing grid and constructed on existing blocks with minimal re-grading expected. The new development would replace gas stations, warehouses, garages, other types of light industrial buildings, and parking lots. Therefore, the Proposed Actions would not alter the topography, natural features, street pattern and hierarchy, and block shapes of the Project Area.

VISUAL RESOURCES

View corridors. Because a building that makes use of the provisions of the Special Permit
could result in a different site plan/distribution of building bulk than as analyzed in the
DEIS, it is possible that there would be differences in how view corridors are affected.

As discussed above, prior to granting approval for the Special Permit, CPC must find that any modifications of the height, setback, and streetwall requirements achieve a better distribution of bulk on the zoning lot, provide flexibility of architectural design and encourage more attractive building forms, and result in a development or enlargement that is compatible with development in the surrounding areas. Where there is a transfer of floor area, CPC must further find that such a transfer does not adversely affect the character of the surrounding area by unduly concentrating floor area in any portion of Subdistrict A. As such, use of the Special Permit is unlikely to result in significant adverse urban design impacts.

NEIGHBORHOOD CHARACTER

The character of a neighborhood is established by numerous factors, including land use patterns, the characteristics of its population and economic activities, the scale of its development, the design of its buildings, the presence of notable landmarks, and a variety of other physical features that include noise levels, traffic, and pedestrian patterns.

As discussed in the DEIS, the Proposed Actions would clearly and substantially alter neighborhood character. An aging industrial area would be replaced with academic and academic research facilities of Columbia University, as well as mixed-use development adjacent to the waterfront and on the east side of Broadway. The Proposed Actions would improve the streetscapes, provide active retail uses along Broadway, West 125th Street, and Twelfth Avenue, improve connections to the waterfront, and introduce substantial new publicly accessible open space.

As discussed above, use of the Special Permit would not affect land use, socioeconomic conditions, noise, traffic, or pedestrian levels. As described in the previous sections, it is unlikely that use of the Special Permit would result in new or different impacts than those discussed in the DEIS in terms of historic resources, and urban design and visual resources. Use of the Special Permit could result in differences in incremental shadows but is not likely to result in additional significant adverse impacts other than the one described for I.S. 195, which would occur under the Proposed Actions, and a potential significant adverse impact on the open spaces to be created as part of the Proposed Actions if use of the Special Permit occurs after construction of these open spaces is completed. However, as described above, it is anticipated that the landscape design of the proposed open spaces would take into account the shadow

conditions, and vegetation would be selected for its shade tolerance. While there is the potential that this element of neighborhood character (shadows) could be affected through use of the Special Permit, the clear and substantial alteration of neighborhood character that would occur with the Proposed Actions—i.e., the replacement of an aging industrial area with academic and academic research facilities and mixed-use development—would not be altered by use of the Special Permit Use of the Special Permit would be subject to both ULURP and CEQR review; therefore, a site-specific analysis of a development using the Special Permit and its potential effect on neighborhood character would be undertaken at that time, and the potential for significant adverse impacts determined in connection with that analysis.

NATURAL RESOURCES

If building heights were to be raised substantially (in excess of 500 to 600 feet) because of the Special Permit, an assessment of the potential effects on migratory birds (due to building collisions) may be warranted. However, it is highly unlikely that a Special Permit would be granted for a building of this height given the findings described above (see "Description of Section 104-60," above). Therefore, it is unlikely that use of the Special Permit would result in significant adverse impacts on natural resources.

WATERFRONT REVITALIZATION PROGRAM

The project area west of Broadway is located within the City's coastal zone. Any proposed development in the coastal zone—whether it is proposed with or without using the Special Permit—must be assessed for its consistency with the City's Local Waterfront Revitalization Program (LWRP). Use of the Special Permit (with or without a transfer of floor area) could result in buildings with different heights, setbacks, and streetwalls than those without the Special Permit. Therefore, the policies that could be affected by the use of the Special Permit are Policies 9 and 10, which state "protect scenic resources that contribute to the visual quality of the New York City coastal area," and "protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area," respectively.

It is unlikely that use of the Special Permit would result in impacts that would cause a project to be inconsistent with these policies. As discussed above in "Historic Resources" and "Urban Design and Visual Resources," it is unlikely that any development that makes use of the Special Permit (with or without a transfer of floor area) would result in significant adverse impacts on those areas and are therefore unlikely to result in a development that would be inconsistent with the City's LWRP. Therefore, use of the Special Permit is unlikely to result in a project that would be inconsistent with the City's LWRP.

AIR QUALITY (STATIONARY SOURCES)

Assessments of stationary sources depend on a specific site plan and relate to 1) how nearby commercial, institutional or large-scale residential developments affect a proposed development; and 2) how the heating, ventilation, and air conditioning (HVAC) emissions from a proposed development would affect surrounding buildings. The issue of how use of the Special Permit would affect stationary sources is related to how building heights of new and existing buildings would change in relation to each other.

As discussed above, the Special Permit would be subject to both ULURP and CEQR review. As part of the CEQR review, a screening analysis (at a minimum) would be prepared to determine whether emissions from any on-site fuel-fired HVAC equipment (for example, boilers or hot

water heaters) would be significant. The procedure involves determining the distance (from the exhaust point) within which potential significant impacts may occur, on elevated receptors (such as open windows, air intake vents, etc.) that are of an equal or greater height when compared with the height of the Proposed Project's HVAC exhaust. The distance within which a significant impact may occur depends on a number of factors, including the height of the discharge, type(s) of fuel burned and development size. The screening analysis would identify any requirements to avoid impacts (such as prescribing fuel type or exhaust locations). If such measures would not avoid potential impacts, additional measures, such as increasing the exhaust stack height, designing the building without operable windows or air intake locations, or connecting the building to a steam plant, if possible, could be implemented to ensure that no significant adverse stationary source impacts would occur.

APPENDIX B SOCIOECONOMIC CONDITIONS

A. TABLES REFERENCED IN CHAPTER 4

Table B-1
Direct Business and Institutional Displacement¹

	Direct Business and Institutional Displace						
Block		Dusiness Name	Estimated Employment	Sub-	Build		
1996	61	100% Brushless Car Wash & Gas Station	5	Α		Retail Trade	
1996	29	3225 Broadway Service Station	6	A	2015	Retail Trade	
4007		3251 Broadway Auto Center/German			+	recui trade	
1997	34	Parking	19	Α	2015	Other Services	
1995	35	612 West 129th St. Gas station	4	Α	2015	Retail Trade	
1997 1998	64	Alpine Beef	4	Α	2015	Wholesale Trade	
1990	3	Ace Packing	3	A	2015	Wholesale Trade	
1997	56	Andrea Claire	20 ³	A	2015	Arts, Entertainment, and	
1997	61	Arc Athletics	2			Arts, Entertainment, and	
1997	34	Architectural Antiques (aka Steven Stollman)	1	A	2015	Recreation	
		The state of the s		A	2015	Transportation and Warehousing	
1986	65	Artel Design	1		2045	Arts, Entertainment, and	
1998	24,26	Ashland Chemical	17	$\frac{A}{A}$	2015	Recreation	
1986	65	AT&T Wireless	0	A	2015	Wholesale Trade	
1997	34	Big City Autoparts	7	A	2015	Information	
1987	7	Body Pro Body Shop	4	A		Retail Trade	
1986	65	Broadway Video	4		2015	Other Services	
1986	65	Cingular Interactive	0	A	2015	Information	
1996	1	Cotton Club	20	A	2015	Information	
1986	65	Daphne Studio (no Daphne Fashion)	6	A	2030	Accommodation and Food Services	
		Deborah Bradley Construction &		A	2015	Manufacturing	
1997	56	Management Services	12		2045		
1997	30	Despatch Moving and Storage Co.	36	A A	2015	Construction	
1997	61	Dinosaur Barbeque	35	A	2015	Transportation and Warehousing	
1987	1	El Mundo Department Store (El Mundo Kids)	83	A	2015	Accommodation and Food Services	
1995	31	Eritrean Community Center	0	$\frac{A}{A}$	2030	Retail Trade	
1996	20	Fearless Lee	18		2015	Other Services	
1996		GMC Parking	4	A	2015	Other Services	
1999	36	Hamilton Pharmacy	4	Α		Other Services	
1996	34	Hudson North American	37	A		Retail Trade	
		Iglesia de Dios Pentecostal		Α	2015	Transportation and Warehousing	
		(Pentecostal Church of God, International					
1997	48	Movement)	3	Α	2045	0.00	
		Iglesia el Encuentro Con Dios			2015	Other Services	
1997	29	(Meeting With God Pentecostal Church, Inc)	6	A	2015	Other Services	
1996	20	Jennifer Nuss	1	А	2015	Arts, Entertainment, and Recreation	
999	36	Josh's Place Catering	12	A		Accommodation and Food Services	
997	34 .	JV Auto Repair aka Javier Auto Repair	5	A	2015	Other Services	
995	31	Katz Brothers Paint Corp.	6	Â		Other Services Other Services	
986	65 I	_A Mode Upholstery Co.	3	$\frac{2}{A}$			
996	18 l	iberty Auto Body	3	Â	2015	Other Services	
997		LifeTV	10	$\frac{A}{A}$	2015	Other Services	
			10	A	∠015 I	nformation	



Table B-1 (cont'd)
Direct Business and Institutional Displacement¹

			Direct Business and Institutional Displacemen						
			Estimated	Sub-	Build	NAICS Economic Sector			
llock	Lot	Business Name	Employment ²	district	Year				
		Los Compadres Auto Repair	9	Α		Other Services			
997	9	Mamais Contracting Corporation	60	Α	2015	Construction			
997	40	Manhattan Wheel Alignment/GM Auto Repair	6	Α	2015	Other Services			
986	10	Mi Floridita Restaurant and Bakery	27	Α	2015	Accommodation and Food Service			
995	31	Mobil Gas station aka 3260 Service Station	4	Α	2015	Retail Trade			
986			5	Α	2015	Information			
997	61	Moxnet MTP 3300 Broadway Corporation (Parking)	2	Α	2015	Other Services			
	16, 18	MTP 3300 Broadway Corporation (Parking)	2	A	2015	Other Services			
998	13	MTP 3300 Broadway Corporation (Carking)	3	A	2015	Other Services			
998	61	New 2000 Auto Electric	2	Α		Other Services			
998		New Millennium Auto Repair	2	A	2015	Other Services			
987	9	Night Towing Service	-			Professional, Scientific, and			
		L	1	A		Technical Services			
986		Optical Imaging	2	Α	2015	Other Services			
997_	34	Padilla Auto Repair	11	A	2015	Health Care and Social Assistance			
986	65	Pathways to Housing	38	A	2015	Wholesale Trade			
997	40	Pearlgreen Corporation	2		2015	Other Services			
997	55	Pedro y Jorge Body Shop	 	 	1	Arts, Entertainment, and			
			1	A	2015	Recreation			
1986_	65	Peggy Moorman/Quaytman	10	A	2015	Other Services			
1997	1	Pepito's Auto Repair	 10 		+===	Professional, Scientific, and			
		- 4500	40	A	2015	Technical Services			
1997	61	Peter Gluck and Partners/ARCS	53	$\frac{1}{A}$	2015	Construction			
1997	49	Pizzo Brothers	7	A	2015	Other Services			
1987	7	Prestige Transmission	8	$\frac{1}{A}$	2015	Wholesale Trade			
1996	16	Publishers Circulation	13	A		Other Services			
1987	7	Rico Auto Repairs	2	T A	2015				
1996	20	Strands of Hair/Gerard Dure Salon		 	+ 20.0	Arts, Entertainment, and			
			1	A	2015	Recreation			
1996	20	Thomas White	+ 0	A	2030	Information			
1999	36	T-Mobile USA, Inc.	6	A	2015	Information			
1997	61	Triple Threat TV	6	1 A	2015	Transportation and Warehousing			
1996	56	Tuck it Away		1 A	2015	Transportation and Warehousing			
1997	44	Tuck it Away	6	$\frac{A}{A}$	2015	Transportation and Warehousing			
1998	29	Tuck it Away	13		2015	Real Estate and Rental Leasing			
1986	30	U-Haul Co.	8	A	2015	Other Services			
1987	9	Unique Auto Diagnostics	3	A_	2015	Retail Trade			
1987	7	Used Clothing Store	11	A		Information			
1997	27	Verizon New York	34	A_		Information			
1998	57 6	1 Verizon New York	3	A	2013	Other Conices			
1997	34	Victoriano Auto Repair	5	A	201	Other Services Arts, Entertainment, and			
1331	+				004				
1986	65	Wilkinson & Associates	11	_ _ A_	201	Recreation			
1987	1 8	7 Y & H Garages aka Y & H Enterprises	2	A	201	Other Services			
1997	33		2	A	201	5 Other Services			



Table B-1 (cont'd)
Direct Business and Institutional Displacement¹

			Direct Business and Institutional Displacemen							
Block			Estimated Employment ²	Sub- district	Build Year	NAICS Economic Sector				
2004	12	125th St. Tire Corp.	4	В		Other Services				
2004	12	Admiral Electric Corp	16	В		Construction				
2005		Hudson River Café	12	В		Accommodation and Food Services				
2004	8	MTP 3300 Broadway Corporation (Parking)	1	В		Other Services				
2005		Tommy Hilfiger	1	В		Wholesale Trade				
1988		Tuck it Away	5	В		Transportation and Warehousing				
2004	8	Westside Stone and Marble	9	В	2015	Construction				
1988		C-Town	22	0		Retail Trade				
1988		Danny's Beauty Salon	4	0		Other Services				
1988	1	Marena Unisex	4	Ö		Other Services				

Note:

¹ Direct business and institutional displacement is defined by the *CEQR Technical Manual* as the involuntary displacement of businesses or institutions from the site of a proposed action. Columbia University has been purchasing property to facilitate the assemblage of the project site for development. Owners who operated businesses on their property and decided to sell their properties to the University are not defined as directly displaced by the Proposed Actions under CEQR because they voluntarily sold their properties. Similarly, commercial tenants who have vacated their space pursuant to an agreement with the University are not defined as directly displaced. The businesses and institutions that have vacated space now owned by Columbia University are discussed in Appendix C, "Recent Trends." Businesses and institutions that are new to the Project Area (i.e., since 2000) and that have signed short-term leases with Columbia University also are not considered directly displaced because they entered a voluntary lease agreement with the University, knowing that they would eventually be displaced.

³ For businesses and institutions that provided an unspecified range for their number of employees in response to AKRF interviews and letters, the midpoint of that range was used for "Estimated Employment." Hudson North American provided a range of 23—50 employees, and 3225 Broadway Service Station provided a range of 5–7 employees.

³ Approximately 20 artists maintain a presence at 638 West 131st Street, where they share studio space on two floors of the building.

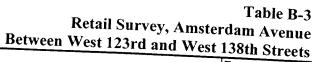
Sources: Claritas, Inc., Appleseed, Inc., Dunn & Bradstreet Selectory Database, Columbia University, and AKRF, Inc.



Table B-2 Retail Survey, Broadway Between West 123rd and West 138th Streets

	Establi	lishments			ishments	
Category	Category No. Percent		Category		Percent	
HOPPING GOODS	17	16.5%	CONVENIENCE GOODS	27	26.2%	
eneral Merchandise Stores	2	1.9%	Food Stores	19	18.4%	
eneral merchandise stores epartment stores, conventional national chains			Grocery stores, delis, bodegas	8	ļ	
epartment stores, conventional national chains	-		Supermarkets	4		
epartment stores, discount national chains liscellaneous general merchandise stores	2		Meat and fish markets	2		
iscellaneous general merchandise stores	4	3.9%	Retail bakeries	1 1		
pparel and Accessory Stores	1		Fruit and vegetable markets	1 1		
len's and boy's clothing	1 1		Candy, nut, and confectionary	1		
/omen's and girl's clothing	<u> </u>	<u> </u>	Miscellaneous/specialty foods (health food)	2		
amily clothing		 	Miscellaneous Convenience Goods	8	7.8%	
hildren's clothing	2		Drug and proprietary stores	5		
hoes	 		Liquor stores	2		
Other apparel and accessories	3	2.9%	Florists			
Furniture, Home Furnishings, and Equipment Stores	1		Cigar stores and stands			
urniture stores	+	 	News dealers and newsstands	11		
loor covering stores	 	 	Pet shops			
Drapery, curtain, and upholstery stores		 	Photocopy stores			
Miscellaneous home furnishing stores		-	Photo developing			
Household appliance stores	+		Other miscellaneous convenience goods			
Audio and video electronics (beepers, cell phones)	2		EATING AND DRINKING PLACES	21	20.49	
Records and musical instruments			Restaurants/Luncheonettes	8		
Computer			Refreshments/"Fast-food" places	12		
Miscellaneous Shopping Goods Stores	8	7.8%	Other eating places—catering, catering halls			
Sporting goods and bicycle			Drinking places (alcohol)	1		
Books			NEIGHBORHOOD SERVICES	21	20.4	
Stationary/Office Supply	11			— -		
Jewelry	2		Video rentals	1		
Hobby, toy, and games			Banks	+ +	 	
Camera and photographic supplies	11		Cleaners and tailors	5	-	
Gifts, novelties, and souvenirs			Hair and nail care	2		
Luggage and leather goods			Laundry	1		
Sewing, needlework, and piece goods			Travel agencies			
Religious articles			TV/Audio/Appliance repair			
Optical goods			Shoe repair			
Used merchandise			Medical offices	1		
Other misc. shopping goods	3		Other professional offices	1 1		
BLDING MTR'LS, HARDWARE, & GARDEN SUPPLY	1 1	1.0%	Home improvement services	11		
Paint, glass, and wallpaper			Funeral services			
	1		Health/Fitness club			
Hardware and corden supply stores	<u> </u>		Car service			
Retail nurseries, lawn, and garden supply stores			Pharmacy			
Lumber and other building materials	5	4.9%				
AUTO-RELATED TRADE			Paid parking			
Motor vehicle dealers	1 2		Other neighborhood services	5		
Auto supplies	2	_				
Gasoline and service stations	$\frac{2}{1}$					
Car rental						
STOREFRONT SUMMARY		1 400 22		27		
	103	100.0%	Convenience Goods		26.2	
Total Storefronts	17	16.5%		21	20.4	
Shopping Goods		1.0%		21	20.4	
Building Mtr'ls, Hardware, & Garden Supply	1 1	4.9%		11	10.7	
Auto-Related Trade	5	4.9%	Vacant Storenonts			





Category		blishment	Between West 123rd and West	F	
SHOPPING GOODS	No	. Percer	t Category	⊨sta	blishm
General Merchandise Stores	6	8.8%	CONVENIENCE GOODS	No	. Per
Department stores, conventional national at	0	0.0%	Food Stores	15	2:
Department Stores, discount national above			Grocery stores, delis, bodegas	12	1
Miscellaneous general merchandise stores			Supermarkets	9	
Apparel and Accessory Stores			Meat and fish markets	2	
Men's and boy's clothing	1	1.5%	Retail bakeries	1	
Women's and girl's clothing			Fruit and vegetable markets		
Family clothing	_		Candy, nut, and confectionary		
Children's clothing		T	Miscellaneous/specialty		
Shoes			Miscellaneous/specialty foods (health food)		
Other apparel and accessories			Miscellaneous Convenience Goods Drug and proprietary stores	3	4
Furniture Homo Europe	1	 	Liquor stores	2	
Furniture, Home Furnishings, and Equipment Stores Furniture stores	2	2.9%	Florists	1	+
Floor covering stores		2.0 /8			+
Orange audin		 	Cigar stores and stands		
Drapery, curtain, and upholstery stores	T	 	News dealers and newsstands		+
Miscellaneous home furnishing stores	1	+	Pet shops		+
Household appliance stores	 	 	Photocopy stores		+
Audio and video electronics (beepers, cell phones)	1	 	Photo developing		
Accords and musical instrumente	1		Other miscellaneous convenience goods		+
Computer	 '		LATING AND DRINKING PLACES	12	+
discellaneous Shopping Goods Stores	3	4 40	Restaurants/Luncheonettes	5	17.0
porting goods and bicycle	+	4.4%	Refreshments/"Fast-food" places	7	+
ooks	 		Other eating places—caterers, catering ball		
tationary/Office Supply	 		Drinking places (alcohol)		
ewelry	 		NEIGHBORHOOD SERVICES	 	
obby, toy, and games	 		Video rentals	26	38.2
amera and photographic supplies	<u> </u>		Banks	1_1_	
itts, novelties, and souvenirs			Cleaners and tailors	1	
Jggage and leather goods	2		Hair and nail care	2	
ewing, needlework, and piece goods			aundry	11	
eligious articles	1		ravel agencies ¹	3	
ptical goods			V/Audio/Appliance repair	1 1	
sed merchandise			Shoe repair		
her misc, shopping goods			Medical offices	1	
DING MTR'LS, HARDWARE & CARDEN OUT			Other professional offices ²	1 1	
in, glass, and wallnaper	1	1.5% F	lome improvement services	1	
rdware		F	uneral services		
tail nurseries, lawn, and garden supply stores	1	I	lealth/Fitness club		
moet and other hillding materials		C	ar service		
TO-RELATED TRADE		Р	harmacy		
tor vehicle dealers	1	1.5% P	awn shop		
o supplies			aid parking	1	
soline and service stations	1	10	ther neighborhood services ³		
rental			mer neighborhood services	3	
		V	ACANT STORES		
	STOREF	RONT SUM	ACANT STOREFRONTS	7	10.3%
l Storefronts	68	100.0%	TART		10.070
pping Goods		100.0% Co	nvenience Goods	15	22.49/
ding Mtr'ls, Hardware, & Garden Supply	6	8.8% Ea	ting and Drinking Places		22.1%
-Related Trade	1	1.5% Ne	ighborhood Services	12	17.6%
This travel agency of	1	1.5% Va	cant Storefronts	26	38.2%
	vices	/0 Va	cant Storetronts	7	10.3%
² Other professional offices includes: Jackson He ⁶ Other neighborhood services include: Money Gr ce: AKRF, Inc. field surveys conducted in May, 2006	witt Tay 9	ervices			10.070
Other neighborhood comics in the contract of t	······································	~: VICE2			





Table B-4 Retail Survey, West 125th Street between Amsterdam and Broadway

	F - / - l- **	obmonto		Establishments	
		shments	Category	No.	Percent
Category	No.	Percent	CONVENIENCE GOODS	5	35.7%
HOPPING GOODS	2	14.3%	Food Stores	2	14.3%
Morchandise Stores	1	7.1%	Grocery stores, delis, bodegas	1	
epartment stores, conventional national chains			Supermarkets	1	
readment stores discount national chairs		ļ	Meat and fish markets		
iscellaneous general merchandise stores	1	0.00/	Retail bakeries		
pparel and Accessory Stores	0	0.0%	Fruit and vegetable markets		
en's and boy's clothing		 	Tondy but and confectionary		
omen's and girl's clothing			Tuiscollaneous/specialty foods (health 1000)		94 40/
amily clothing		 	Miscellaneous Convenience Goods	3	21.4%
hildren's clothing	ļ		Drug and proprietary stores	1	
hoes			Liquor stores	1	
and accessories		7.1%			
furniture, Home Furnishings, and Equipment Stores	1	7.1%	Cigar stores and stands		
umiture stores			News dealers and newsstands	1 1	
Floor covering stores			Pet shops		
Orapery, curtain, and upholstery stores			Photocopy stores		
Miscellaneous home furnishing stores			Photo developing		
Household appliance stores			Other miscellaneous convenience goods		
Household appliance stores Audio and video electronics (beepers, cell phones)			EATING AND DRINKING PLACES	2	14.3%
Audio and video electronics (occupant) Records and musical instruments	1		Restaurants/Luncheonettes		
			t grt food" places	2	
Computer Miscellaneous Shopping Goods Stores	0	0.0%	Other eating places—caterers, catering halls		
Miscellaneous Snopping Goods Steres			Other eating places—caterers, catering		
Sporting goods and bicycle			Drinking places (alcohol) NEIGHBORHOOD SERVICES	5	35.7%
Books			NEIGHBORHOOD SERVICES		
Stationary/Office Supply			Video rentals	1	
Jewelry			Banks		
Hobby, toy, and games			Cleaners and tailors	2	
Camera and photographic supplies			Hair and nail care		
Gifts, novelties, and souvenirs			Laundry		
Luggage and leather goods			Travel agencies		
Sewing, needlework, and piece goods	-		TV/Audio/Appliance repair		
Religious articles			Shoe repair	1	
Optical goods	_		Medical offices	- 	
Used merchandise	_		Other professional offices		
in abanaing goods	0	0.0	% Home improvement services		
BLDING MTR'LS, HARDWARE, & GARDEN SOLT ET	 -		Funeral services		
Paint, glass, and wallpaper			Health/Fitness club		
Llordword			Car service		
Retail nurseries, lawn, and garden supply stores			Pharmacy		
Lumber and other building materials	- 0	0.0	% Pawn shop		
AUTO-RELATED TRADE	_ -		Paid parking		
Motor vehicle dealers			Other neighborhood services		
Auto supplies					
Gasoline and service stations	_	-+-			
Car rental					
STOREFRONT SUMMARY		1 400	09/	- 5	35.
J J OKE KOM COMME	14	100.	Convenience Goods		14.
Total Storefronts	$-\frac{1}{2}$	14.	3% Fating and Drinking Places		
Shanning Goods			0% Neighborhood Services		
Building Mtr'ls, Hardware, & Garden Supply			0% Vacant Storefronts) 0.
Auto-Related Trade		0.	U/U Vadant Cto.		





Table B-5 Retail Survey, Broadway between West 114th and West 146th Streets

	Establ	stablishments		Establ	ishments
Category	140. Telcent Category		No.	Percen	
SHOPPING GOODS	86	24.0	CONVENIENCE GOODS	80	22.3
General Merchandise Stores	8	2.2	Food Stores	55	15.3
Department stores, conventional national chains			Grocery stores, delis, bodegas	40	15.5
Department stores, discount national chains			Supermarkets	6	
Miscellaneous general merchandise stores	8	1	Meat and fish markets	3	—
Apparel and Accessory Stores	28	7.8	Retail bakeries	1	
Men's and boy's clothing	5	1	Fruit and vegetable markets	1	
Women's and girl's clothing	1	 	Candy, nut, and confectionary	2	
Family clothing	9	l	Miscellaneous/specialty foods (health food.)	2	
Children's clothing			Miscellaneous Convenience Goods	25	7.0
Shoes	8		Drug and proprietary stores	10	1 7.0
Other apparel and accessories	5		Liquor stores	6	 -
Furniture, Home Furnishings, and Equipment Stores	24	6.7	Florists	$\frac{1}{1}$	
Furniture stores	3		Cigar stores and stands	 	
Floor covering stores	2		News dealers and newsstands	 ' -	
Drapery, curtain, and upholstery stores			Pet shops	'	
Miscellaneous home furnishing stores	4		Photocopy stores		
Household appliance stores			Photo developing	1 1	ļ
Audio and video electronics (beepers, cell phones)	11		Other miscellaneous convenience goods	5	
Records and musical instruments	4		EATING AND DRINKING PLACES		445
Computer	<u> </u>	 	Restaurants/Luncheonettes	52	14.5
Miscellaneous Shopping Goods Stores	26	7.2	Refreshments/"Fast-food" places	18	
Sporting goods and bicycle	+	· · · ·	Other eating places—caterers, catering halls	32	ļ <u> </u>
Books	1		Drinking places (alcohol)	 	ļ
Stationary/Office Supply	2		NEIGHBORHOOD SERVICES	2	
Jewelry	9	 	Video rentals	95	26.5
Hobby, toy, and games	2		Banks		<u> </u>
Camera and photographic supplies	 -		Cleaners and tailors	5	
Gifts, novelties, and souvenirs	4		Hair and nail care	12	<u> </u>
Luggage and leather goods	 		Laundry	38	ļ
Sewing, needlework, and piece goods	1 1		Travel agencies	6	
Religious articles	<u> </u>		TV/Audio/Appliance repair	6	
Optical goods	2		Shoe repair		
Used merchandise	 -		Medical offices	 	
Other misc. shopping goods	5		Other professional offices	2	
BLDING MTR'LS, HARDWARE, & GARDEN SUPPLY	5	1.4	Home improvement services	13	
Paint, glass, and wallpaper	 	1T	Funeral services	- 	
Hardware	5		Health/Fitness club	- 	
Retail nurseries, lawn, and garden supply stores	 		Car service		
Lumber and other building materials	 		Pharmacy		
AUTO-RELATED TRADE	5	1.4	Pawn shop	2	
Motor vehicle dealers	<u> </u>	1.4			
Auto supplies	2		Paid parking		
Gasoline and service stations			Other neighborhood services		
Car rental	2				
STOREFRONT SUMMARY	<u> </u>				
Fotal Storefronts	359	100.0	Convenience Goods	80	00.0
Shopping Goods	86			 	22.3
Building Mtr'ls, Hardware, & Garden Supply	5	*****	Eating and Drinking Places	52	14.5
Auto-Related Trade	5		Neighborhood Services Vacant Storefronts	95	26.5
Source: AKRF, Inc. field surveys conducted in July		1.4	vacant Storelfonts	36	10.0





Table B-6 Retail Survey, Amsterdam Avenue between 114th & 146th Streets

	Establ	ishments		Establ	ishments
Category	No.	Percent	Category	No.	Percent
	14	6.8%	CONVENIENCE GOODS	38	21.5%
SHOPPING GOODS	1 2	1.1%	Food Stores	29	16.4%
General Merchandise Stores	+	+	Grocery stores, delis, bodegas	23	
Department stores, conventional national chains	+	 	Supermarkets	2	
Department stores, discount national chains	2		Meat and fish markets	3	
Miscellaneous general merchandise stores	1 2	1.1%	Retail bakeries		
Apparel and Accessory Stores		1.1 /6	Fruit and vegetable markets		
Men's and boy's clothing	-		Candy, nut, and confectionary	1	
Women's and girl's clothing	+		Miscellaneous/specialty foods (health food)		
Family clothing		 	Miscellaneous Convenience Goods	9	5.1%
Children's clothing		<u> </u>	Drug and proprietary stores	4	
Shoes	2		Liquor stores	1	
Other apparel and accessories	4	2.3%	Florists ²	1	1
Furniture, Home Furnishings, and Equipment Stores		2.376	Cigar stores and stands	1	
Furniture stores	1_1_		News dealers and newsstands	- 	-
Floor covering stores			Pet shops	_	
Drapery, curtain, and upholstery stores				2	
Miscellaneous home furnishing stores			Photocopy stores	 -	
Household appliance stores			Photo developing Other miscellaneous convenience goods		
Audio and video electronics (beepers, cell phones)	2		Other miscellaneous convenience goods	42	23.7%
Records and musical instruments	1		EATING AND DRINKING PLACES	26	25.776
Computer			Restaurants/Luncheonettes	15	
Miscellaneous Shopping Goods Stores	6	3.4%	Refreshments/"Fast-food" places	1	_
Sporting goods and bicycle			Other eating places—caterers, catering halls ³		
Books	1		Drinking places (alcohol)	61	34.5%
Stationary/Office Supply			NEIGHBORHOOD SERVICES		34.576
Jewelry		<u> </u>	Video rentals	1 1	
Hobby, toy, and games			Banks		
Camera and photographic supplies			Cleaners and tailors	5	
Gifts, novelties, and souvenirs	2		Hair and nail care	26	
Luggage and leather goods			Laundry	5	
Sewing, needlework, and piece goods	1		Travel agencies ⁴	3	
Religious articles			TV/Audio/Appliance repair	2	
Optical goods	1		Shoe repair	1	
Used merchandise			Medical offices	4	
Other misc. shopping goods ¹	1		Other professional offices ⁵	7	
BLDING MTR'LS, HARDWARE, & GARDEN SUPPLY	2	1.1%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware	2		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Pharmacy		
AUTO-RELATED TRADE	2	1.1%	Pawn shop	11	
Motor vehicle dealers			Paid parking		
Auto supplies	2		Other neighborhood services ⁶	5	
Gasoline and service stations	 	_			
Car rental			VACANT STOREFRONTS	20	11.2%
Carrental	STO	REFRONT S			
	179	100.0%		38	6: 6::
Total Storefronts	1/9	100.078	Convenience Goods		21.2%
Shopping Goods	14	7.8%		42	23.5%
Building Mtr'ls, Hardware, & Garden Supply	2	1.1%		61	34.1%
Auto-Related Trade	$\frac{-}{2}$	1.1%		20	11.2%

Other misc. shopping goods include: school/art supplies store Notes:

Source:



²The florist also includes a nail salon.
³Other eating places includes: internet café

⁴Some travel agencies also include income tax services.

⁵Other professional offices include: West Harlem Group Assistance, accountants, New Future Foundation Management, and print

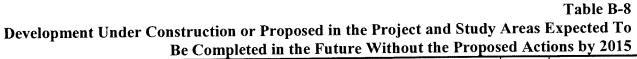
shop/lawyer/accountant

6Other neighborhood services include: driving schools, money transfer services
AKRF, Inc. field surveys conducted in May, 2006.



				Ta	ble B-7
		ha	Retail Survey, We	est 125tl	h Street
	Fetah	lishments	tween Frederick Douglas Blvd.		
Category	No.	Percent	Category	Establ No.	ishments Percent
SHOPPING GOODS	22	22.9	CONVENIENCE GOODS	12	
General Merchandise Stores	2	2.1	Food Stores	8	12.5
Department stores, conventional national chains		1	Grocery stores, delis, bodegas	7	8.3
Department stores, discount national chains			Supermarkets	1 1	
Miscellaneous general merchandise stores	2	 	Meat and fish markets		-
Apparel and Accessory Stores	10	10.4	Retail bakeries	· · · · · · · · · · · · · · · · · · ·	+
Men's and boy's clothing	1		Fruit and vegetable markets		
Women's and girl's clothing	2		Candy, nut, and confectionary		
Family clothing	2		Miscellaneous/specialty foods (health food)		
Children's clothing	 		Miscellaneous Convenience Goods		
Shoes	2		Drug and proprietary stores	4	4.2
Other apparel and accessories	3	 	Liquor stores	1 1	<u> </u>
Furniture, Home Furnishings, and Equipment Stores	7 7	7.3	Florists	1	
Furniture stores	1	1.3	Cigar stores and stands	11	<u> </u>
Floor covering stores	 '	 	News dealers and newsstands		<u> </u>
Drapery, curtain, and upholstery stores		·	Pet shops	1	
Miscellaneous home furnishing stores	2	 	Photo		<u> </u>
Household appliance stores	+	<u> </u>	Photocopy stores		
Audio and video electronics (beepers, cell phones)	1 3		Photo developing		
Records and musical instruments	1	3.1	Other miscellaneous convenience goods		
Computer	+	<u> </u>	EATING AND DRINKING PLACES	14	14.6
Miscellaneous Shopping Goods Stores			Restaurants/Luncheonettes	1	
Sporting goods and bicycle		ļ	Refreshments/"Fast-food" places	12	
Books			Other eating places—caterers, catering halls		
Stationary/Office Supply		ļ	Drinking places (alcohol)	1	
Jewelry	-		NEIGHBORHOOD SERVICES	32	33.3
Hobby, toy, and games	ļ		Video rentals		
Camera and photographic supplies	<u> </u>		Banks	3	
Gifts, novelties, and souvenirs			Cleaners and tailors	1	
			Hair and nail care	14	
Luggage and leather goods			Laundry	2	
Sewing, needlework, and piece goods			Travel agencies		
Religious articles			TV/Audio/Appliance repair		
Optical goods			Shoe repair		
Used merchandise			Medical offices	3	
Other misc. shopping goods	2		Other professional offices	3	
BLDING MTR'LS, HARDWARE, & GARDEN SUPPLY	2	2.1	Home improvement services		
Paint, glass, and wallpaper	1		Funeral services		
Hardware	1		Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Pharmacy	3	
AUTO-RELATED TRADE	1		Pawn shop	1 1	
Motor vehicle dealers			Paid parking		
Auto supplies	1		Other neighborhood services	1	
Gasoline and service stations				 	
Car rental				+	
STOREFRONT SUMMARY	· · · · · · · · · · · · · · · · · · ·				
Total Storefronts	96	100	Convenience Goods	1,0	
Shopping Goods	22		Eating and Drinking Places	12	12.5
Building Mtr'ls, Hardware, & Garden Supply	 			14	14.6
Auto-Related Trade	1		Neighborhood Services	32	33.3
Source: AKRF, Inc. field surveys conducted in July		1.0	Vacant Storefronts	13	13.5





Project Name/Address	Development Proposal/Program	Build Year	Estimated Employment
Science, math, and engineering secondary school (grades 6-12) and Columbia University office space: east side of Broadway and West 132nd Street	90,000 sf; approximately 650 students and 35 faculty/administrators 127,296 sf administrative space for Columbia University	2015	429 ¹
Columbia University Studebaker Building/615 West 131st Street	Conversion to 220,500 sf of administration uses.	2008	882 ¹
Columbia University, former Warren Nash Service Station building (3280 Broadway)	Conversion to 207,710 sf office space for Columbia University	2015	644 ¹
West Harlem Waterfront park Hudson River between St. Clair Place and West 133rd Street	Creation of waterfront destination with new piers, open space, gateway plaza, multi-purpose building (40,000 sf), landscaped areas (approx. 2.26 acres), and new pedestrian/bicycle way (9,995 sf); relocation of Fairway Market parking lot to upland location.	2008	22²
655 West 125th Street rezoning from M1-2 to C6-2 (Block 1996, Lot 56)	Reasonable worst-case development scenarios for existing building retained and enlarged by three stories: (1) Commercial: existing mini-storage retained and additional 52,952 sf office or (2) Residential: conversion for 54 units, 13,500 sf ground-floor retail, and 12 parking spaces.	2008	34 to 212²
614 West 131st Street rezoning from M1-2 to C6-2 (Block 1997, Lot 44)	Reasonable worst-case development scenarios for existing building retained and enlarged by one story: (1) <u>Commercial</u> : existing mini-storage retained and additional 9,369 sf office or (2) <u>Residential</u> : conversion for 25 units, 7,794 sf ground-floor community facility (medical office)	2008	31 to 38 ²
3261 Broadway rezoning from M1-2 to C6-2 (Block 1998, Lot 29)	Reasonable worst-case development scenarios for existing building retained and enlarged by two stories: (1) <u>Commercial</u> : existing mini-storage retained and additional 40,190 sf office or (2) <u>Residential</u> : conversion for 66 units, 20,100 sf ground-floor retail, and 15 parking spaces.	2008	50 to 161 ²
3300 Broadway rezoning from M1-2 to C6-2 (Block 1987, Lot 1)	Reasonable worst-case development scenarios: (1) Commercial: existing uses remain and enlarged by 54,903 sf office or (2) Residential: existing building demolished and new development for 58 units, 17,993 sf ground-floor retail, and 46 parking spaces.	2008	45 to 220 ²
Hudson River Café/2346 Twelfth Avenue	New 2,787-sf restaurant and outdoor seating area	2007	19²
Columbia University, 560 Riverside Drive	Building a new entrance along West 125th Street	2010	01
Columbia University, new academic building at southwest comer of Broadway and West 125th Street	250,840-sf academic building	2010	4011



Table B-8 (cont'd) Development Under Construction or Proposed in the Project and Study Areas Expected To Be Completed in the Future Without the Proposed Actions by 2015

Build Year	Estimated Employment
2007	480²
2007	320²
2010	169²
2010	187 ¹
2006	31 ²
2008	105²
2009	61²
2010	209²
2007	9²
2017 ³	203 ²
	2009 2010 2007

Note:

Projects listed in italics are within the primary study area. All projects are within the secondary study area (which includes

the primary study area).

New York City Economic Development Corporation, New York City Department of City Planning, Sources:

Manhattan CB9, New York City Department of Housing Preservation and Development, New York Construction, March 2004; Columbia University; City College; West Harlem Waterfront EAS, August 2005; Zoning Map Amendment 3261 Broadway EAS, December 2005; Zoning Map Amendment 3300-3320 Broadway EAS, December 2005; Zoning Map Amendment 655 West 125th Street EAS, December 2005; Zoning Map Amendment 614 West 131st Street EAS, December 2005.

¹Employment figures estimated by Columbia University.

Employment figures estimated using standard employment ratios (employees per square foot).

Development will be assumed for the 2015 analysis year for this EIS.

Table B-9
Single Room Occupancy (SRO) Unit Inventory

	SRO Rooms	SRO Rooms Confirm	RO Rooms Confirmed by Field Survey			
Building address	Identified by MISLAND Data	Non-Institutional SRO Rooms	Institutional SRO Rooms			
45 Hamilton Terrace	4	0	0			
420 West 116th Street	122	0	122			
411 West 116th Street	325	0	325			
70-76 Morningside Drive	19	0	19			
1116 Amsterdam Avenue	254	0	254			
1124 Amsterdam Avenue	256	0	256			
2940 Broadway	258	0	258			
501-509 West 114th Street	482	0	482			
545-599 West 114th Street	308	0	308			
12201238 Amsterdam Avenue	114	0	114			
537 West 121st Street	11	0	11			
517 West 121st Street	252	0	252			
503 West 121st Street	114	0	114			
633 West 115th Street	7	0	7			
605-615 West 115th Street	330	0	330			
608-610 West 116th Street	24	0	0			
614-618 West 116th Street	156	0	156			
434 Riverside Drive	22	0	22			
2961 Broadway	76	0	76			
3005 Broadway	232	0	232			
3007 Broadway	492	0	492			
605-607 West 116th Street	105	0	105			
49 Claremont Avenue	111	0	111			
97-101 Claremont Avenue	46	0	46			
600 West 122nd Street	277	0	277			
401 West 118th Street	18	0	0			
411-415 West 120th Street	52	0	52			
1241-1243 Amsterdam Avenue	64	0	0			
425 West 121st Street	213	0	213			
347 West 122nd Street	12	0	0			
345 West 122nd Street	10	0	0			
341 West 122nd Street	10	0	0			
531 Manhattan Avenue	11	0	0			
533 Manhattan Avenue	10	0	0			
537 Manhattan Avenue	4	0	0			
539 Manhattan Avenue	13	0	0			
541 Manhattan Avenue	11	0	0			
543 Manhattan Avenue	8	0	0			
547 Manhattan Avenue	7	0	0			
549 Manhattan Avenue	12	0	0			



Table B-9 (cont'd)
Single Room Occupancy (SRO) Unit Inventory

	Single Room	Occupancy (SRO) Unit Inventory
	SRO Rooms	SRO Rooms Confi	med by Field Survey
	Identified by	Non-Institutional	Institutional SRO
Building address	MISLAND Data	SRO Rooms	Rooms
344 West 123rd Street	11	0	0
348 West 123rd Street	8	0	0
350 West 123rd Street	9	0	0
356 West 123rd Street	8	8	0
358 West 123rd Street	7	7	
353 West 122nd Street	13	0	1 0
343 West 122nd Street	11	0	
346 West 123rd Street	6	0	1 0
354 West 123rd Street	10	0	0
360 West 123rd Street	11	11	0
351 West 122nd Street	9	0	0
355 West 122nd Street	10	0	1 0
357 West 122nd Street	7	0	
371 West 123rd Street	9	0	0
357 West 123rd Street	8	0	
351 West 123rd Street	6	0	0
373 West 123rd Street	10	0	0
396 West 123rd Street	9		0
359 West 123rd Street	6	0	0
355 West 123rd Street	7 7	0	0
349 West 123rd Street	9	0	0
345 West 123rd Street	9	0	0
307 West 125th Street	19	0	0
528 West 123rd Street	48	0	0
524-527 Riverside Drive	104	48	0
520-523 Riverside Drive	492	0	104
530 Riverside Drive	3,333	0	492
311 West 126th Street	15	0	3,333
306 West 127th Street		15	0
308 West 127th Street	18	0	0
312 West 127th Street	23	0	0
314 West 127th Street	13	0	0
401 West 127th Street	17	0	0
6 Convent Avenue	8 7	0	0
12 Convent Avenue		0	0
14 Convent Avenue	7	0	0
4 Convent Avenue	10	0	0
8 Convent Avenue	11	0	0
17-19 Old Broadway	7	0	0
	23	0	0
536 West 126th Street 538 West 126th Street	16	0	0
	16	0	0
540 West 126th Street	16	0	0
551 West 125th Street	40	0	0
473 West 140th Street	8	0	0
469 West 140th Street	8	0	0
465 West 140th Street	11	0	0
454 West 141st Street	5	5	0
458 West 141st Street	4	0	0
462 West 141st Street	2	2	0



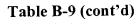
Table B-9 (cont'd)

Single Room Occupancy (SRO) Unit Inventory

	SRO Rooms	SRO Rooms Confir	ned by Field Survey
Building address	Identified by MISLAND Data	Non-Institutional SRO Rooms	Institutional SRO Rooms
464 West 141st Street	6	0	0
474 West 141st Street	8	0	0
467 West 140th Street	7	0	0
452 West 141st Street	4	0	0
460 West 141st Street	7	0	0
468 West 141st Street	6	0	0
616 West 138th Street	8	0	0
618 West 138th Street	10	0	0
	10	10	0
614 West 138th Street	155	0	155
30 Hamilton Place	9	9	0
48 Hamilton Place	10	10	0
52 Hamilton Place	12	0	0
540 West 140th Street	9	0	0
546 West 140th Street	10	0	0
550 West 140th Street		10	0
50 Hamilton Place	10 7	0	1 0
544 West 140th Street	The second secon	0	0
548 West 140th Street	8	0	0
551 West 141st Street	12	4	0
537 West 141st Street	4		0
533 West 141st Street	5	0	0
519 West 141st Street	7	7	0
105 Hamilton Place	6	0	0
512 West 142nd Street	12	0	0
514 West 142nd Street	12	0	
518 West 142nd Street	12	0	0
530 West 142nd Street	11	11	0
536 West 142nd Street	11	0	0
538 West 142nd Street	8	8	0
548 West 142nd Street	10	0	0
554 West 142nd Street	14	14	0
510 West 142nd Street	8	0	0
516 West 142nd Street	12	0	0
522 West 142nd Street	6	6	0
552 West 142nd Street	14	0	0
607 West 138th Street	7	0	0
315 Convent Avenue	4	0	0
323 Convent Avenue	10	0	0
327 Convent Avenue	11	0	0
329 Convent Avenue	12	0	0
333 Convent Avenue	12	0	0
339 Convent Avenue	6	0	0
47 Hamilton Terrace	3	0	0
	18	0	0
414 West 145th Street	9	0	0
51 Hamilton Terrace	12	12	0
413 West 144th Street	7	7	0
52 Hamilton Terrace	7	0	0
48 Hamilton Terrace		0	0
46 Hamilton Terrace	9		

Table B-9 (cont'd)
ingle Room Occupancy (SRO) Unit Inventory

	Single Room	Occupancy (SRO) Unit Inventory
	SRO Rooms	SRO Rooms Confir	med by Field Survey
D. W. L.	Identified by	Non-Institutional	Institutional SRO
Building address	MISLAND Data	SRO Rooms	Rooms
44 Hamilton Terrace	7	7	0
40 Hamilton Terrace	8	0	0
34 Hamilton Terrace	8	0	0
18 Hamilton Terrace	8	0	0
3 Hamilton Terrace	7	0	0
416 West 14th Street	9	0	0
406 West 145th Street	7	0	0
402 West 145th Street	7	7	0
400 West 145th Street	8	8	0
416 West 144th Street	6	0	0
42 Hamilton Terrace	5	5	0
36 Hamilton Terrace	8	0	0
419 West 141st Street	8	0	0
421 West 141st Street	1	1	1 0
37 Hamilton Terrace	12	0	0
43 Hamilton Terrace	8	0	0
133 Edgecombe Avenue	90	90	0
342 West 145th Street	10	10	0
225 Edgecombe Avenue	12	0	0
207 Edgecombe Avenue	10	10	
205 Edgecombe Avenue	7	1 0	0
203 Edgecombe Avenue	10	10	0 0
201 Edgecombe Avenue	8	0	
197 Edgecombe Avenue	12	12	0
191 Edgecombe Avenue	11	0	0
187 Edgecombe Avenue	8	1 0	0
188 Edgecombe Avenue	10	10	0
192 Edgecombe Avenue	10	10	0
194 Edgecombe Avenue	10	10	0
196 Edgecombe Avenue	10		0
206 Edgecombe Avenue	11	. 10	0
208 Edgecombe Avenue	9		0
210 Edgecombe Avenue	9	0	0
214 Edgecombe Avenue	8	0	0
216 Edgecombe Avenue	9	0	0
218 Edgecombe Avenue	7	0	0
220 Edgecombe Avenue	 	0	0
224 Edgecombe Avenue	9	0	0
2226 Edgecombe Avenue	10	0	0
228 Edgecombe Avenue	12	0	0
336 West 145th Street	65	0	0
324 West 145th Street	10	10	0
322 West 145th Street	21	0	0
320 West 145th Street	21	0	0
	22	0	0
51 Bradhurst Avenue	11	0	0
49 Bradhurst Avenue	9	0	0
47 Bradhurst Avenue	12	0	0
45 Bradhurst Avenue	11	0	0
43 Bradhurst Avenue	10	0	0



Single Room Occupancy (SRO) Unit Inventory

		Occupancy (SRO)	med by Field Survey
	SRO Rooms Identified by	Non-Institutional	Institutional SRO
Building address	MISLAND Data	SRO Rooms	Rooms
	14	0	0
41 Bradhurst Avenue	12	0	0
39 Bradhurst Avenue	14	0	0
37 Bradhurst Avenue	14	0	0
35 Bradhurst Avenue	11	0	0
33 Bradhurst Avenue	11	0	1 0
31 Bradhurst Avenue	9	0	0
29 Bradhurst Avenue		0	0
27 Bradhurst Avenue	7	1 0	138
1641-1659 Amsterdam Avenue	138	0	100
475 West 141st Street	6		0
465 West 141st Street	3	0	1 0
463 West 141st Street	12	12	
453 West 141st Street	3	3	0
282 Convent Avenue	10	0	0
456 West 142nd Street	9	0	0
458 West 142nd Street	8	8	0
462 West 142nd Street	9	9	0
464 West 142nd Street	5	5	0
475 West 142nd Street	5	5	0
471 West 142nd Street	7	7	0
469 West 141st Street	9	0	0
296 Convent Avenue	7	0	0
460 West 142nd Street	10	10	0
473 West 142nd Street	9	0	0
473 West 142rid Street	11	0	0
	5	0	0
471 West 143rd Street	12	0	0
461 West 143rd Street	13	0	0
324 Convent Avenue	14	0	0
326 Convent Avenue	8	0	0
328 Convent Avenue	17	0	0
334 Convent Avenue	12	0	0
336 Convent Avenue		0	0
454 West 144th Street	7	4	1 0
468 West 144th Street	4	0	0
470 West 144th Street	6		0
474 West 144th Street	8	0	0
473 West 144th Street	7	0	1 0
471 West 144th Street	8	0	0
465 West 144th Street	8	0	
463 West 144th Street	9	0	0
461 West 144th Street	12	0	0
453 West 144th Street	6	6	0
348 Convent Avenue	6	6	0
356 Convent Avenue	19	0	0
456 West 145th Street	7	7	0
462 West 145th Street	9	0	0
468 West 145th Street	12	12	0
476 West 145th Street	5	0	0
463 West 143th Street	9	0	0

Table B-9 (cont'd)
ingle Room Occupancy (SRO) Unit Inventory

	Single Room	Occupancy (SRO	<u>) Unit Inventory</u>
	SRO Rooms	SRO Rooms Confir	med by Field Survey
Building address	Identified by MISLAND Data	Non-Institutional SRO Rooms	Institutional SRO Rooms
469 West 144th Street	9	0	0
354 Convent Avenue	4	0	0
466 West 145th Street	9	9	0
539 West 142nd Street	13	0	0
537 West 142nd Street	2	0	0
529 West 142nd Street	9	9	0
517 West 142nd Street	11	0	0
515 West 142nd Street	6	0	0
511 West 142nd Street	8	8	0
507 West 142nd Street	70	70	0
512 West 143rd Street	7	0	0
520 West 143 Street	9	0	0
524 West 143rd Street	6	0	0
528 West 143rd Street	10	0	0
531 West 143rd Street	7	7	0
513 West 142nd Street	8	0	0
522 West 143rd Street	7	0	0
515 West 144th Street	9	9	0
520-522 West 145th Street	80	80	0
529 West 144th Street	25	25	0
513 West 144th Street	7	0	0
507 West 144th Street	7	0	0
503 West 144th Street	6	6	0
515 West 145th Street	70	0	0
511 West 145th Street	59	0	0
639 West 142nd Street	7	0	0
623 West 142nd Street	9	0	0
601 West 142nd Street	90	90	0
637 West 142nd Street	7	7	0
631 West 142nd Street	7	7	0
621 West 142nd Street	11	0	0
617 West 142nd Street	8	8	0
611 West 142nd Street	9	0	0
612 West 146th Street	6	0	0
607 West 145th Street	6	0	0
Total SRO Rooms:	11,718	843	8,856

Sources: New York City Department of City Planning's 2005 MISLAND Multiple Dwellings database, and verified through AKRF, Inc. field surveys conducted September 2006.

B. ANALYTICAL ASSUMPTIONS FOR SOCIOECONOMIC WORST-CASE DEVELOMENT SCENARIO

For purposes of providing a conservative analysis of the Proposed Actions, a reasonable worst-case development scenario for the Academic Mixed-Use Area (Subdistrict A) was developed specifically for the socioeconomic conditions assessments. The "socioeconomic reasonable worst-case development scenario" maximizes the amount of potential University general academic and academic research space, and minimizes on-site housing for graduate students,

faculty, and other employees, and private commercial ground-floor space. Table B-10 compares the programming assumptions of the socioeconomic reasonable worst-case development scenario with those of the Illustrative Plan.

Table B-10 Comparison Between Illustrative Plan and Socioeconomic Worst-Case Scenario

Comparison Between Illustrat	tive Plan and So	cioeconomi	e worst-cas	e Scenario
	Illustrati	ve Plan	Reasonable \	
	2015	2030	2015	2030
	Above Grade			
Community Facilities				
Academic	532,840	1,266,928	705,000	2,000,000
Community use	_			
University housing	158,840	509,200	_	350,000
Academic research	351,310	2,596,957	361,939	2,295,016
Recreation		239,313		
Total Community Facilities	1,042,990	4,612,698	1,066,939	4,645,016
Commercial				
Office	60,449	162,618		
Retail	-		18,250	65,000
Restaurant	<u> </u>		18,250	65,000
Total Commercial	60,449	162,618	36,500	130,000
Total Above Grade	1,103,439	4,775,016	1,103,439	4,775,010
	Below Grade			
Research support	59,563	296,201	58,563	296,201
Below-grade program	69,830	69,830	69,830	69,830
Recreation (swim/dive center)	_	145,431		145,43
Parking (Including ramp)	-	848,605		848,60
Central energy plant	50,870	70,199	50,870	70,19
Mechanical/circulation/loading	94,638	366,166	94,638	366,16
Storage	31,294	189,225	31,294	189,22
Total Below Grade	305,195	1,985,657	305,195	1,985,65
Grand Total	1,408,634	6,760,673	1,408,634	6,760,67

Even though it may never occur, the socioeconomic reasonable worst-case development scenario would generate the greatest potential off-site demand for housing and commercial space, which in turn would maximize potential indirect residential and business displacement pressures. Direct displacement is unaffected by variations in the types of uses considered for a worst-case scenario.

C. UNIVERSITY-GENERATED HOUSING DEMAND ANALYSIS

The detailed analysis of indirect residential displacement in Chapter 4, "Socioeconomic Conditions," included estimates of the propensity for University employees and students working and studying in the Academic Mixed-Use Area to seek housing in the primary and secondary study areas. To estimate this demand, Columbia prepared a comprehensive housing demand model based on an analysis of employees and students at the University's existing campuses. The housing demand model and underlying data analysis are described in detail below.

EXISTING EMPLOYEE AND STUDENT INVENTORY

As a first step in its analysis, Columbia prepared a comprehensive inventory of all employees and students active at the University as of October 2005. This point in the year—the mid-point of the fall academic term—represents the period of maximum employment and enrollment in the annual academic cycle of the institution. Drawing on a variety of data sources, including the University's Human Resources, Student Information, and University Housing databases, a new database was prepared containing the following data elements for each employee or student:

- University affiliation by campus, school and department;
- Basic demographic information, including age, ethnicity, and family size;
- Job information, including employment category, rank, and related attributes (for employees only);
- Expected annual Columbia-paid employment compensation, including any compensation paid to students working part-time for the University;
- Home address (including an indicator of whether the person was living in University housing); and
- Office address.

CATEGORIZATION OF THE EXISTING EMPLOYEE AND STUDENT POPULATION

A statistical analysis of key population attributes was conducted to determine the most appropriate categorization of the employee and student population for modeling purposes. Based on meaningful differences in compensation, housing preferences, and demographics, the below population categories were chosen. Each of these was, a result of the analysis, subdivided into persons with either a (1) full-time or (2) part-time University affiliation based on employment or enrollment. All modeling was conducted at the level of these population categories and was then aggregated for analysis of cumulative demand.

1. Employees

- a. Faculty (divided into science, non-science, and clinical)
- b. Researchers (divided into science, non-science, and clinical)
- c. Post-doctoral student researchers (divided into science, non-science, and clinical)
- d. Administrators (including officers and support staff)

2. Students

- a. Graduate (divided into science and non-science)
- b. Undergraduate
- c. Special

EXISTING SPACE INVENTORY

To calculate current employment densities, a full inventory was conducted of Columbia buildings on all of its campuses and at off-site locations. Total gross square footage was recorded for each building (or portion of a building, where Columbia did not own or lease the entire building). Each property was then assigned either to one of the space categories utilized in the General Project Plan (GPP) and Draft Environmental Impact Statement (DEIS)—academic,

academic research, administrative, recreation, University housing, or support—or to other uses not relevant to the Proposed Actions (notably, clinical facilities).

EXISTING EMPLOYMENT DENSITIES AND FORECAST EMPLOYMENT

Each existing employee was assigned to an existing University property based on the employee's Office Address (or departmental affiliation when Office Address was not available). Using these assignments, Columbia calculated the employment densities (i.e., number of employees per 1,000 gross square feet [gsf]) for all of its existing properties. Within each space category, a smaller set of buildings was identified that most closely resembled the function and layout of the planned buildings to be constructed with the Proposed Actions. Based on the employment densities identified for all buildings and for the smaller set of representative buildings within each category, final employment densities were derived to model the number of employees expected as a result of the Proposed Actions.

Utilizing these employment densities—along with additional industry-standard employment densities for non-University uses, such as retail and restaurant—total employment was calculated for the Proposed Actions based on the number of gsf assigned to each space category under the socioeconomic reasonable worst-case development scenario. Within each space category, the number of persons employed in each of the population categories listed above was calculated by examining the mix of employees belonging to those segments in all existing properties within the space category. Thus, from the total gross square footage assumed for development under the socioeconomic reasonable worst-case development scenario, total employment and the number of employees was forecast for each population category.

FORECAST STUDENT ENROLLMENT

To forecast the number of students expected to study at the proposed Columbia academic and academic research facilities, a detailed enrollment forecast model was constructed. The model examined historical enrollment trends for full- and part-time students within each school of the University by campus and by the student population categories identified above. The model established the base population for each school in the fall term of the 2004–2005 academic year. For each combination of school, campus, and population category, an annual forecast growth rate was established, along with a determination of what portion of existing and future student enrollment would be located at the proposed facilities. From these forecast projections, the total number of students expected to study at the proposed university area was determined. Also determined was the number of students expected to relocate from existing campuses, along with the number of students expected to fill (over time) the academic space vacated by the students relocated to the proposed university area.

FORECAST HOUSING DEMAND

Utilizing the employment and enrollment forecasts described above, potential University-generated demand for housing in the primary and secondary study areas was calculated as follows. First, the home address of each existing employee or student was analyzed using a geographic information system (GIS) application to determine whether the address was located within either ½ or ½ mile of the employee or student's home campus. Second, from the analysis of these approximately 39,000 individual addresses, the overall propensity of persons in each population segment to live within ¼ or ½ mile of the current home campus was established. Third, these current housing propensities were used as the basis for establishing potential



University-generated housing demand in the primary and secondary study areas. At current University campuses, a much larger proportion of total building square footage is allocated to University housing compared with the proposed university area. Since the availability of this housing greatly influences the propensity of employees and students to live nearby their home campuses, using the current housing propensities would exaggerate potential housing demand in the study areas. As a highly conservative assumption, forecast potential housing demand in the primary and secondary study areas was established for each population segment by summing the total percentage of persons who live within ¼ mile (for the primary study area) or ½ mile (for the secondary study area) of the home campus in properties that are not University housing, plus one-half the percentage of persons living in University housing within the same ¼- and ½-mile boundaries.

Having calculated a highly conservative propensity for potential housing demand within the primary and secondary study areas, total potential demand for housing was projected by multiplying the forecast housing propensity for each population segment by the forecast number of employees and students in that segment. The student forecasts account for the fact that a portion of students relocating from the Morningside Heights campus already live within the study areas and therefore would not generate new housing demand. Total forecast potential housing demand was then reduced by the number of units (if any) of University housing to be constructed in the Project Area under the assumptions of the socioeconomic reasonable worst-case development scenario. The remaining unmet potential housing demand was used as the basis for the analysis conducted in Chapter 4.

D. NEW UNIVERSITY POPULATION DEMOGRAPHIC ANALYSIS

To analyze the potential demographic characteristics of the projected University-generated populations in the Project Area and in the primary and secondary study areas, Columbia assumed that demographic characteristics for future employees and students working and studying at the proposed university area would be similar to those for existing employees and students. As described above in section C, the University prepared a detailed analysis of its employee and student population, and segmented that population for modeling purposes based on meaningful differences in demographic characteristics, compensation, and housing propensities. Employment and enrollment was forecast for each of the population segments listed above, and potential housing demand was calculated for each. Using best available information on the family size for each population segment, the total potential University-generated population within the project areas was determined. For the purposes of the population demographic analysis, family members were assumed to have the same demographic characteristics as the employee or student with whom they were associated.

APPENDIX C RECENT TRENDS ANALYSIS

BASELINE REAL ESTATE CONDITIONS

City Environmental Quality Review (CEQR) recommends that the analysis year for existing conditions be within one year of Draft Environmental Impact Statement (DEIS) publication. Accordingly, the DEIS existing conditions analysis year is 2006. However, during scoping, Manhattan Community Board 9 and others requested that the EIS select an earlier year, before Columbia announced its plans and began acquiring properties, to determine whether impacts of the Proposed Actions would have already occurred. In response to that request, this section analyzes land use and socioeconomic trends before 2006, focusing on the years 2000 to the present. The analysis considers whether public awareness of Columbia's proposed plans for the Manhattanville university area significantly changed real estate conditions in the Project Area and surrounding neighborhoods. Specifically, three issues of concern are analyzed: 1) whether Columbia's announcement has already resulted in increases in residential sales and median rents in the surrounding neighborhoods, leading to indirect residential displacement; 2) whether the former affordable housing development at 3333 Broadway "opted out" of the Mitchell-Lama program due to added real estate pressure generated by Columbia's announcement; and 3) whether Columbia's acquisition of properties has interrupted a commercial real estate trend and/or caused a climate of disinvestment within the project area itself.

METHODOLOGY

The analysis examines local real estate conditions before and after public awareness of the Proposed Actions to establish whether there is an identifiable correlation between real estate trends and Columbia's announcement. There are two primary indicators of real estate growth or decline in an area: 1) the number of real estate sales transactions that have occurred, indicating overall activity and interest in an area; and 2) an increase or decrease in the value of property, as typically reflected by its sales price or rental rate. Analyses of both sales transaction volumes and property values were completed, as described below.

The analysis is based on the comparison of two areas: 1) a study area comprising the neighborhoods most likely to be impacted by Columbia's real estate activity, identical to the socioeconomic secondary study area (generally bounded by West 146th Street to the north, West 114th Street to the south, Manhattan Avenue to the east, and Riverside Drive to the west); and (2) a "control area" comprising all of Northern Manhattan north of 91st Street on the West Side and 96th Street on the East Side. The control area includes all zip code areas (the geographic entity for which sales data is most efficiently obtained) in Northern Manhattan, generally considered to be all of Manhattan north of 96th Street. Additionally, the control area has been delineated into neighborhoods to better understand whether control area trends were more heavily influenced by activity in certain neighborhoods (see Figure C-1).

Northern Manhattan was selected as a control area because transaction volumes and property values in this region are similarly influenced by a variety of economic forces unrelated to

Columbia's development plans. These include Harlem's construction boom; the availability of undervalued, high-quality housing stock in Northern Manhattan; readily available credit for financing acquisitions of residential and commercial properties; relatively low interest rates for home mortgages; the area's decrease in crime rates; and, most importantly, population and employment growth in New York City. Additionally, if public awareness of Columbia's proposed plans had significantly altered real estate conditions, it would be expected that activity in areas surrounding the proposed university area (the study area) would have demonstrated a higher rate of growth in the years after the announcement, and could demonstrate a higher rate of growth in the years after the announcement compared with the Northern Manhattan control area as a whole.

To sufficiently account for potential impacts before and after public awareness of the Proposed Actions, and to understand overall real estate trends in the area, sales transaction data were analyzed for all years from 2000 through 2005. Rental rates were analyzed for the years 2000, 2003, and 2005. Columbia's first purchase of property within the Project Area, a parking lot at 603-611 West 129th Street, occurred in November 1967. Twenty years later, in 1987, the University leased space and purchased an option on the Studebaker Building at 615 West 131st Street, and on the adjacent parking lot at 635 West 131st Street. Those options were converted into contracts in mid 2005, and the University expects to close on the property in the second half of 2007. Columbia purchased additional property at 624-628 West 131st Street on January 13, 2000, and 3233 Broadway on December 28, 2001, followed by four properties in 2002: 3205-3219 Broadway in February, 613-615 West 129th Street in March, 631-639 West 130th Street in April, and 635 West 125th Street in July. By 2002, these purchases may have collectively raised speculation that Columbia planned to purchase additional land in the Project Area to redevelop for institutional or back-office use; however, knowledge as to the comprehensive nature and extent of Columbia's plans, such that they could have substantially affected real estate trends within the broader study area, was more likely to have occurred when the University publicly announced its plans for a Manhattanville university area in February 2003. Therefore, it is reasonable to assume that public awareness of the Proposed Actions would have the potential to substantially affect property values beginning in 2003.

Since 2000, there have been no Columbia University property acquisitions outside of the Project Area within the primary study area, and two purchases within the secondary study area were not related to the Proposed Actions.²

The analysis also considers whether Columbia's recent influence on real estate activity has led to disinvestment in the Project Area through an examination of non-Columbia real estate sales prior to the announcement, land use changes, property ownership histories, and current tenant leasing arrangements for Columbia-owned properties. Land use changes were analyzed using LotInfo data from both 2000 and 2006. Because land uses were categorized differently by LotInfo in

¹ Columbia News: The Public Affairs and Records Homepage, "University Announces Campus Plan Study," February 19, 2003. Available at: http://www.columbia.edu/cu/news/03/02/campus_plan.html.

² Columbia University has purchased two properties from St. Luke's-Roosevelt Hospital since 2000. A 37-unit apartment building at 44 Morningside Drive, purchased in Fall 2001, has been renovated and is currently occupied by graduate students and faculty. The St. Luke's Development Site (between West 114th and West 115th Streets, east of Amsterdam Avenue) was purchased in 2002 and will be redeveloped in the future; however, use has not been determined.

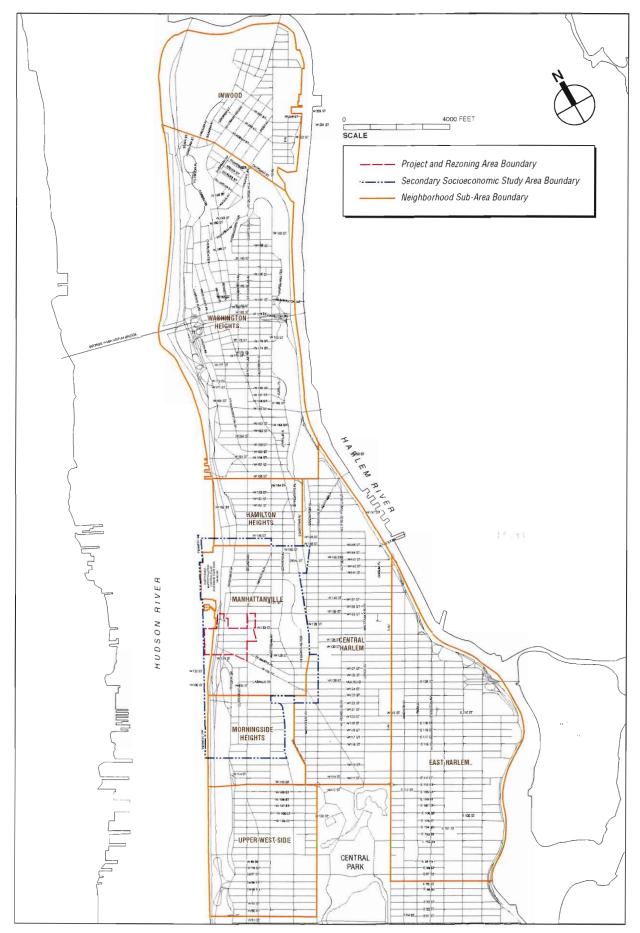


Figure C-1
North Manhattan Control Area

these two analysis years, 2006 data was adjusted to reflect the 2000 categorization style so that a side-by-side comparison could be made.

Data Sources

Sales transactions data for this analysis were obtained through Comps, Inc., a private company that compiles property information for the New York City metropolitan area, using information collected from the New York City Department of Buildings and New York City Department of Finance. For residential analysis, median price per square foot (sf) figures were calculated and used as a basis for comparison of sales prices, from year to year and between the control and study areas. Comparisons were made in 2005 dollars to adjust for sales price increases due to inflation alone. Each sales record was reviewed individually and removed if common sense would indicate there may have been an error in filing, or when the transaction appeared not to represent the exchange of a residential unit or units. For example, properties with a price per sf far below market rate (typically less than \$10/sf) or with a total sales price below \$85,000 were removed from the data. Transactions for which square footage information was not available were not included in the median price per sf calculations. Because the sample size of commercial sales transactions was too small to calculate statistically accurate average median price figures, the location and number of sales directly in and around the Project Area were analyzed in an attempt to determine if a trend of commercial sales was disrupted or disinvestment could be identified.

Rental rate information was gathered by Jerry Minsky, senior vice president at Corcoran Realty, who contacted property managers, real estate brokers, and appraisers in the study and control areas to obtain rental rates for studios, one-, two-, and three-bedroom units. For each of these unit sizes, samples of at least 10 units in the study area and 25 units in the control area were gathered for the years 2000, 2003, and 2005. Each sample included a variety of housing types (low-rise, high-rise, townhouse, and mixed use) and achieved consistent geographic coverage throughout the study and control areas.

Information about tenants and former property owners of Columbia-purchased properties were provided by Columbia University. Data for comparisons in vacancy rates were gathered during site visits by Appleseed in April 2004 and AKRF in May 2006, and by a tenant roster provided by Columbia University.

TRANSACTION VOLUME

The number of residential and commercial real estate sales transactions in the control area (Northern Manhattan) stayed relatively steady from 2000 to 2003, before increasing dramatically in 2004 and 2005. As shown in Table C-1, there were 1,250 sales transactions in 2000, compared with 2,089 in 2005. This growth in sales volume was largely the result of a strong residential market fueled by low interest rates; commercial sales volumes were steadier, increasing at most by 33 percent (between 2000 and 2004), compared with a 90 percent increase in residential market transactions (between 2000 and 2005).

As shown in Figure C-2, sales volumes in the control area were driven not by activity in the study area, but by the growing real estate market in Central Harlem, where the number of transactions jumped from 382 in 2000 to 885 in 2005—an increase of 132 percent. East Harlem and the Upper West Side also contributed to growth in the control area over the last two years, as the rate of transactions in those areas grew steadily in 2004 and 2005.

Table C-1

										Con	ımerci	al and I	Reside	Commercial and Residential Sales Transaction Volume	ales Tr	ansact	ion Vo	lume
		2000			2001			2002			2003			2004			2005	
Sales Volume	Bos	and J	Total	Res	Comm	Total	Res	Comm	Total	Res	Comm	Total	Res	Comm	Total	Res	Comm	Total
Control Area	1,099	148	1,250	1,214	176	1,390	1,129	186	1,315	1,214	197	1,411	1,545	155	1,700	1,916	173	2,089
Study Area	77	6	98	96	12	108	62	20	66	66	12	111	104	15	119	66	10	109
Central Harlem	364	18	382	516	28	544	402	75	477	383	35	418	584	28	612	819	99	885
East Harlem	176	101	277	165	95	260	168	69	237	179	101	280	201	85	286	195	162	357
Hamilton Heights	47	4	51	75	3	78	62	0	62	63	11	74	80	8	88	80	-	81
poomul	28	8	31	14	1	25	16	9	22	30	14	44	37	က	40	43	O	52
Manhattanville	71	41	85	76	8	84	74	18	92	87	13	100	7.1	14	85	06	7	97
Morningside Heights	8	0	9	9	0	9	80	0	8	9	0	9	5	0	ß	5	2	7
Upper West Side	307	8	310	268	8	271	298	4	302	300	6	608	381	2	383	439	13	452
Washington Heights	103	5	108	107	7	118	107	6	116	165	5	170	186	15	201	245	13	258
Source: Comps, Inc.					-													

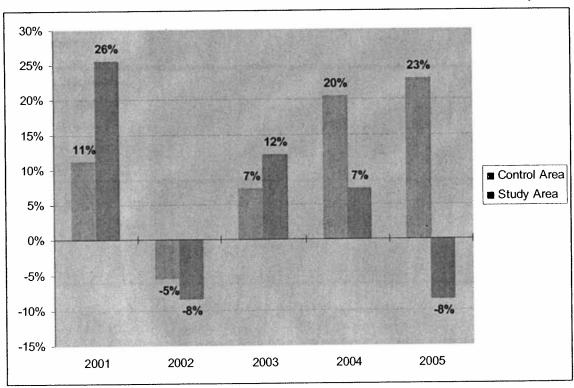
2250 2000 1750 1500 - Control Area Study Area Central Harlem **Transactions** 1250 East Harlem - Hamilton Heights - Inwood 1000 Manhattanville - Morningside Heights Upper West Side Washington Heights 750 500 250 0 2000 2001 2002 2003 2004 2005 Year

Figure C-2 Total Transaction Volume for Control Area, Study Area, and Neighborhoods

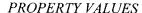
Source: Comps, Inc.

In contrast, the study area, roughly located within ½ mile of the Project Area, did not experience a dramatic increase in the rate of sales transactions in 2004 and 2005, but instead remained fairly consistent from 2000 to 2005 (see Figure C-2). Sales volumes were at their lowest in 2000 with 86 transactions and reached a high point in 2004 with 119 transactions; however, sales dropped by 9 percent to 109 transactions in 2005, while control area sales volume increased by 23 percent (see Figure C-3). Morningside Heights was also notable for the extremely small number of transactions that occurred over the five-year period, most likely due to the neighborhood's small geographic size, and the large number of properties owned by Columbia and other not-for-profit institutions. In sum, there is little indication that public awareness of Columbia's proposed Manhattanville university area led to an increase in sales transactions in the study area. While there was a slightly greater percent increase in the number of transactions in the study area compared with the control area between 2002 and 2003, the overall trend demonstrates just the opposite—that the number of sales transactions in the study area did not increase to the extent that they did in the control area in the years following Columbia's announcement.

Figure C-3
Percent Increase in Transaction Volume from Previous Year
for Control Area and Study Area



Source: Comps, Inc.



Median Residential Sales Prices

Both the control area and study area experienced an overall upward trend in median residential price per sf between 2000 and 2005 (see Table C-2 and Figure C-4). In total, median sales price per sf in the control area more than doubled between 2000 and 2005, from \$151/sf to \$330/sf—an increase of 119 percent. In the study area the median sales price rose 82 percent, from \$93/sf to \$169/sf. Both areas demonstrated a moderate increase in 2001, followed by a large increase in 2002 (62 percent in the study area, and 35 percent in the control area). In both areas, growth tapered off in 2003, followed by another large jump in 2004. The trends diverge in 2005, however, when the control area's median prices increased by 9 percent, while the median sales price in the study area dropped by 14 percent. If residential real estate values were affected due to public awareness of Columbia's plans, indicators would include a new trend toward increasing value within the study area, or a greater percentage increase in value in the study area compared with the control area. As detailed above, however, while median prices in the study area did increase after the announcement, the growth between 2003 and 2005 was less than the study area growth that occurred prior to the announcement. In addition, the study area's growth was at a lower level compared with the control area, even registering a slight decrease in 2005.

Median Sales Price per Square Foot in Control Group and Study Area

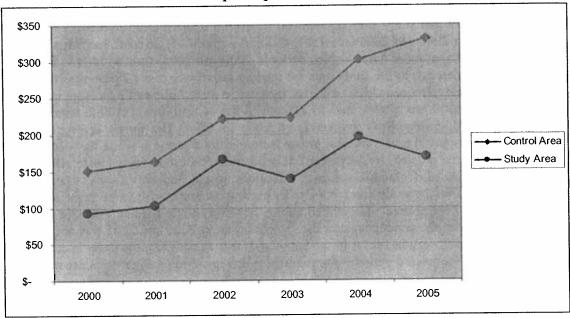
Year Control Area 2000 \$151		% Increase	Study Area	% Increase	
		n/a	\$93	n/a	
2001	\$164	8.6%	\$103	10.2%	
2002	\$222	35.4%	\$167	62.1%	
2003	\$223	0.5%	\$140	-16.2%	
2004	\$302	35.4%	\$196	40.0%	
2005	\$330	9.3%	\$169	-13.8%	

Notes: All median price per sf figures are adjusted to 2005 dollars.

Source: Comps, Inc.

Further analysis identified that all neighborhoods within the control area showed substantial increases in property values between 2000 and 2005 (see Table C-3 and Figure C-5), with the exception of Morningside Heights, where the sample size is too small to measure. If the increased property values in the study area were to have been a result of the announced Proposed Actions, growth would be expected at greater levels compared with other neighborhoods. Again, this is not the case. The 82 percent growth in median price per sf in the study area, though significant, was lower than in surrounding areas, such as the Upper West Side (84 percent increase) and all of Manhattanville (90 percent increase), and significantly lower than Central Harlem, where median prices per sf jumped 148 percent. Given that (as shown in Figure C-4) there was less growth in the study area after the announcement compared with the period prior to the announcement, and that the pattern of growth in the study area mirrored the control area, it does not appear that Columbia University activities had a marked effect on sales prices in the study area after Columbia University's announcement.

Figure C-4 Median Sales Price per Square Foot in Control Group and Study Area



Notes: All median price per sf figures are adjusted to 2005 dollars.

Source: Comps, Inc.

Table C-3 Median Sales Price per Square Foot Comparison (2000 and 2005)

	2000 ¹	2005	% Increase	
Control Group	\$151	\$330	119%	
Study Area	\$93	\$169	82%	
Central Harlem	\$114	\$283 -	148%	
East Harlem	\$92	\$339	268%	
Hamilton Heights	\$117	\$192	65%	
Inwood	\$70	\$136	94%	
Manhattanville	\$94	\$179	90%	
Morningside Heights ²	n/a	n/a	n/a	
Upper West Side	\$467	\$859	84%	
Washington Heights	\$59	\$128	115%	

Notes:

¹ All 2000 median price per sf figures are adjusted to 2005 dollars.

Source: Comps, Inc.

² Sample size for Morningside Heights is only 2 in 2000 and 5 in 2005.

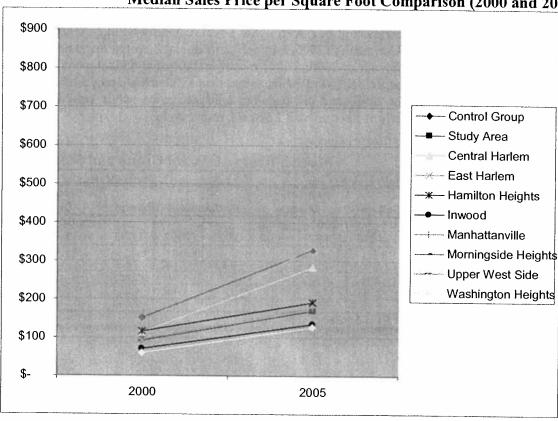


Figure C-5 Median Sales Price per Square Foot Comparison (2000 and 2005)

Notes: All median price per sf figures are adjusted to 2005 dollars. **Source:** Comps, Inc.

Additionally, as shown in Figure C-4, there was no substantial positive or negative trend in the study area or control area after the announcement. The study area's median sales price per sf follows a similar pattern as the control area, with the declines in 2003 and 2005 corresponding to periods of slower growth in the control area. The growing disparity between median sf prices in the study area and control area is largely attributable to the Upper West Side's relatively high median sf prices in the control area (see Figure C-5).

In sum, when comparing sales prices before public awareness of the proposed university area in 2002 with the years following (2003–2005), the study area's growth was less than that of the control area. Additionally, when comparing median sales prices, the immediate study area did not experience larger increases than in surrounding neighborhoods, which would be expected if the announcement of the Proposed Actions was acting to directly increase real estate values. The data indicate that median residential sales prices in the study area have not been significantly influenced by Columbia's proposed plans.

Median Residential Rental Rates

Since the announcement of Columbia's proposed university expansion, there have not been increases in residential sales or rental costs in the study area that could have led to indirect displacement of area

residents. Median rents in the study area remained relatively stagnant between 2000 and 2005 (see Table C-4 and Figure C-6). No prevalent trends could be identified, as rates for individual apartment types tended to both increase and decrease during the five-year period. For example, after adjusting for inflation, a one-bedroom apartment at 611 West 138th Street rented for \$1,282/month in 2000, \$1,317/month in 2003, and \$1,300/month in 2005. Similarly, a three-bedroom apartment at 508 West 136th Street rented for \$2,995/month in 2000, \$3,071/month in 2003, and \$3,000/month in 2005. Between 2003 and 2005—the period following public awareness of Columbia's proposed university expansion—study area rents for studio and one-bedroom units decreased, while two- and three-bedroom rental rates rose modestly at 3 percent and 7 percent, respectively.

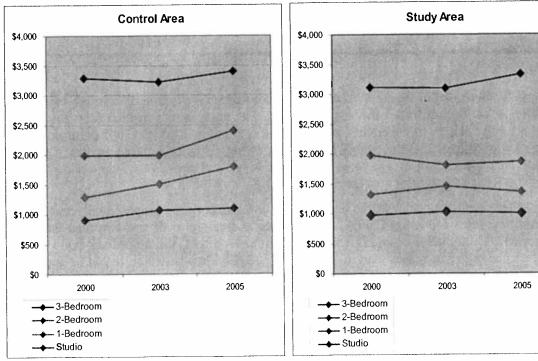
Table C-4
Median Rent in Control Group and Study Area

	Control Area					Study Area				
	Median Rent (Dollars)			Percentage Change		Median Rent (Dollars)			Percentage Change	
Apartment Size	2000	2003	2005	2000- 2003	2003- 2005	2000	2003	2005	2000- 2003	2003- 2005
Three- bedroom	3,292	3,226	3,400	-2%	8%	3,106	3,102	3,325	0%	7%
Two-bedroom	1,981	1,989	2,400	0%	21%	1,973	1,815	1,863	-8%	3%
One-bedroom	1,282	1,505	1,800	17%	20%	1,311	1,452	1,350	11%	-7%
Studio	903	1,070	1,100	18%	3%	976	1,024	1,000	5%	-2%

Notes: All rental rates are adjusted to 2005 dollars.

Source: Jerry Minsky, senior vice president, Corcoran Group Realty.

Figure C-6 Rental Rates in Control Area and Study Area: 2000, 2003, and 2005



Notes: All rental rates are adjusted to 2005 dollars.

Source: Jerry Minsky, senior vice president, Corcoran Group Realty.

In contrast, between 2000 and 2005, median monthly residential rental rates in the control area increased across all apartment sizes, as shown in Table C-4 and Figure C-6. Between 2000 and 2003, the sample median rental rate remained relatively constant for two- and three-bedroom units but increased for studio and one-bedroom units (18 and 17 percent, respectively). Between 2003 and 2005, the median rents increased across all unit types, with the largest growth occurring in one-bedroom and two-bedroom units, which both increased by more than 20 percent.

RIVERSIDE PARK COMMUNITY

In 2005, Riverside Park Community, a 1,190-unit rental apartment complex at 3333 Broadway, directly north of the Academic Mixed-Use Area between West 133rd and West 135th Streets and Broadway and Riverside Drive, opted out of the Mitchell-Lama program, which was designed to accommodate the housing needs of moderate-income families. It has been suggested by some in the community that the "buyout" is largely the result of Columbia's proposed university area, and should therefore be considered an impact of the Proposed Actions. The following section considers whether Columbia's plan for the proposed university area was a likely cause of the buyout at 3333 Broadway.

Since 1955, the Mitchell-Lama housing program has led to the development of numerous moderate- and middle-income co-op and rental housing complexes throughout New York City. Developers are permitted to buy out of the program after a certain amount of time, typically 20 years, if they have repaid their initial mortgage and all other debts. For complexes built after 1973, following a buyout, the developer is no longer subject to rental regulations and profitability restrictions, allowing them to sell or rent units at market rate. New York City has seen an increase in buyouts over the past several years, as many of these 20-year periods have expired and the strong real estate market has provided the incentive for building owners to opt out of the program.

A report published by the New York City Comptroller's Office in 2004 states that a "combination of historically low interest rates, an upward swing of real estate prices, and initial mortgages nearing their maturation date, especially within Manhattan, has made leaving the supervision of the Mitchell-Lama and Limited Divided programs more attractive." In May 2006, the Comptroller's office updated the original report, stating that the number of buyouts is accelerating: "Prior to 2004, more than 24,000 units withdrew from the program. Since 2004, more than 25,000 units have either withdrawn or filed a notice to withdraw." Thirty-two Mitchell-Lama developments have left the program since 2004, a majority of which are located in Manhattan (7,860 units). In sum, Mitchell-Lama buyouts have been a substantial trend over the past decade, particularly since 2004.

Jerome Belson Associates, owner of 3333 Broadway, removed three other complexes in Harlem from the Mitchell-Lama program in 2005—UPACA 1 and 2 at Lexington Avenue and 121st Streets, Schomburg Plaza at Fifth Avenue and 110th Street, and Metro-North Riverview at First

¹ Thompson, William C., "Affordable No More: New York City's Looming Crisis in Mitchell-Lama and Limited Dividend Housing," City of New York Office of the Comptroller, February 18, 2004.

² Thompson, William C., "Affordable No More, An Update: New York City's Mitchell-Lama and Limited Dividend Housing Crisis is Accelerating," City of New York Office of the Comptroller, May 26, 2006.

³ Ibid, Page 3.

Avenue and 101st Streets—in addition to the Eastwood complex on Roosevelt Island. These apartment complexes have existing amenities, such as relatively recent construction, modern design, parking, views, and desirable locations, that may make them attractive as long-term unregulated real-estate investments. For example, the 3333 Broadway complex is a relatively new structure (built in 1976), with many units offering unobstructed views of the Hudson River. Additionally, it is well served by mass transit, easily accessible by car, and contains on-site parking facilities.

The substantial trend toward buying out of Mitchell-Lama programs in Manhattan, combined with the fact that Jerome Belson and Associates took four other properties out of the program in 2005, demonstrates that there may have been a business justification to "buy out" 3333 Broadway, regardless of Columbia's plans.

The change in the building's Mitchell-Lama status is unlikely to have contributed to a substantial change in the area's rental market. The majority of the building's units (nearly 85 percent) continue to be occupied by long term-tenants who receive federal subsidies known as Section 8 Enhanced Vouchers. These vouchers protect recipients from unaffordable rent increases by paying the difference between HPD-approved "market rents" and a household's subsidized rent, therefore alleviating indirect displacement pressures. And unlike standard Section 8 vouchers, Section 8 Enhanced Vouchers are not subject to ceilings on rents which apply to regular Section 8 vouchers. The remaining 15 percent of the building's 1,192 units now permitted to rent at true market rates continue to rent at the same levels as those at HPD-approved "market rents." This indicates a flat rental market, consistent with the area prior to the announcement of the Proposed Actions, not one increasing because of it.

EFFECTS ON PROJECT AREA REAL ESTATE MARKET

As mentioned above, there are concerns that Columbia's plans for a new university area—both public awareness of the Proposed Actions and Columbia's purchase of commercial properties in the Project Area—have already influenced real estate activity within the Project Area, and, therefore, an analysis of existing conditions should be conducted for 2002 instead of 2006. Specifically, there are concerns that Columbia's purchase of properties in the Project Area have led to a climate of disinvestment and stagnation of the Project Area's commercial real estate market.

When Columbia announced its plans for a new university area in 2003, the Project Area was not showing substantial signs of real estate growth. Between 2000 and 2002, only six commercial sales transactions that were not facilitated by Columbia occurred in the Project Area. Additionally, while real estate pressure in other industrial areas of the City was leading to widespread adaptive reuse of older industrial buildings, this was not the case in the Project Area, where a large percentage of businesses continue to operate as manufacturing, storage and warehousing facilities, automotive repair and service shops, and general construction contractors. Fairway Market opened in 1995 at 2328 Twelfth Avenue; however, no other new developments of comparable scale occurred until 2003, when a building at West 131st Street and Twelfth Avenue was renovated by its current owner and now is occupied by the Dinosaur Bar-B-Que restaurant, a fitness consultant, two television production firms, an architecture firm, and a technology company. Apart from the renovation of this building, the number and type of businesses within the Project Area have remained fairly constant following Columbia's purchase of various Project Area properties beginning in 2000. Additionally, these purchases did not interrupt an existing trend toward adaptive reuse. With a large percentage of tenants in Project

Area buildings operating as either storage and warehousing facilities, automotive repair and service shops, or general contractors, it is apparent that few industrial buildings had been converted prior to 2000.

Since 2000, Columbia has purchased 31 properties within the Project Area and is "in contract" on an additional 14 properties that are expected to close within the next 29 months. All of these properties are older, either industrial or commercial buildings, and with the exception of one vacant property, at the time of purchase all properties were owner-occupied or had existing tenants leasing from the previous owner. In cases where the former property owner had current leases with commercial tenants, these leases were assigned to Columbia as landlord/owner.

Columbia currently deals with tenant negotiations on a case-by-case basis. Generally, tenants are being offered one-year leases that would be renewed annually, until occupancy is needed for University purposes, provided the tenant remains in good standing. (To be considered a tenant in good standing, a tenant must secure and continue to maintain insurance coverage, all required permits and licenses appropriate to operate its business, and remain current on all rental payments.) A few tenants, such as Alexander Doll Company, the New York Police Department, Department of Housing Preservation and Development, Mi Floridita Restaurant and Bakery, and Verizon, have longer leases.

According to Columbia's tenant roster, the occupancy levels have remained relatively steady since its purchase of various properties. Most previous tenants continue to remain in spaces they occupied before Columbia acquired ownership. In a few cases, tenants have vacated, and Columbia has been able to find replacement tenants. There are currently two vacant spaces (a garage at 613 West 129th Street and one store at 3205 Broadway) for which Columbia is actively trying to secure new tenants. The structure at 620 West 130th Street is currently being renovated for a tenant being relocated from the fourth floor of 3251-3253 Broadway. In four cases where Columbia purchased property from previous owners who also operated a business on their property, three of the properties were sold to Columbia as the proprietors had decided to retire. These three businesses, acquired between 2003 and 2006, are Busch Boiler Repair, Lolis West Market Diner, and Standard Aromatics. The owner of the fourth property—Emay Foods consolidated their operations at other sites they have in the City. With the exception of 632 West 130th Street (formerly occupied by Busch Boiler Repair and now leased to a new tenant), these buildings are currently vacant. The building previously occupied by Emay Foods is currently being renovated for a tenant (an auto repair shop) being relocated from 3251-3253 Broadway (currently the second- and third-floor occupants). Columbia has stated that due to deteriorated building conditions in the building previously occupied by Standard Aromatics, the building will be decommissioned. Therefore, Columbia currently has no plans for an interim use in this building.

According to Columbia, many of the properties acquired since 2000 also have many deferred maintenance needs. According to Columbia, the poor physical condition of most buildings they purchased suggests that substantial investments were not being made by existing businesses to maintain their buildings or the premises they occupied. As of April 30, 2007, Columbia has invested approximately \$3.0 million in 31 properties to address life safety issues, cure preexisting code violations, and make urgent repairs to major building systems, along with other capital repairs. Major components of this investment include \$900,000 in exterior repairs and Local Law 11 work in order to maintain exterior walls and appurtenances in a safe condition, approximately \$500,000 in repairs to heating systems, approximately \$500,000 in roofing repairs, and over \$100,000 in sidewalk repairs. In addition, through May 11, 2007, Columbia has

identified similar repairs that are scheduled for completion within the next 18 to 24 months. These additional repairs, many of which have commenced, will bring Columbia's total investment to in excess of \$10 million. Repairs to address life safety issues, code violations, and urgent repairs to building systems do not cover all "State of Good Repair" issues that have been created by past disinvestment. Major capital upgrades are also being made to the Studebaker Building, located at 615 West 131st Street, to prepare it for occupancy by Columbia University administrative offices beginning in summer 2007; and interior improvements are being made to the former Warren Nash Service Station building, located at 3280 Broadway.

As shown in Figures C-7 and C-8, land use changes in the Project Area between 2000 and 2006 have been minimal.¹ In both years, industrial land uses, which include auto-related uses, warehouses, and storage facilities, were the most common, occupying 75 percent of lot area in 2000 and 70 percent in 2006. Commercial and office uses have decreased from 16 to 14 percent between 2000 and 2006, while residential land uses have remained at 2 percent of the total lot area. The amount of vacant lot area occupied by a vacant building has increased by 2.5 percent; these include formerly owner-occupied properties that were sold to Columbia and vacated, but have not been leased due to their poor physical condition.

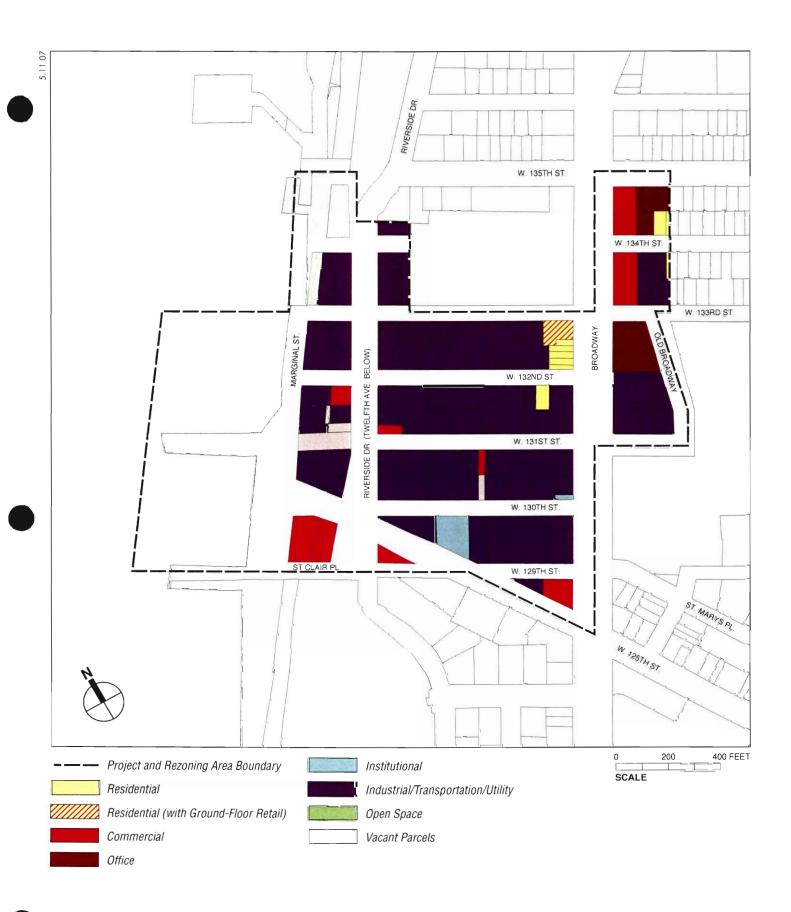
The analysis above indicates that differences in land use, tenancy, and overall real estate conditions have not changed such that they would justify an adjustment of the baseline analysis of existing conditions to 2002, or some other year before public awareness of Columbia's university area plans. Columbia's announced plans did not disrupt or curtail economic investment in the area, with the area continuing to perform as it had, and likely would have performed, with or without the announcement. Before 2003, the Project Area was showing little sign of commercial real estate growth as evidenced by only six non-Columbia commercial sales transactions between 2000 and 2002. Pressure for adaptive reuse or conversions of industrial properties was not substantial, unlike in other industrial areas. The number and type of businesses within the Project Area has remained almost entirely the same following Columbia's purchase of various Project Area properties. Auto repair businesses that have left the area have been replaced by other auto repair businesses, and office tenants have been replaced by other businesses in need of commercial office space. Additionally, a comparison of land uses reflects only a 2 percent increase in amount of vacant square footage within the Project Area, a difference not substantial enough to change the area's overall economic conditions.

CONCLUSION

This analysis concludes that the public announcement of Columbia's proposed university area has not had a sizable influence on either the local residential or Project Area commercial real estate market. Real estate growth in the control area surpassed growth in the study area according to two primary indicators: transaction volume and property value. Transaction volume gained momentum in the control area in the years following the announcement, with the number of transactions increasing by 7 percent in 2003, 20 percent in 2004, and 23 percent in 2005. During the same period, the transaction volume in the study area rose slightly but then dropped, increasing 12 percent in 2003, 7 percent in 2004, and decreasing by 8 percent in 2005.

C-14

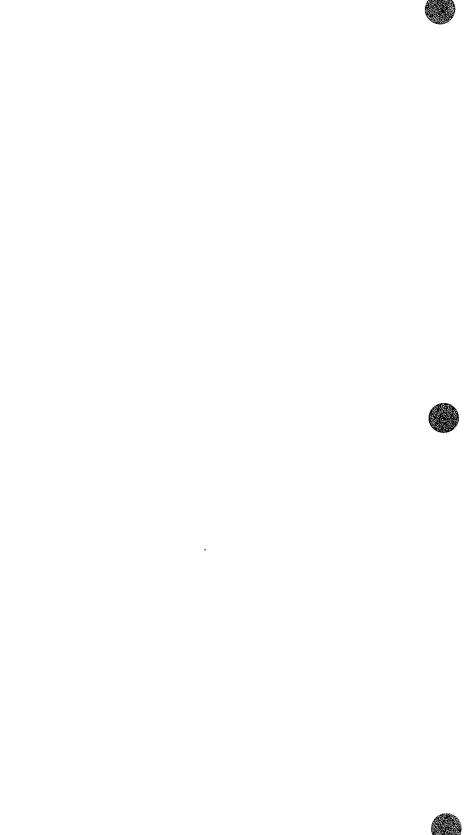
¹ As mentioned above in "Methodology," the land use map for 2006 has been adjusted to reflect the categorization style of that in 2000 as used by LotInfo.





Similarly, while the control area's median residential sales prices and rental rates have shown substantial growth, the study area's market has been relatively stagnant. In 2003, the study area's median residential sales price per sf fell by 16 percent while it remained steady in the control area, increasing approximately 1 percent. And while the study area's median sales price per sf rose by 1 percent between 2002 and 2005, the control area's prices jumped by 49 percent. Between 2000 and 2005, rental rates in the control area increased for all unit sizes, but over the same period in the study area there was only growth in the rental rate for three-bedroom units.

Finally, an analysis of the Project Area commercial real estate conditions indicates that the area did not demonstrate substantial real estate growth before public awareness of the proposed university area, nor did Columbia's purchase of numerous properties in the Project Area lead to substantial differences in use, tenancy, or overall economic conditions that would warrant an adjustment of the baseline analysis of existing conditions to 2002, or some other year before public awareness of Columbia's university area plans.











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CEMETERY AND DOMESTIC SITE DOCUMENTARY STUDY

MANHATTANVILLE REZONING IN WEST HARLEM NEW YORK, NEW YORK

CEMETERY AND DOMESTIC SITE DOCUMENTARY STUDY

MANHATTANVILLE REZONING IN WEST HARLEM NEW YORK, NEW YORK

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EXECUTIVE SUMMARY

Columbia University is the applicant for the rezoning of an approximately 35-acre area of Manhattanville (the "Project Area") in West Harlem in Manhattan. The rezoning would also allow Columbia to realize and Academic Mixed-Use plan (the "Academic Mixed-Use Development) on approximately 17 acres within the 35-acre rezoning area. Development within the Academic Mixed-Use Area would include academic buildings, laboratory/research facilities, student and faculty housing, administrative offices, recreational facilities, and an open space. The Academic-Mixed Use Development would also include an extensive below-grade component of several basement levels to house support facilities and an energy center.

The approximate boundaries of the Project Area are West 133rd and 135th Streets to the north, Broadway and Old Broadway to the east, West 125th Street and St. Clair Place to the south, and the Hudson River to the west.

The proposed project requires review under City Environmental Quality Review (CEQR), the New York State Environmental Quality Review Act (SEQRA), and the New York State Historic Preservation Act of 1980 (SHPA), which require the analysis of archaeological resources. Under CEQR, the New York City Landmarks Preservation Commission (LPC) Guidelines for Archaeological Work in New York City outlines specific steps to determine whether the Proposed Actions could affect areas of potential archaeological sensitivity. The first step in this process is an initial review conducted by LPC of the affected area, in this case the Project Area. In reviewing the Project Area, the New York City Landmarks Preservation Commission (LPC) determined on June 16, 2004 that two lots within the Project Area—Block 1986, Lot 30 and Block 1997, Lot 17—may be sensitive for archaeological resources dating to the nineteenth century and recommended that a Phase 1A Documentary Study be prepared to determine the archaeological sensitivity of these sites.

Blocks 1986 and 1997 are located within the Academic Mixed-Use Area. Block 1986 is located north of West 131st Street, east of Broadway. For Block 1986, Lot 30, LPC noted a nineteenth century estate complex, and subsequent church on an 1852 map, and inquired about the potential for archaeological resources associated with the residential complex and an adjoining cemetery.

Block 1997 is located on the north side of West 130th Street, between Broadway and Twelfth Avenue. On Block 1997, Lot 17, LPC noted a nineteenth-century possible dwelling with an alley-way to an open space in the rear yard to the north and requested that additional documentary research be performed to evaluate the potential for a domestic site with the concomitant shaft features such as privies, cisterns, and wells.

Following LPC's request for research into the potential for a nineteenth-century cemetery and domestic site archaeological resources, HPI undertook background research for these two lots. A search through a combination of conveyance, tax assessment, city directory, atlas, and insurance map records, as well as a centennial history of Manhattan College, indicates that the church on Block 1986, Lot 30, was constructed in 1853, two years after New York City's prohibition of new cemeteries in Manhattan. The Church of the Annunciation at Manhattanville

was connected with the nascent Manhattan College, and the area to the north of the church served as an open space. In addition to an 1877 insurance map, a period photograph indicates that the open space to the north of the church was part of the college's courtyard and a manicured park area with an allee of trees that ran north and south along the east side of the block. An estate complex stood on the site prior to Manhattan College's purchase of the property. The college adaptively reused two of the estate buildings, then razed them in conjunction with the construction of the brick multi-storied academic building. Sometime after 1926, the brick building was demolished and the exposed bedrock blasted so that the area aligned with street level.

As for the domestic site on Lot 17 of Block 1997, documentary records indicate that the lot was originally part of an eighteenth-century farm or estate. During the first three quarters of the nineteenth century, the lot was undeveloped and owned variously by merchants, druggists, a medical doctor, a stationer, and a carpenter/builder who worked and lived, for the most part, south of Washington Square. In 1878 a 20 by 30-foot brick three-story dwelling was built on the 25 by 100-foot lot. In 1879 there were fire hydrants at the southeast and southwest corners of the West 130th Street side of the block, indicating the provision of city water. By 1884 a fire hydrant stood between Lots 17 and 16. Even if the residents of Lot 17 made use of privies, cisterns, and wells in combination with city water, there would be only a six-year timeframe between the construction of the house and the placement of a fire hydrant directly in front of the dwelling, a very short time for the potential use of any shaft features in the nineteenth century.

Manhattan College and its courtyard and open space on Block 1986 stood on the site until 1926, when its buildings were demolished. The 20 by 30-foot brick dwelling stood on Lot 17 from 1878 until at least 1985. Presently both sites are used as surface parking lots (Photographs 1, 1b, and 2). Lot 30 on Block 1986, which had been at a high elevation (approximately 15 feet above street level) in contrast to the land that became Broadway (Photograph 3: Washington 2002:45), is now level with Broadway for its western part, but rises sharply to the east. Lot 17 on Block 1997 is level with the West 130th Street streetbed, which slopes gently downward to the west toward the Hudson River (Photograph 4:Gabriel 1953:14).

Therefore, there is little potential for either a nineteenth-century cemetery or domestic back yard features on the two lots flagged by LPC. Lot 30 of Block 1986 was an open courtyard connected with Manhattan College, not the location of a burial ground. In addition, the bedrock outcrop was blasted to street level, eliminating the potential for the recovery of any residential resources that predated Manhattan College or human remains. In addition, As for Lot 17 on Block 1997, in all likelihood, public utilities ran along West 130th Street the year the residence was built. If not, Lot 17 of Block 1997 had public utilities available within anywhere from one to six years from the year of the dwelling's construction in 1878, thus greatly reducing the chances for back-yard shaft features' existence and usage. No further archaeological study for Lot 30 of Block 1986 and Lot 17 of Block 1997 is warranted.

This documentary study will be submitted to LPC and SHPO for their review.

I. INTRODUCTION

Columbia University is the applicant for the rezoning of an approximately 35-acre area of Manhattanville (the "Project Area") in West Harlem in Manhattan. The rezoning would also allow Columbia to realize and Academic Mixed-Use plan (the "Academic Mixed-Use Development) on approximately 17 acres within the 35-acre rezoning area. Development within the Academic Mixed-Use Area would include academic buildings, laboratory/research facilities, student and faculty housing, administrative offices, recreational facilities, and an open space. The Academic-Mixed Use Development would also include an extensive below-grade component of several basement levels to house support facilities and an energy center.

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The proposed project requires review under City Environmental Quality Review (CEQR), the New York State Environmental Quality Review Act (SEQRA), and the New York State Historic Preservation Act of 1980 (SHPA), which require the analysis of archaeological resources. Under CEQR, the New York City Landmarks Preservation Commission (LPC) Guidelines for Archaeological Work in New York City outlines specific steps to determine whether the Proposed Actions could affect areas of potential archaeological sensitivity. The first step in this process is an initial review conducted by LPC of the affected area, in this case the Project Area. In reviewing the Project Area, the New York City Landmarks Preservation Commission (LPC) determined on June 16, 2004 that two lots within the Project Area—Block 1986, Lot 30 and Block 1997, Lot 17—may be sensitive for archaeological resources dating to the nineteenth century and recommended that a Phase 1A Documentary Study be prepared to determine the archaeological sensitivity of these sites. LPC flagged both sites as potentially sensitive for nineteenth century residential resources. Lot 30 of Block 1986 was additionally identified as potentially sensitive for human remains if a cemetery had ever existed on the site.

This report presents the results of the documentary research undertaken to evaluate the potential sensitivity of Lot 30 of Block 1986 and Lot 17 of Block 1997.

II. RESEARCH GOAL AND METHODS

The research goal for this documentary study was to respond to the City of New York Landmarks Preservation Commission's (LPC) environmental review request for an archaeology review only for two lots within the approximately 35-acre Project Area (LPC: June 16, 2004). LPC based the review request on sensitivity models, historical maps, and subsurface information, including boring logs, contained in Summary of Available Historic and Subsurface Data, University Master Plan, New York, New York, prepared by Mueser Rutledge Consulting Engineers, March 7, 2003. LPC indicated "that there is the potential for the recovery of remains from [nineteenth-century] occupation on two lots within the study area (B 1997 L17 – residential) (B 1986 L30 – possible burial ground and residential).... There are no further archaeological concerns for the other blocks and lots in the study area." (Ibid.).

To accomplish the goal, several kinds of resources were consulted. The documentary research included the review of conveyance records, tract reports, re-indexed maps, and tax assessments, as well as manuscript and published maps and atlases, and a listing of church records. Published resources included city directories and histories of Manhattanville, Manhattan College, housing, and a study of graveyards in New York City. There was a review of the New York Public Library's (NYPL) photograph collection and the City's 1940s tax assessment photographs at the Municipal Archives. LPC files turned up no historical-archaeology site reports within a one-mile radius. Site photographs were taken in June and July 2004 (Photographs 1-2). Several librarians and archivists provided insight, as did a site visit and a walking tour of the West 125th Street area (led by Eric Washington, a Manhattanville scholar).

Historical maps and atlases, both published and in manuscript form, were studied for land use over time. Evidence of twentieth-century disturbance was also established in order to determine site integrity and the potential presence of intact cultural remains. Establishing prior disturbance was essential toward determining whether additional research would be necessary.

Among the maps consulted were the British Headquarters' Map (1782); Tract Report Map (33) showing the project area in 1806; the manuscript version of the Commissioner's Plan (1807-1811); Tract Report Maps (44 and 71) showing the project area in 1835; Dripps (1852 and 1867); Sackersdorf Blue Book (1815-1868); Viele (1855, 1865); Perris (1877); Holmes (1878); Bromley (1879, 1897, 1916, 1921, 1927, 1934, 1955); Spielmann & Brush (1881); Beers (1884-1885); Robinson (1884, 1890); Re-indexed Map 385 (1917); City Register Maps (1917); USGS (1956, 1979); and the Sanborn Insurance Maps (1975, 1985, 2002).

III. NATURAL HISTORY AND NINETEENTH-CENTURY OVERVIEWS

Generally, the project area is within the Manhattanville Valley, which was formed as a result of a northwest-southeast fault in the bedrock and is known as the "125th Street Fault" (MRCE 2003:7). The depressed fault zone lies, roughly, between West 123rd and 125th Streets, with the elevation of the top of the bedrock rising to the north and south of the fault (Berkey 1933:38). Block 1986, the former site of Manhattan College and the Church of the Annunciation at Manhattanville, stood on a bedrock outcrop on the north side of West 131st Street between Broadway on the west and Old Broadway on the east (Photograph 3: Washington 2002:45). The top of the bedrock was 15 feet above the street level, with the buildings rising above that.

The dwelling on Block 1997's Lot 17, was, beginning in 1878, listed as being three-stories high and brick (Tax Assessment, Manhattan, 12th Ward, 1878:226 through 1890:226). A 1940 photograph shows the same brick residence with two outdoor sets of stairs, one down to a windowed basement level, several feet below street level; the other, up to the first level of the house (Tax Photograph, Manhattan, E-1306). It appears as though the residence that stood on the site from 1878 to 1985, at least, had a foundation on some combination of surficial fills and alluvial and glacial outwash sands, silts, clays, and till (MRCE 2003:8; Berkey 1933:38). Soil borings have not been taken on Lot 17, but in the twentieth century, after the construction of the elevated IRT subway along Broadway in 1904, the top of bedrock at the corner of Broadway and West 130th Street (325 feet east of Lot 17) was 11.4 feet beneath the curb level (Rock Data 1937: Vol. 4, Sheet 1, Boring 61). It is assumed that the house stood on alluvial and glacial outwash materials.

In part, period maps shed light on the streams, ponds, and watercourses that may have been influenced by and had an effect on the geology and soils on Block 1997. Both the shoreline of "Haerlem Cove" on the Hudson River at the foot of West 130th Street (Randel's manuscript version of the Commissioners' Map 1807-1811; British Headquarters' Map 1782; Holmes 1878; Robinson 1884; Bromley 1897, 1916, 1921, 1927, 1934, 1955; Sanborn 1975, 1985, 2002) and the ponds and a stream that ran diagonally southeast/northwest downstream just west of Lot 17 (Viele 1855 and 1865) were located in what became West 130th Street between the Hudson River and Broadway. The bight's estuarine shoreline varied with the mapmakers (and perhaps time), and the high tide line may have been located anywhere from 175 to more than 350 feet west of Lot 17. The western boundary of the Byrd, subsequently the Lawrence and Hicks, Lawrence & Co. parcels, which included Lot 17, probably was the Hudson River shoreline, shown within the western part of Block 1997 (Tract Report 55 [1806]; Tract Report 44 [1835]; Tract Report 71 [1835]; Holmes 1878). The ponds, as shown on maps, varied from being located in the street in front of Lot 17 to being 175 feet west of Lot 17. The "Old Pond" label at the foot of West 130th Street on an 1879 map may indicate a combination of a pond system draining into the Hudson or a filling-in of the cove at the foot of West 130th Street (Bromley). At any rate, the water drained down gently westward to the river in and along Block 1997, west of Broadway.

The valley formed by the 125th Street fault in the bedrock provided a gentle downward-sloping plane to the Hudson River and a sandy bight that allowed sailing vessels, barges, and other

water craft to load and unload produce and products from the seventeenth century onward (Washington 2002:I). During the Revolution the project area appeared to be the only hospitable landing area for a great distance along the west coast of Manhattan as it was a low lying area between what is known today as Morningside Heights to the south and Washington Heights to the north (British Headquarters Map 1782).

In 1790, Peter and Elizabeth Waldron and their three slaves lived on land that included the project sites on Blocks 1986 and 1997 (Ancestry.com: 1790 Federal Census; City Register General Statements for Blocks 1986 and 1997). In 1795 Elizabeth Waldron, Peter's widow, sold their property to two merchants, Joseph Byrd and John Barrow, who lived and worked in federal downtown New York City (City Register: Liber 54, Pages 405-408; Tract Reports 33 and 55; Duncan 1795; Longworth 1800-1807).

In 1806, the village of Manhattanville was established in the Bloomingdale Road/Old Broadway and Manhattan Street/West 125th Street area. The village's street grid was laid somewhat parallel and perpendicular to Harlem Cove on the Hudson River, which was at a 45-degree angle (northeast/southwest) to the grid system being devised by the Commissioners between 1807 and 1811 (Holmes 1878).

During the nineteenth century the suburban village was the location of country estates, residential housing, commercial establishments, manufacturing enterprises, religious, educational, and other institutions, as well as a transportation hub that linked water travel with that of the stagecoaches, streetcars, and the railroad (Washington 2002:9; Photographs 3 and 4). Early landowners who established the village—Jacob Schieffelin, John Lawrence, and Thomas Buckley—gave the streets their names. These streets would, by and large, succumb to the Commissioners' grid plan. Only vestigal streets from the 1806 period, including West 125th Street (formerly Manhattan Street), West 126th Street, (Lawrence Street, east of Broadway outside of the Project Area), and Old Broadway (Bloomingdale Road) still remain today.

As Manhattan moved uptown, with present day Broadway being cut through the area in 1872 and the IRT's elevated subway opening above it in 1904, Manhattanville, as a distinct village, lost some of its autonomy and became engulfed in the urban large-scale and high-rise development of the twentieth century.

IV. RESEARCH RESULTS

Block 1986, Lot 30 (Figures 2 and 3; Photographs 1 and 3) variously appeared as a meadow atop a southern prong of the exposed bedrock of Washington Heights (Viele 1855 and 1865). It was the location of a colonial estate (Gabriel 1953:7; Holmes 1878), then a nineteenth-century estate (Dripps 1852; Holmes 1878; City Register grantor/grantee index; Gabriel 1953:6; Washington 2002:45), after which it became part of the Manhattan College campus and the churchyard of the Church of the Annunciation at Manhattanville, both built in 1853 (Gabriel 1953:7-8; Dripps 1867; Bromley 1879; Robinson 1884; Bromley 1897). The church building was razed some time after 1897 (Bromley), but before the Manhattan College's north/south, L-shaped, multi-storied building facing Broadway was torn down in 1926 (New York Public Library 1981:752, A4).

Describing the block's landscape of a century earlier, at the time just before the construction of the college and church buildings, Brother Casimir Gabriel, in a centennial monograph, wrote that the building site "In miniature, ... was a topographical wonder with solid hillocks of granite [sic], fertile valleys, a few small groves and one or two plane areas" (Gabriel 1953:7). At the time neither West 131st Street nor Broadway had been cut through (Gabriel 1953:7; Washington 2002:45). One of the flat areas was behind both the college building and the east/west long axis of the church, whose tower and steeple stood at the eastern end of the building facing what would become West 131st Street (Photographs 4 and 5). This area served as a public space, an interior-block courtyard, with an allee of trees behind the tower/steeple end of the church (Photograph 5).

The New York State Rural Cemetery Act of 1847, together with the 1851 moratorium in New York City for new cemeteries, made it highly unlikely that there was a burial ground in the churchyard of the Church of the Annunciation at Manhattanville, constructed in 1853 (Snyder 1881; Inskeep 2000). The 1847 Act encouraged the establishment of the suburban cemeteries in Brooklyn and Queens, where, in all likelihood, those connected with the church would have been buried. The church's death registers began in 1853 (WPA 1940:60), the year the church was built and two years after the regulation against new cemeteries in New York City went into effect. The only possible area for a churchyard burial ground would have been the relatively level area behind and to the north of the church in the public space and Manhattan College campus courtyard. In any case, the nineteenth-century churchyard stood on bedrock at least 15 feet above street level, a poor location for a cemetery. Today, only a small section, mid-block, on the western part of Block 1986 is above street level; the majority of the project site on Lot 30 is at street level (Photograph 1), indicating that the bedrock was blasted to drop the elevation to street level.

An estate complex stood on the site prior to Manhattan College's purchase of the property from Newbold Lawrence (Gabriel 1953, Washington 2002)). The college adaptively reused two of the buildings for an academic year, then razed them in conjunction with the construction of a brick multi-storied academic building. Sometime after 1926 the brick building, which faced Broadway, was razed and the exposed bedrock blasted so that the area aligned with street level.

Block 1997, Lot 17 (Photographs 2 and 3) shifted from being part of a colonial farm/estate to becoming part of the growing real estate investment market as the Village of Manhattanville was established in 1806 (1795:Liber 54, Pages 405-408; 1807: Liber 76, Page 36 in Tract Report 33; 1795: Liber 54, Page 405 in Tract 55; Duncan 1795; Longworth 1800-1807). The early nineteenth-century conveyances for the not-yet-lotted Block 1997 (but, through Tract Report maps, can be identified as parcels that include Lot 17) site a meadow, a brook, and the North [Hudson] River as surveying points (1795, Liber 54, Page 405; 1807: Liber 76, Page 36 in Tract Report 33). Thus, the Tract Report maps mirror the conveyance text and substantiate the map evidence from the later nineteenth-century published maps (Holmes 1878; Bromley 1879; Robinson 1885; Bromley 1897).

Merchants John Barrow and Joseph Byrd, who carried on a business together, lived and worked downtown on Pearl Street (Longworth's). They and their wives, Rebecca and Elizabeth, respectively, after purchasing the property from widow Elizabeth Waldron in 1795, conveyed their parcels back and forth to each other in the first decade of the nineteenth century. These parcels, which included Lot 17, were "passed through various conveyances to John Lawrence in 1833 and 1835, respectively" (City Register: General Statement of Early Title for Block 1997). Lawrence had been purchasing property in the area at least as early as 1804.

Druggist John Lawrence, who, like Barrows and Byrd, worked and lived downtown. Yet Lawrence and other family members maintained country estates in the project area. (Two of the buildings on Newbold Lawrence's estate served, for a short time, as a "school house and dormitories" for the nascent Manhattan College being built in 1853 on Block 1986 [Gabriel 1953:6,7]. Cornelius E. Lawrence had a house one block north of Lot 17, Block 1997 [Dripps 1852]. Another Lawrence estate, which was outside the project area, included substantial buildings and outbuildings on the crest of the bluff, along with an elaborate roadway system, encompassing several blocks north of West 134th Street [Dripps 1852]). The Lawrence kin had both business and residential addresses downtown (Longworth's 1804-1807, 1826-1828, 1832, 1833, 1835, 1838; Doggett's 1849, 1850; Rode's 1853; Trow's 1852, 1853, 1854, 1857, 1858).

There were several conveyances among Lawrences in the 1850s for land that included what would become Lot 17. In 1864, there was a conveyance between John B. Lawrence, M.D. (and his wife Mary Adeline Lawrence) of the City of Brooklyn and Edward Jones (Liber 914, Page 208-210; Liber 1358, Pages 38-41) for five parcels that included Lot 17, which, as of then, was not built upon. The five lots conveyed in 1864 sold for a total of \$3500.00. Edward Jones, stationer, had a business address on John Street and a home at the foot of West 130th Street (Trow's 1864). Period maps indicate structures at the foot of West 130th Street as well as at the western end of Block 1997, but not on Lot 17 (Dripps 1867; Perris 1877).

Lot 17 continued to be an absentee-owned parcel of land. In 1877, George H. Peck, agent (later listed as either storage or clerk), both purchased and sold Lot 17 in fee simple (his business address was not listed, but his home address was Kingsbridge [Trow's]). Subsequent directories put his business address downtown and his home in Brooklyn. The next fee simple owner of Lot 17 was James Pettit, builder, carpenter, and fireman, who lived in the Manhattanville neighborhood. Between 1876 and 1889, he lived either on Lawrence (West 126th) Street or Manhattan (West 125th) Street (Trow's).

Finding that the conveyances were providing little detail concerning any of the structures that might have been conveyed, tax assessment records were reviewed, yielding only a small amount of information before 1878. In 1856, Lot 17 was one of 12 lots listed under Dr. John B. Lawrence's name, and the total assessment was \$2000.00 (Tax Assessments Reel 69, Page 165). Thus, in 1856, the assessed value averaged \$166.00 per lot, and, in 1864, the selling price per lot averaged \$700.00. In 1877, even though conveyances listed James Pettit as the owner in fee simple, John B. Lawrence's name continued on the tax assessment rolls for Lot 17. That year Lot 17 was listed as being 25 by 99 feet, with no structure, with a real estate value of \$800.00. The total corrected value of his Lots 15-21 was \$4000.00 (Tax Assessments Reel 82, Page 226).

As early as 1852 the eastern end of the block, near the railroad and the piers along the Hudson, was being randomly developed (Dripps 1852). Fifteen years later little more in the way of development occurred anywhere on Block 1997 (Dripps 1867). Yet, surrounding blocks housed factories, a paint manufactory, lumber and coal yards, as well as stables, all enterprises that were part of the burgeoning Village of Manhattanville. Ten years later, the eastern half of the block continued to show little or no development, although immediately to the west of Lot 17, there was a "planning [sic] mill" (Perris 1877).

In 1878, one house, three stories high, was listed on Lot 17 and valued at \$2000.00 (Tax Assessments Reel 84, Page 226). Throughout its history the 20 by 30 foot house stood on a 25 by 99 foot lot, with an alleyway on the eastern side of the lot leading to the open rear yard (Bromley 1879, 1897, 1916, 1921, 1927, 1934, 1955; Sanborn 1975, 1985). The tax assessment for Lot 17 remained the same through 1894, and, from 1879 on, the house was listed as being brick. After 1890 the tax assessment surname listing for Lot 17 read "unknown" rather then John B. Lawrence.

At least as early as 1879 there was a fire hydrant at either end of Block 1997 on the West 130th Street side (Figure 3). By 1884 there was a hydrant in place between Lots 17 and 16, right in front of the brick three-story house, single-family house. Public utilities were probably put in West 130th Street along the south side of Block 1997 in anticipation of the development of the eastern end of the block, which began at the end of the 1870s. Thus, in all likelihood, there was little need for the residents of Lot 17 to have a well or cistern or privy or any other shaft feature into which they could deposit any refuse and other cultural material.

In the second decade of the twentieth century, there was a complete build-out of the block (Bromley 1916). The buildings on both sides of West 130th Street between Broadway and Twelfth Avenue, housed a pencil works, a sawmill, a stable for street-cleaning horses, a dye works, a worsted mill, and a railway depot (Bromley 1897). Processing and manufacturing complexes as well as businesses involved with transportation and city services surrounded the residence and the tenants on Lot 17. The house stood on the lot until 1985, after which time it became the uneven-surfaced, street-level parking lot it is presently.

V. SENSITIVITY

Both Lot 30 on Block 1986 and Lot 17 on Block 1997 have low sensitivity: Lot 30 for a potential cemetery and estate dwelling site and Lot 17 for domestic site nineteenth-century archaeological remains. On Lot 30 of Block 1986, there is low sensitivity for human remains to be at the location of the former site of the Church of the Annunciation at Manhattanville and its churchyard to the north, which were constructed in 1853, two years after the New York City Ordinance against new burial grounds went into effect. There is also low sensitivity for any residential resources. The churchyard and contiguous Manhattan College campus courtyard, including the adaptively reused early nineteenth century estate complex's two buildings, stood on exposed bedrock, which has subsequently been blasted away.

On Lot 17 of Block 1997, the combination of the initial development of the house lot as a residence in 1878 with the potential access to public utilities at least as early as 1879 makes it unlikely that the residents of the dwelling had such shaft features as a cistern, well, or privy in their open backyard. Historical archaeology relies on subsurface deposits to help in the understanding of the daily lives of the people living and working on the site. In the absence of these shaft features, there is no need to consider further archaeological investigation.

Consequently, since both sites possess low sensitivity for historic period resources, no further archaeological analysis is warranted.

VI. CONCLUSION AND RECOMMENDATIONS

Historical Perspectives, Inc. concludes that there is very low sensitivity for either nineteenth-century human- or domestic-site remains on the two lots that the City of New York Landmarks Preservation Commission flagged for archaeological review as a part of their review process for the Proposed Project. Therefore, Historical Perspectives, Inc. recommends that no further documentary research or archaeological field testing be done concerning Lot 30 on Block 1986 and Lot 17 on Block 1997 in Manhattanville.

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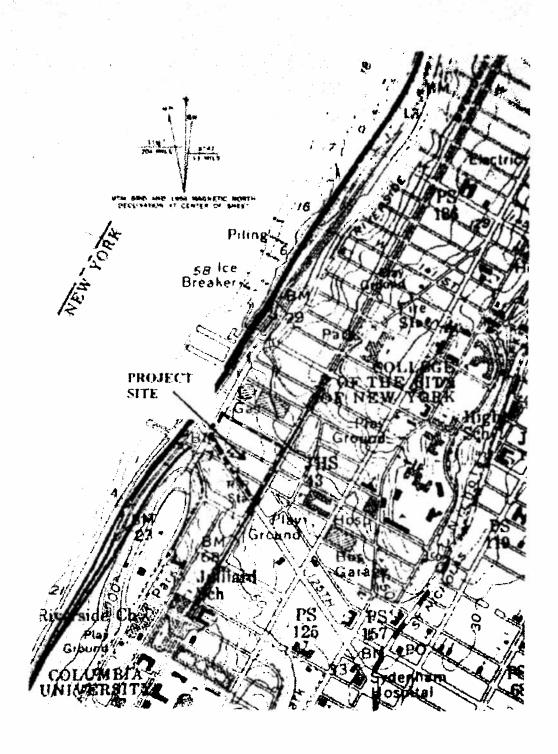


Figure 1: USGS 1979, Central Park Quadrangle

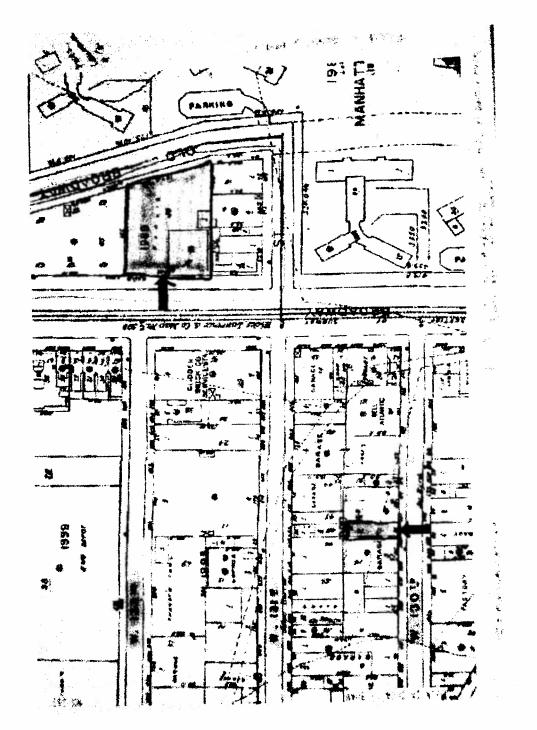


Figure 2: Sanborn 2002

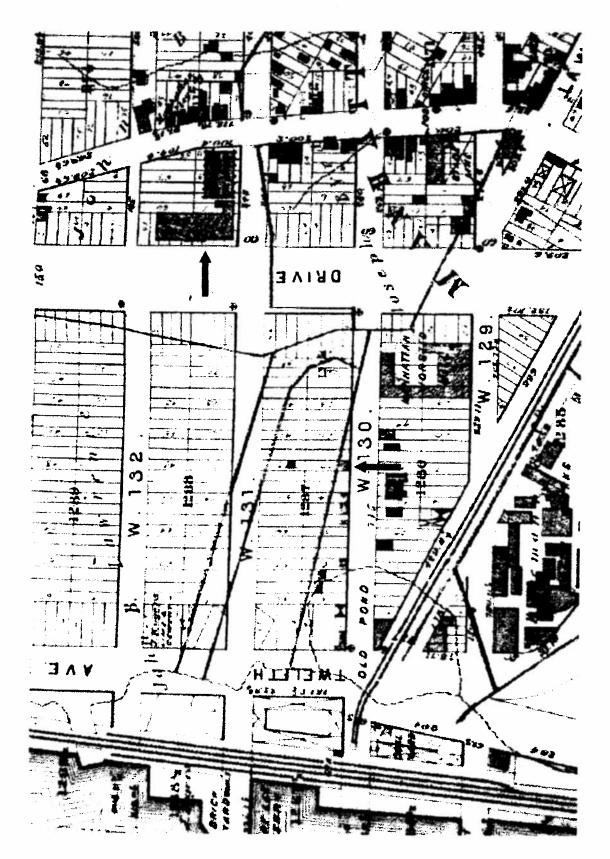
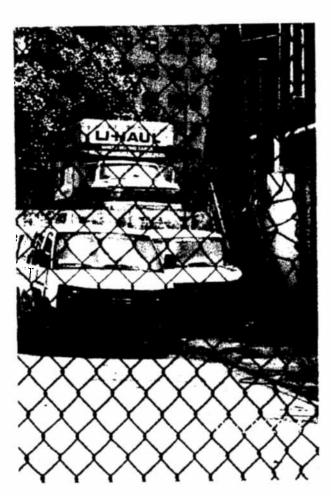


Figure 3: Bromley 1879



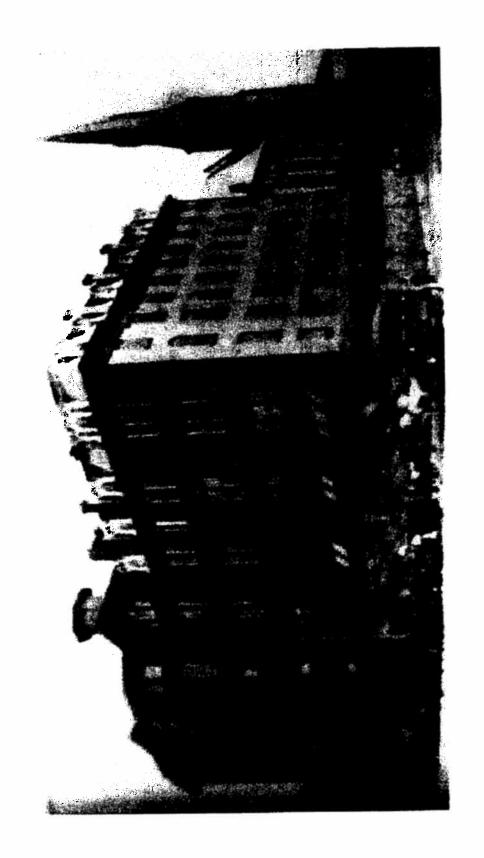
Photograph 1a: Block 1986, Lot 30, looking east from Broadway



Photograph 1b: Block 1986, Lot 30, looking northwest from Old Broadway



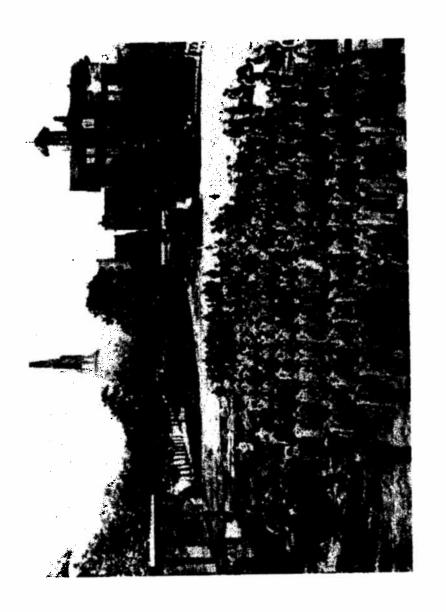
Photograph 2: Block 1997, Lot 17, looking north from West 130th Street



Photograph 3: Block 1986, looking northeast from Broadway and West 131st Street (Washington 2002:45)



Photograph 4: Block 1997 area, looking east from the Hudson River (Gabriel 1953:14)



Photograph 5: Block 1986, looking south within the middle of the block (Gabriel 1953:43)

APPENDIX D.2

HISTORIC RESOURCES AGENCY CORRESPONDENCE



Environmental and Planning Consultants

117 East 29th Street New York, NY 10016 tel: 212 696-0670 fax: 212 213-3191 www.akrf.com

Fax Cover Sheet

TO: Gina Santucci	FROM: Claudia Cooney
COMPANY: NYC LPC	DATE: October 27, 2004
FAX NUMBER: 212-669-7817	PHONE NUMBER: 212-340-9745
PHONE NUMBER: 212-669-7822	TOTAL NO. OF PAGES, INCLUDING COVER: 4
RE: Manhattanville Rezoning in We	est Harlem: EDC/LA-CEQR-M
☐ URGENT ☐ PLEASE REVIEW ☐	PLEASE COMMENT PLEASE REPLY
potential resources identified in the Project Arc should be entitled "Properties within the Project the Study Area."	2004 providing LPC's determinations of eligibility for ea and Study Area. As we discussed, Table 1 ct Area." Table 2 should be entitled "Properties in Please let me know if you have any questions at
Regards,	
Dande	

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

	EDC	/LA-CEQR-M	08/16/04
	PROJ	ECT NUMBER	DATE RECEIVED
PROJECT	MAN	HATTANVILLE/W.HARLEM R	
	[]	No architectural significance	
	[]	No archaeological significance	
		Designated New York City Landmark or Withi	in Designated Historic District
		Listed on National Register of Historic Places	
	[X]	Appears to be eligible for National Register Li Designation as noted.	sting and/or New York City Landmark
	[X]	May be archaeologically significant; requesting	ng additional materials

COMMENTS

See attached comments.

cc: SHPO

10/20/04

DATE

As per the applicant's documents dated 8/13/04, the LPC is in receipt of Table 1, a list of properties within the Academic Mixed-Use project area that appear to meet criteria for listing on the State/National Registers (S/NR), and Table 2, properties that appear eligible for the S/NR in the larger rezoning area. LPC determinations are as follows.

Table 1, Properties within the Academic Mixed-Use project area

Map Ref. #	Name	Address	LPC eligible	S/NR eligible
1	Studebaker Building	615 W. 131 St.	X	X
А	Claremont Theater Building	3338 Broadway	Х	X
В	Former Lee Brothers Storage Building	at Riverside Drive Viaduct	X	X

Table 2, Properties in the larger rezoning area

Map Ref. #	Name	Address	LPC eligible	S/NR eligible
1	Former Sheffield Farms Dairy	632 W. 125 St.	X	Х
4	Former Engine Co. No. 37	509 W. 126 St.	×	Х

142-

			7	<u> </u>
7	New York Public Library, George Bruce Branch	518 W. 125 St.	X	X
8	P.S.43, Manhattanville JHS	509 W. 129 St.		X
11	Riverside Drive & Riverside Park Scenic Landmark North	North of 135 St.	X	X
12	Riverside Drive/135 through 136 Sts. Historic District		X	X

G:\CEQRER\manhattanville rezoning.at.wpd

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

EDC	/LA-CEQR-M	09/03/04
PROJECT	NUMBER	DATE RECEIVED

PROJECT

MANHATTANVILLE/W.HARLEM R

No architectural significance

[] No archaeological significance

Designated New York City Landmark or Within Designated Historic District

Listed on National Register of Historic Places

Appears to be eligible for National Register Listing and/or New York City Landmark Designation

May be archaeologically significant; requesting additional materials

COMMENTS

"Table 1, Subdistrict A:Academic Mixed Use Area, Properties that do not appear to meet NR listing and NYCL designation in the Project Area", received 9/3/04. The LPC concurs with these findings of no significance.

"Table 2, Subdistricts B, C, and Other Area Properties that do not appear to meet criteria for NR listing and NYCL designation", received 9/3/04. The LPC concurs with these findings of no significance.

cc: SHPO

hua Janhecy 10/19/04

OHE DA-

DATE



518-237-8643

October 7, 2004

Claudia Cooney **Technical Director** Allee King Rosen & Fleming 117 East 29th Street New York, New York 10016-8022

Proposed Manhattanville Rezoning and Academic Mixed-Use Development RE: Historic Resource Evaluations New York County, NY 04PR04734

Dear Ms. Cooney:

Thank you for requesting the comments of the State Historic Preservation Office concerning your project's potential effect upon historic resources. My site visit of August 18th was most helpful in evaluating the properties. I have reviewed the documentation which you provided in your submissions in accordance with the provisions of Section 14.09 of the New York State Historic Preservation Act of 1980.

We concur with the Area of Potential Effect (Historic Resources Study Area) for this project. It is our understanding that you are seeking our opinion on the National Register eligibility of the potential historic resources within the area of potential effect.

Properties in Academic Mixed-Use Area - Subdistrict A

The following properties in Subdistrict A (Table 1 "List of Potential Historic Resources in Project Area: Academic Mixed-Use Area," August 12th submission) appear to be National Register-eligible. Resource Evaluations for these properties are enclosed.

- Studebaker Building, 615 West 131st Street
- Former Warren Nash Service Center Building, 3280 Broadway
- West Market Diner, 659 West 131st Street
- Hudson Moving & Storage Building, 3229 Broadway
- Riverside Drive Viaduct, above Twelfth Ave. from St. Claire Place to West 135th St.

While the following properties in Subdistrict A (Table 1 "List of Potential Historic Resources in Project Area: Academic Mixed-Use Area," August 12th submission) are of local historic interest they do not appear to meet the National Register criteria.

- Former Glidden Buick Company Service Station, 3261-3275 Broadway
- Former Chevrolet Building, 3300-3318 Broadway
- Despatch Moving & Storage Building, 3243-3247 Broadway
- Factory building at 3251-3255 Broadway
- Former Third Avenue Railway Company Car House, 637-643 West 125th Street
- Remnants of the original Manhattanville street pattern at West 125th Street

In addition, the State Historic Preservation Office concurs with your "List of Properties That Do Not Appear to Meet the Criteria for NR Listing - Subdistrict A: Academic Mixed-Use Area" (Table 1 of September 2nd submission).

Properties in Subdistricts B, C, and Other Area

The three following buildings in Subdistricts B, C, Other Area (Table 2, August 12th submission) appear to meet the National Register criteria. Resource Evaluations for these properties are enclosed.

- Claremont Theater, 3338 Broadway
- Former Lee Bros. Storage Building, 571 Riverside Drive
- Former NY Central Railroad Substation, 2350-2362 12thAvenue/700 West 134th St.

The following historic resources (Table 2, August 12th submission) are of local historical interest do not appear to meet the National Register criteria.

- Meat packing buildings, 2284-2286 Twelfth Avenue
- Third Avenue Railway Co. turn around tracks, Twelfth Avenue south of 125th Street
- Remnants of the original Manhattanville street pattern, 125th Street west of Twelfth Avenue.

In addition, we concur with your "List of Properties That Do Not Appear to Meet the Criteria for NR Listing – Subdistricts B, C, and Other Area" (Table 2 of September 2nd submission).

Potential Resources in the Study Area

We have reviewed the documentation for the Potential Historic Resources in the Study Area. (These are properties that fall outside Subdistricts A, B, C, and Other Area but within the Study Area Boundary.)

Based on the documentation provided the following properties appear to meet the National Register criteria. Resource Evaluations for these properties are enclosed.

- Whitestone Apartments, 45 Tiemann Place
- Former Sheffield Farms, 632, West 125th Street
- Two apartment buildings at 189 and 191 Claremont Avenue
- Former Engine Co. No. 37, 509 West 126th Street
- Former McDermott-Bunger Dairy, 527-535 West 125th Street
- New York Public Library, George Bruce Branch, 518 West 125th Street
- P.S. 43/Manhattanville JHS, 509 West 129tth Street
- Seven residential buildings, 505-517 West 135th Street
- Riverside Drive and Riverside Park Boundary Increase
- Riverside Drive/135-136th Streets Historic District

The former stable at 508 West 126th Street and the former NY Central Railroad Freight House at 701 West 135th Street are of historic interest but do not meet the National Register criteria.

Comments on Archaeology

Doug Mackey of our Archaeology Unit concurs with LPC's comments concerning the archaeological potential for Lots Block 1997 Lot 17 and Block 1986 Lot 30.

If you have any questions regarding this review, please call me at (518) 237-8643, ext. 3266. Please refer to the Project Review (PR) number noted above in any correspondence.

Sincerely, Kathlan A Howe

Kathleen A. Howe

Historic Preservation Specialist

enc: Resource Evaluations

cc: Rachel Shatz, ESDC



518-237-8643

RESOURCE EVALUATION

	: 10/6/04	STAFF: Kathy Howe	
PROPERTY: Studebaker Building		MCD: Manhattan	
ADDF	RESS: 615 West 131 st Street	COUNTY: New York Co.	
PROJ	ECT REF: 04PR04734	USN: 06101.015089	
	NOTO DE DESCRIPTION DE LA COMPENSA DEL COMPENSA DE LA COMPENSA DEL COMPENSA DE LA COMPENSA DEL COMPENSA DE LA COMPENSA DEL COMPENSA DE LA COMPENSA DEL COMPENSA DE LA COMPENSA DE LA COMPENSA DEL COMPENSA DE LA COMPENSA DEL COMPE	(1914-1919) (1919-1919) (1919-1919) (1919-1919) (1919-1919) (1919-1919) (1919-1919) (1919-1919) (1919-1919) (19	
1.	Property is individually listed on SR/NR: name of listing:		
	Property is a contributing component of a SR/NR of name of district:	listrict:	
II.	Property meets eligibility criteria.		
Property contributes to a district which appears to meet eligibility criteria.			
	Pre SRB: Post SRB: SRB date		
Criteria for Inclusion in the National Register:			
A. 🛭	Associated with events that have made a significant coof our history;	ontribution to the broad patterns	
в. 🗌	Associated with the lives of persons significant in our	past;	
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. 🗌	D. Have yielded, or may be likely to yield information important in prehistory or history.		
CTAT	FEMENT OF SIGNIFICANCE:		

The Studebaker Building at 615 West 131st Street in Manhattanville is a Moderne style industrial building designed by W.S. Ferguson and erected in 1923. The six-story brick building with white terra cotta ornament meets Criterion C as an outstanding example of 20th century Moderne design. The building appears to retain a high degree of integrity of design, materials, and craftsmanship. Many of the original multi-light industrial steel sash remain providing profuse light to the interior spaces.

The Studebaker Building was one of many auto-related businesses that sprang up in Manhattanville prior to World War II. It meets Criterion A at the local level for its association with the industrial history of New York. The building originally served as a large-scale automobile service station by the Studebaker Corporation and was later used as a sales and service headquarters. The historical significance of the building continued after 1937 when it was altered to house a Borden's Farm Products Milk Plant.



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau

Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 10/6/04	STAFF: Kathy Howe		
PROPERTY: former Warren Nash Service Center Building	MCD: Manhattan		
ADDRESS: 3280 Broadway	COUNTY: New York Co.		
PROJECT REF: 04PR04734	USN: 06101.015090		
I. Property is individually listed on SR/NR: name of listing:	પ્રત્યાં કર્યા હતી. તેને તેને તેને તેને તેને તેને તેને તેન		
Property is a contributing component of a SR/NR district: name of district:			
II. Property meets eligibility criteria.			
Property contributes to a district which appears to meet eligib	ility criteria.		
Pre SRB: Post SRB: SRB date			
Criteria for Inclusion in the National Register:			
A. Associated with events that have made a significant contribution t of our history;	o the broad patterns		
B. Associated with the lives of persons significant in our past;			
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. Have yielded, or may be likely to yield information important in pre	history or history.		
STATEMENT OF SIGNIFICANCE: The former Warren Nash Service Center Building at 3280 Broadway in Manhattanville was built in 1927 to the designs of Frank S. Parker as an automobile service station for the Warran Nash Motor Corporation. The six-story			

the former Warren Nash Service Center Building at 3280 Broadway in Manhattanville was built in 1927 to the designs of Frank S. Parker as an automobile service station for the Warran Nash Motor Corporation. The six-story reinforced concrete building meets Criterion C as an intact example of early 20th century industrial design. It is historically significant under Criterion A for its association with Manhattanville's "Automobile Row." Warren-Nash occupied the building up until the early 1940s.

The building is historically significant at the national level for housing one of the laboratories for the Manhattan Project which developed the atomic bomb. Columbia University's SAM Laboratory, which was contracted by the National Research Defense Committee, conducted research in this building from at least 1943 to 1945. The offices of J. Robert Oppenheimer and Brigadier Leslie Grove are believed to have been located on the upper floor.



518-237-8643

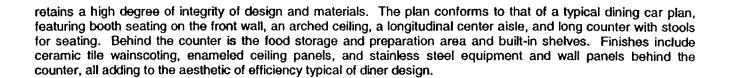
RESOURCE EVALUATION

		AT THE HEALTH STEEL
PROP ADDF	: 10/6/04 PERTY: West Market Diner RESS: 659 West 131 st Street IECT REF: 04PR04734	STAFF: Kathy Howe MCD: Manhattan COUNTY: New York Co. USN: 06101.015093
1.	Property is individually listed on SR/NR: name of listing:	
	Property is a contributing component of a SR/NR district: name of district:	
11.	☑ Property meets eligibility criteria.	
	Property contributes to a district which appears to meet elig	ibility criteria.
	Pre SRB: Post SRB: SRB date	
Crite	ria for Inclusion in the National Register:	
A. 🗆	Associated with events that have made a significant contribution of our history;	n to the broad patterns
в. 🗌	Associated with the lives of persons significant in our past;	
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;		
D. [] Have yielded, or may be likely to yield information important in	prehistory or history.

STATEMENT OF SIGNIFICANCE:

The West Market Diner at the corner of West 131st Street and Twelfth Avenue is comprised of two connected diner buildings. The original diner car, now at the east end, was installed on the site in 1921 by the P.J. Tierney Company of New Jersey. The western diner car was placed here by the Mountain View Diner Company in 1948. The 1921 diner car was converted for use as a kitchen after the installation of the 1948 diner. The diner was in operation up until recently. It meets Criterion C as an example of streamlined metal diner design typical of the period.

The exterior of the entire structure was covered with the present non-historic brick cladding sometime after 1973. Probes of the exterior of the 1948 dining car recently taken by Building Conservation Associates suggest that the original painted sheet metal cladding appears to be intact and in good condition. The interior of the 1948 diner car





518-237-8643

RESOURCE EVALUATION

DATE: 10/6/04	STAFF: Kathy Howe	
PROPERTY: former Sheffield Farms stable	MCD: Manhattan	
(present Hudson Moving & Storage Building)		
ADDRESS: 3229 Broadway	COUNTY: New York Co.	
PROJECT REF: 04PR04734	USN: 06101.015094	
Property is individually listed on SR/NR: name of listing:	ang iyanci an ayan dan an a	
Property is a contributing component of a SR/NR district: name of district:		
II. Property meets eligibility criteria.		
Property contributes to a district which appears to meet eligi	bility criteria.	
Pre SRB: ☐ Post SRB: ☐ SRB date		
Criteria for Inclusion in the National Register:		
A. Associated with events that have made a significant contribution of our history;	to the broad patterns	
B. Associated with the lives of persons significant in our past;		
C. Embodies the distinctive characteristics of a type, period or meth represents the work of a master; or possess high artistic values; significant and distinguishable entity whose components may lace	or represents a	
D. Have yielded, or may be likely to yield information important in prehistory or history.		

STATEMENT OF SIGNIFICANCE:

The six-story brick and stone clad building at 3229 Broadway was built in 1903 to the designs of Frank Rooke. Research indicates that the building served as a stable for Sheffield Farms, a large milk manufacturer. Sheffield Farms had a milk plant nearby at 632 West 125th Street, also designed by Rooke. The building is historically significant under Criterion C for its association with the local milk manufacturing industry which had an important presence in Manhattanville during the early 20th century. Rooke's distinctive façade features rusticated pilasters, a modillioned cornice, and slate roof.



518-237-8643

RESOURCE EVALUATION

DATE: 10/7/04	STAFF: Kathy Howe		
PROPERTY: Riverside Drive Viaduct	MCD: Manhattan		
ADDRESS: Riverside Dr. above Twelfth Ave. between	COUNTY: New York Co.		
St. Clair Place and West 135 th Street			
PROJECT REF: 04PR04734	USN: 06101.015133		
Property is individually listed on SR/NR: name of listing:	(1,4)		
Property is a contributing component of a SR/NR district: name of district:			
II. Property meets eligibility criteria.			
Property contributes to a district which appears to meet eligit	pility criteria.		
Pre SRB: Post SRB: SRB date			
Criteria for Inclusion in the National Register:			
 A.	to the broad patterns		
B. Associated with the lives of persons significant in our past;			
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. Have yielded, or may be likely to yield information important in prehistory or history.			
ANALYSIS OF CLOSUES AND			

STATEMENT OF SIGNIFICANCE:

The Riverside Drive Viaduct, designed by engineer F. Stewart Williamson, was completed in 1901. This impressive engineering structure is designed to carry the Riverside Drive roadway over Manhattanville, which is in a valley. The 80 foot high viaduct is supported on 130-foot girders and semicircular arches featuring steel filigree work. The structure was built three years prior to the IRT Viaduct on Broadway (NR-listed). The Riverside Drive Viaduct meets Criterion C as an important engineering structure in New York City. Its elegant design is also important as an expression of the City Beautiful movement. While the viaduct underwent a major rehabilitation, completed in 1987, and the original viewing balconies have been removed it retains sufficient integrity of design, setting, materials, workmanship, feeling, and association.



518-237-8643

RESOURCE EVALUATION

PROF	: 10/6/04 PERTY: Claremont Theater Building RESS: 3338 Broadway RECT REF: 04PR04734	STAFF: Kathy Howe MCD: Manhattan COUNTY: New York Co. USN: 06101.015099		
i.	Property is individually listed on SR/NR: name of listing:			
	Property is a contributing component of a SR/NR district: name of district:			
n.	Property meets eligibility criteria.			
	Property contributes to a district which appears to meet eligib	oility criteria.		
	Pre SRB: Post SRB: SRB date			
Criter	Criteria for Inclusion in the National Register:			
A. 🛭	Associated with events that have made a significant contribution of our history;	to the broad patterns		
в. 🗌	Associated with the lives of persons significant in our past;			
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;				
D. 🗌	Have yielded, or may be likely to yield information important in pr	ehistory or history.		
STAT	EMENT OF SIGNIFICANCE:			

The former Claremont Theater Building is located on the east side of Broadway between 134th and 135th Streets in Manhattanville. The two and three-story terra cotta and brick clad building was erected in 1914 to the design of architect Gaetan Ajello. The multi-purpose building housed a 1,500-seat movie theater, a dance hall, a rooftop garden, and stores on Broadway. The Claremont displays many of the character-defining features of the Italian Renaissance style including arched window openings, pilasters, and swags. It is historically significant for its association with the cultural entertainment history of the neighborhood.



518-237-8643

RESOURCE EVALUATION

	DATE	: 10/6/04	STAFF: Kathy Howe	
	PROPERTY: former Lee Brothers Storage Building ADDRESS: 571 Riverside Drive		MCD: Manhattan COUNTY: New York Co.	
	PROJECT REF: 04PR04734		USN: 06101.015100	
	1.	Property is individually listed on SR/NR: name of listing:	91 41 41 41 41 41 41 41 41 41 41 41 41 41	
		Property is a contributing component of a SR/NR district: name of district:		
	H.	Property meets eligibility criteria.		
		Property contributes to a district which appears to meet eligibility criteria.		
		Pre SRB: Post SRB: SRB date		
Criteria for Inclusion in the National Register:				
A. Associated with events that have made a significant contribution to the broad patterns of our history;			to the broad patterns	
 B. Associated with the lives of persons significant in our past; C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction; 				
		or represents a		
	D. 🗌	Have yielded, or may be likely to yield information important in p	rehistory or history.	
		THE ST ALCEUTION OF ALCEUTION		

STATEMENT OF SIGNIFICANCE:

The former Lee Brothers Storage Building at 571 Riverside Drive was built in 1927 to the designs of Chicago architect George Kingsley. The upper portion of the façade which projects above the Riverside Drive Viaduct is an elegant neoclassical design done in terra cotta while the lower portion, beneath the Viaduct, is a functional concrete façade devoid of ornament. The temple-fronted building is an outstanding example of Neoclassical design that conceals its very utilitarian purpose as a storage warehouse.



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau

Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 10/6/04			STAFF: Kathy Howe	
PROPERTY: New York Central Substation No. 11		on No. 11	MCD: Manhattan	
ADDRESS:	2350-2362	Twelfth Avenue		COUNTY: New York Co.
	(a.k.a. 700	West 134th Stre	et)	
PROJECT R	EF: 04PR04	734		USN: 06101.015103
I. Prop	perty is individu name of listing	ally listed on SR/Ni	a muunimma alaman ka	NAMES (AN AN A
☐ Prop	erty is a contril name of distric	•	of a SR/NR district:	
II. 🛛 Prop	erty meets elig	jibility criteria.		
☐ Prop	erty contribute	s to a district which	appears to meet eligib	ility criteria.
	Pre SRB:	Post SRB:	SRB date	
Criteria for I	nclusion in	the National Ro	egister:	
A. Associat		that have made a	significant contribution	to the broad patterns
B. Associated with the lives of persons significant in our past;				
represen	its the work of a	a master; or posses	a type, period or methoss high artistic values; one components may lack	r represents a
D. Have yie	elded, or may b	e likely to yield info	rmation important in pro	ehistory or history.

STATEMENT OF SIGNIFICANCE:

The former New York Central Substation No. 11 at 2350-2362 Twelfth Avenue in Manhattanville was built in 1931 for the New York Central Railroad as part of its electrification network to power its trains. This three-story, Art Deco brick building meets Criterion C as an intact example of typical substation design. Identifying characteristics of substation design include the rectangular plan, masonry construction, large window openings (now boarded up) for ample ventilation and natural light. It is not known if original equipment is intact at the interior.



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau

Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 10/7/04 STAFF: Kathy Howe			
PROPERTY: Whitestone Apartments MCD: Manhattan			
ADDRESS: 45 Tiemann Place COUNTY: New York Co.			
PROJECT REF: 04PR04734 USN: 06101.015132			
Property is individually listed on SR/NR: name of listing:	NATALANALANALANALANALANALANALANALANALANA		
Property is a contributing component of a SR/NR district: name of district:			
II. Property meets eligibility criteria.			
Property contributes to a district which appears to meet eligible	gibility criteria.		
Pre SRB: Post SRB: SRB date			
Criteria for Inclusion in the National Register:			
A. Associated with events that have made a significant contribution to the broad patterns of our history;			
B. Associated with the lives of persons significant in our past;			
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. Have yielded, or may be likely to yield information important in prehistory or history.			
STATEMENT OF SIGNIFICANCE:			

The Whitestone Apartments at 45 Tiemann Place meets Criterion C as a distinctive architectural design by the prolific apartment house architect Emery Roth (1871-1947). The six-story brick building is notable for its fine craftsmanship, ornamentation, and use of materials (brick, terra cotta, copper). The lively façade is articulated by tall brick piers between the window bays, colorful terra cotta ornament in geometric shapes, and a fanciful copper parapet.



New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services Bureau Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 10/6/04 PROPERTY: former Sheffield Farms Dairy Company ADDRESS: 632 West 125 th Street PROJECT REF: 04PR04734		STAFF: Kathy Howe MCD: Manhattan COUNTY: New York Co. USN: 06101.015105		
l.	Property is individually listed on SR/NR: name of listing:			
	Property is a contributing component of a SR/NR district: name of district:			
H.	☑ Property meets eligibility criteria.			
	Property contributes to a district which appears to meet eligibility criteria.			
	Pre SRB: Post SRB: SRB date			
Criteria for Inclusion in the National Register:				
 Associated with events that have made a significant contribution to the broad patterns of our history; 				
В. 🗌	B. Associated with the lives of persons significant in our past;			
c. ⊠	C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. 🗌	Have yielded, or may be likely to yield information important in	prehistory or history.		

STATEMENT OF SIGNIFICANCE:

The former Sheffield Farms Dairy Company building was designed by architect Frank Rooke in 1907. In 1934 a three-bay addition, which matches the original design, was built to the west. The building is built of brick with an elegant classical-inspired white terra cotta façade. Sheffield Farms was one of New York City's large milk manufacturers in the early 20th century. This building housed pasteurization and bottling facilities for milk that was distributed on the Upper West Side and Harlem. Of special note at the interior of the building is the original showroom with its Guastavino tile vaulted ceiling. Sheffield Farms Dairy Company meets both Criterion C for its architectural design and Criterion A for its association with the New York's dairy industry.



518-237-8643

RESOURCE EVALUATION

DATE	E: 10/6/04	STAFF: Kathy Howe	
PROPERTY: apartment buildings MCD: Manhattan			
ADDRESS: 189 and 191 Claremont Avenue COUNTY: New York Co.			
PROJECT REF: 04PR04734 USN: 06101.015109			
1.	Property is individually listed on SR/NR: name of listing:	NENETENETENETENETENETENETENETENETENETEN	
	Property is a contributing component of a SR/NR district: name of district:		
II.	☑ Property meets eligibility criteria.		
	Property contributes to a district which appears to meet eligibility criteria.		
	Pre SRB: Post SRB: SRB date		
Criteria for Inclusion in the National Register:			
A. Associated with events that have made a significant contribution to the broad patterns of our history;			
в. 🗌	B. Associated with the lives of persons significant in our past;		
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. 🗌	Have yielded, or may be likely to yield information important in p	prehistory or history.	

STATEMENT OF SIGNIFICANCE:

The apartment buildings at 189 and 191 Claremont Avenue were designed by Denby & Nute in 1906 for developer James O'Brien. Like much of this area, they were built in response to the completion of the IRT subway line. The apartments have limestone bases with brick facades above. Of special note is the attic story which is ornamented with a geometric pattern of diamonds and squares. The buildings meet Criterion C for their elegant architectural design and possess a high degree of integrity of materials, design and craftsmanship.



518-237-8643

RESOURCE EVALUATION

DATE: 10/6/04 PROPERTY: former Engine Co. No. 37		STAFF: Kathy Howe MCD: Manhattan	
ADDRESS: 509 West 126th Street		COUNTY: New York Co.	
PROJECT REF: 04PR04734 USN: 06101.015106		USN: 06101.015106	
l.	Property is individually listed on SR/NR: name of listing:		
	Property is a contributing component of a SR/NR district: name of district:		
II.	Property meets eligibility criteria.		
Property contributes to a district which appears to meet eligibility criteria.			
	Pre SRB: Post SRB: SRB date		
Criteria for Inclusion in the National Register:			
A. 🛛	 A. Associated with events that have made a significant contribution to the broad patterns of our history; 		
B. Associated with the lives of persons significant in our past;			
	C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;		
D. 🗌	D. Have yielded, or may be likely to yield information important in prehistory or history.		

STATEMENT OF SIGNIFICANCE:

Former Engine Company No. 37 at 509 West 126th Street was built in 1881 to the designs of Napoleon LeBrun, who served as the NYC Fire Department's chief architect from 1880 to 1895. This three-story, Romanesque Revival style, red brick building meets Criterion C as a typical example of firehouse design of the period. It is also historically significant under Criterion A for its association with the history of firefighting in New York City. Although the ground floor openings have been blocked in and second and third floor windows partially enclosed, the façade retains many of the original design features including fluted pilasters and decorative shields at the base, stringcourses of brownstone, and a modillioned cornice.



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau

Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 10/7/04 PROPERTY: former McD ADDRESS: 527-535 Wc PROJECT REF: 04PR04	est 125 th Street	STAFF: Kathy Howe MCD: Manhattan COUNTY: New York Co. USN: 06101.015110	
I. Property is individuname of listing Property is a contril	buting component of a SR/NR district:		
II.		ibility criteria.	
Criteria for Inclusion in the National Register:			
A. Associated with events of our history;	that have made a significant contribution	n to the broad patterns	
B. Associated with the live	s of persons significant in our past;		
represents the work of a	e characteristics of a type, period or methal master; or possess high artistic values; shable entity whose components may lac	or represents a	
D. Have yielded, or may be	e likely to yield information important in p	prehistory or history.	

STATEMENT OF SIGNIFICANCE:

The former McDermott-Bunger Dairy at 527-535 West 125th Street was built in 1904 to the designs of Joseph H. McGuire. The three-story brick building with rusticated stone base has large door openings to either side of the main block which provided access to delivery wagons. The building is historically significant under Criterion A for its association with Manhattanville's once thriving dairy industry. The area's easy access to rail, road, and river transportation made it attractive for the development of industry. Sheffield Farms, another large dairy in the neighborhood, took over the McDermott-Bunger operation by 1929.



518-237-8643

RESOURCE EVALUATION

DATE: 10/7/04	STAFF: Kathy Howe		
PROPERTY: New York Public Library, George Bruce Branch MCD: Manhattan			
ADDRESS: 518 West 125 th Street	COUNTY: New York Co.		
PROJECT REF: 04PR04734 USN: 06101.015111			
Property is individually listed on SR/NR: name of listing:			
Property is a contributing component of a SR/NR district: name of district:			
II. Property meets eligibility criteria.			
Property contributes to a district which appears to meet eligibility criteria.			
Pre SRB: ☐ Post SRB: ☐ SRB date			
Criteria for Inclusion in the National Register:			
A. Associated with events that have made a significant contribution to the broad patterns of our history;			
B. Associated with the lives of persons significant in our past;			
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. Have yielded, or may be likely to yield information important in	prehistory or history.		

STATEMENT OF SIGNIFICANCE:

The George Bruce Branch of the New York Public Library was designed by Carrere & Hastings and opened its doors in 1916. The three-story brick building with white marble base meets Criterion C as an outstanding example of Georgian Revival civic architecture in New York City. This elegant building displays a high degree of integrity of design, materials, and craftsmanship. Typical characteristics of the Georgian Revival style used in the design include the entrance with tall fanlight and oculus windows above, the keystoned lintels, and the dentilled comice.



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau

Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 10/7/04	STAFF: Kathy Howe		
PROPERTY: Manhattanville Junior High School/P.S. 43	MCD: Manhattan		
ADDRESS: 509 West 129th Street	COUNTY: New York Co.		
PROJECT REF: 04PR04734	USN: 06101.015113		
I. Property is individually listed on SR/NR: name of listing:	\$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$		
Property is a contributing component of a SR/NR district: name of district:			
II. Property meets eligibility criteria.			
Property contributes to a district which appears to meet eligib	ility criteria.		
Pre SRB: Post SRB: SRB date			
Criteria for Inclusion in the National Register:			
A. Associated with events that have made a significant contribution to the broad patterns of our history;			
B. Associated with the lives of persons significant in our past;			
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. Have yielded, or may be likely to yield information important in prehistory or history.			
STATEMENT OF CICARGO			

STATEMENT OF SIGNIFICANCE:

The Manhattanville Junior High School (P.S. 43) was designed by Walter C. Martin, Superintendent of School Buildings at the NYC Board of Education. The four-story red brick building with limestone trim was built between 1932 and 1937, replacing an earlier school on the site. The school meets Criterion C as an intact example of 1930s-era institutional design with simplified Collegiate Gothic details including a central tower, a pointed arch entrance, and stone pinnacles at the parapets.



518-237-8643

RESOURCE EVALUATION

PROP ADDR	ERTY: Houses at 505-517 West 135 th Street ESS: 505-517 West 135 th Street ECT REF: 04PR04734	STAFF: Kathy Howe MCD: Manhattan COUNTY: New York Co. USN: 06101.015115	
I.	 □ Property is individually listed on SR/NR: name of listing: □ Property is a contributing component of a SR/NR district: name of district: 		
11.	 ☑ Property meets eligibility criteria. ☑ Property contributes to a district which appears to meet eligible. ☑ Pre SRB: ☐ Post SRB: ☐ SRB date 	pility criteria.	
Criteria for Inclusion in the National Register:			
A. Associated with events that have made a significant contribution to the broad patterns of our history;			
B. Associated with the lives of persons significant in our past;			
	C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;		
D. 🗌	D. Have yielded, or may be likely to yield information important in prehistory or history.		

STATEMENT OF SIGNIFICANCE:

The row of seven tenements at 505-517 West 135th Street were built in 1906 to the designs of George Frederick Pelham by builder Louis Cohen. This cohesive row of Beaux-Arts style buildings appears to be eligible under Criterion C as potential historic district for embodying the distinctive characteristics of middle-class tenement design in New York City. The buildings are new-law tenements, erected following the passage of a reform law in 1901. The construction of these buildings reflects the history of development in this section of Manhattan, especially development relating to the construction of the city's first subway lines which opened in 1904. The buildings retain a high degree of integrity of materials, design, and craftsmanship.



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 10/8/04	STAFF: Kathy Howe	
PROPERTY: Riverside Drive and Riverside Park	MCD: Manhattan	
Boundary Increase (North End)		
ADDRESS: Riverside Dr. from W. 135 th St. to W. 158 th St.	COUNTY: New York Co.	
PROJECT REF: 04PR04734	USN: 06101.015116	
I. Property is individually listed on SR/NR: name of listing:	(1.81.81.81.81.81.81.81.81.81.81.81.81.81	
Property is a contributing component of a SR/NR district: name of district:		
II. Property meets eligibility criteria.		
Property contributes to a district which appears to meet eligibility criteria.		
Pre SRB: Post SRB: SRB date		
Criteria for Inclusion in the National Register:		
A. Associated with events that have made a significant contribution to the broad patterns of our history;		
B. Associated with the lives of persons significant in our past;		
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;		
D. Have yielded, or may be likely to yield information important in prehistory or history.		

STATEMENT OF SIGNIFICANCE:

The portion of Riverside Park and Riverside Drive that is listed on the National Register begins at 72nd Street and continues north to St. Clair Place, approximately 129th Street, where it is effectively terminated by the Manhattanville fault. The northern section of the park and drive was not included in the original nomination though it appears to meet the NR criteria in the areas of landscape design and recreation. This section extends from 135th Street up to approximately 158th Street. The original nomination could be amended to include this section of the park provided the appropriate documentation is prepared.



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

		OTAFF. Vother House	
DATE: 10/7/04		STAFF: Kathy Howe	
PROF	PERTY: Riverside Drive – West 135 th – 136 th Streets	MCD: Manhattan	
	Historic District		
ADDF	IESS: various	COUNTY: New York Co.	
PROJ	ECT REF: 04PR04734	USN: various	
1.	Property is individually listed on SR/NR: name of listing:		
	Property is a contributing component of a SR/NR district: name of district:		
II.	☐ Property meets eligibility criteria.	•	
	Property contributes to a district which appears to meet eligibility criteria.		
	Pre SRB: Post SRB: SRB date		
Crite	ria for Inclusion in the National Register:		
 A. Associated with events that have made a significant contribution to the broad patterns of our history; 			
в. 🗌	B. Associated with the lives of persons significant in our past;		
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;			
D. 🗌	D. Have yielded, or may be likely to yield information important in prehistory or history.		

STATEMENT OF SIGNIFICANCE:

Based on the documentation provided the Riverside Drive – West 135^{th} – 136^{th} Streets Historic District consists of a cohesive group of buildings on the blocks between Riverside Drive and Broadway. The potential district meets Criterion C for its collection of high quality residential buildings erected between 1906 and 1909 by many of New York's prominent architectural firms including Neville & Bagge, Schwartz & Gross, Emery Roth, and Bernstein & Bernstein. The majority of the buildings are examples of the Beaux Arts style. The neighborhood is historically significant under Criterion A in the area of community development as a result of the completion of the IRT subway line.

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St, 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

	EDO	C/LA-CEQR-M	09/17/04
	PRO	JECT NUMBER	DATE RECEIVED
PROJECT	<u>MAI</u>	NHATTANVILLE/W.HARLEM R	
	-	No architectural significance	
	[]	No archaeological significance	
	[]	Designated New York City Landmark or Within	Designated Historic District
	[]	Listed on National Register of Historic Places	
	11	Appears to be eligible for National Register List Designation	ing and/or New York City Landmark
	[X]	requesting	additional materials ·
COMMENTS	Stud	LPC is in receipt of the "Cemetery and Do y for Manhattanville Rezoning in West Ha ared by Historical Perspectives, Inc and d	rlem New York New York
	The l	LPC concurs that there are no further arcl se submit 2 bound copies for archival dist	naeological concerns. ribution.

09/23/04

DATE

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

EDC	/LA-CEQR-M	08/16/04
	CT NUMBER	DATE RECEIVED
11000		
MAN	HATTANVILLE/W.HARLEM R	
	No architectural significance	
[]	No archaeological significance	
[]	Designated New York City Landmark or Wit	hin Designated Historic District
[]	Listed on National Register of Historic Place	
[]	Appears to be eligible for National Register Designation	Listing and/or New York City Landmark
ΓΥΊ	May be archaeologically significant; reques	ting additional materials

COMMENTS

PROJECT

The LPC is in receipt of the draft scope of work for EIS dated 8/10/04. The text is acceptable for architectural resources.

cc: SHPO

08/24/04

DATE

SIGNATURE

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

LA-CEQR-M

EDC/

EDC	LA-CEQR-M	08/19/04
PROJ	ECT NUMBER	DATE RECEIVED
MAN	HATTANVILLE/W.HARLEM R	
 -	No architectural significance	•
[]	No archaeological significance	
[]	Designated New York City Landmark or Within	Designated Historic District
[]	Listed on National Register of Historic Places	
[]	Appears to be eligible for National Register Lis Designation	ting and/or New York City Landmark

OMMENTS

PROJECT

Archeology review only. The EIS Draft Scope of Work appears to be acceptable. The project was previously reviewed on 6/16/04 and the following comments still apply. LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from 19th Century occupation on two lots within the study area (B 1997 L 17 - residential) (B 1986 L30 ? possible burial ground and residential). Accordingly, the Commission recommends that an archaeological documentary study be performed for these locations only, to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary (see CEQR Technical Manual 2001). There are no further archeological concerns for the other blocks and lots in the study area. m0edc0MANHATTANVILLEinWharlemREZONE08232004AYz

May be archaeologically significant; requesting additional materials

08/23/04

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

EDC/	LA-CEQR-M	06/04/04
PROJECT NU	MBER	DATE RECEIVED

PROJECT

MANHATTANVILLE/W.HARLEM R

No	architectural	significance
----	---------------	--------------

- [] No archaeological significance
- Designated New York City Landmark or Within Designated Historic District
- Listed on National Register of Historic Places
- Appears to be eligible for National Register Listing and/or New York City Landmark Designation
- [X] May be archaeologically significant; requesting additional materials

COMMENTS

Archaeology review only

LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from 19th Century occupation on two lots within the study area (B 1997 L 17 - residential) (B 1986 L30 - possible burial ground and residential). Accordingly, the Commission recommends that an archaeological documentary study be performed for these locations only, to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary (see CEQR Technical Manual 2001). There are no further archeological concerns for the other blocks and lots in the study area.

G:\aaERceqr\m0edc0MANHATTANVILLEinWharlemREZONE06072004N IzFSO.doc

SIGNATURE 06/16/04

DATE

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

EDC /	06-DCP032M	05/40/00
PROJECT NUMBE	:p	<u>05/12/06</u>
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PROJECT

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- [] No architectural significance
- [X] No archaeological significance
- [X] Designated New York City Landmark or Within Designated Historic District
- [X] Listed on National Register of Historic Places
- [X] Appears to be eligible for National Register Listing and/or New York City Landmark
- [] May be archaeologically significant; requesting additional materials

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COMMENTS

The LPC is in receipt of the Historic Resources chapter of the DEIS dated 5/1/06. Regarding the renovation of the former Warren Nash Service Station (S/NR eligible) and the Studebaker Building (LPC and S/NR eligible), please copy LPC on all SHPO documents. In order to complete the review, a copy of the full DEIS, including the mitigation chapter and the shadow and contextual analysis, should be provided to LPC for comment.

cc: SHPO

06/07/06

DATE

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St, 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

EDC/06-DCP032M

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- May be archaeologically significant; requesting additional materials

COMMENTS

For archaeological resources only:

The LPC is in receipt of the DEIS dated May 1, 2006. In the agency's findings of 9/23/2004, the LPC noted that it did not have any archaeological concerns for the project area as then envisioned which is noted in the DEIS. In the event that any additional blocks and lots are added, the LPC should receive the amended block/lot list for review and comment.

cc: SHPO

05/15/06

DATE

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

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THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St, 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

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cc: SHPO

05/15/06

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THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

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COMMENTS

The LPC is in receipt of the PDEIS chapters for: Chapter 21, "Construction" dated 8/31/06; Chapter 23, "Mitigation", dated 8/31/06; and "Alternatives", dated 8/31/06.

Global change: the Former Sheffield Farms Dalry no longer appears eligible for LPC designation.

The revised Shadow study for the St. Mary's P.E. Church (LPC listed) is still outstanding, and possible mitigation needs to be explored in the Mitigation chapter.

Chapter 23, "Mitigation": Paragraph 40 regarding construction protection for the LPC designated Claremont Theater, please note that TPPN 10/88, "Procedures for the Avoidance of Damage to Historic Structures", issued by the NYC DOB, still provides protection to the landmark, irregardless of an asof-right or project- related action. The text should reflect this.

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THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

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COMMENTS

The LPC is in receipt of the revised historic resources chapter of the DEIS dated 8/14/06, and the shadows chapter dated 8/15/06. Comments are as follows.

May be archaeologically significant; requesting additional materials

The Mitigation chapter still needs to be provided for review and comment. The St. Mary's Protestant Episcopal Church, Parish House, and Sunday School Complex at 517-523 W. 126 St. (LPC and S/NR) should be added to the shadow study analysis. It is a sun-sensitive historic resource within the project study area. A construction protection plan should be provided for the Claremont Theater (LPC) at 3320 Broadway.

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BIGNATURE DATE

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THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

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COMMENTS

Chapter 23, "Mitigation", dated 10/3/06.

Page 23-4. Remove lines 26 through 34. Replace with: "DOB's "Technical Policy and Procedure Notice (TPPN) #10-88 will provide protection measures for these structures should construction occur on the adjacent soft sites. Therefore, the potential for construction period damage to these resources will be eliminated, and no adverse impacts are anticipated."

Chapter 8, "Historic Resources", dated 9/28/06.

Page 8-10. Table 8-1. The Former Sheffield Farms Dairy does not appear eligible for LPC designation.

Page 8-23. Remove lines 20 through 28. Replace with: "DOB's "Technical Policy and Procedure Notice (TPPN) #10-88 will provide protection measures for these structures should construction occur on the adjacent soft sites. Therefore, the potential for construction period damage to these resources will be eliminated, and no adverse impacts are anticipated."

Page 8-31. Line 19. Please provide the supporting shadow analysis for the statement that the Old Broadway Synagogue and St. Mary's Episcopal Church are not affected by incremental project shadows.

272

Chapter 7, "Shadows", dated 9/19/06.

Page 7-5. Please provide the supporting shadow analysis for the statement that the Old Broadway Synagogue and St. Mary's Episcopal Church are not affected by incremental project shadows.

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THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

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COMMENTS

The LPC is in receipt of Chapter 7, "Shadows", Chapter 8, "Historic Resources" and Chapter 23, "Mitigation", of the DEIS, all dated 10/26/06. Comments are as follows.

Chapter 7, "Shadows". Provide Figure 7-2.
Chapter 8, "Historic Resources". Table 8-1. The Former Sheffield Farms Dairy does not appear eligible for LPC designation.
Chapter 23, "Mitigation". LPC notes that the text regarding construction protection for Riverside Drive viaduct, former Central Railroad Substation #11, and the Claremont Theater, a designated NYC landmark, has been removed. These properties may be affected by the redevelopment of projected development sites in Subdistrict B and in the Other Area east of Broadway. The text should be restored as written in Chapter 8, "Historic Resources", lines 25 through 38 on page 8-22.

GULLA SUTUCES 11/01/06
BIGNATURE DATE

Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development

Table 8-1 Architectural Resources in the Project Area and Study Area

Ref.	Name	Address	Block/ Lat	S/NR	S/NR- Eligible	NYCL	NYCL- Eligible
	ect Area						
	Manhattan Valley IRT viaduct	Broadway from West 122nd to West 135th Streets	N/A	х		Х	
2	125th Street IRT Subway Station	Broadway and Wast 125th Street	N/A	X	<u> </u>	ļ	
3	Studebaker Building	615 West 131st Street	1998/17		X ²	<u> </u>	X _ä
4	Former Warren Nash Service Station building	3280 Broadway	1986/85		Xs		
5	Former Sheffield Farms Stable	3229 Broadway	1998/34	X ^{2,4}		ļ <u>.</u>	
8	West Market Diner	659 West 131st Street	1998/1		X ²		
7	Riverside Drive viaduct	Above Twelfth Avenue	NVA		X ²		
9	Former New York Central Raikoed Substation No. 11	2350-2352 Twelfth Avenue/700 West 134th Street	2005/9		X ²		
9	Former Lee Brothers Storage Building	571 Riverside Drive	2001/1		X ² .		X3
10	Claremont Theater building	3320 Broadway	1988/1		X ²	X	L
	ly Area						
	Former Sheffield Farms Dairy	632 West 125th Street	1995/44		X3	Ī	- Deschi
12	Whitestone Apartments	45 Tiemann Place	1995/16		X ²		
13	Two six-story apartment buildings	189 and 191 Claremont Avenue	1994/66, 69		χ³		
14	Former McDermott-Bunger Dairy	527-535 West 125th Street	1982/10		X ²		
15	New York Public Library, George Bruce Branch	518 West 125th Street	1980/22		X _s		X3
16	St. Mary's P.E. Church, Parish House and Sunday School	517-523 W. 126th Street	1983/11		×	×	
17	Speyer School	514 West 126th Street	1982/36		X		
18	Old Broadway Synagogue	15 Old Broadway	1982/49	X		<u> </u>	<u> </u>
19	Former Engine Co. 37	509 West 126th Street	1983/20		X ²	1	X _d
20	P.S. 43, Manhattanville Junior High School	509 West 129th Street	1933/37		Xz		
21	Seven five-story residential buildings	505-517 West 135th Street	1988/ various		χ ²		
22	Riverside Park and Riverside Drive Scenic Landmark	West 72nd to West 129th Streets	1897/1	х		×	
23	Riverside Park and Riverside Drive Scenic Landmark North	North of West 135th Street	2101/55		X²		X ₃
24	Riverside Drive/West 135th-136th Streets Historic District	See Table 8-2	See Table 8-2		X ²		Хэ
25	Tiemenn Estate Historic District	Tiemann Place and West of Broadway	Various		Xg		

Notes:

Corresponds to Figure 8-1
5/NR eligibility determinations made by SHPO on October 7, 2004.
NYCL eligibility determinations made by LPC on October 2, 2004.
Titls_property_tag_subsequently_beg_listed_on_the_S/NR.

4

Eligibility determination made by SHPO on June 20, 2006.

N/A:

SR:

Not applicable

New York State Register of Historic Places.

National Register of Historic Places.

National Register of Historic Places.

Site has been found eligible for listing on the New York State and National Registers of Historic Places.

New York City Landmark.

LPC has determined that the site appears eligible for NYCL designation.

Site has been calendared for a public hearing or heard for designation by LPC. S/NR Eligible: NYCL: NYCL Eligible: Pending NYCL;





The portion of the building below the viaduct is functional rather than ornate, built of concrete with rectangular window openings (see Figure 8-6). The building continues today to serve as a storage warehouse.

Other Areas

The former Claremont Theater building (S/NR-eligible, NYCL [in part]) is a two- and three-story terra-cotta and brick-clad building designed by Gaetan Ajello in the Italian Renaissance style (see No. 10 in Figures 8-1 and 8-9). Occupying the east blockfront on Broadway between West 134th and West 135th Streets, it was creeted by the Wayside Realty Co., Inc. in 1914 to house a two-story theater, a dance hall on the second floor of the building, a roof garden, and stores on Broadway. The theater was a very early example of a New York City movie theater; Thomas Edison is reputed to have screened his On the Stroke of Twelve at the theater in 1915. Only the original two-story 1914 portion of the building on the southeast corner of West 135th Street and Broadway is an NYCL.

The northwest corner of the building has a chamfered corner, resulting in three façades at the intersection of Broadway and West 135th Street. White terra-cotta detailing includes a combination of shields, swags, finials, pilasters, and moldings. A movie camera detail is depicted in a shield at the cornice. The upper-story fenestration includes palazzo-inspired groupings of arched window openings with slender columns. Little of its original interior is believed to have survived intact, largely as a result of its many subsequent uses over time, which included an auto showroom and roller rink. The three-story brick-clad portion to the south of the theater is an addition from circa 1939 and is not an NYCL; the portion of the building south of the theater was originally one and two stories. It is currently occupied by a variety of commercial uses, including a furniture store.

STUDY AREA

There are 15 architectural resources located in the study area (see Table 8-1 and Figure 8-1). Of these resources, four—St. Mary's Protestant Episcopal Church, Speyer School, Old Broadway Synagogue, and Riverside Park and Riverside Drive Scenic Landmark—were previously known architectural resources. Ten resources, including a historic district north of West 135th Street, were determined by OPRHP (October 7, 2004) and/or LPC (October 2, 2004) to meet eligibility criteria for listing on the S/NR and/or designation as NYCLs, respectively, as part of their review of the Proposed Project. OPRHP determined that the Tiemann Estate Historic District is eligible for listing on the S/NR on June 20, 2006, based on information submitted by the West Harlem Community Preservation Organization.

Prentis Hall (S/NR-eligible, Prentis Hall (S/NR-eligible), formerly the Sheffield Farms Dairy, is a five-story building at 632 West 125th Street (see No. 11 in Figures 8-1 and 8-10). It was designed by Frank A. Rooke for the Sheffield Farms-Slawson-Decker Company to house pasteurization and bottling facilities for the production of milk that was delivered throughout the Upper West Side and Harlem. The original building, built in 1907, was about 135 feet wide; a three-bay addition to the west was built in 1934. The building is clad in glazed white terra-cotta; the color may have been chosen to symbolize the dairy's sanitary and hygienic conditions. The façade has classical ornament, including a dentillated string course above the third story, an egg-and-dart string course above the fourth story, and fasces framing the two triple-story openings (the central and westernmost openings) and the arches of the flanking windows. A showroom with a Guastavino tile vaulted ceiling, still extant, allowed the public to see the milk being processed.

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NYC LPC

PAGE 04

PAGE 01

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

01/30/07 **EDC** /06-DCP032M DATE RECEIVED PROJECT NUMBER

PROJECT .

MANHATTANVILLEW.HARLEM R

- [] No architectural significance
- No archaeological significance X
- Designated New York City Landmark or Within Designated Historic District [X]
- Listed on National Register of Historic Places X
- Appears to be eligible for National Register Listing and/or New York City Landmark Designation [X]
- May be archaeologically significant; requesting additional materials []

COMMENTS

The LPC is in receipt of the Historic Resources chapter of the DEIS dated 1/26/07. On page 8-10, Table 8-1, item 11, "Former Sheffield Farms Dairy" is not LPC eligible.

01/30/07

DATE



New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

January 30, 2007

Rachel Shatz Empire State Development Corporation 633 Third Avenue New York, NY 10017

Dear Ms. Shatz:

Re:

ESDC

Proposed Manhattanville Rezoning and Academic Mixed-Use Development

New York County 04PR04734

Thank you for requesting the comments of the Office of Parks Recreation and Historic Preservation (OPRHP) for the proposed Manhattanville Rezoning and Academic Mixed-Use Development in Manhattan. We have reviewed the Draft Environmental Impact Statement information submitted in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

Based upon our review, we offer the following comments/concerns:

- 1. The historic properties identified in Chapter 8 are correct.
- 2. We understand the National Register listed property known as the Former Sheffield Farms Stable located at 3229 Broadway is proposed for demolition. Demolition of a National Register listed property constitutes an Adverse Impact as defined by the State Historic Preservation Act. Pursuant to Section 428.8 of the Regulations, Chapter III, for Historic Preservation, we request a formal exploration of all prudent and feasible alternatives "to avoid or mitigate any adverse impact of the undertaking." The preservation and adaptive reuse of the building is our preferred alternative to demolition.
- 3. We understand that the National Register eligible West Market Diner at 659 West 131st Street is proposed for relocation. It would be our preference for the diner to be uncovered and restored in its current location. If this cannot be accomplished, we request the opportunity to review possible new locations, the proposed move and the rehabilitation plans for the structure.
- 4. As noted, our office has previously reviewed the rehabilitation of the National Register eligible Studebaker Building and has determined that the Studebaker project, as presented at that time, would have No Adverse Impact upon this historic building. Given the schematics of the proposed development around the Studebaker building, we would like to review the plans and specifications for proposed Columbia University Building #8 in Subdistrict A. It appears that Building #8 will abut the Studebaker building obscuring the Eastern façade. If this is the case, it is possible that Building #8 could have an Adverse Impact upon the historic Studebaker building.
- 5. We request site line studies with regard to the visual impact of the proposed development upon the Studebaker Tower and comice line. At a minimum we would like to see views from the street beneath the Viaduct at 131st Street and 132nd Street toward the building.
- 6. We are pleased to learn that the former Warren Nash Service Station building at 3280 Broadway is planned for rehabilitation. Our office would like to review the proposed plans and specifications for the rehabilitation when they are available. For your use we have attached the Resource Evaluation for the Warren Nash Service Station building. We note that the building may be of national significance for its use as the headquarters of the Association of Manhattan Project Scientists who worked on the atomic bomb during the Second World War. It seems possible that

- interior remnants from this era may still exist within the building and that they should be considered for preservation.
- 7. Given the proximity of historic structures to the proposed new construction, construction protection plans should be developed for properties within 90 feet of any construction. The plan should be developed in accordance with the requirements stipulated in the New York city Department of buildings "Technical Policy Procedure Notice #10/88" and the New York City Landmarks Preservation Commission guidelines described in "Protection Programs for Landmarked Buildings".
- 8. We note that there are no proposed plans for Subdistricts B and C at this time. When such plans become available we request the opportunity to review and comment on such plans. We note that Subdistrict B is directly adjacent to the National Register eligible Riverside Drive Viaduct and includes the National Register eligible former New York Central Railroad substation No. 11. We further note that Subdistrict C includes the National Register eligible former Lee Brothers Storage Building.
- 9. The proposed Columbia University development building #17 is directly across from National Register eligible Claremont Theater building. If the proposed development across the street at building #17 has the potential to impact this historic theater building, we would like to review the proposed development.

Thank you for your request. If you have any questions, I can be reached at (518) 237-8643, ext. 3282. Please refer to the SHPO Project Review (PR) number in any future correspondences regarding this project.

Sincerely.

Beth A. Cumming &Ac

But a.

Historic Preservation Specialist - Technical Unit

e-mail: Beth cumming@oprhp.state.ny.us

enc: Resource Evaluation - former Warren Nash Service Center Building





New York State Office of Parks, Recreation and Historic Preservation Historic Preservation Field Services Bureau Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

RESOURCE EVALUATION

DATE: 1/30/07	STAFF: Kathy Howe					
PROPERTY: former Warren Nash Service Center Building	MCD: Manhattan					
ADDRESS: 3280 Broadway	COUNTY: New York Co.					
PROJECT REF: 04PR04734 USN: 06101.015090						
	The Committee of the Co					
I. Property is individually listed on SR/NR: name of listing:						
Property is a contributing component of a SR/NR district: name of district:	'					
II. Property meets eligibility criteria.						
Property contributes to a district which appears to meet eligible	pility criteria.					
Pre SRB: Post SRB: SRB date						
Criteria for Inclusion in the National Register:						
 Associated with events that have made a significant contribution to the broad patterns of our history; 						
B. Associated with the lives of persons significant in our past;						
C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;						
D. \square Have yielded, or may be likely to yield information important in pr	ehistory or history.					
STATEMENT OF SIGNIFICANCE: The former Warren Nash Service Center Building at 3280 Broadway in Manhattanville was built in 1927 to the						

designs of Frank S. Parker as an automobile service station for the Warran Nash Motor Corporation. The six-story reinforced concrete building meets Criterion C as an intact example of early 20th century industrial design. It is historically significant under Criterion A for its association with Manhattanville's "Automobile Row." Warren-Nash occupied the building up until the early 1940s.

The building is historically significant at the national level for housing one of the laboratories for the Manhattan Project which developed the atomic bomb. Columbia University's SAM Laboratory, which was contracted by the National Research Defense Committee, conducted research in this building from at least 1943 to 1945. The offices of J. Robert Oppenheimer and Brigadier Leslie Grove are believed to have been located on the upper floor.

21:04

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NYC LPC

PAGE 02.

PAGE 01

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION 1 Centre St., 9N, New York, NY 10007 (212) 669-7700

ENVIRONMENTAL REVIEW

EDC /06-DCP032M 01/30/07 PROJECT NUMBER DATE RECEIVED

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COMMENTS

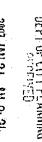
Amended determination. The LPC is in receipt of the Historic Resources chapter of the DEIS dated 1/26/07. The text is acceptable.

01/31/07

DATE

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FRAMINGRENIAT BEALCA DIA





440 Park Avenue South New York, NY 10016 tel: 212 696-0670 fax: 212 213-3191 www.akrf.com

April 13, 2007

Ms. Beth Cumming
Historic Preservation Specialist – Technical Unit
New York State Office of Parks, Recreation and Historic Preservation
Peebles Island, P.O. Box 189
Waterford, NY 12188-0189

Re: Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development

New York County 04PR04734

Dear Beth:

Further to your letter to Rachel Shatz of ESDC dated January 30, 2007 and as discussed on February 6, 2007, please find information on a number of the concerns you raised:

1. West Market Diner at 659 West 131st Street

Columbia University is studying potential locations for the diner to be relocated and exploring options for its restoration. As was discussed on February 6th and as described in Chapter 8, "Historic Resources" of the Preliminary Draft Environmental Impact Statement (PDEIS), the diner is composed of three distinct structures. These consist of the original 1921 wood diner at the north end of the site, the 1948 car fronting on West 131st Street, and a cinderblock addition to the east. The older wood car (on the north) has been substantially altered, with little left of its original fabric. It most recently served as the kitchen for the diner and possesses little historic integrity. The cinderblock addition does not contain significant interior architectural elements and its façade, as that of the 1948 Mountain View dining car, has been extensively remodeled through its recladding in brick in the 1970's. Unlike the 1921 car, however, the 1948 dining car appears to retain many original interior features, and it is possible that the 1948 diner's original metal cladding may still be present beneath the brick cladding. Therefore, Columbia proposes to relocate and to restore to the extent practicable the 1948 diner, but not the 1921 car or the cinderblock addition as these other two structures possess little integrity and architectural significance. Columbia would consult with the New York State Office of Parks Recreation and Historic Preservation (OPRHP) regarding potential relocation sites for the 1948 diner and plans for its rehabilitation.

2. Studebaker Building, 615 West 131st Street

The east façade of the Studebaker Building is a stucco party wall façade with some windows cut into it (see attached Figure 1). A 1909 Sanborn map indicates that the site immediately east of the Studebaker Building was formerly occupied by a two-story stable/carriage house, which was built up against the east façade of the Studebaker Building. This site is now occupied by a one-story industrial building. Since the east façade of the Studebaker Building does not contain any significant architectural elements and is essentially a blank wall, construction of the academic research building on Site 8 would not obstruct views to significant elements of the Studebaker Building. As such, development of Site 8 would not result in significant adverse visual or contextual impacts on the Studebaker Building.

3. Sightlines to the Studebaker Building

As described in Chapter 8 of the PDEIS, views of the west façade of the Studebaker Building, including its cornice and tower, would be obstructed from 12th Avenue beneath the viaduct by the proposed new building to be located on 12th Avenue between West 131st and West 132nd Streets. However, views of the Studebaker's north (West 132nd Street) and south (West 131st Street) facades, including the terracotta cornice lines, would remain visible from 12th Avenue at West 131st and 132nd Streets, as shown in Figure 2. These facades would also remain visible in views west from Broadway (see Figure 9-48 of Chapter 9, "Urban Design and Visual Resources" of the PDEIS).

The project has been designed to respect the historic and architectural character of the Studebaker Building. As described in Chapter 8, the proposed zoning text for the Academic Mixed-Use Area would waive the mandatory setbacks at grade for the West 131st/West 132nd Street block to preserve the streetwall established by the Studebaker Building. In addition, the proposed project would create new open spaces in the Academic Mixed-Use Area that would provide new publicly accessible locations to view the Studebaker Building and its tower. As shown in Figure 3, the proposed new midblock open area, which would traverse the blocks between West 133rd and West 125th Streets, would provide views of the west façade of the Studebaker Building and its tower. Views north from the proposed open area between West 129th and West 130th Streets would be especially dramatic, as views would terminate at the westernmost bay of the Studebaker Building's south (West 131st Street) façade, which includes the Studebaker logo at the terracotta-clad parapet, the two-story decorative terracotta entrance surround, and the Studebaker tower visible above the cornice line (see Figure 8-24 of Chapter 8).

Furthermore, the south and west facades of the Studebaker Building, including its cornice with the Studebaker logo and its tower would be visible from the proposed new square to be built between West 130th and West 131st Streets. The building's south façade would be visible from West 131st Street between Broadway and 12th Avenue, the north façade visible from West 132nd Street between Broadway and 12th Avenue, with a portion of the west façade visible from these streets in proximity to the proposed midblock open area. Figure 3 depicts the locations where it is expected that the Studebaker tower would be visible, in addition to the facades. Therefore, while views from under the viaduct on 12th Avenue would not include the west façade of the Studebaker Building and its tower, its primary north and south facades would remain visible on West 132nd and West 131st Streets and new publicly accessible open areas would be created where the public would enjoy views of this important resource and tower. Therefore, it is not expected that the proposed Academic Mixed-Use Development would result in significant adverse visual or contextual impacts on the Studebaker Building.

- 4. Subdistricts B, C and Other Areas are subject to the New York City Department of City Planning's proposed rezoning for Manhattanville. Columbia's proposed Academic Mixed-Use Development, which is subject to the General Project Plan (GPP) to be issued by ESDC and other state actions, would only occur in Subdistrict A. Therefore, the PDEIS has identified a reasonable worst-case development scenario that could result in the rezoning areas (Subdistricts B, C, and Other Areas) which included the identification of projected development sites, and assessed what the effects of that redevelopment could be. Since Columbia has no proposed development plans in Subdistricts B, C, and Other Areas, and ESDC's GPP will not include any redevelopment plans for these areas, there are no state-sponsored development plans in Subdistricts B, C, and Other Areas at this time that would require review by OPRHP.
- 5. Claremont Theater Building, 3320 Broadway

The academic research building proposed on Site 17 would be located across West 134th Street from the Claremont Theater. Since it is located within 90 feet of proposed construction, the Claremont Theater would be included in the Construction Protection Plan to be prepared for historic buildings as described in the PDEIS. Site 17 is presently occupied by a three story building. Development on Block 17 would result in a taller building with a larger footprint. However, it would not block views to the Claremont Theater that are not already obstructed by the existing three-story building on the site. Furthermore, the primary terracotta façade of the Claremont Theater is located at the chamfered corner of Broadway and 135th Street, which faces north/northwest away from Site 17 (which is located to the south). Views of this

decorative portion of the façade would remain unchanged in views south on Broadway, views north on Broadway in proximity to West 135th Street, and on 135th Street. Therefore, development of the proposed academic research building on Site 17 would not result in any significant adverse visual or contextual impacts to the Claremont Theater.

Please let us know if you require any further information or have any questions at (646) 388-9745.

AKRF, INC.

Claudia Cooney Vice President

cc:

Rachel Shatz ESDC

Geoffrey Wiener, Columbia University

Richard G. Leland, Esq., Fried, Frank, Harris, Shriver & Jacobson LLP

Mark Chertok, Esq., Sive, Paget & Rlesel, P.C.

David Karnovsky, Esq., New York City Department of City Planning





Ellot Spitzer Governor

Carol Ash Commissioner

New York State Office of Parks, Recreation and Historic Preservation

Historic Preservati in Field Services • Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

www.nysparks.cor 1

May 11, 2007

Claudia Cooney Vice President AKRF 440 Park Avenue! outh New York, NY 10 116

Re: ESDC

Proposed Manhattanville Rezoning and Academic Mixed-Use Development

New York (!ounty 04PR04734

Dear Ms. Cooney:

Thank you for providing the additional information requested for review by the Office of Parks Recreation and Historic Preservation (OPR HP) for the proposed Manhattanville Rezoning and Academic Mixed-Use Development in Manhattan. We have reviewed the information submitted in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.0:



Based upon our review we offer the following comments:

- 1. West Mark Din r at 659 West 131st Street We concur that the cinderblock addition and the original 1921 wood diner car possess little historic integrity and as such, we would not advocate for their restoration. We understand that the 1948 Mountain View dining car re ains much of its original interior features and that the original exterior metal cladding is still present beneath the brick exterior. As such, we concur that relocating and restoring the 1948 diner would be appropriate. We would like to be consulted on the proposed new location and rehabilitation of this structure. In this case, it is our opinion that moving the structure would not necessarily result an adverse impact to the 1948 diner car since diner cars were designed to be relocated as needed.
- 2. Studebaker Bui ding, 615 West 131^{xt} Street We concur that there would not be significant adverse visual or contextual impacts on the Stu lebaker building due to the proposed new construction.
- 3. Claremont Theter Building, 3320 Broadway We concur that the redevelopment of site 17 would not result in significant adverse visual or contextual impacts to the Claremont Theater.

Thank you for you request. If you have any questions, I can be reached at (518) 237-8643, ext. 3282. Picase refer to the SHPO Project Review (PI:) number in any future correspondences regarding this project.

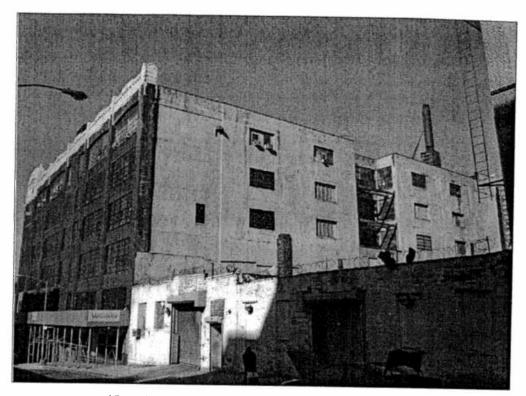
Sincerely,

Beth A. Cumming 706

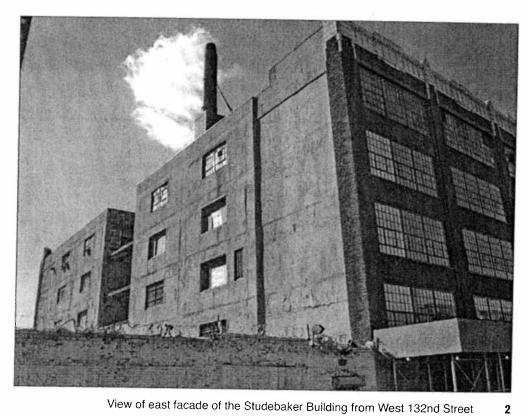
Historic Preservati in Specialist - Technical Unit

e-mail: Beth.cumn ing@oprhp.state.ny.us

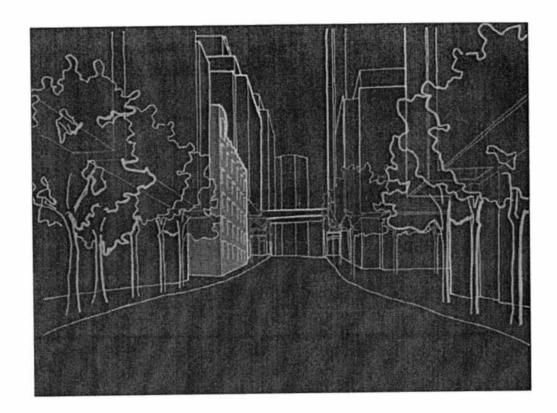
cc: Rachel Shatz - ESDC



View of east facade of the Studebaker Building from West 131st Street



View of east facade of the Studebaker Building from West 132nd Street





ILLUSTRATIVE PLAN SHOWN.

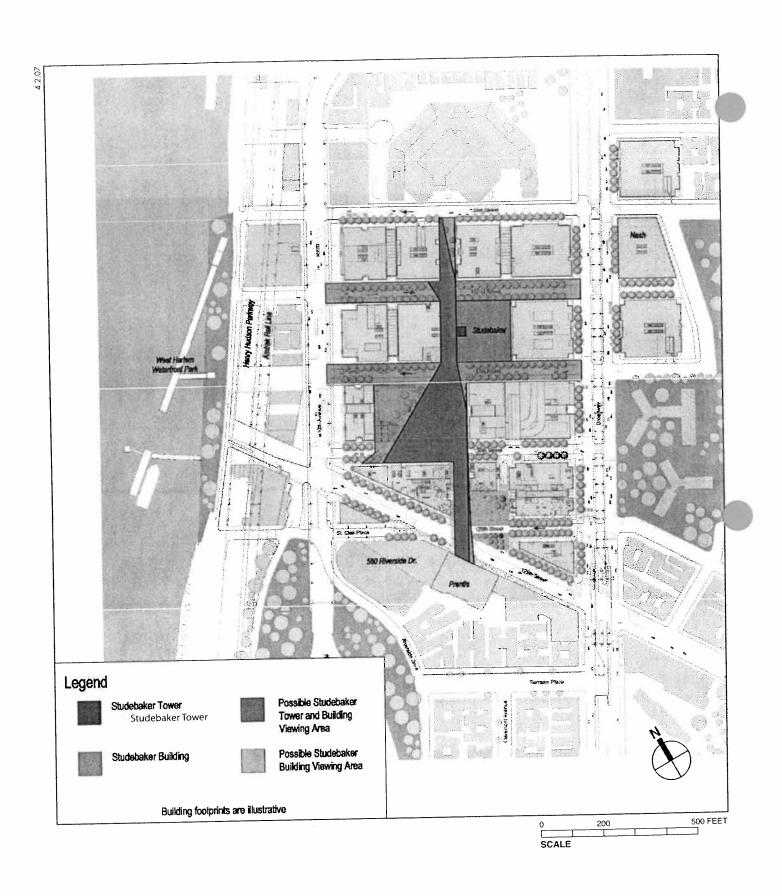


Figure 3

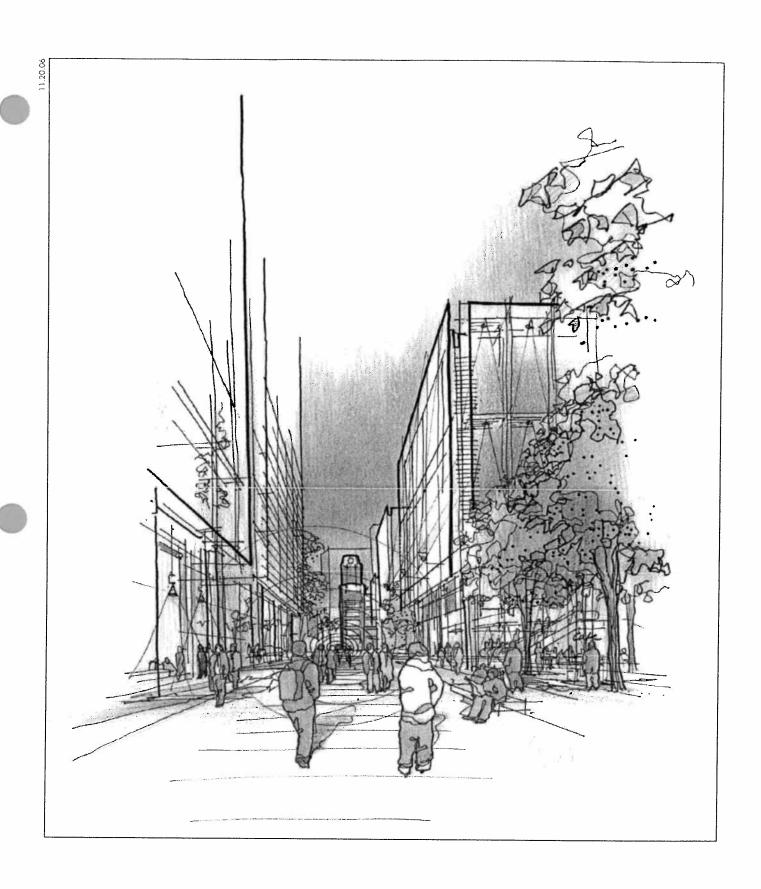


Figure 8-24
View from Open Space Between
West 129th and West 130th Streets
Toward Studebaker Tower

APPENDIX E NATURAL RESOURCES



APPENDIX E.1

Water Quality Modeling

A. INTRODUCTION

This appendix (prepared by HydroQual, Inc.) describes existing water quality conditions within the Project Area and evaluates the potential impacts on this resource by the Proposed Actions. In addition to assessing potential impacts from the Proposed Actions for the two analysis years of 2015 and 2030, it also assesses future water quality without the Proposed Actions.

The Proposed Actions would result in new institutional, commercial, and residential development within the Project Area. Potential increased discharges of treated effluent from the North River Water Pollution Control Plant (WPCP) and combined sewer overflows (CSOs) from the Proposed Actions are evaluated to assess potential impacts to water quality.

PRINCIPAL CONCLUSIONS

The Proposed Actions involve activities that may affect water quality in the Hudson River. Potential concerns would be increased discharge of treated effluent from the North River WPCP and increases in the number and intensity of CSOs.

The increased flow of domestic sewage to the North River WPCP from the Proposed Actions in 2015 is expected to be about 0.2 million gallons per day (mgd) and about 0.95 mgd in 2030. These volumes would not affect the ability of the North River WPCP to properly treat sewage and would not be expected to result in adverse impacts to Hudson River water quality.

As part of the Proposed Actions, new separate stormwater sewer lines are proposed for West 130th, West 131st and West 132nd Streets, between Broadway and Twelfth Avenue. This separate stormwater system would be fully operational by 2030. Although it is likely that the installation of all of the stormwater sewer lines would occur after 2015, it is possible that the stormwater line under West 130th Street could be installed before 2015. Therefore, for the 2015 future with the Proposed Actions, two scenarios were analyzed: the Proposed Actions with a partial stormwater system in place in 2015, and the Proposed Actions with no separate stormwater system in place in 2015. As mentioned earlier, the 2030 analysis accounts for a fully operational separate stormwater system.

In 2015, with a partial separate stormwater system in place, the number of CSO events would remain unchanged, and CSO volume would decrease by approximately 0.6 million gallons per year when compared with the 2015 future without the Proposed Actions conditions. The decrease in CSO volume would be a result of the proposed separate stormwater system, which would divert stormwater from the combined sewer system. The mass loadings of pollutants during CSO events would decrease slightly and the water quality in the Hudson and Harlem Rivers would not be adversely affected due to the Proposed Actions.

If by 2015 the separate stormwater system is not installed or operational, the number of CSO events would increase by one, and CSO volume would increase by approximately 0.3 million gallons per year when compared with the 2015 future without the Proposed Actions condition.

The increase in mass loadings of pollutants during CSO events would be extremely small. The water quality in the Hudson and Harlem Rivers would be essentially identical to those projected for 2015 future without the Proposed Actions.

In 2030, the proposed separate stormwater system would be fully operational. The separate stormwater system with the Proposed Actions would result in a decrease of CSO volume of 1.6 million gallons per year and therefore a decrease in associated pollutant loadings. The CSO volume would decrease by approximately 0.4 percent. The number of CSO events would remain unchanged. These changes would not result in significant adverse impacts to water quality in either 2015 or 2030.

B. METHODOLOGY

The methodology outlined in the City Environmental Quality Review (CEQR) Technical Manual was used to characterize existing conditions and assess potential impacts to surface water quality. Current water quality conditions were compared with anticipated conditions for the analysis years 2015 and 2030 both with and without the Proposed Actions.

To assess the water quality impacts due to the Proposed Actions, baseline water quality data were obtained from several sources, including the New York City Department of Environmental Protection's (DEP) Harbor Survey, and the U.S. Environmental Protection Agency (EPA, 1991). Harbor Survey data collected in 2004 for stations located in the Hudson and Harlem Rivers within the North River WPCP service area were obtained. Effluent data for wastewater flows and pollutant loadings from the North River WPCP for Fiscal Year 2005 (July 1-June 30) were also obtained from DEP to establish the baseline loadings from the plant. In addition, CSO pollutant loadings were calculated for CSOs in the Hudson and Harlem Rivers within the North River WPCP service area. Loadings for constituents of concern were calculated and the impacts assessed for the average annual flow scenarios for both 2015 and 2030. A new separate stormwater system that would discharge into the Hudson River through a new outfall at the foot of West 125th Street (as described in Chapter 14, "Infrastructure") would service the Academic Mixed-Use Area. This separate stormwater system would be fully operational by 2030. Although it is likely that the installation of all of the stormwater sewer lines would occur after 2015, it is possible that the stormwater line under West 130th Street (between Broadway and Twelfth Avenue) could be installed and operational before 2015, draining an area (encompassing the southern half of the block to the north, and the northern half of the block to the south) of approximately 3.9 acres. Therefore, for the 2015 future with the Proposed Actions, two scenarios were analyzed: the Proposed Actions with a partial stormwater system in place in 2015, and the Proposed Actions with no separate stormwater system in place in 2015. The 2030 analysis accounts for a fully operational separate stormwater system.

The percent imperviousness, infiltration, evaporation, and physical features of the drainage area (slope, sewer layout, and surface roughness) were used to compute the volume of runoff that would be discharged to the new stormwater sewer and that would not reach the combined sewer system. Pollutant loadings from the operation of the new separate stormwater sewer were estimated from historical concentrations of pollutants in stormwater runoff in the New York metropolitan area, and the estimated volume of stormwater diverted to the new stormwater system.

Two flow rates were used for the analyses. The average daily flow was used for the evaluation of the potential impact of proposed changes to the North River WPCP on water quality within the Hudson River. The average daily flow includes sanitary flows and also wet weather flows received by the

WPCP. For the analysis of potential effects associated with CSOs within the North River WPCP service area, the average dry weather flow was used. The dry weather flow only includes sanitary flows received under dry weather conditions and was used as a baseline for the analysis of potential CSO effects on the Hudson and Harlem Rivers. Likewise, the assessment of potential effects due to CSOs was also based on the North River WPCP operating at close to 340 mgd during wet weather events. The North River WPCP has been designed to accept two times the 170 mgd dry weather flow, or 340 mgd. Table E.1-1 presents the flows used in the analyses.

Table E.1-1
Average Daily Flow Conditions at North River WPCP Used in Modeling

	Average Daily Flow	Average Daily Dry Weather Flow
Existing Conditions—2005	129.0 mgd	121.0 mgd
2015		
Future Without Proposed Actions	133.0 mgd	125.0 mgd
Future with Proposed Actions	133.2 mgd	125.2 mgd
2030		
Future Without Proposed Actions	140.0 mgd	132.0 mgd
Future with Proposed Actions	141.0 mgd	133.0 mgd

The analysis of potential impacts was based on the effects of the Proposed Actions on the number of CSO events within the North River service area, the CSO volume that could enter the Hudson and Harlem Rivers, and the amount of additional pollutant mass loadings for the 2015 and 2030 future with the Proposed Actions conditions.

WASTEWATER FLOW RATES IN 2015

FLOW RATES USED IN NORTH RIVER WPCP ANALYSIS

The possible water quality impacts with and without the Proposed Actions were calculated for the 2015 analysis year. The 2015 projected North River WPCP effluent flows were calculated based on the DEP projection of future average daily dry weather flow (sanitary flows received under dry weather conditions) for 2015, and wet weather flow estimates (using actual 2005 average daily and average daily dry weather flow data) from DEP's Process Engineering Report (Fiscal Year 2005) (DEP 2005). The dry weather flow projections were developed using New York City Department of City Planning (DCP) population projections for 2015 (DCP 2006). The dry weather flow only includes sanitary flows received under dry weather conditions. DEP projections indicate a future WPCP average dry weather flow of 125 mgd in 2015 due to general background growth within the North River WPCP service area. For the purposes of the water quality analysis, this projected dry weather flow is conservative when used in the assessment of the 2015 future with the Proposed Actions, because it is based on DCP's population projections for 2015 (DCP 2006), which took into consideration the increased population attributable to the Columbia Manhattanville project.

DEP calculates the current average daily flow (see Table E.1-1) as the total volume of wastewater treated at the North River WPCP in a year received during both wet and dry weather periods, divided by the number of days in that year. As presented in DEP's Process Engineering Report (Fiscal Year 2005) (DEP 2005), the difference between the average daily flow and average daily dry weather flow is approximately 8 mgd (the average dry weather flow based on the flows received during days typically preceded by 48 hours of no rainfall). Because the impervious area within the North River WPCP service area is not expected to materially change,

this wet weather increment of 8 mgd would not change, and was assumed as the wet weather flow for the future 2015 analysis year.

To calculate projected average daily flow, the projected dry weather flow of 125 mgd was added to the estimated wet weather flow of 8 mgd. Therefore, as shown in Table E.1-1, the projected average daily flow to the North River WPCP in 2015 without the Proposed Actions is 133.0 mgd.

As discussed in Chapter 14, "Infrastructure," the incremental flows due to the Proposed Actions in 2015 would be approximately 0.2 mgd. Therefore, as shown in Table E.1-1, the projected average daily flow to the North River WPCP in 2015 with the Proposed Actions would be 133.2 mgd.

FLOW RATES USED IN CSO ANALYSIS

In addition to an assessment of the potential water quality impacts due to treated effluent from the North River WPCP, potential water quality impacts due to CSOs within the WPCP service area were evaluated with and without the Proposed Actions in 2015. For this analysis, DEP's projected future dry weather flow in 2015 (125 mgd) is used to determine the potential effects associated with CSOs within the North River WPCP service area. As mentioned above, because DEP's projection of future dry weather flows in 2015 is based on DCP's population projections for 2015 (DCP 2006), which took into consideration the increased population attributable to the Columbia Manhattanville project, the 2015 future with the Proposed Actions analysis is conservative.

As discussed in Chapter 14, the incremental flows due to the Proposed Actions would be approximately 0.2 mgd. Therefore, as shown in Table E.1-1, the projected average daily flow to the North River WPCP in 2015 with the Proposed Actions would be approximately 125.2 mgd.

These flow projections were used as inputs to the land-side modeling, which estimates the volume of CSO discharged and the number of CSO events. Details of the land-side modeling are discussed below.

Columbia University proposes to construct a separate stormwater system and discharge the stormwater at the foot of West 125th Street into the Hudson River through new outfall. The flows from the half blocks north and south of West 130th Street may be separated by 2015. This portion of the new separate stormwater system would remove stormwater discharged into the combined system from 3.9 acres within the Academic Mixed-Use Area. However, the system for this area may not be operational by 2015. Therefore, two analyses were prepared, with and without the partial separate stormwater system in 2015. The pollutant and nutrient loadings in urban stormwater runoff are low compared with the loadings in CSOs.

For the case with the partial stormwater system, the percent imperviousness, infiltration, evaporation, and physical features of the drainage area (slope, sewer layout, and surface roughness) were used to compute the volume of runoff that would not reach the combined sewer system. This volume was subtracted from the modeling of CSOs. During an average year, the total runoff volume diverted into the new stormwater system is estimated to be approximately 3.2 million gallons. This diverted volume of stormwater is not expected to significantly decrease the total flows to the North River WPCP over the course of a year. For the case without the partial stormwater system, the stormwater from the 3.9 acres would be conveyed into the combined system.

WASTEWATER FLOW RATES IN 2030

FLOW RATES USED IN NORTH RIVER WPCP ANALYSIS

Potential water quality impacts with and without the Proposed Actions were also calculated for the year 2030. The 2030 projected North River WPCP effluent flows were calculated using DEP's projection of the future average daily dry weather flow (sanitary flows under dry weather conditions) in 2030 (132 mgd), developed on the basis of DCP's population projections for 2030 (DCP 2006), and wet weather flow estimates (using actual 2005 average daily and average daily dry weather flow data) from DEP's Process Engineering Report (Fiscal Year 2005) (DEP 2005). For the purposes of the water quality analysis, this projected dry weather flow is conservative when used in the assessment of the 2030 future with the Proposed Actions, because it is based on DCP's population projections for 2030 (DCP 2006), which took into consideration the increased population attributable to the Columbia Manhattanville project.

DEP calculates the current average daily flow as the total volume of wastewater treated at the North River WPCP in a year received during both wet and dry weather periods, divided by the number of days in that year. As presented in DEP's Process Engineering Report (Fiscal Year 2005) (DEP 2005), the difference between the average daily flow and average daily dry weather flow is approximately 8 mgd (the average dry weather flow based on the flows received during days typically preceded by 48 hours of no rainfall). Because the impervious area in the North River WPCP service area of 6,030 acres is not expected to change materially, this wet weather increment of 8 mgd is not expected to materially change, and was assumed as the wet weather flow for the future 2030 analysis year.

To calculate projected average daily flow, the projected dry weather flow of 132 mgd was added to the estimated wet weather flow of 8 mgd. Therefore, as shown in Table E.1-1, the projected average daily flow to the North River WPCP in 2030 without the Proposed Actions is 140 mgd.

As discussed in Chapter 14, the incremental flows due to the Proposed Actions in 2030 would be approximately 0.95 mgd. Therefore, as shown in Table E.1-1, the projected average daily flow to the North River WPCP in 2030 with the Proposed Actions would be approximately 141 mgd.

FLOW RATES USED IN CSO ANALYSIS

In addition to an assessment of the potential water quality impacts due to treated effluent from the North River WPCP, potential water quality impacts due to CSOs within the WPCP service area were evaluated with and without the Proposed Actions in 2030. For this analysis, DEP's projected future dry weather flow in 2030 (132 mgd) is used to determine the potential effects associated with CSOs within the North River WPCP service area. For the purposes of the water quality analysis, this projected dry weather flow is conservative, because it is based on DCP's population projections (DCP 2006) within the North River WPCP for 2030, which already include the Proposed Actions.

As discussed in Chapter 14, the incremental flows due to the Proposed Actions in 2030 would be approximately 0.95 mgd. Therefore, as shown in Table E.1-1, the projected average daily flow to the North River WPCP in 2015 with the Proposed Actions would be approximately 133 mgd.

These flow projections were used as inputs to the land-side modeling, which estimates the volume of CSO discharged and the number of CSO events. Details of the land-side modeling are discussed below.

In addition, by 2030, Columbia University proposes to complete the construction of a separate stormwater system for the blocks between West 130th and West 133rd Streets between Broadway and Twelfth Avenue, and discharge the stormwater at the foot of West 125th Street into the Hudson River through a new outfall. The new separate stormwater system would remove stormwater discharged into the combined system from 12.36 acres within the Academic Mixed-Use Area. The pollutant and nutrient loadings in urban runoff are low compared with the loadings in CSOs. The percent imperviousness, infiltration, evaporation, and physical features of the drainage area (slope, sewer layout, and surface roughness) were used to compute the volume of runoff that would not reach the combined sewer system. This volume was subtracted from the modeling of CSOs. During an average year, the total runoff volume diverted into the new stormwater system is estimated to be about 9.9 million gallons. This diverted volume of stormwater is not expected to significantly decrease the total flows to the North River WPCP over the course of a year.

POLLUTANT LOADING ESTIMATES

POLLUTANT LOADINGS USED IN NORTH RIVER WPCPANALYSIS

Effluent pollutant loading data to the Hudson River from the North River WPCP for the various flow scenarios and the 2015 and 2030 future with and without the Proposed Actions were estimated to allow for an analysis of potential water quality conditions. The monthly average concentrations from fiscal year 2005, as reported by DEP for the North River WPCP, were used along with the projected WPCP flows for both the 2015 and 2030 future with and without the Proposed Actions to calculate the existing and projected future loadings. Table E.1-2 presents the total nitrogen, total phosphorus, total suspended solids, fecal coliforms, copper, lead, and zinc concentration monthly average loadings. Based on the average concentration for the fiscal year, pollutant loadings were calculated for existing conditions, and for the 2015 and 2030 future with and without the Proposed Actions (see Table E.1-3). These loadings were used as inputs to the surface water modeling, which estimates the potential impacts on water quality in 2015 and 2030 with and without the Proposed Actions.

POLLUTANT LOADINGS USED IN CSO ANALYSIS

Pollutant loading data to the Hudson and Harlem Rivers within the North River WPCP service area were developed for the various flow scenarios and 2015 and 2030 future with and without the Proposed Actions. For the 2015 with the Proposed Actions, two scenarios were analyzed: one with the partial storm sewer system in place, and one without the partial storm sewer system in place. Since CSOs are composed of a mixture of both raw sanitary water and stormwater, the percentage of sanitary sewage and stormwater were computed for each discharge event and for each individual CSO. The mixture of sanitary sewage and stormwater was used to calculate the total CSO discharge. Copper, lead, and zinc concentrations used were based on the maximum monthly average concentrations measured in the influent of the North River WPCP, and the total nitrogen, phosphorus, and suspended solids concentrations were the yearly averages from 2005.

The incremental changes in CSO event annual mass discharges for the five scenarios are presented in Table E.1-4. The five scenarios are:

- 2015 without the Proposed Actions;
- 2015 with the Proposed Actions and with the partial stormwater system;
- 2015 with the Proposed Actions and without the partial stormwater system;
- 2030 without the Proposed Actions; and
- 2030 with the Proposed Actions.

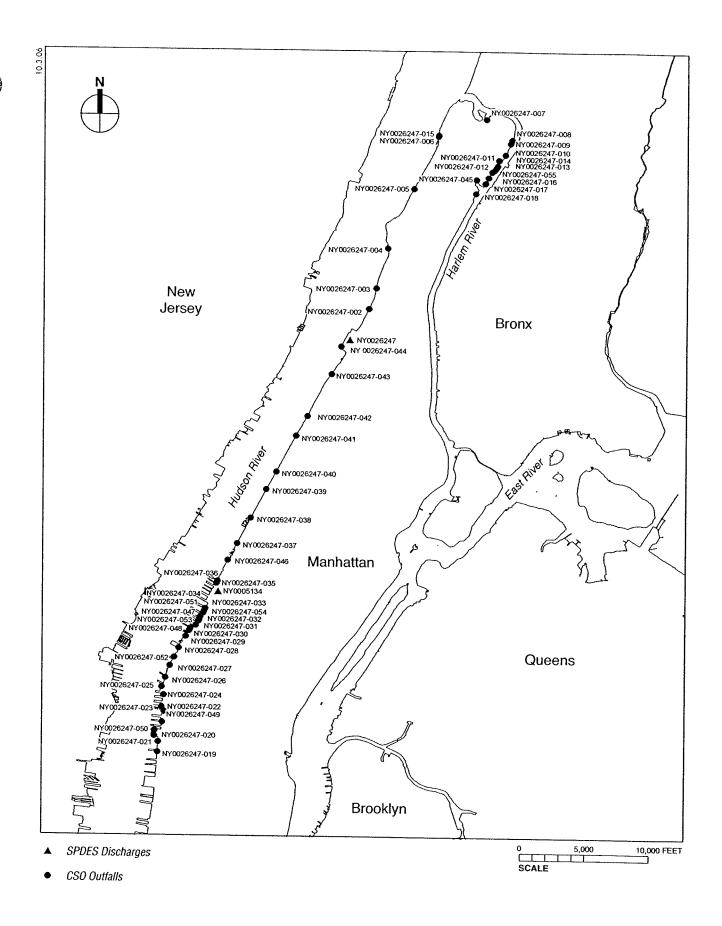


Figure E.1-1 CSOs and NPDES

Table E.1-2 North River WPCP Effluent Parameters

					I CI EIMaem	Laramen
			Effluent Con			
Month	Copper (µg/L)	Lead (μg/L)	Zinc (μg/L)	T-N ⁽²⁾ (mg/L)	T-P ⁽³⁾ (mg/L)	TSS ⁽⁴⁾ (mg/L)
October	11.7	1.9	79.5	14.9	2.8	9.0
November	10.7	1.1	45.7	14.3	2.3	10.0
December	14.0	1.1	42.1	13.8	1.9	11.0
January	13.2	1.6	42.2	19.7	3.4	11.0
February	13.4	1.3	62.8	19.2	2.8	12.0
March	12.9	1.7	64.9	16.6	2.4	12.0
April	13.0	1.0	78.1	18.2	3.8	12.0
May	13.3	1.4	134.2	18.4	2.7	14.0
June	14.4	1.7	86.1	19.2	2.9	13.0
July	26.8	4.5	84.0	19.9	2.9	19.0
August	17.5	1.5	70.2	20.2	2.9	14.0
September	14.1	2.1	57.2	17.7	3.0	16.0
Average	14.6	1.7	70.6	17.7	2.8	12.8

Notes:

Notes:
(1)Basis—2005 Simulation Conditions, Non-reactive Substance
(2)Total nitrogen
(3)Total phosphorus
(4)Total suspended solids

µg/L - micrograms per liter

mg/L - milligrams per liter

Source: "Operating Data, Fiscal Year 2005," DEP - Bureau of Wastewater Treatment, Process Engineering Section.

Table E.1-3

2015 and 2030 Future With and Without the Proposed Actions:

Summary of North River WPCP Existing and Projected Future Effluent Discharges

		Existing Conditions	Future Without the Proposed Actions	S Future Without the Proposed Actions Future With the Pro	Future With the Proposed Actions	roposed Actions	
		2005	2015	2030	2015	2030	
		Average	Average	Average	Average	Average	SPDES Effluent
Parameter	Units	Effluent ⁽²⁾	Effluent	Effluent	Effluent	Effluent	Permit Limit
Average Daily Flow	Mad	129	133.0	140.0	133.2	141.0	170
CBOD	mg/L	7.6	9.7	9.7	7.6	9.7	25
CBOD,	lbs/dav	18.358	10.759	11,326	10,776	11,403	35,000
CBOD, Removal	%	94.3	85	85	85	85	85
Suspended Solids ⁽¹⁾	ma/L	12.8	12.8	12.8	12.8	12.8	30
Suspended Solids	lbs/day	13,771	14,198	14,945	14,219	15,047	43,000
Suspended Solids	%	94.7	85	85	85	85	85
Fecal Coliform	MPN/100ml	62	62	62	62	62	200
Organic Nitrogen	lbs/day	3,012	3,106	3,269	3,111	3,291	
Ammonia	lbs/day	16,030	16,527	17,397	16,552	17,515	,
1KN	lbs/day	19,043	16,633	20,667	19,663	20,807	•
Nitrate	lbs/day	215	222	234	222	235	1
Nitrite	lbs/day	420	433	455	433	459	£
Total Phosphorus	lbs/day	3,012	3,106	3,269	3,111	3,291	
PO ₄	lbs/day	2.367	2,440	2,569	2,494	2,586	
Copper	lbs/day	15.7	16.2	17.0	16.2	17.2	,
Zinc	lbs/day	76.0	78.3	82.4	78.4	83.0	1
Lead	lbs/day	1.8	1.9	2.0	1.9	2.0	1

Notes:
(1) 30-day average.
(2) Data from "Operating Data, Fiscal Year 2005," DEP - Bureau of Wastewater Treatment, Process Engineering Section.
(3) Limits set forth in Draft North River WPCP SPDES Permit No. NY-0026247; April, 2006, where a dash (-) appears there are no existing SPDES Effluent Limits.
(3) Limits set forth in Draft North River WPCP SPDES Permit No. NY-0026247; April 2006.
(4) CBODs and Suspended Solids removal percentages for 2015 and 2030 are those required in the existing Draft North River WPCP SPDES Permit No. NY-0026247; April 2006.



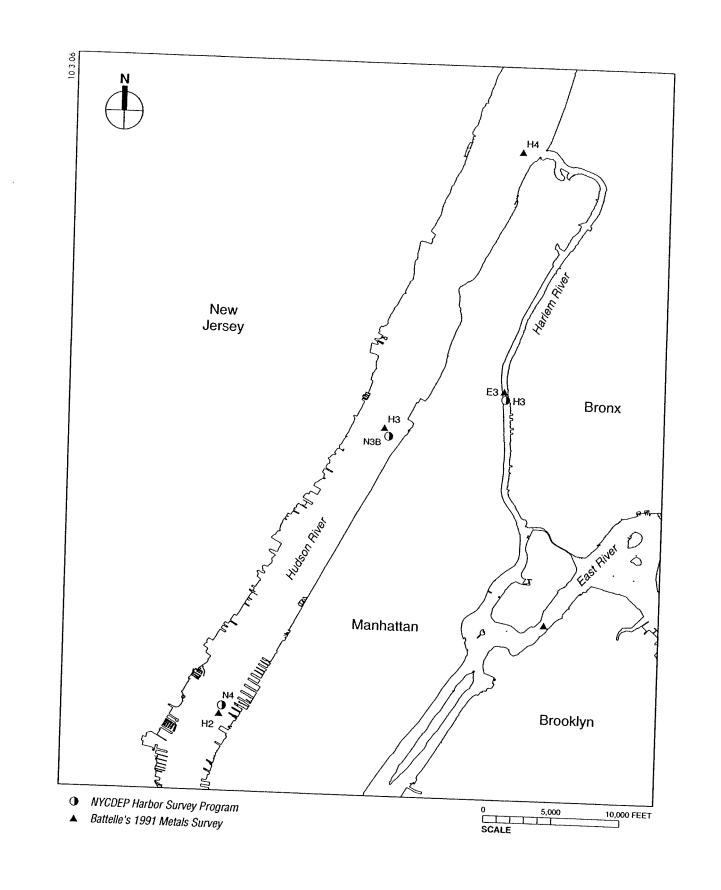


Figure E.1-2
Water Quality Stations

Table E.1-4 remental Changes CSO Annual Loadings

	T		ital Changes		II Loadings
		Changes I	From Current C	onditions	
Water Quality Constituent	2015 without Proposed Actions	2015 with Proposed Actions and with Partial Stormwater System	2015 with Proposed Actions and without Partial Storm System	2030 without Proposed Actions	2030 with Proposed Actions
Total Suspended Solids - TSS	3,812	4,180	4,290	10,549	13,524
BOD₅	2,286	2,507	2,573	6,326	8,110
Total Nitrogen – TN	514	563	578	1,421	1,822
Total Phosphorus – TP	89	97	100	245	314
Total Coliform Bacteria	1.2 %	1.3 %	1.3 %	3.3 %	4.2 %
Zinc	16	17	17	44	56
Lead	2.7	3.0	3.0	7.5	9.7
Copper	5.3	5.8	5.8	15	19
Note: Numbers represent pounds per	r year of each con	stituent except for	coliform bacteria.		

POLLUTANT LOADINGS USED IN STORMWATER OUTFALL ANALYSIS

Pollutant loadings to the Hudson River from the operation of the new separate storm sewer, and discharge through a new outfall at the foot of West 125th Street, were estimated to assess potential water quality impacts with the Proposed Actions in 2015 and 2030. Table E.1-5 presents estimated pollutant concentrations in stormwater developed on the basis of historical concentrations (HydroQual 1991). The estimated pollutant loadings also presented in Table E.1-5 were calculated from these historical concentrations and the estimated total annual volume of stormwater (3.2 million gallons in 2015 and 9.9 million gallons in 2030) that would be diverted to the new storm sewer system during an average year. This annual loading would be discharged throughout the year during rainfall events.

Table E.1-5 New Separate Storm Sewer Annual Loadings

Dally 4 4			New Sepa	rate Storm S	ewer Annua	ıl Loading
Pollutant	TN	TP	TSS	Copper	Lead	Zinc
Concentration (mg/L)	2.40	0.36	27.0	0.596	0.028	0.154
2105 Load (lbs)	64	9.6	721	15.9	0.75	4.1
2030 Load (lbs)	198	29.7	2,229	49.2	2.3	12,7

WATER QUALITY MODELING

LAND-SIDE MODELING

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15 InfoWorks is a detailed hydraulic model used to determine runoff flows, water surface elevations, and flows within sewers for the evaluation of sewer conditions, for the evaluation of

CSO events and for developing pollutant loadings for the water quality models. The model is configured with all sewer elements, including regulators, tide gates, outfalls, branch interceptors, and interceptors. The frequency and volume of CSOs in the North River WPCP service area are dependent on both regulator/branch interceptor capacities and on the hydraulic gradient line (HGL) in the interceptors. Sewer separation, therefore, not only results in CSO frequency/volume reductions within the regulator drainage area where separation is implemented, but also causes marginal reductions in the adjacent regulator drainage areas. The InfoWorks model calculates the CSO volumes/frequencies after sewer separation, so that the incremental effects can be assessed.

- The projected dry weather flows for 2015 and 2030 were included in the InfoWorks model of the North River WPCP service area. The difference in dry weather flow between existing conditions and the future without the Proposed Actions was distributed uniformly in the entire service area (assuming equal population increases). However, the Proposed Actions' dry weather flows were applied to the specific regulator drainage area where the project is located.
- The hydrologic parameters, including the percent imperviousness, are maintained in the future year analyses. A new separate stormwater system is proposed for the Academic Mixed-Use Area. This stormwater system would discharge into the Hudson River through a new outfall located at the foot of West 125th Street.
- By 2015, part of the full separate stormwater system may be installed and operational on West 130th Street and would drain stormwater from approximately 3.9 acres, with only sanitary sewage from this area being discharged into the combined sewers. If operational, it is estimated that during a typical year, approximately 3.2 million gallons per year would be diverted into the separate stormwater system. This volume of diversion is not expected to lower the total flows to the North River WPCP over the course of a year because the area served by the stormwater system is very small compared with the area served by the North River WPCP.
 - By 2030, the new separate stormwater system would remove the stormwater discharged into the combined system from 12.36 acres within the Academic Mixed=Use Area with only sanitary sewage from this area being discharged into the combined sewers. During a typical year, it is estimated that the total volume diverted into the new stormwater system would be approximately 9.9 million gallons. Because the diversion of 9.9 million gallons of stormwater is not expected to significantly decrease the total flows to the North River WPCP over the course of a year, this reduction was not considered in projecting the average daily flow to the North River WPCP in the 2030 future with the Proposed Actions. Therefore, the analysis is conservative.
- The results of the model simulations were used to estimate the annual overflow volumes and pollutant loadings for the CSOs in the North River WPCP service area for the 2015 and 2030 future with and without the Proposed Actions.

SURFACE WATER MODELING

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A modeling framework was also used to evaluate the potential impacts of the North River WPCP and the North River CSOs on water quality for 2015 and 2030 future with and without the Proposed Actions. The System Wide Eutrophication Model (SWEM), a three-dimensional, time-variable, coupled hydrodynamic/eutrophication model of the New York/New Jersey Harbor-New York Bight system, was used for this assessment.

Simulations for all parameters utilized a standardized rainfall condition, specifically 1988. 1988 has been chosen as the base year for DEP's Use and Standards Attainment and the Long Term

CSO Control Plan projects for all of New York City. In addition, 1988 has been used as the base year for the Long Island Sound total daily maximum loads (TMDLs), and is being used as the base year for New York Harbor nutrient and pathogen TMDLs. The New Jersey Department of Environmental Protection requires communities in New Jersey to use 1988 rainfall data to develop their Phase II Long Term CSO Control Plans.

To provide for a conservative analysis, total nitrogen, total phosphorus, total suspended solids, copper, lead, and zinc were considered to be nonreactive substances, and this assumed that their concentrations within the water column would not be reduced by normal chemical, physical, and biological interactions. As discussed later in this appendix, levels of dissolved mercury in the Hudson and Harlem Rivers exceed New York State Department of Environmental Conservation 10 (DEC) guidance values. The Proposed Actions are not expected to change the mercury levels discharged into the sewer system. Columbia University has stringent policies on discharges into the sewers, and these policies are discussed in Chapter 14. The responses for these conservative substances and coliforms were calculated using the pathogen model (PATH), which is a model based on SWEM hydrodynamics, but which has the capability to include coliform kinetics and trace conservative material. Since the conservative substances and coliform bacteria react linearly (i.e., responses are directly proportional to the input pollutant loads), the analysis was performed by inputting a unit load, calculating the receiving water response, and then proportioning the responses based on the projected incremental loads and flows for each scenario. The incremental responses for each scenario were then compared with existing water quality data.

C. EXISTING WATER QUALITY CONDITIONS OF THE HUDSON AND HARLEM RIVERS

CSO outfalls receiving sewage and stormwater runoff within the North River WPCP service area are located along the Hudson and Harlem Rivers (Figure E.1-1). Therefore, sewage and stormwater generated within the Project Area has the potential to be discharged to the Hudson River and/or the Harlem River during a CSO event. The following sections describe the ambient (existing) water quality conditions within both rivers in the vicinity of the CSO outfalls for the North River WPCP.

30 **HUDSON RIVER**

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The Project Area is located along the Manhattan shoreline of the Hudson River, within the Lower Hudson River Estuary. The Hudson River provides approximately 87 percent of the total riverine flow into New York Harbor. The approximate freshwater flow in the Lower Hudson River is between 19,000 and 20,000 cubic feet per second (cfs), while the average tidal flow of the Hudson River at the Battery is much higher on average, measuring approximately 425,000 cfs. Flushing time, or the length of time it takes for water from the Hudson River to replace water in the estuary, varies from month to month and location to location in the estuary. Based on the ratio of water volume to annual freshwater flow, DEC estimates that flushing time in the Lower Hudson River Estuary ranges from 15 days during the spring to 45 to 60 days during the summer.

Water quality in the Hudson River is monitored by DEP as part of the New York Harbor Water Quality Survey. Several indicators of water quality are used to provide information related to quality, ability to sustain aquatic life, ecosystem productivity, and aesthetics, including levels of dissolved oxygen (DO-the amount of oxygen dissolved in the water column-needed for

respiration of oxygen-based forms of aquatic life), water clarity, coliform bacteria levels (indicative of untreated sewage), plankton concentrations, and the amount of nutrients in the water (e.g., phosphorus and nitrogen). High levels of nutrients have a detrimental effect on water quality, because they result in excess plant growth such as phytoplankton and algal blooms, which adversely affect habitat quality. Illegal connections to the City's sewer system, equipment malfunction, and CSOs during and immediately after periods of heavy, sustained rainfall are the primary regional sources of fecal coliform.

In 2005, the North River WPCP treated an average daily flow of 129 mgd, which included sanitary and stormwater flows received by the WPCP, and an average dry weather flow of 121 mgd. Table E.1-3 includes a summary of the 2005 effluent discharge. In addition, CSOs located within the overall North River WPCP service area discharge to the Hudson River and northern portions of the Harlem River above West 190th Street. The Hudson River has been classified by DEC as a Class I water, which indicates water suitable for secondary contact recreation (e.g., fishing and boating). DEP maintains two sampling stations, N-3B and N-4, in the Hudson River for conventional pollutants and additional water quality data as part of its annual harbor survey. Station N-3B is located at West 125th Street, and Station N-4 is located at West 42nd Street. In addition, during 1991 as part of a U.S. Environmental Protection Agency (EPA) study (the most recent extensive study of heavy metals in the Hudson), samples for ambient concentrations of several heavy metals were collected from stations throughout the harbor complex, including the Hudson River. EPA stations within the Hudson River include H2 at West 42nd Street, H3 at West 125th Street, and H4 at Spuyten Duyvil. The locations of these Hudson River water quality stations are shown in Figure E.1-2. Water quality data for the Hudson River are presented in Table E.1-6. The Harbor Survey data in Table E.1-6 represent average concentrations for sampling conducted during 2004, the most recent data available, unless otherwise specifically noted. The EPA 1991 metals data are also presented in Table E.1-6. DEC Class I water quality standards are also presented for comparison.

The water quality data for the Hudson River indicate that all of the water quality parameters reported were in compliance with DEC Class I water quality standards and guidance values with the exception of the minimum DO at station N-3B for both the bottom and surface, and mercury for EPA stations H2-T, H2-B, H-3T, H-3B, H-4T and H-4B.

HARLEM RIVER

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CSOs within the North River WPCP service area are also located within the Harlem River adjacent to the northernmost portions of upper Manhattan. The Harlem River is also a DEC Class I water, which is suitable for secondary contact recreation. DEP maintains one sampling station, H-3, in the Harlem River at East 155th Street for conventional pollutants, and additional water quality data as part of its annual Harbor Survey. In addition, data concerning ambient concentrations of several heavy metals were collected from one station in the Harlem River by EPA in 1991. This station, E3, is also located at East 155th Street. These stations are shown in Figure E.1-2. Water quality data for the Harlem River are presented in Table E.1-7. The Harbor Survey data in Table E.1-7 represents average concentrations for sampling conducted during 2005, unless otherwise specifically noted, and metals data for station E-3 from 1991. DEC Class I water quality standards are also presented for comparison.

Data for the Harlem River indicate that all of the water quality parameters reported were in compliance with DEC Class I water quality standards and guidance values, with the exception of the minimum DO at station H3 from both the bottom and surface, and mercury for Station E-3.

Table E.1-6

					Huc	Ison Riv	er Wate	r Oualit	v and M	Hudson River Water Ouality and Metals Data
		Average Concentration	oncentrati	uc					,	
						Station				DEC
Parameter	Units	N-3B ⁽¹⁾	N.4(2)	H-2T ⁽³⁾	H-2B ⁽⁴⁾	H-3T ⁽⁵⁾	H-3B ⁽⁶⁾	H4T(7)	H-4B ⁽⁸⁾	Class
Dissolved Oxygen (surface/minimum)	mg/L	6.97 ⁽⁹⁾ / 3.86 ⁽¹⁰⁾	6.74 ⁽⁹⁾ / 4.05 ⁽¹⁰⁾	1	1	!		1		0.5
Dissolved Oxygen (bottom/minimum)	mg/L	5.22 ⁽⁹⁾ / 3.73 ⁽¹⁰⁾	5.34(9)/							0,1
BOD (surface)	mg/L	2.0(11)	1.9(11)		١ :	: :	, ,	1	:	> 4.0
BOD (boulding)	mg/L	2.7(11)	2.6(11)	,	,	,				
Total Coliform (hottom)	MPN/100 ml	838(12)	1,495(72)	1		1	-		1 1	< 10.000
Fecal Coliform (top)	MPN/100 ml	1,411(12)	1,316(12)	1	1	1	-		!	< 10,000
Fecal Coliform (bottom)	Colonies/100 ml	24	52	1	1	1	1	1	-	< 2.000
Total Suspended Solids (surface)	Colonies/100 ml	35	46	1	-	1	-	***	ı	< 2,000
Total Suspended Solids (hottom)	IIIG/L	17.69	14.45	1	1	:	1	1	;	1
Arsenic	mg/L	/4.88	67.61	:	1	}	1	1	,	
Cadmium	µg/L	,	,	;	-	1	-	:	1	< 36 (13,14)
Chromium	pg/L	-	;	0.08(13)	0.07(13)	0.06(13)	0.07(13)	0.07(13)	0.08(13)	< 7.7(13.14)
Copper	Pg/L	1		-	1	-		ŀ	1	
Lead	J/B/L	1	;	2.14(13)	1.78(13)	2.00(13)	1.91 ⁽¹³⁾	1.67(13)	1.86(13)	< 5.6(14.15)
Mercury	hg/L	I		0.16(13)	0.18(13)	0.13(13)	0.16(13)	0.15(13)	0.21(13)	< 8.0(13.14)
Nickel	hg/L	:	;	0.0053	0.0033(13)	0.0027(13)	0.0033(13)	0.0068(13)	0.0064(13)	< 0.0026(13.14)
Silver	Ug/L	:	;	1.37(13)	1.39(13)	0.98(13)	1.03(13)	0.82(13)	1,14(13)	< 8.2(13,14)
Zinc	J/B/L	1	1	0.0133(13)	0.0121(13)	.0106 ⁽¹³⁾	0.0135(13)	0.0178(13)	0.0182(13)	1
Cyanide	hg/L	1	1	7.23(13)	7.19 ⁽¹³⁾	3.76(13)	5.23(13)	5.82(13)	4.89(13)	< 66(13,14)
N-STN	hg/L	1	1	I	1	ı	ı	1	1	< 10(14)
(NO ₃ + NO ₂)	mg/L	0.21	0.24	'	:	-	ı	1	1	
Total Phosphorus	gr.	9.48	0.46	1	1	1	1	:	1	1
Chlorophyll-a	1119/1	513	41.0	:		;	1	;	1	
Notes: Bold- Does not meet water quality standard or Guidance Values	7,00	/B:/		ı	,	;	ı	1		:
(1) Average concentrations for 2005 DEP Harbor Survey station N-36	N-3B, West 125th Street			Represents (average betw ween June 1	een January, 2005 and S	Represents average between January and December 2005 Minimum between June 1, 2005 and September 30, 2005	er 2005 2005		
	West 42nd Street e surface at West 42nd	d Street	(11) [atest availa	Latest available data 1997 Latest available data 1996	~ "				
	e bottom at West 42nd s surface at West 125t	d Street th Street		Suidance va DEC Guidan	lues and data	a are for diss	olved metals	errot cterro	Guidance values and data are for dissolved metals DEC Guidance Value (DEC TORS 1111 line 1998 errets language)	
(2) Average concentrations for 1991 EPA Station H-4-B, located on the bottom at West 125th Street (7) Average concentrations for 1991 EPA Station H-4-B, located on the surface at Spuyden Duyvil (8) Average concentrations for 1991 EPA Station H-4-B, located on the purpose at Spuyden Duyvil (8)	 bottom at West 125tl surface at Spuyten D bottom at Spurten D 	h Street Juyvil	(15)	April 2000) Site specific	chronic and	acute criteria	for dissolved	copper in Nev	April 2000) Site specific chronic and acute criteria for dissolved copper in New York/New Jersey Harbor	adderlidum ersey Harbor
	Dougli at chaytell D	Uyvil								

Table E.1-7 Harlem River Water Quality and Metals Data

	Average C	oncentration		
		Stat		DEC Class I
Parameter	Units	H3 ⁽¹⁾	E3 ⁽²⁾	Standards
Dissolved Oxygen		(3) ((4)		> 4.0
(surface/minimum)	mg/L	5.28 ⁽³⁾ / 3.50 ⁽⁴⁾		74.0
Dissolved Oxygen		5.31 ⁽³⁾ / 3.25 ⁽⁴⁾		> 4.0
(bottom/minimum)	mg/L	5.31 7 3.23		
BOD (surface)	mg/L	2.3 ⁽⁵⁾		
BOD (bottom)	mg/L	2.1 ⁽⁵⁾		140,000
Total Coliform (surface)	MPN/100 ml	1,355 ⁽⁶⁾		< 10,000
Total Coliform (bottom)	MPN/100 ml	1,244 ⁽⁶⁾		< 10,000
Fecal Coliform (top)	Colonies/100 ml	51		< 2,000
Fecal Coliform (bottom)	Colonies/100 ml	52 ⁽⁷⁾		< 2,000
Total Suspended Solids				
(surface)	mg/L	19.93		
Total Suspended Solids			<u> </u>	
(bottom)	mg/L	20.65		(8.9)
Arsenic	µg/L			< 36 (8,9)
Cadmium	μg/L	_	0.085(8)	< 7.7 ^(8,9)
Chromium	μg/L			(9.10)
Copper	μg/L		2.63 ⁽⁸⁾	< 5.6 ^(9,10)
Lead	μg/L		0.265 ⁽⁸⁾	< 8.0(8,9)
Mercury	μg/L		0.0036 ⁽⁸⁾	< 0.0026 ^(8,9)
Nickel	µg/L		1.96 ⁽⁸⁾	< 8.2 ^(8,9)
Silver	µg/L		0.0025 ⁽⁸⁾	
Zinc	µg/L		10.04 ⁽⁸⁾	< 66 ^(8,9)
Cyanide	μg/L			< 1.0 ⁽⁹⁾
NH ₃ -N	mg/L	0.322		
$(NO_3 + NO_2)$	mg/L	0.503		
Total Phosphorus	mg/L	0.171		
Chlorophyll-a	μg/L	3.47		

Bold - Does not meet water quality standard or Guidance Values

- (1) Average concentrations for 2005 DEP Harbor Survey Station H-3, East 155th Street
- Average concentrations for 1991 EPA Station E-3, East 155th Street
- Represents average between January and December 2005
- (4) Minimum between June 1, 2005 and September 30, 2005
- (5) Latest available data 1997
- Latest available data 1996
- Latest available data 1999
- Guidance values and data are for dissolved metals
- (9) DEC Guidance Value (DEC TOGS 1.1.1, June 1998 er rata January 1999 and addendum April 2000)
- (10) Site specific chronic and acute criteria for dissolved copper in New York/New Jersey Harbor

A review of the most recently available DEC and EPA databases and the April 2006 Draft State Pollutant Discharge Elimination System (SPDES) Permit (SPDES Permit No. NY-0026247) for the North River WPCP indicated that there were 41 permitted CSO outfalls and two permitted industrial discharges to the Hudson River in the North River WPCP service area. These are shown in Tables E.1-8 and E.1-9, respectively, and are illustrated in Figure E.1-1. In addition, 13 CSO outfalls are located within that portion of the Harlem River that is also within the North River WPCP service area. There are no industrial discharges to the Harlem River in the North River WPCP service area. The CSOs within the Harlem River are presented in Table E.1-10 and are displayed in Figure E.1-1.

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Table E.1-8 North River WPCP Service Area: CSOs Discharging to the Hudson River

Out-III di			arging to the Hudson River
Outfall Location	Permit Number	County	Receiving Water Body
West 152nd Street	NY0026247-002	New York	Hudson River
West 158th Street	NY0026247-003	New York	Hudson River
West 171st Street	NY0026247-004	New York	Hudson River
West 190th Street	NY0026247-005	New York	Hudson River
Dyckman Street	NY0026247-006	New York	Hudson River
Dyckman Street	NY0026247-015	New York	Hudson River
Bank Street	NY0026247-019	New York	Hudson River
Jane Street	NY0026247-020	New York	Hudson River
Gansevoort Street	NY0026247-021	New York	Hudson River
s/o West 17th Street	NY0026247-022	New York	Hudson River
West 18th Street	NY0026247-023	New York	Hudson River
West 21st Street	NY0026247-024	New York	Hudson River
West 23rd Street	NY0026247-025	New York	Hudson River
n/o West 26th Street	NY0026247-026	New York	Hudson River
West 30th Street	NY0026247-027	New York	Hudson River
West 36th Street	NY0026247-028	New York	Hudson River
West 40th Street	NY0026247-029	New York	Hudson River
West 43rd Street	NY0026247-030	New York	Hudson River
West 44th Street	NY0026247-031	New York	Hudson River
West 46th Street	NY0026247-032	New York	Hudson River
West 48th Street	NY0026247-033	New York	Hudson River
West 50th Street	NY0026247-034	New York	Hudson River
West 56th Street	NY0026247-035	New York	Hudson River
West 59th Street	NY0026247-036	New York	Hudson River
West 72nd Street	NY0026247-037	New York	Hudson River
West 80th Street	NY0026247-038	New York	Hudson River
West 91st Street	NY0026247-039	New York	Hudson River
West 96th Street	NY0026247-040	New York	
West 106th Street	NY0026247-041	New York	Hudson River
West 115th Street	NY0026247-042	New York	Hudson River
St. Clair Place	NY0026247-043	New York	Hudson River
West 138th Street	NY0026247-044	New York	Hudson River
West 66th Street	NY0026247-046	New York	Hudson River
West 47th Street	NY0026247-047	New York	Hudson River
West 42nd Street	NY0026247-047	New York	Hudson River
West 14th Street	NY0026247-049		Hudson River
Bloomfield Street	NY0026247-049	New York	Hudson River
West 49th Street	NY0026247-050	New York	Hudson River
West 34th Street		New York	Hudson River
West 35th Street	NY0026247-052	New York	Hudson River
West 33rd Street	NY0026247-053	New York	Hudson River
Treat data difeet	NY0026247-054	New York	Hudson River

Table E.1-9
North River WPCP Service Area: Industrial Discharges to the Hudson River

North River Witch	oci vice Ai ca. Inaas.		
	Point Sources	s	
Company Name	Permit Number	County	Receiving Water Body
North River WPCP	NY0026247	New York	Hudson River
	NY0005134	New York	Hudson River
59th Street Steam Station	NY0005134	New Tork	Tiddsoil Tavel

Table E.1-10 North River WPCP Service Area: CSOs Discharging to the Harlem River

Outfall Location	Permit Number	County	Receiving Water Body
	NY0026247-007	New York	Harlem River
West 128th Street	NY0026247-008	New York	Harlem River
West 216th Street	NY0026247-009	New York	Harlem River
West 215th Street	NY0026247-009	New York	Harlem River
West 211th Street		New York	Harlem River
West 209th Street	NY0026247-011	New York	Harlem River
West 207th Street	NY0026247-012	New York	Harlem River
West 206th Street	NY0026247-013	New York	Harlem River
West 205th Street	NY0026247-014		Harlem River
West 203rd Street	NY0026247-016	New York	Harlem River
West 201st Street	NY0026247-017	New York	
Highbridge Park	NY0026247-018	New York	Harlem River
Academy Street	NY0026247-045	New York	Harlem River
West 207th Street	NY0026247-055	New York	Harlem River

D. 2015 FUTURE WITHOUT THE PROPOSED ACTIONS

Chapter 11, "Natural Resources," provides a detailed description of the 2015 future without the Proposed Actions condition.

NORTH RIVER WPCP

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In the 2015 future without the Proposed Actions, flows to the North River WPCP would continue to increase due to population increases projected by the DCP. The DEP projected future dry weather flow in 2015 (125.0 mgd) is based upon the DCP projected population for 2015, which considered increases associated with the Proposed Actions. An average daily flow of 133.0 mgd, which includes both sanitary and stormwater flows accepted by the WPCP during wet weather, is projected for the North River WPCP without the Proposed Actions.

The estimated 2015 future without the Proposed Actions condition for the North River WPCP is presented above in Table E.1-3 for the average effluent. As shown in Table E.1-3, the SPDES permit limits would continue to be met for the average effluent month in the 2015 future without the Proposed Actions for those parameters that have a limit under the current SPDES permit.

The potential impact of the increased sewage flows to the North River WPCP on water quality within the Hudson River was evaluated using the projected pollutant loadings from the North River WPCP for the 2015 future without the Proposed Actions and SWEM. The predicted concentrations for the maximum 24-hour condition and the maximum 30-day condition in the Hudson River for the 2015 future without the Proposed Actions are presented in Table E.1-11. The maximum 24-hour condition represents the maximum hourly concentration in the North River WPCP outfall receiving water model segment. The maximum 30-day condition is the

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maximum monthly concentration in the North River WPCP outfall receiving water model segment. These maximum values were selected because they present a conservative assessment of the potential effects of the WPCP on surface water quality.

Table E.1-11 shows the incremental change in water quality concentrations and the projected water quality resulting from the projected 2015 future without the Proposed Actions flow of 133.0 mgd. DO levels in both the bottom and surface layers within the Hudson River near the North River WPCP would be predicted to decrease by an extremely small amount, between 0.009 to 0.007 mg/L for the maximum 24-hour condition and the maximum 30-day condition. This would constitute a minimal change in DO. Because the absolute minimum DO for the existing conditions is below the DEC Class I water quality standard of 4.0 mg/L, it would continue to be below the water quality standard for the 2015 future without the Proposed Actions.

The incremental change in total nitrogen, total phosphorus, and total suspended solids concentrations would be minimal. Total nitrogen was calculated to increase by approximately 0.01 mg/L for the maximum 24-hour condition and 0.01 mg/L for the 30-day condition, while total phosphorus and total suspended solids concentrations would remain the same.

In the 2015 future without the Proposed Actions condition, total coliforms were predicted to increase by 1 MPN/100mL for both the maximum 24-hour and the maximum 30-day conditions. Total coliforms would remain below the DEC Class I water quality standard of 10,000 MPN/100ml. Fecal coliforms were predicted to increase by 1 colony per 100 ml for both the maximum 24-hour and maximum 30-day conditions. Fecal coliforms would continue to meet the DEC Class I water quality standard of 2,000 colonies/100 ml.

Incremental changes in copper, lead, and zinc concentrations within the Hudson River were also predicted to be minimal, with incremental changes of 0.05 μ g/L or less. Projected copper, lead, and zinc water concentrations would be expected to remain well below the maximum allowable concentrations for DEC Class I water quality standards.

NORTH RIVER WPCP CSO

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In addition to an assessment of the potential effect of increased flows to the WPCP in the 2015 future without the Proposed Actions, an evaluation of the potential changes due to CSOs on water quality was calculated. The predicted concentrations for the maximum CSO effects to the Hudson and Harlem Rivers for the 2015 future without the Proposed Actions were calculated through the SWEM and are presented in Table E.1-12. The maximum CSO change was defined as the maximum effect in the Hudson and Harlem Rivers within the North River WPCP service area. All other calculated changes to water quality were less than the value that has been presented in Table E.1-12. The projected additional CSO volumes in the 2015 future without the Proposed Actions would be 1.0 million gallons per year. The number and volume of CSO events varies from outfall to outfall. At regulator NR 43, which includes the Project Area, the number of CSO events is predicted to be 27 and the volume is predicted to be 74.9 million gallons per year, based on the 1988 precipitation conditions. Overall within the North River service area, the volume of CSO is estimated to be 493.7 million gallons per year, again based on the 1988 precipitation conditions. Based on the results of the model analysis, the maximum CSO incremental changes would occur within the Hudson River, and these results are presented in Table E.1-12. Table E.1-12 shows the maximum incremental effects of the CSOs resulting from the projected 2015 CSO volumes, and the projected water quality concentrations based on measured existing conditions.

Table E.1-11

2015 Future Without the Proposed Actions:

Water Quality Predictions in the Hudson River Near the North River WPCP

			2015 Fu	Future Without t	2015 Future Without the Proposed Actions	lons	
			Maximum 24-Hour Change (8)	lour Change ⁽⁸⁾	Maximum 30-Day Change ⁽⁹⁾	Day Change ⁽⁹⁾	DEC
	4 4 	Existing Conditions	Incremental ⁽⁷⁾	Projected Water ⁽¹⁰⁾ Ouality	Incremental ⁽⁷⁾ Change	Projected Water ⁽¹⁰⁾ Quality	Standard Class I Waters
Parameter	OIIII	2007	Cilarige	(man)			
Dissolved Oxygen (surface) ⁽²⁾					1000	000	0 7 7
Summer Average ⁽³⁾	mg/L	69.9	•	•	-0.007	00.00	0.4
Absolute Minimum	mg/L	3.86	600'0-	3.85			7.4.0
Dissolved Oxvaen (bottom) ⁽²⁾							
Cummor Avorage(3)	l/om	4.65		•	-0.007	4.64	> 4.0
Sulfiller Average	1/6	3.73	600.0-	3.72	•	•	> 4.0
Absolute Minimum	11.g/L	4 46	0.014	1.47	0.008	1.47	1
Total Nitrogen	mg/L	1.40	410.0		2000	0.014	1
Total Phosphorus	mg/L	0.14	0.002	0.14	0.002	10.01	
Total Suspended Solids	mg/L	75	0.009	75	0.007	600,	. 40
Total Coliform ⁽⁴⁾	MPN/100ml	1087	-	1088	-	1088	00000
Focal Coliform	Colonies/100 ml	29	1	30	-	30	<2,000 2,000
(5,6)	1/011	1 95	0.010	1.96	0.010	1.96	< 5.6
	1/2	0.147	0.001	0.148	0.002	0.149	× 8
Lead Zinc(5,6)	1/84	4.49	0.046	4.53	090'0	4.55	99 >
7117							

Notes:

Bold- Does not meet water quality standard

- (1) DEP Harbor Survey Station N-3B West 125th Street

- (2) Dissolved oxygen data for 2005
 (3) Summer average June 1 to September 30
 (4) Total coliform data for 1996
 (5) EPA Survey Station H3; 1991
 (6) Existing conditions and standards for metals for dissolved form
 (7) Incremental changes were calculated through the use of SWEM
 (8) Maximum 24-hour change represents the maximum hourly change in the North River WPCP outfall receiving water model segment
 (9) Maximum 30-day change represents the maximum monthly change in the North River WPCP outfall receiving water model segment
- (10) Projected water quality due to incremental change represents the projected water quality concentration derived from the increase or decrease of the calculated incremental change from existing conditions



Table E.1-12

nin 7 CIOZ	ZUIS Future Without the Proposed A	posed Actions: W	ater Quality Pro	edictions of the	ctions: Water Quality Predictions of the Potential Impact of North River WPCP CSOs	WPCP CSOs
		(*)	Future Without Proposed Actions	roposed Actions		DEC
Parameter	Units	2005 ⁽¹⁾ Existing Conditions	Incremental ⁽⁷⁾	Projected Water ⁽⁸⁾		Standard Class I
Dissolved Oxygen (surface) ⁽²⁾			Change	Quality		Waters
Summer Average ⁽³⁾	mg/L	69.9	-0 001	9		
Absolute Minimum	mg/L	3.86	-0.001	3.86		> 4.0
Dissolved Oxygen (bottom) ⁽²⁾				20:5		> 4.0
Summer Average ⁽³⁾	mg/L	4.65	-0.001	4.65		
Absolute Minimum	mg/L	3.73	-0.001	3.73		> 4.0
Total Nitrogen	mg/L	146	0000	4 46		> 4.0
Total Phosphorus	ma/L	0.14	0.000	04.1		-
Total Suspended Solids	ma/l	75	0.000	41.0		;
Total Coliform ⁽⁴⁾	MPN/100ml	1 087	0.0.0	(2)		1
Fecal Coliform	Colonies/100 mt	30	2	080'1		< 10,000
Copper ^(5,5)	11 00 (60 100)	4.01		30		<2,000
1 earl(5,6)	1,82	1.95	0.016	1.97		< 5.6
Zinc ^(5,6)	Hg/L	0.147	0.008	0.155		× 8
	hg/L	4.49	0.045	4.54		99 >

Notes:
Boid- Does not meet water quality standard

(1) DEP Harbor Survey Station N-3B - West 125th Street

(2) Dissolved oxygen data for 2005

(3) Summer average - June 1 to September 30

(4) Total coliform data for 1996

(5) EPA Survey Station H3; 1991

(6) Existing conditions and standards for metals for dissolved form

(7) Incremental changes were calculated through the use of SWEM

(8) Represents the maximum impact in the Hudson and Harlem Rivers

Projected DO concentrations in the surface layer and bottom layers within the Hudson River would be the same as the ambient (existing) concentration. Projected surface and bottom DO would be above the DEC Class I water quality standard of 4.0 mg/L for the summer averages but below the standard for the absolute minimum due to the existing conditions being below the standard. Similarly, incremental changes in total nitrogen, total phosphorus, and total suspended solids concentrations due to CSOs in the 2015 future without the Proposed Actions would also be minimal. The incremental maximum change in total coliform count was projected to be 3 MPN/100 ml, and the total value would remain below the DEC Class I water quality standard of 10,000 MPN/100ml. The incremental maximum change in fecal coliforms was projected to increase by 1 colony/100 ml. The total projected concentration would continue to meet the DEC Class I water quality standard of 2,000 colonies/100 ml.

The incremental maximum change in the copper concentration was projected to be 0.02 $\mu g/L$, 0.01 $\mu g/L$ for lead, and 0.045 $\mu g/L$ for zinc. The total copper, lead, and zinc water quality values would remain below the maximum allowable concentrations for DEC Class I water quality standard for the Hudson and Harlem Rivers.

E. 2015 FUTURE WITH THE PROPOSED ACTIONS

NORTH RIVER WPCP

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In the 2015 future with the Proposed Actions, the assessment of potential impacts to the North River WPCP considered the increased sewage flow from the Proposed Actions and the increased flows assessed in the 2015 future without the Proposed Actions. Table E.1-3 presents the average effluent flow for the North River WPCP in the 2015 future with the Proposed Actions and the pollutant loadings for constituents of concern associated with this effluent flow. As presented in Table E.1-3, the SPDES permit limits for the North River WPCP would be met for the average effluent flow in the 2015 future with the Proposed Actions.

For the 2015 future with the Proposed Actions, potential impacts to Hudson River water quality from the additional effluent flows and pollutant loadings from the North River WPCP presented in Table E.1-3 were assessed using SWEM. Projected average daily effluent flows for the 2015 future with the Proposed Actions would be 133.2 mgd. This flow includes the DEP projected future WPCP flow of 133.0 mgd developed on the basis of DCP population projections (DCP 2006) which includes population increases due to the Proposed Actions—and the incremental flow of 0.2 mgd calculated for the Proposed Actions in accordance with the CEQR Manual, as presented in Chapter 14, "Infrastructure." Because the projected 133.2 mgd flow for the 2015 future with the Proposed Actions includes the projected flows from the Proposed Actions twice, it is considered conservative. Table E.1-13 presents the projected incremental change in water quality parameter concentrations and projected concentrations of these parameters in the Hudson River for the 2015 future with the Proposed Actions.

The projected decrease in DO in the Hudson River due to the Proposed Actions for both the maximum 24-hour impact and maximum 30-day impact would be extremely small. The decrease would not result in DO concentrations below the DEC Class I water quality standard of 4.0 mg/L with the exception of the absolute minimums, where the existing conditions are below the water quality standard.

Total coliforms were projected to remain constant for both the daily average and maximum month and would be below the DEC Class I water quality standard of 10,000 MPN/100ml. Fecal

coliforms were also projected to remain constant for both the daily average and maximum month and would continue to meet the DEC Class I water quality standard of 2,000 colonies/100 ml.

The incremental changes in total nitrogen, total phosphorus, total suspended solids, copper, lead, and zinc concentrations in the Hudson River due to the Proposed Actions were projected to be minimal. The resulting projected concentrations of these metals in the Hudson River would remain below the maximum allowable concentrations for DEC Class I water quality standards.

NORTH RIVER WPCP CSO

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An evaluation of the potential impacts of CSOs within the North River service area for the 2015 future with the Proposed Actions on surface water quality was conducted. The potential effects were calculated through the SWEM and involved the evaluation of the maximum CSO impact on water quality within the Hudson and Harlem Rivers adjacent to the North River WPCP service area. This analysis indicated that the greater change would occur within the Hudson River.

2015 WITH PARTIAL STORMWATER SYSTEM

- In 2015, the Proposed Actions with the partial stormwater system would result in a decrease of 15 CSO volumes of 0.6 million gallons per year (mgy) (when compared with future conditions in 2015 without the Proposed Actions) at the regulator servicing the block between West 129th and West 130th Streets (NR 43) and a decrease in the associated pollutant loadings. The resulting incremental additional pollutant mass loadings (see Table E.1-13) would be extremely small and would result in projected concentrations of these water quality parameters essentially identical to 20 those projected for the 2015 future without the Proposed Actions. The number and frequency of CSO events is not expected to change. Overall, the volume of CSO in the North River service area is also expected to decrease by approximately 0.6 million gallons per year with the Proposed Actions and the partial stormwater system. As discussed previously, this decrease in CSO volume would be a result of the proposed partial separate stormwater system, which would 25 divert approximately 3.2 million gallons annually from the combined sewer system. The volume of CSO would decrease by approximately 0.4 percent, and the change in pollutant mass loadings would be minimal. The factors contributing to this smaller reduction in annual CSO volume (0.6 mgy) compared with the volume of stormwater that would be diverted to the new stormwater 30 system (3.2 mgy) are presented below.
 - Not all of the stormwater currently discharged to the combined sewer system from the 3.9-acre area is discharged to the Hudson or Harlem Rivers through CSOs. This is because individual regulators can generally divert between 1.5 and 2-times the peak design dry weather flow into the interceptor system. It is only when the flow exceeds this amount that flow is diverted into a CSO outfall. Additionally, the interceptor sewer system in the North River WPCP has the capacity to hold a significant amount of sanitary waste and stormwater runoff and convey this flow to the WPCP.
 - Even though the inflow from a small portion of the drainage area is reduced, the regulator receiving the stormwater runoff from the 3.9-acre area is also influenced by other factors (i.e., water level in the interceptor sewers, peak inflow to the regulator with and without the Proposed Actions, etc.) that affect the reduction in CSOs in that regulator by 0.4 percent.

The change in pollutant mass loadings from CSOs would be minimal. The resulting incremental additional pollutant mass loadings (see Table E.1-13) would be extremely small and would result in projected concentrations of these water quality parameters essentially identical to those

projected for the 2015 future without the Proposed Actions. Therefore, water quality in the Hudson and Harlem Rivers would continue to meet the Class I water quality standards in the 2015 future with the Proposed Actions with the exception of the absolute minimum DO as a result of the existing conditions being below the standard. Therefore, the Proposed Actions would not have a significant adverse impact on the water quality of the Hudson and Harlem Rivers.

2015 WITHOUT PARTIAL SEPARATE STORMWATER SYSTEM

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For the 2015 future with the Proposed Actions and without the partial stormwater system, the number of CSO events would increase by one at NR 43, and the volume of CSO would increase by approximately 0.3 million gallons per year at regulator NR 43 when compared with future conditions in 2015 without the Proposed Actions. The overall increase of CSO in the North River WPCP service area is predicted to be 0.46 million gallons per year greater than without the Proposed Actions, out of a total CSO volume (at all regulators in the North River WPCP service area) of 493.68 million gallons per year. The resulting incremental additional pollutant mass loadings (see Table E.1-14) would be extremely small and would result in projected concentrations of these water quality parameters essentially identical to those projected for the 2015 future without the Proposed Actions. The differences (nitrogen, fecal coliform, lead, and zinc) are extremely small and are not meaningful. Water quality in the Hudson and Harlem Rivers would continue to meet the Class I water quality standards in the 2015 future with the Proposed Actions without the separate stormwater system except for the absolute minimum DO as a result of the existing conditions being below the standard.

		nosodo I a	2015 Future	With the Propos	ed Actions and	2015 Future With the Proposed Actions and with Partial Separate Stormwater	Near the North	River WPCP
			Maxir	Maximum 24-Hour Impact ⁽⁸⁾	System Sact ⁽⁸⁾	Maximum 30-	Maximum 30-Day Impact ⁽⁹⁾	
Parameter	Units	2005 ⁽¹⁾ Existing Conditions	Incremental ⁽⁷⁾ Change	Incremental ⁽¹¹⁾ Change Due to Proposed	Projected Water ⁽¹⁰⁾	Incremental ⁽¹¹⁾ Change Due to Proposed	Projected Water ⁽¹⁰⁾	DEC Standard Class I
Dissolved Oxygen (surface) ⁽²⁾			Olai ga	HOUSE	Quality	Action	Quality	Waters
Summer Average ⁽³⁾	mg/L	69.9		3		0000	09 9	0.7
Absolute Minimum	mg/L	3.86	-0.009	-0.000	3.86	000:0	60.0	0,47
Dissolved Oxygen (bottom) ⁽²⁾								0.4.0
Summer Average ⁽³⁾	mg/L	4.65	,			-0.001	165	0 8 7
Absolute Minimum	mg/L	3.73	-0.010	-0.001	3.73	,	CO:#	74.0
lotal Nitrogen	mg/L	1.46	0.015	0.001	1.48	0.000	1 47	0.47
Total Phosphorus	mg/L	0.14	0.002	0.000	0.14	0.000	0.14	
Total Suspended Solids	mg/L	75	0.009	0.001	75	0.000	75	
lotal Collform	MPN/100ml	1087	τ-	0	1088	0	1088	< 10 000
recal Collorm	Colonies/100 ml	29	1	0	30	0	30	<2.000
(5,6)	µg/L	1.95	0.010	0.001	1.96	0.001	1.96	< 5.6
7,00(5,6)	ug/L	0.147	0.001	0.001	0.148	0.000	0.149	< 8
N-4-1	µg/∟	4.49	0.047	0.006	4.54	0.003	4.55	99 >

Notes: Bold- Does not meet water quality standard

- (1) DEP Harbor Survey Station N-3B West 125th Street

- (2) Dissolved oxygen data for 2005
 (3) Summer average June 1 to September 30
 (4) Total coliform data for 1996
 (5) EPA Survey Station H3; 1991
 (6) Existing conditions and standards for metals for dissolved form
 (7) Incremental changes were calculated through the use of SWEM
 (8) Maximum 24-hour impact represents the maximum hourly impact in the North River WPCP outfall receiving water model segment
 (9) Maximum 30-day impact represents the maximum monthly impact in the North River WPCP outfall receiving water model segment
- (10) Projected water quality due to incremental change represents the projected water quality concentration derived from the increase or decrease of the calculated incremental change from existing
 - (11) Incremental change resulting solely from the implementation of the Proposed Actions in 2015

Table E.1-14

2015 Future With the Proposed Actions: Water Quality Predictions in the Hudson River Near the North River WPCP

CION	nacodor a om mu do a man r CIO							
			2015 Future W	ith the Proposed	Actions and With	nout the Separate	2015 Future With the Proposed Actions and Without the Separate Stormwater System	
			Maxir	Maximum 24-Hour Impact ⁽⁸⁾	act ⁽⁸⁾	Maximum 3(Maximum 30-Day Impact ⁽⁹⁾	
		•		Incremental ⁽¹¹⁾		Incremental ⁽¹¹⁾		DEC Standard
		2005 ⁽¹⁾ Existing	Incremental ⁽⁷⁾	Change Due to Proposed	Projected Water ⁽¹⁰⁾	Change Due to Proposed	Projected Water (10)	Class I
Parameter	Units	Conditions	Change	Action	Quality	Action	Quality	Maiors
Dissolved Oxygen (surface) ⁽²⁾						000	0	0 7 7
Summer Average ⁽³⁾	mg/L	6.69	ı	•	E	0.000	60.03	0.4
Absolute Minimum	mg/L	3.86	-0.009	-0.000	3.86	-	•	0.4
Dissolved Oxygen (bottom) ⁽²⁾							1 4	
Summer Average (3)	ma/L	4.65		•	•	-0.001	4.65	> 4.0
Absolute Minimum	l/om	3.73	-0.010	-0.001	3.73	•	1	> 4.0
The state of the s	1/6m	1 46	0.015	0.001	1.48	0.001	1.47	
lotal Mittogeri		7.	2000	0000	0.14	0000	0.14	:
Total Phosphorus	mg/L	0.14	0.002	0.000	10.7	000.0	75	1
Total Suspended Solids	mg/L	75	0.00	0.001	۲۵	0.000	0000	1 10 000
Total Coliform ⁽⁴⁾	MPN/100ml	1087	-	0	1088	O	1000	000,01
Fecal Coliform	Colonies/100 ml	29	τ-	0	30	0	34	74,000
Conner (5,6)	na/L	1.95	0.010	0.001	1.96	0.001	1.96	< 5.0
1 63d (5,6)	/pii	0.147	0.001	0.000	0.156	0.000	0.149	8 >
Zinc ^(5,6)	ng/L	4.49	0.047	0.002	4.55	0.003	4.55	99 >

Notes: Bold- Does not meet water quality standard

- (1) DEP Harbor Survey Station N-3B West 125th Street
- Dissolved oxygen data for 2005 (7)
- Summer average June 1 to September 30 ල
- (4) Total coliform data for 1996
 (5) EPA Survey Station H3; 1991
 (6) Existing conditions and standards for metals for dissolved form
 (7) Incremental changes were calculated through the use of SWEM
- Maximum 24-hour impact represents the maximum hourly impact in the North River WPCP outfall receiving water model segment
- (8) Maximum 24-hour impact represents the maximum hourly impact in the North River WPCP outfall receiving water model segment
 (9) Maximum 30-day impact represents the maximum monthly impact in the North River WPCP outfall receiving water model segment
 (10) Projected water quality due to incremental change represents the projected water quality concentration derived from the increase or decrease of the calculated incremental change from existing

(11) Incremental change resulting solely from the implementation of the Proposed Actions in 2015





F. 2030 FUTURE WITHOUT THE PROPOSED ACTIONS

Chapter 11, "Natural Resources," provides a description of the 2030 future without the Proposed Actions.

NORTH RIVER WPCP

- In the 2030 future without the Proposed Actions, wastewater flows to the North River WPCP would continue to increase due to DCP projected changes in population and anticipated new developments, including the Proposed Actions, within the WPCP service area. The projected average daily dry weather flow to the WPCP would be 132.0 mgd in the 2030 future without the Proposed Actions. The average daily flow, including wet weather flows, would be 140.0 mgd.
- Table E.1-3 presents the projected impact of the 2030 future without the Proposed Actions flows on average effluent pollutant loadings from the North River WPCP, and the SPDES permit limit issued for water quality parameters included in the permit. As presented in Table E.1-3, the average effluent loading for the North River WPCP in the 2030 future without the Proposed Actions would be within the SPDES permit limits.
- For the 2030 future without the Proposed Actions, potential impacts to Hudson River water quality from the additional effluent flows and pollutant loadings from the North River WPCP presented in Table E.1-3 were assessed using SWEM. Table E.1-15 presents the projected incremental change and the maximum 24-hour and maximum 30-day concentrations in the Hudson River for the water quality parameters in the 2030 future without the Proposed Actions.
- DO concentrations in both the bottom and surface layers within the Hudson River near the North River WPCP in the 2030 future without the Proposed Actions would decrease by a maximum of 0.04 mg/L. This minimal decrease would not result in DO concentrations below the DEC Class I water quality standard of 4.0 mg/L with the exception of the absolute minimum, which is below the water quality standard for existing conditions.
- Incremental changes in total nitrogen, total phosphorus, and total suspended solids concentrations from existing conditions would also be minimal. The total nitrogen concentration in the Hudson River was predicted to increase by 0.02 mg/L for both the maximum 24-hour condition and the maximum 30-day condition. Total phosphorus and total suspended solid concentrations within the Hudson River are predicted to remain the same in the 2030 future without the Proposed Actions.
- Total coliforms are projected to increase by 1 MPN/100ml, and fecal coliforms by 1 colony/100 ml for both the maximum 24-hour and maximum 30-day concentrations. The projected total and fecal coliform concentrations would continue to meet the DEC Class I water quality standard.
 - Incremental changes in copper and lead concentrations were projected to be minimal (changes of 0.03 $\mu g/L$ or less). The zinc concentration was predicted to increase by 0.12 $\mu g/L$ and 0.16 $\mu g/L$
- for the maximum 24-hour condition and the maximum 30-day condition, respectively. These projected metal concentrations are well below the maximum allowable concentrations for DEC Class I water quality standards.

NORTH RIVER WPCP CSO

Potential changes due to CSOs within the North River WPCP service area on surface water quality were also evaluated in the 2030 future without the Proposed Actions. The potential changes were analyzed with SWEM and evaluated the maximum CSO effect on water quality

within the Hudson and Harlem Rivers. The results of the analysis indicated that the maximum calculated water quality changes would occur in the Hudson River.

Table E.1-16 presents the incremental change in concentrations and projected maximum concentration within the Hudson River that would result from the projected 2030 future without the Proposed Actions CSO volumes. The projected additional CSO volume at regulator NR 43 in the 2030 future without the Proposed Actions would be approximately 2.5 million gallons per year over the 2015 volume without the Proposed Actions, out of an overall CSO volume (at all regulators in the North River WPCP service area) of approximately 512.5 million gallons per year. The number of CSO events at regulator NR 43 is predicted to increase to 29 per year, an increase of 2 events. The projected decrease in DO concentrations in the surface and bottom layers of the Hudson River would be minimal and would not cause DO concentrations to fall below the DEC Class I water quality standard of 4.0 mg/L with the exception of the absolute minimums which were below the water quality standard for the existing conditions.

The projected maximum incremental changes to total nitrogen, total phosphorus, and total suspended solids concentrations presented in Table E.1-16 are also minimal and would result in concentrations within the Hudson River similar to the ambient (existing) concentrations.

The maximum incremental change to total coliforms was projected to increase by approximately 8 MPN/100ml in the 2030 future without the Proposed Actions. The total coliform count would be below the DEC Class I water quality standard of 10,000 MPN/100ml. The maximum incremental change to fecal coliforms was predicted to increase by approximately 2 colonies/100 ml in the 2030 future without the Proposed Actions. The fecal coliform count would continue to meet the DEC Class I water quality standard of 2,000 colonies/100 ml.

The maximum CSO incremental change in copper concentrations was projected to be 0.044 μ g/L. The maximum incremental change for lead was predicted to be 0.021 μ g/L, and for zinc 0.124 μ g/L. The project water quality concentrations for copper, lead, and zinc due to the projected incremental increases in the Hudson River water quality would remain below the maximum allowable concentrations for DEC Class I water quality standards.

G. 2030 FUTURE WITH THE PROPOSED ACTIONS

By 2030, it is assumed that the remaining development generated as a result of the Proposed Actions would be completed.

NORTH RIVER WPCP

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In the 2030 future without the Proposed Actions, the projected average daily flow to the WPCP would increase by 0.95 mgd to 141.0 mgd.

Table E.1-3 presents the projected impact of the 2030 future with the Proposed Actions flows on average effluent pollutant loadings from the North River WPCP, and the SPDES permit limit issued for water quality parameters included in the permit. As presented in Table E.1-3, the average effluent loading for the North River WPCP in the 2030 future with the Proposed Actions would be within the SPDES permit limits.

2030 Fu	2030 Future Without the Proposed		ctions: Water Q	Actions: Water Quality Predictions in the Hudson River Near the North River WPCP	the Hudson Ri	ver Near the North	Table E.1-15 River WPCP
				2030 Future Without the Proposed Actions	he Proposed Actio	ins	
			Maximum 2	Maximum 24-Hour Change ⁽⁸⁾	Maximum 3	Maximum 30-Day Change ⁽⁹⁾	
		2005 (1)					DEC
Parameter	Units	Existing Conditions	Incremental ⁽⁷⁾ Change	Projected Water ⁽¹⁰⁾	Incremental ⁽⁷⁾	Projected Water ⁽¹⁰⁾	Standard Class I
Dissolved Oxygen (surface) ⁽²⁾			96	damit)	Cilarige	Quainty	waters
Summer Average ⁽³⁾	//om	6.60					
Absolute Minimum	7,611	60.0	•	•	-0.019	6.67	> 4.0
Dissolved Oxygen (hottom) ⁽²⁾	mg/L	3.86	-0.024	3.83	•		> 4.0
Summer Average (3)							
Absolute Minimim	mg/L	4.65	-	-	-0.020	4.63	>40
	mg/L	3.73	-0.026	3.70			0.4
Iotal Nitrogen	mg/L	1.46	0.015	1 40	0000		> 4.0
Total Phosphorus	1/500	77	0.0	1.40	0.023	1.48	1
Total Suspended Solids	1.g/L	10.14	0.002	0.14	0.004	0.144	
Total Coliform ⁽⁴⁾	TING!	(3)	0.01	75	0.019	75	
Focal Coliform	IMIOOT /NILINI	108/		1088		1088	< 10.000
	Colonies/100 ml	29	-	29		000	000,01
Copper	µg/L	1.95	0.026	1 98	7600	4.00	\$4,000
Lead (13)	ng/L	0.147	0.003	0.15	0.027	1.90	9.6 >
Zinc'3,9)	l/pn	4.49	0.100	0.10	c00.0	0.152	< 8
Notes:	7.62	54.7	0.123	4.61	0.164	4.65	> 66

Bold- Does not meet water quality standard

(1) DEP Harbor Survey Station N-3B - west 12005
 (2) Dissolved oxygen data for 2005
 (3) Summer average - June 1 to September 30
 (4) Total coliform data for 1996
 (5) EP A survey Station H3; 1991
 (6) Existing conditions and standards for metals for dissolved form
 (7) Incremental changes were calculated through the use of SWEM
 (8) Maximum 24-hour change represents the maximum hourly change in the North River WPCP outfall receiving water segment
 (9) Maximum 30-day change represents the maximum monthly change in the projected water quality concentration derived from the incremental change represents the projected water quality due to incremental change represents the projected water quality concentration derived from the increase or decrease of the calculated incremental change from existing conditions.

Table E.1-16

2030 Future Without the Proposed Actions:

Water Quality Predictions of the Potential Changes Due to North River WPCP CSOs

			F. true Without Bronocod Actions	T. d. w. Without Droposed Actions	DEC
			ruture without r	Oposed Actions	District Co.
		2005(1)		Projected	Standard
		Existing	Incremental ⁽⁷⁾	Water ⁽⁸⁾	 Waters
Parameter	Units	Conditions	Change	Quality	Waters
Dissolved Oxvaen (surface) ⁽²⁾					0.5
Summer Average (3)	ma/L	69.9	-0.002	69.9	0.4.0
Absolute Minimum	ma/L	3.86	-0.002	3.86	> 4.0
Posociate (William)(2)					
Dissolved Oxygen (Dollotti)	37	10.7	6000	7.65	> 4.0
Summer Average ⁽³⁾	mg/L	4.05	-0.003	00:4	>40
Absolute Minimum	ma/L	3.73	-0.003	3.73	2)
Total Nitrogen	ma/l	1.46	0.004	1.46	
Total Minogoli	1/om	0 14	0.001	0.14	1
Iotal Pilospilolus	1,811	75	0000	75	1
Total Suspended Solids	l mg/L	6)	0.023		< 10.000
Total Coliform ⁽⁴⁾	MPN/100ml	1087	∞	1,095	2000
Fecal Coliform	Colonies/100 ml	29	•	30	22,000
Coppor(5,6)	1/0/1	1.95	0.044	1.99	< 5.6
isel.	1 (2)	0.447	0.021	0.168	< 8
Lead	Jg/L	7.0	20:0		< 66
Zinc(5,6)	ng/L	4.49	0.124	4.61	

Notes: Bold- Does not meet water quality standard

- (1) DEP Harbor Survey Station N-3B West 125th Street
 (2 Dissoived oxygen data for 2005
 (3) Summer average June 1 to September 30
 (4) Total coliform data for 1996
 (5) EPA Survey Station H3; 1991
 (6) Existing conditions and standards for metals for dissolved form
 (7) Incremental changes were calculated through the use of SWEM
 - Represents the maximum impact in the Hudson and Harlem Rivers



The WPCP effluent pollutant loadings for the 2030 future with the Proposed Actions were used to assess potential impacts to water quality within the Hudson River. Table E.1-17 presents the projected incremental changes in the selected water quality parameters and resulting maximum 24-hour and 30-day concentrations in the Hudson River for the 2030 future with the Proposed Actions.

The projected incremental decrease in DO in the Hudson River due to the Proposed Actions for both the maximum 24-hour and 30-day impacts would be extremely small, approximately 0.003 mg/L or less. This minimal change in DO concentration would not result in DO concentrations below the DEC Class I water quality standard of 4.0 mg/L. The absolute minimum DO would remain below the water quality standard as it is in the 2005 existing conditions.

Total coliforms and fecal coliforms were also projected to remain the same as the current ambient condition for the maximum 24-hour impact and for the maximum 30-day impact, and would continue to meet the DEC Class I water quality standard of 10,000 MPN/100ml and 2,000 colonies/100 ml, respectively.

As shown in Table E.1-17 total nitrogen concentrations in the 2030 future with the Proposed Actions for the maximum 24-hour and maximum 30-day impact were predicted to increase by 0.003 mg/L or less from the 2030 future without the Proposed Actions incremental change. The total phosphorus concentrations within the Hudson River were projected to increase by 0.004 mg/L or less than the 2030 future without the Proposed Actions incremental change. The total suspended solids within the Hudson River are expected to remain the same as the ambient (existing) condition.

Predicted incremental increases in copper concentrations within the Hudson River for the 2030 future with the Proposed Actions would be 0.002 μ g/L for both the maximum 24-hour and the maximum 30-day impact. Lead concentrations were predicted to remain constant for the maximum 24-hour impact and for the maximum 30-day impact. The increase in zinc concentration due to the Proposed Actions was predicted to be 0.011 μ g/L for the maximum 24-hour period and 0.014 μ g/L for the maximum 30-day period. The projected water quality concentrations for copper, lead, and zinc due to the projected incremental increases in Hudson River water quality would remain below the maximum allowable concentrations for DEC Class I water quality standards.

NORTH RIVER WPCP CSO

The Proposed Actions would result in a decrease of CSO volumes of 1.6 million gallons per year at regulator (mgy) NR 43 and associated pollutant loadings, compared with the 2030 conditions without the Proposed Actions. The frequency of CSO events is not expected to change. Overall, the volume of CSO in the North River service area is expected to decrease by about 1.8 million gallons per year with the Proposed Actions. As discussed previously, this decrease in CSO volume be would a result of the proposed separate stormwater system, which would divert approximately 9.9 million gallons annually from the combined sewer system. The factors contributing to this smaller reduction in annual CSO volume (1.8 mgy) compared to the volume of stormwater that would be diverted to the new stormwater system (9.9 mgy) are as presented below.

• Not all of the stormwater currently discharged to the combined sewer system from the 12.36-acre area is discharged to the Hudson or Harlem Rivers through CS0s. This is because individual regulators can generally divert between 1.5 and 2-times the peak design dry weather flow into the interceptor system. It is only when the flow exceeds this amount that flow is diverted into a CSO outfall. Additionally, the interceptor sewer system in the North River WPCP has the capacity to hold a significant amount of sanitary waste and stormwater runoff and convey this flow to the WPCP.

Even though the inflow from a small portion of the drainage area is reduced, the regulator receiving the stormwater runoff from the 12.36-acre area is also influenced by other factors (i.e., water level in the interceptor sewers, peak inflow to the regulator with and without the Proposed Actions, etc.) that affect the reduction in CSOs in that regulator.

The change in pollutant mass loadings from CSOs would be minimal, The resulting incremental change for the water quality parameters described below would be minimal, and would not result in significant adverse impacts to water quality.

Table E.1-16 presents the projected incremental changes from the existing conditions and the maximum impact of the CSOs in the Hudson River for the 2030 future with the Proposed Actions. Although CSOs within the North River WPCP service area are located within the Hudson and Harlem Rivers, the maximum CSO impact was projected to occur within the Hudson River.

Table E.1-17 2030 Future With the Proposed Actions: Water Quality Predictions in the Hudson River Near the North River WPCP

						V22 V = 1 1	T CH IXIVCI	
				2030 Future Witl	h the Propo	sed Actions		
	1	, }	Maximu	m 24-Hour Impa	ct ⁽⁸⁾	Maximum 30-Da	ay Impact ⁽⁹⁾	
Parameter	Units	2005 ⁽¹⁾ Existing Conditions	Incremental ⁽⁷⁾ Change	Incremental ⁽¹¹⁾ Change Due to		Incremental ⁽¹¹⁾ Change Due to Proposed Action	Projected Water ⁽¹⁰⁾ Quality	DEC Standard Class I Waters
Dissolved Oxygen								
(surface) ⁽²⁾						-0.002	6.69	4.0
Summer Average ⁽³⁾	mg/L	6.69	-		- 2 02		5.05	4.0
Absolute Minimum	mg/L	3.86	-0.027	-0.002	3.83	-		
Dissolved Oxygen		1						ĺ
(bottom) ⁽²⁾	,				<u> </u>	-0.002	4.65	4.0
Summer Average ⁽³⁾	mg/L	4.65		- 0.000	3.70		-	4.0
Absolute Minimum	mg/L_	3.73	-0.028	-0.002	1.50		1.48	_
Total Nitrogen	mg/L	1.46	0.041	0.022	0.15		0.144	
Total Phosphorus	mg/L	0.14	0.006	0.004		0.000	75	
Total Suspended Solids	mg/L	75	0.026	0.011	75		1088	10.000
Total Coliform(4)	MPN/100ml	1087	1	0	1088	0	1000	10,000
	Colonies/				29	- 0	29	<2,000
Fecal Coliform	100 ml	29	11	0			1.98	5.6
Copper ^(5,6)	μg/L	1.95	0.028	0.002	1.98		0.152	
Lead (5,6)	μg/L	0.147	0.003	0.000	0.150		4.66	66
Zinc ^(5,6)	μg/L	4.49	0.133	0.011	4.62	0.014	4.00	

Notes:

Bold- Does not meet water quality standard

- (1) DEP Harbor Survey Station N-3B West 125th Street
- (2) Dissolved oxygen data for 2005
- (3) Summer average June 1 to September 30
- (4) Total coliform data for 1996
- (5) EPA Survey Station H3; 1991
- Existing conditions and standards for metals for dissolved form
- (7) Incremental changes were calculated through the use of SWEM
- (8) Maximum 24-hour impact represents the maximum hourly impact in the North River WPCP outfall receiving water segment
- (9) Maximum 30-day impact represents the maximum monthly impact in the North River WPCP outfall receiving water segment
- (10) Projected water quality due to incremental change represents the projected water quality concentration derived from the increase or decrease of the calculated incremental change from existing conditions.
- (11) Incremental change resulting solely from the implementation of the Proposed Actions in 2030

DO within the Hudson River due to the Proposed Actions as a result of the maximum CSO impact were projected not to be impacted. The DO in the Hudson River would not result in DO concentrations below the DEC Class I water quality standard of 4.0 mg/L with the exception of the absolute minimums, which were below the standards for the existing conditions.

For the 2030 future with the Proposed Actions, total coliform and fecal coliforms were predicted to remain unchanged. The predicted incremental increase in total coliforms would not result in concentrations above the DEC Class I water quality standard of 10,000 MPN/100 ml. For the 2030 future with the Proposed Actions, fecal coliforms would remain unchanged. The projected fecal coliforms would continue to meet the DEC Class I water quality standard of 2,000 colonies/100 ml.

The incremental changes in the total nitrogen, total phosphorus, and total suspended solids concentrations in the Hudson River due to the Proposed Actions were projected to be extremely small and would not affect the existing concentrations within the Hudson River.

The incremental change in the concentration of copper in the Hudson River in the 2030 future with the Proposed Actions was projected to increase by 0.003 $\mu g/L$. Lead concentrations were projected to increase by 0.003 $\mu g/L$ and zinc was projected to increase by 0.016 $\mu g/L$. The incremental changes in the concentrations of copper, lead, and zinc and the projected water quality within the Hudson River would not result in concentrations above the maximum allowable concentrations for DEC Class I water quality standard.

STORMWATER OUTFALL

The estimated annual pollutant loads from the operation of the new storm sewer system are small, particularly in comparison to the daily loadings currently discharged and projected to be discharged from the North River WPCP (Table E.1-3) in 2030 with or without the Proposed Actions which would not be expected to result in significant adverse impacts to water quality. Additionally, with the exception of zinc, the estimated annual loadings from the stormwater outfall presented in Table E.1-5 are less than the incremental changes in CSO annual loadings in 2015 and 2030 with or without the Proposed Actions, which would also not be expected to result in significant adverse impacts to water quality. Therefore, the discharge of stormwater from the new storm sewer would not be expected to result in adverse impacts to water quality of the Hudson River.

H. REFERENCES CITED

HydroQual, 1991. Task 7.1 Assessment of Pollutant Loadings to New York-New Jersey Harbor. Prepared for EPA Region II.

New York City Department of City Planning. December 2006. New York City Population Projections by Age/Sex & Borough 2000-2030. Department of City Planning, 22 Reade Street, New York, NY 10007-1216, nyc.gov/planning.

New York City Department of Environmental Protection (DEP), Bureau of Wastewater Treatment, Process Engineering Section Operating Data Fiscal Year 2005, November 2005.

E.1-31

APPENDIX E.2

Natural Resources Correspondence

National Marine Fisheries Service Habitat Conservation Division Milford Field Office, 212 Rogers Avenue Milford, Connecticut 06460

DATE: 6 October 2004

TO:	AKF 725	Sandra Collins RF 0 Parkway Drive, Suite 210 lover, Maryland 21076	
SUBJECT	: Info	ormation Request for Manhattanville, W	est Harlem, New York County, New York
			Diane Rusanowsky (Reviewing Biologist)
	o the Endang		pove subject project. We offer the following preliminary comments ordination Act and the Magnuson-Stevens Fishery Conservation and
		Endangered ar	nd Threatened Species
	There are n	o endangered or threatened species in the	project area.
XX	The followin	g endangered or threatened species may	be present in the general project vicinity as transients:
	XX	shortnose sturgeon (Acipenser breviros	trum) occur in the Hudson River
Sea turtle	s:	loggerhead (Caretta caretta) green (Chelonia mydas)	Kemp's ridley (<i>Lepidochelys kempii</i>) leatherback (<i>Dermochelys coriacea</i>) €
	directed to M		the involved federal action agency(ies). Correspondence should be urces, NOAA/F, Protected Resources Division, One Blackburn Drive,
		Fish and Wildlife	Coordination Act Species
<u>XX</u> _T	he following n	nay be present in the project vicinity:	Resident fish, forage and benthic species
	• •	,	State Department of Environmental Conservation to confirm the presence me species or life stages may be seasonal (e.g. over-wintering juvenile

Essential Fish Habitat

striped bass)

Upper New York Bay and adjacent waters have been designated as Essential Fish Habitat (EFH) for one or more species. When details of the project are made available and permit applications have been made, conservation recommendations may be given. For a listing of EFH designations and further information, please go to our website at:

http://www.nero.noaa.gov/hcd/

New York State Department of Environmental Conservation

Division of Fish, Wildlife & Marine Resources

New York Natural Heritage Program

625 Broadway, 5th floor, Albany, New York 12233-4757

Phone: (518) 402-8935 • FAX: (518) 402-8925

Website: www.dec.state.ny.

August 24, 2004

Sandra Collins A K R F Environmental 7250 Parkway Dr, Suite 210 Hanover, MD 21076

Dear Ms. Collins:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed 35-acre Rezoning of Manhattanville in West Harlem, area as indicated on the map you provided, located in Manhattan.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered <u>sensitive</u> and may not be released to the public without permission from the New York Natural Heritage Program.

The presence of rare species may result in this project requiring additional permits, permit conditions, or review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information

Betty A. Ketcham, Information Services

Erin M. Crotty

Commissioner

NY Natural Heritage Program

cc Reg. 2, Wildlife Mgr.
Peter Nye, Endangered Species Unit, Albany
Shaun Keeler, Bureau of Fisheries, Albany

Natural Heritage Report on Rare Species and Ecological Communities



Prepared 23 August 2004 by NY Natural Heritage Program, NYS DEC, Albany, New York

Refer to the Users' Guide for explanations of codes, ranks, and fields.

We do not always provide maps of locations of species most vulnerable to disture. • County
EO Rank & Last Seen Detailed Location
HUDSON RIVER The lower Hudson River from The Bautery in New York City at its junction with Upper New York Bay, upstream to the Federal Dam in Troy and a portion of Schodack Creek.



4007378 S ESU

2 Records Processed

USERS GUIDE TO NY NATURAL HERITAGE DATA

New York Natural Heritage Program, 625 Broadway, Albany, NY, 12233-4757 (518) 402-8935

NATURAL HERITAGE PROGRAM: The Natural Heritage Program is an ongoing, systematic, scientific inventory whose goal is to compile and maintain ata on the rare plants and animals native to New York State, and significant ecological communities. The data provided in the report facilitate sound anning, conservation, and natural resource management and help to conserve the plants, animals and ecological communities that represent New York's natural heritage.

DATA SENSITIVITY: The data provided in the report are ecologically sensitive and should be treated in a sensitive manner. The report is for your in-house use and should not be released, distributed or incorporated in a public document without prior permission from the Natural Heritage Program.

NATURAL HERITAGE REPORTS (may contain any of the following types of data):

COUNTY NAME: County where the occurrence of a rare species or significant ecological community is located. TOWN NAME: Town where the occurrence of a rare species or significant ecological community is located.

USGS 7 1/4' TOPOGRAPHIC MAP: Name of 7.5 minute US Geological Survey (USGS) quadrangle map (scale 1:24,000).

SIZE (acres): Approximate acres occupied by the rare species or significant ecological community at this location. A blank indicates unknown size. SCIENTIFIC NAME: Scientific name of the occurrence of a rare species or significant ecological community.

COMMON NAME: Common name of the occurrence of a rare species or significant ecological community.

ELEMENT TYPE: Type of element (i.e. plant, animal, significant ecological community, other, etc.)

LAST SEEN: Year rare species or significant ecological community last observed extant at this location.

EO RANK: Comparative evaluation summarizing the quality, condition, viability and defensibility of this occurrence. Use with LAST SEEN.

A-E = Extant: A=excellent, B=good, C=fair, D=poor, E=extant but with insufficient data to assign a rank of A - D. F = Failed to find. Did not locate species, but habitat is still there and further field work is justified.

H = Historical. Historical occurrence without any recent field information.

X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location.

? = Unknown.

Blank = Not assigned.

NEW YORK STATE STATUS (animals): Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

E = Endangered Species: any species which meet one of the following criteria:

1) Any native species in imminent danger of extirpation or extinction in New York.

2) Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T = Threatened Species: any species which meet one of the following criteria:

1) Any native species likely to become an endangered species within the foreseeable future in NY.

2) Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).

P = Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of

U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license

G = Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NEW YORK STATE STATUS (plants): The following categories are defined in regulation 6NYCRR part 193.3 and apply to NYS Environmental Conservation Law section 9-1503.

E = Endangered Species: listed species are those with:

1) 5 or fewer extant sites, or

2) fewer than 1,000 individuals, or

3) restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or

4) species listed as endangered by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

T = Threatened: listed species are those with:

1) 6 to fewer than 20 extant sites, or

2) 1,000 to fewer than 3,000 individuals, or

3) restricted to not less than 4 or more than 7 U.S.G.S. 7 and ½ minute topographical maps, or

4) listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

R = Rare: listed species have:

1) 20 to 35 extant sites, or

2) 3,000 to 5,000 individuals statewide.

V = Exploitably vulnerable: listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked. U = Unprotected; no state status.



NEW YORK STATE STATUS (communities): At this time there are no categories defined for communities.

FEDERAL STATUS (plants and animals): The categories of federal status are defined by the United States Department of the Interior as part of 1974 Endangered Species Act (see Code of Federal Regulations 50 CFR 17). The species listed under this law are enumerated in the Federal Regist vol. 50, no. 188, pp. 39526 - 39527.



(blank) = No Federal Endangered Species Act status.

LE = The element is formally listed as endangered.

LT = The element is formally listed as threatened.

E/SA = The element is treated as endangered because of similarity of appearance to other endangered species or subspecies.

PE = The element is proposed as endangered.

PT = The element is proposed as threatened.

C= The element is a candidate for listing.

- (LE) = If the element is a full species, all subspecies or varieties are listed as endangered; if the element is a subspecies, the full species is listed as endangered.
- (LE-LT) = The species is formally listed as endangered in part of its range, and as threatened in the other part; or, one or more subspecies or varieties is listed as endangered, and the others are listed as threatened.
- (LT-C) = The species is formally listed as threatened in part of its range, and as a candidate for listing in the other part; or, one or more subspecies or varieties is listed as threatened, and the others are candidates for listing.
- (LT-(T/SA)) = One or more subspecies or populations of the species is formally listed as threatened, and the others are treated as threatened because of similarity of appearance to the listed threatened subspecies or populations.
- (PS) = Partial status: the species is listed in parts of its range and not in others; or, one or more subspecies or varieties is listed, while the others are not listed.

GLOBAL AND STATE RANKS (animals, plants, ecological communities and others): Each element has a global and state rank as determined by the NY Natural Heritage Program. These ranks carry no legal weight. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State. Infraspecific taxa are also assigned a taxon rank to reflect the infraspecific taxon's rank throughout the world. ? = Indicates a question exists about the rank. Range ranks, e.g. S1S2, indicate not enough information is available to distinguish between two ranks.

GLOBAL RANK:

- G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.
- G2 = Imperiled globally because of rarity (6 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.
- G3 = Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.
- G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
- G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
- GH = Historically known, with the expectation that it might be rediscovered.
- GX = Species believed to be extinct.

STATE RANK:

- S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.
- S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
- S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
- S4 = Apparently secure in New York State.
- S5 = Demonstrably secure in New York State.
- SH = Historically known from New York State, but not seen in the past 15 years.
- SX = Apparently extirpated from New York State.
- SZ = Present in New York State only as a transient migrant.

SxB and SxN, where Sx is one of the codes above, are used for migratory animals, and refer to the rarity within New York State of the breeding (B) populations and the non-breeding populations (N), respectively, of the species.

- TAXON (T) RANK: The T-ranks (T1 T5) are defined the same way as the Global ranks (G1 G5), but the T-rank refers only to the rarity of the subspecific taxon.
 - T1 through T5 = See Global Rank definitions above.
 - Q = Indicates a question exists whether or not the taxon is a good taxonomic entity.

OFFICE USE: Information for use by the Natural Heritage Program.





United States Department of the Interior

PISH A WILLIAM IPE SERVICE

FISH AND WILDLIFE SERVICE

3817 Luker Road Cortland, NY 13045

August 13, 2004

Ms. Sandra Collins Senior Scientist AKRF Environmental Planning Consultants 7250 Parkway Drive, Suite 210 Hanover, MD 21076

Dear Ms. Collins:

This responds to your letter of August 4, 2004, requesting information on the presence of Federally listed or proposed endangered or threatened species in the vicinity of the proposed rezoning of 35 acres associated with Columbia University in Manhattan, New York County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Therefore, no further Endangered Species Act coordination or consultation with the U.S. Fish and Wildlife Service (Service) is required. Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. The most recent compilation of Federally listed and proposed endangered and threatened species in New York* is available for your information.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under other legislation.

For additional information on fish and wildlife resources or State-listed species, we suggest you contact the appropriate New York State Department of Environmental Conservation regional office(s),* and:

New York State Department of Environmental Conservation New York Natural Heritage Program Information Services 625 Broadway Albany, NY 12233-4757 (518) 402-8935 Since wetlands may be present, you are advised that National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

> Cornell Institute for Resource Information Systems 302 Rice Hall Cornell University Ithaca, NY 14853-5601 (607) 255-6520

web: http://iris.css.cornell.edu email: cornell-iris@cornell.edu

Work in certain waters of the United States, including wetlands, may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without recommending additional permit conditions, or recommend denial of the permit depending upon potential adverse impacts on fish and wildlife resources associated with project construction or implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s).*

If you require additional information or assistance please contact Michael Stoll at (607) 753-9334.

Sincerely,
Mark W. Clough
Acting For

David A. Stilwell Field Supervisor

*Additional information referred to above may be found on our website at http://nyfo.fws.gov/es/esdesc.htm.

cc NYSDEC, Long Island City, NY (Environmental Permits) NYSDEC, Albany, NY (Natural Heritage Program) COE, New York, NY

APPENDIX E.3

Natural Resources References

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Table F-1 Environmental Issues in Project Area

							Environmenta	Environmental Issues in Project Area
Block	Lot	Address	Phase I	Current Use	Historical Uses	Site Reconnaissance Notes	Database Review	Environmental Issues
1986	r-	3260 Broadway		Mobile Gas Station	Developed as a gas station.	One gasoline vent pipe and three other vent pipes observed; four monitoring wells; a waste oil UST is located in front of the building.	Several petroleum spills listed; Gasoline USTs closed and removed and 3 in-service gasoline USTs: Large Quantity Generator of hazardous waste	Gas station; Large Quantity Generator of hazardous waste; gasoline USTs; Known soil, and groundwater contamination;
1986	9	573-577 W. 131st	×	Warehouse; parking	Garage with gasoline USTs; chemical manufacturing company with chemical ASTs.	Potential vent pipe associated with former gasoline USTs; petroleum ASTs.	Two gasoline USTs closed; chemical manufacturing listed as RCRA Hazardous Waste generator; fuel oil ASTs.	Former auto garage with gasoline USTs; former chemical manufacturing with ASTs.
1986	10	555 W. 131st	×	Auto-repair garage	Former auto garage with gasoline USTs.	No evidence of gasoline tanks noted; hydraulic lifts noted.	No listings	Former and current auto garage; gasoline USTs; hydraulic lifts.
1986	30	3270 Broadway		U'Haul	Former service station.		No listings.	Former service station; gasoline USTs closed in place.
1986	99		×	Office building	station; gasoline al research.	uel oil vent	Hazardous waste generator but RCRA information for this facility was not reported.	Former service station; gasoline UST; 10,000 fuel oil AST.
1987	-	3300-3318 Broadway		Department store; parking	Chevrolet Motor Car Co. Service Station; College of the City of New York.; commercial use since then.	pe.	No listings.	Service station.
1987			×	Parking garage, auto repair		three suspect fuel draulic lifts.	No listings	Historical gas station with gasoline USTs; two unknown status fuel oil tanks; hydraulic lifts.
1987	6	_	×	Two auto repair garages	STs.	Waste oil ASTs; six gasoline vent pipes. Petroleum spills.	Petroleum spills.	Waste oil ASTs, Gasoline vent pipes; one former 500-gallon fuel oil tank.
1995	31	. £	×	Restaurant; Community Center; Paint company	Residential structures; commercial use.	Residential structures; commercial AST in basement; fill pipes; storage of chemicals, paints, vamishes, lacquers.	Petroleum release reported.	Fuel oil ASTs.
1995	35	613-629 W. 125th / 616- 620 W. 129th		BP Gas Station	Gas station.	Three pump islands; monitoring wells were noted; gasoline vents.		Has been a gas station since at least 1951.
1996	-	658-668 W. 125th		The Cotton Club	ences with first-floor filling station.	d parking. ks.	No listings.	Gasoline station.
1996	14	637-647 W. 125th / 634- 642 W. 130th	×	1909 - F Columbia Factory; University office Factory.	(aliroad car repair, 1912 - 1951 - Auto sales; 1976 -	guir	1989 - Petroleum (#2 fuel oil) spill - "will excavate, isolate, and retest." Closed 1993.	Historic auto sales; potential vent pipe noted on southem side of building.
1996	15		×	Warehouse; beauty salon.	rcial uses.	Fuel oil AST, motor oil AST, waste oil AST; vent pipe for potential gasoline UST.	No listings.	Fuel oil AST; lube and waste oil ASTs; potential USTs; auto-related use.
1996	16	631-633 W. 129th / 628- 630 W. 130th	×	Office; parking garage	Historically a condensed milk factory; parking garage.	Suspect vent pipes.		Historical use as a parking garage; possible historic gasoline USTs; possible fuel oil tank.
1996	18	627-629 W. 129th / 624- 626 W. 130th	×	Parking garage; auto repair	h gasoline UST; nd gasoline USTs s were filed; fuel oil	c; vent pipes; auto petroleum storage ater separator).	No listings.	Historical and current auto repair use. Possible fuel oil tank; likely gasoline USTs beneath the building; suspect floor plates on sidewalk.
1996	20	623 W. 129th	×	Dry cleaner; welding shop; locksmith	Historical store-fronted dwelling, a factory, and an ink and supply warehouse. Dry cleaner.	Dry cleaning chemicals stored on-site.	Conditionally Exempt Small Generator of hazardous waste.	Dry cleaners; oil burner applications; fuel oil UST.
1996	21	613-615 W. 129th / 618 - 620 W. 130th	×	Vacant building	gasoline	¥	No listings.	Historic and present use as auto repair shop; waste oil ASTs; potential historic gasoline UST.
1996	23	603 W. 129th		Parking lot	Factory, ink manufacturing plant; parking lot; fuel oil bumer applications.	Asphalt-paved parking lot.	release.	Historic use as an unknown factory; an ink factory; potential fuel oil tanks; Current use as parking lot.



Table F-1

Environmental Issues in Project Area

Block	ř	Address	Phase I	Current Use	Historical Uses	Site Reconnaissance Notes	Database Review	Environmental Issues
1996	59	3221 Broadway/ 601 W. 129th	×		Coal yard; underground parking garage; gasoline station and auto repair.	Active gasoline USTs and waste oil AST; Six monitoring wells.	Gasoline USTs; Leaking Underground Storage Tank (LUST) reported; tank test failures; active spills; Small Quantity Generator of hazardous waste.	Gas station with USTs; Small Quantity Generator of hazardous waste; soil, groundwater and bedrock contaminated by gasoline.
1996	34	3229-3231 Broadway		Hudson Moving and Storage	Dairy company; warehouse.	No evidence of storage tanks noted during the reconnaissance.		Warehouse use.
1996	88	3233-3235 Broadway/ 600 W.130th	×	, 6	Filling station and auto painting and repair facility.	Hydraulic lifts; cut vent pipes and potential fill caps for former gasoline USTs. In-ground waste oil receptacles.	o Service Station; fuel oil and storage tanks; in-service asoline USTs and used oil tank.	Former Amoco gas station. Closed- in-place gasoline USTs. Hydraulic lifts.
1996	50	632 W. 130th	×	Construction contracting office	Feed storage; iron works; Boiler repair shop	Fill port noted; Minor welding done at the site.	US EPA RCRA transporter.	Iron works. Acetylene tanks.
1996	56	651-661 W. 125th/ 644- 652 W. 130th		Tuck-lt-Away storage company	-uel oil permit; auto sales/repair.	No evidence of storage tanks noted during the reconnaissance.	No listings.	Auto sales and repair circa 1951, maps indicated a gasoline UST.
1996	61	663 W. 125th		Car wash and BP Gas Station	Filling station/service station; gasoline and diesel tanks.	Three pump islands; office and car wash.	Several petroleum spills.	Gas station
1997	-	647-651 W. 130th /2283- 2289 12th Ave	×	Auto repair and meat wholesale	3arage: gasoline USTs; Fuel Oil anks; spray booth with paint storage.	Fuel oil and gasoline fills; 275-gallon waste oil AST, hydraulic car lifts and associated 5-gallon oil canisters, suspect pipes, sidewalk access to potential tank noted.	No listings.	Former and current garage with paint booth, former and current gasoline USTs and fuel oil tanks.
1997	9	641-645 W. 130th / 640- 644 W.131st		MTA-NYCT Department of Buses	Coach company; garage.	Fuel oil and gasoline fills; old fuel oil vents.	Fuel oil UST; fuel oil released on land.	Former and current garage; fuel oil UST; tank test failure.
1997	6	631 W. 130th	×	Plumbing and Heating Company	es; arages	No evidence of tanks or other environmental concerns during site inspection.	No listings.	Former painting, former auto sales (possible repair), former gasoline USTs.
1997	14	625-629 W. 130th	×	Skyline windows	≪5	Gasoline fil cap.	etroleum product release to er in 2003.	Factory; former garage with auto repair; gasoline and fuel oil tanks; gasoline fill port and vents.
1997	17	623 W. 130th	×	Parking	Residential; parking and loading dock.	Unpaved parking area.		Unpaved parking area.
1997	18	619 W. 130th	×	uilding	Auto house; gasoline USTs; factory.	Fuel oil AST; Numerous 55-gallon drums; chemical lab; fuel oil fill caps and vent pipe.	n fuel oil AST	Former gasoline UST, in-service fuel oil AST; chemical storage; chemical lab.
1997	21	615 W. 130th	×	Vacant warehouse	fuel oil permit; Asbestos in cellar boiler room	Cut off vent pipe and fill; 55-gallon drum; closed fuel oil AST	No listings.	Warehouse, former fuel oil storage.
1997	27	603-607 W. 130th	×	Verizon	factory; gasoline ronics; manufacturing; of unknown use.	Transformer vaults along West 130th Street; fuel oil USTs, gasoline USTs, waste oil AST.	Reported petroleum releases; gasoline USTs; used oil AST; Small-Quantity Generator.	
1997	39	601 W.130th/ 3241 Broadway		Church	Auto sales; fuel oil permit	Fill cap and vent pipe.	No listings.	Former auto sales (possible repair), former and current fuel oil storage, fill and vent lines noted.
1997	8	3243-3247 Broadway		Moving and storage		Vent pipe noted during reconnaissance. No listings.		Historic garage use; gasoline UST; fuel oil tank.
1997	33	3247 Broadway	×	Auto repair	нор.	Auto-related chemical storage; hydraulic lifts.	Open spill.	Current and former garage with auto repair, reported spill, hydraulic lifts.
1997	8	602 W. 131st	×	Auto repair	TSL	Waste oil 275-gallon AST, three 55- gallon waste oil drums, suspect vent pipe, hydraulic iffs, numerous discarded batteries, antifreeze, heavy petroleum staining throughout.	No listings.	Garage: gasoline UST; RCRA LQG
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Table F-1 Environmental Issues in Project Area

Block	Lot	Address	Phase I	Phase Current Use	Historical Ilsos	Site Boconsissand Motor	Environment	Environmental Issues in Project Area
	1	604-612				one neconitaissance notes	Database Review	Environmental Issues
1997	40	W.131st / 609-613 W. 130th	×	Pearlgreen hardware store	Gasoline USTs; fuel oil permit; garage; warehouse.	No evidence of storage tanks noted during the reconnaissance.	No listings	Former garage, former gasoline
1997	44	614-618 W. 131st		Moving and storage	Garage; gasoline USTs; parking; fuel oil application.	No evidence of storage tanks noted during the reconnaissance	No listings	Current and former garage, former
1997	47	620 W. 131st	×	Auto repair	Auto repair shop; private garage; gasoline USTs.	Waste oil AST; hydraulic lifts.	No listings.	Surrent and former garage and repair show dashine UST
1997	48	622 W. 131st		Church	Garage; gasoline UST.	Fill cap and vent pipe.	No listings.	Former auto repair with one gasoline
1997	49	624-628 W. 131st	×	Construction contracting company	Refrigeration plant; auto parking; gas tank permit; garage, weighing facility.	A fill pipe and tank filling gauge; Three large weiching scales	No listing	AKRF attempted to locate and remove UST in March 2003; no tank
1997	52	630-634 W. 131st	×	Auto repair	Fuel oil permit; gas tank permit; auto service; parking	One fuel oil fill cap and vent pipe noted.	No listings.	Fuel oil burner application; gas tank applications: fuel oil tank
1997	55	636 W. 131st	×	Auto repair	Garage; gasoline USTs, fuel oil tanks; spray booth with paint storage.	Fuel oil vent, two 55-gallon drums, hydraulic car lifts and associated 5-gallon oil canisters, sidewalk access to potential tank noted.	Two active DOR holler violations	Former and current auto repair.
1997	56 6	638 W. 131st	×	Contractor's storage; commercial	Residential dwelling; contractor and an auto repair; bologna factory; garage.	No evidence of tanks or other environmental concerns during site inspection.	No listings.	Former garage
1997	19	2293-2297 12th Ave / 646-648 W. 131st Street		Commercial office and restaurant	Refrigeration plant; storage.	No evidence of storage ranks	No lietinos	Former refrigeration plant, unlabeled
1997	64	2291 12th Ave	×	Vacant		No evidence of storage tanks noted during reconnaissance.	No listinas.	Former factory current warehouse
1998	,	659 W.131st / 2301 12th Ave	×	Vacant (former diner)	dwelling; junk yard.	No evidence of tanks or other environmental concerns during site inspection.	No listinas.	Former junk yard in the vacant lot
1998	3	2305-2307 12th Ave	×	Fish, meat, warehouse		e of tanks was noted during onnaissance.	No listinas.	Fish/Meat warehouse
1998	9 1	653-655 W. 131st	×	area ay	e.	is noted during	No listinas	Former auto repair use, historic
1998	10	×.	×	Midway Electrical Supply	Φ	Vent pipes and fill cap;	Reported spills; fuel oil UST.	Former garage; historic gasoline
1998	13 V	635-639 W.131st	×	arage	Residential; garage; gasoline USTs	Fill caps and vent pipes; waste oil AST.	No listings.	Present and former use as a garage. gasoline USTs; waste oil AST.
1998	16	633 W. 131st		Columbia University office.		No evidence of tanks was noted during the site reconnaissance.	No listings.	No on-site issues
1998	17	. 🖻	×	Columbia University office	Gas tanks; fuel oil permit; paint oom, solvent storage room, spray booths; fuel oil tank	Several toxic and/or hazardous materials; fuel oil AST.	T, Small Quantity Generator	Factory; fuel oil AST; gasoline USTs, RCRA SQG. FORMER MGP GAS HOLDER.
1998	24	131st / 606- 608 W.	×	Company c	Fuel oil permit, auto service w/ gasoline tanks; garage; chemical company.	Storage of chemicals; monitoring wells.	waste	

Table F-1 Environmental Issues in Project Area

Block	Lot	Address	Phase I	Current Use	Historical Uses	Site Reconnaissance Notes	Database Review	Environmental Issues
1998	26	603-605 West 131st	×	Chemical Company	Fuel oil permit; auto service w/ gasoline tanks; garage; chemical company.	Storage of chemicals.	Leaking Underground Storage Tank (LUST)	Current and former use as a garage, former gasoline USTs and potential former fuel oil storage
0.0 0.0 0.0 0.0	29	600 W.132nd /3259-3275 Broadway / 601 W.131st Street		g	vice; fuel oil nd grease trap.	Evidence of former tank; potential old vent pipe.	No listings.	Current use for auto parking, former auto repair, former fuel oil storage.
1998		602-604 W. 132nd		Residential		Fuel oil fill pipe and vent; evidence of significant spill.	Fuel oil UST in service.	Fuel oil storage, severe staining at fill pipe.
1998		626 W. 132nd		Con Ed Cooling Plant	Standard Gas & (associated with holders); transfo	nes beneath the come of the stones ed.	Reported spills; Conditionally Exempt Small Quantity Generator.	Transformer yard, multiple reported spills; - RCRA CESQG
1998		638-644 W. 13th	×	Verizon parking and maintenance garage	Lime shed and stable; garage; Bordens Milk Company, gasoline USTs; diesel UST; waste oil and motor oil ASTs.	Former pump islands; a gasoline/water separator.	Gasoline USTs; diesel USTs.	Former garage; former gasoline USTs, former waste oil and motor oil ASTs.
1998	61	2311-2317 12th Ave / 646-652 West 132nd	×	Auto repair and parking		Waste oil AST; hydraulic lifts; auto painting.	No listings.	Auto and auto body repair (painting); waste oil AST; historic gasoline USTs.
1999	7	604-670 W.133rd / 2319-2329 12th Ave / 605-663 W. 132nd		Bus Depot, Bus Parking	Manufactured gas holder; auto trucking; gasoline USTs; garage; bus depot, bus parking.	Monitoring wells; transmission fluid UST fill ports, lube oil UST fill ports.	Reported spills, gasoline and other petroleum USTs; petroleum ASTs, Large Quantity Generator of hazardous waste.	Parking lot and garage; petroleum USTs; multiple spills and leaks of diesel and gasoline; MGP site.
1999	29	3281 Broadway / 601 W.132nd		Residential	Residential dwelling with a store front.	No evidence of storage tanks noted during reconnaissance.	No listings.	No on-site issues.
1999	30	3283 Broadway		Residential	Residential dwelling with a store front.	No evidence of storage tanks noted during reconnaissance.	No listings.	No on-site issues.
1999	31	3285 Broadway		Residential			Gasoline tank	
1999	32	3287 Broadway		Residential	Residential dwellings; fuel oil tank.	Vent pipes and fill port.	No listings.	Vent pipe and fill port; gasoline tank.
1999	33	3289 Broadway		Residential			No listings.	
1999	36	600 W. 133rd / 3291-3299 Broadway	×	Residential and retail	Residential dwelling with a store front; fuel oil tank.	Residential with stores; fill and vent.	Fuel oil tank	Fill port and vent pipe: fuel oil tank.
2001	100	2331-2333 12th Ave / 697-699 W. 133rd		Beer and Soda distributor	Vermont Marble Company; Cleantex Cleaners; grocery warehouse; oil burner application	One fill cap and vent pipe.	No listings.	Large scale cleaning company (using solvents); fuel oil storage tank.
2001	110	2335-2339 12th Ave		Cleantex Industrial Cleaners	Vermont Marble Company, CleanTex Cleaners, which contained a solvent tank.	No evidence of storage tanks noted during reconnaissance.	Fuel oil released.	Large scale cleaning company; fuel oil storage tank and reported spill.
2001	120	2341-2347 12th Ave / 640 W.134th		Cleantex Industrial Cleaners	Residential structure and a stable; gasoline USTs; oil burner applications.	One fill cap and vent pipe.	No listings.	Historic garage with gasoline USTs.





Table F-1

							Environmenta	Environmental Issues in Project Area
Block	Ľ	Address	Phase I	Current Use	Historical Uses	Site Reconnaissance Notes	Database Review	Environmental Issues
1988		3320-3332 Broadway / 535-539 W. 134th / 536- 54 W. 135th		Supermarket, moving and storage	Auto auction; gasoline UST; auto		1	Historic auto-related uses - sales and
1988		527 W. 134th		Recidential	Docidontial of the china	One illi cap and vent pipe.	No listings.	service; gasoline UST; fuel oil tank. Suspect vent pipes - potential fuel oil
1988	53	520-532 W.		Hamilton Job	i vesideriuai su ucture.	Suspect vent pipes.	No listings.	tanks.
		534 W 135th		Commingn	Garage with gasoline USTs.	Transformers on West 135th Street.	No listings.	Former garage with gasoline USTs.
1988	09	/ 529-533 W. 134th	- 	Health Center; Hair Salon	Garage with gasoline USTs.	No evidence of storage tanks noted during reconnaissance.	Reported petroleum spill	Former garage gasoline USTs;
2004	80	712-718 W. 125th	-, -	Store; storage; parking lot	"Manhattanville Station" - N.Y. Central and Hudson River Railroad; auto repair shop.	Hydraulic car lifts on parking lot	No listing	Former auto repair; Hydraulic lifts in
2004	-	700-710 W.			"Manhattanville Station"; Wilson and Company Cold Storage; auto	Sidewalk access to potential tank noted;		parking tot. Mercury spill: former auto renair
2004		2282 12th		d snop	repairs. Hotel; cold storage; meat	black staining at side door. No evidence of storage tanks noted		black staining.
5 00 4	T	AVe 2286-2288		storage	warehouse; café.	during reconnaissance.	No listings.	Unknown warehouse use.
2004	42	12th Ave / 711 W. 125th	- 0	Warehouse, storage	Cold beef storage.	No evidence of storage tanks noted during reconnaissance.	No listings.	Unknown warehouse use
2004	46	713-719 W. 125th Ave / 713-719 W. 125th	LL.	Parking Lot	Cold beef storage with an independent electrical plant.	Demolished	Renorted natrole im release	Historic "Independent Electrical Plant" associated with cold storage facility. Former garage or parking, reported
2004	20	Address Unknown	ш	Parking Lot	aast	Parking lot	No licitions	
2004	65	Address Unknown	<u> </u>	Parking Lot	entral and Hudson River ad; coal pockets (Interboro			No on-site issues. Site has been vacant except for
2004	68	2300 12th Ave		Parking Lot	veef storage and a stable thay and grain; provisions e: garage and parking.			nistoric railroad tracks; Coal pockets. Garage and parking since sometime between 1951 and 1976. Historic
2004	71	2302-2306 12th Ave	<u> </u>					warehouse use.
2004	72 A	2314 12th Ave	Æ⊢ŭ.	Harlem Bait & (Tackle and g Fairway storage r		0		Chemical manufacturer; Fairway cold
2004	102 7	2328-2330 12th Ave / 701 W.132nd	Ľ	Fairway	beef	the property of the property o		storage.
2004	2 106 A	2338 12th Ave	<u> </u>		d; fuel		No listings.	Past use as freight station and parking lot; former fuel oil and
2005	8		០៩ជ	Parking lot and storage for Fairway.	The site has remained vacant Except for historical railroad tracks	ot for Fairway; loading and		gasoni le stotage.
2005	9	2350-2362 12th Ave	ď	j;		an way.		Fairway cold storage. Railroad tracks: parking lot

Table F-1 Environmental Issues in Project Area

Block		Address	Phase I	Lot Address Phase Current Use	Historical Uses	Site Reconnaissance Notes	Database Review	Environmental Issues
		2344-2348		Restaurant		Auto repair, detailing, and car wash. No		
		12th Ave /		nuder	Wagon shed and a stone house;	evidence of tanks was noted during site		Current auto repair use; gas tank
2005	12	701 W. 133rd		construction	gas tank permit.	reconnaissance.	No listings.	permit.
		702 West		Vacant building:		No evidence of tanks was noted during		
2005	27	135th		parking lot	Coal pockets; police station.	the site reconnaissance.	No listings.	No on-site issues.
		2368 12th		Tommy Hilfiger		No evidence of gasoline tanks noted		Historic railroad tracks ran through
2005	32	Ave		storage	Railroad tracks.	during reconnaissance.	No listings.	the eastern half of the site.



APPENDIX F.2 SUBSURFACE (PHASE 2) INVESTIGATION

Columbia Manhattanville

TAX BLOCKS 1986, 1987, 1995-1999 NEW YORK, NEW YORK

Subsurface (Phase II) Investigation

AKRF Project Number: 10470

Prepared for:

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Figure 1 - Site Location Map

Figure 2 - Project Site Detail

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- Appendix A Photographic Documentation
- Appendix B Soil Boring Logs and Monitor Well Construction Logs
- Appendix C Soil and Groundwater Analytical Data Sheets
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1.0 INTRODUCTION

AKRF, Inc. (AKRF) conducted a Subsurface (Phase II) Investigation at the Columbia-Manhattanville properties located in Harlem, New York, as shown on Figure 1 (Project Area). The objective of the subsurface investigation was to characterize the subsurface conditions and determine whether past or present on-site and/or off-site potential sources of contamination have adversely affected the Project Area. Results of the Phase II study were also intended to be used to evaluate any potential environmental risks and/or the need for remedial action at the site prior to future development.

The 35-acre rezoning area has a long history of industrial and manufacturing uses and, therefore, there is potential for residual contaminants, including soil and/or groundwater contamination associated with buried storage tanks and the remnants of two manufactured gas plants. Development within the Project Area would involve excavation and disturbance of the existing soil, dewatering of groundwater, and renovation or demolition of existing structures. Consequently, construction activities could temporarily increase exposure pathways for the surrounding community and construction workers to these potential contaminants.

Subsurface (Phase II) activities were conducted in accordance with AKRF's New York City Department of Environmental Protection (NYCDEP)-approved Sampling Protocol and site-specific Health and Safety Plan (HASP) dated February 2005. The Phase II study included the advancement of twenty-two soil borings, nineteen of which were retrofitted with groundwater monitor wells, and the collection of soil and groundwater samples for laboratory analysis. This report describes methods and results of the Phase II investigation conducted by AKRF. All of the soil and groundwater samples were collected from properties within the Project Area owned or controlled by Columbia University, which comprised properties within the Academic Mixed-Use Area only (Figures 1 and 2). Properties outside the Academic Mixed-Use Area (i.e., not controlled by Columbia University) were evaluated for potential assignment of "e-designations" by the NYCDEP, as discussed further in the following section.

2.0 BACKGROUND

2.1 Preliminary Environmental Site Assessment (PESA)

A Preliminary Environmental Site Assessment (PESA) was prepared for the entire Project Area, including the Academic Mixed-Use Area, to assess the potential for hazardous or contaminated materials in buildings or the soil and groundwater from past or present uses. The PESA incorporated: street-level site inspections; a review of historic maps, regulatory records and existing environmental studies; and 27 individual Phase I Environmental Site Assessments (Phase I ESAs) conducted for properties within the Academic Mixed-Use Area in accordance with American Society for Testing and Materials (ASTM) Standard E1527-00.

Each lot in the Project Area was studied to determine whether current or historical, known or potential, hazardous materials conditions may have affected the lot or adjacent lots. Factors that were considered when making this determination included the severity and probability of the potential hazardous materials condition, as well as physical, geological, or hydrogeological (groundwater) conditions that may have affected the migration of hazardous materials.

For the 35-acre Project Area the following research was conducted:

 A visual inspection of each property from sidewalks and public rights-of-way to identify current uses and assess existing conditions.

- An evaluation of land use history using available historical maps.
- A review of federal and state databases regarding hazardous materials for sites within the Project Area and for the surrounding area.
- A review of available geologic, hydrologic, hydrogeologic, and topographic information from existing data sources.
- A review of available Phase I ESAs and environmental and geotechnical reports previously conducted by AKRF and others, including historic mapping and boring logs.
- Interior inspections of the 27 sites where individual Phase I ESAs were performed.

At the time of this study, the majority of the Project Area was occupied by commercial, manufacturing, and light industrial uses, including gas stations and auto repair shops, and the Manhattanville Bus Depot (Discussed further in Section 2.2). The PESA identified numerous properties as having past or current auto-related uses. Two large manufactured gas holders were identified in the Project Area that were originally developed as manufactured gas plant (MGP) sites before 1909 and were operated as such until sometime before 1939. The areas occupied by these two MGP sites includes the current Manhattanville Bus Depot property located at 2319–2329 Twelfth Avenue (605–663 West 132nd Street) and the Columbia University property located at 611–631 West 131st (610–624 West 132nd Street). Based on the results of the PESA, the following potential classes/sources of contaminated materials at various sites in the Project Area were identified:

- Volatile organic compounds (VOCs). There are two main kinds of VOCs: aromatic compounds and chlorinated compounds. Aromatic compounds include benzene, toluene, ethylbenzene, xylene (BTEX), and methyl tertiary butyl ether (MTBE), which are found in petroleum products, especially gasoline. Chlorinated compounds include tetrachloroethene (also known as perchloroethylene or "perc") and tricholoroethene, which are common ingredients in solvents, degreasers, and cleansers, and in chemicals commonly used in dry cleaning. VOCs present the greatest potential for contamination since they can generate vapors, as well as contaminate soil and groundwater. Former or current gasoline tanks are the most likely sources for VOC contamination in the Project Area.
- Semivolatile organic compounds (SVOCs). The most common SVOCs in urban areas are polycyclic aromatic hydrocarbons (PAHs), which are constituents of partially combusted coal or petroleum-derived products, such as coal ash and fuel oil. PAHs are commonly found in New York City urban fill material, which likely underlies most of the Project Area. In addition, petroleum-related SVOCs could be associated with the numerous tanks currently or formerly located in the Project Area.
- Polychlorinated biphenyls (PCBs). Commonly used as a dielectric fluid in transformers, some underground high-voltage electric pipelines, and hydraulically operated machinery (e.g., hydraulic lifts). PCBs were also used in manufacturing and industrial applications (e.g., plastic manufacturing).
- Metals (including lead, arsenic, cadmium, chromium, and mercury). Metals contamination is frequently associated with smelters, platers, foundries, and metalworks and are found as components in paint, ink, petroleum products, and coal ash. These metals tend not to migrate far in soil and, therefore, they are of greatest concern at the site where they are generated. Metals at levels above natural background levels are frequently present in fill material throughout the New York metropolitan area.



- Pesticides, herbicides, and rodenticides. These are commonly used to control
 pests/rodents and/or insects and vegetation. They can be used both inside of buildings
 and outdoors.
- Fuel oil and gasoline storage tanks. Numerous residences and businesses within the Project Area currently have, or once had, aboveground storage tanks (ASTs) or underground storage tanks (USTs) for fuels, including heating oil and gasoline. Some of these tanks may have been removed, and others, although no longer in use, may remain buried in place or within basements. Some of the tanks are known to have leaked, and others may have leaked, though the leaks have not been discovered or documented. Some spills have been cleaned up in accordance with State regulations, but others have not because cleanup, which can take several years, is ongoing.
- Historic manufactured gas plant (MGP) gas holders. The two primary byproducts of MGPs are coal tar and purifier bed wastes. As freshly manufactured gas was cooled, less volatile chemicals condensed from the gas to an oily mixture to create coal tar. Coal tar is relatively viscous so it can migrate to adjacent properties, and it contains VOCs (including BTEX) and SVOCs (including PAHs). After the gas cooled, impurities were removed from the gas by sending it through purifier beds, which usually consisted of lime or wood chips impregnated with iron filings.
- Fill materials of unknown origin. In the past, waste materials, including coal and incinerator ash, demolition debris, and industrial wastes, were commonly used as fill in urban areas. Even fill material consisting primarily of soil may exhibit elevated levels of PAHs, metals, PCBs, and other contaminants. Such materials are potentially present throughout the Project Area.
- Asbestos. Asbestos is a common component of building materials, especially insulation, fireproofing, tile flooring, plaster, sheetrock, tile ceiling, mastic, and roofing materials. In addition to materials within existing structures, subsurface utility lines may be coated with asbestos or encased in "transite," an asbestos-containing material (ACM). Asbestos was widely used before 1980. Because of the ages of the buildings in the Project Area, ACMs are likely present.
- Lead-based paint. The use of lead-based paint in New York City residential buildings was banned in 1960. Its use in other buildings and outdoors was severely restricted by the Consumer Products Safety Commission in 1977. Lead-based paint that is released (as dust or otherwise) is potentially hazardous, especially to children. Older buildings in the Project Area likely contain lead-based paint.

Based on the results of the PESA, in consultation with the New York City Department of Environmental Protection (NYCDEP), the Phase II Sampling Protocol dated February 2005 was developed by AKRF to evaluate the nature and prevalence of subsurface contamination at locations within the Academic Mixed-Use Area.

2.2 Manhattanville Bus Depot

As part of the environmental assessment of the Project Area, a Freedom of Information Law (FOIL) request was sent to the New York State Department of Environmental Conservation (NYSDEC) regarding the ongoing investigation and cleanup of the Metropolitan Transportation Authority (MTA) Manhattanville Bus Depot, which is located in the Academic Mixed-Use Area on the block bounded by West 132nd and 133rd Streets, Twelfth Avenue (Riverside Drive) and Broadway. The current structure was built in 1991 on the site of the former Manhattan and Bronx

s of the d in the closed

Surface Transit Operating Authority Depot, which was built in 1918. Prior to that, portions of the site were used for the production and storage of manufactured gas. The bus depot is listed in the NYSDEC Petroleum Bulk Storage database as having 18 tanks currently in-service and 15 closed and removed tanks. The tanks contain (or formerly contained) diesel, No. 2 fuel oil, lube oil, leaded gasoline, and other products. In August 2002, URS Corporation (URS) completed a Remedial Investigation (RI) Report, which was submitted to the NYSDEC. Soil and groundwater beneath the site was found to have been affected by leaks from the site's tanks and two free product plumes were delineated. According to the report, leaking petroleum products are being recovered (approximately 11,705 gallons of product were removed between August 2001 and June 2002). Product recovery rates have since been reduced. As of May 2004, a total of 14,312 gallons had been recovered, but only 3 gallons were recovered during the final month.

In January 2003, URS completed a fingerprint analysis of petroleum product recovered from onsite monitoring wells. URS concluded that product detected in two of the monitoring wells represent a different release from that related to the product removal described above and may have come from the north-adjacent apartment building (fronting Broadway) or another upgradient facility. URS requested that NYSDEC investigate the potential source and instruct the responsible party to implement remedial action. No additional information regarding additional studies related to this other potential source of contamination was included in the documents received.

Remediation of the Manhattanville Bus Depot property appears to be on-going. Petroleum compounds detected in samples from nearby monitoring wells may indicate petroleum releases from the bus depot, or perhaps from the former MGP operations. It is possible that most of the former MGP structures (i.e., gas holders, etc.) previously located at the site were removed during construction of the on-site building. However, residual contamination from both the Manhattanville Bus Depot and former MGP site are likely present, which will require remediation as part of, or prior to, proposed future development plans for the site.

2.3 e-Designated Properties

Selected lots outside the Academic Mixed-Use Area (i.e., properties not controlled by Columbia University), where the potential for contamination was identified in the PESA, have been recommended to receive an "e-designation" to ensure they are properly investigated and remediated, if necessary. A summary of the potential environmental concerns associated with each of these lots is provided in Table 2.3, and their locations are provided on Figure 2.

Under the e-designation, the lot owner must prepare a Phase I Environmental Site Assessment (ESA) before any redevelopment and, if necessary, implement a testing and sampling protocol, and remediation where appropriate, to the satisfaction of the NYCDEP before issuance of a building permit by the New York City Department of Buildings (DOB) (pursuant to Section 11-15 of the Zoning Resolution—Environmental Requirements). The e-designation also requires mandatory Construction Health and Safety Plans (CHASPs), which must be approved by NYCDEP.



Table 2.3 Proposed e-Designation Lots

Block	Lot	Environmental Issues					
	1	Historic auto-related uses - sales and service - one historic 550-gallon gasoline UST. Fuel oil tank.					
1988	8	Suspect vent pipes - potential fuel oil tanks.					
1700	53	Former garage use from circa 1939 through circa 1951 - historically four 550-gallon gasoline USTs and one 1,500-gallon gasoline UST.					
	60	Former garage with four historic 550-gallon gasoline USTs.					
	100	Large scale cleaning company (using solvents) circa 1939. Fuel oil storage tank.					
2001	110	Large scale cleaning company containing a solvent tank circa 1939 through at least 1951. Fuel oil storage tank and spill.					
	120	Historic 550-car capacity garage with four 550-gallon gasoline USTs.					
	8	Former auto repair. Hydraulic car lifts in parking lot.					
2004	12	Former mercury spill, former auto repair, black staining at side door during site reconnaissance.					
	40	Potential former fuel oil tanks associated with historic hotel. Unknown warehouse use.					
2004	46	Historic "Independent Electrical Plant" associated with cold storage facility. Former garage or parking, formerly generated "auto waste".					
2004	68	Garage and parking since sometime between 1951 and 1976. Historic warehouse use.					
	72	Chemical manufacturer circa 1951. Fairway cold storage.					
	102	Post you as fraight station and marking late for more first late 1					
	106	Past use as freight station and parking lot; former fuel oil and gasoline storage.					
2005	8	Potential tanks associated with Fairway cold storage.					
2003	12	Current auto repair use. 1953 gas tank permit.					

3.0 FIELD ACTIVITIES

3.1 Sampling Protocol

A Phase II Sampling Protocol was developed in consultation with the NYCDEP to evaluate the nature and prevalence of subsurface contamination at locations within the Academic Mixed-Use Area. The Subsurface (Phase II) Investigation consisted of subsurface sampling at 22 locations spread throughout the Academic Mixed-Use Area, but biased towards locations with a higher potential for contamination (based on the PESA), encompassing a variety of types of contamination (e.g., petroleum storage, former manufactured gas facilities and manufacturing facilities). Sample locations are shown on a site plan provided as Figure 2. Photographic documentation is provided in Appendix A.

Several sampling locations within Academic Mixed-Use Area sited in the Sampling Protocol were not accessible by AKRF at the time of this Phase II study. Access to these locations was not granted by the current property owners for various reasons, primarily because the Phase II sampling activities would have hindered the operations of the on-site businesses. As such, sampling at these locations, as noted on Figure 2 will be performed when site access is available.



3.2 Soil Borings

Between February 15 and March 4, 2005, Subsurface Drilling Solutions, of Canastota, New York, advanced 22 soil borings (MW/CB-1 through MW/CB-22 and CB-6, CB10 and CB-15) throughout the Academic Mixed-Use Area. A hollow-stem auger rotary rig was used to advance the soil borings into the subsurface. Soil samples were collected on a continuous basis by driving a split-spoon sampler into the subsurface at two-foot intervals. Soil sampling was conducted to approximately five to six feet below the groundwater table at all locations, except boring locations CB-6, CB-10 and CB-15, where bedrock refusal was encountered at 8.0, 14.7 and 18.2 feet respectively. Soil samples were characterized according to the Modified Burmister soil classification system.

Recovered soil at each boring was transferred from the sampler into a sealable plastic bag. The headspace of each sample was screened by placing the probe of a photoionization detector (PID) inside the plastic bag. Up to two soil samples from each of the soil borings were selected for laboratory analysis based on PID response and other indications of contamination. If no evidence of contamination (visual, odor or PID readings) was encountered during field screening, one sample was collected from the interval directly below the asphalt or concrete surface and one sample was collected from the soil/groundwater interface or bottom of the boring. If evidence of contamination was noted, one of the two soil samples was collected from the interval with evidence of the most significant contamination.

Each sample was labeled, sealed, and placed in a chilled cooler for shipment to Alpha Analytical Laboratories, a New York State Department of Health (DOH)-certified laboratory. Soil samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, polychlorinated biphenyls (PCBs) by EPA Method 8082, pesticides by EPA Method 8081, and target analyte list (TAL) metals. Due to limited soil sample recovery and/or fill material (brick, concrete, wood, and asphalt) at soil boring location MW/CB-3, only one soil sample was submitted for laboratory analysis for VOCs, SVOCs, PCBs, pesticides, and TAL metals. For the same reason, only one soil sample was submitted for laboratory analysis from soil boring locations MW/CB-4 and CB-6 and analyzed for VOCs only. No soil samples were able to be submitted from MW/CB-5 due to extremely limited soil sample recovery throughout the entire soil boring.

For quality assurance/quality control purposes, four field blanks and four trip blanks were submitted to the laboratory along with the soil samples collected. The field blanks were analyzed for all the same parameters selected for the soil sample analyses. The trip blanks were analyzed for VOCs by EPA Method 8260 only.

All drill cuttings not used to backfill the soil borings or that exhibited petroleum-like odors, staining or elevated PID readings, were containerized in DOT-approved 55-gallon drums.

3.3 Groundwater

At 19 of the 22 soil boring locations, groundwater was encountered prior to bedrock in the soil borings and the soil borings were retrofitted with groundwater monitoring wells. The wells were constructed of two-inch, Schedule 40, threaded, flush-joint PVC well materials, in accordance with EPA RCRA monitor well installation procedures. A locking well cap and flush-mount well cover were installed upon completion of each well. Refusal was encountered on bedrock prior to encountering groundwater at soil boring locations CB-6, CB-10 and CB-15, therefore, these three soil borings were not retrofitted with monitor wells. Following the completion of well construction, each well was developed using a 2-inch submersible pump to remove at least three

well volumes. All well development water was containerized in 55-gallon drums for off-site disposal. Soil boring logs and well installation diagrams are provided in Appendix B.

In accordance with EPA protocols, the monitoring wells were allowed to stabilize for at least one week prior to sampling. Between March 14 and 16, 2005, the groundwater samples were collected using the low-flow methods into laboratory-supplied containers according to EPA protocols, as outlined in the Sampling Protocol dated February 2005. Each sample was labeled, sealed, and placed in a chilled cooler for shipment to Alpha Analytical Laboratories, a New York State Department of Health (DOH)-certified laboratory. Prior to sampling, an electronic interface meter was used to measure water levels and thickness of free product, if any. No free phase product was detected in any of the sampled monitor wells. Temperature, pH, specific conductivity and turbidity were recorded during the low-flow purging of the wells and allowed to stabilize in accordance with the Sampling Protocol prior to sampling. Groundwater samples were analyzed for VOCs by EPA Method 8260, SVOCs by EPA Method 8270, pesticides and PCBs by EPA Methods 8081/8082, and TAL metals (both filtered and unfiltered samples).

3.4 Field Analytical Results

Recovered soil at each boring was transferred from the sampler into sealable plastic bags. The headspace of each sample was screened for volatile organic compounds (VOCs) by placing the probe of a Model 580B photoionization detector (PID) inside the plastic bags. Headspace readings ranged from none detected (the majority of the samples) to 27.8 parts per million (ppm) at soil boring location MW/CB-4 (18'-20'). Soil samples collected from the soil boring locations throughout the study site area generally consisted of light brown, fine sand and silt, with fine gravel and fill material (brick, asphalt, wood and/or coal and ash). Petroleum like odors were noted in soil samples MW/CB-2 (12'-14'), MW/CB-4 (18'-20'), MW/CB-5 (12'-14'), MW/CB-19 (8'-10') and MW/CB-20 (20'-24'). Creosote-like odors were noted in soil samples MW/CB-4 (14'-16') and MW/CB-5 (4'-6'), as noted on the boring logs provided in Appendix B.

The depth to water was measured from the top of casing in the monitoring wells during groundwater sampling on March 14 and 15, 2005. The depth to water ranged from approximately 6.4 feet below grade at MW/CB-17 to 25.9 feet below grade at MW/CB-3. No sheens or odors were noted in the groundwater sampled.

4.0 SOIL ANALYTICAL RESULTS

Thirty four (34) discrete soil samples were collected from twenty two (22) soil borings for laboratory analysis as part of this investigation. Soil sample analytical results were compared to the Recommended Soil Cleanup Objectives (RSCO) outlined in the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) 4046. Soil sample analytical results are presented in Tables 1, 2, 3 and 4. Soil descriptions, observations, and photoionization detector (PID) readings were recorded on the soil boring logs provided in Appendix B. The laboratory analytical data sheets are provided in Appendix C.

VOCs were detected in eight of the soil samples analyzed at concentrations below their respective TAGM RSCOs. Fourteen VOCs were detected in sample MW/CB-16 (4'-6'); less than four were detected in the other seven samples. These levels of VOCs may be reflective of poor quality urban fill material and are not necessarily indicative of contamination from past or present on-site operations.

SVOCs were detected in 25 of the soil samples analyzed, primarily below the TAGM RSCOs. Compound concentrations were found to exceed TAGM guidance values in three of the samples. The majority of the SVOCs detected were polycyclic aromatic hydrocarbons (PAHs). The concentrations detected were typical of urban fill material encountered in New York City soils and do not appear to be indicative of environmental contamination from former operations.

Metals were detected in all of the soil samples analyzed. Most of the concentrations were either below the TAGM RSCOs or within normal background levels established for eastern U.S. soils. Some metals were detected above established background levels in seven of the samples analyzed including calcium, chromium, lead, magnesium, mercury, selenium and zinc. The above background metals concentrations in MW/CB-9 (4-6), CB-10 (2-4), CB-10 (7-8) CB-15 (2-4), MW/CB-17 (2-4) are most likely attributable to deposition of urban fill during past development activities and do not appear to be indicative of environmental contamination from historic operations on-site.

The concentrations of calcium, chromium, lead, mercury and selenium were significantly above their respective established background levels in samples MW-CB-13 (2-4) and MW/CB-13 (6-8), which were collected from the same soil boring at depths less than eight feet below grade. The site is currently and auto body and repair shop and the elevated metals in the samples are likely related to the on-site maintenance operations. Chromium is used in the process of chrome plating of automotive body parts. Selenium is used as a component of pigments and may also be related to auto body repair work. Calcium has various uses, including in metallurgy when it is used to harden lead for bearings.

Pesticides were detected in two of the samples collected. The pesticides 4,4'-DDE and 4,4'-DDT were detected in MW/CB-13 (2-4) and CB-15 (2-4), but at concentrations below the TAGM RSCOs. No PCBs were detected in any of the samples collected for laboratory analysis.

Petroleum-like odors noted in the soil samples borings MW/CB-2 (12'-14'), MW/CB-4 (18'-20'), MW/CB-5 (12'-14'), MW/CB-19 (8'-10') and MW/CB-20 (20'-24') during sampling were likely due to residual petroleum products either from past on-site operations or poor quality fill imported to the site during past grading activities. The soil sample analytical data did not indicate significant petroleum contamination.

Creosote-like odors were noted for soil samples MW/CB-4 (14'-16') and MW/CB-5 (4'-6'). Creosote is typically used as a wood preservative in the United States, often in the construction of railroad tracks. Residual creosote has been known to be found in urban fill material. As no current or historic source of creosote could be identified for these sampling locations, the creosote odors are likely attributable to urban fill and not to a specific spill or release.

5.0 GROUNDWATER ANALYTICAL RESULTS

Nineteen (19) groundwater samples were collected for laboratory analysis as part of this investigation. Groundwater sample analytical results were compared to the NYSDEC Class GA Ambient Water Quality Standards, the most stringent standards available. Since groundwater is not a source of potable water in the Manhattan, these standards are used for comparison purposes only. The groundwater analytical results are presented in Tables 5, 6, 7, 8 and 9. The laboratory analytical data sheets are provided in Appendix C.

VOCs were detected in 15 of the 19 groundwater samples collected from the project site. VOCs were at concentrations above their respective TAGM RSCOs in nine of these samples. The



majority of the detected levels of VOCs are likely reflective of poor quality urban fill material and are not necessarily indicative of contamination from past on-site operations. However, elevated VOCs potentially reflective of gasoline contamination were detected in samples MW/CB-4 and MW/CB-5. The potential for indication of gasoline-related contamination at these sampling locations is based on the elevated levels of compounds typically associated with gasoline product (i.e., benzene, ethylbenzene, toluene, and xylenes). These groundwater samples were collected downgradient from the gasoline station located at Broadway and West 129th Street, and may be indicative of leaks or spills from the gasoline tanks, though such contaminants were not noted in the soil sample from boring MW/CB-4. Elevated petroleum-related VOCs (i.e., ethylbenzene, toluene, xylenes and naphthelene) were also noted in samples MW/CB-11, MW/CB-18, MW-CB-19, and MW/CB-22 that may reflect impacts from the manufactured gas plant along West 131st Street, which was located in a presumed upgradient groundwater flow direction.

SVOCs were detected in all of the groundwater samples collected, primarily below the TAGM RSCOs. Compound concentrations were found to exceed TAGM guidance values in eight of the samples. Most of the SVOC exceedances were for polycyclic aromatic hydrocarbons (PAHs), which is typical of groundwater encountered in industrial areas of New York City. Such detections are usually the result of impact from poor quality urban fill material and may not be indicative of environmental contamination from former operations. Suspended sediment contained in the samples may have contributed to the elevated concentrations of SVOCs.

Total and dissolved metals were detected in all of the groundwater samples collected. The majority of the concentrations were below the NYSDEC Class GA Ambient Water Quality Standards. However, total metals exceeding the Class GA standards were detected in 18 of the 19 groundwater samples analyzed. These metals included barium, chromium, iron, lead, magnesium, manganese, and sodium. Dissolved metals exceeding the Class GA standards were detected in only nine of the groundwater samples analyzed and included barium, iron, magnesium, manganese, and sodium. The fact that more total metals levels were found to exceed the standards is likely due to the suspended sediments in the collected sample and not indicative of contamination from former on-site operations. Nonetheless, the elevated dissolved metals are also typical of groundwater quality encountered in industrial areas of New York City and are not necessarily reflective of contamination from past operations. The potential presence of brackish water, due to the close proximity of the Hudson River, may have contributed to the presence of certain dissolved metals such as sodium.

No pesticides or PCBs were detected in any of the groundwater samples analyzed.

6.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

All investigation-derived waste, including drill cuttings not used to backfill the soil borings or that exhibited evidence of contamination (i.e., petroleum-like odors, staining or elevated PID readings), well development purge water, and decon-pad wash water, were containerized in DOT-approved 55-gallon drums. The drums were sealed at the end of each work day and labeled with the date, the well or boring number(s), the type of waste (i.e., drill cuttings, decontamination water, development water or purge water) and the name of an AKRF point-of-contact. Results from soil and groundwater samples collected during investigation activities were used for waste characterization.



On April 1, 2005, Brookside Environmental of Baldwin, New York, removed all of the Phase II subsurface investigation-derived waste from the study site staging area, located at the intersection of Broadway and West 130th Street. The waste was disposed of at MXI Environmental Services of Abingdon, Virginia. The disposal manifest documentation is included in Appendix D.

7.0 CONCLUSIONS AND RECOMMENDATIONS

AKRF, Inc. (AKRF) conducted a Subsurface (Phase II) Investigation at the Columbia-Manhattanville properties located in Harlem, New York. The objective of the subsurface investigation was to characterize the subsurface conditions and determine whether past or present on-site and/or off-site potential sources of contamination have adversely affected the Project Area. Results of the Phase II study were also intended to be used to evaluate any potential environmental risks and/or the need for remedial action at the site prior to future development. The investigation included the collection of thirty four (34) discrete soil samples and nineteen (19) groundwater samples from twenty two (22) sample locations for laboratory analysis.

Most of the soil samples analyzed as part of this Phase II study contained above-background concentrations of polycyclic aromatic hydrocarbons, and in some cases metals and pesticides, that are likely associated with urban fill material rather than specific past or current uses. However, the concentrations of chromium (and other metals) were significantly above background levels in the two soil samples collected in front of the 2311–2317 Twelfth Avenue property, which are likely associated with the site's automotive body and repair operations. The analyses of the groundwater samples collected did not reveal the presence of significant wide-spread contamination, though trace levels of petroleum-related contaminants were identified in localized areas, which are likely due to the historic automotive and fueling operations in the Project Area. Given that these contaminants are currently isolated, so that human exposure is not occurring, the concentrations found do not currently pose a threat to human health.

Development within the portion of the Academic Mixed-Use Area targeted for 2015 would involve demolition of the existing buildings, followed by excavation of all existing fill and soil (and varying thicknesses of bedrock). Development within the Academic Mixed-Use Area during the 2030 Development phase of the Proposed Actions would involve demolition of the remaining buildings (excluding the former Warren Nash Service Station building at 3261–3275 Broadway and the Studebaker Building at 615 West 131st Street, which are not slated for demolition in any of the proposed development plans). Absent appropriate controls, described below, this could result in increases in exposure for the community and construction workers to contaminants (both known as identified by environmental studies or as yet unknown).

To minimize the potential for impacts to the community and construction workers, all demolition, excavation, and construction work involving soil disturbance would be performed under an environmental CHASP. The CHASP, which would be approved by NYCDEP, would specify appropriate testing and/or monitoring (e.g., real-time dust and organic vapor air monitoring) and detail appropriate measures to be implemented (including notification of regulatory agencies) if underground storage tanks, soil and groundwater contamination, or other unforeseen environmental conditions are encountered. In addition to dust and volatile organic compounds (VOC) monitoring, the CHASP would set out a variety of procedures to prevent the generation and dispersal of dust (which may contain above-background levels of contaminants). Dust control measures would include the use of water for sprinkling/wetting to suppress dust in dry weather, covering haul trucks with tarp covers, and gravel pads at access points to prevent site soils from being tracked onto roads in the surrounding area.

In addition to the CHASP, to assist with any environmental issues encountered during general site development activities (i.e., construction and site excavation), a NYCDEP-approved Remedial Action Plan (RAP) would be developed to present measures for managing on-site urban fill materials or soil and groundwater, removing any known or unforeseen underground petroleum storage tanks, and addressing any other potential environmental issues in accordance with applicable federal, state and local regulations. Since construction and development activities would extend below the water table and dewatering would

be required, the RAP would outline the appropriate sampling that should be performed to determine whether pretreatment would be required (i.e., whether the groundwater contaminant concentration exceeded numerical sewer use limitations) before groundwater is discharged to municipal sewers. Where specific soil contamination is already known, such as at the 2311–2317 Twelfth Avenue auto body and repair shop and the Manhattanville Bus Depot, the RAP would provide the scope of work necessary to delineate, excavate, and properly dispose of contaminated soil prior to or as part of site development.

Remediation of the Manhattanville Bus Depot property appears to be on-going. Petroleum compounds detected in samples from nearby monitoring wells may indicate petroleum releases from the bus depot, or perhaps from the MGP operations formerly conducted at the site. It is possible that most of the historic MGP structures (i.e., gas holders, etc.) previously located at the site were removed during construction of the on-site building. However, residual contamination from both the Manhattanville Bus Depot and former MGP site are likely present, which will require remediation as part of, or prior to, proposed future development plans for the site.

With respect to the two existing MGP properties (located within the 2030 Development phase of the project), these sites are part of an existing multi-property Voluntary Cleanup Program (VCP) agreement in which Con Edison has committed to NYSDEC to investigate and remediate all of its former MGP properties. The timing of the performance of investigation and remediation (whether by Con Edison or others) would be integrated into the Proposed Actions to ensure that contamination associated with these sites is properly addressed. In addition to any necessary soil disposal, it is possible that other measures, such as vapor barriers or groundwater treatment systems, might be required.

For the remainder of the Project Area, not under current control of Columbia University, an e-designation should be placed on those lots where the potential for contamination was found. An e-designation is a New York City Department of Environmental Protection (NYCDEP) and Buildings (DOB) mechanism to ensure that properties are properly investigated and remediated, if necessary, prior to any redevelopment. The lot owner/developer must prepare a Phase I Environmental Site Assessment (Phase I) and, if necessary, implement a testing and sampling protocol, and remediation where appropriate, to the satisfaction of the NYCDEP before issuance of a building permit by the DOB (pursuant to Section 11-15 of the Zoning Resolution – Environmental Requirements). The e-designation also requires mandatory construction-related health and safety plans, which must be approved by NYCDEP.

With the implementation of the preventative and remedial measures outlined above, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the proposed development and subsequent site use. However, sampling and testing in the previously inaccessible areas of the Project Area should be conducted to characterize subsurface conditions in these areas prior to commencing with any site development activities. Otherwise, no further testing is recommended at this time.



The findings set forth in this report are strictly limited in scope and time to the date of the evaluation described herein. The conclusions and recommendations presented in the report are based solely on the services and any limitations described in this report.

This report may contain conclusions that are based on the analysis of data collected at the time and locations noted in the report through intrusive or non-intrusive sampling. However, further investigation might reveal additional data or variations of the current data, which may differ from our understanding of the conditions presented in this report and require the enclosed recommendations to be reevaluated or modified.

Chemical analyses may have been performed for specific parameters during the course of this investigation, as summarized in the text and tables. It should be noted that additional chemical constituents, not searched for during this investigation, may be present at the site. Due to the nature of the investigation and the limited data available, no warranty, expressed or implied, shall be construed with respect to undiscovered liabilities. The presence of biological hazards, radioactive materials, lead-based paint and asbestos-containing materials was not investigated, unless specified in the report.

Interpretations of the data, including comparison to regulatory standards, guidelines or background values, are not opinions that these comparisons are legally applicable. Furthermore, any conclusions or recommendations should not be construed as legal advice. For such advice, the client is recommended to seek appropriate legal counsel. Disturbance, handling, transportation, storage and disposal of known or potentially contaminated materials is subject to all applicable laws, which may or may not be fully described as part of this report.

This report may be based solely or partially on data collected, conducted, and provided by, AKRF and/or others. No warranty is expressed or implied by usage of such data. Such data may be included in other investigation reports or documentation. In addition, these reports may have been based upon available previous reports, historical records, documentation from federal, state and local government agencies, personal interviews, and geological mapping. This report is subject, at a minimum, to the limitations of the previous reports, historical documents, availability and accuracy of collected documentation, and personal recollection of those persons interviewed. In certain instances, AKRF has been required to assume that the information provided is accurate with limited or no corroboratory evidence.

This report is intended for the use solely by Kramer Levin Naftalis & Frankel LLP. Reliance by third parties on the information and opinions contained herein is strictly prohibited and requires the written consent of AKRF. AKRF accepts no responsibility for damages incurred by third parties for any decisions or actions taken based on this report. This report must be used, interpreted, and presented in its entirety.



9.0 QUALIFICATIONS

The purpose of this limited study was to investigate the potential presence or absence of contamination, or possible sources of contamination on the property, and to identify existing and/or potential environmental problems associated with the property. The conclusions are based on the results of the sampling and analyses conducted as outlined in this report. The following limitations should be noted:

- Access to certain proposed sample locations was not provided to AKRF.
- Refusal was encountered in some of the borings, which limited the sampling depths at those locations.

Key to Symbols and Terms

NS	No Standard Exists
J	Denotes and estimated value. Compound was detected at a concentration below the detection limit.
ppb	parts per billion
ppm	parts per million
ND	Not detected above method detection limits
NA	Not Applicable
SB	Site Background
TAGM	Technical and Administrative Guidance Memorandum #4046
RSCOs	Recommended Soil Cleanup Objectives
	Groundwater Standards are taken from the ambient water quality sprovided in the Technical and Operational Guidance Series 1.1.1

TABLE 1 Columbia Manhattanville Subsurface Investigation Soil Samples Volatile Organic Compounds



Sample ID .ab Sample Number	TAGM 4046 RSCOs	MW/CB-1 (2-4) L0501658-01	MW/CB-1 (10'-12') L0501858-02	MW/CB-2 (10'-12') £0501658-03	MW/CB-2 (12'-14') L0501658-04	MW/CB-3 (20'-22') L0501658-05	FIELD BLANK L0501658-06
an sample remove ampling Date	1	2/15/2005	2/15/2005	2/15/2005	2/15/2005	2/15/2006	2/15/2005
atrix	1	Soil	Soit	Soil	Soil	Soil	Soil
ilution Factor	ł	1.0	1.0	1.0	1,0	1.0	1.0
nits	ppb	ppb	ppb	ppb	ppb	bbp	ppb
a cuna una			İ				
OMPOUND ,1,1,2-Tetrachloroethane	NS	ND	ND	ND	ND	ND	ND
,1,1-Trichloroethane	800	ND	ND	ND	ND	ND	ND
,1,2,2-Tetrachloroethane	600	ND	ND	ND	ND	ND	ND
1,2-Trichloroethane	NS	ND	ND	ND	ND	ND	ND
,1-Dichloroethane	200	ND	ND	ND	ND	ND	ND
,1-Dichloroethene	400	ND	ND ND	ND	ND	ND	ND
,1-Dichloropropene	NS	ND	ND	ND	ND	ND	ND
,2,3-Trichlorobenzene	NS	ND	ND.	ND	ND	ND	ND
1,2,3-Trichloropropane	400	ND	ND ND	ND	ND	ND	ND
,2,4-Trichlorobenzene	3400	ND	ND.	ND	ND	ND	ND
,2,4-Trimethylbenzene	10000	ND	ND	ND	44	ND	ND
1,2-Dibromo-3-chloropropane	NS	ND	ND	ND	ND	ND.	ND
,2-Dibromoethane	NS	ND	ND	ND	ND	ND	ND
,2-Dichlorobenzene	7900	ND	ND	ND	ND	ND	ND
,2-Dichloroethane	100	ND	ND	ND	ND	ND	ND
,2-Dichloropropane	NS	ND	ND	ND	ND	ND	ND
,3,5-Trimethylbenzene	3300	ND	ND	ND	ND	ND ND	ND
,3-Dichlorobenzene	1600	ND	ND ND	ND_	ND	ND	ND
1,3-Dichloropropane	300	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	8500	ND	ND	ND	ND	ND	ND
1,4-Dichlorobutane	NS	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	NS	ND	ND	ND	ND	ND	ND
2-Butanone	300	ND	ND	ND	ND	ND	ND
2-Hexanone	NS	ND	ND	ND	ND ND	ND_	ND
I-Methyl-2-pentanone	1000	ND	ND	ND	ND	ND ND	ND
Acetone	200	ND	ND	ND	31	ND	ND
Acrolein	NS	ND	ND	ND	ND	ND	ND
Acrylonitrile	NS	ND	ND	ND	ND	ND	ND
Benzene	60	ND	3	ND ND	ND	ND	ND
Bromobenzene	NS	ND	ND	ND_	ND	ND	ND
Bromochloromethane	NS	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND ND	ND	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND	ND
Bromomethane	NS	ND	ND	ND_	ND	ND	ND
Carbon disulfide	2700	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	600	ND	ND	ND	ND	ND	ND.
Chlorobenzene	1700	ND	ND	ND	ND	ND	ND
Chloroethane	1900	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND ND	ND	ND	ND
Chloromethane	NS	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NS	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NS	ND	ND	ND	ND ND	ND	ND
Dibromomethane	NS	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NS	ND	ND	ND	ND	ND	ND
Ethyl ether	NS	ND	ND	ND	ND	ND	ND
Ethyl methacrylate	NS	ND	ND	ND	ND	ND	ND
Ethylbenzene	5500	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	NS	ND	ND	ND	ND	ND	ND
lodomethane	NS	ND	ND	ND	ND	ND	ND
Isopropylbenzene	2300	ND	ND	ND	ND	ND	ND
Methyl tert butyl ether	NS	ND	ND	ND	ND	ND	ND
Methylene chloride	100	ND	ND	ND	ND	ND	ND
Naphthalene	13000	ND	ND	ND	ND	ND	ND
n-Butylbenzene	10000	ND	ND	ND	82	ND	ND
n-Propylbenzene	3700	ND	ND	ND	ND	ND	ND
o-Chlorotoluene	NS	ND	ND	ND	ND	ND	ND
o-Xylene	600	ND	ND	ND	ND	ND	ND
p/m-Xylene	1200	ND	ND	ND	ND	ND	ND
p-Chlorotoluene	NS	ND	ND	ND	ND	ND	ND
p-Isopropylloluene	10000	ND	ND	ND	11	ND	ND
sec-Butylbenzene	10000	ND	ND	ND	86	ND	ND
Styrene	NS	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	10000	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1400	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	NS	ND	ND	ND	ND	ND	ND
Toluene	1500	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	300	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	NS	ND	ND	ND	ND	ND	ND
Trichloroethene	700	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NS	ND	ND	ND	ND	ND	ND
Vinyl acetate	NS	ND	ND	ND	ND	ND	ND
Vinyl chloride	200	ND	ND	ND	ND	ND	ND



TABLE 1 Columbia Manhattanville Subsurface Investigation Soil Samples Volatile Organic Compounds

Sample ID Lab Sample Number	TAGM 4046 RSCOs	TRIP BLANK	MW/CB-4 (14'-16')	CB-6 (5'-6')	MW/CB-7 (6'-8')	MW/CB-8 (12'-14"	1044000
Sampling Date	1 1000	L9501658-07	L0501658-08	L0501881-01	L0501881-02	L8501881-03	MW/CB-9 (4'-6') L0501881-04
Matrix		2/15/2005	2/15/2005	2/21/2005	2/21/2005	2/21/2005	1
Dilution Factor		Soil	Soil	Soil	Soit	Soil	2/21/2065 Soil
Units	ppb	1.0 ppb	1.0	1.0	1.0	1.0	1.0
	1 "	""	ppb	ppb	ppb	ppb	ppb
COMPOUND					1		
1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane	NS NS	ND	ND	ND	- NO		
1,1,2,2-Tetrachloroethane	800	ND	ND	ND	ND ND	ND	ND
1,1,2-Trichloroethane	600	ND	ND	ND	ND	ND	ND ND
1,1-Dichloroethane	NS NS	ND	ND	ND	ND	ND ND	ND
1,1-Dichloroethene	200 400	ND	ND	ND	ND	ND ND	ND
1,1-Dichloropropene	NS NS	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	NS NS	ND ND	ND	ND	ND	ND	ND ND
1,2,3-Trichloropropane	400	ND	ND ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	ND	ND ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	10000	ND	ND	ND	ND ND	ND	ND
1,2-Dibromo-3-chloropropane	NS	ND	ND	ND ND	ND ND	ND	ND
1,2-Dibromoethane 1,2-Dichlorobenzene	NS	ND	ND	ND	ND	ND ND	ND
1,2-Dichloroethane	7900	ND	ND	ND	ND ND	ND	ND
,2-Dichloropropane	100	ND	ND	ND ND	ND ND	ND ND	ND
1,3,5-Trimethylbenzene	NS	ND	ND	ND	ND	ND ND	ND
,3-Dichlorobenzene	3300	ND	ND	ND	ND	ND ND	ND ND
,3-Dichloropropane	1600 300	ND ND	ND	ND	ND	ND	ND ND
,4-Dichlorobenzene	8500	ND ND	ND	ND	ND	ND	ND ND
,4-Dichlorobutane	NS NS	ND ND	ND	ND	ND	ND	ND
,2-Dichloropropane	NS	ND	ND	ND	ND	ND	ND
-Butanone	300	ND	ND ND	ND	ND	ND	ND
Hexanone	NS	ND	ND	ND ND	ND	ND	ND
-Methyl-2-pentanone cetone	1000	ND	ND	ND ND	ND	ND	ND
crolein	200	ND	54	ND	ND ND	ND	ND
crytonitrile	NS	ND	ND	ND	ND ND	ND	ND
enzene	NS NS	ND	ND	ND	ND	ND ND	ND
romobenzene	60	ND	ND	ND	ND	ND ND	ND
romochloromethane	NS NS	ND	ND	ND	ND	ND ND	ND ND
romodichloromethane	NS NS	ND	ND	ND	ND	ND	ND ND
romoform	NS	ND ND	ND	ND	ND	ND	ND
omomethane	NS	ND ND	ND ND	ND	ND	ND	ND
erbon disulfide	2700	ND	ND ND	ND	ND	ND	ND
arbon tetrachloride	600	ND	ND	ND	ND	ND	ND
nkombenzene	1700	ND	ND	ND ND	ND ND	ND	ND
nkoroethane nkoroform	1900	ND	ND	ND ND	ND ND	ND	ND
loromethane	300	ND	ND	ND	ND ND	ND	ND
-1,2-Dichloroethene	NS	ND	ND	ND	ND	ND	ND
-1,3-Dichloropropene	NS NS	ND ND	ND	ND	ND	ND	ND
promochloromethane	NS NS	ND	ND	ND	ND	ND ND	ND
promomethane	NS NS	ND	ND	ND	ND	ND	ND ND
chlorodifluoromethane	NS I	ND ND	ND	ND	ND	ND	ND
nyl ether	NS	ND ND	ND	ND	ND	ND	ND
yl methacrylate	NS	ND	ND	ND	ND .	ND	ND
lylbenzene	5500	ND	ND ND	ND	ND	ND	ND
xachlorobutadiene	NS	ND	ND ND	ND ND	ND ND	ND	ND
omethane	NS	ND	ND	ND	ND ND	ND	ND
propylbenzene thyl tert butyl ether	2300	ND	ND	ND	ND ND	ND	ND
thylene chloride	NS	ND	ND	ND	ND	ND	ND
phthalene	100	ND	ND	ND	ND	ND ND	ND
utyibenzene	13000 10000	ND	ND	ND	ND	ND ND	ND
ropylbenzene	3700	ND	ND	ND	ND	ND ND	ND
hlorotoluene	NS	ND ND	ND	ND	ND	ND	ND ND
ylene	600	ND ND	ND	ND	ND	ND	ND
-Xylene	1200	ND	ND	ND	ND	ND	ND
hlorotoluene	NS	ND	8.5 ND	ND	ND	ND	ND
opropyltoluene	10000	ND	ND	ND	ND	ND	ND
Butylbenzene	10000	ND	ND	ND ND	ND	ND	ND
ene Butylbenzene	NS	ND	ND	ND	ND ND	ND	ND
ochloroethene	10000	ND	ND	ND	ND ND	ND	ND
ahydrofuran	1400	ND	ND	ND	ND ND	ND ND	ND
ene	NS 1500	ND	ND	ND	ND ND	ND	ND
i-1,2-Dichloroethene	1500	ND	ND	ND	ND ND	ND ND	ND
-1,3-Dichloropropene	300 NS	ND	ND	ND	ND	ND ND	ND
		ND	ND	ND	ND	ND	ND ND
-1,4-Dichloro-2-butene	NS I						
-1,4-Dichloro-2-butene koroethene	NS 700	ND ND	ND	ND	ND		
-1,4-Dichloro-2-butene loroethene lorofluoromethane	700	ND	ND	ND		ND ND	ND
-1,4-Dichloro-2-butene koroethene					ND	ND	

TABLE 1 Columbia Manhattanville Subsurface Investigation Soil Samples Volatile Organic Compounds



. 10	TAGM 4046	MW/CB-9 (14'-16')	CB-10 (2'-4')	CB-10 (7"-8")	FIELD BLANK		MW/CB-11 (2'-4"
mple ID	RSCOs	L0501881-05	L0501881-06	L0501881-07	L0501881-08	L0501881-09	L0502002-01
Sample Number	1,0005	2/21/2005	2/21/2005	2/21/2005	2/21/2005	2/21/2005	2/24/2005
mpling Date	1	Soil	Soil	Soil	Soil	Sold	Sell
strtx		1.0	1.0	1.0	1.0	1.0	1.0
ution Factor	ppb	pob	ppb	ppb	ppb	ppb	ьфр
its	PP~				i i		
						1	
OMPOUND	NS	ND	ND	ND	ND	ND	ND
1,1,2-Tetrachloroethane	800	ND	ND	ND	ND	ND	ND
1,1-Trichloroethane	600	ND	ND	ND	ND	ND	ND ND
1,2,2-Tetrachloroethane	NS	ND	ND	ND	ND	ND	ND
1,2-Trichloroethane 1-Dichloroethane	200	ND	ND	NĐ	ND	ND	
1-Dichloroethene	400	ND	ND	ND	ND	ND	ND ND
	NS	ND	ND	ND	ND	ND	
1-Dichloropropene	NS	ND	ND	ND	ND	ND	ND ND
2,3-Trichlorobenzene	400	ND	ND	ND	ND	ND	ND
2,3-Trichloropropane 2,4-Trichlorobenzene	3400	ND	ND	ND	ND	ND	ND
	10000	ND	ND	ND	ND	ND	ND
2.4-Trimethylbenzene	NS	ND	ND	ND	ND	ND	ND ND
2-Dibromo-3-chloropropane	NS	ND	ND	ND ND	ND	ND	ND
,2-Dibromoethane	7900	ND	ND	ND	ND	ND	
2-Dichlorobenzene	100	ND	ND	ND	ND	ND	ND
2-Dichloroethane	NS	ND	ND	ND	ND	ND	ND
,2-Dichloropropane	3300	ND	ND	ND	ND	ND	ND ND
,3,5-Trimethylbenzene	1600	ND	ND	ND	ND	ND	ND ND
,3-Dichlorobenzene	300	ND	ND	ND	ND	ND	ND ND
,3-Dichloropropane	8500	ND	ND	ND	ND	ND	ND
,4-Dichlorobenzene ,4-Dichlorobutane	NS	ND	ND	ND	ND	ND	ND
	NS	ND	ND	ND	ND_	ND	ND
2,2-Dichloropropane 2-Butanone	300	ND	ND	ND	ND	ND	ND ND
	NS	ND	ND	ND	ND	ND	ND ND
2-Hexanone 1-Methyl-2-pentanone	1000	ND	ND	ND	ND	ND ND	ND
	200	ND	ND	ND	ND	ND ND	ND
Acetone Acrolein	NS	ND	ND	ND	ND	ND ND	ND
	NS	ND	ND	ND	ND	ND	13
Acrylonitrile	60	ND	ND	ND	ND	ND	ND
Benzene Bromobenzene	NS	ND	ND	ND	ND	ND	ND
Bromochioromethane	NS	ND	ND	ND ND	ND	ND ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND ND	ND
Bromomethane	NS	ND	ND	ND	ND		ND
Carbon disulfide	2700	ND	ND	ND	ND	ND ND	ND
Carbon tetrachloride	600	ND	ND	ND	ND		ND
Chlorobenzene	1700	ND	ND	ND	ND	ND ND	ND
Chloroethane	1900	ND	ND	ND	ND		ND
Chloroform	300	ND	ND	ND	ND	ND ND	ND
Chloromethane	NS	ND	ND	ND	ND_	ND ND	ND
cis-1,2-Dichloroethene	NS	ND	ND.	ND	ND ND	ND ND	ND
cis-1,3-Dichloropropene	NS	ND	ND	ND	ND ND	ND	ND
Dibromochloromethane	NS	ND	ND	ND	ND ND	ND ND	ND
Dibromomethane	NS	ND	ND	ND	ND ND	ND ND	ND
Dichlorodifluoromethane	NS	ND	ND	ND	ND		ND
Ethyl ether	NS	ND	ND	ND	ND	ND ND	ND
Ethyl methacrylate	NS	ND	ND	ND	NB	ND ND	NE
Ethylbenzene	5500	ND	ND	ND	ND	ND	NC NC
Hexachlorobutadiene	NS	ND	ND	ND	ND	ND ND	NE NE
lodomethane	NS	ND	ND	ND	ND	ND ND	NE NE
Isopropylbenzene	2300	ND	ND	ND	ND ND	ND ND	NE.
Methyl tert butyl ether	NS	ND	ND	ND	ND	ND ND	NE NE
Methylene chloride	100	ND	ND	ND	ND	ND ND	NE
Naphthalene	13000	ND	ND	ND.	ND ND	ND ND	NE
n-Butyibenzene	10000	ND	ND	ND.	ND ND	ND ND	N
n-Propylbenzene	3700	ND	ND	ND	ND ND	ND ND	N
o-Chlorotoluene	NS	ND	ND	ND	ND ND	ND ND	NI
	600	ND	ND	ND	ND ND	ND	NE NE
o-Xylene p/m-Xylene	1200	ND	ND	ND	ND	ND ON	N
p-Chlorotoluene	NS	ND	ND	ND	ND ND	ND ND	NI
p-Isopropyltoluene	10000	ND	ND	ND	ND		N
sec-Butylbenzene	10000	ND	ND	ND	ND	ND	N
	NS	ND	ND	ND	ND	ND ND	N N
Styrene	10000	ND	ND	ND	ND	ND	
tert-Butylbenzene	1400	ND	ND	ND	ND	ND	N
Tetrachioroethene Tetrachioroethene	NS NS	ND	ND	ND	ND	ND	N
Tetrahydrofuran	1500	ND	ND	ND	ND	ND	4
Toluene	300	ND	ND	ND	ND	ND	N
trans-1,2-Dichloroethene	NS	ND	ND	ND		ND	N
trans-1,3-Dichloropropene		ND	ND	ND	ND	ND	N
trans-1,4-Dichloro-2-butene	700	ND ND	ND	ND		ND	N
Trichloroethene		ND	ND ND	ND		ND	N
Trichlorofluoromethane	NS NS	ND	ND ND	ND		ND	N
Vinyl acetate	NS	ND ND	ND ND			ND	N



Sample ID Lab Sample Number	TAGM 4046 RSCOs		IW/CB-12 (18.5'-20	, , ,	MW/CB-13 (6'-8')	MW/CB-14 (2'-4')	MW/CB-14 (6'-8"
Sampling Date	RSCUS	L0502002-03	L0502002-04	L0502002-05	L0502002-06	L0502002-07	L0502002-08
Matrix		2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005
Dilution Factor	1	Soft	Soil	Soil	Soil	Soll	Soft
Unita	ppb	1,0 ppb	1.0 ppb	1.0	1.0	1.0	1.0
İ	, m	ppo	bbo	ppb	ppb	bbp	ppb
COMPOUND				i			
1,1,1,2-Tetrachtoroethane	NS	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	800	ND	ND	ND	ND	ND	ND ND
1,1,2,2-Tetrachloroethane	600	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NS	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	200	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	400	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene 1,2,3-Trichlorobenzene	NS	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	NS 400	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	ND ND	ND ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	10000	ND	ND ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	NS	ND	ND	ND ND	ND	ND ND	ND
1,2-Dibromoethane	NS	ND	ND	ND ND	ND ND	ND	ND
1,2-Dichlorobenzene	7900	ND	ND	ND	ND	ND ND	ND
1,2-Dichloroethane	100	ND	ND	ND	ND	ND ND	ND
1,2-Dichloropropane	NS	ND	ND	ND	ND	DN D	ND ND
1,3,5-Trimethylbenzene	3300	ND	ND	ND	ND	ND	ND ND
1,3-Dichlorobenzene	1600	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	300	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene 1,4-Dichlorobutane	8500	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	NS NS	ND	ND	ND	ND	ND	ND
2-Butanone	NS 300	ND ND	ND	ND ND	ND	ND	ND
2-Hexanone	NS	ND ND	ND	ND	ND ND	ND	ND
4-Methyl-2-pentanone	1000	ND ND	ND ND	ND ND	ND	ND	ND
Acetone	200	ND	ND	ND ND	ND SS	ND	ND
Acrolein	NS	ND ND	ND	ND	56 ND	ND	ND
Acrylonitrile	NS	ND	ND	ND	ND	ND ND	ND ND
Benzene	60	ND	ND	ND	ND ND	ND	ND ND
Bromobenzene	NS	ND	ND	ND	ND	ND	ND
Bromochloromethane	NS	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NS NS	ND	ND	ND	ND	ND	ND
Bromoform Bromomethane	NS	ND ND	ND	ND	ND	ND	ND
Carbon disulfide	NS 2700	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	2700 600	ND	ND ND	ND	ND ND	ND	ND
Chlorobenzene	1700	ND ND	ND	ND	ND	ND	ND
Chloroethane	1900	ND ND	ND ND	ND ND	ND ND	ND I	ND
Chloroform	300	ND	ND	ND ND	ND ND	ND	ND
Chloromethane	NS	ND	ND	ND	ND	ND ND	ND
cis-1,2-Dichloroethene	NS	ND	ND	ND	ND	ND ND	ND ND
cis-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND ND
Dibromochloromethane	NS	ND	ND	ND	ND	ND	ND
Dibromomethane	NS	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NS	ND	ND	ND	ND	ND	ND
Ethyl ether Ethyl methacrylate	NS NS	ND	ND	ND	ND	ND	ND
Ethylbenzene	NS FF00	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	5500 NS	ND	ND	ND	ND	ND	ND
lodomethane	NS NS	ND ND	ND	ND	ND	ND	ND
Isopropylbenzene	2300	ND ND	ND ND	ND	ND ND	ND	ND
Methyl tert butyl ether	NS NS	ND ND	ND	ND ND	ND	ND ND	ND
Methylene chloride	100	ND ND	ND	ND	ND ND	ND ND	ND
Naphthalene	13000	ND	ND	ND	ND ND	ND ND	ND
n-Butylbenzene	10000	ND	ND	ND	ND ND	ND ND	ND ND
n-Propylbenzene	3700	ND	ND	ND	ND	ND	ND ND
o-Chlorotoluene	NS	ND	ND	ND	ND	ND	ND
o-Xylene	600	ND	ND	ND	ND	ND	ND
p/m-Xylene	1200	ND	ND	ND	ND	ND	ND
p-Chlorotoluene	NS 10000	ND	ND	ND	ND	ND	ND
p-Isopropyttoluene sec-Butylbenzene	10000	ND	ND	ND	ND	ND	ND
Styrene	10000	ND	ND	ND	ND	ND	ND
ert-Butylbenzene	NS 10000	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1400	ND ND	ND	ND ND	ND	ND	ND
Tetrahydrofuran	NS NS	ND ND	ND ND	ND	ND	ND	ND
Toluene	1500	ND ND	ND ND	ND ND	ND	ND	ND
rans-1,2-Dichloroethene	300	ND	ND	ND ND	ND ND	ND	ND
rans-1,3-Dichloropropene	NS NS	ND ND	ND	ND	ND ND	ND	ND
rans-1,4-Dichloro-2-butene	NS	ND	ND	ND ND	ND	ND ND	ND ND
Trichloroethene	700	ND	ND	ND	ND	ND	ND ND
Frichlorofluoromethane	NS	ND	ND	ND	ND	ND ND	ND ND
/inyl acetate	NS	ND	ND	ND	ND	ND	ND
/inyl chloride	200	ND	ND	ND	ND	ND	ND



ample ID ab Sample Number	TAGM 4046 RSCOs	FIELD BLANK L0502002-09	TRIP BLANK L0502002-10	CB-15 (2'-4') L0502261-01	CB-15 (14'-16') £0502261-02	MW/CB-16 (4'-6') L0502261-03 2/28/2005	MW/CB-16 (10*-1 L0502261-04 2/28/2005
ampling Date	1	2/24/2005	2/24/2005	2/28/2005	2/28/2005	2/28/2005 Soli	2/28/2405 Soil
etrix	1	Soll	Soil	Soil	Soil		1.0
lution Factor	l l	1.0	1.0	1.0	1.0	1.0	
nits	ppb	ug/i	ug/l	ppb	ppb	ppb	bbp
DMPOUND							
1,1,2-Tetrachloroethane	NS	ND	ND	ND	ND	ND	ND ND
1,1-Trichloroethane	800	ND	ND ND	ND	ND_	ND	ND
1,2,2-Tetrachloroethane	600	ND	ND	ND	ND	ND	
1,2-Trichloroethane	NS	ND	ND	ND_	ND	ND	ND
1-Dichloroethane	200	ND	ND	ND	ND	ND	ND
1-Dichloroethene	400	ND	ND	ND	ND	ND	ND
	NS	ND	ND	ND	ND	ND	ND
1-Dichloropropene	NS	ND	ND	ND	ND	ND	ND
2,3-Trichlorobenzene	400	ND	ND	ND	ND	ND	ND
2,3-Trichloropropane	3400	ND	ND	ND	ND	ND	ND
,2,4-Trichlorobenzene	10000	ND	ND	ND	ND	580	ND
2,4-Trimethylbenzene	~	ND ND	ND	ND	ND	ND	ND
,2-Dibromo-3-chloropropane	NS_		ND	ND	ND	ND	ND
2-Dibromoethane	NS	ND		ND	ND	ND	ND
,2-Dichlorobenzene	7900	ND	ND ND		ND	ND	ND
,2-Dichloroethane	100	ND	ND ND	ND ND	ND ND	ND	ND
,2-Dichloropropane	NS	ND	ND ND	ND		300	ND
3,5-Trimethylbenzene	3300	ND	ND	ND ND	ND ND		ND
,3-Dichlorobenzene	1600	ND	ND	ND ND	ND ND	ND ND	ND
,3-Dichloropropane	300	ND	ND ND	ND	ND	ND ND	
,4-Dichlorobenzene	8500	ND	ND	ND	ND	ND	ND
,4-Dichlorobutane	NS	ND	ND	ND	ND	ND	ND
2-Dichloropropane	NS	ND	ND	ND	ND	ND	ND
	300	ND	ND	ND	ND	ND	ND
2-Butanone	NS NS	ND	ND	ND	ND	ND	ND
2-Hexanone	1000	ND	ND	ND	ND	ND	ND
I-Methyl-2-pentanone		ND ND	ND	ND	ND	95	ND
Acetone	200		ND	ND	ND	ND	ND
Acrolein	NS	ND ND		ND	ND	ND	ND
Acrylonitrile	NS	ND	ND ND		ND	ND	ND
Benzene	60	ND	ND_	ND	ND	ND	ND
Bromobenzene	N\$	ND	ND	ND		ND	ND
Bromochloromethane	NS	ND	ND	ND	ND ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND		ND
Bromoform	NS	ND	ND	ND	ND	ND	
Bromomethane	NS	ND	ND	ND	ND	ND	ND
Carbon disulfide	2700	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	600	ND	ND	ND	ND	ND	ND
Chlorobenzene	1700	ND	ND	ND	ND	ND	ND
	1900	ND	ND	ND	ND	ND_	ND
Chloroethane	300	ND	ND	ND	ND	ND	ND
Chloroform	NS	ND	ND	ND	ND	ND	ND
Chloromethane	NS NS	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NS	ND ND	ND	ND	ND	ND	ND
Dibromochloromethane	NS		ND	ND	ND	ND	ND
Dibromomethane	NS	ND ND		ND	ND	ND	ND
Dichlorodifluoromethane	NS	ND_	ND	ND ND	ND ND	ND ND	NE.
Ethyl ether	NS	ND	ND		ND	ND	NE.
Ethyl methacrylate	NS	ND	ND ND	ND		31	NC NC
Ethylbenzene	5500	ND	ND	ND	ND ND	ND	ND ND
Hexachlorobutadiene	NS	ND	ND	ND	ND ND		NC NC
lodomethane	NS	ND	ND	ND	ND ND	ND 0.6	
Isopropylbenzene	2300	ND	ND	ND	ND	9.6	NE NE
Methyl tert butyl ether	NS	ND	ND	ND	ND	7	NE
Methylene chloride	100	ND	ND	ND	ND	ND	NC
	13000	ND	ND	ND	ND	110	NE
Naphthalene - Butthalene	10000	ND	ND	ND	ND	100	NE
n-Butylbenzene	3700	ND	ND	ND	ND	28	NE.
n-Propylbenzene	NS	ND ND	ND	ND	ND	ND	NE
o-Chlorotoluene		ND ND	ND	ND	ND	160	NE
o-Xylene	600	ND ND	ND	ND	ND	210	NE
p/m-Xylene	1200		ND	ND	ND ND	ND	NE
p-Chlorotoluene	NS	ND ND		ND ND	ND	10	NE
p-Isopropyttoluene	10000	ND	ND		ND	11	NI
sec-Butylbenzene	10000	ND	ND	ND ND		ND	NI NI
Styrene	NS	ND	ND	ND	ND ND		
tert-Butyibenzene	10000	ND	ND	ND	ND	ND.	NO
Tetrachloroethene	1400	ND	ND	ND	ND	ND	NI
Tetrahydrofuran	NS	ND	ND	ND	ND	ND	NI
	1500	ND	ND	ND	ND	29	NI
Totuene	300	ND	ND	ND	ND	ND	NI
trans-1,2-Dichloroethene			ND ND	ND	ND	ND	NI
trans-1,3-Dichloropropene	NS NS	ND ND		ND	ND	ND	NI
trans-1,4-Dichloro-2-butene	NS	ND	ND		ND	ND ND	NE
Trichloroethene	700	ND	ND	ND		ND	NI
Trichlorofluoromethane	NS	ND	ND	ND	ND		N
Vinyl acetate	NS	ND	ND	ND	ND	ND	
Vinyi chloride	200	ND	ND	ND	ND	ND	N





Sample ID Lab Sample Number	TAGM 4046 RSCOs	MW/CB-17 (1'-2') L0502261-05	MW/CB-17 (2'-4') L0502261-06	MW/CB-18 (4'-6') L0502281-07	MW/CB-19 (1'-2') L0502261-08	MW/CB-19 (8'-10') £0502261-09	MW/CB-20 (1'-2') L0502281-10
Sampling Date		2/28/2005	2/28/2005	2/28/2005	2/28/2005	2/28/2005	2/28/2005
Matrix		Soil	Soil	Soit	Soil	Soil	Soil
Dilution Factor		1.0	1.0	1.0	1.0	1,0	1.0
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
COMPOUND							
1,1,1,2-Tetrachloroethane	NS	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	800	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane	600	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	NS	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	200	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	400	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	NS NS	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	NS 400	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	10000	ND ND	ND_	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	NS NS	ND ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	NS NS		ND	ND	ND	ND	ND
1,2-Dichlorobenzene	7900	ND ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	100	ND ND	ND	ND	ND	ND	ND
1,2-Dichloropropane			ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	NS 3300	ND ND	ND ND	ND ND	ND	ND	ND
1,3-Dichlorobenzene	1600	ND ND	ND ND	ND	ND	ND	ND
1,3-Dichloropropane	300	ND ND	ND ND	ND ND	ND	ND	ND
1,4-Dichlorobenzene	8500	ND ND	UN D	ND	ND	ND	ND
1,4-Dichlorobutane	NS NS	ND	ND D	ND ND	ND	ND	ND
2,2-Dichloropropane	NS	ND	ND ND	ND ND	ND	ND	ND ND
2-Butanone	300	ND ND	ND ND	ND ND	ND ND	ND	ND
2-Hexanone	NS	ND	ND	ND ND	ND	ND	ND
4-Methyl-2-pentanone	1000	ND	ND ND	ND ND	ND	ND	ND
Acetone	200	ND	ND	ND	ND ND	ND ND	ND
Acrolein	NS	ND	ND	ND	ND ND	ND	ND
Acrylonitrile	NS	ND	ND	ND	ND	ND ND	ND
Benzene	60	ND	ND	ND	ND		ND
Bromobenzene	NS	ND	ND	ND	ND	ND ND	ND
Bromochloromethane	NS	ND	ND	ND	ND	ND ND	ND ND
Bromodichloromethane	NS	ND	ND	ND ND	ND ND	ND	ND
Bromoform	NS	ND	ND	ND	ND	ND	ND ND
Bromomethane	NS	ND	ND	ND	ND	ND ND	ND ND
Carbon disulfide	2700	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	600	ND	ND	ND	ND	ND	ND
Chlorobenzene	1700	ND	ND	ND	ND	ND	ND
Chloroethane	1900	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	ND	ND
Chloromethane	NS	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NS	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NS	ND	ND	ND	ND	ND	ND
Dibromomethane	NS	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NS	ND	ND	ND	ND	ND	ND
Ethyl ether	NS	ND	ND	ND	ND	ND	ND
Ethyl methacrylate	NS	ND	ND	ND	ND.	ND	ND
Ethylbenzene Hexaehlerehutedises	5500	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	NS	ND	ND	ND	ND	ND	ND
odomethane sopropylbenzene	NS 2200	ND	ND	ND	ND	ND	ND
sopropyidenzene Methyl tert butyl ether	2300	ND	ND	ND	ND	ND	ND
Methylene chloride	NS 100	ND ND	ND	ND	ND	ND	ND
Vaphthalene	100	ND	ND	ND	ND	ND	ND
n-Butylbenzene	13000	ND	ND	ND	ND	ND	ND
n-Propylbenzene	10000	ND	ND	ND	ND	ND	ND
-Chlorotoluene	3700	ND	ND	ND	ND	ND	ND
	NS	ND	ND	ND	ND	ND	ND
o-Xylene	600	ND	ND	ND	ND	ND	ND
Chlomatations	1200	ND	ND	ND	ND	ND	ND
-Chlorotoluene	NS NS	ND	ND	ND	ND	ND	ND
-Isopropyltoluene ec-Butylbenzene	10000	ND	ND	ND	ND	ND	ND
	10000	ND	ND	ND	ND	ND	ND
Styrene	NS	ND	ND	ND	ND	ND	ND
ert-Butylbenzene	10000	ND	ND	ND	ND	ND	ND
etrachioroethene	1400	ND	ND	ND	ND	ND	ND
etrahydrofuran	NS	ND	ND	ND	ND	ND	ND
oluene	1500	ND	ND	ND	ND	ND	ND
ans-1,2-Dichloroethene	300	ND	ND	ND	ND	ND	ND
ans-1,3-Dichloropropene	NS	ND	ND	ND	ND	ND	ND
ans-1,4-Dichloro-2-butene	NS	ND	ND	ND	ND	ND	ND
richloroethene	700	ND	ND	ND	ND	ND	ND
richlorofluoromethane	NS	ND	ND	ND	ND	ND	ND
inyl acetate	NS	ND	ND	ND	ND	ND	ND
inyl chloride	200	ND	ND	ND	ND	ND	ND





ample ID	TAGM 4046	MW/CB-20 (18'-20"	MW/CB-21 (16'-18')	MW/CB-22 (12'-14"	FIELD BLANK	TRIP BLANK
sh Sample Number	RSCOs	L0502261-11	L0502261-12	L0502261-13	L0502261-14	L0502281-15
ampling Date	ļ ·	2/28/2005	2/28/2005	2/28/2005	2/28/2005	2/28/2005
ampang vam atrix		Soil	Soll	Soil	Soft	Soil
ilution Factor	1	1.0	1.0	1.0	1.0	1.0
atton races sits	ppb	ppb	ppb	ppb	ug∕l	ug/l
OMPOUND	1					
1,1,2-Tetrachloroethane	NS	ND	ND	ND	ND	ND
1,1-Trichloroethane	800	ND	ND	ND	ND	ND
1,2,2-Tetrachloroethane	600	ND	ND	ND	ND	ND
1,2-Trichloroethane	NS	ND	ND	ND	ND	ND
1-Dichloroethane	200	ND	ND	ND	ND	ND
1-Dichloroethene	400	ND	ND	ND	ND	ND
1-Dichloropropene	NS	ND	ND	ND	ND	ND
2.3-Trichlorobenzene	NS	ND	ND	ND	ND	ND
,2,3-Trichloropropane	400	ND	ND	ND	ND	ND
2,4-Trichlorobenzene	3400	ND	ND	ND	ND	ND_
	10000	ND	ND	ND	ND	ND
,2,4-Trimethylbenzene	NS	ND	ND	ND	ND	ND
,2-Dibromo-3-chloropropane	NS NS	ND	ND	ND	ND	ND
,2-Dibromoethane	7900	ND	ND	ND	ND	ND
,2-Dichlorobenzene			ND	ND	ND	ND
,2-Dichloroethane	100	ND ND	ND	ND	ND	ND
,2-Dichloropropane	NS	ND ND	ND ND	ND	ND	ND
,3,5-Trimethylbenzene	3300	ND ND	ND	ND	ND	ND
,3-Dichlorobenzene	1600	ND		ND	ND	ND
,3-Dichloropropane	300	ND	ND	ND ND	ND ND	ND
,4-Dichlorobenzene	8500	ND	ND ND		ND	ND
,4-Dichlorobutane	NS	ND	ND ND	ND ND	ND	ND
2,2-Dichloropropane	NS	ND	ND	ND		ND ND
2-Butanone	300	ND ND	ND	ND	ND	ND ND
2-Hexanone	NS	ND	ND	ND	ND	
4-Methyl-2-pentanone	1000	ND	ND	ND	ND	ND
Acetone	200	ND	ND	ND	12	5.3
Acrolein	NS	ND	ND	ND	ND	ND
Acrylonitrile	NS	ND	ND	ND.	ND	ND
Benzene	60	ND	ND	ND	ND	ND
Bromobenzene	NS	ND	ND	ND	ND	ND
Bromochloromethane	NS	ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND	ND	ND
	NS	ND	ND	ND	ND	ND
Bromoform	NS NS	ND	ND	ND	ND	ND
Bromomethane	2700	ND	ND	ND	ND	ND
Carbon disulfide	600	ND	ND	ND	ND	ND
Carbon tetrachloride	1700	ND	ND	ND	ND	ND
Chlorobenzene	1900	ND	ND	ND	ND	ND
Chloroethane		ND ND	ND	ND	ND	ND
Chloroform	300	ND ND	ND ND	ND	ND	ND
Chloromethane	NS	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NS		ND	ND ND	ND	ND
cis-1,3-Dichloropropene	NS	ND ND	ND	ND	ND	ND
Dibromochloromethane	NS	ND	ND DN	ND	ND	ND
Dibromomethane	NS	ND ND		ND	ND	ND
Dichlorodifluoromethane	NS	ND	ND	ND ND	ND ND	ND
Ethyl ether	NS	ND	ND		- ND	ND
Ethyl methacrylate	NS	ND.	ND ND	ND		NC NC
Ethylbenzene	5500	ND	ND.	ND	ND ND	ND
Hexachlorobutadiene	NS	ND	ND_	ND	ND	ND
lodomethane	NS	ND	ND	ND ND	ND	ND ND
Isopropylbenzene	2300	ND	ND	ND ND	ND	ND ND
Methyl tert butyl ether	NS	ND	ND	ND	ND	NE NE
Methylene chloride	100	ND	ND	ND	ND ND	
Naphthalene	13000	ND	ND	ND	ND ND	NE NE
n-Butylbenzene	10000	ND	ND	ND	ND ND	NE
n-Propylbenzene	3700	ND	ND	ND	ND	NE NE
o-Chlorotoluene	NS	ND	ND	ND	ND	NE
o-Xylene	600	ND	ND	ND	ND	NE NE
p/m-Xylene	1200	ND	ND	ND	0.91	NE
p-Chlorotoluene	NS	ND	ND	ND	ND	NE
p-Isopropyltoluene	10000	ND	ND	ND	ND	NE
sec-Butylbenzene	10000	ND	ND	ND	ND	NE
Styrene	NS NS	ND	ND	ND	ND	NI
	10000	ND	ND	ND	ND	NI
tert-Butylbenzene	1400	ND	ND	ND	ND	N
Tetrachloroethene		ND ND	ND	ND	ND	N
Tetrahydrofuran	NS 1500	ND	ND	ND ND	2.6	N
Toluene	1500		ND ND	ND	ND	N
trans-1,2-Dichloroethene	300	ND	ND	ND	ND	NI
trans-1,3-Dichloropropene	NS	ND	ND ND	ND	ND	NI NI
trains-1,3-Dichioloproperie				i Nil	1 140	1 191
trans-1,4-Dichloro-2-butene	N\$	ND				Lif
trans-1,4-Dichloro-2-butene Trichloroethene	700	ND	ND	ND	ND	NI
trans-1,4-Dichloro-2-butene						NI NI



Columbia Manhattanville

Subsurface Investigation

Soil Samples Semi-Volatile Organic Compounds

Sample ID Lab Sample Number	TAGM 4046 RSCOs	MW/CB-1 (2-4)	MW/CB-1 (10'-12')	MW/CB-2 (10'-12')	MW/CB-2 (12'-14')	MW/CB-3 (20'-22
Sampling Date		L0501658-01	L0501658-02	L0501658-03	L0501658-04	L0501658-05
Matrix	1	2/15/2005	2/15/2005	2/15/2005	2/15/2005	2/15/2005
Dilution Factor	(ppb)	Soil	Soil	Soil	Soll	Soil
Units	(1000)	1.0 ppb	1.0	1.0	1.0	1.0
			ppb	ppb	ppb	ppb
COMPOUND	ļ					
1,2,4,5-Tetrachlorobenzene	NS	ND	ND	ND	ND	10
1,2,4-Trichlorobenzene	3400	ND	ND	ND	ND ND	ND ND
1,2-Dichlorobenzene	7900	ND	ND	ND	ND	ND ND
1,3-Dichlorobenzene 1,4-Dichlorobenzene	1600	ND	ND	ND	ND	ND
1-Chloronaphthalene	8500	ND	ND	ND	ND	ND
1-Methylnaphthalene	NS NS	ND ND	ND ND	ND	ND	ND
1-Methylnaphthalene*	NS NS	ND ND	ND	ND ND	ND	ND
1-Methylphenanthrene*	NS NS	14	ND ND	ND ND	120	ND
2,4,5-Trichlorophenol	100	ND	ND ND	ND ND	ND ND	ND
2,4,6-Trichlorophenol	NS	ND	ND ND	ND I	ND	ND ND
2,4-Dichlorophenol	400	ND	ND	ND	ND ND	ND ND
2,4-Dimethylphenol	NS	ND	ND	ND ND	ND ND	ND ND
2,4-Dinitrophenol 2,4-Dinitrotoluene	200	ND	ND	ND	ND	ND ND
2,6-Dichlorophenol	NS NS	ND ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene*	NS NS	ND ND	ND	ND	ND	ND
2,6-Dinitrotoluene	1000	ND ND	ND	ND	260	ND
2-Chloronaphthalene	NS NS	ND ND	ND ND	ND ND	ND	ND
2-Chloronaphthalene*	NS NS	ND	ND ND	ND ND	ND	ND
2-Chlorophenol	800	ND	ND	ND ND	ND ND	ND
2-Methylnaphthalene	36400	ND	ND	ND	ND ND	ND ND
2-Methylnaphthalene*	36400	7.2	ND	ND	190	ND ND
2-Methylphenol 2-Nitroaniline	NS	ND	ND	ND	ND ND	ND
2-Nitrophenol	430	ND ND	ND	ND	ND	ND
2-Picoline	330 NS	ND ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	NS NS	ND ND	ND ND	ND	ND	ND
3-Methylcholanthrene	NS NS	ND ND	ND ND	ND ND	ND	ND
3-Methylphenol/4-Methylphenol	NS	ND	ND ND	ND ND	ND	ND
3-Nitroanlline	500	ND	ND	ND ND	ND ND	ND ND
4,6-Dinitro-o-cresol	NS	ND	ND	ND	ND	ND ND
4-Aminobiphenyl	NS	ND	ND	ND	ND ND	ND ND
4-Bromophenyl phenyl ether 4-Chloroaniline	NS	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	220 NS	ND ND	ND	ND	ND	ND
4-Nitroaniline	NS NS	ND ND	ND	ND ND	ND	ND
1-Nitrophenol	100	ND ND	ND ND	ND ND	ND	ND
7,12-Dimethylbenz(a)anthracene	NS	ND	ND ND	ND ND	ND I	ND
a,a-Dlmethylphenethylamine	NS	ND	ND	ŊD ND	ND ND	ND
Acenaphthene	50000	ND	ND	ND ND	ND ND	ND ND
Acenaphthene*	50000	18	ND	ND	ND	ND ND
Acenaphthylene Acenaphthylene*	41000	ND	ND	ND	ND	ND
Acetophenone	41000	ND ND	ND	ND	ND	ND
n-Naphthylamine	NS NS	ND ND	ND ND	ND	ND	ND
niline	100	ND ND	ND ND	ND	ND	ND
Inthracene	50000	ND	ND ND	ND ND	ND	ND
inthracene*	50000	35	ND ND	ND ND	ND	ND ND
zobenzene	NS	ND	ND	ND ND	ND ND	ND ND
enzidine	NS	ND	ND	ND	ND	ND ND
enzo(a)anthracene	224	ND	ND	ND	ND ND	ND
enzo(a)anthracene* enzo(a)pyrene	224	170	ND	ND	ND	ND
enzo(a)pyrene*	61	ND 110	ND	ND	ND	ND
enzo(b)fluoranthene	61 1100	140	ND	ND	ND	ND
enzo(b)fluoranthene*	1100	ND 200	ND ND	ND	ND	ND
enzo(e)pyrene	NS	200 ND	ND	ND ND	ND	ND
enzo(e)Pyrene*	NS NS	100	ND ND	ND	ND ND	ND
enzo(ghi)perylene	50000	ND ND	ND ND	ND ND	ND	ND
enzo(ghi)perylene*	50000	92	ND ND	ND ND	ND ND	ND ND



Columbia Manhattanville



ample ID	TAGM 4046 RSCOs	MW/CB-1 (2-4)	MW/CB-1 (10'-12')		MW/CB-2 (12'-14')	
b Sample Number		L0501658-01	L0501658-02	L0501658-03	L0501658-04 2/15/2005	L0501658-05 2/15/2005
mpling Date		2/15/2005	2/15/2005	2/15/2005		2/15/2005 Soil
atrix		Soil	Soil	Soil	Soll 1.0	1.0
lution Factor	(ppb)	1.0	1.0	1.0	ppb	ppb
nits		ppb	ppb	ppb	PPD	Pr.
				Ì		
OMPOUND	4400	ND	ND	ND	ND	ND
enzo(k)fluoranthene	1100	100	ND	ND	ND	ND
enzo(k)fluoranthene*	1100 2700	ND ND	ND	ND	ND	ND
enzoic Acid	NS	ND	ND	ND	ND	ND
enzyl Alcohol	NS NS	ND	ND	ND	ND	ND
iphenyl iphenyl*	NS	ND	ND	ND	ND	ND
sis(2-chloroethoxy)methane	NS	ND	ND	ND	ND	ND
is(2-chloroethyl)ether	NS	ND	ND	ND ND	ND ND	ND ND
lis(2-chloroisopropyl)ether	NS	ND	ND	ND ND	ND ND	ND ND
Bis(2-ethylhexyl)phthalate	50000	ND	ND	ND ND	ND ND	ND
-Naphthylamine	NS	ND ND	ND ND	ND ND	ND ND	ND
Butyl benzyl phthalate	50000	ND ND	ND ND	ND	ND	ND
Carbazole	NS NS	ND ND	ND ND	ND ND	ND	ND
Chlorobenzilate	NS 400	ND	ND	ND	ND	ND
Chrysene	400	160	ND	ND	ND	ND
Chrysene*	14	ND ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene Dibenzo(a,h)anthracene*	14	31	ND	ND	ND	ND
Dibenzo(a,n)anurracene Dibenzofuran	6200	ND	ND	ND	ND	ND.
Diethyl phthalate	7100	ND	ND	ND	ND	ND
Dimethoate	NS	ND	ND	ND	ND ND	ND ND
Dimethyl phthalate	2000	ND	ND	ND ND	ND ND	ND ND
Di-n-butylphthalate	8100	ND	ND	ND	ND ND	ND ND
Di-n-octylphthalate	50000	ND	ND_	ND ND	ND	ND
Ethyl Methanesulfonate	NS	ND 000	ND ND	ND ND	ND ND	ND
Fluoranthene	50000	300	ND ND	ND	ND	ND
Fluoranthene*	50000	ND ND	ND ND	ND ND	ND	ND
Fluorene	50000 50000	15	ND	ND	21	ND
Fluorene*	410	ND	ND	ND	ND	ND
Hexachlorobenzene	410	ND	ND	ND	ND	ND
Hexachlorobenzene* Hexachlorobutadiene	NS	ND	ND	ND	ND	ND
Hexachlorobutadiene*	NS	ND	ND	ND	ND	ND ND
Hexachlorocyclopentadiene	NS	ND	ND	ND	ND_	ND
Hexachloroethane	NS	ND	ND	ND ND	ND ND	ND ND
Hexachloroethane*	NS	ND	ND ND	ND ND	ND ND	ND ND
Hexachloropropene	NS	ND ND	ND ND	ND ND	ND ND	ND
Indeno(1,2,3-cd)pyrene	3200	ND 89	ND ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene*	3200	ND 99	ND ND	ND ND	ND	ND
Isodrin	NS 4400	ND ND	ND ND	ND	ND	ND
Isophorone	NS	ND ND	ND	ND	ND	ND
Methyl methanesulfonate	13000	ND ND	ND	ND	ND	ND
Naphthalene Naphthalene*	13000	39	ND	ND	22	ND
NDPA/DPA	NS	ND	ND	ND	ND	ND.
Nitrobenzene	200	ND	ND	ND	ND	ND ND
Nitrosodi-n-butylamine	NS	ND	ND	ND	ND ND	ND ND
Nitrosodipiperidine	NS	ND	ND_	ND	ND ND	ND
n-Nitrosodimethylamine	NS	ND	ND	ND	ND ND	ND ND
n-Nitrosodi-n-propylamine	NS	ND	ND ND	ND ND	ND ND	ND
p-Chloro-m-cresol	NS	ND ND	ND_	ND ND	ND ND	ND ND
p-Dimethylaminoazobenzene	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
Pentachlorobenzene	NS NS	ND ND	ND ND	ND ND	ND	ND
Pentachloronitrobenzene	NS 1000	ND ND	ND ND	ND ND	ND ND	ND
Pentachlorophenol	1000	ND ND	ND ND	ND ND	ND	ND
Pentachlorophenol*	1000 NS	ND	ND	ND	ND	ND
Perylene	NS NS	35	ND ND	ND	ND	ND
Perylene*	NS NS	ND ND	ND	ND	ND	ND
Phenacetin Phenacethrone	50000	180	ND	ND	ND	ND
Phenanthrene Phenanthrene*	50000	180	ND	ND	ND	ND
Phenalurene	30	ND	ND	ND	ND	ND
Pronamide	NS	ND	ND	ND	ND	ND
Pyrene	50000	240	ND	ND	ND	ND
Pyrene*	50000	240	ND	ND	ND ND	ND
Pyridine	NS	ND	ND	ND	ND	ND

Columbia Manhattanville

Sample ID Lab Sample Number	TAGM 4046 RSCOs	FIELD BLANK	MW/CB-7 (6'-8')	MW/CB-8 (12'-14')	MW/CB-9 (4'-6')	MW/CB-9 (14'-16'
Sampling Date		L0501658-06 2/15/2005	L0501881-02	L0501881-03	L0501881-04	L0501881-05
Matrix		2/15/2005 Soil	2/21/2005 Soli	2/21/2005	2/21/2005	2/21/2005
Dilution Factor	(ppb)	1.0	1.0	Soil 1.0	Soil	Soil
Units	1 "'''	ppb	ppb	ppb	1.0	1.0
			pp2	ppb	ppb	ppb
COMPOUND						
1,2,4,5-Tetrachlorobenzene	NS	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	ND	ND	ND	ND	ND
1,2-Dichlorobenzene 1,3-Dichlorobenzene	7900	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1600 8500	ND ND	ND ND	ND	ND	ND
1-Chloronaphthalene	NS	ND ND	ND ND	ND ND	ND	ND
1-Methylnaphthalene	NS NS	ND	ND	ND ND	ND ND	ND ND
1-Methylnaphthalene*	NS	ND	ND	ND ND	ND	ND ND
1-Methylphenanthrene*	NS	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	100	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	NS	ND	ND	ND	ND	ND
2,4-Dichlorophenol 2,4-Dimethylphenol	400	ND	ND	ND	ND	ND
2,4-Dinitrophenol	NS 200	ND ND	ND	ND	ND	ND
2,4-Dinitrotoluene	NS NS	ND ND	ND ND	ND ND	ND ND	ND
2,6-Dichlorophenol	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
2,6-Dimethylnaphthalene*	NS	ND	ND ND	ND ND	ND ND	ND ND
2,6-Dinitrotoluene	1000	ND	ND	ND	ND	ND ND
2-Chloronaphthalene	NS `	. ND	ND	ND	ND	ND
2-Chloronaphthalene* 2-Chlorophenol	NS NS	ND	ND	ND	ND	ND
2-Methylnaphthalene	800 36400	ND ND	ND	ND	ND	ND
2-Methylnaphthalene*	36400	ND ND	ND	ND	ND ND	ND
2-Methylphenol	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
2-Nitroaniline	430	ND	ND ND	ND	ND ND	ND ND
2-Nitrophenol	330	ND	ND	ND	ND ND	ND ND
2-Plcoline	NS NS	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	NS	ND	ND	ND	ND	ND
3-Methylcholanthrene 3-Methylphenol/4-Methylphenol	NS NS	ND	ND	ND	ND	ND
3-Nitroaniline	NS 500	ND	ND ND	ND	ND	ND
4,6-Dinitro-o-cresol	NS NS	ND ND	ND ND	ND ND	ND	ND
4-Aminobiphenyl	NS NS	ND ND	ND	ND ND	ND ND	ND
4-Bromophenyl phenyl ether	NS	ND	ND	ND	ND ND	ND ND
4-Chloroaniline	220	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	NS	ND	ND	ND	ND	ND
4-Nitroaniline 4-Nitrophenol	NS 100	ND	ND	ND	ND	ND
7,12-Dimethylbenz(a)anthracene	100 NS	ND ND	ND ND	ND	ND	ND
a,a-Dimethylphenethylamine	NS NS	ND ND	ND ND	ND	ND	ND
Acenaphthene	50000	ND ND	ND ND	ND ND	ND ND	ND ND
Acenaphthene*	50000	ND	ND	ND ND	ND ND	ND ND
Acenaphthylene	41000	ND	ND	ND ND	ND ND	ND ND
Acenaphthylene*	41000	ND	ND	ND	ND	ND
Acetophenone	NS	ND	ND	ND	ND	ND
a-Naphthylamine Aniline	NS NS	ND	ND	ND	ND	ND
Anthracene	100 50000	ND ND	ND ND	ND	ND	ND
Anthracene*	50000	ND ND	ND ND	ND ND	ND	ND
Azobenzene	NS	ND ND	ND ND	ND	ND	ND ND
3enzidine	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
Benzo(a)anthracene	224	ND	ND ND	ND ND	ND ND	ND ND
Benzo(a)anthracene*	224	ND	ND	ND ND	16	ND ND
Benzo(a)pyrene	61	ND	ND	ND	ND ND	ND
Benzo(a)pyrene*	61	ND	ND	ND	12	ND
Benzo(b)fluoranthene Benzo(b)fluoranthene*	1100	ND	ND	ND	ND	ND
Benzo(b)liuorantnene	1100	ND	ND	ND	15	ND
Benzo(e)Pyrene*	NS NS	ND ND	ND ND	ND ND	ND	ND
Benzo(ghi)perylene	50000	ND	ND ND	ND	12	ND
Benzo(ghi)perylene*	50000	ND ND	ND ND	ND ND	ND 0.4	ND
		110]	מא	עא	9.4	ND



ample ID	TAGM 4046 RSCOs	FIELD BLANK	MW/CB-7 (6'-8')	MW/CB-8 (12'-14')	MW/CB-9 (4'-6')	MW/CB-9 (14'-16
in Sample Number		L0501658-06	L0501881-02	L0501881-03	L0501881-04	L0501881-05
impling Date		2/15/2005	2/21/2005	2/21/2005	2/21/2005	2/21/2005
atrix		Soil	Soil	Soil	Soil	Soil
lution Factor	(ppb)	1.0	1.0	1.0	1.0	1.0
nits		ppb	ppb	ppb	ppb	ppb
enzo(k)fluoranthene	1100	ND	ND	ND	ND	ND
enzo(k)fluoranthene*	1100	ND	ND	ND	12	ND
enzoic Acid	2700	ND	ND	ND	ND	ND
enzyl Alcohol	NS	ND	ND	ND	ND	ND_
iphenyl	NS	ND	ND	ND	ND	ND_
iphenyl*	NS	ND	ND	ND	ND	ND ND
is(2-chloroethoxy)methane	NS	ND	ND	ND	ND	ND ND
is(2-chloroethyl)ether	NS	ND	ND.	ND ND	ND ND	ND
is(2-chloroisopropyl)ether	NS	ND	ND.	ND ND	ND ND	ND ND
ils(2-ethylhexyl)phthalate	50000	ND ND	ND	ND ND	ND	ND
-Naphthylamine	NS	ND ND	ND ND	ND	ND	ND
lutyl benzyl phthalate	50000	ND ND	ND ND	ND	ND	ND
arbazole	NS	ND ND	ND	ND ND	ND	ND
Chlorobenzilate	NS 400	ND ND	ND	ND ND	ND	ND
Chrysene	400	ND ND	ND ND	ND	18	ND
Chrysene*	14	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	14	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene*	6200	ND	ND	ND	ND	ND
Dibenzofuran	7100	ND	ND	ND	ND	ND
Diethyl phthalate Dimethoate	NS NS	ND	ND	ND	ND	ND
Dimethyl phthalate	2000	ND	ND	ND	ND	ND
Di-n-butylphthalate	8100	ND	ND	ND	ND	ND ND
Di-n-octylphthalate	50000	ND	ND	ND	ND ND	ND ND
Ethyl Methanesulfonate	NS	ND	ND	ND_	ND ND	ND ND
luoranthene	50000	ND	ND	ND ND	ND 30	ND ND
Fluoranthene*	50000	ND	ND	ND ND	ND ND	ND ND
Fluorene	50000	ND	ND	ND ND	ND ND	ND
Fluorene*	50000	ND	ND ND	ND ND	ND	ND
Hexachlorobenzene	410	ND	ND	ND ND	ND	ND
Hexachlorobenzene*	410	ND	ND ND	ND ND	ND ND	ND
Hexachlorobutadiene	NS NS	ND ND	ND ND	ND	ND	ND
Hexachlorobutadiene*	NS NS	ND ND	ND ND	ND	ND	ND
Hexachlorocyclopentadiene	NS NS	ND ND	ND ND	ND	ND	ND
Hexachloroethane	NS NS	ND ND	ND	ND	ND	ND
Hexachloroethane*	NS NS	ND	ND	ND	ND	ND
Hexachloropropene Indeno(1,2,3-cd)pyrene	3200	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene*	3200	ND	ND	-ND	ND	ND
Isodrin	NS	ND	ND	ND	ND_	ND
Isophorone	4400	ND	ND	ND	ND	ND
Methyl methanesulfonate	NS	ND	ND	ND	ND ND	ND
Naphthalene	13000	ND	ND	ND	ND ND	NC NC
Naphthalene*	13000	ND	ND	ND ND	ND ND	ND ND
NDPA/DPA	NS	ND	ND ND	ND	ND ND	ND ND
Nitrobenzene	200	ND_	ND_	ND	ND ND	NC NC
Nitrosodi-n-butylamine	NS	ND_	ND ND	ND	ND ND	ND ND
Nitrosodipiperidine	NS	ND ND	ND	ND ND	ND ND	NE NE
n-Nitrosodimethylamine	NS	ND	ND ND	ND ND	ND ND	NE NE
n-Nitrosodi-n-propylamine	NS NS	ND ND	ND ND	ND ND	ND ND	NE
p-Chloro-m-cresol	NS NS	ND ND	ND ND	ND ND	ND ND	NE
p-Dimethylaminoazobenzene	NS NS	ND ND	ND ND	ND	ND	NE
Pentachlorobenzene	NS NS	ND ND	ND	ND	ND	NE
Pentachloronitrobenzene	1000	ND ND	ND	ND	ND	NE
Pentachlorophenol	1000	ND ND	ND	ND	ND	N
Pentachlorophenol*	NS	ND	ND	ND	ND	NE
Perylene Perylene*	NS NS	ND	ND	ND	ND	NE
Perylene* Phenacetin	NS NS	ND	ND	ND	ND	NI NI
Phenacetin Phenanthrene	50000	ND	ND	ND	ND	NI
Phenanthrene*	50000	ND	ND	ND	17	NI
Phenol	30	ND	ND	ND	ND	NI NI
Pronamide	NS NS	ND	ND	ND	ND	N(
Pyrene	50000	ND	ND	ND	ND	NI
Pyrene*	50000	ND	ND	ND	32	N
Pyridine	NS	ND	ND	ND ND	ND	N



Lab Sample Number Sampling Date Matrix Matrix Dilution Factor Units	ррь ррь ррь ррь ррь ррь ррь ррь ррь ррь	,	FIELD BLANK L0501881-08 2/21/2005 Soil 1.0 ppb ND ND ND	MW/CB-11 14'-16') L0502002-01 2/24/2005 Soil 1.0 ppb ND ND	MW/CB-12 (6°-8' L0502002-03 2/24/2005 Soil 1.0 ppb
Matrix	Soil 1.0 ppb 6 ND 0 ND 0 ND 0 ND 0 ND 0 ND 0 ND 0 ND 0	2/21/2005 Soil 1.0 ppb ND ND ND	2/21/2005 Soil 1.0 ppb ND ND	2/24/2005 Soil 1.0 ppb ND	2/24/2005 Soil 1.0
Dilution Factor Units Un	6 ND 1.0 ppb 6 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND 10 ND	1.0 ppb ND ND ND ND	Soil 1.0 ppb ND ND ND ND	Soif 1.0 ppb ND	Soil 1.0
Units	ррь ррь ррь ррь ррь ррь ррь ррь ррь ррь	ND ND ND ND	1.0 ppb ND ND	1.0 ppb ND	1.0
COMPOUND 1,2,4,5-Tetrachlorobenzene 3.4 1,2-Dichlorobenzene 7.9 1,3-Dichlorobenzene 16 1,4-Dichlorobenzene 16 1,4-Dichlorobenzene 85 1-Chloronaphthalene N 1-Methylnaphthalene N 1-Methylnaphthylnaphthalene N 1-Methylnaphthylnaphthylnaphthylnaphthalene N 1-Methylnaphthy	S ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND 100 ND	ND ND ND ND	ND ND ND	ppb ND	
1,2,4,5-Tetrachlorobenzene	00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND	ND ND ND	ND ND		
1,2,4,5-Tetrachlorobenzene	00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND	ND ND ND	ND ND		1
1,2-Dichlorobenzene	00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND	ND ND ND	ND ND		l
1,2-Dichlorobenzene 79 1,3-Dichlorobenzene 16 1,4-Dichlorobenzene 85 1-Chloroaphthalene N 1-Methylnaphthalene N 1-Methylnaphthalene* N 1-Methylphenanthrene* N 2,4,5-Trichlorophenol 10 2,4-Dichlorophenol N 2,4-Dichlorophenol N 2,4-Dinitrophenol N 2,4-Dinitrotoluene N 2,4-Dinitrotoluene N 2,6-Dichlorophenol N 2,6-Dinitrotoluene 10 2,6-Dinitrotoluene N 2,2-Methylaphthalene* 364 2-Me	00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND 00 ND	ND ND	ND	NID.	ND
1,3-Dichlorobenzene	00 ND 00 ND 6 ND 6 ND 6 ND 6 ND 6 ND 6 ND 7 ND 7 ND 7 ND	ND			ND
1.4-Dichlorobenzene	0 ND S ND S ND S ND S ND S ND S ND S ND		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ND	ND
1-Chloronaphthalene	ND	ND	ND	ND ND	ND
1-Methylnaphthalene	ND ND ND ND	ND	ND ND	ND	ND
1-Methylphenanthrene*	ND ND ND	ND	ND ND	ND	ND
2,4,5-Trichlorophenol 10 2,4,6-Trichlorophenol N: 2,4-Dichlorophenol 40 2,4-Dinitrophenol 20 2,4-Dinitrophenol 20 2,4-Dinitrotoluene N: 2,6-Dinitrotoluene N: 2,6-Dinitrotoluene 100 2,0-Dinitrotoluene 100 3,6-Dinitrotoluene 100 3,6-Dinitrophenol 100 3,3-Dichlorobenzidine 100 3,3'-Dichlorobenzidine 100 3,3'-Dichlorobenzidine 100 3,3'-Dichlorobenzidine 100 3,3'-Dichlorobenzidine 100 3,3'-Dichlorobenzidine 100 4,6-Dinitro-o-cresol) ND	ND	ND ND	ND ND	ND ND
2,4,6-Trichlorophenol N. 2,4-Dichlorophenol 40 2,4-Dinitrophenol N. 2,4-Dinitrophenol 20 2,4-Dinitrophenol N. 2,6-Dichlorophenol N. 2,6-Dinitrotoluene 100 2,6-Dinitrotoluene 100 2,6-Dinitrotoluene 100 2,6-Dinitrotoluene N. 2,6-Dinitrotoluene N. 2,6-Dinitrotoluene N. 2,6-Dinitrotoluene N. 2,6-Dinitrophenol 80 2-Chloronaphthalene* N. 2-Chlorophenol 364 2-Methylnaphthalene* 364 2-Methylnaphthalene* 364 2-Methylphenol N. 3,3-Dichlorobenzidine N. 3,3-Dichlorobenzidine N. 3,3-Dichlorobenzidine N. 3,Methylcholanthrene N. 3-Methylphenol/4-Methylphenol N. 4-Aminobiphenyl N. 4-Bromophenyl phenyl ether N. 4-Chloroaniline 20		ND	ND	ND ND	ND ND
2,4-Dichlorophenol 40 2,4-Dinethylphenol Ni 2,4-Dinitrophenol 20 2,4-Dinitrophenol 20 2,4-Dinitrotoluene Ni 2,6-Dichlorophenol Ni 2,6-Dinitrotoluene 100 2,0-Chloronaphthalene 100 2,0-Chlorophenol 800 2,0-Chlorophenol 800 2,0-Methylnaphthalene 3644 2,0-Methylnaphthalene 3644 2,0-Methylphenol Ni 2,0-Nitroaniline 430 2,0-Nitroaniline 430 2,0-Nitrophenol 331 2,0-Nitrophenol Ni 3,3-Dichlorobenzidine Ni 3,3-Dichlorobenzidine Ni 3,3-Methylcholanthrene Ni 3,3-Methylcholanthrene Ni 3,3-Methylcholanthrene Ni 3,3-Methylcholanthrene Ni 4,6-Dinitro-o-cresol Ni 4,6-Dinitro-o-cresol Ni 4,6-Dinitro-o-cresol Ni 4-Chloroaniline 220 4-Chloroaniline 220 4-Chlorophenyl phenyl ether Ni 4-Chlorophenyl phenyl ether Ni 4-Chlorophenol 100 7,12-Dimethylbenz(a)anthracene Ni 3,a-Dimethylphenethylamine Ni 3,a-Dimethy		ND	ND	ND	ND ND
2,4-Dimethylphenol N. 2,4-Dinitrotohenol 20 2,4-Dinitrotohenol N. 2,6-Dichlorophenol N. 2,6-Dinitrotohene 100 2,6-Dinitrotohene 100 2,6-Dinitrotohene 100 2,6-Dinitrotohene 100 2,6-Dinitrotohene N. 2,6-Dinitrotohene N. 2,6-Dinitrotohene N. 2,6-Dinitrophenol 80 2-Chlorophenol 80 2-Methylnaphthalene 364 2-Methylnaphthalene 364 2-Methylnaphthalene 364 2-Methylnaphthalene 364 2-Methylnaphthalene 364 2-Methylnaphthalene N. 3-Nitroaniline N. 3,3'-Dichlorobenzidine N. 3-Methylcholanthrene N. 3-Methylcholanthrene N. 3-Mitroaniline 500 4,6-Dinitro-o-cresol N. 4-Aminobiphenyl N. 4-Bromophenyl phenyl ether N.		ND	ND	ND	ND
2,4-Dinitrophenol 20 2,4-Dinitrotoluene NS 2,6-Dichlorophenol NS 2,6-Dinitrotoluene 100 2-C-Dinitrotoluene 100 2-C-Chloronaphthalene NS 2-Chloronaphthalene NS 2-Chlorophenol 80 2-Methylnaphthalene 364 2-Methylnaphthalene NS 3-Nitroaniline NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 4-Anitro-o-cresol NS 4-Anitrophenyl NS 4-Chlorophenyl phenyl ether NS 4-Nitrophenol 100 4-Nitrophenol 100 4-Nitrophenol 100 4-Nitrophenol 100		ND	ND	ND	ND
2,4-Dinitrotoluene NS 2,6-Dichlorophenol NS 2,6-Dimethylnaphthalene* NS 2,6-Dinitrotoluene 100 2-Chloronaphthalene NS 2-Chloronaphthalene* NS 2-Chlorophenol 80 2-Methylnaphthalene* 364 2-Methylnaphthalene* 364 2-Methylnaphthalene* 33 2-Methylnaphthalene* 33 2-Methylphenol NS 2-Nitrophenol 33 2-Nitrophenol 33 2-Picoline NS 3,3'-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitrophenol 100 7,12-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene 4100		ND	ND	ND	ND
2,6-Dichlorophenol NS 2,6-Dimethylnaphthalene* NS 2,6-Dimitrotoluene 100 2,6-Dinitrotoluene 100 2-Chloronaphthalene NS 2-Chlorophenol 800 2-Methylnaphthalene* 3644 2-Methylnaphthalene* 364 2-Methylphenol NS 2-Nitroaniline 43 2-Nitrophenol 33 2-Nitrophenol NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Nitroaniline 500 4-Aminobiphenyl NS 4-Enloroaniline 220 4-Chloroaniline 220 4-Chloroaniline NS 4-Nitrophenol 100 7,12-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene* 4100 Acenaphthylamine NS Acenapht		ND	ND	ND	ND
2,6-Dimethylnaphthalene* NS 2,6-Dinitrotoluene 100 2-Chloronaphthalene* NS 2-Chloronaphthalene* NS 2-Chlorophenol 80 2-Methylnaphthalene* 364 2-Methylnaphthalene* 364 2-Methylphenol NS 2-Mitrophenol 33 2-Nitrophenol 33 2-Picoline NS 3,3'-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Mitroaniline 500 4-Aninobiphenyl NS 4-Aminobiphenyl NS 4-Chlorophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 4-Nitrophenol 100 4-Nitrophenol 100 4-Nitrophenol 100 4-Nitrophenol 100 Acenaphthylene NS Acenaphthylene 100 Acenaphthylene		ND ND	ND	ND	ND
2,6-Dinitrotoluene 100 2-Chloronaphthalene* NS 2-Chloronaphthalene* NS 2-Chloronaphthalene 364 2-Methylnaphthalene 364 2-Methylnaphthalene* 364 2-Methylphenol NS 2-Methylphenol NS 2-Methylphenol NS 2-Methylphenol NS 2-Mitrophenol NS 3-S-Victolorobenzidine NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Mitroaniline 500 4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitrophenol 100 7-(12-Dimethylbenz(a)anthracene NS 3-acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene 4100 Acenaphthylene NS		ND ND	ND	ND	ND
2-Chloronaphthalene NS 2-Chloronaphthalene* NS 2-Chlorophenol 800 2-Methylnaphthalene 3644 2-Methylnaphthalene* 3644 2-Methylphenol NS 2-Methylphenol NS 2-Methylphenol NS 2-Methylphenol NS 2-Methylphenol NS 2-Mitrophenol NS 3-3-Vitrophenol NS 3-Methylphenol/4-Methylphenol NS 3-Methylphenol/4-Methylphenol NS 3-Nitroaniline NS 4-Chloroaniline NS 4-Chloroaniline NS 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 7-(12-Dimethylbenz(a)anthracene NS a.a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene 100 Acenaphthylene 100 Acenaphthylene 100	ND ND	ND ND	ND	ND	ND
2-Chloronaphthalene* NS 2-Chlorophenol 80i 2-Methylnaphthalene* 364i 2-Methylnaphthalene* 364i 2-Methylphenol NS 2-Mitrophenol 33i 2-Nitrophenol 33i 2-Picoline NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 4-Aminobiphenyl NS 4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chloroaniline NS 4-Chlorophenyl phenyl ether NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a-Cenaphthene NS Acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene 4100 Acenaphthylene NS Acenaphthylamine NS An	ND ND	ND	ND	ND ND	ND
2-Chloropheno 80 2-Methylnaphthalene 364 2-Methylnaphthalene* 364 2-Methylpheno NS 2-Nitroaniline 43 2-Nitropheno 33 2-Nitropheno 33 2-Picoline NS 3,3*-Dichlorobenzidine NS 3,4*-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Methylphenol/4-Methylphenol NS 3-Methylphenol/4-Methylphenol NS 3-Methylphenol/4-Methylphenol NS 3-Methylphenol/4-Methylphenol NS 3-Methylphenol/4-Methylphenol NS 4-Chloroniline NS 4-Chloroniline NS 4-Chlorophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Nitrophenol NS 4-Nitrophenol NS 4-Nitrophenol NS 4-Nitrophenol NS 4-Nitrophenol NS 4-Chlorophenyl phenethylamine NS 4-Chlorophenyl NS 4-Chlorophenyl NS 4-Chlorophenol NS 4-Chloro	ND ND	ND ND	ND	ND	ND
2-Methylnaphthalene* 3644 2-Methylphenol NS 2-Methylphenol NS 2-Nitroaniline 43 2-Picoline NS 3-3-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Nitroaniline 500 4-G-Dinitro-o-cresol NS 4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitrophenol 100 7-(12-Dimethylbenz(a)anthracene NS a-Dimethylphenethylamine NS Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene NS Acenaphthylene NS Acenaphthylene NS Anderlophenone NS Anthracene 5000 Anthracene 5000 Anthracene 5000 Anthracene NS Actophenone		ND ND	ND ND	ND ND	ND
2-Methylphenol NS 2-Nitroaniline 430 2-Nitrophenol 33 2-Picoline NS 3,3'-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Mitroaniline 500 4-Aminobiphenyl NS 4-Aminobiphenyl phenyl ether NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a,a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene NS a-Naphthylamine NS Aniline 100 Anthracene 5000 Anthracene 5000 Anthracene 5000 Actoracene NS Berzidine NS	0 ND	ND ND	ND ND	ND	ND ND
2-Nitroaniline 43 2-Nitrophenol 330 2-Picoline NS 3-3'-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Nitroaniline 500 4-Aminobiphenyl NS 4-Aminobiphenyl NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a,enaphthene* 5000 Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene* 4100 Acenaphthylamine NS Aniline 100 Aniline 100 Anthracene 5000 Anthracene 5000 Anthracene 5000 Actophenone NS Anthracene 5000 Anthracene 5000 Anthracene 5000		ND	ND ND	ND ND	ND ND
2-Nitrophenol 333 2-Picoline NS 3,3'-Dichlorobenzidine NS 3,3'-Dichlorobenzidine NS 3-Methylcholanthrene NS 4-Chloroniline South NS 4-Chlorophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitrophenol NS 5-Acenaphthylchene NS Acenaphthylchene NS Acenaphthylene NS	ND	ND	ND	ND ND	ND ND
2-Picoline 3,3'-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Nitroaniline NS 4-Chlorophenyl NS 4-Chlorophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitrophenol NS NS NS NS NS NS NS NS NS NS NS NS NS	ND	ND	ND	ND	ND
3,3*-Dichlorobenzidine NS 3-Methylcholanthrene NS 3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Mitroaniline 500 4-G-Dinitro-o-cresol NS 4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a-a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene 4100 Acenaphthylene NS Acenaphthylene NS Acetophenone NS Andiline 100 Anthracene 5000 Anthracene 5000 Anthracene NS Benzidine NS	ND	ND	ND	ND	ND
3-Methylcholanthrene NS 3-Methylphenol/4-Methylphenol NS 3-Mitroaniline 500 4,6-Dinitro-o-cresol NS 4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a,a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene* 4100 Acetophenone NS a-Naphthylamine NS Aniline 100 Anthracene 5000 Anthracene* 5000 Actophenone NS Benzidine NS	ND ND	ND	ND	ND	ND
3-Methylphenol/4-Methylphenol 3-Nitroaniline 4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol 4-Aminobiphenyl 4-Bromophenyl phenyl ether 4-Chlorophenyl phenyl ether 4-Chlorophenyl phenyl ether 4-Chlorophenyl phenyl ether 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS Acenaphthene 4-Roenaphthylene Acenaphthylene Acenaphthylene NS Nacenaphthylene NS Nacenaphthy	ND ND	ND	ND	ND	ND
3-Nitroaniline 500 4,6-Dinitro-o-cresol NS 4-Aminobiphenyl NS 4-Amrobiphenyl phenyl ether NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a.a-Dimethylphenethylamine NS Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene* 4100 Acenaphthylene NS Aniline 100 Aniliracene 5000 Aniliracene 5000 Anithracene 5000 Anthracene 5000	ND ND	ND ND	ND	ND	ND
4.6-Dinitro-o-cresol NS 4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a,a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene NS Acetophenone NS Anline 100 Anthracene 5000 Anthracene 5000 Anthracene 5000 Actopapere NS Benzidine NS	ND ND	ND ND	ND	ND	ND
4-Aminobiphenyl NS 4-Bromophenyl phenyl ether NS 4-Chloroaniline 220 4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitroaniline NS 4-Nitrophenol 100 7-(12-Dimethylbenz(a)anthracene NS a.a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthene 4100 Acenaphthylene 4100 Acenaphthylene NS Acenaphthylene NS Acenaphthylene NS Acenaphthylene NS Acenaphthylene NS Acenaphthylene NS Acenaphthylene NS Acetophenone NS Aniline 100 Anthracene 50000 Anthracene 50000 Anthracene NS Anthracene NS	ND ND	ND ND	ND	ND	ND
4-Bromophenyl phenyl ether 4-Chloroaniline 220 4-Chlorophenyl phenyl ether 4-Nitroaniline 4-Nitrophenol 7,12-Dimethylbenz(a)anthracene a,a-Dimethylphenethylamine NS Acenaphthene 4-Cenaphthylene 4-Cenaphthylamine NS Aniline 4-Cenaphthylamine NS Aniline 4-Chloroaniline 5-Cono Actionaline 5-Cono Anthracene 4-Cono Actionaline 8-Cono Anthracene 8-Cono Actionaline 8-Co	ND	ND	ND ND	ND	ND
4-Chlorophenyl phenyl ether NS 4-Nitroaniline NS 4-Nitrophenol 100 7-12-Dimethylbenz(a)anthracene NS a.a-Dimethylbenz(a)anthracene NS a.a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene 4100 Acenaphthylene NS a-Chaphthylene NS a-Chaphthylene NS a-Chaphthylene NS a-Chaphthylene NS a-Chaphthylene NS a-Chaphthylene NS a-Chaphthylamine NS a-Chaphthylamine NS Aniline 100 Anthracene 50000 Anthracene NS acobenzene NS Benzidine NS	ND	ND	ND ND	ND NO	ND
4-Nitroaniline NS 4-Nitrophenol 100 4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a,a-Dimethylphenethylamine NS Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene* 4100 Acenaphthylene NS Achaphthylamine NS Aniline 100 Anthracene 5000 Anthracene* 5000 Azobenzene NS Benzidine NS	ND	ND	ND ND	ND ND	ND ND
4-Nitrophenol 100 7,12-Dimethylbenz(a)anthracene NS a,a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene* 4100 Acenaphthylene 4100 Acetophenone NS a-Naphthylamine NS Anthracene 5000 Anthracene 5000 Anthracene 5000 Anthracene 5000 Anthracene NS Anthracene NS	ND	ND	ND	ND	ND ND
7,12-Dimethylbenz(a)anthracene a.a-Dimethylpenethylamine NS a.a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthylene 4100 Acenaphthylene 4100 Acetophenone NS a-Naphthylamine NS a-Naphthylamine NS anthracene 50000 Anthracene 50000 Anthracene NS acobenzene NS Benzidine NS	ND	ND	ND	ND	ND
a,a-Dimethylphenethylamine NS Acenaphthene 5000 Acenaphthene* 5000 Acenaphthylene 4100 Acetophthylene* 4100 Acetophenone NS a-Naphthylamine NS Aniline 100 Anthracene 5000 Anthracene NS Azobenzene NS Benzidine NS	ND	ND	ND	ND	ND
Acenaphthene 5000 Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene* 4100 Acetophenone NS Anaphthylamine NS Aniline 100 Anthracene 5000 Anthracene* 5000 Azobenzene NS Benzidine NS	ND	ND	ND	ND	ND
Acenaphthene* 5000 Acenaphthylene 4100 Acenaphthylene 4100 Acenaphthylene* 1400 Acetophenone NS A-Naphthylamine NS Aniline 100 Anthracene 50000 Anthracene* 50000 Actorophenone NS Anthracene NS	ND ND	ND	ND	ND	ND
Acenaphthylene 4100 Acenaphthylene* 4100 Acetophenone NS a-Naphthylamine NS Aniline 100 Anthracene 50000 Anthracene NS Azobenzene NS Benzidine NS		ND ND	ND	ND	ND
Acenaphthylene*		ND ND	ND	ND	ND
Acetophenone NS a-Naphthylamine NS Aniline 100 Anthracene 5000 Anthracene* 5000 Azobenzene NS Benzidine NS		ND ND	ND ND	ND	ND
a-Naphthylamine NS Aniline 100 Anthracene 50000 Anthracene* 50000 Azobenzene NS Benzidine NS	ND ND	ND ND	ND	ND	ND
Aniline 100 Anthracene 5000 Anthracene* 5000 Azobenzene NS Benzidine NS	ND	ND ND	ND	ND	ND
Anthracene* 50000 Azobenzene NS Benzidine NS	ND	ND ND	ND	ND ND	ND
Azobenzene NS Benzidine NS	ND	ND ND	ND ND	ND ND	ND ND
Benzidine NS		ND	ND ND	ND	ND
140	ND	ND	ND	ND ND	ND ND
penzo(a)anthracene 224	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND
227	22	22	ND	ND	ND
	ND	ND	ND	ND	ND
enzo(a)pyrene* 61 enzo(b)fluoranthene 1100	17	21	ND	ND	ND
enzo(b)fluoranthene* 1100	ND	ND ND	ND	ND	ND
enzo(e)pyrene NS	1 00	27	ND	ND	ND
enzo(e)Pyrene* NS		ND ND	ND ND	ND	ND
enzo(ghi)perylene 50000	ND	21 ND	ND	ND	ND
enzo(ghi)perylene* 50000			ND ND	ND ND	ND ND



Columbia Manhattanville



mple ID o Sample Number	TAGM 4046 RSCOs	CB-10 (2'-4') £0501881-06 2/21/2005	CB-10 (7'-8') L0501881-07 2/21/2005	FIELD BLANK L0501881-08 2/21/2005	MW/CB-11 14'-16') L0502002-01 2/24/2005	MW/CB-12 (6'-8') L0502002-03 2/24/2005
mpling Date trix		Soil	Soil 1.0	Soil 1.0	Soil 1.0	Soil 1.0
ution Factor its	(ppb)	1.0 ppb	ppb	ppb	ppb	ppb
MPOUND	1100	ND	ND	ND	ND	ND
enzo(k)fluoranthene	1100	17	20	ND	ND	ND
enzo(k)fluoranthene* enzoic Acid	2700	ND	ND	ND	ND	ND
enzyl Alcohol	NS	ND	ND	ND	ND	ND ND
phenyl	NS	ND	ND	ND ND	ND ND	ND
phenyl*	NS	ND	ND	ND ND	ND ND	ND
is(2-chloroethoxy)methane	NS	ND	ND ND	ND ND	ND ND	ND
is(2-chloroethyl)ether	NS	ND_	ND ND	ND	ND	ND
is(2-chloroisopropyl)ether	NS	ND	ND ND	ND	ND	ND
is(2-ethylhexyl)phthalate	50000	ND ND	ND ND	ND	ND	ND
-Naphthylamine	NS	ND ND	ND	ND	ND	ND
utyl benzyl phthalate	50000	ND	ND	ND	ND	ND
arbazole	NS NS	ND	ND	ND	ND	ND
Chlorobenzilate	NS 400	ND	ND	ND	ND	ND
Chrysene	400	26	25	ND	ND	ND ND
Chrysene*	14	ND ND	ND	ND	ND	ND ND
Dibenzo(a,h)anthracene	14	ND	ND	ND	ND	ND ND
Dibenzo(a,h)anthracene*	6200	ND	ND	ND	ND	ND ND
Dibenzofuran	7100	ND	ND	ND	ND ND	ND ND
Diethyl phthalate Dimethoate	NS	ND	ND	ND	ND ND	ND ND
Dimethyl phthalate	2000	ND	ND	ND	ND ND	ND ND
Di-n-butylphthalate	8100	ND	ND	ND ND	ND ND	ND ND
Di-n-octylphthalate	50000	ND	ND	ND ND	ND ND	ND
Ethyl Methanesulfonate	NS	ND	ND_	ND ND	ND	ND
Fluoranthene	50000	ND	ND ND	ND ND	ND ND	ND
Fluoranthene*	50000	39	37 ND	ND	ND ND	ND
Fluorene	50000	ND ND	ND ND	ND ND	ND	ND
Fluorene*	50000	ND ND	ND ND	ND	ND	ND
Hexachlorobenzene	410	ND ND	ND ND	ND	ND	ND
Hexachlorobenzene*	410	ND ND	ND	ND	ND	ND
Hexachlorobutadiene	NS NS	ND	ND ND	ND	ND	ND
Hexachlorobutadiene*	NS NS	ND ND	ND	ND	ND	ND.
Hexachlorocyclopentadiene	NS NS	ND ND	ND	ND	ND	ND
Hexachloroethane	NS NS	ND	ND	ND	ND ND	ND
Hexachloroethane*	NS NS	ND	ND	ND	ND	ND_
Hexachloropropene	3200	ND	ND	ND	ND	ND ND
Indeno(1,2,3-cd)pyrene Indeno(1,2,3-cd)Pyrene*	3200	10	15	_ND	ND_	ND
Indeno(1,2,3-cu)r ytene	NS NS	ND	ND	ND	ND ND	ND ND
Isophorone	4400	ND	ND	ND	ND ND	ND ND
Methyl methanesulfonate	NS	ND	ND ND	ND ND	ND ND	ND ND
Naphthalene	13000	ND	ND	ND ND	ND ND	+ ND
Naphthalene*	13000	ND	ND	ND ND	ND ND	ND ND
NDPA/DPA	NS	ND ND	ND ND	ND ND	ND	ND
Nitrobenzene	200	ND	ND ND	ND ND	ND ND	ND
Nitrosodi-n-butylamine	NS	ND	ND ND	ND ND	ND ND	ND
Nitrosodipiperidine	NS NS	ND ND	ND ND	ND ND	ND	ND
n-Nitrosodimethylamine	NS NS	ND ND	ND	ND ND	ND	ND
n-Nitrosodi-n-propylamine	NS NS	ND ND	ND ND	ND	ND	ND
p-Chloro-m-cresol	NS NS	ND ND	ND	ND	ND	ND
p-Dimethylaminoazobenzene	NS NS	ND ND	ND	ND	ND	ND
Pentachlorobenzene	NS NS	ND	ND	ND	ND	ND
Pentachloronitrobenzene	1000	ND ND	ND	ND	ND	ND
Pentachlorophenol	1000	ND ND	ND	ND	240	110
Pentachlorophenol*	NS NS	ND	ND	ND	ND	ND
Perylene	NS NS	ND	ND	ND	ND	ND
Perylene*	NS NS	ND	ND	ND	ND	ND
Phenacetin	50000	ND	ND	ND	ND	ND
Phenanthrene Phenanthrene*	50000	21	19	ND	ND ND	ND ND
Phenanthrene* Phenol	30	ND	ND	ND	ND	ND ND
Prenoi Pronamide	NS	ND	ND	ND	ND ND	NL NE
Pyrene	50000	ND	ND	ND	ND ND	NE NE
Pyrene*	50000	39	41	ND	ND ND	NE NE
Pyridine	NS	ND	ND	ND	ND	1,70



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Sample ID	TAGM 4046 RSCOs	4W/CB-12 (18.5°-20	MW/CR-13 (2'-4')	MW/CB-13 (6'-8')	MW/CB-14 (6'-8')	FIELD BLANK
Lab Sample Number	170m 4040 110003	L0502002-04	L0502002-05	L0502002-06	L0502002-08	L0502002-09
Sampling Date		2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005
Matrix	,	Soil	Soil	Soil	Soil	Soll
Dilution Factor	(ppb)	1.0	1.0	1.0	1.0	1.0
Units		ppb	ppb	ppb	ppb	ug/l
COMPOUND						
1,2,4,5-Tetrachlorobenzene	NS	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	ND	ND	ND	ND ND	ND
1,2-Dichlorobenzene	7900	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1600	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	8500	ND	ND	ND	ND	ND
1-Chloronaphthalene	NS	ND	ND	ND	ND	ND
1-Methylnaphthalene	NS NS	ND	ND	ND	ND	ND
1-Methylnaphthalene* 1-Methylphenanthrene*	NS NS	ND ND	ND ND	ND ND	ND ND	ND
2,4,5-Trichlorophenol	100	ND	ND ND	ND ND	ND ND	ND ND
2,4,6-Trichlorophenol	NS NS	ND	ND	ND	ND	ND
2,4-Dichlorophenol	400	ND	ND	ND	ND	ND
2,4-Dimethylphenol	NS	ND	ND	ND	ND	ND
2,4-Dinitrophenol	200	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	NS NS	ND ND	ND	ND	ND	ND
2,6-Dichlorophenol 2,6-Dimethylnaphthalene*	NS NS	ND ND	ND	ND	ND ND	ND ND
2.6-Dinitrotoluene	1000	ND ND	ND ND	ND ND	ND ND	ND ND
2-Chloronaphthalene	NS	ND	ND ND	ND ND	ND ND	ND ND
2-Chloronaphthalene*	NS	ND	ND	ND	ND	ND
2-Chlorophenol	800	ND	ND	ND	ND	ND
2-Methylnaphthalene	36400	ND	ND	ND	ND	ND
2-Methylnaphthalene*	36400	ND	ND	ND	ND	ND
2-Methylphenol	NS 430	ND	ND ND	ND	ND	ND
2-Nitroaniline 2-Nitrophenol	430 330	ND ND	ND ND	ND ND	ND ND	ND
2-Picoline	NS NS	ND	ND ND	ND ND	ND ND	ND ND
3,3'-Dichlorobenzidine	NS	ND	ND	ND	ND ND	ND
3-Methylcholanthrene	NS	ND	ND	ND	ND	ND
3-Methylphenol/4-Methylphenol	NS	ND	ND	ND	ND	ND
3-Nitroaniline	500	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol 4-Aminobiphenyl	NS NS	ND ND	ND ND	ND	ND	ND
4-Armhoolphenyl phenyl ether	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
4-Chloroaniline	220	ND	ND	ND ND	ND ND	ND ND
4-Chlorophenyl phenyl ether	NS	ND	ND	ND	ND	ND
4-Nitroaniline	NS	ND	ND	ND	ND	ND
4-Nitrophenol	100	ND	ND	ND	ND	ND
7,12-Dimethylbenz(a)anthracene	NS NS	ND	ND ND	ND	ND	ND
a,a-Dimethylphenethylamine Acenaphthene	NS 50000	ND ND	ND ND	ND ND	ND ND	ND ND
Acenaphthene*	50000	ND ND	ND ND	ND ND	ND ND	ND ND
Acenaphthylene	41000	ND	ND ND	ND ND	ND ND	ND ND
Acenaphthylene*	41000	ND	ND	ND	ND ND	ND ND
Acetophenone	NS	ND	ND	ND	ND	ND
a-Naphthylamine	NS NS	ND	ND	ND	ND	ND
Aniline	100	ND	ND ND	ND ND	ND ND	ND
Anthracene Anthracene*	50000 50000	ND ND	ND ND	ND ND	ND	ND ND
Azobenzene	NS NS	ND ND	ND ND	ND D	ND ND	ND ND
Benzidine	NS NS	ND ND	ND ND	ND	ND ND	ND ND
Benzo(a)anthracene	224	ND	ND	ND	ND	ND
Benzo(a)anthracene*	224	ND	25	ND	ND	ND
Benzo(a)pyrene	61	ND	ND	ND	ND	ND
Benzo(a)pyrene*	61	ND	19	ND	ND	ND
Benzo(b)fluoranthene	1100	ND ND	ND 45	ND ND	ND	ND
Benzo(b)fluoranthene* Benzo(e)pyrene	1100 NS	ND ND	15 ND	ND	ND	ND ND
Benzo(e)Pyrene*	NS NS	ND ND	ND 18	ND ND	ND ND	ND ND
Benzo(ghi)perylene	50000	ND ND	ND	ND ND	ND ND	ND ND
Benzo(ghi)perylene*	50000	ND	14	ND	ND	ND
				110	ייי	110



Columbia Manhattanville



Sample ID	TAGM 4046 RSCOs	IW/CB-12 (18.5'-20	MW/CB-13 (2'-4')	MW/CB-13 (6'-8')	MW/CB-14 (6'-8')	FIELD BLANK
Lab Sample Number		L0502002-04	L0502002-05	L0502002-06	L0502002-08	L0502002-09
Sampling Date		2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005
Matrix		Soil	Soil	Soil	Soil	Soil
Dilution Factor	(ppb)	1.0	1.0	1.0	1.0	1.0
Units		ppb	ppb	ppb	ppb	ug/I
COMPOUND						
Benzo(k)fluoranthene	1100	ND	ND	ND	ND	ND
Benzo(k)fluoranthene*	1100	ND	24	ND	ND	ND
Benzoic Acid	2700	ND	ND	ND	ND	ND
Benzyl Alcohol	NS	ND	ND	ND	ND	ND
Biphenyl	NS	ND	ND	ND	ND	ND
Biphenyl*	NS	ND	ND	ND	ND	ND
Bis(2-chloroethoxy)methane	NS	ND ND	ND	ND ND	ND	ND ND
Bis(2-chloroethyl)ether	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
Bis(2-chloroisopropyl)ether	NS 50000	ND ND	ND ND	ND ND	ND	ND ND
Bis(2-ethylhexyl)phthalate b-Naphthylamine	NS	ND	ND ND	ND ND	ND	ND
Butyl benzyl phthalate	50000	ND	ND	ND	ND	ND
Carbazole	NS	ND	ND	ND	ND	ND
Chlorobenzilate	NS	ND	ND	ND	ND	ND
Chrysene	400	ND	ND	ND	ND	ND
Chrysene*	400	ND	28	ND	ND	ND ND
Dibenzo(a,h)anthracene	14	ND ND	ND	ND NB	ND ND	ND
Dibenzo(a,h)anthracene*	14	ND	ND ND	ND ND	ND ND	ND ND
Dibenzofuran	6200	ND ND	ND ND	ND ND	ND	ND
Diethyl phthalate Dimethoate	7100 NS	ND ND	ND ND	ND ND	ND ND	ND
Dimethyl phthalate	2000	ND	ND	ND	ND	ND ND
DI-n-butylphthalate	8100	ND	ND	ND	ND	ND
Di-n-octylphthalate	50000	ND	ND	ND	ND	ND
Ethyl Methanesulfonate	NS	ND	ND	ND	ND	ND
Fluoranthene	50000	ND	ND	ND	ND	ND
Fluoranthene*	50000	ND ND	57	ND ND	ND ND	ND ND
Fluorene	50000	ND ND	ND	ND ND	ND ND	ND ND
Fluorene*	50000 410	ND ND	ND ND	ND	ND ND	ND
Hexachlorobenzene Hexachlorobenzene*	410	ND ND	ND	ND ND	ND	ND
Hexachlorobutadiene	NS NS	ND	ND ND	ND	ND	ND
Hexachlorobutadiene*	NS NS	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	NS	ND	ND	ND	ND	ND
Hexachloroethane	NS	ND	ND	ND	ND	ND
Hexachloroethane*	NS	ND	ND	ND ND	ND ND	ND
Hexachloropropene	NS	ND_	ND ND	ND	ND	ND ND
Indeno(1,2,3-cd)pyrene	3200	ND ND	ND 12	ND ND	ND ND	ND ND
Indeno(1,2,3-cd)Pyrene*	3200 NS	ND ND	ND	ND	ND ND	ND
Isodrin Isophorone	4400	ND	ND ND	ND	ND	ND
Methyl methanesulfonate	NS	ND	ND	ND	ND	ND
Naphthalene	13000	ND	ND	ND	ND	ND
Naphthalene*	13000	ND	ND	ND	ND	ND
NDPA/DPA	NS	ND	ND	ND	ND	ND
Nitrobenzene	200	ND	ND	ND	ND ND	ND ND
Nitrosodi-n-butylamine	NS	ND	ND ND	ND ND	ND	ND
Nitrosodipiperidine	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
n-Nitrosodimethylamine	NS NS	ND ND	ND ND	ND ND	ND ND	ND ND
n-Nitrosodi-n-propylamine p-Chloro-m-cresol	NS NS	ND ND	ND ND	ND	ND ND	ND ND
p-Unioro-m-cresoi p-Dimethylaminoazobenzene	NS NS	ND	ND ND	ND ND	ND	ND
Pentachlorobenzene	NS NS	ND ND	ND ND	ND	ND	ND
Pentachloronitrobenzene	NS	ND	ND	ND	ND	ND
Pentachlorophenol	1000	ND	ND	ND	ND	ND
Pentachlorophenol*	1000	ND	ND	760	150	6.5
Perylene	NS	ND	ND	ND	ND ND	ND ND
Perylene*	NS	ND ND	ND_	ND	ND	ND
Phenacetin	NS SOON	ND ND	ND	ND ND	ND ND	ND ND
Phenanthrene	50000	ND	ND 36	ND 17	ND ND	ND ND
Phenanthrene*	50000	ND ND	36 ND	ND	ND ND	ND ND
Phenol	30 NS	ND ND	ND ND	ND ND	ND	ND ND
Pronamide Pyrene	50000	ND ND	ND	ND	ND ND	ND ND
EL VICIE						
Pyrene*	50000	ND	51	22	ND	ND



Sample ID	TAGM 4046 RSCOs	CB-15 (2'-4')	CB-15 (14'-16')	linuon to the		
Lab Sample Number	111011111111111111111111111111111111111	L0502261-01	L0502261-02	MW/CB-16 (10*-12*) L0502261-04	1 ' /	MW/CB-18 (4'-6'
Sampling Date		2/28/2005	2/28/2005	2/28/2005	L0502261-06	L0502261-07
Matrix		Soil	Soil	Soil	2/28/2005 Soil	2/28/2005
Dilution Factor	(ppb)	1.0	1.0	1.0	1.0	Soil
Units		ppb	ppb	ppb	ppb	1.0 ppb
COMPOUND					F.F.2	ppb
1,2,4,5-Tetrachlorobenzene						
1,2,4-Trichlorobenzene	NS 3400	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	7900	ND ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1600	ND ND	ND ND	ND	ND	ND
1,4-Dichlorobenzene	8500	ND ND	ND ND	ND ND	ND	ND
1-Chloronaphthalene	NS	ND ND	ND	ND ND	ND	ND
1-Methylnaphthalene	NS	ND	ND	ND ND	ND ND	ND
1-Methylnaphthalene*	NS	ND	ND	ND ND	ND ND	ND
1-Methylphenanthrene*	NS	100	ND	ND	ND ND	ND ND
2,4,5-Trichlorophenol	100	ND	ND	ND	ND	ND ND
2,4,6-Trichlorophenol 2,4-Dichlorophenol	NS	ND	ND	ND	ND	ND
2,4-Dimethylphenol	400	ND	ND	ND	ND	ND
2,4-Dinitrophenol	NS 200	ND ND	ND	ND	ND	ND
2,4-Dinitrotoluene	NS NS	ND ND	ND	ND ND	ND	ND
2,6-Dichlorophenol	NS NS	ND ND	ND ND	ND ND	ND	ND
2,6-Dimethylnaphthalene*	NS	ND	ND ND	ND ND	ND	ND
2,6-Dinitrotoluene	1000	ND	ND	ND ND	ND ND	ND ND
2-Chloronaphthalene	NS	ND	ND	ND	ND ND	ND ND
2-Chloronaphthalene*	NS	ND	ND	ND	ND ND	ND ND
2-Chlorophenol	800	ND	ND	ND	ND ND	ND ND
2-Methylnaphthalene	36400	ND	ND	ND	ND	ND
2-Methylnaphthalene* 2-Methylphenol	36400	ND ND	ND	ND	ND	ND
2-Nitroaniline	NS 430	ND ND	ND	ND	ND	ND
2-Nitrophenol	330	ND ND	ND ND	ND	ND	ND
2-Picoline	NS SSS	ND ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	NS NS	ND ND	ND ND	ND ND	ND	ND
3-Methylcholanthrene	NS	ND	ND ND	ND ND	ND ND	ND
3-Methylphenol/4-Methylphenol	NS	ND	ND	ND	ND ND	ND
3-Nitroaniline	500	ND	ND	ND	ND	ND ND
4,6-Dinitro-o-cresol	NS	ND	ND	ND	ND	ND
4-Aminobiphenyl 4-Bromophenyl phenyl ether	NS NS	ND	ND	ND	ND	ND
4-Chloroaniline	NS 220	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	220 NS	ND ND	ND	ND	ND	ND
4-Nitroaniline	NS NS	ND ND	ND ND	ND	ND	ND
4-Nitrophenol	100	ND	ND ND	ND ND	ND	ND
7,12-Dimethylbenz(a)anthracene	NS	ND	ND	ND	ND ND	ND ND
a,a-Dimethylphenethylamine	NS	ND	ND	ND ND	ND ND	ND
Acenaphthene	50000	ND	ND	ND	ND	ND ND
Acenaphthene*	50000	ND	ND	ND	ND	ND
Acenaphthylene Acenaphthylene*	41000	ND	ND	ND	ND	ND
Acetophenone	41000 NS	98	ND	ND	ND	ND
a-Nanhthylamine	NS NS	ND	ND	ND	ND	ND
Aniline	100	ND ND	ND	ND ND	ND	ND
Anthracene I	50000	ND ND	ND ND	ND ND	ND	ND
Anthracene*	50000	140	ND ND	ND ND	ND	ND
Azobenzene	NS	ND	ND ND	ND ND	ND ND	ND
Benzidine	NS	ND	ND	· ND	ND ND	ND ND
Benzo(a)anthracene	224	500	ND	ND	ND ND	ND ND
Benzo(a)anthracene*	224	600	ND	ND	ND ND	35
Benzo(a)pyrene	61	510	ND	ND	ND ND	ND ND
Benzo(a)pyrene* Benzo(b)fluoranthene	61	580	ND	ND	ND	61
Benzo(b)fluoranthene*	1100	400	ND	ND	ND	ND
Benzo(e)pyrene	1100 NS	710	ND	ND	ND	47
Benzo(e)Pyrene*	NS NS	360 450	ND ND	ND	ND	ND
Benzo(ghi)perylene	50000	370	ND ND	ND ND	ND	42
Benzo(ghi)perylene*	50000	410	ND ND	ND ND	ND	ND
			עאי	ND	ND	50

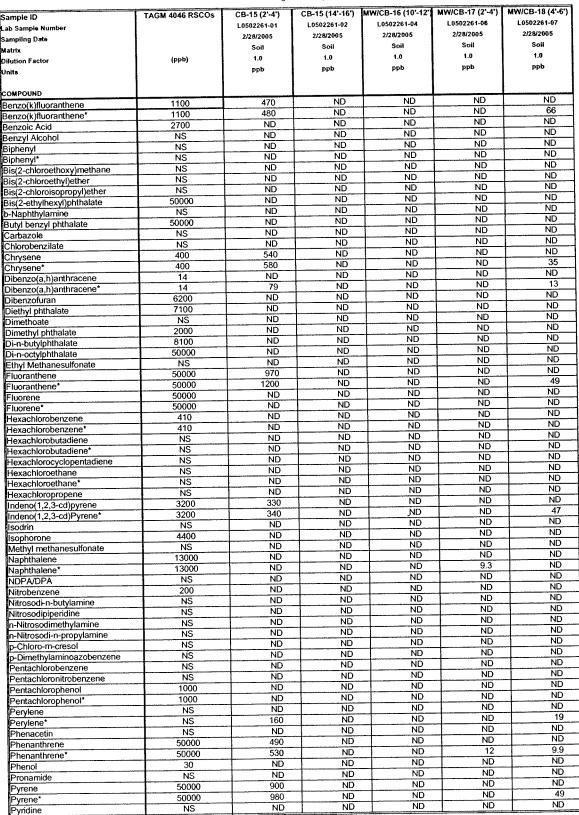


Columbia Manhattanville

Subsurface Investigation

Soil Samples

Semi-Volatile Organic Compounds









Columbia Manhattanville

Sample ID	TAGM 4046 RSCOs	MW/CB-19 (8'-10')	MW/CB-20 (18'-20')	MW/CR-21 (16'-18'	MW/CB-22 (12'-14')	EIELD DI ANY
Lab Sample Number		L0502261-08	L0502261-11	L0502261-12	L0502261-13	FIELD BLANK L0502261-14
Sampling Date		2/28/2005	2/28/2005	2/28/2005	2/28/2005	2/28/2005
Matrix		Soil	Soil	Soil	Soil	Soil
Dilution Factor	(ppb)	1.0	1.0	1.0	1.0	1.0
Units		ppb	ppb	ppb	ppb	ug/l
						- &
COMPOUND						
1,2,4,5-Tetrachlorobenzene	NS	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene 1,2-Dichlorobenzene	3400	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	7900	ND ND	ND ND	ND	ND	ND
1,4-Dichlorobenzene	1600 8500	ND ND	ND ND	ND	ND	ND
1-Chloronaphthalene	NS	ND	ND	ND ND	ND ND	ND
1-Methylnaphthalene	NS NS	ND ND	ND ND	ND	ND ND	ND
1-Methylnaphthalene*	NS NS	550	ND	ND ND	ND ND	ND
1-Methylphenanthrene*	NS	1100	ND	ND	ND ND	ND ND
2,4,5-Trichlorophenol	100	ND	ND	ND	ND ND	ND ND
2,4,6-Trichlorophenol	NS	ND	ND	ND	ND ND	ND ND
2,4-Dichlorophenol	400	ND	ND	ND	ND	ND
2,4-Dimethylphenol	NS	ND	ND	ND	ND	ND ND
2,4-DInitrophenol	200	ND	ND	ND	ND	ND ND
2,4-Dinitrotoluene	NS	ND	ND	ND	ND	ND
2,6-Dichlorophenol	NS	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene*	NS	3100	ND	ND	ND	ND
2,6-Dinitrotoluene	1000	ND	ND	ND	ND	ND
2-Chloronaphthalene 2-Chloronaphthalene*	NS NS	ND	ND	ND	ND	ND
2-Chlorophenol	NS NS	ND	ND	ND	ND	ND
2-Methylnaphthalene	800 36400	ND ND	ND ND	ND	ND	ND
2-Methylnaphthalene*	36400	ND ND	ND ND	ND ND	ND	ND
2-Methylphenol	NS	ND ND	ND ND	ND ND	ND	ND
2-Nitroaniline	430	ND ND	ND ND	ND	ND	ND
2-Nitrophenol	330	ND ND	ND ND	ND ND	ND ND	ND ND
2-Picoline	NS	ND	ND	ND ND	ND ND	ND ND
3,3'-Dichlorobenzidine	NS	ND	ND ND	ND	ND ND	ND
3-Methylcholanthrene	NS	ND	ND	ND	ND ND	ND
3-Methylphenol/4-Methylphenol	NS	ND	ND	ND	ND	ND
3-Nitroaniline	500	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	NS	ND	ND	ND	ND	ND
4-Aminobiphenyl	NS	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether 4-Chloroaniline	NS	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	220 NC	ND ND	ND	ND ND	ND	ND
4-Nitroaniline	NS NS	ND ND	ND ND	ND ND	ND	ND
4-Nitrophenol	100	ND ND	ND ND	ND ND	ND	ND ND
7,12-Dimethylbenz(a)anthracene	NS NS	ND ND	ND ND	ND ND	ND	ND
a,a-Dimethylphenethylamine	NS NS	ND	ND ND	ND	ND ND	ND ND
Acenaphthene	50000	ND	ND ND	ND	ND ND	ND ND
Acenaphthene*	50000	370	ND	ND	ND	ND ND
Acenaphthylene	41000	ND	ND	ND	ND	ND
Acenaphthylene*	41000	ND	ND	ND	ND	ND
Acetophenone	NS	ND	ND	ND	ND	ND
a-Naphthylamine	NS	ND	ND	ND	ND	ND
Aniline	100	ND	ND	ND	ND	ND
Anthracene	50000	220	ND	ND	ND	ND
Anthracene* Azobenzene	50000	ND	ND	ND	ND	ND
Benzidine	NS NS	ND	ND	ND	ND	ND
Benzo(a)anthracene	NS NS	ND	ND	ND	ND	ND
Benzo(a)anthracene*	224 224	ND ND	ND ND	ND ND	ND	ND
Benzo(a)pyrene	61	ND ND	ND	ND ND	ND	ND
Berizo(a)pyrene*	61	ND	ND	ND NB	ND ND	ND
Benzo(b)fluoranthene	1100	ND ND	ND ND	ND ND	ND ND	ND
Benzo(b)fluoranthene*	1100	ND I	ND ND	ND ND	ND ND	ND ND
Benzo(e)pyrene	NS	ND	ND D	ND ND	ND	ND ND
Benzo(e)Pyrene*	NS NS	ND ND	ND	ND ND	ND	ND ND
Benzo(ghi)perylene	50000	ND	ND	ND ND	ND ND	ND
Benzo(ghi)perylene*	50000	ND	ND	ND	ND ND	ND ND
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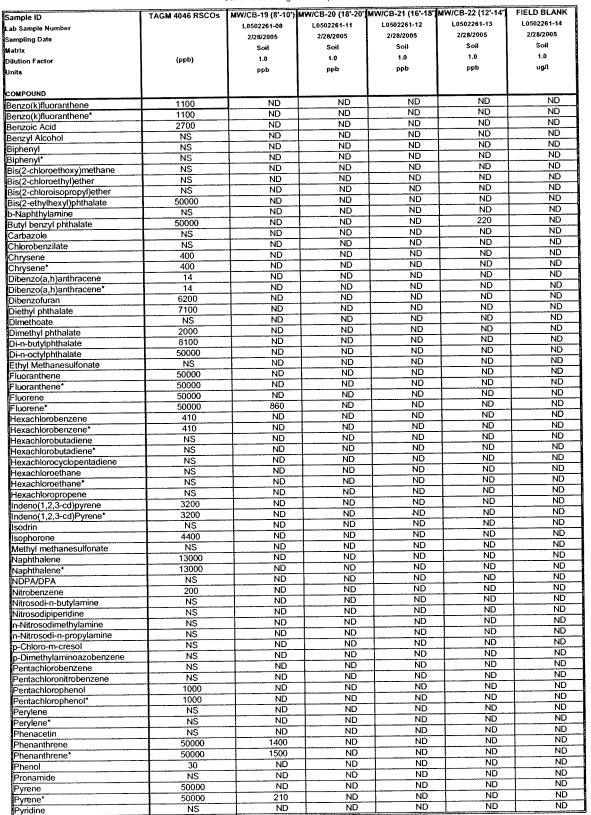


Columbia Manhattanville

Subsurface Investigation

Soil Samples

Semi-Volatile Organic Compounds









	TAGM 4046 RSCOs	EASTERN US						The state of the s
Sample ID		BACKGROUNDS	MW/CB-1 (2-4)	MW/CB-1 (10'-12')	MW/CB-2 (10:-12")	MW/CB-2 (12:-14:)	MW/CB.3 (201.221)	FIELD RI ANK
Lab Sample Number			L0501658-01	L0501658-02	L0501658-02 L0501658-03 L0501658-04 10501658-05	L0501658-04	1 0501658-05	10501658-06
Sampling Date			2/15/2005	2/15/2005	2/15/2005	2/15/2005	2/15/2005	2/15/2005
Matrix			Soil	Soil	Soil	Soil	Soil	Soil
Dilution Factor			1.0	1.0	1.0	0.1	1.0	1,0
Units	qdd	qdd	qdd	qdd	qdd	qdd	qdd	qdd
METAL:								
Aluminum, Total	SB	33000	4900	6300	5900	6400	3200	CZ
Antimony, Total	SB	N/A	2	QN	2	S	GN	CN
Arsenic, Total	7500 OR SB	3-13	2.3	2.4	2.5	2	1.4	Q
Barrum, Total	300000 OR SB	15-600	21	25	19	22	23	QN
Beryllium, Total	160 OR SB	0-1.75	ΩN	2	QN.	QN	9	QX
Cadmium, Total	1000 OR SB	0.1-1	QN	QN	QN	QN.	9	QX
Calcium, Total	SB	130-35000	2200	2500	1400	1000	3300	0.25
Chromium, Total	10000 OR SB	1.5-40	7.9	10	7.6	17	6.4	QN
Cobalt, Total	30000 OR SB	2.5-60	4.2	5.7	4.9	6.2	3.2	2
Copper, Total	25000 OR SB	1-50	10	12	11	14	8.6	QN
Iron, Iotal	2000000 OR SB	2000-550000	10000	13000	12000	12000	7500	0.07
Lead, Total	SB	200-500	12	9.7	5.4	5.6	9	Q
Magnesium, Total	SB	100-5000	2300	2900	2400	2700	1900	S
Manganese, Total	SB	50-5000	240	280	150	110	250	QN.
Mercury, Total	100 OR SB	0.001-0.2	QV.	S	9	9	2	QN
Nickel, Iotal	13000 OR SB	0.5-25	7.8	10	10	12	7.1	2
Potassium, Iotal	SB	85000-43000	270	370	350	410	410	QN
Selenium, Total	2000 OR SB	0.1-3.9	DN	Ð	9	Q	2	Q
Silver, lotal	SB	N/A	ON	Q	2	2	2	QN
Sodium, Iotal	SB	0008-0009	130	190	130	2	130	Q
I naillum, Total	SB	N/A	2	QN	QN	2	S	QN
Variadium, Total	150000 OR SB	1-300	9.1	1	9.6	11	6.9	ND
Linc, Tolai	20000 OR SB	9-50	27	32	30	36	19	S

TABLE 3
Columbia Manhattanville
Subsurface Investigation
Soil Samples
Metals

	TAGM 4046 RSCOs	EASTERN US			10 117 0 1071	(194 144) Q GOM	CB 40 (2: 4:)	CB-10 (7'.8")
Sample ID		BACKGROUNDS	MW/CB-7 (6'-8')	MW/CB-8 (12:-14')	MW/CB-9 (4'-6')	MW/CB-9 (14 - 10)	1 0501001-06	1.0501881-07
Lab Sample Number			L0501881-02	L0501881-03	L0501881-04	CO-10010COT	C0301661-00	2/24/2006
Sampling Date			2/21/2005	2/21/2005	2/21/2005	C002/L2/2	600711717	COOR 117
Matrix			Soll	Soil	Soil	Soil	205	901
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0
Units	qdd	qdd	qdd	qdd	qdd	qdd	qdd	qdd
METAL:					V CE	000	0020	0008
Aluminum, Total	SB	33000	8000	4900	4700	0081	00/0	0000
Antimony. Total	SB	N/A	QN.	QN	QN	QN	ON I	ON G
Arsenic Total	7500 OR SB	3-13	2.3	2.1	2.7	6.0	2.5	2.9
Barium Total	3000000 SB	15-600	54	30	46	41	51	35
Berylling Total	160 OR SB	0-1.75	QN	0.1709	QN	0.1293	ND	QN
Cadmin Total	1000 OR SB	0.1-1	QN	Q.	QN	QN	ND	Q
Cadrilloni, Total	S S S S S S S S S S S S S S S S S S S	130-35000	12000	980	4800	3600	2200	2300
Carcium, Total	10000 OB SB	1 5-40	-	7.5	10	7.7	11	6.6
Cobalt Total	30000 OB SB	2.5-60	6.7	4.6	5.4	2.9	6.1	4.9
Coball, Total	90 00 0000	1 50	7.0	10	37	12	20	20
Copper, Iotal	90 00 0000000	0000 550000	12000	10000	7800	5100	11000	11000
Iron, Iotal	20 NO 000007	200-220000	23	8.7	93	4.9	40	67
Lead, lotal	8 8	400 5000	2300	1700	1500	1700	2400	1700
Magnesium, Total	000	50-3000	410	320	120	330	330	280
Manganese, Total	100 OB SB	0.001-0.2	GN	QN	0.21	Q.	0.24	0.67
Nickel Total	13000 OB SB	0.5-25	10.7	8.57	10.1	7.15	10.4	7.94
Detection Total	av	85000-43000	2200	410	320	380	1000	380
Polassium, Total	SOUNCE SE	0.1-3.9	QN	0.366	0.558	QN.	0.365	0.442
Oilor Total	S S S S S S S S S S S S S S S S S S S	Δ/N	CN	2	2	QV	QN	Q.
Station Total	3 8	8000-8000	1200	220	970	QN	180	240
Health Total	300	A/A	CZ	GN	2	QV	Q	2
Vending Total	150000 OB SB	1-300	16	8.8	11	6.5	14	13
Variaciónii, lotai	SOUND SERVICE	9-50	29	24	20	11	30	26
ZIIIC, IOIAI	20010 00002	22.2						







	TAGM 4046 RSCOs	EASTERN US	A					
Sample ID		BACKGROUNDS	FIELD BLANK	MW/CB-11 (14'-16"	MW/CB-12 (6'-8')	MW/CB-11 (14'-16' MW/CB-12 (6'-8') MW/CB-12 (18,5'-20 MW/CB-13 (2'-4')		MW/CB-13 (6'-8')
Lab Sample Number	·		L0501881-08	L0502002-01	L0502002-03	L0502002-04		L0502002-06
Sampling Date			2/21/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005
Matrix			Soll	Soil	Soil	Soil	Soil	Soil
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0
Units	qdd	qdd	qdd	qdd	qdd	qdd	qdd	qdd
METAL:								
Aluminum, Total	SB	33000	QN.	5200	2700	2000	2000	1900
Antimony, Total	SB	N/A	ND	ΩN	ΩN	S	QV	Q.
Arsenic, Total	7500 OR SB	3-13	QN	1.8	1.2	0.89	3.4	2
Barium, Total	300000 OR SB	15-600	ΩN	47	32	24	39	25
Beryllium, Total	160 OR SB	0-1.75	ΩN	0.2809	0.1212	0.1196	2	ND
Cadmium, Total	1000 OR SB	0.1-1	ND	QN	Ð	2	0.1222	ND
Calcium, Total	SB	130-35000	ND	7500	5500	740	>10000	>10000
Chromium, Total	10000 OR SB	1.5-40	ND	6'8	6.3	6.4	48000	16000
Cobalt, Total	30000 OR SB	2.5-60	ND	3.9	2.8	2.5	3.7	4.4
Copper, Total	25000 OR SB	1-50	ND	6.6	10	9.4	2.4	2.2
Iron, Total	2000000 OR SB	2000-550000	QN.	8200	5400	4300	13	10
Lead, Total	SB	200-500	ND	23	5.7	6.4	3600	4500
Magnesium, Total	SB	100-5000	ND	1500	1400	780	170	
Manganese, Total	SB	50-5000	QN	260	260	200	2300	1900
Mercury, Total	100 OR SB	0.001-0.2	DN	ΩN	ΩN	Q	210	240
Nickel, Total	13000 OR SB	0.5-25	ΔN	9'9	5.8	5.7	0.28	QN
Potassium, Total	SB	85000-43000	ND	340	320	220	4.9	4.5
Selenium, Total	2000 OR SB	0.1-3.9	DN	ΩN	Q	QV	650	520
Silver, Total	SB	N/A	DN	ΩN	ΩN	2	Ð	Q.
Sodium, Total	SB	6000-8000	ND	200	150	110	2	Q
Thallium, Total	SB	N/A	QN	QN	ΩN	ΩN	760	1500
Vanadium, Total	150000 OR SB	1-300	ΩN	8.9	7.2	6.2	QN	QN
Zinc, Total	20000 OR SB	9-50	QN	19	13	7.7	6.2	7.4

TABLE 3
Columbia Manhattanville
Subsurface Investigation
Soil Samples
Metals

	TAGM 4046 RSCOs	EASTERN US				407 11 11 110	100 46 (40, 40)	MANAILCE 17 (2'.4")
Sample ID		BACKGROUNDS	MW/CB-14 (6'-8')	FIELD BLANK	CB-15 (2'-4')	CB-15 (14-16)	WW/CB-16 (10-14	1 0502364 06
Lab Sample Number			L0502002-08	L0502002-09	L0502261-01	L0502261-02	LU502261-04	00-1907000
Sampling Date			2/24/2005	2/24/2005	2/28/2005	2/28/2005	C007/87/7	C007/07/7
Matrix			Soil	Soil	Soil	Soil	205	
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0
Units	qdd	qdd	qdd	l/Bn	qdd	qdd	qdd	qdd
- 4'	00	33000	0002	CZ	4800	4300	3600	1300
Aluminum, Total	900	00000 V/N	CN	GN CN	S	QN	QN	QN
Americanis, Total	7500 OB CB	3-13	16	QN	4.2	1.4	1.8	3.3
Alsellic, Iotal	as ac 00000c	15.600	3.4	CN	130	22	32	18
Bondling Total	160 OR SR	0-1.75	0.1435	S	QV	0.1691	0.2554	0.1124
Cadmin Total	1000 OR SR	0.1-1	QN	QV	0.3298	QN	ND	ΩN
Calcium Total	SB	130-35000	4100	QN	49000	830	2600	47000
Obromium Total	10000 OR SB	1.5-40	6.2	Q	9.5	7.3	6.7	4.2
Cobalt Total	30000 OR SB	2,5-60	4.4	QN.	3.2	2.9	4.9	2.3
Copper Total	25000 OR SB	1-50	10	QN	7.1	7	17	7
Iron Total	2000000 OR SB	2000-550000	0069	0.12	7700	0069	8800	3400
lead Total	SB	200-500	6.9	QN.	210	4.6	9.9	4.7
Macnesium Total	SB	100-5000	2100	QV	7900	970	1700	2300
Manganese Total	SB	20-2000	280	QN	200	140	370	180
Mercury, Total	100 OR SB	0.001-0.2	Q	QN	0.38	Q	Q	Q.
Nickel Total	13000 OR SB	0.5-25	7.1	QN	6	4.9	10	8.4
Potassium Total	SB	85000-43000	540	QN	1000	250	006	290
Selenium Total	2000 OR SB	0.1-3.9	Ð	QN	ΩN	0.242	Q	QN
Silver Total	SB	A/N	2	QN	Q	Q.	QN	QN
Sodium Total	S S	6000-8000	350	Q.	099	120	120	440
Thalling Total	SS	A/N	QN	QN	Q.	ΩN	ON	2
Vanadium Total	150000 OR SB	1-300	7.7	QN	8.3	7.4	10	4.9
Zinc Total	20000 OR SB	9-50	16	Q	160	13	23	9.6
1 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,								





Sample ID	TAGM RSCOs	MW/CB-1 (2-4)	MW/CB-1 (10'-12')	MW/CB-2 (10'-12')	MW/CB-2 (12:-14")	MW/CB-3 (20'-22')	FIELD BLANK	MW/CB-7 (6'-8')
Lab Sample Number		L0501658-01		L0501658-03	L0501658-04	L0501658-05	L0501658-06	L0501881-02
Sampling Date		2/15/2005	2/15/2005	2/15/2005	2/15/2005	2/15/2005	2/15/2005	2/21/2005
Matrix		Soil		Soil	Soil	Soil	Soil	Soil
Dilution Factor		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units	qdd	qdd		qdd	qdd	qdd qdd qdd	qdd	qdd
COMPOUND								
4,4'-DDD	2900	ΩN	ΩN	ΔN	DN	ND	QN	Q.
4,4'-DDE	2100	Q	2	ΩN	QN	DN	ND	QN.
4,4'-DDT	2100	Q	Q	QN	DN	QN	ND	Q.
Aldrin	41	Q	ΩN	ΔN	ND	ND	ND	2
Alpha-BHC	110	Q.	Q	ΩN	DN	ND	ND	2
Beta-BHC	200	QN	Ð	2	Q	DN	ND	ND
Chlordane	540	S	QN	QN	QN	QN	ND	ΩN
cis-Chlordane	A/N	QN	ΩN	ΔN	ND	DN	ND	2
Delta-BHC	N/A	QV	QΝ	ΔN	DN	DN	ND	ΩN
Dieldrin	44	Q.	9	QN	ΩN	ΩN	ND	ND
Endosulfan I	006	g	9	QN	QN	ΩN	ND	ND
Endosulfan II	006	2	Ð	Q	ΔN	ΠN	ND	ΩN
Endosulfan sulfate	1000	2	Q	ΔN	ΔN	ΩN	ND	ND
Endrin	100	2	ΩN	ΔN	DN	DN	ND	ΩN
Endrin aldehyde	A/A	QV	ΩN	ΔN	DN	ND	ND	QN.
Endrin ketone	N/A	S.	QN.	ΩN	ΔN	DN	ND	ΩN
Heptachlor	100	2	Ð	ΔN	ΩN	QN	ND	ON
Heptachlor epoxide	20	QN	ΩN	ND	ΔN	ND	ΩN	2
Lindane	N/A	Q	ΩN	ΔN	ND	ND	ND	2
Methoxychlor	<10000 TOTAL	2	Q	ΔN	DN	QN	ND	ΩN
Toxaphene	N/A	DN	ΔN	ND	ON	QN	S	2
trans-Chlordane	A/N	ΩN	QN	ND	QN	ND	ND	ON.

ND

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PCBs Total PCBs

TABLE 4
Columbia Manhattanville
Subsurface Investigation
Soil Samples
Pesticides and PCBs

Sample ID	TAGM RSCOs		MW/CB-9 (4'-6')	MW/CB-9 (14'-16')	CB-10 (2'-4')	CB-10 (7'-8')	FIELD BLANK	MW/CB-11 14.5-16
Lab Sample Number		L0501881-03	L0501881-04	L0501881-05	L0501881-06	L0501881-07		L0502002-01
Sampling Date		2/21/2005		2/21/2005	2/21/2005	2/21/2005		2/24/2005
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil
Dilution Factor		1.0		1.0	1.0	1.0		1.0
Units	qdd	qdd		qdd	qdd	qdd		qdd
COMPOUND								
4,4'-DDD	2900	QV.	QN	ΩN	QN	ΩN	ΩN	ΩN
4,4'-DDE	2100	QN	QN	DN	ND	ΩN	Q	ΩN
4,4'-DDT	2100	2	QN	DN	ND	ΩN	S	Q
Aldrin	41	Q.	2	2	ΩN	ΩN	ND	ND
Alpha-BHC	110	DN	QV	QN	ND	ΩN	ND	ΩN
Beta-BHC	200	9	QV	Q	ND	QN	ΔN	ΩN
Chlordane	540	2	QN	ΩN	DN	ΩN	ND	ΩN
cis-Chlordane	N/A	Q.	ΩN	QN	ND	QN	Q.	2
Delta-BHC	A/A	2	QN	DN	ND	ΩN	ΔN	Q
Dieldrin	44	QN.	DN	DN	ND	ΩN	ΩN	QN
Endosulfan I	006	QN	ΔN	ΠN	ND	ΩN	QN.	Q
Endosulfan II	006	QV	QN	QN	ND	ΩN	ND	S
Endosulfan sulfate	1000	QN	Q	ΩN	ND	ΩN	ND	QN
Endrin	100	2	2	ΠN	ND	ΩN	ΔN	QN
Endrin aldehyde	N/A	2	QN	ΩN	ND	ΩN	ND	Q
Endrin ketone	N/A	QN	QN	DN	ND	ΩN	QN	ΩN
Heptachlor	100	QN.	ΔN	DN	ND	ON	Q	2
Heptachlor epoxide	20	ΩN	DN	ΠN	ND	ΩN	ND	2
Lindane	N/A	Q	ΔN	DN	ND	ΩN	ON.	QN
Methoxychlor	<10000 TOTAL	QN	ΔN	DN	ND	QN	Q	Q
Toxaphene	N/A	QN	ΔN	ND ND	ND	QN	2	2
trans-Chlordane	N/A	QN	ΔN	DN	ND	ON	Q	QN
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TABLE 4
Columbia Manhattanville
Subsurface Investigation
Soil Samples
Pesticides and PCBs

Sample ID	TAGM RSCOs	MW/CB-12 (6'-8')	MW/CB-12 (6'-8') NW/CB-12 (18.5'-20	MW/CB-13 (2'-4')	MW/CB-13 (6'-8')	MW/CB-14 (6'-8')	FIELD BLANK	CB-15 (2'-4')
Lab Sample Number		L0502002-03		L0502002-05	L0502002-06	L0502002-08	L0502002-09	1.0502261-01
Sampling Date		2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/24/2005	2/28/2005
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil
Dilution Factor		1.0	1.0	1.0	1.0	1.0	1.0	0.
Units	qdd	qdd	qdd	qdd	qdd	qdd	l/6n	qdd
COMPOUND								
4,4'-DDD	2900	QN	Q	QN	QN	QN	CZ	CZ
4,4'-DDE	2100	ΩN	Ω	QN	QN	Ω.	9	95.9
4,4-001	2100	S	ON	7.63	ON.	2	QN	183
Aldrin	41	2	QN	ΩN	2	QV	QN	QN
Alpha-BHC	110	Q	QN	ΔN	2	2	QN	Q.
Beta-BHC	200	S	QN	ΩN	QN	QN	QN	QN
Chlordane	540	ΩN	Q	QN	2	2	2	QN
cis-Chlordane	N/A	Q	ND	Q	2	2	QN	Q
Delta-BHC	N/A	QN	QN	2	S	QN	2	2
Dieldrin	44	Q	DN	QN	S	9	QN	2
Endosultan	006	QN	NΩ	ΔN	QN	2	QN	QN.
Endosulfan II	900	QN	QN	Ð	9	2	QV	2
Endosulfan sulfate	1000	QN	ON	QN	QN	2	2	2
Endrin	100	2	QN	ΩN	2	Q	QV	QN
Endrin aldehyde	N/A	Q	QN	ND	QV	Q	Q	2
Endrin ketone	N/A	QN .	QN	ND	Q	Q	Q	2
Heptachlor	100	ΩN	ΩN	2	QN	2	2	QV
Heptachlor epoxide	20	QN	Q	Q	Q	2	QX	CZ
Lindane	N/A	ND	2	2	9	2	2	CN
Methoxychlor	<10000 TOTAL	ΩN	QN	QN	2	QN.	2	2
loxaphene	A/A	Q	ND	QN	9	2	g	QN
trans-Chlordane	N/A	QN	N ON	ΩN	ΩN	S	S	QN

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PCBs Total PCBs

TABLE 4
Columbia Manhattanville
Subsurface Investigation
Soil Samples
Pesticides and PCBs

Sample ID	TAGM RSCOs	CB-15 (14'-16')	MW/CB-16 (10:-12")	MW/CB-17 (2'-4')	MW/CB-18 (4"-6")	MW/CB-19 (8'-10')	MW/CB-20 (18'-20')	MW/CB-21 (16'-18')
Lab Sample Number			L0502261-04	L0502261-06	_	L0502261-09	L0502261-09 L0502261-11 L0502261-12	L0502261-12
Sampling Date		2/28/2005		2/28/2005	2/28/2005	2/28/2005	2/28/2005	2/28/2005
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil
Dilution Factor		1.0		1.0	1.0	1.0	1.0	1.0
Units	qdd	qdd		qdd	qdd	qdd	qdd	qdd
COMPOUND								
4.4DDD	2900	QN	g	QN	QN	ND	QN	2
4.4'-DDE	2100	Ð	QV	QN	QN	NΩ	P	2
4,4'-DDT	2100	QN	9	Ω	QN	ON	ON.	2
Aldrin	41	2	Q	2	QN	ON	ND	S
Alpha-BHC	110	QN	S	S	QN	ON	ΩN	2
Beta-BHC	200	QN	S	QN	QN	QN	ND	2
Chlordane	540	QN.	2	ND	QN	DN	ON	2
cis-Chlordane	N/A	S	Q	ND	ΩN	ND	Q	Q
Delta-BHC	N/A	QN	9	Q	ND	NO	QN	Q
Dieldrin	44	QN	S	2	QN	QN	ND	2
Endosulfan I	006	S	Q	Q	QN	ND	QN	2
Endosulfan II	006	QN	2	2	QN	DN	ON	9
Endosulfan sulfate	1000	9	2	Q	Q	QN	N	Q
Endrin	100	QN	S	Q	Q	ND	ΩN	2
Endrin aldehyde	N/A	S	2	QN	ND	ΔN	ΩN	2
Endrin ketone	N/A	QN	9	9	9	2	ΩN	Q
Heptachlor	100	QN	9	2	QN	ΩN	ON	2
Heptachlor epoxide	20	QN.	2	Q	QN	QN	ND	2
Lindane	N/A	9	S	QN	DN	ND	Ω	2
Methoxychlor	<10000 TOTAL	2	Q	QN	ND	O N	Ω	Q
Toxaphene	N/A	QN	ΔN	ΩN	Q	2	QN	2
trans-Chlordane	N/A	ΩN	ND	QN	QN	Q	QN.	QN

	NO NO
	ON I
	QN - QN
	ON .
	ΩN
	10,000
PCBs	Total PCBs







Sample ID	TAGM RSCOs	MW/CB-22 (12'-14')	FIELD BLANK
Lab Sample Number		L0502261-13	L0502261-14
Sampling Date		2/28/2005	2/28/2005
Matrix		Soil	Soll
Dilution Factor		1.0	1.0
Units	qdd	qdd	ng/I
COMPOUND			
4,4'-DDD	2900	Q	QN
4,4'-DDE	2100	ΩN	P
4,4'-DDT	2100	Ω	2
Aldrin	41	QN	Q
Alpha-BHC	110	QN	QN
Beta-BHC	200	ON	ΩN
Chlordane	540	QN	Ð
cis-Chlordane	N/A	ON.	2
Delta-BHC	N/A	QN	Ω
Dieldrin	44	QN	QV
Endosulfan I	006	ΩN	2
Endosulfan II	006	QN	Q.
Endosulfan sulfate	1000	QN	QN
Endrin	100	Q	QV
Endrin aldehyde	N/A	ON	QN
Endrin ketone ·	N/A	ΩN	QN
Heptachlor	100	ΩN	QN
Heptachlor epoxide	20	QN	QN
Lindane	N/A	QN	ND
Methoxychlor	<10000 TOTAL	Q.	QN
Toxaphene	N/A	QN	ND
trans-Chlordane	N/A	QN	Q

	ΩN
	QN
	10,000
PCBs	Total PCBs



ample ID ab Sample Number empling Date	Class GA	MW/CB1 £0502580-07 3/14/2005 Groundweter	MW/CB2 L0502589-08 3/14/2005 Groundwater	MW/CB3 L0502589-01 3/14/2005 Groundwater	MW/CB4 L0502589-02 3/14/2005 Groundwater	MW/CB5 L0502589-03 3/14/2005 Groundwater	MW/CB7 L0502658-08 3/14/2005 Groundweter	MW/CB8 £0502658-05 3/14/2005 Groundwater
latrix Hitution Factor	Standards	1.0	1,0	1.0	1.0 ppb	1,0 ppb	1.0 ppb	1.0 ppb
inita	ppb	ppb	ppb	ppb	рро	pps		
COMPOUND				ND	ND	ND	ND	ND
,1,1,2-Tetrachloroethane	5	ND ND	ND ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND ND	ND D	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1 1	ND						
1,1,2-Trichloroethane	5	ND						
1,1-Dichloroethane 1,1-Dichloroethene	0.6	ND						
1,1-Dichloropropene	5	ND						
1,2,3-Trichlorobenzene	5	ND						
1,2,3-Trichloropropane	0.04	ND	ND	ND	ND	ND	ND ND	ND ND
1,2,4-Trichlorobenzene	5	ND	ND	ND	ND	ND 1100	ND ND	ND
1,2,4-Trimethylbenzene	5	ND	ND	ND ND	ND ND	ND ND	ND	ND
1,2-Dibromo-3-chloropropane	0.04	ND	ND	ND ND	ND ND	ND	ND	ND
1,2-Dibromoethane	NS	ND ND	ND ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	3	ND ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	ND ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	ND ND	ND	ND	ND	400	ND	ND
1,3,5-Trimethylbenzene	3	ND						
1,3-Dichlorobenzene 1,3-Dichloropropane	5	ND						
1,4-Dichlorobenzene	3	ND	ND	ND	. ND	ND	ND ND	ND ND
1,4-Dichlorobutane	NS	ND	ND	ND	ND	ND	ND	ND ND
2,2-Dichloropropane	5	ND	. ND	ND ND	ND.	ND ND	ND	ND ND
2-Butanone	NS	ND	ND	ND	ND ND	ND ND	ND ND	ND ND
2-Hexanone	NS	ND	ND	ND	ND ND	ND ND	ND	ND
4-Methyl-2-pentanone	NS	ND	ND	ND NO	ND ND	ND	7.5	ND
Acetone	50	ND	ND	ND ND	ND ND	ND	ND	ND
Acrolein	5	ND ND	ND ND	ND ND	ND	ND	ND	ND
Acrylonitrile	5	ND ND	ND	ND	ND	66	0.55	ND
Benzene	0.7 5	ND ND	ND	ND	ND	ND	ND	ND
Bromobenzene	5	ND ND	ND	ND	ND	ND	ND	ND
Bromochloromethane Bromodichloromethane	NS	ND						
Bromoform	NS	ND	ND	ND	ND_	ND	ND	ND ND
Bromomethane	5	ND	ND	ND	ND ND	ND_	ND_	ND ND
Carbon disulfide	NS	ND	ND	ND	ND	ND_	ND	ND ND
Carbon tetrachloride	5	ND	ND	ND	ND ND	ND	ND ND	ND
Chlorobenzene	5	ND	ND	ND	ND ND	ND ND	ND	ND
Chloroethane	5	ND	ND	ND	ND ND	ND	ND	ND
Chloroform	7	ND_	ND	ND ND	ND ND	ND	ND	ND
Chloromethane	NS NS	ND ND	ND ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND ND	ND ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.4	ND						
Dibromochloromethane	5 5	ND						
Dibromomethane Dichlorodifluoromethane	- J - 5	ND						
Ethyl ether	NS	ND	ND	ND	ND	- ND	ND	ND.
Ethyl methacrylate	NS	ND	ND	ND	ND	ND	ND	ND ND
Ethylbenzene	5	0.59	0.54	ND	270	ND_	ND	ND ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND	ND ND	ND ND	ND ND
lodomethane	NS	ND	ND	ND	ND 110	ND ND	ND ND	ND ND
Isopropylbenzene	5	0.94	0.93	11	410	ND ND	ND ND	ND ND
Methyl tert butyl ether	10	ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
Methylene chloride	5	ND ND	ND	ND	ND ND	160	ND	ND
Naphthalene	10	ND ND	ND	ND ND	ND ND	34	ND	ND
n-Butytbenzene	5	ND 0.54	0.51	6.1	160	ND ND	ND	ND
n-Propylbenzene	5	0.54 ND	ND	ND	ND ND	ND	ND	ND
o-Chlorotoluene	5 5	D D	ND	ND	88	120	ND	ND
o-Xylene	5	2	1.9	ND	640	120	0.8	ND
p/m-Xylene p-Chlorotoluene	5	ND						
p-isopropyltoluene	5	ND	ND	ND	ND	25	ND ND	ND
sec-Butylbenzene	5	ND	ND	2.5	ND	ND	ND.	ND ND
Styrene	5	ND	ND	ND	ND	ND	ND ND	ND ND
tert-Butylbenzene	5	ND	ND	ND	ND	ND	ND ND	ND 8.4
Tetrachloroethene	5	ND.	ND	ND	ND	ND ND	ND ND	8.4 ND
Tetrahydrofuran	NS	ND	ND	ND_	ND ND	ND 130	ND ND	ND ND
Toluene	5	NĐ	ND	ND.	ND	130	ND NO	ND ND
trans-1,2-Dichloroethene	5	ND	ND	ND_	ND ND	ND ND	ND ND	ND ND
trans-1,3-Dichloropropene	0.4	ND	ND	ND	ND	ND ND	ND ND	ND ND
trans-1,4-Dichloro-2-butene	5	ND	ND	ND_	ND ND	ND ND	ND ND	0.69
Trichloroethene	5	ND	ND	ND	ND	ND ND	ND ND	ND ND
Trichlorofluoromethane	5	ND.	ND	ND ND	ND ND	ND ND	ND ND	ND
Vinyl acetate	NS	ND	ND	ND ND	ND ND	ND ND	ND ND	ND





Sample ID		MW/CB9	MW/CB11	MW/CB12	MW/CB13	MW/CB14	I MANAGEDIC	14000000	
Lab Sample Number		L0502658-03	L0502589-04	L0502658-02	L0502658-09	L0502658-04	MW/CB16 L0502658-10	MW/CB17	MW/CB18
Sampling Date		3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	£0502589-09 3/14/2005	L0502589-05
Matrix	Class GA	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	3/14/2005 Groundwater
Dilution Factor Units	Standards	1.0	1,0	1.0	1.0	1.0	1.0	1.0	1.0
Onits	bbp	bbp	bbp	bbp	ppb	ррь	ppb	ppb	ppb
COMPOUND					l	j			
1,1,1,2-Tetrachloroethane	5	ND	ND	ND	- 1/5		ļ		
1,1,1-Trichloroethane	5	ND	ND ND	ND	ND ND	ND	ND	ND	NĐ
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND ND	ND	ND	ND
1,1,2-Trichloroethane	1	ND	ND	ND	ND	ND ND	ND ND	ND	ND ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND ND	ND ND	ND ND	ND
1,1-Dichloroethene	0.6	ND	ND	ND	ND	ND	ND ND	ND	ND
1,1-Dichloropropene	5	ND ND	ND	ND	ND	ND	ND	ND	ND ND
1,2,3-Trichlorobenzene 1,2,3-Trichloropropane	5	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.04 5	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	5	ND ND	ND 7.4	ND	ND ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	0.04	ND	7.4 ND	ND	ND	ND ND	ND	3,6	ND
1,2-Dibromoethane	NS	ND	ND	ND ND	ND	ND ND	ND ND	ND	ND
1,2-Dichlorobenzene	3	ND	ND	DI	ND ND	ND ND	ND ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND	0.74	ND ND	ND	ND	ND
1,2-Dichloropropane	1	ND	ND	ND	ND	ND ND	ND ND	ND	ND
1,3,5-Trimethylbenzene	5	ND	2.6	ND	ND	ND ND	ND ND	ND	ND
1,3-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND	ND ND	ND ND
1,3-Dichloropropane	5	ND	ND	ND	ND	ND	ND	ND ND	ND ND
1,4-Dichlorobenzene 1,4-Dichlorobutane	3	ND	ND	ND	ND	ND	ND	ND	ND ND
2,2-Dichloropropane	NS 5	ND ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	NS S	ND ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	NS NS	ND ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	NS	ND	ND ND	ND	ND ND	ND	ND	ND	ND
Acetone	50	ND	ND	ND ND	ND ND	ND	ND	ND	ND
Acrolein	5	ND	ND	ND	ND ND	ND ND	ND	ND	ND
Acrylonitrile	5	ND	ND ND	ND	ND	ND ND	ND ND	ND ND	ND
Benzene	0.7	ND	1	ND	ND	ND	ND ND	ND	ND
Bromobenzene	5	ND	ND	ND	ND	ND	ND ND	ND	ND
Bromochloromethane	5	ND	ND	ND	ND	ND	ND	ND ND	ND ND
Bromodichloromethane Bromoform	NS	ND	ND	ND	ND	0.64	ND	ND	ND ND
Bromomethane	NS	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	5	ND	ND ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	NS 5	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	ND	ND ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND ND	ND 3.0	ND ND	ND	ND ND	ND	ND
Chloromethane	NS	ND	ND	3.8 ND	ND	14	ND	1,1	1.6
cis-1,2-Dichloroethene	5	ND	ND	1.2	ND ND	ND ND	ND	ND	ND
cis-1,3-Dichloropropene	0.4	ND	ND	ND ND	ND	ND ND	ND ND	ND	ND
Dibromochloromethane	5	ND	ND	ND	ND	ND	ND ND	ND	ND
Dibromomethane	5	ND	ND	ND	ND	ND	ND	ND ND	ND ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND	ND	ND	ND ND
Ethyl ether Ethyl methacrylate	NS	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	NS 5	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND ND	3.6	ND	ND	ND	ND	2.2	0.84
lodomethane	NS .	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	5	ND	ND 4.8	ND F	ND	ND	ND	ND	ND
Methyl tert butyl ether	10	ND	ND ND	5 ND	ND	ND	ND	3.3	1.2
Methylene chloride	5	ND	ND	ND ND	MD ND	ND	7.7	ND	36
Naphthalene	10	ND	3.2	ND	ND	ND ND	ND	ND	ND
n-Butylbenzene	5	ND	ND	7.2	ND	ND	2.7	ND ND	ND
n-Propylbenzene	5	ND	1.8	12	ND	ND	ND ND	ND 15	ND
o-Chlorotoluene	5	ND	ND	ND	ND	ND	ND	1.5 ND	0.58
o-Xylene	5	ND	2.2	ND	ND	ND	14	11	ND
o/m-xylene o-Chlorololuene	5	ND	12	ND	ND	ND	1.2	7.3	3.1
-Chlorotoldene -Isopropyltoluene	5	ND	ND	ND	ND	ND	ND	ND	ND
ec-Butylbenzene	5	ND	0.74	2	ND	ND	ND	ND	ND
Styrene	5	ND ND	ND	10	ND	ND	1	ND	ND
ert-Butylbenzene	5	ND ND	ND ND	ND	ND	ND	ND	ND	ND
etrachloroethene	5	ND	ND 15	ND ND	ND	ND	ND	ND	ND
etrahydrofuran	NS	ND	1,5 ND	ND	ND	ND	ND	ND	ND
oluene	5	ND	ND ND	ND ND	ND	ND	ND	ND	ND
rans-1,2-Dichloroethene	5	ND	ND	ND D	ND ND	ND	ND ND	ND	ND
rans-1,3-Dichloropropene	0.4	ND	ND	ND ND	ND	ND ND	ND	ND	ND
rans-1,4-Dichloro-2-butene	5	ND	ND	ND ND	ND ND	ND ND	ND ND	ND	ND
richloroethene	5	ND	ND	ND	ND	ND ND	ND ND	ND	ND
richlorofluoromethane	5	ND	ND	ND	ND	ND	ND ND	ND ND	ND
finyl acetate	NS	ND	ND	ND	ND	ND	ND	ND ND	ND
inyl chloride	2	ND	ND	ND	ND	ND	ND ND	ND ND	ND ND



ample ID ib Sample Number		MW/CB19 L0502589-06 3/14/2005	MW/CB20 L0502658-01 3/16/2005	MW/CB21 L0502658-07 3/14/2005	MW/CB22 L0502658-08 3/14/2005	TRIP BLANK L0502589-10 3/14/2005	FIELD BLANK L0502589-11 3/15/2005	FIELD BLANK L0502658-11 3/14/2005	TRIP BLANK £0502658-12 3/11/2005
umpling Data	Class GA	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
atrix			1.0	1.0	1.0	1.0	1.0	1.0	1.0
lution Factor nits	Standards ppb	1.0 ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
nns	-								
OMPOUND		ND	ND	ND	ND	ND	ND	ND	ND
,1,1,2-Tetrachloroethane	5		ND	ND	ND	ND	ND	ND	ND
,1,1-Trichloroethane	5	ND		ND	ND	ND	ND	ND	ND
,1,2,2-Tetrachloroethane	5	ND	ND			ND	ND	ND	ND
,1,2-Trichloroethane	11	ND	ND	ND	ND		ND	ND	ND
,1-Dichloroethane	5	ND	ND	ND	ND	ND		ND	ND
1-Dichloroethene	0.6	ND	ND	ND	ND	ND	ND		ND
1-Dichloropropene	5	ND	ND	ND	ND	ND	ND	ND	
	5	ND	ND	ND	ND	ND	ND	ND	ND
,2,3-Trichlorobenzene	0.04	ND	ND	ND	ND	ND	ND	ND_	ND
,2,3-Trichloropropane		ND	ND	ND	ND	ND	ND	ND_	ND
,2,4-Trichlorobenzene	5		ND	ND	35	ND	ND	ND	ND
,2,4-Trimethylbenzene	5	2.5		ND	ND	ND	ND	ND	ND
,2-Dibromo-3-chloropropane	0.04	ND	ND ND		ND	ND	ND	ND	ND
,2-Dibromoethane	NS	ND	ND.	ND			ND	ND	ND
,2-Dichlorobenzene	3	ND	ND	ND	ND	ND ND	ND	ND	ND
,2-Dichloroethane	5	ND	ND	ND_	ND	ND		ND	ND
,2-Dichloropropane	1	ND	ND	ND	ND	ND	ND ND		
,3,5-Trimethylbenzene	5	ND	ND	ND	28	ND ND	ND	ND.	ND
	3	ND	ND	ND	ND	ND	ND	ND	ND.
,3-Dichlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND
,3-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND.
,4-Dichlorobenzene	3		ND	ND	ND	ND	ND	ND	ND
,4-Dichlorobutane	NS	ND		ND	ND	ND	ND	ND	ND
,2-Dichloropropane	5	ND	ND			ND	ND	ND	ND
2-Butanone	NS	ND	ND	ND	ND		ND	ND	ND
2-Hexanone	NS	ND	ND	ND	ND	ND		ND	ND
I-Methyl-2-pentanone	NS	ND	ND ND	ND ND	ND	ND	ND		ND ND
Acetone	50	ND	ND	ND	ND_	ND	ND ND	32	
	5	ND	ND	ND	ND	ND	ND	ND	ND.
Acrolein	5	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	0.7	ND	ND	ND	ND	ND	ND	ND	ND
Benzene			ND	ND	ND	ND	ND	ND	ND
Bromobenzene	5	ND		ND	ND	ND	ND	ND	ND
Bromochloromethane	5	ND	ND		ND	ND	ND	ND	ND
Bromodichloromethane	NS	ND	ND	ND		ND	ND	ND	ND
Bromoform	NS	ND	ND	ND	ND		ND	ND ND	ND
Bromomethane	5	ND	ND_	ND	ND	ND			ND
Carbon disulfide	NS	ND	ND	ND	ND ND	ND	ND_	ND ND	ND
Carbon tetrachloride	5	ND	ND	ND ND	ND	ND	ND	ND_	
Chlorobenzene	5	ND	ND	ND	ND	ND ND	ND	ND	ND
	5	ND	ND	ND	ND	ND	ND	ND	ND.
Chloroethane	7	ND	7.7	ND	ND	ND	ND	ND ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND.
Chloromethane	NS		ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND ND		ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.4	ND	ND		ND	ND	ND	ND	ND
Dibromochloromethane	5	ND	ND	ND		ND ND	ND ND	ND	ND
Dibromomethane	5	ND_	ND	ND	ND ND		ND	ND	ND
Dichlorodifluoromethane	5	ND	ND_	ND	ND	ND ND			ND
Ethyl ether	NS	ND	ND	ND	ND	"ND	ND ND	ND ND	ND
Ethyl methacrylate	NS	ND	ND	ND	ND_	ND	ND	ND ND	
	5	2.7	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene Hexachlorobutadiene	0.5	ND ND	ND	ND	ND	ND	ND	ND_	ND
		ND ND	ND	ND	ND	ND	ND	ND	ND
lodomethane	NS .	9.7	ND	ND	31	ND	ND	ND	ND
Isopropylbenzene	5		ND ND	ND ND	ND	ND	ND	ND	ND
Methyl tert butyl ether	10	11		ND ND	ND	ND	ND	ND	ND
Methylene chloride	5	ND	ND_			ND	ND	ND	ND
Naphthalene	10	2.7	ND	ND ND	22		ND ND	ND ND	ND
n-Butylbenzene	5	ND	ND	ND	ND ND	ND		ND ND	ND
n-Propylbenzene	5	4.8	ND	ND	25	ND	ND		
o-Chlorotoluene	5	ND	ND	ND	ND_	ND	ND	ND ND	ND
	5	0.72	ND	ND	4.7	ND	ND	ND	ND
o-Xylene	5	6.3	ND	ND	250	ND	ND	ND	ND
p/m-Xylene		ND ND	ND	ND ND	ND	ND	ND	ND	ND.
p-Chlorotoluene	5		ND	ND	1.3	ND	ND	ND	NE
p-Isopropyttoluene	5	ND		ND	3.9	ND	ND	ND	ND
sec-Butylbenzene	5	ND.	ND			ND	ND ND	ND	ND
Styrene	5	ND	ND_	ND	ND			ND	NE
tert-Butylbenzene	5	ND	ND	ND	ND	ND	ND		NE.
Tetrachloroethene	5	ND	0.94	3.3	ND	ND	ND ND	ND	
Tetrahydrofuran	NS	ND	ND	ND	ND	ND_	ND	ND	NC.
	5	ND	ND	ND	7.8	ND	ND	ND	NE.
Toluene			ND	ND	ND	ND	ND	ND	NO
trans-1,2-Dichloroethene	5	ND			ND	ND	ND	ND	NE
trans-1,3-Dichloropropene	0.4	ND	ND	ND			ND	ND	NC
trans-1,4-Dichloro-2-butene	5	ND	ND	ND	ND.	ND.			NE NE
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	
Trichlorofluoromethane	5	ND	ND	ND	ND	ND_	ND	ND	NE
Vinyl acetate	NS NS	ND	ND	ND	ND	ND	ND	ND	NE
			, 110	1 110	ND	ND	ND	ND	NE



Sample ID Lab Sample Number		MW/CB1 L0502589-07	MW/CB2 £0502589-08	MW/CB3 L0502589-01	MW/CB4 L0502589-02	MW/CB5 L0502589-03	MW/CB7	MW/CB8
Sampling Date		3/14/2005	3/14/2005	3/14/2005	3/14/2005	1	L0502658-08	L0502658-05
Matrix	Class GA	Groundwater	Groundwater	Groundwater	Groundwater	3/14/2005	3/14/2005	3/14/2005
Dilution Factor	Standards	1.0	1.0	1.0	1.0	Groundwater 1.0	Groundwater	Groundwater
Unita	ppb	ppb	ppb	ppb	ppb	ppb	1.0 ppb	1.0 ppb
COMPOUND	İ						P P P	PPB
1,2,4,5-Tetrachlorobenzene	5	ND	ND					
1,2,4-Trichlorobenzene	5	ND	ND ND	ND ND	ND	ND ND	ND ND	ND
1,2-Dichlorobenzene	3	ND ND	ND	ND ND	ND ND	ND	ND ND	ND
1,3-Dichlorobenzene	3	ND	ND	ND ND	ND ND	ND ND	ND	ND
1,4-Dichlorobenzene	3	ND	ND	ND	ND ND	ND	ND	ND ND
1-Chloronaphthalene	NS	ND	ND	ND	ND	ND ND	ND	ND ND
1-Methylnaphthalene	NS	ND	ND	0.35	0.23	4.3	ND ND	ND
1-Methylphenanthrene	NS	ND	ND	ND	ND	0,2	ND ND	ND
2,4,5-Trichlorophenol	NS	ND	ND	ND	ND	ND	ND ND	ND ND
2,4,6-Trichlorophenol	NS	ND	ND	ND	ND	ND	ND	ND ND
2,4-Dichlorophenol	11	ND	ND	ND	ND	ND	ND	ND ND
2,4-Dimethylphenol	5	ND	ND	ND	ND	12	ND	ND ND
2,4-Dinitrophenol	1 1	ND	ND	ND	ND	ND	ND ND	ND
2,4-Dinitrotoluene	5	ND_	ND	ND	ND	ND	ND	ND
2,6-Dichlorophenol	1	ND	ND	ND	ND	ND ND	ND	ND ND
2,6-Dimethylnaphthalene	NS	ND	ND	0.22	ND	0.54	ND	ND
2,6-Dinitrotoluene	5	ND ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	NS 1	ND ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol 2-Methylnaphthalene	1	ND ND	ND ND	ND	ND	ND	ND	ND
2-Methylphenol	NS NS	ND ND	ND	ND	0.24	6.3	ND	ND
2-Nitroaniline	NS 5	ND ND	ND ND	ND ND	ND	ND	ND	ND
2-Nitrophenol	1	ND ND	ND ND	ND	ND	ND	ND	ND
2-Picoline	NS	ND ND	ND ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	5	ND ND	ND ND	ND ND	ND	ND ND	ND	ND
3-Methylcholanthrene	NS	ND ND	ND ND	ND ND	ND ND	ND	ND	ND
3-Methylphenol/4-Methylphenol	NS	ND	ND ND	ND ND	ND ND	ND	ND	ND
3-Nitroaniline	5	ND	ND	ND ND	ND ND	ND ND	ND	ND
4,6-Dinitro-o-cresol	NS	ND	ND ND	ND ND	ND ND	ND ND	ND	ND
4-Aminobiphenyl	5	ND	ND	ND	ND ND	ND ND	ND	ND
4-Bromophenyl phenyl ether	NS	ND	ND	ND	ND ND	ND ND	ND ND	ND
4-Chloroaniline	5	ND	ND	ND	ND ND	ND ND	ND ND	ND
4-Chlorophenyl phenyl ether	NS	ND	ND	ND	ND ND	ND ND	ND ND	ND
1-Nitroaniline	5	ND	ND	ND	ND ND	ND ND	ND	ND ND
1-Nitrophenol	NS	ND	ND	ND	ND	ND ND	ND ND	ND ND
7,12-Dimethylbenz(a)anthracene	NS	ND	ND	ND	ND	ND		ND_
a,a-Dimethylphenethylamine	NS	ND	ND	ND	ND	ND	ND ND	ND ND
Acenaphthene	20	ND	ND	ND	ND	2	ND	ND ND
Acenaphthylene	NS	ND	ND	ND	ND	ND	ND ND	ND ND
Acetophenone	NS	ND	ND	ND	ND	55	ND	ND
a-Naphthylamine	NS	ND	ND	ND	ND	ND	ND	ND
Aniline	5	ND	ND	ND	ND	ND	ND	ND
Anthracene	50	ND	ND	ND	ND.	0.79	ND	ND
Azobenzene Benzidine	5	ND	ND	ND	ND	ND	ND	ND
	5	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene Benzo(a)pyrene	0.002	ND NB	ND	ND	ND	0.43	ND	ND
Benzo(b)fluoranthene	0.002	ND ND	ND	ND	ND	0.38	ND	0.38
Benzo(e)pyrene	0.002 NS	ND 0.24	ND ND	ND	ND	0.25	ND	0.33
Benzo(ghi)perylene	5		ND ND	ND ND	ND	0.26	ND	0.76
lenzo(k)fluoranthene	0.002	0.54 ND	ND ND	ND ND	0.34	0.34	ND	2.6
Senzoic Acid	NS	ND ND	ND	ND I	ND ND	0.3	ND	0.28
lenzyl Alcohol	NS NS	ND	ND ND	ND ND	ND ND	ND	ND	ND
iphenyl	5	ND	ND D	ND	ND	ND	ND	ND
is(2-chloroethoxy)methane	5	ND	ND ND	ND ND	ND	0.56	ND	ND
is(2-chloroethyl)ether	1	ND	ND		ND ND	ND	ND	ND
is(2-chloroisopropyl)ether	NS	ND	ND ND	ND ND	ND ND	ND	ND	ND
is(2-ethylhexyl)phthalate	5	ND	ND	ND ND	ND ND	ND	ND ND	ND
-Naphthylamine	NS	ND	ND	ND ND	ND	ND ND	ND	ND
utyl benzyl phthalate	NS	ND	ND	ND ND	ND ND	ND ND	ND	ND
arbazole	NS	ND	ND	ND ND	ND ND	ND	ND	ND
hlorobenzilate	NS	ND	ND	ND ND	ND ND	ND	ND	ND ND
hrysene	0.002	ND	ND	ND ND	ND ND	ND 0.43	ND ND	ND
ibenzo(a,h)anthracene	NS	ND	ND	ND	ND	0.43	ND ND	0.28
ibenzofuran	NS	ND	ND	ND	ND D	ND ND	ND	ND
iethyl phthalate	NS	ND	ND	ND	ND	ND ND	ND ND	ND
imethoate	NS	ND	ND	ND	ND D	ND ND	ND ND	ND
methyl phthalate	NS	ND	ND	ND	ND ND	ND	ND	ND
-n-butylphthalate	NS	ND	ND	ND	ND	ND ND	ND ND	ND
-n-octylphthalate	NS	ND	ND	ND	ND ND	ND	ND ND	ND



Columbia Manhattanville

Subsurface Investigation Groundwater Semi-Volatile Organic Compounds



		MW/CB1	MW/CB2	MW/CB3	MW/CB4	MW/CB5	MW/CB7	MW/CB8
Sample ID		L0502589-07	L0502589-08	L0502589-01	L0502589-02	L0502589-03	L0502658-08	L0502658-05
Lab Sample Number		3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005
Sampling Date	Class GA	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Matrix		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Dilution Factor	Standards	1.0 deg	ppb	ppb	ppb	ppb	ppb	ppb
Units	ррь	ppo	ppo	775	· ·			
COMPOUND								
Ethyl Methanesulfonate	NS	ND						
	50	ND	0.42	1.5	3.2	1.9	7.7	5.4
Fluoranthene Fluorene	50	ND	ND	ND	ND	1.9	ND	ND
Hexachlorobenzene	0.04	ND						
Hexachlorobutadiene	0.5	ND						
Hexachlorocyclopentadiene	5	ND						
Hexachloroethane	5	ND						
Hexachloropropene	5	ND						
Indeno(1,2,3-cd)Pyrene	0.002	ND	ND	ND	ND	0.22	ND	0.5
Isodrin	5	ND						
	NS	ND ND	ND	ND	ND	ND	ND	ND
Isophorone Methyl methanesulfonate	NS	ND						
	10	ND	ND	0.36	0.46	>40	ND	ND
Naphthalene NDPA/DPA	NS	ND						
Nitrobenzene	0.4	ND	ND	ND	ND	ND	ND_	ND
Nitrosodi-n-butylamine	NS	ND						
Nitrosodipiperidine	NS NS	ND						
n-Nitrosodimethylamine	NS	ND	ND	ND	ND	ND	ND ND	ND
n-Nitrosodi-n-propylamine	NS NS	ND						
p-Chloro-m-cresol	NS NS	ND						
p-Dimethylaminoazobenzene	NS	ND						
Pentachlorobenzene	5	ND						
Pentachloronitrobenzene	5	ND						
Pentachiorophenol	1 1	ND	ND	ND	ND	ND	ND	ND_
Perylene	NS	ND	ND	ND	ND	ND	ND	0.23
Phenacetin	NS	ND						
Phenanthrene	50	ND	ND	0.99	1.3	4.1	1.4	0.96
Phenol	1	ND	ND	ND	ND	ND	ND	ND ND
Pronamide	NS	ND						
Pyrene	50	0.3	1.1	2.2	7.4	1.8	14	11
Pyridine	NS	ND	ND	ND	ND ND	ND	ND_	ND







Sample ID	T	MW/CB9	1 10000044	I 100000000	1			
Lab Sample Number		L0502658-03	MW/CB11	MW/CB12	MW/CB13	MW/CB14	MW/CB16	MW/CB17
Sampling Date	1		L0502589-04	L0502658-02	L0502658-09	L0502658-04	L0502658-10	L0502589-09
Matrix	Class GA	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005
Dilution Fector	Standards	Groundwater 1.0	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Units	ppb	1	1.0	1.0	1.0	1.0	1.0	1.0
	PPD	ppb	ppb	dqq	ppb	ppb	ppb	ppb
COMPOUND	1			[
1,2,4,5-Tetrachlorobenzene	5	ND	ND	ND	ND	ND	ND	1 10
1,2,4-Trichlorobenzene	5	ND:	ND	ND	ND	ND	ND ND	ND
1,2-Dichlorobenzene	3	ND	ND	ND	ND	ND ND	ND ND	ND ND
1,3-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND ND	ND ND
1,4-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND	ND ND
1-Chloronaphthalene	NS	ND	ND	ND	ND	ND	ND	ND ND
1-Methylnaphthalene	NS	ND	ND	1.8	ND	ND	0.27	ND ND
1-Methylphenanthrene	NS	ND	ND	ND	ND	ND	ND	ND ND
2,4,5-Trichlorophenol	NS	ND	ND	ND	ND	ND	ND	ND ND
2,4,6-Trichlorophenol	NS	ND	ND	ND	ND	ND	ND	ND ND
2,4-Dichlorophenol	1	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	5	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	1	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	5	ND	ND	ND	ND	ND	ND	ND
2,6-Dichlorophenol	1	ND	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	NS	ND	ND	ND	ND	ND	ND	ND ND
2,6-Dinitrotoluene	5	ND	ND	ND	ND	ND	ND	ND ND
2-Chloronaphthalene	NS	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	11	МD	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NS	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	NS	ND	ND	ND	ND	ND	ND	ND
2-Nitroaníline	5	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	1	ND	ND	ND_	ND	ND	ND	ND
2-Picoline	NS	ND	ND	ND	ND ND	ND	ND	ND
3,3'-Dichlorobenzidine	5	ND ND	ND	ND	ND	ND	ND	ND
3-Methylcholanthrene 3-Methylphenol/4-Methylphenol	NS NS	ND 115	ND	ND	ND	ND	ND	ND
3-Nitroaniline	NS 5	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	5 NS	ND	ND	ND	ND	ND ND	ND	ND
4-Aminobiphenyl	5	ND ND	ND ND	ND ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	NS	ND ND	ND	ND ND	ND	ND	ND	ND
4-Chloroaniline	5	ND ND	ND ND	ND	ND ND	ND ND	ND	ND
4-Chlorophenyl phenyl ether	NS	ND ND	ND ND	ND ND	ND ND	ND ND	ND	ND
4-Nitroaniline	5	ND ND	ND ND	ND ND	ND	ND	ND	ND ND
4-Nitrophenol	NS	ND ND	ND ND	ND ND	ND ND	ND ND	ND	ND
7,12-Dimethylbenz(a)anthracene	NS	ND ND	ND ND	ND ND	ND ND	ND ND	ND	ND
a,a-Dimethylphenethylamine	NS	ND	ND	ND	ND ND	ND	ND ND	ND ND
Acenaphthene	20	ND	ND	ND	ND	ND ND	ND ND	ND
Acenaphthylene	NS	ND	0.31	ND	ND	ND	ND ND	ND_
Acetophenone	NS	ND	ND	ND	ND	ND ND	ND ND	ND ND
a-Naphthylamine	NS	ND	ND	ND	ND	ND ND	ND ND	ND ND
Aniline	5	ND	ND	ND	ND	ND ND	ND ND	ND
Anthracene	50	ND	0.24	ND	ND	· ND	ND	ND
Azobenzene	5	ND	ND	ND	ND	ND	ND	ND
Benzidine	5	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.002	ND	0.3	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.002	ND	0.55	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.002	ND	0.42	ND	ND	ND	ND	ND
Benzo(e)pyrene	NS	0.38	1.2	0.43	ND	ND	ND	ND
Benzo(ghi)perylene	5	1.1	3.3	1.3	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	ND	0.58	ND	ND	ND	ND	ND
Benzoic Acid	NS	ND	ND	ND	ND	ND	ND	ND
Benzyl Alcohol	NS	ND	ND	ND	ND	ND	ND	ND
Biphenyl	5	ND	ND	ND	ND	ND	ND	0.21
Bis(2-chloroethoxy)methane	5	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl)ether	1	ND ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl)ether	NS	ND ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	5	ND	ND	ND	ND	ND	ND	21
b-Naphthylamine	NS NS	ND	ND	ND	ND	ND	ND	ND
Butyl benzyl phthalate	NS NS	ND ND	ND	ND	ND	ND	ND	ND
Carbazole Chlorobenzilate	NS NS	ND ND	ND	ND	ND	ND	ND	ND
	NS 0.000	ND ND	ND	ND ND	ND	ND	ND	ND
Chrysene Dibenzo(a,h)anthracene	0.002	ND	0.51	ND ND	ND	ND	ND	ND
Dibenzo(a,n)aninracene Dibenzofuran	NS NS	ND ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	NS NS	ND	ND	ND	ND	ND	ND	ND
Dimethoate	NS NS	ND ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	NS NS	ND ND	ND ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	NS NS	ND	ND ND	ND	ND	ND	ND	ND
Di-n-outylphthalate Di-n-octylphthalate	NS NS	ND ND	ND ND	ND	ND	ND	ND	ND
DEN-OCISIPIRIAIAIE	NS	ND	ND	ND	ND	ND	ND	ND



Sample ID		MW/CB9	MW/CB11	MW/CB12	MW/CB13	MW/CB14	MW/CB16	MW/CB17
Lab Sample Number		L0502658-03	L0502589-04	L0502658-02	L0502858-09	L0502658-04	L0502658-10	£0502589-09
Sampling Date		3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005
Matrix	Class GA	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Dilution Factor	Standards	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
								l
COMPOUND								
Ethyl Methanesulfonate	NS	ND	ND	ND	NĐ	ND	ND	ND
Fluoranthene	50	9.5	15	3.7	4.1	ND	13	1.7
Fluorene	50	ND	0.53	ND	ND	ND	0.49	ND
Hexachlorobenzene	0.04	ND						
Hexachlorobutadiene	0.5	ND						
Hexachlorocyclopentadiene	5	ND						
Hexachloroethane	5	ND						
Hexachloropropene	5	ND						
Indeno(1,2,3-cd)Pyrene	0.002	0.23	0.68	0.26	ND	ND	ND	ND
Isodrin	5	ND						
Isophorone	NS	ND						
Methyl methanesulfonate	NS	ND						
Naphthalene	10	ND	1,1	1.2	ND	ND	0.41	0.55
NDPA/DPA	NS	ND						
Nitrobenzene	0.4	ND						
Nitrosodi-n-butylamine	NS	ND						
Nitrosodipiperidine	NS	ND						
n-Nitrosodimethylamine	NS	ND						
n-Nitrosodi-n-propylamine	NS	ND						
p-Chloro-m-cresol	NS	ND						
p-Dimethylaminoazobenzene	NS	ND						
Pentachlorobenzene	5	ND						
Pentachloronitrobenzene	5	ND						
Pentachlorophenol	1	ND						
Perylene	NS	ND						
Phenacetin	NS	ND						
Phenanthrene	50	2.4	5.9	1.5	0.67	ND	7.1	0.31
Phenol	1	ND						
Pronamide	NS	ND						
Pyrene	50	19	30	6.7	8.1	1.2	28	3.1
Pyridine	NS	ND						





Lab Sample Number	1	MW/CB18 L0502589-05	MW/CB19	MW/CB20	MW/CB21	MW/CB22	FIELD BLANK	FIELD BLAN
Sampling Date		3/14/2005	L0502589-06 3/14/2005	L0502658-01	L0502658-07	L0502658-06	L0502589-11	L0502658-11
Matrix	Class GA	Groundwater	1	3/16/2005	3/14/2005	3/14/2005	3/15/2005	3/14/2005
Dilution Factor	Standards	1.0	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Units	ppb	ppb	1.0 ppb	1.0 ppb	1.0 ppb	1.0 ppb	1.0	1.0
COMPOUND					,,,,		ppb	ppb
1,2,4,5-Tetrachlorobenzene	5	ND	NS					
1,2,4-Trichlorobenzene	5	ND	ND	ND ND	ND	ND	ND	ND
1,2-Dichlorobenzene	3	ND	ND ND	ND ND	ND ND	ND	ND	ND
1,3-Dichlorobenzene	3	ND	ND ND	ND	ND	ND ND	ND	ND
1,4-Dichlorobenzene	3	ND	ND	ND ND	ND	ND ND	ND	ND
1-Chioronaphthalene	NS	ND	ND	ND ND	ND ND	ND ND	ND	ND
1-Methylnaphthalene	NS	ND	ND ND	ND	ND ND	ND	ND ND	ND
1-Methylphenanthrene	NS	ND	ND	ND	ND ND	0.45	ND	ND
2,4,5-Trichlorophenol	NS	ND	ND	ND	ND ND	ND ND	ND .	ND
2,4,6-Trichlorophenol	NS	ND	ND	ND	ND ND	ND ND	ND	ND
2,4-Dichlorophenol	1	ND	ND	ND	ND	ND ND	ND	ND
2,4-Dimethylphenol	5	ND	ND	ND	ND ND	ND ND	ND ND	ND
2,4-Dinitrophenol	1	ND	ND	ND	ND	ND ND	ND ND	ND
2,4-Dinitrotoluene	5	ND	ND	ND	ND		ND ND	ND_
2,6-Dichlorophenol	1	ND	ND	ND	ND	ND ND	ND ND	ND
2,6-Dimethylnaphthalene	NS	ND	ND	ND	ND	ND ND	ND ND	ND_
2,6-Dinitrotoluene	5	ND	ND	ND	ND	ND ND	ND ND	ND ND
2-Chloronaphthalene 2-Chlorophenol	NS	ND	ND	ND	ND	ND ND	ND ND	ND
	11	ND	ND	ND	ND	ND		ND
2-Methylnaphthalene 2-Methylphenol	NS	ND ND	ND	ND	ND	ND ND	ND ND	ND ND
2-Nitroaniline	NS	ND	ND	ND	ND	ND	ND ND	ND
2-Nitrophenol	5	ND	ND	ND	ND	ND	ND	ND ND
2-Picoline	1	ND	ND	ND	ND	ND	ND	ND ND
3,3'-Dichlorobenzidine	NS	ND	ND	ND	ND	ND	ND	ND ND
3-Methylcholanthrene	5	ND ND	ND	ND	ND	ND	ND	ND ND
3-Methylphenol/4-Methylphenol	NS NS	ND ND	ND	ND	ND	ND	ND	ND ND
3-Nitroaniline	5	ND ND	ND	ND	ND	ND	ND	ND ND
,6-Dinitro-o-cresol	NS	ND	ND	ND	ND	ND	ND	ND
I-Aminobiphenyl	5	ND ND	ND ND	ND	ND	ND	ND	ND
l-Bromophenyl phenyl ether	NS	ND ND	ND ND	ND	ND	ND	ND	ND
-Chloroaniline	5	ND	ND	ND	ND	ND	ND	ND
-Chlorophenyl phenyl ether	NS	ND ND	ND ND	ND	ND	ND	ND	ND
-Nitroaniline	5	ND	ND ND	ND	ND	ND	ND	ND
-Nitrophenol	NS	ND	ND ND	ND	ND ND	ND	ND	ND
,12-Dimethylbenz(a)anthracene	NS	ND	ND ND	ND ND	ND ND	ND	ND	ND
,a-Dimethylphenethylamine	NS	ND	ND	ND	ND	ND	ND	ND
cenaphthene	20	ND	ND	ND ND	ND	ND	ND	ND
cenaphthylene	NS	ND	ND ND	ND ND	ND	ND	ND	ND
cetophenone	NS	ND	ND	ND	ND	ND	ND	ND
-Naphthylamine	NS	ND	ND	ND ND	ND ND	ND	ND	ND
niline	5	ND	ND	ND	ND ND	ND	ND ND	ND
nthracene	50	ND	ND	ND	ND	ND ND	ND	ND
zobenzene	5	ND	ND	ND	ND -	ND	ND	ND
enzidine	5	ND	ND	ND ND	ND ND	ND ND	ND ND	ND
enzo(a)anthracene	0.002	0.51	0.21	ND ND	ND ND	ND ND	ND	ND
enzo(a)pyrene	0.002	1.1	0.46	ND ND	ND ND	ND ND	ND ND	ND
enzo(b)fluoranthene	0.002	0.86	0.29	ND ND	ND ND	0.23	ND ND	ND
enzo(e)pyrene	NS	0.84	0.89	ND	ND	ND 0.46	ND	ND
enzo(ghi)perylene	5	1.5	2.8	ND	ND ND	0.46	ND	ND
enzo(k)fluoranthene	0.002	1.3	0.44	ND	ND ND		ND	ND
enzoic Acid	NS	ND	ND	ND	ND	ND ND	ND ND	ND ND
enzyl Alcohol	NS	ND	ND	ND	ND ND	ND ND	ND	ND
phenyl	5	ND	ND	ND	ND	ND ND	ND	ND
s(2-chloroethoxy)methane	5	ND	ND	ND	ND	ND	ND ND	ND
s(2-chloroethyl)ether	1	ND	ND	ND	ND	ND ND	ND ND	ND ND
s(2-chloroisopropyl)ether	NS	ND	ND	ND	ND	ND	ND	ND
(2-ethylhexyl)phthalate	5	ND ND	ND	ND	ND	ND	ND ND	ND
Naphthylamine	NS	ND	ND	ND	ND	ND	ND ND	ND
tyl benzyl phthalate rbazole	NS	ND	ND	ND	ND	ND ND	ND ND	ND
lorobenzilate	NS NS	ND	ND	ND	ND	ND	ND ND	ND
rysene	NS	ND	ND	ND	ND	ND	ND	ND ND
	0.002	0.62	0.38	ND	ND	0.23	ND	ND ND
penzo(a,h)anthracene	NS	0.21	ND	ND	ND	ND ND	ND ND	ND ND
	NS	ND	ND	ND	ND ND	ND ND	ND	ND ND
ethyl phthalate nethoate	NS	ND	ND	ND	ND ND	ND ND	ND ND	ND
	NS	ND	ND	ND	ND	ND ND	ND ND	ND ND
nethyl phthalate	NS	ND	ND	ND	ND	ND ND	ND ND	ND ND
n-butylphthalate	NS	ND	ND	ND	ND	ND	ND ND	ND ND
n-octylphthalate	NS	ND	ND	ND	ND	ND	ND	ND





				- 1000000 I	MW/CB21	MW/CB22	FIELD BLANK	FIELD BLANK
Sample ID		MW/CB18	MW/CB19	MW/CB20	L0502658-07	L0502658-06	L0502589-11	L0502658-11
Lab Sample Number]	L0502589-05	L0502589-06	L0502658-01	3/14/2005	3/14/2005	3/15/2005	3/14/2005
Sampling Date	[3/14/2005	3/14/2005	3/16/2005	Groundwater	Groundwater	Groundwater	Groundwater
Matrix	Class GA	Groundwater	Groundwater	Groundwater	1.0	1.0	1.0	1.0
Dilution Factor	Standards	1.0	1.0	1.0		ppb	ppb	ppb
Units	ppb	ppb	ppb	ppb	ppb	ppu	,,,,,	
COMPOUND					ND	ND	ND	ND
Ethyl Methanesulfonate	NS	ND	ND	ND_	ND ND	12	ND ND	ND
Fluoranthene	50	6.6	10	0.56	ND	ND ND	ND	ND
Fluorene	50	ND	ND	ND	ND ND	ND	ND	ND
Hexachlorobenzene	0.04	ND	ND	ND		ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND ND	ND ND	ND	ND
Hexachlorocyclopentadiene	5	ND	ND	ND ND	ND ND	ND	ND	ND
Hexachloroethane	5	ND	ND	ND	UND DND	ND	ND	ND
Hexachloropropene	5	ND	ND	ND_	ND ND	ND	ND ND	ND
Indeno(1,2,3-cd)Pyrene	0.002	0.92	0.54	ND	ND ND	ND	ND	ND
Isodrin	5	ND	ND	ND		ND	ND	ND
Isophorone	NS	ND	ND	ND	ND ND	ND ND	ND	ND
Methyl methanesulfonate	NS	ND	ND	ND	ND ND	5.4	ND	ND
Naphthalene	10	ND	ND	ND	ND ND	ND ND	ND	ND
NDPA/DPA	NS	ND	ND	ND ND	ND ND	ND	ND	ND
Nitrobenzene	0.4	ND	ND ND	ND	ND	ND	ND	ND
Nitrosodi-n-butylamine	NS	ND	ND	ND	ND ND	ND	ND	ND
Nitrosodipiperidine	NS	ND	ND	ND	ND ND	ND	ND	ND
n-Nitrosodimethylamine	NS	ND	ND	ND ND	ND ND	ND	ND	ND
n-Nitrosodi-n-propylamine	NS	ND	ND	ND	ND ND	ND ND	ND	ND
n-Chloro-m-cresol	NS	ND	ND	ND_	ND ND	ND ND	ND	ND
p-Dimethylaminoazobenzene	NS	ND	ND	ND	ND ND	ND	ND	ND
Pentachlorobenzene	5	ND	ND	ND ND	ND ND	ND	ND	ND
Pentachloronitrobenzene	5	ND	ND	ND ND	ND ND	ND ND	ND	ND
Pentachlorophenol	1	ND	ND	ND ND	ND	ND	ND	ND
Perylene	NS	0.36	ND.	ND ND	ND ND	ND	ND	ND
Phenacetin	NS	ND ND	ND	ND ND	ND ND	1.7	ND ND	ND
Phenanthrene	50	1.7	0.79	ND_	ND ND	ND ND	ND	ND
Phenol	1	ND	ND	ND ND	ND ND	ND ND	ND	ND
Pronamide	NS	ND ND	ND	ND 1.6	0.65	23	ND	ND
Pyrene	50	12	29	1.6 ND	ND ND	ND ND	ND	ND
Pyridine	NS	ND	ND	L ND	1 10	1		







Sample ID											
Lab Sample Number		MW/CB1	MW/CB2	MW/CB3	MW/CB4	MW/CB5	MW/CB7	000000			
Sampling Date		744/2005	L0502589-08	L0502589-01	L0502589-02	L0502589-03	10502858.00	MW/CB8	MW/CB9	MW/CB11	MW/CB12
Matrix	Class GA	2007	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2008	C0-96920707	L0502658-03	L0502589-04	L0502658-02
Difution Factor	Standards	Ol Collawater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	314/2003	3/14/2005	3/14/2005	3/14/2005
Units	Hod	2	0.1	4.0	1.0	1,0		Groundwater	Groundwater	Groundwater	Groundwater
		E dd	mdd	mdd	шdd	maa	2 1	0.0	1.0	1.0	1.0
COMPOUND							2	шdd	udd	mdd	mdd
Aluminum, Total	SN	1 20	0,00								
Antimony, Total	0.03	CIN	0.216	3.43	7.44	0.261	16.2	0 00			
Arsenic, Total	0.025	70000	CN	S	0.0019	0.0013	S C C	677	2.83	0.05	16.5
Barium, Total		0.0024	0.0023	0.001	0.0082	0.001	0.000	0.0004	0.0005	0.001	0.0004
Beryllium, Total	0000	0.0372	0.0521	0.5426	1.013	0.0526	1 162	0.0064	0.0035	0.002	0.0074
Cadmium, Total	2000	ON S	2	Q	CZ	CIN	704-1	0.2038	0.095	0.001	0.5576
Calcium Total	0.003	0.0004	2	2	0.0012	2 2	2	0.0012	S	0.0025	0.0015
Chromium Total	2 3	54.6	92.8	113	932	100	2	2	Q	0.002	200
Cohalf Total	0.05	0.0029	9000.0	600.0	0.0650	1.60	888	120	45	-	
Social, rotal	NS	0.0057	0.0106	1,000	0.000	0.0014	0.0357	0.0379	0.0054		1
Johner, Total	0.2	0.0073	0.0017	1 2000	7800.0	0.0003	0.0163	0.0111	90000	0.00	0.0492
ron, Total	0.3	3.65		0.0338	0.027	0.0018	0.0396	0 0404	0.0030	0.0005	0.0164
ead, Total	0.025	0.0037	+ - 0000	9.29	29.9	0.534	27.9	24.4	7800.0	0.0025	0.0848
dagnesium, Total	35	13.4	0.0007	0.0095	0.0372	0.0051	0.0082	0.0076	2.23	0.05	23.7
Janganese, Total	0.3	1 530	19.5	42.3	51	99.9	286	0.0270	0.0046	0.001	0.0779
Aercury, Total	0.0007	9000	23.66	5.662	1.461	0.0393	0 2738	7,0.5	13.1	0.05	32.2
Vickel, Total	101	0000	QN S	2	9	S	200	1.784	0.5582	0.001	8.375
otassium, Total	SN	0.0000	0.0056	0.0169	0.0167	0.0016	0.0353	ON CO	Q	0.0002	QN
Selenium, Total	003	0.00	8.3	9.01	36	13.6	26.37	0.0207	0.0055	0.0025	0.0563
Silver, Total	500	2 5	2	Q	0.003	0.001	2000	18.8	3.72	0.5	F
Sodium, Total	300		2	QV	QN.	S	0.00	0.004	S	0.005	0.002
hallium, Total	0000	0.4	56.3	169	381	42.7	7720	0.0003	Ð	0.0005	S
Janadium, Total	S S S S S S S S S S S S S S S S S S S	2000	Q	QV	Q	S	677	977	30.1	1	195
Zinc, Total		0.0027	0.0007	0.0108	0.0204	0 001	0.0573	0.0002	Q.	0.0005	0.0003
		0.0333	0.0325	0.0364	0.7441	0.0414	0.0373	0.0301	0.0065	0.001	0.0435
							0.1390	0.0822	0.0331	0.025	0.0773

TABLE 7
Columbia Manhattanville
Subsurface Investigation
Groundwater
Total Metals

Sample ID Lab Sample Number Sampling Date Matrix Muttion Factor Units	Class GA Standards ppm	MW/CB13 L0502658-09 3/14/2005 Groundwater 1,0	MW/CB14 L050268-04 3/14/2005 Groundwater 1.0 ppm	MW/CB16 L0502658-10 3/14/2005 Groundwater 1.0	MW/CB17 L0502589-09 3/14/2005 Groundwater 1.0	MW/CB18 L0502589-05 3/142005 Groundwater 1.0 ppm	MW/CB19 L0502589-06 3/14/2005 Groundwater 1.0 ppm	MW/CB20 L0502658-01 3/16/2005 Groundwater 1.0 ppm	MWI/CB21 L0502658-07 3/14/2005 Groundwater 1,0 ppm	MVI CD L L050268-08 3/14/2005 Groundwater 1.0 ppm	3/15/2005 3/15/2005 Groundwater 1.0	L0502858-11 314/2005 Groundwater 1.0 ppm
									۶	2 85	QN	0.017
COMPOUND		Ş	371	189	7.48	4.65	27.6	0.211	0-000	2000	QZ	Q
Aluminum, Total	NS	2	10000	00000	0 0006	0.0004	0.0005	Q	0.0004	0.000	2	2
Antimony, Total	0.03	2	0.0007	0.000	0.0034	0.0026	0.0113	2	0.0063	0.0102	2	0.0003
rsenic, Total	0.025	0.0046	0.0140	0.00	0.1037	0.1437	0.7092	0.1569	0.8211	0.2130	2 2	CN
Barium Total	+	0.575	0.6555	\$ 500	2000	S	0.002	9	0.0011	2	2 4	SZ
Bendlium Total	0.003	Q	0.003	G100.0	0.0000	2	0.0019	S	9000'0	2	ON	2 2
Codmirm Total	0.005	Q	0.0011	2		5 2	264	62.1	584	252	0.295	
Calcium Total	NS	326	72.1	156	6.86	0 0004	0.1521	0.0015	0.024	0.007	Ž	2 4
Dromitm Total	0.05	0.0165	0.058	0.0236	0.0127	0.000	0.0173	0.0006	0.0109	0.002	2	2 200
chalt Total	SN	0.0085	0.022	0.0146	0.0030	2000	0.0811	0.0024	0.0219	0.009		2.000
Copper Total	0.2	0.0305	0.074	0.0341	0.035	7.16	41.2	0.64	23.8	11.8	0.00	0.000
rop Total	0.3	14.7	47.3	23.2	501	2000	0.1412	0.0025	0.0236	0.05	0.0004	0.0003
and Total	0.025	0.0194	0.0554	0.0192	0.0142	27.6	49.1	16.2	99	39.6	0.013	9000
Agonesium Total	35	35.5	15.6	38.7	0,40	2 331	3.141	0.234	1.155	4.21	5000.0	2000.0
Manganese, Total	0.3	1.631	1.709	1.988	0.1034		0.0003	Q.	Q	0.0002	2 9	2 2
deroury. Total	0.0007	Q	2	2 2	1000	0.0085	0.0415	0.0019	0.025	0.005	2	2 2
Nickel, Total	0.1	0.0242	0.0532	0.0357	2,000	29	23.9	9.57	37.6	7.7	2 2	2
Potassium Total	SN	53.2	12.9	2 3	1.000	0000	0.00	0.002	0.008	0.001	2 3	2 2
Selection Total	0.01	QN	0.008	0.009	0.003	200	0.0002	2	QN	2		2 5
Silver Total	0.05	QN.	2	0.0003	S S	96	430	114	418	162	2 9	
Sodium Total	20	3140	257	19.5	2000	CN	0 0003	2	0.0002	Q		2 2
Thallium Total	0.0005	ON	0.0005	0.0004	0.000	500	0.0624	0.001	0.0268	0.0044	2 2	70,50
Vanadium. Total	SN	0.0214	0.0635	0.0308	0.0132	0.0816	0.279	0.0061	0.0798	0.0322	S	1210.0
	ļ	0000	0 1210	5		2						





Sample ID		MW/CB1	MW/CR2	MANGER									
Lab Sample Number Sampling Date		L0502589-07	L0502589-08	L0502589-01	MW/CB4 L0502589-02	MW/CB5	MW/CB7	MW/CB8	MW/CB9	MW/CB11	MW/CB12	MW/CB13	_
Matrix	Class GA	3/14/2005 Groundwater	3/14/2005 Groundwater	3/14/2005	3/14/2005	3/14/2005	3/14/2005	L0502658-05 3/14/2005	L0502658-03	L0502589-04	L0502658-02	L0502658-09	
Ollution Factor Units	Standards	1.0	1.0	Groundwater 1.0	Groundwater 1.0	Groundwater	Groundwater	Groundwater	Groundwater	S14/2005 Groundwater	3/14/2005 Groundwater	3/14/2005 Groundwater	
COMPOUND	ì	E C C	mdd	шdd	шdd	wdd	mdd .	1.0 ppm	1.0 ppm	1.0 ppm	1,0	0.1	
Aluminum, Dissolved	SN	0.014	0,00										_
Antimony, Dissolved	0.03	0.0015	0.018	0.035	0.018	0.03	0.05	,	,				
Arsenic, Dissolved	0.025	0.0016	0.0018	0.0012	0.0059	0.0024	0.001	0,000	10.0	0.015	0.01	0.02	
Barium, Dissolved	NS	0,0265	0.0013	Q S	0.0041	0.001	0.002	0.000	0.0002	0.0019	0.0002	0.0004	
Beryllium, Dissolved	0.003	2	- CZ	0.467	1.16	0.0445	0.001	0.0002	0.0004	0.0005	0.0004	0.0008	
Cadmium, Dissolved	0.005	0.0007	00000	2	2	QN	0.0025	0.0005	0.0002	0.2053	0.0002	0.0004	
Calcium, Dissolved	. SN	52.6	86.2	N S	2	0.0009	0.002	0.0004	0.0003	Q S	0.0005	0.001	
Chromium, Dissolved	0.05	2	100	61.10	1260	51.2	2	,	0.0004	ON S	0.0004	0.0008	
Cobait, Dissolved	SN	0.0043	0.0132	0.0003	0.0007	0.0003	0.001	0.0002	0.000	185	0.2	2	
Copper, Dissolved	0.2	0.0124	0.0238	20002	0.0069	0.0003	0.0005	0.0001	0.0002	0.0002	0.0002	0.0004	
Iron, Dissolved	0.3	0.521	0.394	0.003	0.0277	0.0212	0.0025	0.0005	5000	0.0016	0.0001	0.0002	
Lead, Dissolved	0.025	0.0003	0000	3.23	13.2	0.164	0.05	0.01	10000	0.0.168	0.0005	0.001	
Magnesium, Dissolved	35	12.4	18.0	0.000	0.0014	0.0008	0.001	0.0002	0.00	0.33	0.01	0.02	
Manganese, Dissolved	0.3	1,465	20.31	25.4	51.1	6.68	0.05	0.01	0.0002	2100.0	0.0002	0.0004	
Mercury, Dissolved	0.0007	Q	CN	1207	1.431	0.0384	0.001	0.0002	2000	7.77	0.01	0.02	
Nickel, Dissolved	0.1	0.0078	0.0122	90000	QN 13	S	0.0002	0.0002	00000	1.362	0.0002	0.0004	
Polassium, Dissolved	NS	6.79	8.4	8 00	1610.0	0.0057	0.0025	0.0005	0 0005	22000	0.0002	0.0002	
Selection, Dissolved	0.01	QN	S	, O.22	41.4	14.2	0.5	0.1	100	0.0076	0.0005	0.001	
Silver, Dissolved	0.05	Ð	S	2 2	0.003	2	0.005	0.001	000	0.60	0.1	0.2	
Sodium, Dissolved	20	45.4	57.4	150	2 5	2	0.0005	0.0001	0 0001	2007	0.001	0.002	
Traillum, Dissolved	0.0005	Q	CN	S CN	48/	43.6	10	-	100	NO.	0.0001	0.0002	
Zinc Dissolved	SN	Q	0.0004	0.0006	NO 0	QN	0.0005	0.0001	0.0001	CS CN	10000	10	
Carlo Dasonken	2	0.0145	0.0207	0.0119	0.0014	0.0008	0.001	0.0002	0.0002	0.0004	0.000	0.0002	
	!				0.0777	0.0192	0.025	0.005	0.005	00000	0.0002	0.0004	
										20000	0.000	000	

TABLE 8
Columbia Manhattanville
Subsurface Investigation
Groundwater
Dissolved Metals

	Class GA Standards ppm	L0502658-04 3/14/2005 Groundwater 1.0 ppm	MW/CB16 L0502858-10 3/14/2005 Groundweter 1.0	MW/CB17 L0502589-09 3/4/2005 Groundwater 1.0 ppm	MW/CB18 L0502589-05 3/14/2005 Groundwater 1.0 ppm	MW/CD13 L0502589-08 3/14/2005 Groundwater 1.0	MW100240 1.050268-01 3.16/2005 Groundwater 1.0 ppm	L0502658-07 3/14/2005 Groundwater 1,0 ppm	L0502658-06 3/14/2005 Groundwater 1.0 ppm	L0502689-11 3/15/2005 Groundwater 1.0 ppm	L0502658-11 3/14/2005 Groundwater 1.0 ppm
							200	0.01	0.01	Q	0.01
	9	100	0.02	0,011	0.013	0.012	0.00	20000	0 0002	Q	0.0002
	200	0 0002	0.0004	0.0034	0.0019	0.0023	0.0002	0.000	0.0004	QN	0.0004
	0.025	0.0004	0.0008	0.0005	0.0014	60000	+0000	0 0002	0.0002	S	0.0002
Arsenic, Dissolved	NS	0.0002	0.0004	0.0464	0.107	0.4025	0.0005	0.0005	0.0005	ON	0.0005
1	0.003	0.0005	0.001	2	2	2000	0.0004	0.0004	0.0004	S	0.0004
	0.005	0.0004	0.0008	2	ND	303	0.2	2	2	0.37	2.0
	NS	2	2	62.5	0000	0000	0.0002	0.0002	0.0002	Q S	0.0002
þe	0.05	0.0002	0.0004	0.0003	0.0002	0.001	0.0001	0.0001	0.0001	2	2000
	NS	0.0001	0.0002	0.0004	0.00	0.0091	0.0005	0.0005	0.0005	2 3	0.000
	0.2	0.0005	0.001	0.0153	0.000	0.951	0.01	0.01	0.01	0.015	2000
	0.3	0.01	0.02	0.127	9000	0.0003	0.0002	0.0002	0.0002	ON S	0.0002
-	.025	0.0002	0.0004	1.0004	30.00	56.4	0.01	0.01	0.01	0.036	2000
	35	0.01	0.02	00.7	2 62	2.616	0.0002	0.0002	0.0002	0.000	0.000
	0.3	0.0002	0.0004	OCCU.	Q	Q	0.0002	0.0002	0.0002		0.0005
	/000.0	0.0002	\$000	9000	0.0075	0.0068	0.0005	\$000.0	0.0003	2	0.1
	0.0	0.0003	0000	114	31	22.5	0.1	0.1	- 000	S	0.001
P	2 2	000	0 000	0.003	S	0.001	0.001	0.001	0.00	Q	0.0001
ved	0.01	0.00	20000	QN	2	9	0.0001	0,000	00000	S	0.1
	60.0	0.000	4	674	111	265	0.1		- 000	CZ	0.0001
Pé	2	- 1000	0000	CZ	2	S	0.0001	0.0001	0.0001	2	0 0002
q	0.0005	0.0001	0.0002	000	0.0007	0.0005	0.0002	0.0002	0.0002	9 9	0.005
Vanadium, Dissolved	SN.	0.0002	0.0004	0.0128	0.0267	0.0213	0.005	0.005	0.00.0		
Zinc, Dissolved	2	C00.0	2.0	200							







Name Name												
Control Cont	sample ID		MW/CB1	MW/CB2	MW/CB3	MAIICEA	100//100					
Class GA Groundwater (class GA) LUGGISSEAD (a) (142005) LUGGISSEAD (a) (a) (142005) LUGGISSEAD (a) (a) (a) (a) (a) (a) (a) (a) (a) (a)	ab Sample Number		10502500			MVV/CD4	MW/CB5	MW/CB7	MW/CB8	MW/CB9	MW/CB11	MW/CB12
Class GA Groundwater of Country and Part State of Countr	ampling Date		10-8007007	80-88CZ0C0-1	1.0502589-01	L0502589-02	L0502589-03	1.0502658-08	10502658.05	1.0502656.03	10000000	
Class GA Groundwater (Groundwater) Groundwater (Ground			3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/14/2005	3/44/2006	2000000		the second	L0502658-02
Standards 1,0 1	THE STATE OF THE S	Class GA	Groundwater	Groundwater	Groundwater	Groundwitter		2007#1	3714/Z005	3/14/2005	3/14/2005	3/14/2005
10 10 10 10 10 10 10 10	ilution Factor	Standards	1,0	¢		Jese Appunding	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
10.3	Units	d c	1	2	?	1,0	1.0	1.0	0.1	1,0	5	,
0.3			odd	qdd	qdd	qdd	qdd	qdd	qqq	qua	2 4	9 1
10.3	SOMPOUND										ì	ndd
100 100	4'-DDD	50	Civ	4.								
10	4. DDE		2	S	2	QN	ÇŽ	Ç	9			
100	4.005	0.2	g	2	Q	S	2	2 2	2	2	Q.	2
Control Cont	4 -001	0.2	9	S	Ş			2	2	2	2	S
100	drin	0.001	S	CIN	2 2	2	2	Q	2	9	S	CN
100	pha-BHC	0.05	S	2 2		2	2	Q	Q	2	S	S
Columbia Columbia	sta-BHC	0.05	2		2	2	2	2	9	S	CN	2
Control Cont	lordane	0.05	2 2	2	2	2	2	2	QN	S	S	2 2
Control Cont	-Chlordane	20.0	2 5	2	Q	2	2	S	S	S	2 2	
Composition Composition	tta-BHC	20.0	2	2	Q	2	2	2	CZ	25		2
1000	417	00.0	2	2	2	S	S	Ş		2	2	2
S	Junua.	0.001	2	R	S	2	2 2	2	2	2	Q	9
19	dosulfan I	SN	9	S		2 2	2 !	QN	Q	8	₽	2
N	dosulfan II	SN	S		2 2	2	2	2	QN	₽	2	S
O	dosulfan sulfate	SN	S	2 5	2 2	2	Q	2	QN	Q	2	2
O	drin	9	2	2 2	2 2	2	Q	Q	Q	2	2	S
Columbia Columbia	drin aldehyde	5	S	2 2	2 2	2	2	Q	ΩN	₽	S	2
10	drin ketone	2	S	2 2	2 2	2	2	S	2	2	2	S
ON	ptachlor	0,04	S	2 2	2 2	2	2	9	S	2	CN	S
ON ON ON ON ON ON ON ON ON ON ON ON ON	ptachlor epoxide	0.03	2	2 2	2 5	Q	2	Ð	S	2	2	
ON	dane	SN	2 2	2 5	2	2	Ð	QN	2	2	S	99
ON	thoxychior	35	2 2		2	2	2	2	₽	2	15	2
ON ON ON ON ON ON ON ON ON SOO	aphene	900	2 2	2	2	2	Q	2	2	S	2 2	2 2
CIN UN ON ON ON ON ON	s-Chlordane	0.05	2 2	2 2	2	Q	2	Ð	QV	E	2 2	2 2
				ON .	2	2	9	2	S			9!

TABLE 9
Columbia Manhattanville
Subsurface Investigation
Groundwater
Pesticides and PCBs

Sample ID Leb Semple Number Sampling Date Matrix Pillution Factor Pillution Factor	Class GA Standards	MW/CB13 L0502658-09 3/14/2005 Groundwater 1.0 ppb	MW/CB14 L0502858-04 3/14/2005 Groundwater 1.0 ppb	MW/CB16 L0502658-10 3/14/2005 Groundwater 1.0 ppb	MWI/CB17 L0502589-09 3/14/2005 Groundwater 1.0	MWICB18 L0502589-05 3/14/2005 Groundwater 1.0	MW/CB19 L0502580-08 3/14/2005 Groundwater 1.0 ppb	MWICB20 L0502658-01 3/16/2005 Groundwater 1.0 ppb	MW/CB21 L0502658-07 3/14/2005 Groundwater 1.0 ppb	MWV/CB22 L050268-08 3/14/2005 Groundwater 1.0 ppb	10502889-11 3/15/2005 Groundwater 1.0 ppb	L0502658-11 3/14/2005 Groundwater 1,0 ppb
CNICOMOC						2	S	CN	2	Q	QN	QN
DOO	0.3	Q	QN	2	2	2 2	2 2	Q	Q	QV	2	9
4.4-DDE	0.2	QN	2	2	2 2	2 2	Q	QN	2	Q	9	2
TOO	0.2	9	2	2	2 2	2 5	2	Ð	S	9	Q	2 9
U	0.001	S	2	2	2 2	2 2	CZ	QN	S	2	2	2 9
Alpha-BHC	0.05	2	2		2 2	2 2	9	Q	2	2	9	2 2
BHC	0.05	2	2		2 2	S	2	9	2	2	2 5	2 2
rdane	0.05	2	2	2	2 2	S	2	QN	Q	2	2	2 2
Chlordane	0.05	9	2	2 2	2 5	S	2	QN	2	9	2	2 2
a-BHC	0.05	2	2	2 2	2 2	2	Ð	Q	Q	S	2	2 2
Jrin	0.001	Q	2	2 2	2 2	S	2	QN	₽	2	2	2 2
Endosulfan I	SN	2	2	2	2 2	2	2	₽	Q	2	2	2
Endosulfan II	SN	2	2	22	2/2	S	2	S	Q	S	Q S	2 2
Endosulfan sulfate	SN	2	2	2 2	2 2	Ę	2	9	9	2	2	2 2
Endrin	Q	9	2	2 2	2 2	S	2	S	ᄝ	2	2	2 2
Endrin aldehyde	5	2	2	2	2 2	S	2	Q	S	2	2	2 2
Endrin ketone	S	Q	2	2 5		S	2	S	욷	2	2	2 2
Hentachlor	0.04	9	2	2 5	2 2	2 5	S	£	Q	Q	2	2 2
Hentachlor epoxide	0.03	2	2	2	2	9 5	S	9	9	2	2	2
lane	SN	S	9	2	2 2	2 2	S	2	2	2	2	
Methoxychlor	35	QN	9	2	2	2 2	2	£	QV	S	2	2 2
Toxaphene	90:0	9	2	2	2 2	2 2	2	R	QN	Q	2	ON.
Opposition of the second	500	CZ	c Z	2	2	2	!					

PCBs TOTAL PCBs







PROJECT SITE LOCATION MAP

AKRF, Inc.

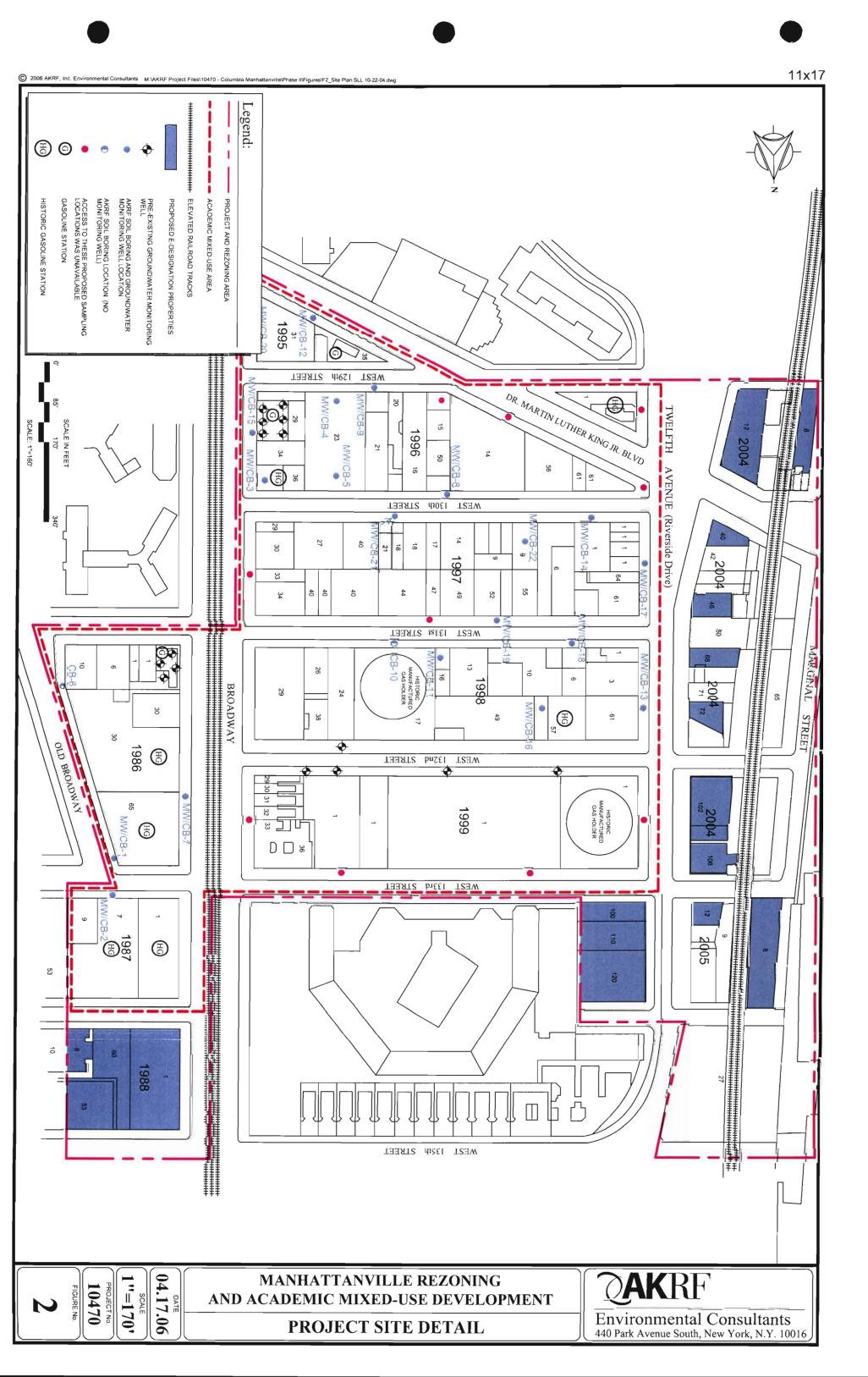
Environmental Consultants 440 Park Avenue South, New York, N.Y. 10016

04.17.06

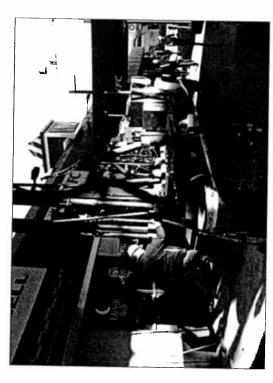
PROJECT No. 10470

FIGURE No

1



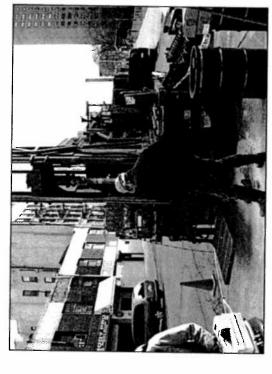
BAKKE



Photograph 1: Drilling activities at soil boring location MW/CB-20.



Photograph 3: Water level measurement collected at newly installed MW/CB-2.



Photograph 2: Drilling activities at soil boring location MW/CB-1.



Photograph 4: Steam-cleaning the augers between soil boring locations.

	\mathbf{A}_{\cdot}	KR	F, Inc.	Manhattanville Rezoning Columbia University - West Harle	em, NY	Boring	No. MW /	CB-1
				AKRF Project Number : 104	70	Sheet 1 of 1		
1	Envi	ronment	tal Consultants	Sampling Method: 2' Spät Spoon		Drilling	Finish	
	440.0			Driller: SDS Weather: 45F. Clear		Time: 10:15	Time: 12:	10
	440 Pa	rk Avenue So	uth, New York,NY 10016	Weather: 45F, Clear Sampler: AKRF/Steve Grens		Date: 2/15/05	Date: 2/15	/05
Depth (feet)	Recovery (Inches)	Blows/Pt.	Surface Condition: (Concrete	PiD Reading (ppm)	Ddor	Moleture	Samples Collected for Lab Analysis
1			Top 6": CONCRETE.		+ =		+-	- N-
	6"	1	Bottom 6*: Gray fine SAND and S	SILT (removed by hand).	-		_	
2	-	2	Gray fine SAND and SILT.		ND	No Odor	Dry	
3 4	16**	2 2 2 2	Very loose brown fine SAND and	SILT.	ND	No Odor	Dry	MW/CB-1 (2'-4')
5 6	12"	1/12*	Very loose brown fine SAND and	SILT.	ND	No Odor	Dry	
?	12"	1 1 1	Very loose brown fine SAND and	SILT.	ND	No Odor	Dry	
9 10	19"	2 2 1 2	Very loose brown fine SAND and	SILT.	ND	No Odor	Dry	
11	18"	2	Very loose brown fine SAND and of Orange and black vertical banding	SILT, noted throughout soil in split spoon.	ND	No Odor	Dry	MW/CB-1 (10'-12')
<u>13</u>	17"			noted throughout soil in split spoon.	ND	No Odor	Dry	
15 16	18"	2 1 2 1	Top 11": Brown fine SAND and Orange and black verti Bottom 7": Gray fine SAND and SI	cal banding noted throughout	ND	No Odor	Wet	
17 18 19 20			Augered to 20 feet below grade to	set well.				
21			End of boring at 20 feet below grad	le.				
23								
25								

Groundwater encountered at 14 feet below grade during drilling.

Soil samples MW/CB-1 (2'-4') and MW/CB-1 (10'-12') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-1 groundwater samples sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

Boring No. MW/CB-2 AKRF, Inc. Manhattanville Rezoning Columbia University - West Harlem, NY AKRF Project Number: 10470 **Environmental Consultants** impling Method: 2' Split Spoon Start Time: 13:45 Time: 15:30 SDS 45F, Clear Date: 2/15/05 Date: 2/15/05 Neather: 440 Park Avenue South, New York, NY 10016 AKRF/Steve Grens Odor Surface Condition: Concrete Samples of for Lab A 문 Top 5": CONCRETE. Bottom 7": Dark brown fine SAND and SILT (removed by hand). Loose brown fine SAND and SILT, trace Concrete (Slough). ND No Odor Dry 2" 2 Loose brown fine SAND and SILT, trace Concrete (Slough). 0.2 No Odor Dry 3 16" Medium dense brown fine SAND and SILT. No Odor Dry ND 5 19" Medium dense brown fine SAND and SILT. No Odor Dry ND Horizontal gray banding noted on bottom 2". .7_. 17" 10 Medium dense brown fine SAND and SILT. No Odor Dry ND 13 9_ 24" 13 10 Medium dense brown fine SAND and SILT, No Odor Dry MW/CB-2 ND 11_ 24" (10'-12') 10 12 No Odor Top12": Brown line SAND and SILT. Dry MW/CB-2 10.9 Bottom 12": Gray fine SAND and SILT. 13 Strong petroleum-like (12'-14') Wet 14 15 Augered to 19 feet below grade to set well. 16 17 18_ 19 End of boring at 19 feet below grade. 20_ 21 22 23 24 25 26 ND - Not Detected PID - Photolonization detector

Groundwater encountered at 13 feet below grade during drilling.

Soil samples MW/CB-2 (10'-12') and MW/CB-2 (12'-14') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-2 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	Al	KR	F, Inc.	Manhattanville Rezonii Columbia University - West Ha	_	Boring	No. MW/C	B-3
				AKRF Project Number : 1	0470	Sheet 1 of 2 Drilling		
	Envir	onment	al Consultants	Sampling Method: 2 Split Spoon Driller: SDS		Start Time: 07:35	Finish Time: 12:00	
	440 Par	k Avenue Sou	uth, New York,NY 10016	Weather: 49F, Clear AKRF/Steve Grens		Date: 2/16/65	Date: 2/16/0	
Depth (feet)	Recovery (Inches)	Blows/ Ft.	Surface Condition:	Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected
1			Top 3": ASPHALT PAVEMENT Bottom 9": Brown fine SAND an	d GRAVEL (removed by hand).				\Box
2	2"	48 9	Brown fine SAND, SILT and GR		ND	No Odor	Dry	\vdash
.3	6-	9 7 3	Top 4": Dark brown SAND and the Fill (Brick, Asphalt, Castom 2": Gray fine SAND and	Concrete).	ND	No Odor	Dry	
5	2"	1 1 2 1	Very loose CONCRETE and fine Sand, Silt (FILL).	a GRAVEL, trace brown fine	ND	No Odor	Dry	
.7	8-	4 8 8 3	Medium dense CONCRETE and Sand, Silt (FILL).	fine GRAVEL, trace brown fine	ND	No Odor	Dry	Г
9	1"	8 7 6 2	Medium dense CONCRETE (FI	LL).	ND	No Odor	Dry	
11	1-	6 3 4 2	Loose BRICK and CONCRETE,	trace brown fine Sand, Silt (FILL).	ND	No Odor	Dry	
13	14"	11 12 5 4	Top 3*: BRICK and CONCRETE Bottom 11*: Brown fine SAND a		ND	No Odor	Dry	Г
15	16"	2 2 2 2	Loose brown fine SAND, trace S	SHL.	ND	No Odor	Dry	
17	7*	2 3 15 50/1*	Medium dense brown fine SAN(), trace Sitt.	ND	No Odor	Dry	
19			Augered to 20 feet below grade. Continued split spoon sampling.	at 20 feet below grade.				
21	17"	16 23 35 28	Very dense reddish/brown SAN(O and fine GRAVEL, trace Silt.	ND	No Odor	Dry	MW/C (20'-22
23	16"	16 23 44 28	Top 14": Reddish/brown SAND a Bottom 2": Gray SAND and fine		ND	No Odor	Dry	
25	2"	24 47 50/1"	Very dense gray coarse SAND a	ind fine GRAVEL, trace Silt.	ND	No Odor	Dry	

Groundwater encountered at 26.2 feet below grade during drilling.

Soil sample MW/CB-3 (20'-22') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-3 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	Aŀ	(RI	F, Inc.	1	nhattanville Rezoning University - West Harlem	, NY	Boring No	. MW/C	B-3
				AKRE	F Project Number : 10470		Sheet 2 of 2 Drilling: 222		
	Enviro	nmenta	al Consultants	Sampling Method:	2' Split Spoon	***************************************	Start	Finish	
	AAN Pork	Avonue Sout	h, New York,NY 10016	Driller : Weather:	SDS 49F, Clear		Time: 07:35 Date: 2/16/05	Time: 12:00 Date: 2/16/05	
		7.10100 0000	I I I I I I I I I I I I I I I I I I I	Sampler:	AKRF/Steve Grens	Ê		<u></u>	8.
Depth (feet)	Racovery (Inches	Blows/Ft.	Surface Condition: A			PID Reading (ppm)	Jopo	Moisture	Samples Collected for Lab Analysis
27	14"	21 7 6 4	Medium dense gray SAND and fil	ne GRAVEL, trace \$	Silt.	ND	No Odor	Wet	MW/CB-3 (20°-22°)
29 30			Augered to 31 feet below grade to	o set well.					
31								 	ļ
32			End of boring at 31 feet below gr	ade.					
33	1								
34									İ
35	-								
36	1					İ			
37									
38]								
39]								
40]					ļ			
41	<u> </u>								
42									
43]								
44	1								
45	1								
46	1								
47	1								
48	1								
49	1								
50	1								1
51	1								
	1								
<u>52</u>	1					1			

ND - Not Detected

Groundwater encountered at 26 feet below grade during drilling.

Notes:

Soil sample MW/CB-3 (20'-22') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

PID - Photoionization detector

MW/CB-3 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).





	Al	KR	F, Inc.	Manhattanville Rezoning Columbia University - West Harler	n, NY	Boring No	MW/C	B-4
				AKRF Project Number : 10476)	Sheet 1 of 1		
	Envir	onment	al Consultants	Driller: SDS		Start Time: 12:45	Finish	
	440 Par	k Avenue So	uth, New York,NY 10016	Sampler: AKRF/Steve Grens		Date: 2/16/05	Time: 15:3: Date: 2/16/	
Depth (feet)	Recovery (Inches)	Blows/ Ft.	Surface Conditi	on: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
_1			Top 2": ASPHALT PAVEME Bottom 2": CONCRETE.	1000				
2			Brick, Concrete, Automotive and Silt (FILL) (n	Parts, some fine brown Sand amoved by hand).	ND	No Odor	Dry	
3	4"	5 3 5 2	Loose BRICK, trace fine bro	wn Sand, Sitt.	ND	No Odor	Dry	
56	4-	4 7 5 2		ICRETE, and GRAVEL (FILL).	0.1	No Odor	Dry	
<u>?</u> .	2"	29 50/2*	Very dense BRICK, CONCR	ETE, GRAVEL, and WOOD FRAGMENTS (FILL)	ND	No Odor	Dry	
9	2"	5 4 2 2	Loose BRICK (FILL).		ND	No Odor	Dry	
11	0	3 4 5 10	No Recovery.					
13	0	50/2*	No Recovery. Fill (Brick) visible around aug Augered to 14 feet below gra	gers. ide to continue split spoon sampling.				
15	6"	6 3 3 6	Loose brown/gray SAND and	d SILT, trace Wood, Brick (FILL).	ND	Slight creosote-like odor	Dry	MW/CB- (14'-16')
17 18	0	4 6 3 2	No Recovery.		ND	No Odor	Dry	
- <u>19</u> 20	19"	1 3 9 13	Top 12*: Gray SILT and fine Bottom 7*: Gray fine to medi		27.8	Slight petroleum/creosote- like odor	Wet	
. <u>21</u>			Augered to 22 feet below gra	de to set well.				
23 24 25			End of boring at 22 feet belo	w grade.				
26 lotes:			PID - Photoionization detec	tor ND - Not Detected				

ND - Not Detected

Groundwater encountered at 17 feet below grade during drilling.

Soil sample MW/CB-4 (14'-16') sent to the lab to be analyzed for VOCs (8260).

MW/CB-4 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).



Manhattanville Rezoning Columbia University - West Harlem, NY Boring No. MW/CB-5

AKRF Project Number: 10470

							Sheet 1 of 1		
	*						Ording-older#00a/re		3788°.48
	Enviro	onmenta	al Consultants	Sampling Method:	2' Split Spoon		Start	Finish	
				Driller :	SDS		Time: 07:35	Time: 10:10	
	140.0	A C	the Name Varde NEV 10016	Weather:	45F, Clear		Date: 2/17/05	Date: 2/17/05	
	440 Park	Avenue Sout	th, New York,NY 10016	Sampler:	AKRF/Steve Grens				
	7					Ê			Samples Collected
₽	Recovery (Inches)					PiD Reading (ppm)		1 . 1	, š
Depth (feet)	Ĕ	Blows/ Ft.				5	юро	Moisture	. მ.
ءَ	5	3	Surface Condition	: Concrete		1 7	ď	<u> </u>	5
ē	\$	윤					1]	1 2
°	ğ	_				₽ .			S.
	α								
			CONCRETE (5").	DETE 1 1 C	- C CB (EU L)		<u> </u>		
1		43	BRICK, ASPHALT, and CONC	RELE, trace brown fin	e Sano, Siit (FILL).	ND			
- 1	2"	4				ND	No Odor	Dry	ı
2		2							├─
		4	Loose BRICK, ASPHALT, and	CONCRETE, trace bro	own fine Sand, Silt	1		D	ı
3	1"	4	(FILL).			ND	No Odor	Dry	ı
1	1"	4				ł	1		i
4		2							
 +		14	Very dense BRICK, CONCRE	TE, ASPHALT, and Wo	OOD, trace fine				ĺ
5		27	brown/gray Sand,			0.2	Slight creosote-like	Dry	l
5	6™	30	1			1	odor	I	i
,		4					odor	i	
6			Dense BRICK, CONCRETE, A	OOOM box TIALISM	trace fine				
_		16			, and the	0.2		Dry	ı
. ?	2"	17	brown/gray Sand,	SIII (FILL).		V.2	Slight creosote-like	/	1
		19	1			1	odor		l
8		50	<u> </u>						├─
1		50/1"	Very dense BRICK (FILL).				No Odor	Dry	1
9	1"		İ			ND	190 0001	Lity	
	•	1						1	1
10								 	₩
			Void encountered 10 to 12 fee			i	1		i
11		1	Augered to 12 feet below grad	ie.			1	1	ı
			1			ı	1	1	
12		l							₩
		50/2"	Very dense gray fine to mediu	im SAND and SILT, so	me Brick (FILL).		65-1-1		
13	1"	i .				0.5	Slight	Wet	1
	1"	1	1				petroleum/creosote-		1
14		1	i				like odor		Ь.
		— —	Void encountered 14 to 19 fee	et below grade.					1
15			Groundwater encountered wit	thin augers at 12 feet b	elow grade.	l l			1
		1	Set well at 17 feet below grad		•	1		Į.	1
16	1	i	Co. Holl by 7, 1000 bolow grad			1	1	1	1
16	l	I	1			ı	1	1	1
17	l						1		1
17		╀						T	T
40	l	1	End of boring at 17 feet below	v orado		I		1	1
18	Į.	1	End of boiling at 17 leet belov	y grado.				1	1
	1	1				1		ı	ŀ
19	ŀ					1			1
						l l			1
20	1		1			1		1	1
			ŀ			1		l l	
21	1	1	1			i i		1	1
		1	1				1	1	1
22	1	1	Į.					1	
	I							1	1
23	1	1	i			1		1	1
	I	1				1		1	
24	j	1	1			1			1
	1					I	1		1
25	l		1			1	1	1	1
	1	1	1			1	1	1	1
26	1	ı	ŀ			I	1	1	1

27 Notes:

PID - Photoionization detector

ND - Not Detected

Groundwater encountered at 12 feet below grade during drilling.

No soil sample submitted for laboratory analysis due to poor sample recovery and fill material.

MW/CB-5 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).







	A]	KR	F, Inc.	Columbia	nhattanville Rezoning University - West Harle Project Number : 1047		Boring I	No. CB-6	
				AKKF	Project Number: 104/	Ü	Sheet 1 of 1		
	Envir	onmen	tal Consultants	Sampling Method:	2' Split Spoon		Drilling	Finish	San Villa
	440 Pa	rk Avenue So	uth, New York,NY 10016	Driffer : Weather: Sampler:	SDS 32F, Rain/Snow		Time: 10:30 Date: 2/21/05	Time: 12:3 Date: 2/21/	
Depth (feet)	Recovery (Inches)	Blows/ Ft.	Surface Condition		AKRF/Stove Grans	PID Reading (ppm)	Odor	Molsture	Samples Collected
			CONCRETE (3*), some brow	n fine Sand and Silt (rem	oved by hand).	+	_	+-	3
1	2"	4 5 5	Brown/gray SAND and SILT,	trace fine Gravel.		ND	No Odor	Dry	Т
34	1"	7 50/3*	Very dense brown/gray SAND	and SILT, trace fine Gr	avel.	ND	No Odor	Dry	
5	9"	4 4 4 6	Top 2": SLOUGH. Bottom 7": Brown SILT and fir	ne SAND.		ND	No Odor	Dry	CB-6 (5'-6')
7	2-	50/4"	Top 1*: SLOUGH. Bottom 1*: Brown SILT and fir	e SAND.		ND	No Odor	Dry	T
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26							*		
27 es:			PID - Photoionization detector	т	ND - Not Detected	\perp			
	not encou B-6 (5'-6')		e lab to be analyzed for VOCs (8	3260).					

	Aŀ	(RI	F, Inc.		nhattanville Rezoning University - West Harle	m, NY	Boring No	. MW/CI	B-7
				AKRF	Project Number: 1047	0	Sheet 1 of 1		
	Enviro	nmonts	al Consultants	Sampling Method:	2' Split Spoon		Start	Finish	100,000,000,000
	CHAIL	линени	a Consultants	Driller :	SDS		Time; 13:30	Time: 16:00	
l	440 Park	Avenue Sout	th, New York,NY 10016	Weather: Sampler:	45F, Clear AKRF/Steve Grens		Date: 2/22/95	Date: 2/22/05	-
Depth (feet)	Recovery (Inches)	Blows/ Pt.	Surface Condition: (PID Reading (ppm)	Defor	Moisture	Samples Collected for Lab Analysis
\vdash			Top 10°: CONCRETE.						
1		4	Bottom 2*: Brown fine SAND and Top 2*: CONCRETE (Slough).	SILT (removed by	nand).	ND	No Odor	Dry	
2	3"	6	Bottom 1": Brown fine SAND and			NU	140 0000	Lity	
3	2"	5 14 11 6	Medium dense brown SAND and	SILT, trace fine Gra	ivel.	ND	No Odor	Dry	
5	4"	9 2 5 6	Loose brown SAND and SILT, tra	ace fine Gravel (Sch	ist).	ND	No Odor	Dry	
7	r	7 8 8 7	Medium dense brown fine SAND	and SILT, trace Ro	ck Fragments (Schist).	ND	No Odor	Dry	MW/CB-7 (6'-8')
910	4-	9 13 6 4	Medium dense micaceous SCHI	ST, some brown fine	s Sand, trace Sit.	ND	No Odor	Dry	
	3.5"	10 50/1"	Very dense BRICK, some brown trace micaceous Sch			ND	No Odor	Wet	
13			Augered to 15 feet below grade	to set well.					
15 16 17 18 19 20 21 22 23 24 25 26			End of boring at 15 feet below g	rade.					
27 Notes:		L_	PID - Photoionization detecto	r	ND - Not Detecte	d			

Groundwater encountered at 10 feet below grade during drilling.

Soil sample MW/CB-7 (6'-8') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-7 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	A	KR	F, Inc.	Manhattanville Rezoning Columbia University - West Har		Boring I	No. MW/	CB-8
				AKRF Project Number : 10	470	Sheet 1 of 1		
1	Envi	ronmen	tal Consultants	Sampling Method: 2 Split Spoon		Drilling	Finish	1974 1975
1	110.0			Driller: SDS 45F Glear		Time: 17:30	Time: 20:0	
	440 Pa	rk Avenue So	outh, New York,NY 10016	45F, Clear AKRF/Steve Grens		Date: 2/22/05	Date: 2/22	/05
Depth (feet)	Recovery (Inches)	Blows/FL	Surface Condi	tion: Concrete	D Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			CONCRETE (12*).		윤		+-	8.2
2	2"	7 10	CONCRETE and BRICK, to	ace fine brown Sand, Silt (FILL).	ND	No Odor	-	-
3	0	17 19 16	No Recovery.		ND	No Odor	Dry	
4 5	1-	14 13 11 11	Medium dense CONCRETE (FILL).	and GRAVEL, trace fine brown Sand, Silt	ND	No Odor	Dry	
? 8	0	50/1*	No Recovery.	-	ND	No Odor	Dry	
9 10	3-	8 12 12 9	Medium dense brown fine :	SAND and SILT.	0.1	No Odor	Dry	
<u>11</u> .	14"	4 5 5 9	Loose brown fine SAND and		0.1	No Odor	Dry	
13	24"	12 7 6 5	Medium dense brown fine S	AND and SILT, trace fine Gravel.	0.5	No Odor	Dry	MW/CB-8 (12*-14*)
15 16	0	50/1*	No Recovery. Rock in tip of split spoon sar	npler.	ND	No Odor	Dry	
17	1"	4 3 1 2	Loose brown fine SAND and	SILT.	ND	No Odor	Dry	
19 20	24"	2 1 2 2	Loose brown SILT and fine S	SAND, trace fine Gravel.	ND	No Odor	Wet	
21 			Augered to 23 feet below gra	ide to set well.				
24			End of boring at 23 feet belo	w grade				
26			PID - Photoionization detec					

Groundwater encountered at 18.4 feet below grade during drilling.

Soil sample MW/CB-8 (12'-14') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-8 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	Ak	R	F, Inc.	Manhattanville Rezoning Columbia University - West Harle	m, NY	Boring No	. MW/CE	3-9
				AKRF Project Number : 1047	0	Sheet 1 of 1	(5) (5) (5) (5) (5)	
	Enviro	nment	al Consultants	Sampling Method: 2' Split Spoon Driller: SDS Weather: 35F, Clear		Start Time: 06:00 Date: 2/23/05	Finish Time: 08:30 Date: 2/23/05	
	440 Park	Avenue Sou	rth, New York,NY 10016	Weather: 35F, Clear Sampler: AKRF/Steve Grens				
Depth (fest)	Recovery (Inches)	Blows/ Ft.	Surface Conditi	on: Concrete	PID Reading (ppm)	Oder	Moisture	Samples Collected for Lab Analysis
1			CONCRETE (12"). CONCRETE (Slough).			No Odor	Dry	-
2	1"	5	CONCRETE (Slough).		ND	No Odor	Dity	
3	4"	5 5 4	Top 2*: CONCRETE (Sloug Bottom 2*: Brown fine SANI	h). D and SiLT, trace fine Gravel.	ND	No Odor	Dry	
.5	8"	3 4 7 9 13	Medium dense brown fine S Ash, Asphalt, Co	AND and SILT, some oncrete, trace fine Gravel (FILL).	ND	No Odor	Dry	MW/CB-9 (4'-6')
.7	3-	10 7 7	Medium dense FILL (Ash, A trace fine Grave	sphalt), some brown fine Sand and Silt, i.	ND	No Odor	Dry	
9	3-	7 6 8	Medium dense FILL (Ash, / trace fine Grave	Asphalt), some brown fine Sand and Silt, al.	ND	No Odor	Dry	
11	4-	8 24 7 7 5	Medium dense light brown	SILT and fine SAND, trace Schist.	ND	No Odor	Dry	
13	16**	7 8 9 7	Medium dense light brown	fine SAND and SILT, trace fine Gravel.	0.5	No Odor	Dry	
15	24"	11 17 27	Top 22": Light brown fine S Bottom 2": Light brown SIL	SAND and SILT, trace fine Gravel. T, trace fine Sand.	ND	No Odor	Dry	MW/CB (14'-16')
16	1-	31 17 13 9	Medium dense brown fine	SAND and SILT, some fine Gravel.	ND	No Odor	Dry	
19 20	18"	8 15 9 8 8	Top 9": Light brown fine S. Bottom 9": Brown fine SAN	AND and SILT, trace fine Gravel. ND and SILT, trace fine Gravel.	ND	No Odor	Wet	
21 22 23			Augered to 23 feet below	grade to set well.				
24 25			End of boring at 23 feet be	elow grade.				
26 Notes:			PID - Photoionization de	etector ND - Not Detect	ed			

Groundwater encountered at 16.6 feet below grade during drilling.

Soil samples MW/CB-9 (4'-6') and MW/CB-9 (14'-16') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-9 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	AI	R	F, Inc.	Manhattanville Rezonin Columbia University - West Ha	-	Boring N	o. CB-1	0
		*****		AKRF Project Number : 10	470	Sheet 1 of 1		
	Enviro	onment	al Consultants	Sampling Method: 2' Split Spoon		Dritting Start	Finish	PER MANAGEMENT
				Driller: SDS		Time: 09:30	Time: 12:30	
	440 Park	Avenue So	uth, New York,NY 10016	Weather. 32F, Clear Sampler. AKRF/Steve Grens		Date: 2/23/05	Date: 2/23/	05
Depth (feet)	Surface Condition:			n: Concrete	PID Reading (ppm)	Oder	Moisture	Samples Collected for Lab Analysis
1			CONCRETE (12").					
2	4"	6 7	CONCRETE, ASPHALT, and	ASH, some brown fine Sand, Silt (FILL).	ND	No Odor	Dry	\vdash
.3	18"	9 8 10 11	Top 3": ASPHALT (Slough). Bottom 15": Brown fine SAND	and SILT, trace fine Gravel.	0.1	No Odor	Dry	CB-10 (2'-4')
56	14-	4 3 4 3	Top 2*: ASPHALT (Slough). Bottom 12*: Brown fine SAND		ND	No Odor	Dry	
.7 8	10"	4 3 2 4	Loose brown SILT and SAND	trace fine Gravel.	ND	No Odor	Dry	CB-10 (7*-8*)
9	4"	3 2 2 2	Top 2*: ASPHALT (Slough). Bottom 2*: Brown fine SAND a	and SILT, trace fine Gravel.	ND	No Odor	Dry	
11	2-	5 6 5 7	Medium dense brown SAND a	and SILT, trace fine Gravel.	ND	No Odor	Dry	
13	2"	7 6 7 4	Medium dense brown SAND a	nd SILT, trace fine G avel.	ND	No Odor	Wet	
15 16 17 18 19 20 21 22 23 24			End of boring at 14.7 feet belo	w grade due to refusal on bedrock.				

Soil samples CB-10 (2'-4') and C-10 (7'-8') sent to the lab to be analyzed for VOCs (8260).

	Ak	RI	F, Inc.	Manhattanville Rezonir Columbia University - West H		Boring N	o. MW/CI	B-11
				AKRF Project Number : 1	0470	Sheet 1 of 1	V-10 Miles	
İ			al Consultants	Sampling Method: 2' Spfit Spoon Driller: SDS Weather: 20F, Clear		Start Time: 09:30 Date: 2/24/05	Finish Time: 13:00 Oste: 2/24/0	5
	440 Park	Avenue Sou	th, New York, NY 10016	Sampler: AXRF/Steve Grens				۳.
Depth (feet)	Recovery (Inches)	Blown/Ft.	Surface Condit	ion: Concrete	PID Reading (ppm)	30 pp 0	Moisture	Samples Collected for Lab Analysis
1			CONCRETE (12").					
2			Top 6*: Brown fine SAND a Bottom 6*: CONCRETE St.	nd SILT (removed by hand auger).				
3	2-	10 9 9		SAND and SILT, trace fine Gravel,	0.1	No Odor	Dry	MW/ CB-11 (2'-3')
5	2-	8 6 50/2*	Top 1*: Brown fine SAND a Bottom 1*: BRICK (FILL).	and SILT, trace Brick (FILL).	ND	No Odor	Dry	
·	0	50/1*	No Recovery. Brick noted in tip of split sp	oon sampler.				
9	3-	18 12 10 10	Medium dense red/brown	SAND, SILT, and fine GRAVEL.	ND	No Odor	Dry	
11	17**	5 12 20 28	Dense brown SAND and S	ILT, trace fine Gravel.	ND	No Odor	Dry	
13	7"	23 28 20 19	Dense red/brown SAND a	nd SILT, trace fine Gravel.	ND	No Odor	Dry	
15	18"	12 4 3 6	Loose dark brown SILT, s Shell Frageme	ome fine Sand, trace fine Gravel, nts.	ND	No Odor	Dry	MW/ CB-11 (14.5'-
17	19"	4 2 3 3	Shell Frageme	, some Sand, trace fine Gravel, nts. ND and SILT, trace fine Gravel.	ND	No Odor	Wet	
19 20 21 22			Augered to 23 feet below	grade to set well.				
23 24 25			End of boring at 23 feet b	elow grade.				

Notes: PID - Photoionization detector Groundwater encountered at 17.7 feet below grade during drilling. Notes:

Soil sample MW/CB-11 (2'-3') sent to lab to be anlyzed for VOCs (8260).

Soil sample MW/CB-9 (14'-16') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-9 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

AKRF, Inc.

Manhattanville Rezoning Columbia University - West Harlem, NY

Boring No. MW/CB-12

AKRF Project Number: 10470

	Envi	ronmen	ital Consultants	Sampling Method:	2 Split Spoon		Drilling Start		
l			nui o o no o nui nu	Driller :	SDS		Time: 14:15	Finish Time: 16:4	
i	440 Pa	rk Avenue Sc	outh, New York,NY 10016	Weather	20F, Clear		Date: 2/24/05	Date: 2/24	
			10010	Sampler;	AKRF/Steve Grens			10010. 224	,03
Depth (feet)	Recovery (Inches)	Blows/Ft.	Surface Conditio	n: Concrete		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
			CONCRETE (6°).			-		_	10
1	200	6	CONCRETE and ASPHALT).	some brown Sand, Si	it,	-		_	-
١.	3-	5	trace fine Gravel.			1	1		
2	_	6	T						
3 4	3=	4 3 2 3	Top 2°: CONCRETE and ASP Bottom 1°: Brown SAND and 3	PHALT (FILL). SILT and fine GRAVE	L	ND	No Odor	Dry	
5	0.5**	7 7 7 7	Medium dense COAL and ASI	H, trace brown fine Sa	nd, Silt (FILL).	ND	No Odor	Dry	
78	13"	4 8 9	Medium dense red/brown SAN	ND and SILT, trace fine	e Gravel.	ND	No Odor	Dry	MW/ CB-12 (6'-8')
9	12"	10 4 5	Top 2": Brown fine SAND and Bottom 10": Red/brown SILT a			ND	No Odor	Dry	
11	11"	4 2 2 2	Loose red/brown SILT and fine	e SAND, trace fine Gra	ivel.	ND	No Odor	Dry	
13	10"	9 7 6 4	Top 2": Brown fine SAND and Middle 6": Red/brown SILT and Bottom 2": Dark brown SAND Shell Fragments.	d fine SAND.	ravel,	ND	No Odor	Dry	
<u>15</u>	1"	9 12 16 14	Medium dense brown fine to m	edium SAND, some S	silt.	ND	No Odor	Dry	
<u>17</u>	9-	10 8 16 14	Top 3": Red/brown fine SAND, Middle 3": Brown fine SAND, tr Bottom 3": Brown/gray SAND,	ace Silt. some Silt, trace fine G	iravel.	ND	No Odor	Dry	
	8-	16 18 10 13	Top 2*: Red/brown SILT, some Bottom 6*: Light brown medium	n SAND, trace Silt.	I.	ND	No Odor	Dry	MW/ CB-11 (18.5'-20')
<u>21</u> 22	4-	4 7 8 7	Medium dense light brown SAN		•	ND	No Odor	Wet	
23	3"	5 7 3 8	Medium dense brown SAND, s	ome fine Gravel, trace	Silt.	ND	No Odor	Dry	
25 26			Augered to 26 feet below grade	to set well.					
27			End of boring at 26 feet below o	grade.		\vdash		-	
lotes:		****	PID - Photoionization detecto	r	ND - Not Detected		***************************************		

Groundwater encountered at 21 feet below grade during drilling.

Soil samples MW/CB-12 (6'-8') and MW/CB-2 (18.5'-20') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-12 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

\mathbf{A}	KRI	F, Inc.	Manhattanville Rezoning Columbia University - West Harl	em, NY	Boring No	. MW/C	B-13
			AKRF Project Number : 104	70	Sheet 1 of 1		PARTIES.
Envi	ronmenta	al Consultants	Sampling Method: 2' Split Spoon		Start Time: 06:15	Finish Time: 08:15	
			Driller: SDS Weather: 20F, Clear		Date: 2/25/05	Date: 2/25/0	5
Î	ark Avenue Sou	th, New York,NY 10016	Sampler: AKRF/Stave Grens	Finda		Τ.	lected lysis
Depth (feet) Recovery (Inches	Blown/ Ft.	Surface Condition	on: Concrete	PID Reading (ppm)	b b b b b b b b b b b b b b b b b b b	Moistur	Samples Collected for Lab Analysis
1		CONCRETE (12").					
2"	7	CONCRETE (Slough), trace	brown Sand, Silt.				
3 10"	4 4 3	Loose red/brown fine SAND	and SILT, trace fine Gravel.	ND	No Odor	Dry	MW/ CB-13 (2'-4')
5 12"	3 7 10	Medium dense light brown fir	ne SAND and SILT, trace fine Gravel.	ND	No Odor	Dry	
7 6-	14 13 14 6	Medium dense light brown fir Wood (FILL).	ne SAND and SILT, trace fine Gravel,	ND	No Odor	Dry	MW/ CB-13 (6'-8')
9 6-	6 4 5 7	Medium dense light brown fi	ne SAND and SILT, trace fine Gravel.	ND	No Odor	Dry	
11 13	14 4 3 2 2	Loose light brown fine SAND	and SILT, trace fine Gravel.	ND	No Odor	Dry	
13		Augered to 15 feet below gr	ade to set well.				
15 16 17 18 19 20 21 22 23 24 25 26		End of boring at 15 feet beld	ow grade.				

Groundwater encountered at 9.8 feet below grade during drilling.

Soil samples MW/CB-13 (2'-4') and MW/CB-13 (6'-8') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-13 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

A	KR	F, Inc.	Manhattanville Rezonin Columbia University - West Hai		Boring No	. MW/	CB-14
	•		AKRF Project Number : 10	470	Sheet 1 of 1		
Env	'ironmen	ital Consultants	Sampling Method: 2' Split Spoon		Start	Finish	
440 F	ark Avenue So	outh, New York, NY 10016	Dritter: SDS Weather: 20F, Clear		Time: 00:15 Date: 2/25/05	Time: 11:2	
			Sampler: AKRF/Steve Grens		DAME: 225/05	Date: 2/25	05
Depth (feet) Recovery (inches)	Blows/ Ft.	Surface Condition	n: Concrete	PID Reading (ppm)	Oder	Moisture	iamples Collected for Lab Analysis
1.	3	CONCRETE (6"). Top 5": ASPHALT and GRAVE	=[(EUI)				
2 7**	3 4	Bottom 2": Dark brown fine SA	ND, SILT and fine GRAVEL.				
-3 4"	1 1 1 1		nd SILT, trace CONCRETE (FILL).	ND	No Odor	Dry	MW/ CB-14 (2'-4')
5 6	1 2 3	Top 3*: COAL and ASH (FILL). Bottom 7*: Light brown SILT ar	nd fine SAND.	ND	No Odor	Dry	
7 12"	8 7 8 9		T and fine SAND, trace fine Gravel.	ND	No Odor	Dry	MW/ CB-14 (6'-8')
9 14"	9 12 17 21	Top 11": Light brown SAND, tra Bottom 3": Black/gray SAND an	ace fine Gravel. nd SILT, trace fine Gravel.	5.0	Petroleum-like odor noted on bottom 3*	Dry	
111 12 13 14 15		Augered to 17 feet below grade	to set well.				
9 0 1 - 2 2 3 4 - 3 5 5 - 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5		End of boring at 17 feeet below to the second of boring at 17 feeet below to the second of the secon	grade.				

Soil sample MW/CB-14 (2'-4') sent to lab to be anlyzed for VOCs (8260).

Soil sample MW/CB-14 (6'-8') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-14 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	AKRF, Inc.	i .	nhattanville Rezoning University - West Harler	m, NY	Boring No	. CB-15			
			,	AKRF	Project Number : 1047	0	Sheet 1 of 1	S	
	Enviro	nmenta	al Consultants	Sampling Method:	2' Split Spoon		Start Time: 06:10	Finish Time: 08:35	
	440 Dark	August Coud	th, New York,NY 10016	Dräler : Weather:	SDS 30F, Clear		Date: 2/28/05	Date: 2/28/05	,
Т		AVGRUG SCUI	II, IMAN TOIR, INT TOUTO	Sampler:	AKRF/Steve Grens	Ē	 	1	- 8 I
Depth (feet)	Recovery (Inches)	Blows/ Ft.	Surface Condition:	Concrete		PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
1			CONCRETE (12").						<u> </u>
	0.5"	50/4*	CONCRETE and BRICK, trace g	gray/brown fine Sand	I, Sift (FILL).	ND	No Odor	Dry	
34	10"	10 10 6 7	Medium dense dark brown SANI trace Brick (FILL).	D and SILT, some fir	ne Gravel,	0.1	No Odor	Dry	CB-15 (2'-4')
5 6	2**	7 6 10 14	Medium dense brown SAND, so	me Silt, fine Gravel.		ND	No Odor	Dry	
- 7 - 8	4"	34 15 14 12	Medium dense dark brown SAN some Silt.	D and GRAVEL,		ND	No Oder	Dry	
9 10	1"	10 9 6 4	Medium dense dark brown SAN	ID, SILT and trace fir	ne GRAVEL.	ND	No Odor	Dry	
11 12	11"	4 3 3 3	Loose light brown fine SAND an	nd SILT.		ND	No Odor	Dry	
13	21"	4 5 10	Medium dense light brown fine	SAND and SILT, trac	ce fine Gravel.	ND	No Odor	Dry	
15	11"	15 11 16 15	Dense light brown fine SAND at	nd SILT, some fine C	Sravel.	ND	No Odor	Dry	CB-15 (14'-16')
16 17 18	- 0.5"	11 16 22 21 30	Dense black/gray fine SAND, S	ILT, and fine GRAVI	EL.	ND	No Odor	Dry	
	0	50/2*	No Recovery.						
20			End of boring at 18.2 feet below bedrock.	พ grade due to refusa	al on possible				
22									
23 24 25									
26 27									
Notes:			PID - Photoionization detector	or	ND - Not Detecte	d			

Groundwater not encountered.

Soil samples MW/CB-15 (2'-4') and MW/CB-15 (14'-16') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.







AKRF, Inc. Manhattanville Rezoning Boring No. MW/CB-16 Columbia University - West Harlem, NY AKRF Project Number: 10470 **Environmental Consultants** Sampling Method: 2' Split Spoon SDS Tima; 09:10 Time: 12:30 30F, Overcast 440 Park Avenue South, New York, NY 10016 Date: 2/28/05 AKRF/Steve Grens Surface Condition: Concrete Odor Depth Samples for Lab 1 BRICK and CONCRETE, some brown Sand, Sllt, 1" 14 trace fine Gravel. 3 Concrete slab noted at 3.8 feet below grade. ND No Odor Dry 50/1" Augered to 4 feet below grade. Top 2*: Dark brown SAND, SILT, and fine GRAVEL. Bottom 8": CONCRETE and GRAVEL (FILL). MW/ 10" ND No Odor Dry **CB-16** 50/4" (4'-6') Augered through fill from 6 to 8 feet below grade. Continued split spoon sampling at 8 feet below grade. Top 5*: CONCRETE (Slough). Bottorn 10*: Light brown SiLT and fine SAND. 15" ND No Odor Dry Top 1": CONCRETE (Slough). 11 Bottom 13": Light brown SILT and fine SAND. No Odor Dry **CB-16** 10 12 (10'-12') Top 2*: CONCRETE (Slough). Bottom 1*: Light brown SILT and fine SAND. 13 13 No Odor Dry 13 Loose light brown SILT and fine SAND. 15 ND No Odor Wet 16 Medium dense loose light brown SILT and fine SAND. 17 11" No Odor Wet 19 20 Augered to 22 feet below grade to set well. 21 22 23 End of boring at 22 feet below grade. 24 25 26 ND - Not Detected

Groundwater encountered at 15 feet below grade during drilling.

Soil sample MW/CB-16 (4'-6') sent to lab to be anlyzed for VOCs (8260).

Soil sample MW/CB-16 (10'-12') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-16 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

Boring No. MW CB-17 AKRF, Inc. Manhattanville Rezoning Columbia University - West Harlem, NY AKRF Project Number: 10470 Finish **Environmental Consultants** 2' Split Spoon Start Time: 14:00 Time: 14:50 SDS Date: 2/28/05 30F, Overcast Venther 440 Park Avenue South, New York, NY 10016 Sampler: Odor Surface Condition: Concrete 문 CONCRETE (12°). ND MW/CB-17 Top 2": CONCRETE (Slough). No Odor Bottom 8": Brown SAND and SILT, trace fine Gravel. Top 6": Brown SAND and SILT, trace fine Gravel. 10-(1'-2') 2 MW/ No Odor Bottom 5"; Red/brown SAND and SILT, trace fine Gravel. ND Dry CB-17 9 3 (2'-4') Loose brown SAND, SILT and fine GRAVEL, trace Wood (FILL). No Odor ND 5_ Wet 6 Loose CONCRETE (Slough). No Odor Wet ND Medium dense light brown SAND and SILT, trace fine Gravel. No Odor Wet ND 9_ 23 10 11_ Augered to 13 feet below grade to set well. 12 13 End of boring at 13 feet below grade. 14__ 15 16__ 17 18 19 20___ 21 22___ 23_ 24 25___ 26 27 ND - Not Detected

Notes: PID - Photoionization detector Groundwater encountered at 5.5 feet below grade during drilling.

Soil sample MW/CB-17 (1'-2') sent to the lab to be analyzed for VOCs (8260).

Soil sample MW/CB-17 (2'-4') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-17 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	A.	NΚ	F, Inc.	Manhattanville Rezoning Columbia University - West Harle		Boring	No. MW	CB-18
				AKRF Project Number : 1047	0	Sheet 1 of 1		
	Envi	ronment	tal Consultants	Sampling Method: 2' Sphil Spoon		Orilling Start	Finish	0070 1019
<u></u>	440 Pa	rk Avenue So	uth, New York,NY 10016	: SDS eather: 30F, Overcast Sampler: AKRF/Steve Grens		Time: 10:25 Date: 3/2/05	Time: 12:3 Date: 3/2/0	
Depth (feet)	Recovery (Inches)	Blows/FL	Surface Condition: C		D Reading (ppm)	Oder	Moisture	Bamptes Collected for Lab Analysis
1			CONCRETE (12").		OF.		+-	3 2
2	1"	7 14	ASPHALT and CONCRETE, trace		ND	No Odor	Dry	-
3	12"	7 4 14 10	Top 10": Dark brown fine SAND a Bottom 2": Brown SILT and fine S	nd SILT, trace fine Gavel. AND, trace fine Gravel.	ND	No Odor	Dry	
56	15"	6 7 4 3	Medium dense brown fine SAND a		ND	No Odor	Dry	MW/ CB- 18 (4'-6')
<u>7</u>	4"	5 19 27 15	Dense brown SAND and SILT, trad	ce fine Gravel.	ND	No Odor	Dry	
9 10	16**	12 8 7 5	Medium dense red/brown SAND at trace fine Gravel.	nd SILT,	ND	No Odor	Wet	
11 12 13 14 15			Augered to 15 feet below grade to s	set well.				
16 17 18 19 20 21 22 23 24 25 26			End of boring at 15 feet below grade	g.		-		

Groundwater encountered at 10 feet below grade during drilling.

Soil sample MW/CB-18 (4'-6') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-18 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	AKRF, Inc.			Manhattanville Columbia University -			Boring No.	MW CE	3-19
			,	AKRF Project Nui	mber : 10470		Sheet 1 of 1		
	Enviro	nmenta	l Consultants	Sampling Method: 2' Split Sp	oon		Start	Finish	
	LIIVIIO	HITCHIC	a consultante	Driller: SDS				Time: 15:15 Date: 3/2//05	
	440 Park	Avenue Sout	h, New York,NY 10016	Weather: 30F, Over Sampler: AKRF/Ste			Color, Carro		
Depth (feet)	Surface Condition: C		Concrete	mon Deselva (rom)		Oder	Moisture	Samples Collected for Lab Analysis	
-			CONCRETE (12").						
1	3"	4	Medium dense light brown SAND	and SILT, trace fine Gravel, Co	ncrete (Slough) N	ID	No Odor	Dry	MW/CB-19 (1'-2')
3	4"	7 4 4 4	Top 2°: Brown SAND and SILT, I Bottom 2°: BRICK and TILE (FIL	trace fine Gravel. L).		ID	No Odor	Dry	
5	13"	3 4 2 3	Loose brown SAND and SILT, tr.	ace fine Gravel.	,	ND.	No Odor	Dry	
7	8"	5 1 1 2	Top 6": Brown SAND and SILT, Bottom 2": Red/brown SILT and	trace fine Gravel. fine SAND.	,	۷D	No Odor	Dry	
9	21"	3 12 11 11	Top 8*: Brown SILT and SAND, Middle 12*: Red/brown SILT and Brick (FILL). Bottom 11*: Dark brown SILT and	d SAND, trace fine Gravel,	(0.8	Slight petroleum-like odor noted	Dry	MW/ CB-19 (8'-10')
10	20"	11 2 2 2 2 3	Top 6": Brown SILT and fine SA Middle 12": Red/brown SILT and Bottom 2": Gray SILT and fine S	IND. d fine SAND.		ND	Slight petroleum-like odor noted	Wet	
13 14 15			Augered to 16 feet below grade	e to set well.					
16 17 18			End of boring at 16 feet below	grade.			_		
19 20									
<u>21</u>	-								
23									
24	. [
25	-								
27			PID - Photolonization detect		Not Detected				

Notes: PID - Photolonization detector Groundwater encountered at 11 feet below grade during drilling.

Soil sample MW/CB-19 (1'-2') sent to the lab to be analyzed for VOCs (8260).

Soil sample MW/CB-19 (8'-10') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-19 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	\mathbf{A}	KR	F, Inc.	Manhattanville Rezoni Columbia University - West H	•	Boring No	. MW /0	CB-20
	Envir		tol Consultant	AKRF Project Number :	10470	Sheet 1 of 1		***************************************
			tal Consultants	Sampling Method: 2' Split Spoon Driller: SDS		Start Time: 08:00	Finish Time: 11:3	10
	T	rk Avenue S	outh, New York,NY 10016	Weather: 25F, Clear Sampler: AKRF/Steve Grens		Date: 3/3/05	Date: 3/3/0	15
Depth (foat)	Recovery (Inches)	Blows/ Ft.	Surface Condition:	Concrete	PID Reading (ppm)	990 0	Moisture	Samples Collected for Lab Analysis
1			CONCRETE (12").				1	1 5
2	2"	5 6	Dark brown fine SAND and SILT	, trace Asphalt, Concrete (FILL).	ND	No Odor	Dry	MW/CB-11
34	0	5 6 5 7	No Recovery. Rock noted in tip of split spoon s	ampler.	ND	No Odor	Dry	(1'-2')
5 6	14"	7 6 5 8	Top 6": Dark brown SAND and fi Bottom 8": Red/brown SAND and	ne GRAVEL, some Silt. d SILT, trace fine Gravel.	ND	No Odor	Dry	
7 8	1"	8 50/2"	Very dense red/brown SILT, SAN Rock fragment noted in tip of spli	ID, and fine GRAVEL. It spoon sampler.	ND	No Odor	Dry	
9 10	19"	6 7 11 12	Medium dense brown fine SAND	and SILT.	ND	No Odor	Dry	
11 12	21"	5 10 18 11	Dense red/brown SAND and SIL	T, some fine Gravel.	ND	No Odor	Dry	
13 14	17"	5 5 5 8	Top 10": Brown SAND and SILT, Bottom ア: Dark brown SAND and	trace fine Gravel. d SILT, some fine Gravel.	ND	No Odor	Dry	
<u>15</u>	9**	8 10 13 11	Top 3": Red/brown SAND and SII Bottom 6": Brown SILT and fine S	.T, trace fine Gravel. AND.	ND	No Odor	Dry	
<u>17</u> 18	18"	8 10 15 11	Top 12": Dark brown SILT and fin Bottom 6": Red/brown fine SAND	e SAND. and SILT, trace Brick (FILL).	ND	No Odor	Dry	
<u>19</u>	18"	2 3 3 3	Loose brown SAND and fine GRA	VEL, some Silt.	ND -	No Odor	Dry	MW/ CB-20 (18'-20')
<u>21</u>	10"	2 3 5 8	Top 2": Brown SAND, some fine (Bottom 8": Brown/ light gray SANI	D, trace Silt.	ND	Slight petroleum-like odor	Wet	
<u>23</u> 24	8"	3 5 6 9	Medium dense brown SAND, som trace Silt.	e fine Gravel,	ND	Slight petroleum-like odor	Wet	
25 26 27			Augered to 27 feet below grade to	set well.				
28			End of boring at 27 feet below grad	de.				
lotes: Froundwate	er encounte	red at 21 F	PID - Photoionization detector feet below grade during drilling.	ND - Not Detecte	<u>а</u> — — — — —	<u> </u>		

Groundwater encountered at 21.5 feet below grade during drilling.

Soil sample MW/CB-20 (1'-2') sent to the lab to be analyzed for VOCs (8260).

Soil sample MW/CB-20 (18*-20') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-20 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	Ak	RI	F, Inc.	Manhattanville Rezoning Columbia University - West Harlem,	NY	Boring No.	MW/CB	-21
				AKRF Project Number : 10470		Sheet 1 of 1	000000000000000000000000000000000000000	
	Enviro	nmenta	al Consultants	Sampling Method: 2' Split Spoon Driller: SDS		Start Time: 12:15	Finish Time: 15:00	
	440 Park	Avenue Sou	eth, New York,NY 10016	Weather: 25F, Clear Sampler: AKRF/Steve Grens		Date: 3/3/05	Date: 3/3/05	
Dapth (feet)	Recovery (Inches)	Blows/ Ft.	Surface Condition	n: Asphalt	PID Reading (ppm)	Odor	Moisture	Samples Collected for Lab Analysis
_			Top 6*: ASPHALT PAVEMEN Bottom 6*: CONCRETE.	п.				
1	1"	2	BRICK and ASPHALT, trace	brown fine Sand, Silt (FILL).	ND	No Odor	Dry	
3	2"	10 7 5 5	Loose BRICK and ASPHALT	, trace brown fine Sand, Sit, fine Gravel (FILL).	ND	No Odor	Dry	
5	6"	3 6 4 9	Top 4": BRICK, ASPHALT, a Bottom 2": Dark brown fine S	nd CONCRETE (Slough). AND, SILT and fine GRAVEL (FILL).	ND	No Odor	Dry	
7	3-	21 11 3 21 16	Medium dense BRICK, trace and fine Gravel (ND	No Odor	Dry	
9		10_	Void encountered 10 to 12 fo Augered to 10 feet below gra	eet below grade due to fill (brick). ade.				
11 12	0	50/1*	No Recovery. Brick noted in tip of split spo Augered through fill (Brick)!	on sampler. o 14 feet below grade.				
13		7 2	Very loose brown fine SAN	D and SILT.	ND	No Odor	Dry	
16	10"	2 2						
17	18"	4 5 11	Medium dense brown fineS	AND and SILT.	ND	No Odor	Dry	MW/CB- 21 (1 18")
18	- 21"	15 5 3 1	Very loose brown fine SAN	D and SILT.	ND	- No Odor	Dry	
21 22 23 24			Augered to 25 feet below g	rade to set well.				
25 26			End of boring at 25 feet be	low grade.				
Notes:			PID - Photoionization de	ector ND - Not Detected	-		3	

Groundwater encountered at 19.2 feet below grade during drilling.

Soil sample MW/CB-21 (16'-18') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-21 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

	\mathbf{A}	KR	F, Inc.	Manhattanville Rezoning Columbia University - West Harl		Boring No. MW/CB-22			
				AKRF Project Number : 104	70	Sheet 1 of 1			
1	Envi	ronment	tal Consultants	Sampling Method: 2' Split Spoon		Drilling Start	Finish		
1	440.0			Driller: SDS Weather: 28F, Clear		Time: 09:00	Time: 11:0		
	440 Pa	rk Avenue sou	uth, New York,NY 10016	AKRF/Steve Grens		Date: 3/4/05	Date: 3/4/0	15	
Depth (feet)	Recovery (Inches)	Blown Ft.	Surface Condition:	Concrete	PID Reading (ppm)	à	Moisture	Samples Collected for Lab Analysis	
1			CONCRETE (12").				+	1	
2	2"	7 50/1*		ce dark brown fine SAND, SILT (FILL).	ND	No Odor	Dry	_	
34	0	5 5 5	No Recovery. Rock noted in tip of split spoon s	ampler.					
56	0.5*	1 1 1	Very loose brown fine SAND and	SILT.	ND	No Odor	Dry		
<u>?</u>	0	50/1"	No Recovery.						
9	3"	2 4 8 10	Top 2": COAL and ASH (FILL). Bottom 1": Brown fine SAND and	SILT (FILL).	ND	No Odor	Dry		
<u>11</u>	18"	6 7 7 5	Medium dense brown SAND and Brick, Coal, Ash (FILL		ND	No Odor	Dry		
13 14	14"	4 5 4 5	Loose brown fine SAND and SIL		ND	No Odor	Dry	MW/CB- 22 (12' 14')	
<u>15</u>	20*	1 1 1	Very loose brown fine SAND and	SILT.	ND	No Odor	Wet		
17 18 19			Augered to 19 feet below grade to	o set well.					
20			End of boring at 19 feet below gra	rde.					
21									
22									
23									
<u>24</u> <u>25</u>		V.							
		A							
27	- 1	- 1			1 1				

Groundwater encountered at 14 feet below grade during drilling.

Soil sample MW/CB-22 (12'-14') sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals.

MW/CB-22 groundwater sample sent to the lab to be analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), Pesticides (8081) and TAL Metals (total and dissolved).

AKRF, Inc.		Manhattanville Rezoning/Columbia University West Harlem, NY AKRF Project Number : 10470		Well No. MW/CB-1	
				Sheet 1	of 1
		Drilling Method:	Truck-mounted, HSA	Drilling	
Environmental Consultants 440 Park Avenue South New York, NY 10016		Sampling Method:	See boring MW/CB-1	Start	Finish Time:12:10
		Driller:	SDS	Time: 10:15	Date: 2/15/05
		Weather:	45F Overcast	Date: 2/15/05	Date: 2/15/05
		Field Supervisor: AKRF/Steve Grens			
Depth (feet)	Well Construction	Surface Cond			
		Flush-mounte grade	d well cover, locking cap an	d concrete seal 0 to	o 0.5' below
4		Well riser from	n 0.5' to 10'		
6		Natural backf	ill 0.5' to 7'		
8		Bentonite sea	al 7' to 9'		
10		Sand pack file	ter 9' to 20'		
16 18 20		20-Slot well s	screen 10' to 20'		
22	19/189	1		•	
24					
<u>26</u> -	_				
28	4				
30					
32	7		rement of 14.0 feet below g		

AK	RF, Inc.	Manhattanville Rezoning/Columbia University West Harlem, NY AKRF Project Number: 10470		Well No. MW/CB-2		
				Sheet 1	of 1	
Environn	nental Consultants	Sampling Method:	Truck-mounted, HSA	Drilling	图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 图 	
	norman oomountainto	Driller:	See boring MW/CB-2 SDS	Start	Finish	
440 F	Park Avenue South	Weather:	45F Overcast	Time: 13:45	Time: 15:30	
	v York, NY 10016	Field Supervisor:		Date: 2/15/05	Date: 2/15/05	
Depth (feet)	Well Construction					
2		Flush-mounted below grade Well riser from Natural backfill		concrete seal 0 to	0.5'	
6		Bentonite seal	6' to 8'			
10						
12		Sand pack filter	8' to 19'			
14						
18		20-Slot well scr	een 9' to 19'			
				•		
- <u>26</u>						
_ <u>28</u>						
_3ō						
32						
tes:	Stabilized groundwat	er level measurem	ent of 12.7 feet below grade	taken prior to		
	sampling on 3/14/05.		3	prior to		

.

AKRF, Inc.		Manhattanville Rezoning/Columbia University West Harlem, NY AKRF Project Number: 10470		Well No. MW/CB-3			
				Sheet 1	of 1		
		Drilling Method:	Truck-mounted, HSA	Drilling			
nvironm	ental Consultants	Sampling Method:	See boring MW/CB-3	Start	Finish		
.IIVIIOIIII	cital consultants	Driller:	SDS	Time: 07:35	Time: 12:00		
440 P	ark Avenue South	Weather:	49F Overcast	Date: 2/16/05	Date: 2/16/05		
	York, NY 10016	Field Supervisor:	AKRF/Steve Grens				
Depth (feet)	Well Construction	Surface Condition: Asphalt					
		Flush-mounted grade	d well cover, locking cap ar	nd concrete se	al 0 to 0.5' below		
6 8		Well riser fron	n 0.5' to 21'				
10 12 14		Natural backfi	iil 0.5' to 18'				
18		Bentonite sea	al 18' to 20'				
22		Sand pack fil	ter 20' to 31'				
26 28 30	A second	20-Slot well s	screen 21' to 31'				
<u>3</u> 2	-			d- d-b!	- to		
Notes:	Ctabilized groups	lwater level measu	rement of 25.9 feet below g	rade taken prid	or to		

AK	RF, Inc.	Manhattanville Rezoning/Columbia University West Harlem, NY AKRF Project Number : 10470		Well No. MW/CB-	
				Sheet 1	of 1
Environn	nental Consultants	Drilling Method:	Truck-mounted, HSA	Drilling	THE RESERVE
	icital consultants	Sampling Method:	See boring MW/CB-4	Start	Finish
440 F	ark Avenue South	Driller :	SDS	Time: 12:45	Time: 15:35
	York, NY 10016	Weather:	49F Overcast	Date: 2/16/05	Date: 2/16/05
ivew	7 TOIK, NY 10016	Field Supervisor:	AKRF/Steve Grens		
Depth (feet)	Well Construction	Surface Condit	tion: Asphalt		
		Flush-mounted below grade	well cover, locking cap	and concrete se	eal 0 to 0.5'
-4 -6		Well riser from	0.5' to 12'		
-8		Natural backfill	0.5' to 9'		
10		Bentonite seal 9	9' to 11'		
12					
14		Sand pack filter	11' to 22'		
16		20-Slot well scre	een 12' to 22'		
20					
22				5	
24					
26					
28					
30					
32					
es: S	Stabilized groundwat	er level measurem	ent of 15.2 feet below gra	ade taken price	10
s	ampling on 3/14/05.	7.34	grand set below gra	ade taken prior	10

AKRF, Inc.		Manhattanville Rezoning/Columbia University West Harlem, NY AKRF Project Number: 10470		Well No. MW/CB-5			
nvironm	ental Consultants	Sampling Method:	See boring MW/CB-5	Start	Finish		
1141101111	iontai oonoaname	Driller:	SDS	Time: 07:35	Time:10:10		
440 P	ark Avenue South	Weather:	45F Overcast	Date: 2/17/05	Date: 2/17/05		
New	York, NY 10016	Field Supervisor: AKRF/Steve Grens					
Depth (feet)	Well Construction	Surface Condition: Concrete					
		Flush-mounte	d well cover, locking cap ar	d concrete sea	al 0 to 0.5'		
2		below grade					
		Well riser from	n 0.5' to 7'				
4		Natural backfi	II 0.5' to 4'				
		Bentonite sea	1 4' to 6'				
8	-						
10		Sand pack filter 6' to 17'					
12-							
14							
16							
10		20-Slot well s	creen 7' to 17'				
18		1					
20							
			,				
22	-	1					
24	7	1					
<u>2</u> 6-							
28	-	1					
30							
<u>3</u> 5							
	Ctabilized ground	water level measu	rement of 11.3 feet below g	rade taken pric	or to		
lotes:							

AKRF, Inc.		Manhattanville Rezoning/Columbia University West Harlem, NY		Well No. MW/CB-7			
	,	AKRF Project Number: 10470		Sheet 1	of 1		
F		Drilling Method:	Truck-mounted, HSA	Drilling			
Environn	nental Consultants	Sampling Method:	See boring MW/CB-7	Start	Finish		
	2 2 2 22 23	Driller:	SDS	Time: 13:30	Time:16:00		
	Park Avenue South	Weather:	45F Overcast	Date: 2/22/05	Date: 2/22/05		
Nev	v York, NY 10016	Field Supervisor:	AKRF/Steve Grens				
Depth (feet)	Well Construction	Surface Condition: Concrete					
		Flush-mounted	well cover, locking cap an	d concrete sea	al 0 to 0.5'		
2		below grade					
		Natural backfill	0.5' to 2'				
4		Bentonite seal					
6		Well riser from	0.5' to 5'				
8							
10		Sand pack filter	r 4' to 15'				
12		20-Slot well scr	reen 5' to 15'				
14							
16							
18	}						
<u>2</u> ō							
22			26				
24							
26							
28							
30							
32							
otes:	Stabilized groundwa	ter level measurem	ent of 11.9 feet below grad	e taken prior t	0		
1	sampling on 3/16/05.		3.22	р. тот с	5.		

AK	RF, Inc.	Manhattanville Rezoning/Columbia University West Harlem, NY AKRF Project Number: 10470			io. MW/CB-8
		Drilling Method:	Truck-mounted, HSA	Sheet 1	of 1
Environn	nental Consultants	Sampling Method:	See boring MW/CB-8	Drilling Start	
2-110-110-E-1110	ioniai conoditanto	Driller:	SDS	Time: 17:30	Finish
440 F	Park Avenue South	Weather:	45F Overcast	Date: 2/22/05	Time:20:00
	York, NY 10016	Field Supervisor:	AKRF/Steve Grens	Date: 2/22/05	Date: 2/22/05
Depth (feet)	Well Construction			·	
		Flush-mounted	well cover, locking cap and	concrete seal	O to O E'
2		below grade	coron, rooming cap and	concrete seal	0 10 0.5
		Well riser from	0.5' to 13'		
4		Trem riser from	0.5 10 13		
6		Natural backfill	0.5' to 10'		
			2000 20 (57)		
8					
10		Bentonite seal	10' to 12'		
12		Sand pack filter	r 12' to 23'		
14					
16					
		20-Slot well scr	non 421 to 221		
18		20-310t Well SCI	een 13 to 23		
20					
			*		
22					
24	Start Best Revers				
26					
<u>28</u>					
30					
32					
	Stabilized groundwa	ter level measures	nent of 16.1 feet below grade		
	sampling on 3/16/05.	ter lever measurem	lent of 16.1 feet below grade	taken prior to	

AKI	RF, Inc.	1	oning/Columbia University We Harlem, NY	Well !	No. MW/CB-9
HIL	Kr, Inc.	AKRF P	roject Number : 10470	Sheet 1	of 1
		Drilling Method:	Truck-mounted, HSA	Drilling	
Environm	ental Consultants	Sampling Method:	See boring MW/CB-9	Start	Finish
	icital concurant	Driller:	SDS	Time: 06:00	Time: 08:30
440 P	ark Avenue South	Weather:	35F Clear	Date: 2/23/05	Date: 2/23/05
	York, NY 10016	Field Supervisor:	AKRF/Steve Grens		
Depth (feet)	Well Construction				
	\sim		d well cover, locking cap an	d concrete sea	il 0 to 0.5'
2		below grade			
		Well riser from	1 0.5' to 13'		
4					
			II 0 5' to 10'		
6		Natural backfi	11 0.5 to 10		
8					
		Bentonite sea	I 10' to 12'		
10					
		Sand pack filt	er 12' to 23'		
12		Sand pack int	61 12 10 20		
	- 1				
14					
 -	- 1869				
10	- SUFFER SUFFER	20-Slot well s	creen 13' to 23'		
 -	- 1997	20 Olot Hem 5			
10					
20 -	- 1000				
20					
22	- 1 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7			
24		7			
24	-	1			
	-1				
	-				
28					
	-	1			
30		1			
	┥	1			
32					
			rement of 15.6 feet below gr	ade taken prio	rto
Notes:	Stabilized ground	water level measu	rement of 15.6 feet below gi	ade tanen prio	1 10

AK	RF, Inc.	W.	ezoning/Columbia University est Harlem, NY roject Number: 10470		No. MW/CB-1
		Drilling Method:	Truck-mounted, HSA	Sheet 1	of 1
Environn	nental Consultants	Sampling Method:	See boring MW/CB-11	Drilling	
	ional concutants	Driller :	SDS	Start Time: 09:30	Finish
440 F	Park Avenue South	Weather:	20F Clear		Time: 13:00
	v York, NY 10016	Field Supervisor:	AKRF/Steve Grens	Date: 2/24/05	Date: 2/24/05
Depth (feet)	Well Construction	Surface Condit			
		Flush-mounted	well cover, locking cap and	d concrete see	1040051
2		below grade	. Wen cover, locking cap an	u concrete sea	ii 0 to 0.5
		Well riser from	0.5' to 13'		
4		Well fiser from	0.5 10 13		
6		Natural backfill	0.5' to 10'		
		Tractaran babilin	0.0 10 10		
8					
	the same the	_			
10		Bentonite seal	10' to 12'		
12		Sand pack fliter	r 12' to 23'		
		3.5%			
14					
16					
		20-Slot well scr	een 13' to 23'		
18					
20					
22					
24					
26					
20					
28					
28					
30					
32					
	PA-LIIII				
tes:	Stabilized groundwa	ter level measurem	ent of 16.9 feet below grade	e taken prior to	0
	sampling on 3/14/05.				

ATZI	DE Inc	Manhattanville Re	ezoning/Columbia University est Harlem, NY	Well N	o. MW/CB-12
AK	RF, Inc.	AKRF PI	roject Number : 10470	Sheet 1	of 1
		Drilling Method:	Truck-mounted, HSA	Drilling	
nvironm	ental Consultants	Sampling Method:	See boring MW/CB-12	Start	Finish
LITVITOTITI	cittai consultante	Driller :	SDS	Time: 14:15	Time: 16:45
440 P	ark Avenue South	Weather:	20F Clear	Date: 2/24/05	Date: 2/24/05
	York, NY 10016	Field Supervisor:	AKRF/Steve Grens		
Depth (feet)	Well Construction	Surface Condi			
<u>-</u>		Flush-mounted below grade	d well cover, locking cap ar	nd concrete sea	al 0 to 0.5'
4	-	Well riser from	0.5' to 16'		
6 		Natural backfi	II 0.5' to 13'		
14		Bentonite sea	I 13' to 15'		
16		Sand pack filt	ter 15' to 26'		
24 26		20-Slot well s	creen 16' to 26'		
28					
30					
32	Stabilized ground	water level measur	rement of 20.9 feet below g	rade taken prio	or to
Notes:		05.		:	

AK	RF, Inc.		oning/Columbia University Harlem, NY ² roject Number : 10470	West Well N	of 1
	0.002	Drilling Method:	Truck-mounted, HSA	Drilling	OI I
Environn	nental Consultants	Sampling Method:	See boring MW/CB-13	Start	Finish
		Driller:	SDS	Time: 06:15	Time: 08:15
440 F	Park Avenue South	Weather:	20F Clear	Date: 2/25/05	Date: 2/25/05
Nev	v York, NY 10016	Field Supervisor:	AKRF/Steve Grens		Pater Erzoros
Depth (feet)	Well Construction	Surface Condit			
	\sim	Flush-mounted	well cover, locking cap	and concrete seal	0 to 0.5'
2		below grade			- 15 010
		Natural backfill	0.5' to 2'		
4		Bentonite seal			
6		Well riser from	0.5' to 5'		
8					
10		Sand pack filter	r 4' to 15'		
12		20-Slot well scr	een 5' to 15'		
14					
16					
18					
20					
22				*	
24					
26					
- 28					
30					
32					
tes:	Stabilized groundwa	ter level measurem	ent of 7.8 feet below grad	de taken prior to	
	sampling on 3/16/05.		-		

AKI	RF, Inc.		oning/Columbia University Wes Harlem, NY Project Number : 10470	Well N	of 1
	,			Sheet 1 Drilling	Of 1
		Drilling Method:	Truck-mounted, HSA	Start	Finish
Environm	ental Consultants	Sampling Method:	See boring MW/CB-14 SDS	Time: 09:15	Time: 11:30
	CONTROL MATERIAL CONTROL COMPANY OF ANY OF	Driller:	20F Clear	Date: 2/25/05	Date: 2/25/05
	ark Avenue South	Weather:		Date: 2720/00	Dutor Education
Depth (feet)	York, NY 10016 Well Construction	Field Supervisor: Surface Condi	AKRF/Steve Grens tion: Concrete	<u> </u>	
<u>2</u> <u>4</u> <u>6</u>		Flush-mounted below grade Well riser from Natural backfil Bentonite seal	II 0.5' to 4'	concrete sea	l 0 to 0.5'
8 10 12 14 16		Sand pack filte			
18					
<u>32</u> - Notes:	Stabilized ground sampling on 3/16/		rement of 8.2 feet below grad	le taken prior t	to

AK	RF, Inc.	W	ezoning/Columbia University est Harlem, NY roject Number : 10470	Well	No. MW/CB-10
		Drilling Method:		Sheet 1	of 1
Environn	nental Consultants	Sampling Method:	Truck-mounted, HSA	Drilling	THE PARTY OF THE P
	ornar conoditants	Driller:	See boring MW/CB-16 SDS	Start	Finish
440 F	Park Avenue South	Weather:		Time: 09:10	Time: 12:30
	v York, NY 10016	Field Supervisor:	30F Overcast AKRF/Steve Grens	Date: 2/28/05	Date: 2/28/05
Depth (feet)	Well Construction				
		Flush-mounted below grade Well riser from	well cover, locking cap a	nd concrete se	al 0 to 0.5'
8		Natural backfill	0.5' to 9'		
₁₂		Bentonite seal 9	9' to 11'		
14		Sand pack filter	11' to 22'		
18		20-Slot well scre	een 12' to 22'		
20					
22					
24					
26					
28					
30					
<u>32</u>					
otes:	Stabilized groundwat sampling on 3/16/05.	er level measureme	ent of 18.1 feet below grad	e taken prior to)

AKRF, Inc.		Manhattanville Rezoning/Columbia University West Harlem, NY		Well No. MW/CB-17	
AN	Kr, Inc.	AKRF P	roject Number : 10470	Sheet 1	of 1
		Drilling Method:	Truck-mounted, HSA	Drilling	DESIGNATION STORY
nvironm	ental Consultants	Sampling Method:	See boring MW/CB-17	Start	Finish Time: 14:50
		Driller :	SDS	Time: 14:00	Date: 2/28/05
440 P	ark Avenue South	Weather: 30F Clear		Date: 2/28/05	Date: 2/26/05
New	York, NY 10016	Field Supervisor:	AKRF/Steve Grens		
Depth (feet)	Well Construction	Surface Condi			
	\sim	Flush-mounte	d well cover, locking cap ar	nd concrete sea	il 0 to 0.5'
2		below grade			
		Well riser from	0.5' to 3'		
4		Natural backfi	II 0.5' to 1'		
6		Bentonite sea	I 1' to 2'		
8	-	Sand pack filt	er 2' to 13'		
10		Sand pack inc			
12	•	20-Slot well s	creen 3' to 13'		
14					
16	1				
18	4				
20	4				
<u></u>	7				
<u>24</u> -					
<u>-</u> 26					
28-					
30-					
<u>3</u> z̄-			amount of C A fact holour are	ade taken prior	to
Notes:	Stabilized ground	water level measu	rement of 6.4 feet below gra	ade taken prior	

AK	RF, Inc.	We	ezoning/Columbia University est Harlem, NY roject Number : 10470	Well I	No. MW/CB-18
		Drilling Method:	Truck-mounted, HSA	Drilling	of 1
Environn	nental Consultants	Sampling Method:	See boring MW/CB-18	Start	Finish
		Driller :	SDS	Time: 10:25	Time: 12:30
440 F	Park Avenue South	Weather:	30F Overcast	Date: 3/2/05	Date: 3/2/05
New	York, NY 10016	Field Supervisor:	AKRF/Steve Grens	Date: 0/2/00	Date: 3/2/03
Depth (feet)	Well Construction	Surface Condit	ion: Concrete	•	
2	\sim	below grade Natural backfill		d concrete sea	al 0 to 0.5'
4	SAME HELAND	Bentonite seal	2' to 4'		
6		Well riser from	0.5' to 5'		
8		Sand pack filter	4 to 45		
10		Sand pack inte	74 10 15		
12		20-Slot well scr	een 5' to 15'		
14					
16					
18					
20			i sa		
22					
24					
26					
28					
30					
32					
otes:	Stabilized groundwa	ter level measuren	ent of 8.8 feet below grade	taken prior to	sampling
	sampling on 3/14/05.				

AKRF, Inc.		Manhattanville Re We	ezoning/Columbia University est Harlem, NY	Well No. MW/CB-19	
AK	KF, Inc.	AKRF PI	roject Number : 10470	Sheet 1	of 1
		Drilling Method:	Truck-mounted, HSA	Drilling	
Environm	nental Consultants	Sampling Method:	See boring MW/CB-19	Start	Finish
LIIVIIOIIII	icital consultants	Driller :	SDS	Time:13:20	Time:15:15
440 P	ark Avenue South	Weather:	30F Overcast	Date: 3/2/05	Date: 3/2/05
New	York, NY 10016	Field Supervisor:	AKRF/Steve Grens		
Depth (feet)	Well Construction	ction Surface Condition: Concrete			
	\sim		d well cover, locking cap an	d concrete se	al 0 to 0.5'
2		below grade	0.5 to 6!		
		Well riser from Natural backfil	1 0.5 to 6		
4					
6		Bentonite seal	3' to 5'		
8	-				
10					
		Sand pack filt	er 5' to 16'		
12					
14		20-Slot well so	creen 6' to 16'		
16	-				
18	<u>-</u>				
<u>-</u> 20					
<u></u>					
<u>-</u>					
<u>2</u> 6					
<u>-</u> 28					
30-	-1				
32-					
Notes:	Stabilized ground	water level measur	rement of 10.6 feet below gr	rade taken prid	or to
	sampling on				

AK	RF, Inc.	W	ezoning/Columbia University est Harlem, NY	Welf	No. MW/CB-20
			roject Number : 10470	Sheet 1	of 1
Environn	nental Consultants	Drilling Method:	Truck-mounted, HSA	Drilling	REPORT OF SMILES
LITALIOIIII	nemai Consultants	Sampling Method:	See boring MW/CB-20	Start	Finish
440 5	Oork August Court	Driller :	SDS	Time: 08:00	Time:11:30
	Park Avenue South	Weather:	25F Overcast	Date: 3/3/05	Date: 3/3/05
IVEV	v York, NY 10016	Field Supervisor:	AKRF/Steve Grens		
Depth (feet)	Well Construction	Surface Condit	tion: Concrete		
2		Flush-mounted below grade	well cover, locking cap and	d concrete sea	al 0 to 0.5'
		Well riser from	0.5' to 17'		
8		Natural backfill	0.5' to 14'		
10					
12					
14					
16		Bentonite seal 1	14' to 16'		
18					
		Sand pack filter	16' to 27'		
22		The second secon	*		
24					
26		20-Slot well scre	een 17' to 27'		
30					
-32					
es:	Stabilized groundwa	ter level measurem	ent of 21.4 feet below grade	taken prior t	
1.	sampling on 3/16/05.		and a seriou grade	taken prior to	,

	DE I	Manhattanville Ro	ezoning/Columbia University est Harlem, NY	Well	No. MW/CB-21
AK	RF, Inc.		roject Number : 10470	Sheet 1	of 1
		Drilling Method:	Truck-mounted, HSA	Drilling	
nvironm	ental Consultants	Sampling Method:	See boring MW/CB-21	Start	Finish
-11411011111	icital condutant	Driller:	SDS	Time: 12:15	Time: 15:00
440 P	ark Avenue South	Weather:	25F Clear	Date: 3/3/05	Date: 3/3/05
	York, NY 10016	Field Supervisor:	AKRF/Steve Grens		
Depth (feet)	Well Construction				
<u>-</u>	\sim	Flush-mounte below grade	d well cover, locking cap a	nd concrete se	eal 0 to 0.5'
4		Well riser from	n 0.5 to 15'		
8		Natural backf	ill 0.5' to 12'		
14	-	Bentonite sea	al 12' to 14'		
16		Sand pack fil	ter 14' to 25'		
24		20-Slot well s	screen 15' to 25'		
28					
32		La lavel	rement of 19 0 feet helow o	rade taken nri	or to
Notes:	Stabilized ground sampling on 3/16		rement of 19.0 feet below g	rade taken pri	

AK	RF, Inc.	We	ezoning/Columbia University est Harlem, NY roject Number : 10470	Well No. MW/CB		
		Drilling Method:	The state of the s	Sheet 1	of 1	
Environm	nental Consultants	Sampling Method:	Truck-mounted, Hollow Stem Au			
	ontai concaitanto	Driller:	See boring MW/CB-22 SDS	Start	Finish	
440 F	ark Avenue South	Weather:		Time: 09:00	Time: 11:00	
	York, NY 10016	Field Supervisor:	28F Clear	Date: 3/4/05	Date: 3/4/05	
Depth (feet)	Well Construction	Surface Condit	AKRF/Steve Grens ion: Concrete			
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30		Flush-mounted below grade Well riser from Natural backfill Bentonite seal of Sand pack filter 20-Slot well screen	0.5' to 6' 6' to 8'	d concrete se	al 0 to 0.5'	
32						
es:	Stabilized groundwat	er level measurem	ent of 14.3 feet below grade	taken prior t		
1.	sampling on 3/16/05.		grade	taken prior t	U	

L

APPENDIX C SOIL AND GROUNDWATER ANALYTICAL DATA SHEETS

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive Westborough, Massachusetts 01581-1019 (508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: AKRF, Inc.

Laboratory Job Number: L0501658

Address: 116 E. 27th Street

7th Floor

New York, NY 10016

Date Received: 17-FEB-2005

Attn: Mr. Axel Schwendt

Date Reported: 24-FEB-2005

Project Number: 10470-0213

Delivery Method: Alpha

Site: COLUMBIA-MANHATTANVILLE REZONI

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0501658-01 L0501658-02 L0501658-03 L0501658-04 L0501658-05 L0501658-06 L0501658-07 L0501658-08	MW/CB-1 (2'-4') MW/CB-1 (10'-12') MW/CB-2 (10'-12') MW/CB-2 (12'-14') MW/CB-3 (20'-22') FIELD BLANK TRIP BLANK MW/CB-4 (14'-16')	HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY

Authorized by: James Todaro

This document electronically signed

02240514:00 Page 1 of 78

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0501658

Metals

The wg194621-1 Duplicate % RPD for Ca is outside of the acceptance criteria for the method. The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

The wg194621-2 MS % recoveries for Al, Ca, Fe, and Mg are invalid because the sample concentrations are greater than four times the spike amount added.

Pesticides

he project-required reporting limits were not achieved on L0501658-01 through -05

Semi-Volatile Organics

The LCS has a low % recovery for 2,4-Dinitrophenol.

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-01

Date Collected: 15-FEB-2005 11:00

MW/CB-1 (2'-4')

Date Received : 17-FEB-2005

Sample Matrix:

SOIL

Date Reported : 24-FEB-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D.F	TE	ID
					PREP	ANAL	
Solids, Total	0.0			·····			
SOLIUS, IOCAL	92.	96	0.10	30 2540G		0218 11:2	7 LC
Total Metals				1 3051			
Aluminum, Total	4900	mg/kg	4.3	1 6010B	0218 14:00	0001 11.0	7 ри
Antimony, Total	ND	mg/kg	2.2	1 6010B	0218 14:00		
Arsenic, Total	2.3	mg/kg	0.43	1 6010B	0218 14:00		
Barium, Total	21.	mg/kg	0.43	1 6010B	0218 14:00		
Beryllium, Total	ND	mg/kg	0.22	1 6010B	0218 14:00		
Cadmium, Total	ND	mg/kg	0.43	1 6010B	0218 14:00		
Calcium, Total	2200	mg/kg	4.3	1 6010B			
Chromium, Total	7.9	mg/kg	0.43	1 6010B	0218 14:00		
Cobalt, Total	4.2	mg/kg	0.86	1 6010B	0218 14:00		
Copper, Total	10.	mg/kg	0.43	1 6010B	0218 14:00		
Iron, Total	10000	mg/kg	2.2	1 6010B	0218 14:00		
Lead, Total	12.	mg/kg	2.2	1 6010B	0218 14:00		
Magnesium, Total	2300	mg/kg	4.3	1 6010B	0218 14:00		
Manganese, Total	240	mg/kg	0.43	1 6010B	0218 14:00		
Mercury, Total	ND	mg/kg	0.09	1 7471A	0218 14:00		
Nickel, Total	7.8	mg/kg	1.1	1 6010B	0222 19:50		
Potassium, Total	270	mg/kg	110		0218 14:00		
Selenium, Total	ND	mg/kg	0.86	1 6010B	0218 14:00		
Silver, Total	ND	mg/kg	0.43	1 6010B 1 6010B	0218 14:00		
Sodium, Total	130	mg/kg	86.		0218 14:00		
Thallium, Total	ND	mg/kg	0.43	1 6010B	0218 14:00		
Janadium, Total	9.1	mg/kg	0.43	1 6010B	0218 14:00		
Zinc, Total	27.	mg/kg	2.2	1 6010B	0218 14:00		
		mg/ kg	4.4	1 6010B	0218 14:00	0221 11:37	RW
Volatile Organics by GC/MS				1 8260B		0219 21:28	вт
Methylene chloride	ND	ug/kg	27.				
l,1-Dichloroethane	ND	ug/kg	4.1				
Chloroform	ND	ug/kg	4.1				
Carbon tetrachloride	ND	ug/kg	2.7				
,2-Dichloropropane	ND	ug/kg	9.5				
Dibromochloromethane	ND	ug/kg	2.7				
.,1,2-Trichloroethane	ND	ug/kg	4.1				
Petrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
Prichlorofluoromethane	ND	ug/kg	14.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0501658-01

MW/CB-1 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA PREP	TE ANAL	ID
					28			
Volatile Organics by GC/MS 8	3260 continu	ied		1	8260B		0219 21:2	28 BT
1,2-Dichloroethane	ND	ug/kg	2.7					
1,1,1-Trichloroethane	ND	ug/kg	2.7					
Bromodichloromethane	ND	ug/kg	2.7					
trans-1,3-Dichloropropene	ND	ug/kg	2.7					
cis-1,3-Dichloropropene	ND	ug/kg	2.7					
1,1-Dichloropropene	ND	ug/kg	14.					
Bromoform	ND	ug/kg	11.					
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7					
Benzene	ND	ug/kg	2.7					
Toluene	ND	ug/kg	4.1					
Ethylbenzene	ND	ug/kg	2.7					
Chloromethane	ND	ug/kg	14.					
Bromomethane	ND	ug/kg	5.4					
Vinyl chloride	ND	ug/kg	5.4					
Chloroethane	ND	ug/kg	5.4					
1,1-Dichloroethene	ND	ug/kg	2.7					
trans-1,2-Dichloroethene	ND	ug/kg	4.1					
Trichloroethene	ND	ug/kg	2.7					
1,2-Dichlorobenzene	ND	ug/kg	14.					
1,3-Dichlorobenzene	ND	ug/kg	14.					
1,4-Dichlorobenzene	ND	ug/kg	14.					
Methyl tert butyl ether	ND	ug/kg	5.4					
p/m-Xylene	ND	ug/kg	2.7					
o-Xylene	ND	ug/kg	2.7					
cis-1,2-Dichloroethene	ND	ug/kg	2.7					
Dibromomethane	ND	ug/kg	27.					
1,4-Dichlorobutane	ND	ug/kg	27.					
Iodomethane	ND	ug/kg	27.					
1,2,3-Trichloropropane	ND	ug/kg	27.					
Styrene	ND	ug/kg	2.7					
Dichlorodifluoromethane	ND	ug/kg	27.		-			
Acetone	ND	ug/kg	27.					
Carbon disulfide	ND	ug/kg	27.					
2-Butanone	ND	ug/kg	27.					
Vinyl acetate	ND	ug/kg	27.					
4-Methyl-2-pentanone	ND	ug/kg	27.					
2-Hexanone	ND	ug/kg	27.					
Ethyl methacrylate	ND	ug/kg	27.					
Acrolein	ND	ug/kg	68.					
Acrylonitrile	ND	ug/kg	27.					
Bromochloromethane	ND	ug/kg	14.					
Tetrahydrofuran	ND	ug/kg	54.					
2,2-Dichloropropane	ND	ug/kg	14.					
1,2-Dibromoethane	ND	ug/kg	11.					
1,3-Dichloropropane	ND	ug/kg	14.					
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.7					
Bromobenzene	ND	ug/kg	14.					
n-Butylbenzene	ND	ug/kg	2.7					
sec-Butylbenzene	ND	ug/kg	2.7					



Laboratory Sample Number: L0501658-01

MW/CB-1 (2'-4')

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	DATE II		
					PREP AI	NAL	
Volatile Organics by GC/MS 8	260 continu	ied		1 8260B	. 0210	21:28 BT	
tert-Butylbenzene	ND	ug/kg	14.		. 0217	£1,20 DI	
o-Chlorotoluene	ND	ug/kg	14.				
p-Chlorotoluene	ND	ug/kg	14.				
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.				
Hexachlorobutadiene	ND	ug/kg	14.				
Isopropylbenzene	ND	ug/kg	2.7				
p-Isopropyltoluene	ND	ug/kg	2.7				
Naphthalene	ND	ug/kg	14.				
n-Propylbenzene	ND	ug/kg	2.7				
1,2,3-Trichlorobenzene	ND	ug/kg	14.				
1,2,4-Trichlorobenzene	ND	ug/kg	14.				
1,3,5-Trimethylbenzene	ND	ug/kg	14.				
1,2,4-Trimethylbenzene	ND	ug/kg	14.				
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.				
Ethyl ether	ND	ug/kg	14.				
12 30002	N.D	ug/ kg	14.				
Surrogate(s)	Recovery		QC Cr	iteria			
1,2-Dichloroethane-d4	101.	용					
Toluene-d8	97.0	8					
4-Bromofluorobenzene	109.	양					
Dibromofluoromethane	94.0	9			V9		
SVOC's by GC/MS 8270				1 8270C	0218 12:45 0221	20.42 14	
Acenaphthene	ND	ug/kg	180	1 02/00	0218 12:45 0221	20:42 HL	
Benzidine	ND	ug/kg	1800				
1,2,4-Trichlorobenzene	ND	ug/kg	180				
Hexachlorobenzene	ND	ug/kg	180				
Bis(2-chloroethyl)ether	ND	ug/kg	180				
1-Chloronaphthalene	ND	ug/kg ug/kg	180				
2-Chloronaphthalene	ND	ug/kg ug/kg	220				
1,2-Dichlorobenzene	ND	ug/kg ug/kg	180				
1,3-Dichlorobenzene	ND	ug/kg ug/kg	180	•			
1,4-Dichlorobenzene	ND	ug/kg ug/kg	180				
3,3'-Dichlorobenzidine	ND	ug/kg ug/kg	1800				
2,4-Dinítrotoluene	ND	ug/kg ug/kg	220				
2,6-Dinitrotoluene	ND	ug/kg ug/kg	180				
Azobenzene	ND		180				
Fluoranthene		ug/kg					
4-Chlorophenyl phenyl ether	300 ND	ug/kg	180				
4-Bromophenyl phenyl ether		ug/kg	180				
Bis(2-chloroisopropyl)ether	ND	ug/kg	180				
Bis(2-chlorofsopropy1)ether Bis(2-chloroethoxy)methane	ND ND	ug/kg	180				
dexachlorobutadiene	ND ND	ug/kg	180				
	ND	ug/kg	360				
Hexachlorocyclopentadiene	ND	ug/kg	360				
Hexachloroethane	ND	ug/kg	180				
Sophorone	ND	ug/kg	180				
Naphthalene	ND	ug/kg	180				
Nitrobenzene	ИD	ug/kg	180				
IDPA/DPA	ND	ug/kg	540				

Laboratory Sample Number: L0501658-01

MW/CB-1 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DAT: PREP	E ANAL	ID
SVOC's by GC/MS 8270 continue	ed ·		- 1, 1	1	8270C	0218, 12:45 0	221 20	42 HL
n-Nitrosodi-n-propylamine	ND	ug/kg	180					
Bis(2-ethylhexyl)phthalate	ND	ug/kg	360					
Butyl benzyl phthalate	ND	ug/kg	180					
Di-n-butylphthalate	ND	ug/kg	180					
Di-n-octylphthalate	ND	ug/kg	180					
Diethyl phthalate	ND	ug/kg	180					
Dimethyl phthalate	ND	ug/kg	180					
Benzo(a)anthracene	ND	ug/kg	180					
Benzo(a)pyrene	ND	ug/kg	180					
Benzo(b) fluoranthene	ND	ug/kg	180					
Benzo(k) fluoranthene	ND	ug/kg	180					
Chrysene	ND	ug/kg	180					
Acenaphthylene	ND	ug/kg	180					
Anthracene	ND	ug/kg	180					
Benzo(ghi)perylene	ND	ug/kg	180					
Fluorene	ND	ug/kg	180					
Phenanthrene	180	ug/kg	180					
Dibenzo(a,h)anthracene	ND	ug/kg	180					
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180					
Pyrene	240	ug/kg	180					
Benzo(e)pyrene	ND	ug/kg	180					
Biphenyl	ND	ug/kg	180					
Perylene	ND	ug/kg	180					
Aniline	ND	ug/kg	360					
4-Chloroaniline	ND	ug/kg	180					
	ND	ug/kg	180					
1-Methylnaphthalene	ND	ug/kg	180					
2-Nitroaniline	ND	ug/kg	180					
3-Nitroaniline	ND	ug/kg	250					
4-Nitroaniline	ND	ug/kg	180					
Dibenzofuran	ND	ug/kg	1800					
a,a-Dimethylphenethylamine	ND	ug/kg	360	-	•			
Hexachloropropene		ug/kg ug/kg	360					
Nitrosodi-n-butylamine	ND	ug/kg ug/kg	290					
2-Methylnaphthalene	ND	ug/kg ug/kg	720					
1,2,4,5-Tetrachlorobenzene	ND		720					
Pentachlorobenzene	ND	ug/kg ug/kg	720					
a-Naphthylamine	ND	, ,	720					
b-Naphthylamine	ND	ug/kg	360					
Phenacetin	ND	ug/kg	720					
Dimethoate	ND	ug/kg						
4-Aminobiphenyl	ND	ug/kg	360					
Pentachloronitrobenzene	ND	ug/kg	360					
Isodrin	ND	ug/kg	360					
p-Dimethylaminoazobenzene	ND	ug/kg	360					
Chlorobenzilate	ND	ug/kg	720					
3-Methylcholanthrene	ND	ug/kg	720					
Ethyl Methanesulfonate	ND	ug/kg	540					
Acetophenone	ND	ug/kg	720					
Nitrosodipiperídine	ND	ug/kg	720					



Laboratory Sample Number: L0501658-01

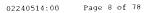
MW/CB-1 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continue	dia si			1 8270C	0219 12.45 0221 20 12 22
7,12-Dimethylbenz(a)anthracen	e ND	ug/kg	360		0218 12:45 0221 20:42 HL
n-Nitrosodimethylamine	ND	ug/kg	1800		
2,4,6-Trichlorophenol	ND	ug/kg	180		
p-Chloro-m-cresol	ND	ug/kg	180		
2-Chlorophenol	ND	ug/kg	220		
2,4-Dichlorophenol	ND	ug/kg	360		
2,4-Dimethylphenol	ND	ug/kg	360		
2-Nitrophenol	ND	ug/kg	720		
4-Nitrophenol	ND	ug/kg	360		
2,4-Dinitrophenol	ND	ug/kg	720		
4,6-Dinitro-o-cresol	ND	ug/kg	720		
Pentachlorophenol	ND	ug/kg	720		
Phenol	ND	ug/kg	250		
2-Methylphenol	ND	ug/kg	220		
3-Methylphenol/4-Methylphenol	ND	ug/kg	220		
2,4,5-Trichlorophenol	ND	ug/kg	180		
2,6-Dichlorophenol	ND	ug/kg	360		
Benzoic Acid	ND	ug/kg	1800		
Benzyl Alcohol	ND	ug/kg	360		
Carbazole	ND	ug/kg	180		
Pyridine	ND	ug/kg	1800		
2-Picoline	ND	ug/kg	720		
Pronamide	ND	ug/kg	720		
Methyl methanesulfonate	ND	ug/kg	720		
Surrogate(s)	Recovery		QC Crit	eria	
2-Fluorophenol	57.0	8	25-120	CIIU	
Phenol-d6	67.0	8	10-120		
Nitrobenzene-d5	59.0	96	23-120		
2-Fluorobiphenyl	54.0	00	30-120		
2,4,6-Tribromophenol	63.0	96	19-120	_	
4-Terphenyl-d14	82.0	8	18-120	·	
PAH by GC/MS SIM 8270M				1 8270C-M	0210 12115 0202 10 22 22
Acenaphthene	18.	ug/kg	7.2	1 02.70C-F1	0218 12:45 0221 19:27 RL
2-Chloronaphthalene	ND	ug/kg	7.2		
Pluoranthene	300	ug/kg	7.2		
lexachlorobutadiene	ND	ug/kg	18.		
aphthalene	39.	ug/kg	7.2		
enzo(a)anthracene	170	ug/kg	7.2		
enzo(a)pyrene	140	ug/kg	7.2		
enzo(b)fluoranthene	200	ug/kg	7.2		
enzo(k)fluoranthene	100	ug/kg ug/kg	7.2		
hrysene	160	ug/kg ug/kg	7.2		
cenaphthylene	ND	ug/kg ug/kg	7.2		
nthracene	35.	ug/kg ug/kg	7.2		
enzo(ghi)perylene	92.	ug/kg ug/kg	7.2		
luorene	15.	ug/kg ug/kg	7.2		
henanthrene	180	ug/kg ug/kg			
	100	ug/kg	7.2		

Laboratory Sample Number: L0501658-01

MW/CB-1 (2'-4')

PARAMETER	RESULT	UNITS	RDL R	EF METHOD	DATE ID PREP ANAL
AH by GC/MS SIM 8270M continu	ed:			1 8270C-M	0218 12:45 0221 19:27 RL
oibenzo(a,h)anthracene	31.	ug/kg	7.2		
Indeno (1, 2, 3-cd) Pyrene	89.	ug/kg	7.2		
	240	ug/kg	7.2		
Pyrene	ND	ug/kg	7.2		
l-Methylnaphthalene	7.2	ug/kg	7.2		
2-Methylnaphthalene Pentachlorophenol	ND	ug/kg	29.		
Hexachlorobenzene	ND	ug/kg	29.		
	35.	ug/kg	7.2		
Perylene	ND	ug/kg	7.2		
Biphenyl	ND	ug/kg	7.2		
2,6-Dimethylnaphthalene	14.	ug/kg	7.2		
1-Methylphenanthrene	100	ug/kg	7.2		
Benzo(e) Pyrene	ND	ug/kg	29.		
Hexachloroethane	ND	~9, 49	•		
a	Recovery		OC Crit	eria	
Surrogate(s)	50.0	%	25-120		
2-Fluorophenol	68.0	96	10-120		
Phenol-d6	52.0	8	23-120		
Nitrobenzene-d5	51.0	ş	30-120		
2-Fluorobiphenyl	76.0	96	19-120		
2,4,6-Tribromophenol 4-Terphenyl-d14	75.0	8	18-120		
4-Terphenyi-di4	, , , , ,				e syang tap
Polychlorinated Biphenyls				1 8082	0218 10:30 0222 20:27 JB
Aroclor 1221	ND	ug/kg	36.2		
Aroclor 1232	ND	ug/kg	36.2		
Aroclor 1242/1016	ND	ug/kg	36.2		
Aroclor 1248	ND	ug/kg	36.2		
Aroclor 1254	ND	ug/kg	36.2		
Aroclor 1260	ND	ug/kg	36.2		
- L. L.	Recovery		QC Crit	eria	
Surrogate(s)	64.0	8	30-150		
2,4,5,6-Tetrachloro-m-xylene	65.0	%	30-150		
Decachlorobiphenyl	03.0	· ·			
Organochlorine Pesticides		*		1 8081	0218 10:15 0224 00:23 BM
Delta-BHC	ND	ug/kg	3.62		
Lindane	ND	ug/kg	3.62		
Alpha-BHC	ND	ug/kg	3.62		
Beta-BHC	ND	ug/kg	3.62		
Heptachlor	ND	ug/kg	3.62		
Aldrin	ND	ug/kg	3.62		
Heptachlor epoxide	ND	ug/kg	3.62		
Endrin	ND	ug/kg	3.62		
Endrin aldehyde	ND	ug/kg	3.62		
Endrin ketone	ND	ug/kg	3.62		
Dieldrin	ND	ug/kg	3.62		
4,4'-DDE	ND	ug/kg	3.62		
4,4'-DDD	ND	ug/kg	3.62		
4.4 :000			3.62		



Laboratory Sample Number: L0501658-01

MW/CB-1 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA:	re	ID	
						PREP	ANAL		
Organochlorine Pesticides con	tinued			1	8081	0218 10:15	0224 02	in the	
Endosulfan I	ND	ug/kg	3.62	_	0021	0210 10.13	0224 00:2	23 BW	
Endosulfan II	ND	ug/kg	3.62						
Endosulfan sulfate	ND	ug/kg	3.62						
Methoxychlor	ND	ug/kg	3.62						
Toxaphene	ND	ug/kg	14.5						
Chlordane	ND	ug/kg	14.5						
cis-Chlordane	ND	ug/kg	3.62						
trans-Chlordane	ND	ug/kg	3.62						
Surrogate(s)	Recovery		QC Cri	teria	9				
2,4,5,6-Tetrachloro-m-xylene	50.0	%	30-150		_				
Decachlorobiphenyl	54.0	ક	30-150						



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-02 MW/CB-1 (10'-12') Date Collected: 15-FEB-2005 11:30

Date Received: 17-FEB-2005

SOIL Sample Matrix:

Date Reported: 24-FEB-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA'	ΓE	ID
YARMIE 1 D.C.					PREP	ANAL	
Solids, Total	90.	ş	0.10	30 2540G		0218 11:2	.7 LC
Solids, local	,						
Total Metals				1 3051			7,7
Aluminum, Total	6300	mg/kg	4.4	1 6010B	0218 14:00		
Antimony, Total	ND	mg/kg	2.2	1 6010B	0218 14:00		
Arsenic, Total	2.4	mg/kg	0.44	1 6010B	0218 14:00		
Barium, Total	25.	mg/kg	0.44	1 6010B	0218 14:00		
Beryllium, Total	ND	mg/kg	0.22	1 6010B	0218 14:00		
Cadmium, Total	ND	mg/kg	0.44	1 6010B	0218 14:00		
Calcium, Total	2500	mg/kg	4.4	1 6010B	0218 14:00		
Chromium, Total	10.	mg/kg	0.44	1 6010B	0218 14:00		
Cobalt, Total	5.7	mg/kg	0.87	1 6010B	0218 14:00		
Copper, Total	12.	mg/kg	0.44	1 6010B	0218 14:00		
Iron, Total	13000	mg/kg	2.2	1 6010B	0218 14:00		
Lead, Total	9.7	mg/kg	2.2	1 6010B	0218 14:00		
Magnesium, Total	2900	mg/kg	4.4	1 6010B	0218 14:00		
Manganese, Total	280	mg/kg	0.44	1 6010B	0218 14:00		
Mercury, Total	ND	mg/kg	0.09	1 7471A	0222 19:50	0223 14:	36 DM
Nickel, Total	10.	mg/kg	1.1	1 6010B	0218 14:00		
Potassium, Total	370	mg/kg	110	į 6010B	0218 14:00		
Selenium, Total	ND	mg/kg	0.87	1 6010B	0218 14:00		
Silver, Total	ND	mg/kg	0.44	1 6010B	0218 14:00		
Sodium, Total	190	mg/kg	87.	1 6010B	0218 14:00	0221 11:	48 RW
Thallium, Total	ND	mg/kg	0.44	1 6010B	0218 14:00		
Vanadium, Total	11.	mg/kg	0.44	1 6010B	0218 14:00	0221 11:	48 RW
Zinc, Total	32.	mg/kg	2.2	1 6010B	0218 14:00	0 0221 11:	48 RW
Volatile Organics by GC/MS 8	3260			1 8260B		0220 13	:36 BT
Methylene chloride	ND	ug/kg	28.				
1,1-Dichloroethane	ND	ug/kg	4.3				
Chloroform	ND	ug/kg	4.3				
Carbon tetrachloride	ND	ug/kg	2.8				
1.2-Dichloropropane	ND	ug/kg	10.				
Dibromochloromethane	ND	ug/kg	2.8				
1,1,2-Trichloroethane	ND	ug/kg	4.3				
Tetrachloroethene	ND	ug/kg	2.8				
Chlorobenzene	ND	ug/kg	2.8				
Trichlorofluoromethane	ND	ug/kg	14.				



Laboratory Sample Number: L0501658-02

MW/CB-1 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by GC/MS	8260 continu	ıed		1 8260B		0220 13:3	6 DT
1,2-Dichloroethane	ND	ug/kg	2.8			0440 10.5	0 61
1,1,1-Trichloroethane	ND	ug/kg	2.8				
Bromodichloromethane	ND	ug/kg	2.8				
trans-1,3-Dichloropropene	ND	ug/kg	2.8				
cis-1,3-Dichloropropene	ND	ug/kg	2.8				
1,1-Dichloropropene	ND	ug/kg	14.				
Bromoform	ND	ug/kg	11.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8				
Benzene	3.0	ug/kg	2.8				
l'oluene	ND	ug/kg	4.3				
Ethylbenzene	ND	ug/kg	2.8				
Chloromethane	ND	ug/kg	14.				
Bromomethane	ND	ug/kg	5.7				
Vinyl chloride	ND	ug/kg	5.7				
Chloroethane	ND	ug/kg	5.7				
1,1-Dichloroethene	ND	ug/kg	2.8				
trans-1,2-Dichloroethene	ND	ug/kg	4.3				
Trichloroethene	ND	ug/kg	2.8				
1,2-Dichlorobenzene	ND	ug/kg	14.				
l,3-Dichlorobenzene	ND	ug/kg	14.				
l,4-Dichlorobenzene	ND	ug/kg	14.				
Methyl tert butyl ether	ND	ug/kg	5.7				
o/m-Xylene	ND	ug/kg	2.8				
o-Xylene	ND	ug/kg ug/kg	2.8				
cis-1,2-Dichloroethene	ND	ug/kg ug/kg	2.8				
Dibromomethane	ND	ug/kg ug/kg	28.				
1,4-Dichlorobutane	ND	ug/kg ug/kg	28.				
Iodomethane	ND	ug/kg	28.				
1,2,3-Trichloropropane	ND	ug/kg ug/kg	28.				
Styrene	ND	ug/kg ug/kg	2.8				
Dichlorodifluoromethane	ND	ug/kg ug/kg	28.				
Acetone	ND	ug/kg ug/kg	28.	•			
Carbon disulfide	ND		28.				
2-Butanone	ND	ug/kg	28. 28.				
inyl acetate	ND	ug/kg ug/kg	28. 28.				
-Methyl-2-pentanone	ND	, ,					
?-Hexanone	ND ND	ug/kg	28.				
Sthyl methacrylate		ug/kg	28.				
crolein	ND	ug/kg	28.				
Acrylonitrile	ND ND	ug/kg	71.				
romochloromethane	ND	ug/kg	28.				
etrahydrofuran	ND	ug/kg	14.				
,2-Dichloropropane	ND	ug/kg	57.				
	ND	ug/kg	14.				
,2-Dibromoethane	ND	ug/kg	11.				
,3-Dichloropropane	ND	ug/kg	14.				
,1,1,2-Tetrachloroethane	ND	ug/kg	2.8				
romobenzene	ND	ug/kg	14.				
-Butylbenzene	ND	ug/kg	2.8				
ec-Butylbenzene	ND	ug/kg	2.8				



Laboratory Sample Number: L0501658-02

MW/CB-1 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ied .		1 8260B	0220 13;36 BT
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.8		
p-Isopropyltoluene	ND	ug/kg	2.8		
Naphthalene	ND	ug/kg	14.		
n-Propylbenzene	ND	ug/kg	2.8		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Equal equer		- 21 1-3			
Surrogate(s)	Recovery		QC Cr:	iteria	
1,2-Dichloroethane-d4	97.0	8	**		
Toluene-d8	100.	%			
4-Bromofluorobenzene	120.	8			
Dibromofluoromethane	90.0	96			
DIDIOMOTICOLOMO SILAM					
SVOC's by GC/MS 8270				1 \$270C	0218 12:45 0221 21:07 HL
Acenaphthene	ND	ug/kg	180		
Benzidine	ND	ug/kg	1800		
1,2,4-Trichlorobenzene	ND	ug/kg	180		
Hexachlorobenzene	ND	ug/kg	180		
Bis(2-chloroethyl)ether	ND	ug/kg	180		
1-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
1,2-Dichlorobenzene	ND	ug/kg	180		
1,3-Dichlorobenzene	ND	ug/kg	180		
1,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,6-Dinitrotoluene	ND	ug/kg	180		
Azobenzene	ND	ug/kg	180		
Fluoranthene	ND	ug/kg	180		
4-Chlorophenyl phenyl ether	ND	ug/kg	180		
4-Bromophenyl phenyl ether	ND	ug/kg	180		
Bis(2-chloroisopropyl)ether	ND	ug/kg	180		
Bis(2-chloroethoxy)methane	ND	ug/kg	180		
Hexachlorobutadiene	ND	ug/kg	370		
Hexachlorocyclopentadiene	ND	ug/kg	370		
Hexachloroethane	ND	ug/kg	180		
Isophorone	ND	ug/kg	180		
Naphthalene	ND	ug/kg	180		
Nitrobenzene	ND	ug/kg	180		
NDPA/DPA	ND	ug/kg	560		



Laboratory Sample Number: L0501658-02

MW/CB-1 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continue	ed .	* * * - ·		1: 8270c	0218 12:45 0221 51 02 78
n-Nitrosodi-n-propylamine	ND	ug/kg	180	1 62/00	0218 12:45 0221 21:07 HL
Bis(2-ethylhexyl)phthalate	ND	ug/kg ug/kg	370		
Butyl benzyl phthalate	ND	ug/kg	180		
Di-n-butylphthalate	ND	ug/kg ug/kg	180		
Di-n-octylphthalate	ND	ug/kg	180		
Diethyl phthalate	ND	ug/kg ug/kg	180		
Dimethyl phthalate	ND	ug/kg ug/kg	180		
Benzo(a)anthracene	ND	ug/kg	180		
Benzo(a)pyrene	ND	ug/kg ug/kg	180		
Benzo(b) fluoranthene	ND	ug/kg ug/kg	180		
Benzo(k) fluoranthene	ND				
Chrysene	ND	ug/kg	180		
Acenaphthylene	ND	ug/kg	180		
Anthracene	ND	ug/kg	180		
Benzo(ghi)perylene		ug/kg	180		
Fluorene	ND	ug/kg	180		
Phenanthrene	ND	ug/kg	180		
Dibenzo(a,h)anthracene	ND	ug/kg	180		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180		
Pyrene	ND	ug/kg	180		
Benzo(e)pyrene	ND	ug/kg	180		
Biphenyl	ND	ug/kg	180		
Perylene	ND	ug/kg	180		
Aniline	ND	ug/kg	180		
4-Chloroaniline	ND	ug/kg	370		
	ND	ug/kg	180		
l-Methylnaphthalene	ND	ug/kg	180		
2-Nitroaniline	ND	ug/kg	180		
3-Nitroaniline	ND	ug/kg	180		
4-Nitroaniline	ND	ug/kg	260		
Dibenzofuran	ND	ug/kg	180		
a,a-Dimethylphenethylamine	ND	ug/kg	1800	•	
Hexachloropropene	ND	ug/kg	370		
Nitrosodi-n-butylamine	ND	ug/kg	370		
2-Methylnaphthalene	ND	ug/kg	300		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	740		
Pentachlorobenzene	ND	ug/kg	740		
a-Naphthylamine	ND	ug/kg	740		
o-Naphthylamine	ND	ug/kg	740		
Phenacetin	ND	ug/kg	370		
Dimethoate	ND	ug/kg	740		
I-Aminobiphenyl	ND	ug/kg	370		
Pentachloronitrobenzene	ND	ug/kg	370		
Sodrin	ND	ug/kg	370		
-Dimethylaminoazobenzene	ND	ug/kg	370		
Chlorobenzilate	ND	ug/kg	740		
3-Methylcholanthrene	ND	ug/kg	740		
Ethyl Methanesulfonate	ND	ug/kg	560		
cetophenone	ND	ug/kg	740		
litrosodipíperidine	ND	ug/kg	740		

Laboratory Sample Number: L0501658-02

MW/CB-1 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued	Î.e.			1 8270¢	0218 12:45 0221 21:07 HL
7,12-Dimethylbenz(a)anthracene		ug/kg	370	* (*****	200
	ND	ug/kg	1800		
n-Nitrosodimethylamine	ND	ug/kg ug/kg	180		
2,4,6-Trichlorophenol	ND ND	ug/kg ug/kg	180		
p-Chloro-m-cresol		ug/kg ug/kg	220		
2-Chlorophenol	ND	ug/kg ug/kg	370		
2,4-Dichlorophenol	ND	ug/kg ug/kg	370		
2,4-Dimethylphenol	ND	ug/kg ug/kg	740		
2-Nitrophenol	ND	ug/kg ug/kg	370		
4-Nitrophenol	ND	ug/kg ug/kg	740		
2,4-Dinitrophenol	ND		740		
4,6-Dinitro-o-cresol	ND	ug/kg ug/kg	740		
Pentachlorophenol	ND		260		
Phenol	ND	ug/kg	220		
2-Methylphenol	ND	ug/kg	220		
3-Methylphenol/4-Methylphenol	ND	ug/kg	180		
2,4,5-Trichlorophenol	ND	ug/kg	370		
2,6-Dichlorophenol	ND	ug/kg	1800		
Benzoic Acid	ND	ug/kg	370		
Benzyl Alcohol	ND	ug/kg	180		
Carbazole	ND	ug/kg	1800		
Pyridine	ND	ug/kg			
2-Picoline	ND	ug/kg	740		
Pronamide	ND	ug/kg	740		
Methyl methanesulfonate	ND	ug/kg	740		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	62.0	%	25-120)	
Phenol-d6	73.0	%	10-120)	
Nitrobenzene-d5	65.0	%	23-120)	
2-Fluorobiphenyl	59.0	%	30-120)	
2,4,6-Tribromophenol	47.0	ક	19-120)	
4-Terphenyl-d14	72.0	8	18-120)	
PAH by GC/MS SIM 8270M				1 8270C-M	0218 12:45 0221 20:13 R
Acenaphthene	ND	ug/kg	7.4		
2-Chloronaphthalene	ND	ug/kg	7.4		
Fluoranthene	ND	ug/kg	7.4		
Hexachlorobutadiene	ND	ug/kg	18.		
Naphthalene	ND	ug/kg ug/kg	7.4		
•	ND	ug/kg	7.4		
Benzo(a) anthracene	ND	ug/kg ug/kg	7.4		
Benzo(a) pyrene Benzo(b) fluoranthene	ND	ug/kg ug/kg	7.4		
• •	ND	ug/kg ug/kg	7.4		
Benzo(k) fluoranthene		ug/kg ug/kg	7.4		
Chrysene	ND	ug/kg ug/kg	7.4		
Acenaphthylene	ND ND		7.4		
Anthracene	ND	ug/kg	7.4		
Benzo(ghi)perylene	ND	ug/kg	7.4		
Fluorene	ND	ug/kg			
Phenanthrene	ND	ug/kg	7.4		



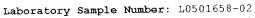
Laboratory Sample Number: L0501658-02

MW/CB-1 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
PAH by GC/MS SIM 8270M conti	nued	*	. 3 2	1 8270C-N	0210 10 45 000
Dibenzo(a,h)anthracene	ND	ug/kg	7.4	2 02,00 11	0218 12:45 0221 20:13 RL
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.4		
Pyrene	ND	ug/kg	7.4		
1-Methylnaphthalene	ND	ug/kg	7.4		
2-Methylnaphthalene	ND	ug/kg	7.4		
Pentachlorophenol	ND	ug/kg	30.		
Hexachlorobenzene	ND	ug/kg	30.		
Perylene	ND	ug/kg	7.4		
Biphenyl	ND	ug/kg	7.4		
2,6-Dimethylnaphthalene	ND	ug/kg	7.4		
1-Methylphenanthrene	ND	ug/kg	7.4		
Benzo(e)Pyrene	ND	ug/kg	7.4		
Hexachloroethane	ND	ug/kg	30.		
Surrogate(s)	Danie				
2-Fluorophenol	Recovery	_		iteria	
Phenol-d6	53.0	8	25-120)	
Nitrobenzene-d5	72.0	8	10-120)	
2-Fluorobiphenyl	56.0	8	23-120)	
2,4,6-Tribromophenol	54.0	90	30-120)	
1-Terphenyl-d14	59.0	8	19-120)	
i-rerbuenyr-014	59.0	%	18-120)	
Polychlorinated Biphenyls				1 8082	0219 10.20 0200 00 00
Aroclor 1221	ND	ug/kg	37.0	1 0002	0218 10:30 0222 20:55 JB
Aroclor 1232	ND	ug/kg	37.0		
Aroclor 1242/1016	ND	ug/kg	37.0		
Aroclor 1248	ND	ug/kg	37.0		
Aroclor 1254	ND	ug/kg	37.0		
Aroclor 1260	ND	ug/kg	37.0		
Surrogate(s)	Recovery				
,4,5,6-Tetrachloro-m-xylene	58.0	%	QC Cri	=	
Decachlorobiphenyl	58.0	6 %	30-150		
	30.0	ð	30-150		
rganochlorine Pesticides				1 8081	0010 10 15 0004 11 11
elta-BHC	ND	ug/kg	3.70	1 0001	0218 10:15 0224 03:15 BW
indane	ND	ug/kg	3.70		
lpha-BHC	ND	ug/kg	3.70		
eta-BHC	ND	ug/kg	3.70		
eptachlor	ND	ug/kg	3.70		
ldrin	ND	ug/kg	3.70		
eptachlor epoxide	ND	ug/kg			
ndrin	ND		3.70		
ndrin aldehyde	ND	ug/kg	3.70		
ndrin ketone	ND ND	ug/kg	3.70		
ieldrin		ug/kg	3.70		
4'-DDE	ND ND	ug/kg	3.70		
, 4'-DDD	ND	ug/kg	3.70		
4'-DDT	ND	ug/kg	3.70		
. WUI	ND	ug/kg	3.70		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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MW/CB-1 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Organochlorine Pesticides con	tinued			1 8081	0218 10:15 0224 03:15 BW
Endosulfan I	ND	ug/kg	3.70		
Endosulfan II	ND	ug/kg	3.70		
Endosulfan sulfate	ND	ug/kg	3.70		
Methoxychlor	ND	ug/kg	3.70		
Toxaphene	ND	ug/kg	14.8		
Chlordane	ND	ug/kg	14.8		
cis-Chlordane	ND	ug/kg	3.70		
trans-Chlordane	ND	ug/kg	3.70		
Surrogate(s)	Recovery		QC Cr	iteria	
2,4,5,6-Tetrachloro-m-xylene	49.0	ફ	30-15	0	
Decachlorobiphenyl	53.0	%	30-15	50	



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-03

Date Collected: 15-FEB-2005 14:25

MW/CB-2 (10'-12') Sample Matrix:

Date Received : 17-FEB-2005

SOIL

Date Reported : 24-FEB-2005

Condition of Sample: Satisfactory

Field Prep:

None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Solids, Total	88.	ે	0.10	30 2540G			
Mohal Watala			0.10	30 2340G		0218 11:27	LC
Total Metals				1 3051	+		
Aluminum, Total	5900	mg/kg	4.5	1 6010B	0218 14:00	0221 11.50	DEX
Antimony, Total	ND	mg/kg	2.2	1 6010B	0218 14:00		
Arsenic, Total	2.5	mg/kg	0.45	1 6010B			
Barium, Total	19.	mg/kg	0.45	1 6010B	0218 14:00		
Beryllium, Total	ND	mg/kg	0.22	1 6010B	0218 14:00		
Cadmium, Total	ND	mg/kg	0.45	1 6010B	0218 14:00		
Calcium, Total	1400	mg/kg	4.5	1 6010B	0218 14:00		
Chromium, Total	7.6	mg/kg	0.45		0218 14:00		
Cobalt, Total	4.9	mg/kg	0.43	1 6010B	0218 14:00		
Copper, Total	11.	mg/kg	0.45	1 6010B	0218 14:00		
Iron, Total	12000	mg/kg	2.2	1 6010B	0218 14:00		
Lead, Total	5.4	mg/kg mg/kg	2.2	1 6010B	0218 14:00		
Magnesium, Total	2400	mg/kg	4.5	1 6010B	0218 14:00		
Manganese, Total	150			1 6010B	0218 14:00		
Mercury, Total	ND	mg/kg	0.45	1 6010B	0218 14:00		
Nickel, Total	10.	mg/kg	0.09	1 7471A	0222 19:50		
Potassium, Total	350	mg/kg	1.1	1 6010B	0218 14:00		
Selenium, Total	ND	mg/kg	110	1 · 6010B	0218 14:00	0221 11:50	RW
Silver, Total	ND	mg/kg	0.90	1 6010B	0218 14:00	0221 11:50	R₩
Sodium, Total	_	mg/kg	0.45	1 6010B	0218 14:00	0221 11:50	RW
Thallium, Total	130	mg/kg	90.	1 6010B	0218 14:00	0221 11:50	R₩
Vanadium, Total	ND	mg/kg	0.45	1 6010B	0218 14:00	0221 11:50	RW
Zinc, Total	9.6	mg/kg	0.45	1 6010B	0218 14:00	0221 11:50	RW
aine, iotai	30.	mg/kg	2.2	1 6010B	0218 14:00	0221 11:50	RW
Volatile Organics by GC/MS	8260			1 8260B	,	0219 23:24	n.m
Methylene chloride	ND	ug/kg	28.		,	1412 43:44	131
l,1-Dichloroethane	ND	ug/kg	4.3				
Chloroform	ND	uq/kq	4.3				
Carbon tetrachloride	ND	ug/kg	2.8				
l,2-Dichloropropane	ND	ug/kg	9.9				
Dibromochloromethane	ND	ug/kg	2.8				
l,1,2-Trichloroethane	ND	ug/kg	4.3				
Tetrachloroethene	ND	ug/kg ug/kg	2.8				
Chlorobenzene	ND	ug/kg ug/kg	2.8				
Crichlorofluoromethane	ND	ug/kg ug/kg	2.8				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0501658-03

MW/CB-2 (10'-12')

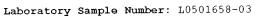
ARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	260 continu	ed	- ,	1 8260B	0219 23:24 BT
1,2-Dichloroethane	ND	ug/kg	2.8		
l,1,1-Trichloroethane	ND	ug/kg	2.8		
Bromodichloromethane	ND	ug/kg	2.8		
trans-1,3-Dichloropropene	ND	ug/kg	2.8		
cis-1,3-Dichloropropene	ND	ug/kg	2.8		
1,1-Dichloropropene	ND	ug/kg	14.		
Bromoform	ND	ug/kg	11.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8		
Benzene	ND	ug/kg	2.8		
Toluene	ND	ug/kg	4.3		
Ethylbenzene	ND	ug/kg	2.8		
Chloromethane	ND	ug/kg	14.		
Bromomethane	ND	ug/kg	5.7		
Bromomethane Vinyl chloride	ND	ug/kg	5.7		
	ND	ug/kg	5.7		
Chloroethane 1,1-Dichloroethene	ND	ug/kg	2.8		
trans-1,2-Dichloroethene	ND	ug/kg	4.3		
Trichloroethene	ND	ug/kg	2.8		
1,2-Dichlorobenzene	ND	ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg	14.		
1,4-Dichlorobenzene	ND	ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg	5.7		
p/m-Xylene	ND	ug/kg	2.8		
o-Xylene	ND	ug/kg	2.8		
cis-1,2-Dichloroethene	ND	ug/kg	2.8		
Dibromomethane	ND	ug/kg	28.		
1,4-Dichlorobutane	ND	ug/kg	28.		
Iodomethane	ND	ug/kg	28.		
1,2,3-Trichloropropane	ND	ug/kg	28.		
Styrene	ND	ug/kg	2.8		
Dichlorodifluoromethane	ND	ug/kg	28.		
Acetone	ND	ug/kg	28.		
Carbon disulfide	ND	ug/kg	28.		
2-Butanone	ND	ug/kg	28.		
Vinyl acetate	ND	ug/kg	28.		
	ND	ug/kg	28.		
4-Methyl-2-pentanone 2-Hexanone	ND	ug/kg	28.		
Ethyl methacrylate	ND	ug/kg	28.		
<u> </u>	ND	ug/kg	71.		
Acrolein Acrylonitrile	ND	ug/kg	28.		
Bromochloromethane	ND	ug/kg	14.		
Tetrahydrofuran	ND	ug/kg	57.		
2,2-Dichloropropane	ND	ug/kg	14.		
	ND	ug/kg	11.		
1,2-Dibromoethane	ND	ug/kg ug/kg	14.		
1,3-Dichloropropane	ND	ug/kg	2.8		
1,1,1,2-Tetrachloroethane	ND	ug/kg	14.		
Bromobenzene	ND	ug/kg ug/kg	2.8		
n-Butylbenzene					



Laboratory Sample Number: L0501658-03

MW/CB-2 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS 8	260 contin	ied 💮 🖖		1 8260B	
tert-Butylbenzene	ND	ug/kg	14.	1 0200B.	0219 23:24 BT
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.8		
p-Isopropyltoluene	ND	ug/kg	2.8		
Naphthalene	ND	ug/kg	14.		
n-Propylbenzene	ND	ug/kg	2.8		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
_	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	101.	ક			
Toluene-d8	96.0	8	*		
4-Bromofluorobenzene	110.	%			
Dibromofluoromethane	94.0	%			
SVOC's by GC/MS 8270				1 82700	0218 12:45 0221 20:17 HL
Acenaphthene	ND	ug/kg	190	1 02/00	0218 12:45 0221 20:13 HL.
Benzidine	ND	ug/kg	1900		
1,2,4-Trichlorobenzene	ND	ug/kg	190		
Hexachlorobenzene	ND	ug/kg	190		
Bis(2-chloroethyl)ether	ND	ug/kg	190		
l-Chloronaphthalene	ND	ug/kg	190		
2-Chloronaphthalene	ND	ug/kg	230		
1,2-Dichlorobenzene	ND	ug/kg	190		
1,3-Dichlorobenzene	ND	ug/kg	190	•	
l,4-Dichlorobenzene	ND	ug/kg	190		
3,3'-Dichlorobenzidine	ND	ug/kg	1900		
2,4-Dinitrotoluene	ND	ug/kg ug/kg	230		
2,6-Dinitrotoluene	ND	ug/kg	190		
Azobenzene	ND	ug/kg	190		
Fluoranthene	ND				
-Chlorophenyl phenyl ether	ND	ug/kg	190		
A-Bromophenyl phenyl ether	ND	ug/kg	190		
Bis(2-chloroisopropyl)ether	ND	ug/kg ug/kg	190		
Bis(2-chloroethoxy)methane	ND		190		
lexachlorobutadiene	ND ND	ug/kg	190		
lexachlorocyclopentadiene		ug/kg	380		
exachloroethane	ND ND	ug/kg	380		
sophorone	ND	ug/kg	190		
aphthalene	ND	ug/kg	190		
itrobenzene	ND	ug/kg	190		
DPA/DPA	ND	ug/kg	190		
DI DI DEN	ND	ug/kg	570		



MW/CB-2 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE I PREP ANAL
					PREP ANAL
SVOC's by GC/MS 8270 continue	e d			1 8270C	0218 12:45 0221 20:17 F
n-Nitrosodi-n-propylamine	ND	ug/kg	190		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	380		
Butyl benzyl phthalate	ND	ug/kg	190		
Di-n-butylphthalate	ND	ug/kg	190		
Di-n-octylphthalate	ND	ug/kg	190		
Diethyl phthalate	ND	ug/kg	190		
Dimethyl phthalate	ND	ug/kg	190		
Benzo(a)anthracene	ND	ug/kg	190		
Benzo(a) pyrene	ND	ug/kg	190		
Benzo(b) fluoranthene	ND	ug/kg	190		
Benzo(k) fluoranthene	ND	ug/kg	190		
Chrysene	ND	ug/kg	190		
Acenaphthylene	ND	ug/kg	190		
Anthracene	ND	ug/kg	190		
Benzo(ghi)perylene	ND	ug/kg	190		
Fluorene	ND	ug/kg	190		
Phenanthrene	ND	ug/kg	190		
Dibenzo(a,h)anthracene	ND	ug/kg	190		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190		
Pyrene	ND	ug/kg	190		
Benzo(e)pyrene	ND	ug/kg	190		
Biphenyl	ND	ug/kg	190		
Perylene	ND	ug/kg	190		
Aniline	ND	ug/kg	380		
4-Chloroaniline	ND	ug/kg	190		
1-Methylnaphthalene	ND	ug/kg	190		
2-Nitroaniline	ND	ug/kg	190		
3-Nitroaniline	ND	ug/kg	190		
4-Nitroaniline	ND	ug/kg	260		
Dibenzofuran	ND	ug/kg	190		
a,a-Dimethylphenethylamine	ND	ug/kg	1900		
Hexachloropropene	ND	ug/kg	380	•	
Nitrosodi-n-butylamine	ND	ug/kg	380		
2-Methylnaphthalene	ND	ug/kg	300		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg ug/kg	76 0		
Pentachlorobenzene	ND	ug/kg ug/kg	760		
a-Naphthylamine	ND	ug/kg ug/kg	760		
	ND	ug/kg ug/kg	760		
b-Naphthylamine		- /,	380		
Phenacetin	ND ND	ug/kg ug/kg	760		
Dimethoate		ug/kg ug/kg	380		
4-Aminobiphenyl Pentachloronitrobenzene	ND	ug/kg ug/kg	380		
	ND ND	ug/kg ug/kg	380		
Isodrin			380		
p-Dimethylaminoazobenzene	ND	ug/kg			
Chlorobenzilate	ND	ug/kg	760 760		
3-Methylcholanthrene	ND	ug/kg	760 570		
Ethyl Methanesulfonate	ND	ug/kg	570 760		
Acetophenone	ND	ug/kg	760		
Nitrosodipiperidine	ND	ug/kg	760		

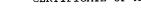


Laboratory Sample Number: L0501658-03

MW/CB-2 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA PREP	TE ANAL	ID

SVOC's by GC/MS 8270 continued				1 8270C	0218 12:45	0221 20:	17 Hi
7,12-Dimethylbenz(a)anthracene	e ND	ug/kg	380				
n-Nitrosodimethylamine	ND	ug/kg	1900				
2,4,6-Trichlorophenol	ND	ug/kg	190				
p-Chloro-m-cresol	ИD	ug/kg	190				
2-Chlorophenol	ND	ug/kg	230				
2,4-Dichlorophenol	ND	ug/kg	380				
2,4-Dimethylphenol	ND	ug/kg	380				
2-Nitrophenol	ND	ug/kg	760				
4-Nitrophenol	ND	ug/kg	380				
2,4-Dinitrophenol	ND	ug/kg	760				
4,6-Dinitro-o-cresol	ND	ug/kg	760				
Pentachlorophenol	ND	ug/kg	760				
Phenol	ND	ug/kg	260				
2-Methylphenol	ND	ug/kg	230				
3-Methylphenol/4-Methylphenol	ND	ug/kg	230				
2,4,5-Trichlorophenol	ND	ug/kg	19 0				
2,6-Dichlorophenol	ND	ug/kg	380				
Benzoic Acid	ND	ug/kg	1900				
Benzyl Alcohol	ND	ug/kg	380				
Carbazole	ND	ug/kg	190				
Pyridine	ND	ug/kg	1900				
2-Picoline	ND	ug/kg	760				
Pronamide	ND	ug/kg	760				
Methyl methanesulfonate	ND	ug/kg	760				
Surrogate(s)	Recovery		QC Cris	teria			
2-Fluorophenol	72.0	%	25-120				
Phenol-d6	85.0	8	10-120				
Nitrobenzene-d5	77.0	%	23-120				
2-Fluorobiphenyl	68.0	%	30-120				
2,4,6-Tribromophenol	49.0	8	19-120				
-Terphenyl-d14	79.0	ક	18-120				
PAH by GC/MS SIM 8270M				1 8270€-M	0218 12:45	0222-15-1	4 RI.
cenaphthene	ND	ug/kg	7.6				
-Chloronaphthalene	ND	ug/kg	7.6				
'luoranthene	ND	ug/kg	7.6				
lexachlorobutadiene	ND	ug/kg	19.				
aphthalene	ND	ug/kg	7.6				
enzo(a)anthracene	ND	ug/kg	7.6				
enzo(a)pyrene	ND	ug/kg	7.6				
enzo(b)fluoranthene	ND	ug/kg	7.6				
enzo(k)fluoranthene	ND	ug/kg	7.6				
hrysene	ND	ug/kg	7.6				
.cenaphthylene	ND	ug/kg ug/kg	7.6				
nthracene	ND	ug/kg ug/kg	7.6				
enzo(ghi)perylene	ND	ug/kg ug/kg	7.6				
luorene	ND	ug/kg ug/kg	7.6				
		44/14	1.0				



Laboratory Sample Number: L0501658-03 MW/CB-2 (10'-12')

PARAMETER	RESULT	UNITS	RDL F	REF METHOD	DATE ID PREP ANAL
PAH by GC/MS SIM 8270M continu	íed ⊴	30,35	· .	1 8270C-M	0218 12:45 0222 15:14 RL
Dibenzo(a, h) anthracene	ND	ug/kg	7.6		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.6		
Pyrene	ND	ug/kg	7.6		
1-Methylnaphthalene	ND	ug/kg	7.6		
2-Methylnaphthalene	ND	ug/kg	7.6		
Pentachlorophenol	ND	ug/kg	30.		
Hexachlorobenzene	ND	ug/kg	30.		
Perylene	ND	ug/kg	7.6		
Biphenyl	ND	ug/kg	7.6		
2,6-Dimethylnaphthalene	ND	ug/kg	7.6		
1-Methylphenanthrene	ND	ug/kg	7.6		
Benzo(e) Pyrene	ND	ug/kg	7.6		
Hexachloroethane	ND	ug/kg	30.		
Surrogate(s)	Recovery		QC Crit	eria	
2-Fluorophenol	65.0	8	25-120		
Phenol-d6	84.0	8	10-120		
Nitrobenzene-d5	68.0	8	23-120		
2-Fluorobiphenyl	65.0	%	30-120		
2,4,6-Tribromophenol	66.0	%	19-120		
4-Terphenyl-d14	77.0	8	18-120		
-					
Polychlorinated Biphenyls			27 0	1 8082	0218 10:30 0222 21:24 JB
Aroclor 1221	ND	ug/kg	37.9		
Aroclor 1232	ND	ug/kg	37.9		
Aroclor 1242/1016	ND	ug/kg	37.9		
Aroclor 1248	ND	ug/kg	37.9		
Aroclor 1254	ND	ug/kg	37.9		
Aroclor 1260	ND	ug/kg	37.9		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	56.0	B	30-150		
Decachlorobiphenyl	55.0	ક	30-150		
Organochlorine Pesticides	10 1 10 10 10 10 10 10 10 10 10 10 10 10			1 8081	0218 10:15 0224 03:43 BW
Delta-BHC	ND	ug/kg	3.79		
Lindane	ND	ug/kg	3.79		
Alpha-BHC	ND	ug/kg	3.79		
Beta-BHC	ND	ug/kg	3.79		
Heptachlor	ND	ug/kg	3.79		
Aldrin	ND	ug/kg	3.79		
Heptachlor epoxide	ND	ug/kg	3.79		
Endrin	ND	ug/kg	3.79		
Endrin aldehyde	ND	ug/kg	3.79		
Endrin ketone	ND	ug/kg	3.79		
Dieldrin	ND	ug/kg	3.79		
4,4'-DDE	ND	ug/kg	3.79		
4,4'-DDD	ND	ug/kg	3.79		
- r -	ND	ug/kg	3.79		



Laboratory Sample Number: L0501658-03

MW/CB-2 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF 1	ME THOD	DATE		ID		
						PREP	ANAL	ANAL		
Organochlorine Pesticides cor	ntinued			1	8081	0218 10:15	0224 034	42 DW		
Endosulfan I	ND	ug/kg	3.79			10,10	0224 051	a 3 10 Mi		
Endosulfan II	ND	ug/kg	3.79							
Endosulfan sulfate	ND	ug/kg	3.79							
Methoxychlor	ND	ug/kg	3.79							
Toxaphene	ND	ug/kg	15.2							
Chlordane	ND	ug/kg	15.2							
cis-Chlordane	ND	ug/kg	3.79							
trans-Chlordane	ND	ug/kg	3.79							
Surrogate(s)	Recovery		QC Crit	teria						
2,4,5,6-Tetrachloro-m-xylene	52.0	96	30-150							
Decachlorobiphenyl	57.0	%	30-150							

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-04

MW/CB-2 (12'-14')

Date Collected: 15-FEB-2005 14:30 Date Received : 17-FEB-2005

Sample Matrix:

SOIL

Date Reported : 24-FEB-2005

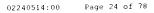
Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID		
					PREP ANAL		
Solids, Total	80.	8	0.10	30 2540G	0218 11:27 LC		
Total Metals				1 3051			
Aluminum, Total	6400	mg/kg	5.0	1 6010B	0218 14:00 0221 11:53 RW		
	ND	mg/kg	2.5	1 6010B	0218 14:00 0221 11:53 RW		
Antimony, Total	2.0	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Arsenic, Total	22.	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Barium, Total	ND	mg/kg	0.25	1 6010B	0218 14:00 0221 11:53 RW		
Beryllium, Total Cadmium, Total	ND	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
	1000	mg/kg	5.0	1 6010B	0218 14:00 0221 11:53 RW		
Calcium, Total	11.	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Chromium, Total	6.2	mg/kg	0.99	1 6010B	0218 14:00 0221 11:53 RW		
Cobalt, Total	14.	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Copper, Total	12000	mg/kg	2.5	1 6010B	0218 14:00 0221 11:53 RW		
Iron, Total Lead, Total	5.6	mg/kg	2.5	1 6010B	0218 14:00 0221 11:53 RW		
Magnesium, Total	2700	mg/kg	5.0	1 6010B	0218 14:00 0221 11:53 RW		
Manganese, Total	110	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Mercury, Total	ND	mg/kg	0.10	1 7471A	0222 19:50 0223 14:45 DM		
Nickel, Total	12.	mg/kg	1.2	1 6010B	0218 14:00 0221 11:53 RW		
Potassium, Total	410	mg/kg	120	1 6010B	0218 14:00 0221 11:53 RW		
Selenium, Total	ND	mg/kg	0.99	1 6010B	0218 14:00 0221 11:53 RW		
Silver, Total	ND	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Sodium, Total	ND	mg/kg	99.	1 6010B	0218 14:00 0221 11:53 RW		
Thallium, Total	ND	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Vanadium, Total	11.	mg/kg	0.50	1 6010B	0218 14:00 0221 11:53 RW		
Zinc, Total	36.	mg/kg	2.5	1 6010B	0218 14:00 0221 11:53 RW		
Volatile Organics by GC/MS	8260			1 8260B	0220 00:40 BT		
Methylene chloride	ND	ug/kg	31.				
1,1-Dichloroethane	ND	ug/kg	4.7				
Chloroform	ND	ug/kg	4.7				
Carbon tetrachloride	ND	ug/kg	3.1				
1,2-Dichloropropane	ND	ug/kg	11.				
Dibromochloromethane	ND	ug/kg	3.1				
1,1,2-Trichloroethane	ND	ug/kg	4.7				
Tetrachloroethene	ND	ug/kg	3.1				
Chlorobenzene	ND	ug/kg	3.1				
Trichlorofluoromethane	ND	ug/kg	16.				



Laboratory Sample Number: L0501658-04

MW/CB-2 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	10
Volatile Organics by GC/MS	8260 continu	ned.		1 8260B			
1,2-Dichloroethane	ND	ug/kg		1 8560B	. 4.	0220 00:4	0 BT
1,1,1-Trichloroethane	ND	ug/kg	3.1 3.1				
Bromodichloromethane	ND	ug/kg ug/kg	3.1				
trans-1,3-Dichloropropene	ND	ug/kg ug/kg	3.1				
cis-1,3-Dichloropropene	ND	ug/kg ug/kg					
1,1-Dichloropropene	ND	J. J	3.1				
Bromoform	ND	ug/kg	16.	•			
1,1,2,2-Tetrachloroethane	ND	ug/kg	12.				
Benzene	ND	ug/kg	3.1				
Toluene	ND	ug/kg	3.1				
Ethylbenzene	ND	ug/kg	4.7				
Chloromethane	ND ND	ug/kg	3.1				
Bromomethane		ug/kg	16.				
Vinyl chloride	ND	ug/kg	6.2				
Chloroethane	ND	ug/kg	6.2				
1,1-Dichloroethene	ND	ug/kg	6.2				
trans-1,2-Dichloroethene	ND	ug/kg	3.1				
Frichloroethene	ND	ug/kg	4.7				
1,2-Dichlorobenzene	ND	ug/kg	3.1				
1,3-Dichlorobenzene	ND	ug/kg	16.				
L,4-Dichlorobenzene	ND	ug/kg	16.				
Methyl tert butyl ether	ND	ug/kg	16.				
o/m-Xylene	ND	ug/kg	6.2				
o-Xylene	ND	ug/kg	3.1				
cis-1,2-Dichloroethene	ND	ug/kg	3.1				
Dibromomethane	ND	ug/kg	3.1				
	ND	ug/kg	31.				
1,4-Dichlorobutane	ND	ug/kg	31.				
Iodomethane	ND	ug/kg	31.				
1,2,3-Trichloropropane	ND	ug/kg	31.				
tyrene	ND	ug/kg	3.1				
Dichlorodifluoromethane	ND	ug/kg	31.				
Acetone	31.	ug/kg	31.				
Carbon disulfide	ND	ug/kg	31.				
-Butanone	ND	ug/kg	31.				
'inyl acetate	ND	ug/kg	31.				
-Methyl-2-pentanone	ND	ug/kg	31.				
-Hexanone	ND	ug/kg	31.				
thyl methacrylate	ND	ug/kg	31.				
crolein	ND	ug/kg	78.				
crylonitrile	ND	ug/kg	31.				
romochloromethane	ND	ug/kg	16.				
etrahydrofuran	ND	ug/kg	62.				
,2-Dichloropropane	ND	ug/kg	16.				
,2-Dibromoethane	ND	ug/kg	12.				
,3-Dichloropropane	ND	ug/kg	16.				
,1,1,2-Tetrachloroethane	ND	ug/kg	3.1				
romobenzene	ND	ug/kg	16.				
-Butylbenzene	82.	ug/kg	3.1				
ec-Butylbenzene	86.	ug/kg	3.1				

Laboratory Sample Number: L0501658-04

MW/CB-2 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ied		1 82608	0220 00:40 BT
tert-Butylbenzene	ND	ug/kg	16.		
o-Chlorotoluene	ND	ug/kg	16.		
p-Chlorotoluene	ND	ug/kg	16.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	16.		
Hexachlorobutadiene	ND	ug/kg	16.		
Isopropylbenzene	ИD	ug/kg	3.1		
p-Isopropyltoluene	11.	ug/kg	3.1		
Naphthalene	ND	ug/kg	16.		
n-Propylbenzene	ND	ug/kg	3.1		
1,2,3-Trichlorobenzene	ND	ug/kg	16.		
1,2,4-Trichlorobenzene	ND	ug/kg	16.		
1,3,5-Trimethylbenzene	ND	ug/kg	16.		
1,2,4-Trimethylbenzene	44.	ug/kg	16.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	16.		
Ethyl ether	ND	ug/kg	16.		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	99.0	%			
Toluene-d8	96.0	૪			
4-Bromofluorobenzene	127.	ે			
Dibromofluoromethane	93.0	96			
SVOC's by GC/MS 8270				1 8270C	0218 12:45 0221 21:32 HL
Acenaphthene	ND	ug/kg	210		
Benzidine	ND	ug/kg	2100		
1,2,4-Trichlorobenzene	ND	ug/kg	210		
Hexachlorobenzene	ND	ug/kg	210		
Bis(2-chloroethyl)ether	ND	ug/kg	210		
1-Chloronaphthalene	ND	ug/kg	210		
2-Chloronaphthalene	ИD	ug/kg	250		
1,2-Dichlorobenzene	ND	ug/kg	210		
1,3-Dichlorobenzene	ND	ug/kg	210		
1,4-Dichlorobenzene	ND	ug/kg	210		
3,3'-Dichlorobenzidine	ND	ug/kg	2100		
2,4-Dinitrotoluene	ND	ug/kg	250		
2,6-Dinitrotoluene	ND	ug/kg	210		
Azobenzene	ND	ug/kg	210		
Fluoranthene	ND	ug/kg	210		
4-Chlorophenyl phenyl ether	ND	ug/kg	210		
4-Bromophenyl phenyl ether	ND	ug/kg	210		
Bis(2-chloroisopropyl)ether	ND	ug/kg	210		
Bis(2-chloroethoxy)methane	ND	ug/kg	210		
Hexachlorobutadiene	ND	ug/kg	420		
Hexachlorocyclopentadiene	ND	ug/kg	420		
Hexachloroethane	ND	ug/kg	210		
Isophorone	ND	ug/kg	210		
Naphthalene	ND	ug/kg	210		
Nitrobenzene	ND	ug/kg	210		
NDPA/DPA	ND	ug/kg	620		



Laboratory Sample Number: L0501658-04

MW/CB-2 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	ID
					PREP AN	AL
SVOC's by GC/MS 8270 continu	red .		* * **	1 8270c	0218 12:45 0221	21.22 11
n-Nitrosodi-n-propylamine	ND	ug/kg	210		22, (0 (221	Tit. 3C.113
Bis(2-ethylhexyl)phthalate	ND	ug/kg	420			
Butyl benzyl phthalate	ND	ug/kg	210			
Di-n-butylphthalate	ND	ug/kg	210			
Di-n-octylphthalate	ND	ug/kg	210			
Diethyl phthalate	ND	ug/kg	210			
Dimethyl phthalate	ND	ug/kg	210			
Benzo(a)anthracene	ND	ug/kg	210			
Benzo(a)pyrene	ND	ug/kg	210			
Benzo(b)fluoranthene	ND	ug/kg	210			
Benzo(k)fluoranthene	ND	ug/kg	210			
Chrysene	ND	ug/kg	210			
Acenaphthylene	ND	ug/kg	210			
Anthracene	ND	ug/kg	210			
Benzo(ghi)perylene	ND	ug/kg	210			
Fluorene	ND	ug/kg	210			
Phenanthrene	ND	ug/kg	210			
Dibenzo(a,h)anthracene	ND	ug/kg	210			
Indeno(1,2,3-cd)pyrene	ND	ug/kg	210			
Pyrene	ND	ug/kg	210			
Benzo(e)pyrene	ND	ug/kg	210			
Biphenyl	ND	ug/kg	210			
Perylene	ND	ug/kg	210			
Aniline	ND	ug/kg	420			
4-Chloroaniline	ND	ug/kg	210			
l-Methylnaphthalene	ND	ug/kg	210			
2-Nitroaniline	ND	ug/kg	210			
3-Nitroaniline	ND	ug/kg	210			
4-Nitroaniline	ND	ug/kg	290			
Dibenzofuran	ND	ug/kg	210			
a,a-Dimethylphenethylamine	ND	ug/kg	2100			
Hexachloropropene	ND	ug/kg	420	-		
Nitrosodi-n-butylamine	ND	ug/kg	420			
2-Methylnaphthalene	ND	ug/kg	330			
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	830			
Pentachlorobenzene	ND	ug/kg ug/kg	830			
a-Naphthylamine	ND	ug/kg ug/kg				
-Naphthylamine	ND		830			
Phenacetin	ND	ug/kg	830			
Dimethoate	ND	ug/kg	420			
-Aminobiphenyl	ND ND	ug/kg	830			
Pentachloronitrobenzene	ND	ug/kg	420			
sodrin	ND	ug/kg	420			
o-Dimethylaminoazobenzene		ug/kg	420			
Chlorobenzilate	ND	ug/kg	420			
-Methylcholanthrene	ND	ug/kg	830			
thyl Methanesulfonate	ND	ug/kg	830			
cetophenone	ND	ug/kg	620			
itrosodipíperidine	ND	ug/kg	830			
reresearbibetigiue	ND	ug/kg	830			

Laboratory Sample Number: L0501658-04

MW/CB-2 (12'-14')

PARAMETER	RESULT	UNITS	RDL 1	REF METHOD	DATE ID PREP ANAL
					0218 12:45 0221 21:32 HL
SVOC's by GC/MS 8270 continued			100	1 8270C	0216 12:45 0221 21:52 ng
7,12-Dimethylbenz(a)anthracene		ug/kg	420		
n-Nitrosodimethylamine	ND	ug/kg	2100		
2,4,6-Trichlorophenol	ND	ug/kg	210		
p-Chloro-m-cresol	ND	ug/kg	210		
2-Chlorophenol	ND	ug/kg	250		
2,4-Dichlorophenol	ND	ug/kg	420		
2,4-Dimethylphenol	ND	ug/kg	420		
2-Nitrophenol	ND	ug/kg	830		
4-Nitrophenol	ND	ug/kg	420		
2,4-Dinitrophenol	ND	ug/kg	830		
4,6-Dinitro-o-cresol	ND	ug/kg	830		
Pentachlorophenol	ND	ug/kg	830		
Phenol	ND	ug/kg	290		
2-Methylphenol	ND	ug/kg	250		
3-Methylphenol/4-Methylphenol	ND	ug/kg	250		
2,4,5-Trichlorophenol	ND	ug/kg	210		
2,6-Dichlorophenol	ND	ug/kg	420		
Benzoic Acid	ND	ug/kg	2100		
Benzyl Alcohol	ND	ug/kg	420		
Carbazole	ND	ug/kg	210		
Pyridine	ND	ug/kg	2100		
2-Picoline	ND	ug/kg	830		
Pronamide	ND	ug/kg	830		
Methyl methanesulfonate	ND	ug/kg	830		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	81.0	8	25-120		
Phenol-d6	95.0	%	10-120		
Nitrobenzene-d5	85.0	%	23-120		
2-Fluorobiphenyl	75.0	8	30-120		
2,4,6-Tribromophenol	69.0	ે	19-120		
4-Terphenyl-d14	75.0	8	18-120		
PAH by GC/MS SIM 8270M				1 8270C-M	0218 12:45 0221 20:56 R
Acenaphthene	ND	ug/kg	8.3		
2-Chloronaphthalene	ND	ug/kg	8.3		
Fluoranthene	ND	ug/kg	8.3		
Hexachlorobutadiene	ND	ug/kg	21.		
Naphthalene	22.	ug/kg	8.3		
Benzo(a) anthracene	ND	ug/kg	8.3		
Benzo(a) pyrene	ND	ug/kg	8.3		
Benzo(b) fluoranthene	ND	ug/kg	8.3		
Benzo(k) fluoranthene	ND	ug/kg	8.3		
Chrysene	ND	ug/kg	8.3		
Acenaphthylene	ND	ug/kg	8.3		
Anthracene	ND	ug/kg	8.3		
Benzo(ghi)perylene	ND	ug/kg	8.3		
Fluorene	21.	ug/kg	8.3		



Laboratory Sample Number: L0501658-04

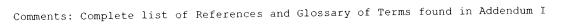
MW/CB-2 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
PAH by GC/MS SIM 8270M contin	nued			1	8270C±M	0218 12:45	0221 20-5	e nii
Dibenzo(a,h)anthracene	ND	ug/kg	8.3			00.10 IL.13	02E1 20;5	O NE
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	8.3					
Pyrene	ND	ug/kg	8.3					
1-Methylnaphthalene	120	ug/kg	8.3					
2-Methylnaphthalene	190	ug/kg	8.3					
Pentachlorophenol	ND	ug/kg	33.					
Hexachlorobenzene	ND	ug/kg	33.					
Perylene	ND	ug/kg	8.3					
Biphenyl	ND	ug/kg	8.3					
2,6-Dimethylnaphthalene	260	ug/kg	8.3					
l-Methylphenanthrene	ND	ug/kg	8.3					
Benzo(e) Pyrene	ND	ug/kg	8.3					
Hexachloroethane	ND	ug/kg	33.					
	ND	ug/kg	33.					
Surrogate(s)	Recovery		QC Cri	teria	a.			
2-Fluorophenol	72.0	8	25-120)				
Phenol-d6	91.0	8	10-120)				
Nitrobenzene-d5	75.0	왕	23-120)				
2-Fluorobiphenyl	62.0	8	30-120)				
2,4,6-Tribromophenol	80.0	%	19-120)				
1-Terphenyl-d14	78.0	ojo	18-120)				
Polychlorinated Biphenyls				. 1	8082	0218 10:30	0222° 21+53	erri: 3
Aroclor 1221	ND	ug/kg	41.7					, 00
Aroclor 1232	ND	ug/kg	41.7					
Aroclor 1242/1016	ND	ug/kg	41.7					
Aroclor 1248	ND	ug/kg	41.7					
Aroclor 1254	ND	ug/kg	41.7					
Aroclor 1260	ND	ug/kg	41.7					
Gurrogate(s)	Recovery		QC Cri	teria	1			
2,4,5,6-Tetrachloro-m-xylene	75.0	8	30-150		•			
Decachlorobiphenyl	70.0	%	30-150					
Organochlorine Pesticides				1	8081	0218 10:15 (2224 05.20	P.11
elta-BHC	ND	ug/kg	4.17	-	0001	0210 10:13 (0224 03:36	BW
indane	ND	ug/kg	4.17					
lpha-BHC	ND	ug/kg ug/kg	4.17					
seta-BHC	ND	ug/kg ug/kg	4.17					
leptachlor	ND	ug/kg ug/kg						
aldrin	ND	ug/kg ug/kg	4.17					
eptachlor epoxide	ND ND		4.17					
Indrin		ug/kg	4.17					
ndrin aldehyde	ND ND	ug/kg	4.17					
indrin aldenyde indrin ketone	ND ND	ug/kg	4.17					
ndrin ketone Tieldrin	ND	ug/kg	4.17					
	ND	ug/kg	4.17					
, 4'-DDE	ND	ug/kg	4.17					
,4'-DDD	ND	ug/kg	4.17					
,4'-DDT	ND	ug/kg	4.17					

Laboratory Sample Number: L0501658-04

MW/CB-2 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Organochlorine Pesticides c	ontinued			1 8081	0218 10:15 0224 05:38 BW
organochiofine Festicides C Endosulfan I	ND	ug/kg	4.17		•
Endosulfan II	ND	ug/kg	4.17		
Endosulfan sulfate	ND	ug/kg	4.17		
Methoxychlor	ND	ug/kg	4.17		
Toxaphene	ND	ug/kg	16.7		
Chlordane	ND	ug/kg	16.7		
cis-Chlordane	ND	ug/kg	4.17		
trans-Chlordane	ND	ug/kg	4.17		
Surrogate(s)	Recovery		QC Cr	iteria	
2,4,5,6-Tetrachloro-m-xyler	ne 59.0	8	30-15	0	
Decachlorobiphenyl	52.0	8	30-15	0	





MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-05

Date Collected: 16-FEB-2005 11:00

MW/CB-3 (20'-22') Sample Matrix: SOIL

Date Received: 17-FEB-2005 Date Reported : 24-FEB-2005

Condition of Sample: Satisfactory

Field Prep:

None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		
					PREP	ANAL	
Solids, Total	93.	કૃ	0.10	30 2540G		0218 14:17	LC
Total Metals				1 3051			
Aluminum, Total	3200	mg/kg	4.3	I 6010B	0218 14-00	0221 12:08	D D D
Antimony, Total	ND	mg/kg	2.1	1 6010B		0221 12:08	****
Arsenic, Total	1.4	mg/kg	0.43	1 6010B		0221 12:08	
Barium, Total	23.	mg/kg	0.43	1 6010B		0221 12:08	
Beryllium, Total	ND	mg/kg	0.21	1 6010B		0221 12:08	
Cadmium, Total	ND	mg/kg	0.43	1 6010B		0221 12:08	
Calcium, Total	3300	mg/kg	4.3	1 6010B		0221 12:08	
Chromium, Total	6.4	mg/kg	0.43	1 6010B		0221 12:08	
Cobalt, Total	3.2	mg/kg	0.86	1 6010B		0221 12:08	
Copper, Total	9.8	mg/kg	0.43	1 6010B		0221 12:08	
Iron, Total	7500	mg/kg	2.1	1 6010B		0221 12:08	
Lead, Total	6.0	mg/kg	2.1	I 6010B		0221 12:08	
Magnesium, Total	1900	mg/kg	4.3	1 6010B		0221 12:08	
Manganese, Total	250	mg/kg	0.43	1 6010B		0221 12:08	
Mercury, Total	ND	mg/kg	0.08	1 7471A		0223 14:47	
Nickel, Total	7.1	mg/kg	1.1	1 6010B		0221 12:08	
Potassium, Total	410	mg/kg	110	1- 6010B		0221 12:08	
Selenium, Total	ND	mg/kg	0.86	1 6010B		0221 12:08	
Silver, Total	ND	mg/kg	0.43	1 6010B		0221 12:08	
Sodium, Total	130	mg/kg	86.	1 6010B		0221 12:08	
Thallium, Total	ND	mg/kg	0.43	1 6010B	0218 14:00		
Vanadium, Total	6.9	mg/kg	0.43	1 6010B	0218 14:00		
Zinc, Total	19.	mg/kg	2.1	1 6010B	0218 14:00		
Volatile Organics by GC/MS	8260			1 8260B		0220 01:18	вт
Methylene chloride	ND	ug/kg	27.				
l,1-Dichloroethane	ND	ug/kg	4.0				
Chloroform	ND	ug/kg	4.0				
Carbon tetrachloride	ND	ug/kg	2.7				
l,2-Dichloropropane	ND	ug/kg	9.4				
Dibromochloromethane	ND	ug/kg	2.7				
l,1,2-Trichloroethane	ND	ug/kg	4.0				
retrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
Prichlorofluoromethane	ND	ug/kg	13.				

Comments: Complete list of References and Glossary of Terms found in Addendum ${\tt I}$

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Laboratory Sample Number: L0501658-05

MW/CB-3 (20'-22')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS	8260 continu	ied		1 8260B	0220 01:18 BT
1,2-Dichloroethane	ND	ug/kg	2.7		
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane	ND	ug/kg	2.7		
trans-1,3-Dichloropropene	ND	ug/kg	2.7		
cis-1,3-Dichloropropene	ND	ug/kg	2.7		
1,1-Dichloropropene	ND	ug/kg	13.		
Bromoform	ND	ug/kg	11.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7		
Benzene	ND	ug/kg	2.7		
Toluene	ND	ug/kg	4.0		
Ethylbenzene	ND	ug/kg	2.7		
Chloromethane	ND	ug/kg	13.		
Bromomethane	ND	ug/kg	5.4		
Vinyl chloride	ND	ug/kg	5.4		
Chloroethane	ND	ug/kg	5.4		
1,1-Dichloroethene	ND	ug/kg	2.7		
trans-1,2-Dichloroethene	ND	ug/kg	4.0		
Trichloroethene	ND	ug/kg	2.7		
1,2-Dichlorobenzene	ND	ug/kg	13.		
1,3-Dichlorobenzene	ND	ug/kg	13.		
1,4-Dichlorobenzene	ND	ug/kg	13.		
Methyl tert butyl ether	ND	ug/kg	5.4		
p/m-Xylene	ND	ug/kg	2.7		
o-Xylene	ND	ug/kg	2.7		
cis-1,2-Dichloroethene	ND	ug/kg	2.7		
Dibromomethane	ND	ug/kg	27.		
1,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
1,2,3-Trichloropropane	ND	ug/kg	27.		
Styrene	ND	ug/kg	2.7		
Dichlorodifluoromethane	ND	ug/kg	27.		
Acetone	ND	ug/kg	27.		
Carbon disulfide	ND	ug/kg	27.		
2-Butanone	ND	ug/kg	27.		
Vinyl acetate	ND	ug/kg	27.		
4-Methyl-2-pentanone	ND	ug/kg	27.		
2-Hexanone	ND	ug/kg	27.		
Ethyl methacrylate	ND	ug/kg	27.		
Acrolein	ND	ug/kg	67.		
Acrylonitrile	ND	ug/kg	27.		
Bromochloromethane	ND	ug/kg	13.		
Tetrahydrofuran	ND	ug/kg	54.		
2,2-Dichloropropane	ND	ug/kg	13.		
1,2-Dibromoethane	ND	ug/kg	11.		
1,3-Dichloropropane	ND	ug/kg	13.		
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.7		
	ND	ug/kg	13.		
Bromohenzene					
Bromobenzene n-Butylbenzene	ND	ug/kg	2.7		



Laboratory Sample Number: L0501658-05

MW/CB-3 (20'-22')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS 8	260 continu	1ed		1 8260B	
tert-Butylbenzene	ND	ug/kg	13.	2 02008	0220 01:18 BT
o-Chlorotoluene	ND	ug/kg	13.		
p-Chlorotoluene	ND	ug/kg	13.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	13.		
Hexachlorobutadiene	ND	ug/kg	13.		
Isopropylbenzene	ND	ug/kg	2.7		
p-Isopropyltoluene	ND	ug/kg	2.7		
Naphthalene	ND	ug/kg	13.		
n-Propylbenzene	ND	ug/kg	2.7		
1,2,3-Trichlorobenzene	ND	ug/kg	13.		
1,2,4-Trichlorobenzene	ND	ug/kg	13.		
1,3,5-Trimethylbenzene	ND	ug/kg	13.		
1,2,4-Trimethylbenzene	ND	ug/kg	13.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	13.		
Ethyl ether	ND	ug/kg	13.		
-	112	ug/ kg	13.		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	95.0	8			
Toluene-d8	98.0	ક			
4-Bromofluorobenzene	101.	%			
Dibromofluoromethane	88.0	8			
SVOC's by GC/MS 8270				1 8270C	. 0218 12:45 0221 21:57 HL
Acenaphthene	ND	ug/kg	180		7777
Benzidine	ND	ug/kg	1800		
1,2,4-Trichlorobenzene	ND	ug/kg	180		
Hexachlorobenzene	ND	ug/kg	180		
Bis(2-chloroethyl)ether	ND	ug/kg	180		
l-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
l,2-Dichlorobenzene	ND	ug/kg	180		
l,3-Dichlorobenzene	ND	ug/kg	180		
l,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,6-Dinitrotoluene	ND	ug/kg	180		
Azobenzene	ND	ug/kg	180		
Fluoranthene	ND	ug/kg	180		
-Chlorophenyl phenyl ether	ND	ug/kg	180		
-Bromophenyl phenyl ether	ND	ug/kg	180		
14-10 -1-1	ND	ug/kg	180		
Bis(2-chloroisopropyl)ether			180		
Bis(2-chloroethoxy)methane	ND	μα/κα			
	ND ND	ug/kg ug/ka			
Bis(2-chloroethoxy)methane Mexachlorobutadiene	ND	ug/kg	360		
Bis(2-chloroethoxy)methane	ND ND	ug/kg ug/kg	360 360		
Bis(2-chloroethoxy)methane Mexachlorobutadiene Mexachlorocyclopentadiene	ND ND ND	ug/kg ug/kg ug/kg	360 360 180		
Bis(2-chloroethoxy)methane Mexachlorobutadiene Mexachlorocyclopentadiene Mexachloroethane Mexachloroethane	ND ND ND	ug/kg ug/kg ug/kg ug/kg	360 360 180 180		
Bis(2-chloroethoxy)methane Mexachlorobutadiene Mexachlorocyclopentadiene Mexachloroethane	ND ND ND	ug/kg ug/kg ug/kg	360 360 180		

Laboratory Sample Number: L0501658-05

MW/CB-3 (20'-22')

PARAMETER	RESULT	UNITS	RDL	REF 1	ME THOD	DATE II PREP ANAL
SVOC's by GC/MS 8270 continue	ed .			1	8270C	0218 12:45 0221 21:57 H
n-Nitrosodi-n-propylamine	ND	ug/kg	180			
Bis(2-ethylhexyl)phthalate	ND	ug/kg	360			
Butyl benzyl phthalate	ND	ug/kg	180			
Di-n-butylphthalate	ND	ug/kg	180			
Di-n-octylphthalate	ND	ug/kg	180			
Diethyl phthalate	ND	ug/kg	180			
Dimethyl phthalate	ND	ug/kg	180			
Benzo(a) anthracene	ND	ug/kg	180			
Benzo(a)pyrene	ND	ug/kg	180			
Benzo(b) fluoranthene	ND	ug/kg	180			
Benzo(k)fluoranthene	ND	ug/kg	180			
Chrysene	ND	ug/kg	180			
Acenaphthylene	ND	ug/kg	180			
Anthracene	ND	ug/kg	180			
Anthracene Benzo(ghi)perylene	ND	ug/kg	180			
Fluorene	ND	ug/kg	180			
Phenanthrene	ND	ug/kg	180			
Dibenzo(a,h)anthracene	ND	ug/kg	180			
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180			
Pyrene	ND	ug/kg	180			
Benzo(e)pyrene	ND	ug/kg	180			
Biphenyl	ND	ug/kg	180			
Perylene	ND	ug/kg	180			
Aniline	ND	ug/kg	360			
4-Chloroaniline	ND	ug/kg	180			
1-Methylnaphthalene	ND	ug/kg	180			
2-Nitroaniline	ND	ug/kg	180			
3-Nitroaniline	ND	ug/kg	180			
4-Nitroaniline	ND	ug/kg	250			
Dibenzofuran	ND	ug/kg	180			
a,a-Dimethylphenethylamine	ND	ug/kg	1800			
Hexachloropropene	ND	ug/kg	360	-		
Nitrosodi-n-butylamine	ND	ug/kg	360			
2-Methylnaphthalene	ND	ug/kg	290			
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	720			
Pentachlorobenzene	ND	ug/kg	720			
	ND	ug/kg	720			
a-Naphthylamine	ND	ug/kg	720			
b-Naphthylamine	ND	ug/kg	360			
Phenacetin	ND	ug/kg	720			
Dimethoate Aminobinhony	ND	ug/kg	360			
4-Aminobiphenyl Pentachloronitrobenzene	ND	ug/kg	360			
	ND	ug/kg	360			
Isodrin	ND	ug/kg ug/kg	360			
p-Dimethylaminoazobenzene	ND	ug/kg ug/kg	720			
Chlorobenzilate	ND	ug/kg	720			
3-Methylcholanthrene		ug/kg ug/kg	540			
	ND	uy/ ky				
Ethyl Methanesulfonate Acetophenone	ND	ug/kg	720			



Laboratory Sample Number: L0501658-05

MW/CB-3 (20'-22')

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF	METHOD	DA	TE	ID
						PREP	ANAL	
SVOC's by GC/MS 8270 continued	i .			1	8270C	0218 12:45	nnos de r	77. 200
7,12-Dimethylbenz(a)anthracene		ug/kg	360	-	02700	0210 42,45	4221 21:3	7 115
n-Nitrosodimethylamine	ND	ug/kg	1800					
2,4,6-Trichlorophenol	ND	ug/kg	180					
o-Chloro-m-cresol	ND	ug/kg	180					
2-Chlorophenol	ND	ug/kg	220					
2,4-Dichlorophenol	ND	ug/kg	360					
2,4-Dimethylphenol	ND	ug/kg	360					
2-Nitrophenol	ND	ug/kg	720					
1-Nitrophenol	ND	ug/kg	360					
2,4-Dinitrophenol	ND	ug/kg	720					
,6-Dinitro-o-cresol	ND	ug/kg	720					
Pentachlorophenol	ND	ug/kg	720					
Phenol	ND	ug/kg	250					
2-Methylphenol	ND	ug/kg	220					
3-Methylphenol/4-Methylphenol	ND	ug/kg	220					
2,4,5-Trichlorophenol	ND	ug/kg	180					
,6-Dichlorophenol	ND	ug/kg	360					
Benzoic Acid	ND	ug/kg	1800					
Senzyl Alcohol	ND	ug/kg	360					
Carbazole	ND	ug/kg	180					
yridine	ND	ug/kg	1800					
-Picoline	ND	ug/kg	720					
ronamide	ND	ug/kg	720					
ethyl methanesulfonate	ND	ug/kg	720					
Surrogate(s)	Recovery		QC Crit	teria				
2-Fluorophenol	39.0	%	25-120					
Phenol-d6	46.0	%	10-120					
Jitrobenzene-d5	40.0	ક	23-120					
-Fluorobiphenyl	36.0	Ş	30-120					
,4,6-Tribromophenol	37.0	90	19-120					
-Terphenyl-d14	50.0	95	18-120	-				
AH by GC/MS SIM 8270M				1 1	3270C-M	0218 12:45	0221.21+39	RT.
cenaphthene	ND	ug/kg	7.2			229		.,,,,
-Chloronaphthalene	ND	ug/kg	7.2					
luoranthene	ND	ug/kg	7.2					
exachlorobutadiene	ND	ug/kg	18.					
aphthalene	ND	ug/kg	7.2					
enzo(a)anthracene	ND	ug/kg	7.2					
enzo(a)pyrene	ND	ug/kg	7.2					
enzo(b)fluoranthene	ND	ug/kg	7.2					
enzo(k)fluoranthene	ND	ug/kg	7.2					
hrysene	ND	ug/kg	7.2					
cenaphthylene	ND	ug/kg ug/kg	7.2					
nthracene	ND	ug/kg ug/kg	7.2					
enzo(ghi)perylene	ND	ug/kg ug/kg	7.2					
luorene	ND	ug/kg ug/kg	7.2					
	110	ug/kg	1.4					

Laboratory Sample Number: L0501658-05

MW/CB-3 (20'-22')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
PAH by GC/MS SIM 8270M continu	ied	-, -	•	1 8270C-M	0218 12:45 0221 21:39 RL
Dibenzo(a,h)anthracene	ND	ug/kg	7.2		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.2		
Pyrene	ИD	ug/kg	7.2		
1-Methylnaphthalene	ND	ug/kg	7.2		
2-Methylnaphthalene	ND	ug/kg	7.2		
Pentachlorophenol	ND	ug/kg	29.		
Hexachlorobenzene	ND	ug/kg	29.		
Perylene	ND	ug/kg	7.2		
Biphenyl	ND	ug/kg	7.2		
2,6-Dimethylnaphthalene	ND	ug/kg	7.2		
1-Methylphenanthrene	ND	ug/kg	7.2		
Benzo(e) Pyrene	ND	ug/kg	7.2		
Hexachloroethane	ND	ug/kg	29.		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	36.0	%	25-120		
Phenol-d6	48.0	8	10-120		
Nitrobenzene-d5	37.0	ક	23-120		
2-Fluorobiphenyl	35.0	ક્ષ	30-120		
2,4,6-Tribromophenol	52.0	ે	19-120		
4-Terphenyl-d14	47.0	ફ	18-120		
Polychlorinated Biphenyls	•			1 8082	0218 10:30 0221 12:38 JB
Aroclor 1221	ND	ug/kg	35.8		
Aroclor 1232	ND	ug/kg	35.8		
Aroclor 1242/1016	ND	ug/kg	35.8		
Aroclor 1248	ND	ug/kg	35.8		
Aroclor 1254	ND	ug/kg	35.8		
Aroclor 1260	ND	ug/kg	35.8		
Surrogate(s)	Recovery		QC Cri	teria	
2,4,5,6-Tetrachloro-m-xylene	67.0	8	30-150		
Decachlorobiphenyl	86.0	%	30-150		
Organochlorine Pesticides				1 8081	0218 10:15:0224 04:40 BM
Delta-BHC	ND	ug/kg	3.58		
Lindane	ND	ug/kg	3.58		
Alpha-BHC	ND	ug/kg	3.58		
Beta-BHC	ND	ug/kg	3.58		
Heptachlor	ND	ug/kg	3.58		
Aldrin	ND	ug/kg	3.58		
Heptachlor epoxide	ND	ug/kg	3.58		
Endrin	ND	ug/kg	3.58		
Endrin aldehyde	ND	ug/kg	3.58		
Endrin ketone	ND	ug/kg	3.58		
Dieldrin	ND	ug/kg	3.58		
4,4'-DDE	ND	ug/kg	3.58		
4,4'-DDD	ND	ug/kg	3.58		
4,4'-DDT	ND	ug/kg	3.58		



Laboratory Sample Number: L0501658-05

MW/CB-3 (20'-22')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		
					PREP ANA	IAL	
Organochlorine Pesticides cor	tinued		,	1 ones	0218 10:15 0224 04	×	
Endosulfan I	ND	uq/kq	3.58	1 0001	ACTO. 10:12 0554 04	:40 BW	
Endosulfan II	ND	ug/kg	3.58				
Endosulfan sulfate	ND	ug/kg	3.58				
Methoxychlor	ND	ug/kg	3.58				
loxaphene	ND	ug/kg	14.3				
Chlordane	ND	ug/kg	14.3				
cis-Chlordane	ND	ug/kg	3.58				
crans-Chlordane	ND	ug/kg	3.58				
Surrogate(s)	Recovery		OC Cri	teria			
2,4,5,6-Tetrachloro-m-xylene	52.0	8	30-150				
Decachlorobiphenyl	51.0	%	30-150				



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-06

Date Collected: 16-FEB-2005 12:00

FIELD BLANK

Date Received: 17-FEB-2005

Sample Matrix:

WATER

Date Reported : 24-FEB-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 6-Amber, 1-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE I	D
						PREP	ANAL	
Fotal Metals		N This		. 1	3015		i jar	
Aluminum, Total	ND	mg/l	0.10	1	6010B	0218 15:30	0221 14:33 F	RW
Antimony, Total	ND	mg/l	0.050	1	6010B	0218 15:30	0221 14:33 F	ЗW
Arsenic, Total	ND	mg/l	0.005	1	6010B	0218 15:30	0221 14:33 F	RW
Barium, Total	ND	mg/l	0.01	1	6010B	0218 15:30	0221 14:33 F	R₩
Beryllium, Total	ND	mg/l	0.005	1	6010B	0218 15:30	0221 14:33 H	RW
Cadmium, Total	ND	mg/l	0.005	1	6010B	0218 15:30	0221 14:33 I	R₩
Calcium, Total	0.25	mg/l	0.10	1	6010B	0218 15:30	0221 14:33 1	RW
Chromium, Total	ND	mg/l	0.01	1	6010B		0221 14:33 1	
Cobalt, Total	ND	mg/l	0.02	1	6010B		0221 14:33 1	
Copper, Total	ND	mg/l	0.01	1	6010B		0221 14:33	
Iron, Total	0.07	mg/l	0.05	1	6010B		0221 14:33	
Lead, Total	ND	mg/l	0.050	1	6010B		0221 14:33	
Magnesium, Total	ND	mg/1	0.10	1	6010B		0221 14:33	
Manganese, Total	ND	mg/l	0.01	1	6010B	0218 15:30	0221 14:33	RW
Mercury, Total	ND	mg/l	0.0002	1	7470A	0222 16:45	0223 09:21	DM
Nickel, Total	ND	mg/l	0.025	1	6010B		0221 14:33	
Potassium, Total	ND	mg/l	2.5	1	6010B		0221 14:33	
Selenium, Total	ND	mg/l	0.005	1	6010B		0 0221 14:33	
Silver, Total	ND	mg/l	0.007	1	6010B		0221 14:33	
Sodium, Total	ND	mg/l	2.0	1	6010B		0221 14:33	
Thallium, Total	ND	mg/l	0.005	1	6010B		0221 14:33	
Vanadium, Total	ND	mg/l	0.01	1	6010B		0 0221 14:33	
Zinc, Total	ND	mg/l	0.05	1	6010B	0218 15:30	0221 14:33	RW
Volatile Organics by GC/MS	8260			1	8260B		0224 09:45	вт
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Trichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					



Laboratory Sample Number: L0501658-06

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS	8260 contin	har		.4 .4	
Bromodichloromethane	ND	ug/l	0.50	1 8260B	0224 09:45 BT
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/l	2.0		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.50		
Toluene	ND	ug/l	0.75		
Ethylbenzene	ND	ug/l	0.50		
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
1,1-Dichloroethene	ND	ug/l	0.50		
trans-1,2-Dichloroethene	ND	ug/l	0.75		
Trichloroethene	ND	ug/l	0.50		
1,2-Dichlorobenzene	ND	ug/l	2.5		
1,3-Dichlorobenzene	ND	ug/l	2.5		
1,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	ND	ug/l	1.0		
p/m-Xylene	ND	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
/inyl acetate	ND	ug/l	5.0		
1-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Cthyl methacrylate	ND	ug/l	5.0		
acrolein	ND	ug/l	12.		
acrylonitrile	ND	ug/l	5.0		
romochloromethane	ND	ug/l	2.5		
etrahydrofuran	ND	ug/l	10.		
,2-Dichloropropane	ND	ug/l	2.5		
,2-Dibromoethane	ND	ug/l	2.0		
,3-Dichloropropane	ND	ug/l	2.5		
,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
romobenzene	ND	ug/l	2.5		
-Butylbenzene	ND	ug/l	0.50		
ec-Butylbenzene	ND	ug/l	0.50		
ert-Butylbenzene	ND	ug/l	2.5		
-Chlorotoluene	ND	ug/l	2.5		



Laboratory Sample Number: L0501658-06

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ed	11 :	1 8260B	0224 09:45 BT
o-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50		
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	117.	%			
Toluene-d8	101.	8			
4-Bromofluorobenzene	106.	8			
Dibromofluoromethane	104.	%			
SVOC's by GC/MS 8270				1 8270C	0218 17:45 0221 14:18 H
Acenaphthene	ND	ug/l	5.0		
Benzidine	ND	ug/l	50.		
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ND	ug/l	5.0		
1-Chloronaphthalene	ND	ug/l	5.0		
2-Chloronaphthalene	ND	ug/l	6.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
1,3-Dichlorobenzene	ND	ug/l	5.0		
1,4-Dichlorobenzene	ND	ug/l	5.0	•	
3,3'-Dichlorobenzidine	ND	ug/l	50.		
2,4-Dinitrotoluene	ND	ug/l	6.0		
2,6-Dinitrotoluene	ND	ug/l	5.0		
Azobenzene	ND	ug/l	5.0		
Fluoranthene	ND	ug/l	5.0		
4-Chlorophenyl phenyl ether	ND	ug/l	5.0		
4-Bromophenyl phenyl ether	ND	ug/l	5.0		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0		
Bis (2-chloroethoxy) methane	ND	ug/l	5.0		
Hexachlorobutadiene	ND	ug/l	10.		
Hexachlorocyclopentadiene	ND	ug/l	10.		
Hexachloroethane	ND	ug/l	5.0		
Isophorone	ND	ug/l	5.0		
Naphthalene	ND	ug/l	5.0		
Nitrobenzene	ND	ug/1	5.0		
NDPA/DPA	ND	ug/l	15.		
n-Nitrosodi-n-propylamine	ND	ug/l	5.0		
Bis(2-ethylhexyl)phthalate	ND	ug/l	10.		



Laboratory Sample Number: L0501658-06 FIELD BLANK

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued	1			1 10000	
Butyl benzyl phthalate	ND	ng /1	E 0	1 8270C	0218 17:45 0221 14:18 HL
Di-n-butylphthalate	ND	ug/1	5.0		
Di-n-octylphthalate	ND	ug/l	5.0		
Diethyl phthalate	ND	ug/l	5.0		
Dimethyl phthalate	ND	ug/l	5.0		
Benzo(a) anthracene	ND	ug/l	5.0		
Benzo(a) pyrene	ND	ug/l	5.0		
Benzo(b) fluoranthene		ug/l	5.0		
Benzo(k) fluoranthene	ND	ug/l	5.0		
Chrysene	ND	ug/l	5.0		
Acenaphthylene	ND	ug/l	5.0		
Anthracene	ND	ug/l	5.0		
Benzo(ghi)perylene	ND	ug/l	5.0		
Fluorene	ND	ug/l	5.0		
Phenanthrene	ND	ug/l	5.0		
Dibenzo(a,h)anthracene	ND	ug/l	5.0		
Indeno(1,2,3-cd)pyrene	ND	ug/l	5.0		
Pyrene	ND	ug/1	7.0		
Benzo(e)pyrene	ND	ug/l	5.0		
Biphenyl	ND	ug/l	5.0		
Perylene	ND	ug/l	5.0		
Aniline	ND	ug/l	5.0		
4-Chloroaniline	ND	ug/l	10.		
	ND	ug/l	5.0		
l-Methylnaphthalene 2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l	5.0		
4-Nitroaniline	ND	ug/l	5.0		
Dibenzofuran	ND	ug/l	7.0		
	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Vitrosodi-n-butylamine	ND	ug/l	10.		
2-Methylnaphthalene	ND	ug/l	8.0		
2,2,4,5-Tetrachlorobenzene Pentachlorobenzene	ND	ug/l	20.		
	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
o-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
-Aminobiphenyl	ND	ug/l	10.		
entachloronitrobenzene	ND	ug/l	10.		
sodrin	ND	ug/l	10.		
-Dimethylaminoazobenzene	ND	ug/l	10.		
hlorobenzilate	ND	ug/l	20.		
-Methylcholanthrene	ND	ug/l	20.		
thyl Methanesulfonate	ND	ug/l	15.		
cetophenone	ND	ug/l	20.		
itrosodipiperidine	ND	ug/l	20.		
,12-Dimethylbenz(a)anthracene	ND	ug/l	10.		
-Nitrosodimethylamine	ND	ug/l	50.		

Laboratory Sample Number: L0501658-06

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued			٠,	1. 8270C	0218 17:45 0221 14:18 HL
2,4,6-Trichlorophenol	ND	ug/l	5.0		
o-Chloro-m-cresol	ND	ug/l	5.0		
2-Chlorophenol	ND	ug/l	6.0		
2,4-Dichlorophenol	ND	ug/l	10.		
2,4-Dieniolophenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	ug/l	10.		
2,4-Dinitrophenol	ND	ug/l	20.		
4.6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	20.		
Phenol	ND	ug/l	7.0		
2-Methylphenol	ND	ug/l	6.0		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0		
2,4,5-Trichlorophenol	ND	ug/l	5.0		
2,6-Dichlorophenol	ND	ug/l	10.		
Benzoic Acid	ND	ug/l	50.		
Benzyl Alcohol	ND	ug/l	10.		
Carbazole	ND	ug/l	5.0		
Pyridine	ND	ug/l	50.		
2-Picoline	ND	ug/l	20.		
Pronamide	ND	ug/l	20.		
Methyl methanesulfonate	ND	ug/l	20.		
Surrogate(s)	Recovery		QC Cr	riteria	
2-Fluorophenol	37.0	8			
Phenol-d6	28.0	8			
Nitrobenzene-d5	63.0	엉			
2-Fluorobiphenyl	59.0	8			
2,4,6-Tribromophenol	60.0	8			
4-Terphenyl-d14	79.0	%			
PAH by GC/MS SIM 8270M				1 8270C-M	0218 17:45 0222 13:40 RL
Acenaphthene	ND	ug/l	0.20		
2-Chloronaphthalene	ND	ug/l	0.20		
Fluoranthene	ND	ug/l	0.20		
Hexachlorobutadiene	ИD	ug/l	0.50		
Naphthalene	ND	ug/l	0.20		
Benzo(a) anthracene	ND	ug/l	0.20		
Benzo(a) pyrene	ND	ug/l	0.20		
Benzo(b) fluoranthene	ND	ug/l	0.20		
Benzo(k) fluoranthene	ND	ug/l	0.20		
Chrysene	ND	ug/l	0.20		
Acenaphthylene	ND	ug/l	0.20		
Anthracene	ND	ug/l	0.20		
Benzo(ghi)perylene	ND	ug/l	0.20		
Fluorene	ND	ug/l	0.20		
Phenanthrene	ND	ug/l	0.20		
Dibenzo(a,h)anthracene	ND	ug/l	0.20		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20		



Laboratory Sample Number: L0501658-06 FIELD BLANK

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
PAH by GC/MS SIM 8270M conti	nued			1 8270С-м	0270 177 17 200
Pyrene	ND	ug/l	0.20	1 02700 11	0218 17:45 0222 13:40 RL
1-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	ND	ug/l	0.80		
Hexachlorobenzene	ND	ug/l	0.80		
Perylene	ND	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l			
1-Methylphenanthrene	ND	ug/l	0.2 0		
Benzo(e) Pyrene	ND		0.20		
Hexachloroethane	ND	ug/l ug/l	0.20 0.80		
Surrogate(s)	Do o o o o o o o o o o o o o o o o o o				
2-Fluorophenol	Recovery	p.	QC Cri	teria	
Phenol-d6	37.0	8	21-120		
Nitrobenzene-d5	31.0	8	10-120		
2-Fluorobiphenyl	60.0	00	23-120		
2,4,6-Tribromophenol	59.0	%	43-120		
	73.0	8	10-120		
4-Terphenyl-d14	70.0	8	33-120		
Polychlorinated Biphenyls			, ,	1 8082	0218 17:35 0223 00:44 JB
Aroclor 1221	ND	ug/l	0.500		**** ***** **** **** **** ****
Aroclor 1232	ND	ug/l	0.500		
Aroclor 1242/1016	ND	ug/l	0.500		
Aroclor 1248	ND	ug/l	0.500		
Aroclor 1254	ND	ug/l	0.500		
Aroclor 1260	ND	ug/l	0.500		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	80.0	9	30-150	erra	
Decachlorobiphenyl	63.0	90	30-150	-	
Organochlorine Pesticides					
Delta-BHC	ND	ug/l	0 000	1 8081	0218 19:45 0223 20:06 BW
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND		0.020		
Beta-BHC		ug/1	0.020		
Meptachlor	ND ND	ug/1	0.020		
Aldrin	ND	ug/l	0.020		
leptachlor epoxide	ND	ug/l	0.020		
Indrin	ND	ug/l	0.020		
ndrin aldehyde	ND	ug/l	0.040		
indrin aldenyde Indrin ketone	ND	ug/l	0.040		
rieldrin	ND	ug/l	0.040		
,4'-DDE	ND	ug/l	0.040		
,4'-DDE	ND	ug/l	0.040		
,4'-DDT	ND	ug/l	0.040		
	ND	ug/l	0.040		
ndosulfan I	ND	ug/l	0.020		
ndosulfan II	ND	ug/l	0.040		

Laboratory Sample Number: L0501658-06

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Organochlorine Pesticides con	tinued			\$ 1 8081-4	0218 19:45 0223 20:06 BW
Endosulfan sulfate	ND	ug/l	0.040		
Methoxychlor	ND	ug/l	0.200		
Toxaphene	ND	ug/l	0.200		
Chlordane	ND	ug/l	0.200		
cis-Chlordane	ND	ug/l	0.020		
trans-Chlordane	ND	ug/l	0.020		
Surrogate(s)	Recovery		QC Cr:	iteria	
2,4,5,6-Tetrachloro-m-xylene	51.0	8	30-150	0	
Decachlorobiphenyl	39.0	8	30-150	0	



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-07

Date Collected: 14-FEB-2005 14:00

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Date Received : 17-FEB-2005

Sample Matrix:

WATER

Date Reported : 24-FEB-2005

Condition of Sample: Satisfactory

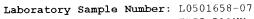
Field Prep: None

Number & Type of Containers: 2-Vial

		UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS	8260			1 8260B	<u> </u>
Methylene chloride	ND	ug/l	5.0	1 02000	0224 10:21 BT
1,1-Dichloroethane	ND	ug/l	0.75		
Chloroform	ND	ug/l	0.75		
Carbon tetrachloride	ND	ug/l	0.50		
1,2-Dichloropropane	ND	ug/1	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.50		
Chlorobenzene	ND	ug/l	0.50		
Trichlorofluoromethane	ND	ug/l	2.5		
1,2-Dichloroethane	ND	ug/l	0.50		
1,1,1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/l	2.0		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.50		
l'oluene	ND	ug/l	0.75		
Ethylbenzene	ND	ug/l	0.75	-	
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
l,1-Dichloroethene	ND	ug/l	0.50		
rans-1,2-Dichloroethene	ND	ug/l	0.75		
richloroethene	ND	ug/l			
,2-Dichlorobenzene	ND	-	0.50		
.,3-Dichlorobenzene	ND	ug/1	2.5		
.,4-Dichlorobenzene	ND	ug/l	2.5		
ethyl tert butyl ether	ND	ug/l	2.5		
o/m-Xylene	ND	ug/l	1.0		
-Xylene		ug/l	0.50		
is-1,2-Dichloroethene	ND ND	ug/1	0.50		
ibromomethane	ND	ug/l	0.50		
,4-Dichlorobutane	ND	ug/l	5.0		
odomethane	ND	ug/l	5.0		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	D <i>I</i> PREP	ATE ID ANAL
Volatile Organics by GC/MS 82	60 continu	ed .		1: 8260B	. %	0224: 10: 21 BT
1,2,3-Trichloropropane	ND ND	ug/l	5.0			
Styrene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
Acetone	ND	ug/l	5.0			
Carbon disulfide	ND	ug/l	5.0			
2-Butanone	ND	ug/l	5.0			
Vinyl acetate	ND	ug/l	5.0			
4-Methyl-2-pentanone	ND	ug/l	5.0			
2-Hexanone	ND	ug/l	5.0			
Ethyl methacrylate	ND	ug/l	5.0			
Acrolein	ND	ug/l	12.			
Acrylonitrile	ND	ug/l	5.0			
Bromochloromethane	ND	ug/l	2.5			
Tetrahydrofuran	ND	ug/l	10.			
2,2-Dichloropropane	ND	ug/l	2.5			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
Bromobenzene	ND	uq/l	2.5			
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	uq/l	0.50			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
Isopropylbenzene	ND	ug/l	0.50			
p-Isopropyltoluene	ND	ug/l	0.50			
Naphthalene	ND	ug/l	2.5			
n-Propylbenzene	ND	ug/l	0.50			
1,2,3-Trichlorobenzene	ND	ug/l	2.5			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			
1,3,5-Trimethylbenzene	ND	ug/l	2.5			
1,2,4-Trimethylbenzene	ND	ug/l	2.5			
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5			
Ethyl ether	ND	ug/l	2.5			
Surrogate(s)	Recovery		QC C1	riteria		
1,2-Dichloroethane-d4	117.	8				
Toluene-d8	102.	98				
4-Bromofluorobenzene	112.	96				
Dibromofluoromethane	105.	ob				



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501658-08

Date Collected: 16-FEB-2005 14:35

MW/CB-4 (14'-16')

Date Received: 17-FEB-2005

Sample Matrix: SOIL

Date Reported : 24-FEB-2005

Condition of Sample: Satisfactory

isfactory **F**:

Field Prep: None

Number & Type of Containers: 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	TE ID
					PREP	ANAL
Solids, Total	82.	ş	0.10	30 2540G		0221 09:18 LC
Volatile Organics by GC/MS	8260			1 8260B		0220 02:35 BT
Methylene chloride	ND	ug/kg	30.	* 0200B		0220 02:33 BI
1,1-Dichloroethane	ND	ug/kg	4.6			
Chloroform	ND	ug/kg	4.6			
Carbon tetrachloride	ND	ug/kg	3.0			
1,2-Dichloropropane	ND	ug/kg	11.			
Dibromochloromethane	ND	ug/kg	3.0			
1,1,2-Trichloroethane	ND	ug/kg	4.6			
Tetrachloroethene	ND	ug/kg	3.0			
Chlorobenzene	ND	ug/kg	3.0			
Trichlorofluoromethane	ND	ug/kg	15.	×		
1,2-Dichloroethane	ND	ug/kg	3.0			
1,1,1-Trichloroethane	ND	ug/kg	3.0			
Bromodichloromethane	ND	ug/kg	3.0			
trans-1,3-Dichloropropene	ND	ug/kg	3.0			
cis-1,3-Dichloropropene	ND	ug/kg	3.0			
1,1-Dichloropropene	ND	ug/kg	15.			
Bromoform	ND	ug/kg	12.			
1,1,2,2-Tetrachloroethane	ND	ug/kg	3.0			
Benzene	ND	ug/kg	3.0			
Toluene	ND	ug/kg ug/kg	4.6			
Ethylbenzene	ND	ug/kg ug/kg	3.0			
Chloromethane	ND	ug/kg ug/kg	15.			
Bromomethane	ND	ug/kg ug/kg	6.1			
Vinyl chloride	ND	ug/kg ug/kg	6.1			
Chloroethane	ND	ug/kg ug/kg	6.1			
1,1-Dichloroethene	ND ND	ug/kg ug/kg	3.0			
trans-1,2-Dichloroethene	ND	ug/kg ug/kg	4.6			
Trichloroethene	ND ND					
1,2-Dichlorobenzene	ND ND	ug/kg	3.0 15.			
1,3-Dichlorobenzene	ND	ug/kg				
1,4-Dichlorobenzene	ND ND	ug/kg	15.			
Methyl tert butyl ether	ND ND	ug/kg	15.			
o/m-Xylene		ug/kg	6.1			
o-Xylene	8.5	ug/kg	3.0			
cis-1,2-Dichloroethene	ND	ug/kg	3.0			
	ND	ug/kg	3.0			
Dibromomethane	ND	ug/kg	30.			



Laboratory Sample Number: L0501658-08

MW/CB-4 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continue	ed		1 8260B	0220 02:35 BT
1.4-Dichlorobutane	ND	ug/kg	30.	•	
Iodomethane	ND	ug/kg	30.		
1,2,3-Trichloropropane	ND	ug/kg	30.		
	ND	ug/kg	3.0		
Styrene Dichlorodifluoromethane	ND	ug/kg	30.		
Acetone	54.	ug/kg	30.		
Carbon disulfide	ND	ug/kg	30.		
2-Butanone	ND	ug/kg	30.		
Vinyl acetate	ND	ug/kg	30.		
4-Methyl-2-pentanone	ND	ug/kg	30.		
2-Hexanone	ND	ug/kg	30.		
Ethyl methacrylate	ND	ug/kg	30.		
Acrolein	ND	ug/kg	76.		
	ND	ug/kg	30.		
Acrylonitrile Bromochloromethane	ND	ug/kg	15.		
	ND	ug/kg	61.		
Tetrahydrofuran	ND	ug/kg	15.		
2,2-Dichloropropane	ND	ug/kg	12.		
1,2-Dibromoethane	ND	ug/kg	15.		
1,3-Dichloropropane 1,1,1,2-Tetrachloroethane	ND	ug/kg	3.0		
Bromobenzene	ND	ug/kg	15.		
n-Butylbenzene	ND	ug/kg	3.0		
sec-Butylbenzene	ND	ug/kg	3.0		
-	ND	ug/kg	15.		
tert-Butylbenzene o-Chlorotoluene	ND	ug/kg	15.		
	ND	ug/kg	15.		
p-Chlorotoluene 1,2-Dibromo-3-chloropropane	ND	ug/kg	15.		
	ND	ug/kg	15.		
Hexachlorobutadiene	ND	ug/kg	3.0		
Isopropylbenzene	ND	ug/kg	3.0		
p-Isopropyltoluene	ND	ug/kg	15.		
Naphthalene	ND	ug/kg	3.0	•	
n-Propylbenzene	ND	ug/kg	15.		
1,2,3-Trichlorobenzene	ND ND	ug/kg	15.		
1,2,4-Trichlorobenzene	ND	ug/kg ug/kg	15.		
1,3,5-Trimethylbenzene	ND	ug/kg	15.		
1,2,4-Trimethylbenzene	ND ND	ug/kg ug/kg	15.		
trans-1,4-Dichloro-2-butene Ethyl ether	ND	ug/kg ug/kg	15.		
Surrogate(s)	Recovery		QC C	riteria	
1,2-Dichloroethane-d4	97.0	90			
Toluene-d8	96.0	oje			
4-Bromofluorobenzene	104.	8			
Dibromofluoromethane	92.0	%			



Laboratory Job Number: L0501658

Parameter	7	Value 1	Value 2	Units	RPD	RPD Li	mits	
	Solids, Total	for samp	le(s) 01-04	/T.0501572-0	no wata	4534 _138	Salviya a	- a165a
Solids, Total	7	1.	72.	%	1	2044_F}		in the American
	Solids, Tota	il for sai	mnle/el A5	/T 0501650_05	MÖ101	e m di i a s		
Solids, Total		93.	93.	8	0	3 0 3-1).		
	Solids, Tota	ıl for saı	mple(s) 08	(L0501658-08	, WG194	668-1.)		
Solids, Total		12.	82.	96	0			
	Total Metals	for sam	ole(s) 06 (L0501354-02.	WG1946	01-11	4.50.5	
Antimony, Total		ID.	ND	mq/l	NC NC	20	* *	
Arsenic, Total	N	ID	ND	mg/l	NC	20		
Beryllium, Total		ID	ND	mg/l	NC	20		
Cadmium, Total	N	D	ND	mg/l	NC	20		
Chromium, Total	N	D	ND	mg/l	NC	20		
Copper, Total	N	D	ND	mg/l	NC	20		
Lead, Total		D	ND	mg/l	NC	20		
Nickel, Total	N	D	ND	mg/l	NC	20		
Selenium, Total		D	ND	mg/l	NC	20		
Silver, Total		D	ND	mg/l	NC	20		
Thallium, Total		D	ND	mg/l	NC	20		
Zinc, Total	N		ND	mg/l	NC	20		
				-		20		
	Total Metals			(L0501658-0	1, WG194	1621-1)		4,14
Aluminum, Total	4	900	4800	mg/kg	2	35		
Antimony, Total	N		ND	mg/kg	NC	35		
Arsenic, Total	2	.3	2.5	mg/kg	8	35		
Barium, Total	2	1.	22.	mg/kg	5	35		
Beryllium, Total	N	D	ND	mg/kg	NC	35		
Cadmium, Total	N	D	ND	mg/kg	NC	35		
Calcium, Total	2	200	3500	mg/kg	46	35		
Chromium, Total	7	. 9	8.0	mg/kg ·	1	35		
Cobalt, Total	4	. 2	4.3	mg/kg	2	35		
Copper, Total	1	0.	12.	mg/kg	18	35		
Iron, Total	1	0000	10000	mg/kg	0	35		
Lead, Total	1:	2.	14.	mg/kg	15	35		
Magnesium, Total	2:	300	2400	mg/kg	4	35		
Manganese, Total	2	40	240	mg/kg	0	35		
Nickel, Total	7	. 8	7.6	mg/kg	3	35		
Potassium, Total	2	70	280	mg/kg	4	35		
Selenium, Total	NI	D	ND	mg/kg	NC	35		
Silver, Total	NI)	ND	mg/kg	NC	35		
Sodium, Total		30	150	mg/kg	14	35		
Challium, Total	NI)	ND	mg/kg	NC	35		
/anadium, Total		. 1	9.2	mg/kg	1	35		
Zinc, Total		7.	28.	mg/kg	4	35		



Laboratory Job Number: L0501658

Parameter	Value 1 Value	e 2 Units	RPD	RPD Limits
Mercury, Total	Total Metals for sample(s)		WG1948:	38 -3) · · · · · · · · · · · · · · · · · · ·
Mercury, Total	Total Metals for sample(s)	01-05 (L0501658-0 mg/kg		4841- 3) 35

Laboratory Job Number: L0501658

	% Recovery	y QC Criteria	
Total Metals LCS fo	ir cample (a) 00	márószon	
Aluminum, Total	105		
Antimony, Total	101	75-125	
Arsenic, Total	101	75-125	
Barium, Total	100	75-125	
Beryllium, Total	100	75-125	
Cadmium, Total	105	75-125	
Calcium, Total	97	75-125	
Chromium, Total	100	75~125	
Cobalt, Total	100	75-125	
Copper, Total	100	75-125	
Iron, Total	97	75-125	
Lead, Total	104	75-125	
Magnesium, Total	100	75-125 75-125	
Manganese, Total	100		
Nickel, Total	98	75-125	
Potassium, Total	100	75-125	
Selenium, Total	112	75-125	
Silver, Total	101	75-125	
Sodium, Total	100	75-125	
Challium, Total	98	75-125	
Vanadium, Total	100	75-125	
Sinc, Total	98	75-125 75-125	
	30	75-125	
Total Metals LCS for	sample(s) 01-05	(WG194621-4)	
luminum, Total	98	70-140	
intimony, Total	92		
rsenic, Total		70-140	
arsenic, Total Farium, Total	92	70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total	92 104	70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total	92 104 93	70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Balcium, Total	92 104 93 92	70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total	92 104 93 92 100 89	70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total	92 104 93 92 100	70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Balcium, Total Balcium, Total	92 104 93 92 100 89 92	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total	92 104 93 92 100 89	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total	92 104 93 92 100 89 92 92 92 92	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total	92 104 93 92 100 89 92 92	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Bagnesium, Total Banganese, Total	92 104 93 92 100 89 92 92 92 94 105 94	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total	92 104 93 92 100 89 92 92 92 94	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Balcium, Total Bagnesium, Total Banganese, Total	92 104 93 92 100 89 92 92 92 94 105 94	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total Barium, Total Beryllium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total Badmium, Total	92 104 93 92 100 89 92 92 92 94 105 94 92	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total carium, Total ceryllium, Total cadmium, Total cadmium, Total calcium, Total calcium, Total calcium, Total calcium, Total cobalt, Total copper, Total con, Total cad, Total cad, Total canganese, Total cickel, Total cotassium, Total	92 104 93 92 100 89 92 92 92 94 105 94 92 92 86 106	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total carium, Total ceryllium, Total cadmium, Total cadmium, Total calcium, Total calcium, Total calcium, Total calcium, Total cobalt, Total copper, Total con, Total cad, Total cad, Total canganese, Total cickel, Total cotassium, Total celenium, Total	92 104 93 92 100 89 92 92 94 105 94 92 92 86 106 93	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
arsenic, Total carium, Total ceryllium, Total cadmium, Total cadmium, Total calcium, Total calcium, Total cobalt, Total copper, Total copper, Total con, Total cad, Total cad, Total cad, Total cad, Total canganese, Total cickel, Total cotassium, Total celenium, Total celenium, Total	92 104 93 92 100 89 92 92 94 105 94 92 92 86 106 93	70-140 70-140	
arsenic, Total carium, Total carium, Total cadmium, Total cadmium, Total calcium, Total calcium, Total calcium, Total cobalt, Total copper, Total con, Total cad, Total cad, Total cad, Total cad, Total cad, Total cad, Total canganese, Total cickel, Total cickel, Total coloum, Total coloum, Total coloum, Total	92 104 93 92 100 89 92 92 94 105 94 92 92 86 106 93	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	

Laboratory Job Number: L0501658

Total Metals LCS for sample(s) 06 (WG194838-1) Mercury, Total Total Metals LCS for sample(s) 01-05 (WG194841-1) Mercury, Total Total Metals LCS for sample(s) 01-05 (WG194841-1) Wolatile Organics by GC/MS 8260 LCS for sample(s) 01,03-05,08 (WG194657-5) Chlorobenzene 101 Benzene 99 Toluene 97 Toluene 99 Toluene 99 Surrogate(s) 1,2-Dichloroethane-d4 99 Toluene-d8 100 4-Bromofluorobenzene 103 Dibromofluoromethane 97 Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene 89 Benzene 89 Toluene 88 1,1-Dichloroethane-d4 113 Toluene-d8 101 4-Bromofluorobenzene 104 Dibromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 87 Surrogate(s) 1,2-Dichloroethane-d4 101 Toluene-d8 101 4-Bromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Enzene 98 Toluene 104 Toluene-d8 98 Toluene 98 Tichloroethane-d4 100 Toluene-d8 98 Tichloroethane-d4 100 Toluene-d8 98 Tichloroethane-d4 100 Toluene-d8 96 Tichloroethane-d4 100 Toluene-d8 96 Toluene-d8 96 Toluene-d8 96 Toluene-d8 96 Toluenoethane-d8 96 Toluenoethane-d8 96 Toluenoethane-d9 96 Toluen	Parameter	% Recovery QC Criteria
Total Metals LCS for sample(s) 01-05 (WG194841-1) Mercury, Total 94 70-130 Volatile Organics by GC/MS 8260 LCS for sample(s) 01,03-05,08 (WG194657-5) Chlorobenzene 101 Benzene 99 Toluene 97 1,1-Dichloroethene 102 Trichloroethene 99 Surrogate(s) 1,2-Dichloroethane-d4 100 A-Bromofluoromethane 97 Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene 89 Benzene 89 Benzene 89 Toluene 87 Surrogate(s) 1,2-Dichloroethane-d4 113 Toluene-d8 100 4-Bromofluorobenzene 87 Surrogate(s) 1,2-Dichloroethane-d4 113 Toluene-d8 101 4-Bromofluorobenzene 104 4-Bromofluorobenzene 104 Columne-d8 105 4-Bromofluorobenzene 104 Toluene-d8 105 4-Bromofluorobenzene 98 Enzene 98 Enzene 98 Enzene 98 Toluene 104 Toluene-d8 105 4-Bromofluorobethene 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 98 Enzene 98 Enzene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 99 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 99 Trichloroethene 98 Trichloroethene 98 Trichloroethene 98 Trichloroethene 99 Trichloroethene 98 Trichloroethene 99 Trichloroethene 98 Trichloroethene 98 Trichloroethene 99 Trichloroethene 99 Trichloroethene 98 Trichloroethene 99 Trichloroethene 98 Trichloroethene 99 T	Total Metals LCS	
Welatile Organics by GC/MS 8260 LCS for sample(s) 01,03-05,08 (WG194657-5) Chlorobenzene 101 Benzene 99 Toluene 97 1,1-Dichloroethene 102 Trichloroethene 99 Surrogate(s) 1,2-Dichloroethane-d4 1,2-Dichloroethane-d8 100 4-Bromofluorobenzene 103 Dibromofluoromethane 97 Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene 89 Benzene 89 Toluene 88 1,1-Dichloroethene 92 Trichloroethene 92 Surrogate(s) 1,2-Dichloroethane-d4 1,2-Dichloroethane 104 Dibromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Benzene 98 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 98 Benzene 98 Volatile Organics by GC/MS 8260 LCS for sample(s) 06 (WG194657-7) <th>Mercury, Total</th> <th>100 70-130</th>	Mercury, Total	100 70-130
Wolatile Organics by GC/MS 8260 LCS for sample(s) 01,03-05,08 (WG194657-5)	Total Metals LCS fo	or sample(s) 01-05 (WG194841-1)
Dilorobenzene 101 99 99 101 99 101 99 101 99 101 97 1,1-Dichloroethene 102 102 102 103		
Chlorobenzene 101 99 99 70 1,1-Dichloroethene 97 1,1-Dichloroethene 99 99 99 99 99 99 99	Volatile Organics by GC/MS 826	0 LCS for sample(s) 01,03-05,08 (WG194657-5)
Toluene 97 1,1-Dichloroethene 102 Trichloroethene 99 Surrogate(s) 1,2-Dichloroethane-d4 99 Toluene-d8 100 4-Bromofluoromethane 97 Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene 89 Eenzene 89 Toluene 88 1,1-Dichloroethene 92 Trichloroethene 92 Trichloroethene 87 Surrogate(s) 1,2-Dichloroethane-d4 113 Toluene-d8 101 4-Bromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Eenzene 97 Surrogate(s) 1,2-Dichloroethane-d4 101 Chloroethane-d8 101 Chlorobenzene 96 Eenzene 98 Toluene 98 Toluene 98 Toluene 98 Toluene 99 Eenzene 98 Toluene 99 Eenzene 98 Toluene 99 Eenzene 98 Toluene 99 Eenzene 98 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene 99 Toluene-d8 96 Toluene-d8 9		101
1,1-Dichloroethene	Benzene	
Surrogate(s) 1,2-Dichloroethane-d4 99	Toluene	
Surrogate(s) 1,2-Dichloroethane-d4 99 Toluene-d8 100 4-Bromofluorobenzene Dibromofluoromethane 97 Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene 89 Benzene 89 Toluene 88,1,1-Dichloroethene 92 Trichloroethene 87 Surrogate(s) 1,2-Dichloroethane-d4 113 Toluene-d8 101 4-Bromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 89 Surrogate(s) 1,2-Dichloroethane-d4 104 Dibromofluoromethane 96 Benzene 96 Benzene 98 Trichloroethene 98 Toluene 99 1,1-Dichloroethene 99 1,1-Dichloroethene 99 1,2-Dichloroethene 99 Trichloroethene 99 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 1,2,4-Trichlorobenzene 56	1,1-Dichloroethene	
1,2-Dichloroethane-d4 99	Trichloroethene	99
Toluene-d8 100 4-Bromofluorobenzene 103 Dibromofluoromethane 97 Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene 89 Benzene 89 Toluene 88 1,1-Dichloroethene 92 Trichloroethene 92 Trichloroethane-d4 113 Toluene-d8 101 4-Bromofluorobenzene 104 Dibromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Benzene 98 Toluene 98 Toluene 99 Toluene-d8 96 T	Surrogate(s)	
### A-Bromofluorobenzene Dibromofluoromethane Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7)	1,2-Dichloroethane-d4	
Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene		
Volatile Organics by GC/MS 8260 LCS for sample(s) 06-07 (WG194703-7) Chlorobenzene 89 Enzene 89 Toluene 88 1,1-Dichloroethene 92 Trichloroethene 87 Surrogate(s) 113 Toluene-d8 101 4-Bromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Enzene 98 Toluene 98 Toluene 998 Toluene 998 Toluene 998 Trichloroethene 995 Surrogate(s) 1,2-Dichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Toluene-d8 96 4-Bromofluoroethane 996 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	4-Bromofluorobenzene	
Chlorobenzene 89 Benzene 89 Toluene 88 1,1-Dichloroethene 92 Trichloroethene 87 Surrogate(s) 1,2-Dichloroethane-d4 113 Toluene-d8 101 4-Bromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Benzene 98 Toluene 94 1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Surrogate(s) 1,2-Dichloroethane 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Dibromofluoromethane	97
Benzene 89 Toluene 88 1,1-Dichloroethene 92 Trichloroethene 87 Surrogate(s) 1,2-Dichloroethane-d4 113 Toluene-d8 101 4-Bromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Benzene 98 Toluene 94 1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluoromethane 96 Dibromofluoromethane 96 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Volatile Organics by GC/MS	8260 LCS for sample(s) 06-07 (WG194703-7)
Toluene 88 1,1-Dichloroethene 92 Trichloroethene 87 Surrogate(s) 1,2-Dichloroethane-d4 101 4-Bromofluorobenzene 104 Dibromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 98 Benzene 98 Toluene 94 1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Surrogate(s) 1,2-Dichloroethane-d4 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SvoC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Chlorobenzene	
1,1-Dichloroethene	Benzene	
Surrogate(s) 1,2-Dichloroethane-d4 113 101 104 108 1	Toluene	
Surrogate(s) 1,2-Dichloroethane-d4 101 4-Bromofluorobenzene Dibromofluoromethane Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene Benzene 96 Benzene 98 Toluene 1,1-Dichloroethene 995 Surrogate(s) 1,2-Dichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 1,2,4-Trichlorobenzene 56	1,1-Dichloroethene	
1,2-Dichloroethane-d4 Toluene-d8 4-Bromofluorobenzene Dibromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene Benzene 96 Benzene 998 Toluene 994 1,1-Dichloroethene 998 Trichloroethene 995 Surrogate(s) 1,2-Dichloroethane-d4 Toluene-d8 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Trichloroethene	87
Toluene-d8 101 4-Bromofluorobenzene 104 Dibromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Benzene 98 Toluene 94 1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Surrogate(s)	
4-Bromofluorobenzene 104 Dibromofluoromethane 108 Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Benzene 98 Toluene 94 1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	1,2-Dichloroethane-d4	
Dibromofluoromethane 108	Toluene-d8	
Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG194657-7) Chlorobenzene 96 Benzene 98 Toluene 94 1,1-Dichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 1,2-Dichloroethane-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56		
Chlorobenzene 96 Benzene 98 Toluene 94 1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 100 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Dibromofluoromethane	108
## Stock	Volatile Organics by GC/MS	
Toluene 94 1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Chlorobenzene	
1,1-Dichloroethene 98 Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Benzene	
Trichloroethene 95 Surrogate(s) 1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56		
Surrogate(s) 1,2-Dichloroethane-d4 Toluene-d8 4-Bromofluorobenzene Dibromofluoromethane SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 1,2,4-Trichlorobenzene 56	•	
1,2-Dichloroethane-d4 100 Toluene-d8 96 4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	Trichloroethene	95
Toluene-d8 4-Bromofluorobenzene Dibromofluoromethane SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 1,2,4-Trichlorobenzene 56	Surrogate(s)	
4-Bromofluorobenzene 96 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56	1,2-Dichloroethane-d4	
Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 1,2,4-Trichlorobenzene 56		
SVOC's by GC/MS 8270 LCS for sample(s) 06 (WG194625-2) Acenaphthene 60 1,2,4-Trichlorobenzene 56		
Acenaphthene 60 1,2,4-Trichlorobenzene 56	Dibromofluoromethane	96
1,2,4-Trichlorobenzene 56	SVOC's by GC/MS 827	
1,2,4 Trichiolobenzene	Acenaphthene	
2-Chloronaphthalene 58	1,2,4-Trichlorobenzene	
	2-Chloronaphthalene	58

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Parameter	% Recovery Q	C Criteria	
SVOC's by GC/MS 8270 Lo	CS for sample(s) 06	(WG194625-2).	
1,2-Dichlorobenzene	52	(
1,4-Dichlorobenzene	51		
2,4-Dinitrotoluene	74		
2,6-Dinitrotoluene	67		
Fluoranthene	77		
4-Chlorophenyl phenyl ether	62		
n-Nitrosodi-n-propylamine	48		
Butyl benzyl phthalate	78		
Anthracene	45		
Pyrene	76		
Hexachloropropene	57		
P-Chloro-M-Cresol	56		
2-Chlorophenol			
2-Nitrophenol	50		
	51		
4-Nitrophenol 2,4-Dinitrophenol	37		
	65		
Pentachlorophenol	75		
Phenol	24		
Surrogate(s)			
2-Fluorophenol	38		
Phenol-d6	30		
Nitrobenzene-d5	62		
2-Fluorobiphenyl	61		
2,4,6-Tribromophenol	71		
4-Terphenyl-d14	79		
SVOC's by GC/MS 8270 LCS	for sample(s) 01-05	(WG194629-2)	
Acenaphthene	55	31-137	
1,2,4-Trichlorobenzene	50	38-107	
2-Chloronaphthalene	53		
1,2-Dichlorobenzene	49		
1,4-Dichlorobenzene	47	28-104	
2,4-Dinitrotoluene	71	28-89	
2,6-Dinitrotoluene	71	20 00	
Fluoranthene	71		
4-Chlorophenyl phenyl ether	61		
n-Nitrosodi-n-propylamine	41	41-126	
Butyl benzyl phthalate	71	4TT.7.0	
Anthracene	41		
Pyrene		25 142	
ryrene Hexachloropropene	70	35-142	
	50 61	06 100	
		26-103	
P-Chloro-M-Cresol			
2-Chlorophenol	47	25-102	
2-Chlorophenol 2-Nitrophenol	47 47	25-102	
2-Chlorophenol 2-Nitrophenol 4-Nitrophenol	47 47 67		
2-Chlorophenol 2-Nitrophenol	47 47	25-102	

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Parameter	% Recovery QC	C Criteria		
SVOC's by GC/MS 8270 LCS f	for sample(s) 01-05	(WG194629-2)	444	
Phenol	44	26-90		
Surrogate(s)				
2-Fluorophenol	51	25-120		
Phenol-d6	58	10-120		
Nitrobenzene-d5	53	23-120		
2-Fluorobiphenyl	55	30-120		
2,4,6-Tribromophenol	67	19-120		
4-Terphenyl-d14	70	18-120		
PAH by GC/MS SIM 8270M LC	CS for sample(s) 06	(WG194626-2)		
Acenaphthene	59	46-118		
2-Chloronaphthalene	60			
Fluoranthene	74			
Anthracene	45			
Pyrene	78	26-127		
Pentachlorophenol	90	9-103		
Surrogate(s)	4.3	21 120		
2-Fluorophenol	43	21-120		
Phenol-d6	38	10-120		
Nitrobenzene-d5	70	23-120		
2-Fluorobiphenyl	63	43-120		
2,4,6-Tribromophenol	85	10-120		
4-Terphenyl-d14	86	33-120		
PAH by GC/MS SIM 8270M LCS	for sample(s) 01-0	5 (WG194630-2)		
Acenaphthene	54	40-140		
2-Chloronaphthalene	50	40-140		
Fluoranthene	61	40-140		
Anthracene	43	40-140		
Pyrene	77	40-140		
Pentachlorophenol	70	40-140		
Surrogate(s)				
		25-120		
2-Fluorophenol	55			
2-Fluorophenol	55 71	10-120		
Phenol-d6	71	10-120		
Phenol-d6 Nitrobenzene-d5	71 58	10-120 23-120		
Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl	71 58 52	10-120 23-120 30-120		
Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophenol	71 58 52 84	10-120 23-120 30-120 19-120		
Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl	71 58 52	10-120 23-120 30-120		
Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophenol	71 58 52 84 63 CS for sample(s) 01	10-120 23-120 30-120 19-120 18-120		
Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophenol 4-Terphenyl-d14	71 58 52 84 63	10-120 23-120 30-120 19-120 18-120		

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Parameter	% Recovery	QC Criteria	
Polychlorinated Biphenyls	LCS for sample(s)	01-05 (WG194547-2)	1, 8.0 - 1730.
Surrogate(s)		(0.000000000000000000000000000000000000	and the second second
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	69	30-150	
becachiolopiphenyl	83	30-150	
Polychlorinated Biphenyls	LCS for sample(s)	06 (WG194624-2)	
Aroclor 1242/1016	95	30-150	
Aroclor 1260	8 4	30-150	
Surrogate(s)			
2,4,5,6-Tetrachloro-m-xylene	0.0		
Decachlorobiphenyl	88	30-150	
zeodemiorobiphenyr	85	30-150	
Organochlorine Pesticides I	CS for sample(s)	01-05 (WG194548-2)	
Derea Dire	54	11 00 (1101040 2)	
Lindane	57	46-127	
Alpha-BHC	55		
Beta-BHC	48		
Heptachlor	61	35-130	
Aldrin	58	34-132	
Heptachlor epoxide	60	3: 132	
Endrin	75	42-139	
Endrin aldehyde	55	12 133	
Endrin ketone	58		
Dieldrin	65	31-134	
4,4'-DDE	64	31 134	
4,4'-DDD	75		
4,4'-DDT	66	23-134	
Endosulfan I	57	23 134	
Endosulfan II	61		
Endosulfan sulfate	51		
Methoxychlor	80	-	
cis-Chlordane	6 2		
trans-Chlordane	58		
Surrogate(s)			•
2,4,5,6-Tetrachloro-m-xylene			
Decachlorobiphenyl	53 62	30-150	
		30-150	
Organochlorine Pesticides I Delta-BHC	CS for sample(s)	06 (WG194627-2)	
indane	55		
Alpha-BHC	64		
Beta-BHC	61		
leptachlor	53		
ldrin	68		
eptachlor epoxide	65		
ndrin	69		
	79		

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Parameter	% Recovery	QC Criteria
Organochlorine Pesticides LC	S for sample(s)	06 (WG194627-2)
Endrin aldehyde	59	
Endrin ketone	56	
Dieldrin	71	
4,4'-DDE	71	
·	75	
4,4'-DDD 4,4'-DDT	67	
Endosulfan I	63	
Endosulfan II	59	
Endosulfan sulfate	47	
	81	
Methoxychlor	67	
cis-Chlordane	62	
trans-Chlordane	52	
Surrogate(s)	49	30-150
2,4,5,6-Tetrachloro-m-xylene	30	30-150
Decachlorobiphenyl	30	
Total Metals SPIKE for sample	e(s) 06 (L050135	54-03, WG194601-2)
Aluminum, Total	125	75-125
Antimony, Total	96	75-125
Arsenic, Total	107	75-125
Barium, Total	95	75-125
Beryllium, Total	96	75-125
	107	75-125
Cadmium, Total	100	75-125
Calcium, Total	90	75-125
Chromium, Total	94	75-125
Cobalt, Total	92	75-125
Copper, Total	50	75-125
Iron, Total	99	75-125
Lead, Total	0	75-125
Magnesium, Total	98	75-125
Manganese, Total	89	75-125
Nickel, Total	200	75-125
Potassium, Total	98	75-125
Selenium, Total		75-125
Silver, Total	101	75-125
Sodium, Total	1000	75-125 75-125
Thallium, Total	112	75-125
Vanadium, Total	94	75-125
Zinc, Total	98	75-123
Total Metals SPIKE for sample	e(s) 01-05 (L050	01658-01, WG194621-2)
Aluminum, Total	1040	70-140
Antimony, Total	83	70-140
	96	70-140
Arsenic, Total	91	70-140
Barium, Total	92	70-140
Beryllium, Total	91	70-140
Cadmium, Total	J.	•

Laboratory Job Number: L0501658

Continued

Parameter	% Recovery	QC Criteria	
Total Metals SPIKE for	eample (a) Of as wracks	een as the same	
Calcium, Total	105 (LU501	058-U1, WG194621-2)	
Chromium, Total	185 105	70-140	
Cobalt, Total	· -	70-140	
Copper, Total	87	70-140	
Iron, Total	102	70-140	
Lead, Total	2310	70-140	
Magnesium, Total	100	70-140	
Manganese, Total	231	70-140	
Nickel, Total	92	70-140	
Potassium, Total	8 9	70-140	
Selenium, Total	125	70-140	
Silver, Total	98	70-140	
Sodium, Total	92	70-140	
	120	70-140	
Challium, Total	91	70-140	
Vanadium, Total	87	70-140	
Sinc, Total	102	70-140	
Total Motals datum c			
Total Metals SPIKE for Mercury, Total		8-06, WG194838-2)	
icicary, iocar	120	70-130	

118 70-130 Mercury, Total

Laboratory Job Number: L0501658

Parameter	MS %	MSD €	RPD	RPD Limit MS/MSD Limits
Volatile Organics by GC/MS 8260	for sample(s)	01-05.0	8 (L0501518	-01, WG194657-2)
Chlorobenzene	81	78	4	
	85	83	2	
Benzene	79	76	4	
Toluene	80	78	3	
1,1-Dichloroethene	72	71	1	
Trichloroethene	7.2	, 1		
Surrogate(s)	0.5	0.0	4	
1,2-Dichloroethane-d4	95	99	1	
Toluene-d8	101	102	2	
4-Bromofluorobenzene	106	108	2	
Dibromofluoromethane	94	96	2	
Volatile Organics by GC/MS 8260) for sample(s) 06-07	(L0501556-0	01, WG194703-2)
Chlorobenzene	88	82	1	
Benzene	90	84	7	
Toluene	88	85	3	
1,1-Dichloroethene	100	91	9	
Trichloroethene	96	91	5	
Summagata (g)				
Surrogate(s)	116	116	0	
1,2-Dichloroethane-d4	101	99	2	
Toluene-d8	104	105	1	
4-Bromofluorobenzene Dibromofluoromethane	108	110	2	
	_		ern de meit	OARDE AV
svoc's by GC/MS 8270 fo	r sample(s) C	6 (L0501	628-06' MeT	94625-41
Acenaphthene	59	59	Ü	
1,2,4-Trichlorobenzene	59	55	7	
2-Chloronaphthalene	63	59	7	
1,2-Dichlorobenzene	50	55	10	
1,4-Dichlorobenzene	50	50	0 _	
2,4-Dinitrotoluene	76	80	5	
2,6-Dinitrotoluene	76	80	5	
Fluoranthene	76	80	5	
4-Chlorophenyl phenyl ether	63	63	0	
n-Nitrosodi-n-propylamine	50	50	0	
Butyl benzyl phthalate	76	80	5	
But AT Delizat butturate	4.0	46	9	
Anthracene	42			
Anthracene	42 76	76	0	
Anthracene Pyrene			0 0	
Anthracene Pyrene Hexachloropropene	76	76		
Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol	76 59	76 59	0	
Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol 2-Chlorophenol	76 59 63 50	76 59 61	0	
Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol 2-Chlorophenol 2-Nitrophenol	76 59 63	76 59 61 50	0 3 0	
Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol 2-Chlorophenol 2-Nitrophenol 4-Nitrophenol	76 59 63 50 55	76 59 61 50 55	0 3 0 0	
Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol 2-Chlorophenol 2-Nitrophenol	76 59 63 50 55	76 59 61 50 55 63	0 3 0 0 7	

Laboratory Job Number: L0501658

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
SVOC's by GC/MS 8270	for sample(s)	06 (1050165	8-06 WC10	1/1625_A1	
	or sample (s)	00 (1000100	0 00, #913	74025-4)	
Surrogate(s)					
2-Fluorophenol	48	48	0		
Phenol-d6	49	49	0		
Nitrobenzene-d5	63	62	2		
2-Fluorobiphenyl	67	62	8		
2,4,6-Tribromophenol	68	71	4		
4-Terphenyl-d14	78	82	5		
SVOC's by GC/MS 8270 fe	or sample(s)	01-05 (L0501	658-03, WG	194629-4)	, ex
Acenaphthene	69	58	17	50	31-137
1,2,4-Trichlorobenzene	6 3	55	14	50	38-107
2-Chloronaphthalene	66	61	8	50	50 107
1,2-Dichlorobenzene	61	53	14	50	
1,4-Dichlorobenzene	58	50	15	50	28-104
2,4-Dinitrotoluene	82	71	14	50	28-89
2,6-Dinitrotoluene	82	74	10	50	20 05
Fluoranthene	84	74	13	50	
4-Chlorophenyl phenyl ether	74	63	16	50	
n-Nitrosodi-n-propylamine	53	50	6	50	41-126
Butyl benzyl phthalate	84	74	13	50	41 120
Anthracene	48	42	13	50	
Pyrene	84	71	17	50	35-142
Hexachloropropene	63	55	14	50	33 142
P-Chloro-M-Cresol	74	66	11	50	26-103
2-Chlorophenol	58	55	5	50	25-102
2-Nitrophenol	58	53	9	50	23-102
4-Nitrophenol	75	59	24	50	11-114
2,4-Dinitrophenol	67	44	41	50	11 114
Pentachlorophenol	25	20	22	50	17-109
Phenol	58	54	7 .	50	26-90
Surrogate(s)					
2-Fluorophenol	63	59	7		05.400
Phenol-d6	74	70	7 6		25-120
Nitrobenzene-d5	66	62	6		10-120
2-Fluorobiphenyl	70	63	-		23-120
2,4,6-Tribromophenol	77	64	11		30-120
1-Terphenyl-d14	85	75	18		19-120
			13		18-120
PAH by GC/MS SIM 8270M	for sample(s)		8-06, WG19	94626-4)	
Acenaphthene	59	55	7	40	46-118
2-Chloronaphthalene	55	55	0	40	
Fluoranthene	67	71	6	40	
Anthracene	42	42	0	40	
Pyrene	76	80	5	40	26-127
Pentachlorophenol	97	100	3	40	9-103

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Continued

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
PAH by GC/MS SIM 8270M for	r sample(s)	06 (L050	1658-06, °WG1	.94626-4)	
Surrogate(s)					01 100
2-Fluorophenol	53	53	0		21-120
Phenol-d6	59	58	2		10-120
Nitrobenzene-d5	67	65	3		23-120
2-Fluorobiphenyl	59	56	5		43-120
2,4,6-Tribromophenol	88	92	4		10-120
4-Terphenyl-d14	72	75	4		33-120
PAH by GC/MS SIM 8270M for	sample(s)	01-05 (LC)501658-03, T	WG194630-4)	era de la companya de la companya de la companya de la companya de la companya de la companya de la companya d
Acenaphthene	61	55	10	30	40-140
2-Chloronaphthalene	58	53	9	50	40-140
Fluoranthene	71	61	15	50	40-140
Anthracene	48	42	13	50	40-140
Pyrene	79	74	7	50	40-140
Pentachlorophenol	34	28	19	50	40-140
Surrogate(s)					25-120
2-Fluorophenol	62	60	3		10-120
Phenol-d6	85	79	7		23-120
Nitrobenzene-d5	69	62	11		30-120
2-Fluorobiphenyl	60	55	9		19-120
2,4,6-Tribromophenol	90	79	13		18-120
4-Terphenyl-d14	73	62	16		18-120
Polychlorinated Biphenyls fo	or sample(s) 01-05 (£0501658-05,	WG194547-4)	40-140
Aroclor 1242/1016	88	83	ь	30	
Aroclor 1260	88	79	10	50	40-140
Surrogate(s)					30-150
2,4,5,6-Tetrachloro-m-xylene	75	72	4.		30-150
Decachlorobiphenyl	92	81	13		30-130
Polychlorinated Biphenyls	for sample	e(s) 06 (I	0501658-06,	WG194624-4)	30-150
Aroclor 1242/1016	86	84	2	30	
Aroclor 1260	88	84	5	30	30-150
Surrogate(s)			1		30-150
2,4,5,6-Tetrachloro-m-xylene	74	73	1		30~150
	74	71	4		20-130
Decachlorobiphenyl					
Decachlorobiphenyl Organochlorine Pesticides		e(s) 06 (I	L0501658-06,	WG194627-4)	
	60	55	9	30	
Organochlorine Pesticides		55 65	9 5	30 30	
Organochlorine Pesticides Delta-BHC	60	55 65 63	9 5 5	30 30 30	
Organochlorine Pesticides Delta-BHC Lindane	60 68	55 65	9 5	30 30	

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Parameter	MS %	MSD	% RPD	RPD Limit	MS/MSD Limits
Organochlorine Pesticide	s for sample(s)	06	(1.0501658-06	WC194627_41	
Aldrin	69	66	4	30	
Heptachlor epoxide	71	66	7	30	
Endrin	87	78	11	30	
Endrin aldehyde	64	60	6	30	
Endrin ketone	67	58	14	30	
Dieldrin	75	68	10	30	
4,4'-DDE	73	68	7	30	
4,4'-DDD	88	76	15	30	
4,4'-DDT	73	64	13	30	
Endosulfan I	66	60	10	30	
Endosulfan II	69	61	12	30	
Endosulfan sulfate	61	53	14	30	
Methoxychlor	90	78	14	30	
cis-Chlordane	73	66	10	30	
trans-Chlordane	66	60	10	30	
			20	30	
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	57	56	2		30-150
Decachlorobiphenyl	57	53	7		30-150



Laboratory Job Number: L0501658

PARAMETER		RESULT	UNITS	\mathtt{RDL}	REF	METHOD		ATE		ID
							PREI	AN	IAL	
			1 o I a \ O C	wriaid		. 1471 45				
otal Metals	Blank Analysı	s ior	sample(s) 06	(MGI340		3015				
_		ND.	ma /1	0.10	1	6010B	0218 15:	30 0221	12.22	RW
Aluminum, Total		ND	mg/l				0218 15:			
Antimony, Total		ND	mg/l	0.050	1		0218 15:			
Arsenic, Total		ND	mg/l	0.005	1	6010B	0218 15:			
Barium, Total		ND	mg/l	0.01	1	6010B				
Beryllium, Total		ND	mg/l	0.005	1	6010B	0218 15:			
Cadmium, Total		ND	mg/l	0.005	1	6010B	0218 15:			
Calcium, Total		ND	mg/l	0.10	1		0218 15:			
Chromium, Total		ND	mg/l	0.01	1	6010B	0218 15:			
Cobalt, Total		ND	mg/l	0.02	1	6010B	0218 15:			
Copper, Total		ND	mg/l	0.01	1	6010B	0218 15:			
Iron, Total		ND	mg/l	0.05	1	6010B	0218 15:			
Lead, Total		ND	mg/l	0.050	1	6010B	0218 15:	30 0221	12:22	R
Magnesium, Total		ND	mg/l	0.10	1	6010B	0218 15:	30 0221	12:22	R
Manganese, Total		ND	mg/l	0.01	1	6010B	0218 15:	30 0221	12:22	R
Manganese, 10tal Nickel, Total		ND	mg/l	0.025	1	6010B	0218 15:	30 0221	12:22	P
		ND	mg/l	2.5	1	6010B	0218 15:	30 0221	12:22	P
Potassium, Total		ND	mq/l	0.005	1	6010B	0218 15:	30 0221	12:22	P
Selenium, Total		ND	mg/l	0.007	1	6010B	0218 15:	30 0221	12:22	F
Silver, Total		ND	mg/l	2.0	1	6010B	0218 15:	30 0221	12:22	F
Sodium, Total		ND	mg/l	0.005	1		0218 15	30 0221	12:22	F
Thallium, Total				0.01	1	6010B	0218 15			
Vanadium, Total		ND	mg/l	0.05	1		0218 15			
Zinc, Total		ND	mg/l	0.03	1	60105	0210 13	50 0223		•
	Blank Analysis	for s	ample(s) 01-05	(WG19	4621-	3)			,	
Total Metals		**			,1	3051				
Aluminum, Total		ND	mg/kg	4.0	1	6010B	0218 14	00 022	1 10:53	3 1
Antimony, Total		ND	mg/kg	2.0	Į	6010B	0218 14	00 022	1 10:53	3]
Arsenic, Total		ND	mg/kg	0.40	1	6010B	0218 14	00 022	1 10:53	3 1
Barium, Total		ND	mg/kg	0.40	1	6010B	0218 14	00 022	1 10:53	3]
Bervllium, Total	1	ND	mg/kg	0.20	1	6010B	0218 14	:00 022	1 10:53	3 1
Cadmium, Total	•	ND	mg/kg	0.40	1	6010B	0218 14	:00 022	1 10:53	3 1
		ND	mg/kg	4.0	1		0218 14	:00 022	1 10:53	3 1
Calcium, Total		ND	mg/kg	0.40	1		0218 14	:00 022	1 10:53	3 1
Chromium, Total		ND	mg/kg	0.80	1		0218 14			
Cobalt, Total			- · · ·	0.40	1			:00 022		
Copper, Total		ND	mg/kg	2.0	1	6010B		:00 022		
Iron, Total	•	ND	mg/kg					:00 022		
Lead, Total	_	ND	mg/kg	2.0	1			:00 022		
Magnesium, Total		ND	mg/kg	4.0	1			:00 022		
Manganese, Total	1	ND	mg/kg	0.40	1					
Nickel, Total		ND	mg/kg	1.0	1			:00 022		
Potassium, Total	1	ND	mg/kg	100	1	6010B		:00 022		
Selenium, Total		ND	mg/kg	0.80	1			:00 022		
		ND	mg/kg	0.40	3	6010B	0218 14	:00 022	1 10:5	3
Silver, Total			***97 ** 9					:00 022		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analysi	s for samp	le(s) 01-0	5 (WG194	621-31.	
Total Metals	·		(1,010.	1 3051	
Thallium, Total	ND	mg/kg	0.40	1 6010B	0218 14:00 0221 10:53 RW
Vanadium, Total	ND	mg/kg	0.40	1 6010B	0218 14:00 0221 10:53 RW
Zinc, Total	ND	mg/kg	2.0	1 6010B	0218 14:00 0221 10:53 RW
Blank Analy	sis for sa	mple(s) 06	(WG1948	38-4)	
Total Metals		No. 44			
Mercury, Total	ND	mg/l	0.0002	1 7470A	0222 16:45 0223 09:17 DM
Blank Analysi	s for samp	le(s) 01-0	5 (WG194	841-4)	
Total Metals			•		
Mercury, Total	ND	mg/kg	0.08	1 7471A	0222 19:50 0223 14:29 DM
Blank Analysis fo	or sample(s) 01,03-0	5,08 (WG	194657-6)	
Volatile Organics by GC/MS 82				1 8260B	0219 18:17 BT
Methylene chloride	ND	ug/kg	25.		
1,1-Dichloroethane	ND	ug/kg	3.8		
Chloroform	ND	ug/kg	3.8		
Carbon tetrachloride	ND	ug/kg	2.5		
1,2-Dichloropropane	ND	ug/kg	8.8		
Dibromochloromethane	ND	ug/kg	2.5		
1,1,2-Trichloroethane	ND	ug/kg	3.8		
Tetrachloroethene	ND	ug/kg	2.5		
Chlorobenzene	ND	ug/kg	2.5		
Trichlorofluoromethane	ND	ug/kg	12.		
1,2-Dichloroethane	ND	ug/kg	2.5		
1,1,1-Trichloroethane	ND	ug/kg	2.5		
Bromodichloromethane	ND	ug/kg	2.5		
trans-1,3-Dichloropropene	ND	ug/kg	2.5		
cis-1,3-Dichloropropene	ND	ug/kg	2.5		
1,1-Dichloropropene	ND	ug/kg	12.		
Bromoform	ND	ug/kg	10.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.5		
Benzene	ND	ug/kg	2.5		
Toluene	ND	ug/kg	3.8		
Ethylbenzene	ND	ug/kg	2.5		
Chloromethane	ND	ug/kg	12.		
Bromomethane	ND	ug/kg	5.0		
Vinyl chloride	ND	ug/kg	5.0		
Chloroethane	ND	ug/kg	5.0		
1,1-Dichloroethene	ND	ug/kg	2.5		
trans-1,2-Dichloroethene	ND	ug/kg	3.8		
Trichloroethene	ND	ug/kg	2.5		



Laboratory Job Number: L0501658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis	for sample	(s) 01,03-0)5,08 (W		
Volatile Organics by GC/MS 8				1 8260B	0219 18:17 BT
1,3-Dichlorobenzene	ND	ug/kg	12.		
1,4-Dichlorobenzene	ND	ug/kg	12.		
Methyl tert butyl ether	ND	ug/kg	5.0		
p/m-Xylene	ND	ug/kg	2.5		
o-Xylene	ND	ug/kg	2.5		
cis-1,2-Dichloroethene	ND	ug/kg	2.5		
Dibromomethane	ND	ug/kg	25.		
1,4-Dichlorobutane	ND	ug/kg	25.		
Iodomethane	ND	ug/kg	25.		
1,2,3-Trichloropropane	ND	ug/kg	25.		
Styrene	ND	ug/kg	2.5		
Dichlorodifluoromethane	ND	ug/kg	25.		
Acetone	ND	ug/kg	25.		
Carbon disulfide	ND	ug/kg	25.		
2-Butanone	ND	ug/kg	25.		
Vinyl acetate	ND	ug/kg	25.		
4-Methyl-2-pentanone	ND	ug/kg	25.		
2-Hexanone	ND	ug/kg	25.		
Ethyl methacrylate	ND	ug/kg	25.		
Acrolein	ND	ug/kg	62.		
Acrylonitrile	ND	ug/kg	25.		
Bromochloromethane	ND	ug/kg	12.		
Tetrahydrofuran	ND	ug/kg	50.		
2,2-Dichloropropane	ND	ug/kg	12.		
1,2-Dibromoethane	ND	ug/kg	10.		
1,3-Dichloropropane	ND	ug/kg	12.		
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.5		
Bromobenzene	ND	ug/kg	12.		
n-Butylbenzene	ND	ug/kg	2.5		
sec-Butylbenzene	ND	ug/kg	2.5	•	
tert-Butylbenzene	ND	ug/kg	12.		
o-Chlorotoluene	ND	ug/kg	12.		
p-Chlorotoluene	ND	ug/kg	12.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	12.		
Hexachlorobutadiene	ND	ug/kg	12.		
Isopropylbenzene	ND	ug/kg ug/kg	2.5		
p-Isopropyltoluene	ND	ug/kg ug/kg	2.5		
	ND	ug/kg ug/kg	12.		
Naphthalene	ND	ug/kg ug/kg	2.5		
n-Propylbenzene 1,2,3-Trichlorobenzene	ND	ug/kg ug/kg	12.		
• •	ND ND	ug/kg ug/kg	12.		
1,2,4-Trichlorobenzene			12.		
1,3,5-Trimethylbenzene	ND	ug/kg	12.		
1,2,4-Trimethylbenzene	ND	ug/kg			
trans-1,4-Dichloro-2-butene	ND	ug/kg	12.		
Ethyl ether	ND	ug/kg	12.		



Laboratory Job Number: L0501658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis Volatile Organics by GC/MS {	for sample (s) 01,03-0	05,08 (W		
Surrogate(s)	Recovery	leu .	00.0.	1 8260B	0219 18:17 BT
1,2-Dichloroethane-d4	102.	8	QC CI	iteria	
Toluene-d8	98.0	8			
4-Bromofluorobenzene	111.				
Dibromofluoromethane		%			
DIDIOMOTIGOTOMECHANE	90.0	ъ			
	ysis for sa	mple(s) 02	2.(WG194	657-8)	
Volatile Organics by GC/MS &	3260			1 8260B	0220 11:03 BT
Methylene chloride	ND	ug/kg	25.		
1,1-Dichloroethane	ND	ug/kg	3.8		
Chloroform	ND	ug/kg	3.8		
Carbon tetrachloride	ND	ug/kg	2.5		
1,2-Dichloropropane	ND	ug/kg	8.8		
Dibromochloromethane	ND	ug/kg	2.5		
l,1,2-Trichloroethane	ND	ug/kg	3.8		
letrachloroethene	ND	ug/kg	2.5		
Chlorobenzene	ND	ug/kg	2.5		
Prichlorofluoromethane	ND	ug/kg	12.		
l,2-Dichloroethane	ND	ug/kg	2.5		
1,1,1-Trichloroethane	ND	ug/kg	2.5		
Bromodichloromethane	ND	ug/kg	2.5		
rans-1,3-Dichloropropene	ND	ug/kg	2.5		
cis-1,3-Dichloropropene	ND	ug/kg	2.5		
.,1-Dichloropropene	ND	ug/kg	12.		
Bromoform	ND	ug/kg	10.		
,1,2,2-Tetrachloroethane	ND	ug/kg	2.5		
Benzene	ND	ug/kg	2.5		
oluene	ND	ug/kg	3.8		
Sthylbenzene	ND	ug/kg	2.5	-	
Chloromethane	ND	ug/kg	12.		
Bromomethane	ND	ug/kg	5.0		
inyl chloride	ND	ug/kg	5.0		
hloroethane	ND	ug/kg	5.0		
,1-Dichloroethene	ND	ug/kg	2.5		
rans-1,2-Dichloroethene	ND	ug/kg ug/kg	3.8		
richloroethene	ND	ug/kg ug/kg	2.5		
,2-Dichlorobenzene	ND	ug/kg ug/kg	12.		
,3-Dichlorobenzene	ND	ug/kg ug/kg	12.		
,4-Dichlorobenzene	ND	ug/kg ug/kg	12.		
ethyl tert butyl ether	ND	ug/kg ug/kg	5.0		
/m-Xylene	ND				
-Xylene	ND ND	ug/kg	2.5		
is-1,2-Dichloroethene		ug/kg	2.5		
ibromomethane	ND	ug/kg	2.5		
,4-Dichlorobutane	ND	ug/kg	25.		
odomethane	ND	ug/kg	25.		
odomethane	ND	ug/kg	25.		

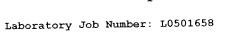


Laboratory Job Number: L0501658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analy	sis for sa	mple(s) 02	(WG194	657-8) \ <u>}</u>	
Volatile Organics by GC/MS 82	60 continu	.ed		1 8260B	0220 11:03 BT
1,2,3-Trichloropropane	ND	ug/kg	25.		
Styrene	ND	ug/kg	2.5		
Dichlorodifluoromethane	ND	ug/kg	25.		
Acetone	ND	ug/kg	25.		
Carbon disulfide	ND	ug/kg	25.		
2-Butanone	ND	ug/kg	25.		
Vinyl acetate	ND	ug/kg	25.		
4-Methyl-2-pentanone	ND	ug/kg	25.		
2-Hexanone	ИD	ug/kg	25.		
Ethyl methacrylate	ND	ug/kg	25.		
Acrolein	ND	ug/kg	62.		
Acrylonitrile	ND	ug/kg	25.		
Bromochloromethane	ND	ug/kg	12.		
Tetrahydrofuran	ND	ug/kg	50.		
2,2-Dichloropropane	ND	ug/kg	12.		
1,2-Dibromoethane	ND	ug/kg	10.		
1,3-Dichloropropane	ND	ug/kg	12.		
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.5		
Bromobenzene	ND	ug/kg	12.		
	ND	ug/kg	2.5		
n-Butylbenzene	ND	ug/kg	2.5		
sec-Butylbenzene	ND	ug/kg	12.		
tert-Butylbenzene o-Chlorotoluene	ND	ug/kg	12.		
	ND	ug/kg	12.		
p-Chlorotoluene 1,2-Dibromo-3-chloropropane	ND	ug/kg	12.		
	ND	ug/kg	12.		
Hexachlorobutadiene	ND	ug/kg	2.5		
Isopropylbenzene	ND	ug/kg ug/kg	2.5		
p-Isopropyltoluene		ug/kg	12.		
Naphthalene	ND ND	ug/kg	2.5	•	
n-Propylbenzene	ND	ug/kg ug/kg	12.		
1,2,3-Trichlorobenzene	ND		12.		
1,2,4-Trichlorobenzene	ND	ug/kg	12.		
1,3,5-Trimethylbenzene	ND	ug/kg	12.		
1,2,4-Trimethylbenzene	ND	ug/kg	12.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	12.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC C	riteria	
1,2-Dichloroethane-d4	100.	8			
Toluene-d8	96.0	%			
4-Bromofluorobenzene	113.	%			
Dibromofluoromethane	87.0	%			
Blank Analys		ple(s) 06-	-07 (WG1		0224 09:09 E
Volatile Organics by GC/MS 8				1 8260B	02Z4 09:09 E
Methylene chloride	ND	ug/l	5.0		

Laboratory Job Number: L0501658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analy	sis for same) le(s) 06-	07 (WG19	4703-8)	
Volatile Organics by GC/MS	3260 continu	ied		1 8260B	
1,1-Dichloroethane	ND	ug/l	0.75	1 02000	0224 09:09 BT
Chloroform	ND	ug/l	0.75		
Carbon tetrachloride	ND	ug/1	0.50		
1,2-Dichloropropane	ND	ug/l	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.73		
Chlorobenzene	ND	-			
Trichlorofluoromethane	ND	ug/l	0.50		
1,2-Dichloroethane	ND	ug/l	2.5		
1,1,1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene		ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	0.50		
Bromoform	ND	ug/l	2.5		
1,1,2,2-Tetrachloroethane	ND	ug/l	2.0		
Benzene	ND	ug/l	0.50		
Poluene	ND	ug/l	0.50		
	ND	ug/l	0.75		
Ethylbenzene	ND	ug/l	0.50		
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
/inyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
l,l-Dichloroethene	ND	ug/l	0.50		
rans-1,2-Dichloroethene	ND	ug/l	0.75		
richloroethene	ND	ug/l	0.50		
,2-Dichlorobenzene	ND	ug/l	2.5		
.,3-Dichlorobenzene	ND	ug/l	2.5		
.,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	ND	ug/l	1.0		
/m-Xylene	ND	ug/l	0.50		
-Xylene	ND	ug/l	0.50		
is-1,2-Dichloroethene	ND	ug/l	0.50		
ibromomethane	ND	ug/l	5.0		
,4-Dichlorobutane	ND	ug/l	5.0		
odomethane	ND	ug/l	5.0		
,2,3-Trichloropropane	ND	ug/l	5.0		
tyrene	ND				
ichlorodifluoromethane	ND	ug/l ug/l	0.50		
cetone	ND	-	5.0		
arbon disulfide		ug/l	5.0		
-Butanone	ND	ug/l	5.0		
inyl acetate	ND	ug/l	5.0		
-Methyl-2-pentanone	ND	ug/l	5.0		
-Hexanone -Hexanone	ND	ug/l	5.0		
revalinie	ND	ug/l	5.0		



PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA PREP	TE ID ANAL
		1 - (+) 06 87	- /WC1 Q	4703-80%	13 4,42	, 1 1.
Blank Analysis	ror samp	re(s) op-or	(MGTS.	1 8260B		0224 09:09 BT
Volatile Organics by GC/MS 826		ug/l	5.0		* ,	
Ethyl methacrylate	ND	ug/l	12.			
Acrolein	ND	ug/l	5.0			
Acrylonitrile	ND	ug/l	2.5			
Bromochloromethane	ND	ug/l ug/l	10.			
Tetrahydrofuran	ND	ug/l ug/l	2.5			
2,2-Dichloropropane	ND	J.	2.0			
1,2-Dibromoethane	ND	ug/l	2.5			
1,3-Dichloropropane	ND	ug/l	0.50			
1,1,1,2-Tetrachloroethane	ND	ug/l	2.5			
Bromobenzene	ND	ug/l				
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	ug/l	0.50			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5			
Hexachlorobutadiene	ИD	ug/l	1.0			
Isopropylbenzene	ND	ug/l	0.50			
p-Isopropyltoluene	ND	ug/l	0.50			
Naphthalene	ND	ug/l	2.5			
n-Propylbenzene	ND	ug/l	0.50			
1,2,3-Trichlorobenzene	ND	ug/l	2.5			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			
1,3,5-Trimethylbenzene	ИD	ug/l	2.5			
1,2,4-Trimethylbenzene	ND	ug/l	2.5			
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5			
Ethyl ether	ND	ug/l	2.5			
Surrogate(s)	Recovery		QC C	riteria		
1,2-Dichloroethane-d4	118.	8				
Toluene-d8	100.	%				
4-Bromofluorobenzene	111.	96				
Dibromofluoromethane	104.	%				
Blank Anal	ysis for s	ample(s) 06	(WG19	4625-1)		
SVOC's by GC/MS 8270				1 8270C	0218 17:	45 0221 12:35 HI
Acenaphthene	ND	ug/l	5.0			
Benzidine	ND	ug/l	50.			
1,2,4-Trichlorobenzene	ND	ug/l	5.0			
Hexachlorobenzene	ND	ug/l	5.0			
Bis(2-chloroethyl)ether	ND	ug/l	5.0			
1-Chloronaphthalene	ND	ug/l	5.0			
2-Chloronaphthalene	ND	ug/l	6.0			
1,2-Dichlorobenzene	ND	ug/l	5.0			
1,3-Dichlorobenzene	ND	ug/l	5.0			
1,4-Dichlorobenzene	ND	ug/l	5.0			

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
		,			
SVOC's by GC/MS 8270 continue	ysis for s	Sample(s)	06 (WG194	1625-1)	
3,3'-Dichlorobenzidine		- 10		1 8270C	0218 17:45 0221 12:35 HL
2,4-Dinitrotoluene	ND ND	ug/l	50.		
2,6-Dinitrotoluene		ug/l	6.0		
Azobenzene	ND	ug/l	5.0		
Fluoranthene	ND ND	ug/l	5.0		
4-Chlorophenyl phenyl ether		ug/l	5.0		
4-Bromophenyl phenyl ether	ND	ug/l	5.0		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0		
Bis(2-chloroethoxy)methane	ND	ug/l	5.0		
Hexachlorobutadiene	ND	ug/l	5.0		
Hexachlorocyclopentadiene	ND	ug/l	10.		
Hexachloroethane	ND	ug/l	10.		
Isophorone	ND	ug/l	5.0		
Naphthalene	ND	ug/l	5.0		
Vitrobenzene	ND	ug/l	5.0		
IDPA/DPA	ND	ug/l	5.0		
	ND	ug/l	15.		
n-Nitrosodi-n-propylamine	ND	ug/l	5.0		
Bis(2-ethylhexyl)phthalate	ND	ug/l	10.		
Butyl benzyl phthalate	ND	ug/l	5.0		
0i-n-butylphthalate	ND	ug/l	5.0		
Di-n-octylphthalate	ND	ug/l	5.0		
piethyl phthalate	ND	ug/l	5.0		
imethyl phthalate	ND	ug/l	5.0		
enzo(a)anthracene	ND	ug/l	5.0		
enzo(a)pyrene	ND	ug/l	5.0		
enzo(b) fluoranthene	ND	ug/l	5.0		
enzo(k)fluoranthene	ND	ug/l	5.0		
hrysene	ND	ug/l	5.0		
cenaphthylene	ND	ug/l	5.0		
nthracene	ND	ug/l	5.0		
enzo(ghi)perylene	ND	ug/l	5.0		
luorene	ND	ug/l	5.0		
nenanthrene	ND	ug/l	5.0		
ibenzo(a,h)anthracene	ND	ug/l			
ndeno(1,2,3-cd)pyrene	ND	ug/l	5.0		
rene	ND		7.0		
enzo(e)pyrene	ND	ug/l	5.0		
phenyl	ND	ug/l	5.0		
erylene	ND	ug/l	5.0		
iline	ND	ug/l	5.0		
Chloroaniline	ND	ug/l	10.		
Methylnaphthalene		ug/l	5.0		
Nitroaniline	ND	ug/l	5.0		
Nitroaniline	ND	ug/l	5.0		
Nitroaniline	ND	ug/l	5.0		
benzofuran	ND	ug/l	7.0		
~cpotutan	ND	ug/l	5.0		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analy	eie for sa	umple(s) 0	6 (WG194	625-1)	
plank Analy	4 STS TOT SC			1 8270C	0218 17:45 0221 12:35 HL
SVOC's by GC/MS 8270 continue	ND	ug/l	50.		
a,a-Dimethylphenethylamine	ND	ug/l	10.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND ND	ug/l	8.0		
2-Methylnaphthalene	ND	ug/1	20.		
1,2,4,5-Tetrachlorobenzene		ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/1	10.		
Phenacetin	ND		20.		
Dimethoate	ND	ug/1	10.		
4-Aminobiphenyl	ND	ug/1	10.		
Pentachloronitrobenzene	ND	ug/1	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	20.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	15.		
Ethyl Methanesulfonate	ND	ug/l	20.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l			
7,12-Dimethylbenz(a)anthrace	ne ND	ug/l	10.		
n-Nitrosodimethylamine	ND	ug/l	50.		
2,4,6-Trichlorophenol	ND	ug/1	5.0		
p-Chloro-m-cresol	ND	ug/l	5.0		
2-Chlorophenol	ND	ug/l	6.0		
2,4-Dichlorophenol	ND	ug/l	10.		
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	ug/l	10.		
2,4-Dinitrophenol	ND	ug/l	20.	•	
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	20.		
Phenol	ND	ug/l	7.0		
2-Methylphenol	ND	ug/l	6.0		
3-Methylphenol/4-Methylpheno	ol ND	ug/l	6.0		
2,4,5-Trichlorophenol	ND	ug/l	5.0		
2,6-Dichlorophenol	ND	ug/l	10.		
Benzoic Acid	ND	ug/l	50.		
Benzyl Alcohol	ND	ug/l	10.		
Carbazole	ND	ug/l	5.0		
Pyridine	ND	ug/l	50.		
2-Picoline	ND	ug/l	20.		
Pronamide	ND	ug/l	20.		
		ug/l	20.		

Laboratory Job Number: L0501658

Recovery 37.0 30.0 62.0 57.0 54.0 79.0	mple(s) 0		625-1) 1 8270c iteria	PREP ANAL 0218 17:45 0221 12:35 HL
Recovery 37.0 30.0 62.0 57.0 54.0	95 96 96		1 8270C	0218 17:45 0221 12:35 HL
Recovery 37.0 30.0 62.0 57.0 54.0	95 96 96		1 8270C	0218 17:45 0221 12:35 HL
37.0 30.0 62.0 57.0 54.0	90 90	QC Cr		0210 17:45 0221 12:35 HL
37.0 30.0 62.0 57.0 54.0	90 90	2001	200114	
62.0 57.0 54.0	90 90			
57.0 54.0				
54.0	8			
79.0	ક્ષ			
	8			
s for samp	le(s) 01-0)5 /WG19	4629~11	
		- ~ (U.)	1 8270C	5010 10.45 poor
ND	ug/kg	170	1 02100	0218 12:45 0221 17:20 HL
ND				
ND				
ND				
ND				
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			•	
	-			
	-			
		170 170		
	ND ND	ND ug/kg ND ug/kg <td>ND ug/kg 170 ND ug/kg</td> <td>ND</td>	ND ug/kg 170 ND ug/kg	ND

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PARAMETER	RESULT	ESULT UNITS RDL		REF METHOD	DATE ID	
					PREP	ANAL
Blank Analysis	for sampl	le(s) 01-05	(WG19	4629-1)		. Sec. Jak
SVOC's by GC/MS 8270 continued				1 8270C	0218 12:45 02	21 17:20 HL
Benzo(k) fluoranthene	ND	ug/kg	170			
Chrysene	ND	ug/kg	170			
Acenaphthylene	ND	ug/kg	170			
Anthracene	ND	ug/kg	170			
Benzo(ghi)perylene	ND	ug/kg	170			
Fluorene	ND	ug/kg	170			
Phenanthrene	ND	ug/kg	170			
Dibenzo(a,h)anthracene	ND	ug/kg	170			
Indeno(1,2,3-cd)pyrene	ND	ug/kg	170			
Pyrene	ND	ug/kg	170			
Benzo(e)pyrene	ND	ug/kg	170			
Biphenyl	ND	ug/kg	170			
Perylene	ND	ug/kg	170			
Aniline	ND	ug/kg	330			
4-Chloroaniline	ND	ug/kg	170			
1-Methylnaphthalene	ND	ug/kg	170			
2-Nitroaniline	ND	ug/kg	170			
3-Nitroaniline	ND	ug/kg	170			
4-Nitroaniline	ND	ug/kg	230			
Dibenzofuran	ND	ug/kg	170			
a,a-Dimethylphenethylamine	ND	ug/kg	1700			
Hexachloropropene	ND	ug/kg	330			
Nitrosodi-n-butylamine	ND	ug/kg	330			
2-Methylnaphthalene	ND	ug/kg	270			
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	670			
Pentachlorobenzene	ND	ug/kg	670			
a-Naphthylamine	ND	ug/kg	670			
b-Naphthylamine	ND	ug/kg	670			
Phenacetin	ND	ug/kg	330			
Dimethoate	ND	ug/kg	670			
4-Aminobiphenyl	ND	ug/kg	330			
Pentachloronitrobenzene	ND	ug/kg	330			
Isodrin	ND	ug/kg	330			
p-Dimethylaminoazobenzene	ND	uq/kg	330			
Chlorobenzilate	ND	ug/kg	670			
3-Methylcholanthrene	ND	ug/kg	670			
Ethyl Methanesulfonate	ND	ug/kg	500			
2	ND	ug/kg	670			
Acetophenone Nitrosodipiperidine	ND	ug/kg	670			
7,12-Dimethylbenz(a)anthracen		ug/kg	330			
	ND ND	ug/kg	1700			
n-Nitrosodimethylamine	ND	ug/kg	170			
2,4,6-Trichlorophenol		ug/kg ug/kg	170			
p-Chloro-m-cresol	ND	ug/kg ug/kg	200			
2-Chlorophenol	ND	ug/kg ug/kg	330			
2,4-Dichlorophenol	ND		330			
2,4-Dimethylphenol	ND	ug/kg	330			

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysi	s for samm	ole(s) 01-	ns (WG194	629-1)	
SVOC's by GC/MS 8270 continue	d	/#c (0)	02 (40124	1 8270C	0014 10 11 11 11 11 11 11
2-Nitrophenol	ND	ug/kg	670	1 02/00	0218 12:45 0221 17:20 HL
4-Nitrophenol	ND	ug/kg	330		
2,4-Dinitrophenol	ND	ug/kg	670		
4,6-Dinitro-o-cresol	ND	ug/kg	670		
Pentachlorophenol	ND	ug/kg	670		
Phenol	ND	ug/kg	230		
2-Methylphenol	ND	ug/kg ug/kg	200		
3-Methylphenol/4-Methylphenol			200		
2,4,5-Trichlorophenol	ND	ug/kg ug/kg	170		
2,6-Dichlorophenol	ND				
Benzoic Acid	ND	ug/kg	330		
Benzyl Alcohol	ND	ug/kg	1700		
Carbazole		ug/kg	330		
Pyridine	ND	ug/kg	170		
2-Picoline	ND	ug/kg	1700		
Pronamide	ND	ug/kg	670		
Methyl methanesulfonate	ND	ug/kg	670		
methyr methanesulfonate	ND	ug/kg	670		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	64.0	용	25-120		
Phenol-d6	74.0	용	10-120		
Nitrobenzene-d5	67.0	왕	23-120		
2-Fluorobiphenyl	62.0	왕	30-120		
2,4,6-Tribromophenol	56.0	왕	19-120		
4-Terphenyl-d14	77.0	ક્ષ	18-120		
Blank Analys	sis for sa	mple(s) 06	(WG19462	26-1)	
PAH by GC/MS SIM 8270M				1 8270C-M	0218 17:45 0221 12:10 RL
Acenaphthene	ND	ug/l	0.20	•	
2-Chloronaphthalene	ND	ug/l	0.20		
Fluoranthene	ND	ug/l	0.20		
Hexachlorobutadiene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	0.20		
Benzo(a)anthracene	ND	ug/l	0.20		
Benzo(a)pyrene	ND	ug/l	0.20		
Benzo(b)fluoranthene	ND	ug/l	0.20		
Benzo(k)fluoranthene	ND	ug/l	0.20		
Chrysene	ND	ug/l	0.20		
Acenaphthylene	ND	ug/l	0.20		
Anthracene	ND	ug/l	0.20		
Benzo(ghi)perylene	ND	ug/l	0.20		
Fluorene	ND	ug/l	0.20		
Phenanthrene	ND	ug/l	0.20		
Dibenzo(a,h)anthracene	ND	ug/l	0.20		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20		
Pyrene	ND	ug/l ug/l	0.20		
-		ug/ I	0.20		

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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Plank Ama	lucia for ca	mole(s) Of	WG194	526-1) (\$30)	
PAH by GC/MS SIM 8270M cont		inpic(b) of	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 8270C-M	0218 17:45 0221 12:10 RL
1-Methylnaphthalene	ND	ug/l	0.20	************	701 1,110 0021 121 12
	ND	ug/l	0.20		
2-Methylnaphthalene Pentachlorophenol	ND	ug/l	0.80		
<u>-</u>	ND	ug/l	0.80		
Hexachlorobenzene Perylene	ND	ug/l	0.20		
-	ND	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l	0.20		
1-Methylphenanthrene		-	0.20		
Benzo(e) Pyrene	ND	ug/l	0.80		
Hexachloroethane	ND	ug/l	0.80		
Surrogate(s)	Recovery		QC Cr.	iteria	
2-Fluorophenol	37.0	8	21-12	0	
Phenol-d6	33.0	8	10-12	0	
Nitrobenzene-d5	59.0	96	23-12	0	
2-Fluorobiphenyl	55.0	ક	43-12	0	
2,4,6-Tribromophenol	66.0	્ર	10-12	0	
4-Terphenyl-d14	65.0	용	33-12	0	
	sis for samp	ole(s) 01-0	05 (WG19	4630-1)	0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M			05 (WG19 6.7	4630-1) 1 8270C-M	0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene	ysis for samp ND ND	ug/kg ug/kg	100		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M	ND	ug/kg	6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene	ND ND	ug/kg ug/kg	6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene	ND ND ND	ug/kg ug/kg ug/kg	6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene	ND ND ND	ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17.		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene	ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17.		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a)anthracene	ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17. 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene	ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17. 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene Benzo(b) fluoranthene	ND ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17. 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene Benzo(b) fluoranthene Benzo(k) fluoranthene	ND ND ND ND ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17. 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17. 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17. 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene Anthracene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 17. 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(a,h) anthracene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(a,h) anthracene Indeno(1,2,3-cd) Pyrene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(a,h) anthracene Indeno(1,2,3-cd) Pyrene Pyrene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(a,h) anthracene Indeno(1,2,3-cd) Pyrene Pyrene 1-Methylnaphthalene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(a,h) anthracene Indeno(1,2,3-cd) Pyrene Pyrene 1-Methylnaphthalene 2-Methylnaphthalene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(a,h) anthracene Indeno(1,2,3-cd) Pyrene Pyrene 1-Methylnaphthalene 2-Methylnaphthalene Pentachlorophenol	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL
PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(a,h) anthracene Indeno(1,2,3-cd) Pyrene Pyrene 1-Methylnaphthalene 2-Methylnaphthalene Pentachlorophenol Hexachlorobenzene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg	6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7		0218 12:45 0222 14:27 RL

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Laboratory Job Number: L0501658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analysi	s for samp	le(s) 01-0)5 (WG194	4630-1)	
PAH by GC/MS SIM 8270M contin				1 8270C-M	0218 12:45 0222 14:27 RL
l-Methylphenanthrene	ND	ug/kg	6.7	1 32190 11	0210 12.43 0222 14:27 RL
Benzo(e)Pyrene	ND	ug/kg	6.7		
Mexachloroethane	ND	ug/kg	27.		
Surrogate(s)	Recovery		OC Cri	iteria	
-Fluorophenol	57.0	9	25-120		
henol-d6	76.0	96	10-120		
litrobenzene-d5	61.0	og Og	23-120		
-Fluorobiphenyl	57.0	9	30-120		
,4,6-Tribromophenol	65.0	%	19-120		
-Terphenyl-d14	73.0	8	18-120		
Blank Analysi	s for samo	le(s) 01-0	5 /WG19/	1547-11	
olychlorinated Biphenyls			- (MOT)-	1 8082	0219 10:20 BODT to
aroclor 1221	ND	ug/kg	33.3	1 000%	0218 10:30 0221 10:43 JB
roclor 1232	ND	ug/kg	33.3		
roclor 1242/1016	ND	ug/kg ug/kg	33.3		
roclor 1248	ND	ug/kg ug/kg	33.3		
roclor 1254	ND				
roclor 1260	ND	ug/kg ug/kg	33.3 33.3		
Surrogate(s)	Recovery		QC Cri	toria	
,4,5,6-Tetrachloro-m-xylene	82.0	00	30-150		
ecachlorobiphenyl	93.0	8	30-150		
Blank Analy	sis for sam	mple(s) 06	- (WG1946	524-11	5
olychlorinated Biphenyls			(1101310	1 8082	0219 17.25 0202 02 54
roclor 1221	ND	ug/l	0.500	1 0002	0218 17:35 0222 22:50 ЈВ
roclor 1232	ND	ug/l	0.500		
roclor 1242/1016	ND	ug/l	0.500	•	
roclor 1248	ND	ug/l	0.500		
roclor 1254	ND	- ·			
roclor 1260	ND	ug/l ug/l	0.500 0.500		
urrogate(s)	Recovery		OC Cri	teria	
,4,5,6-Tetrachloro-m-xylene	65.0	95	30-150		
ecachlorobiphenyl	63.0	9	30-150		
Blank Analysis	for sampl	e(s) 01-0	5 (WC19/	548-1)	
rganochlorine Pesticides		(~, 01 0	- (1 8081	0210 10:16 0002 20 77 77
elta-BHC	ND	ug/kg	3.33	1 0001	0218 10:15 0223 22:29 BW
indane	ND	ug/kg ug/kg	3.33		
lpha-BHC	ND	ug/kg ug/kg	3.33		
eta-BHC	ND				
eptachlor		ug/kg	3.33		
- T	ND	ug/kg	3.33		
Aldrin	ND	ug/kg	3.33		

Laboratory Job Number: L0501658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysi	s for samp	le(s) 01-05	(WG194	548-1)	
Organochlorine Pesticides con				1 8081	0218 10:15 0223 22:29 BW
Heptachlor epoxide	ND	ug/kg	3.33		
Endrin	ND	ug/kg	3.33		
Endrin aldehyde	ND	ug/kg	3.33		
Endrin ketone	ND	ug/kg	3.33		
Dieldrin	ND	ug/kg	3.33		
	ND	ug/kg	3.33		
4,4'-DDE	ND	ug/kg	3.33		
4,4'-DDD	ND	ug/kg	3.33		
4,4'-DDT	ND	ug/kg	3.33		
Endosulfan I	ND	ug/kg	3.33		
Endosulfan II		ug/kg ug/kg	3.33		
Endosulfan sulfate	ND		3.33		
Methoxychlor	ND	ug/kg	13.3		
Toxaphene	ND	ug/kg			
Chlordane	ND	ug/kg	13.3		
cis-Chlordane	ND	ug/kg	3.33		
trans-Chlordane	ND	ug/kg	3.33		
Surrogate(s)	Recovery		QC Cri		
2,4,5,6-Tetrachloro-m-xylene	53.0	8	30-150		
Decachlorobiphenyl	65.0	%	30-150)	
Blank Analy	rsis for sa	mble(s) 06	(WG1946	627-1)	
Organochlorine Pesticides				1 8081	0218 19:45 0223 18:12 BW
Delta-BHC	ND	ug/l	0.020		
	ND	ug/l	0.020		
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/1	0.020	•	
Heptachlor epoxide		ug/l	0.040		
Endrin	ND	ug/l ug/l	0.040		
Endrin aldehyde	ND	-	0.040		
Endrin ketone	ND	ug/l			
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.020		
Endosulfan II	ND	ug/l	0.040		
Endosulfan sulfate	ND	ug/l	0.040		
Methoxychlor	ND	ug/l	0.200		
Toxaphene	ND	ug/l	0.200		
Chlordane	ND	ug/l	0.200		
011202440					
cis-Chlordane	ND	ug/l ug/l	0.020		

Laboratory Job Number: L0501658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	ID
					PREP ANAL	
Blank Analy	sis for sa	mple(s) 0	6 (WG194	627-1)		
Blank Analy Organochlorine Pesticides con		mple(s) 0	6 (WG194	627-1)	0218 19:45 0223 18:1	2 BW
		mple(s) 0		, - ,	0218 19:45 0223 18:1	2 BW
Organochlorine Pesticides con	tinued	mple(s) 0		1 8081 iteria	0218 19:45 0223 18:1	2 BW

ALPHA ANALYTICAL LABORATORIES ADDENDUM I



REFERENCES

- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found. METHOD Method number by which analysis was performed.

ID Initials of the analyst.

ND Not detected in comparison to the reported detection limit.

NI Not Ignitable.

ug/cart Micrograms per Cartridge.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.



ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive Westborough, Massachusetts 01581-1019 (508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: AKRF, Inc. Laboratory Job Number: L0501881

Address: 116 E. 27th Street

7th Floor

New York, NY 10016 Date Received: 24-FEB-2005

Attn: Mr. Axel Schwendt Date Reported: 03-MAR-2005

Project Number: 10470-0213 Delivery Method: Fed Ex

Site: COLUMBIA-MANHATTANVILLE REZONE

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0501881-01	CB-6 (5'-6')	HARLEM, NY
L0501881-02	MW/CB-7 (6'-8')	HARLEM, NY
L0501881-03	MW/CB-8 (12'-14')	HARLEM, NY
L0501881-04	MW/CB-9 (4'-6')	HARLEM, NY
L0501881-05	MW/CB-9 (14'-16')	HARLEM, NY
L0501881-06	CB-10 (2'-4')	HARLEM, NY
L0501881-07	CB-10 (7'-8')	HARLEM, NY
L0501881-08	FIELD BLANK	HARLEM, NY
L0501881-09	TRIP BLANK	HARLEM, NY

Authorized by: Scott McLean

This document electronically signed

03030517:13 Page 1 of 82

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT



Laboratory Job Number: L0501881

Semi-Volatile Organics

L0501881-02 has a high surrogate % recovery for 4-Terphenyl-d14.

The wg195105 LCS and MS/MSD have high % recoveries for 2,4-Dinitrotoluene.

The wg195246 Soil Blank has a high surrogate % recovery for 4-Terphenyl-d14.

The wg195246 LCS has a low % recovery for 2,4-Dinitrophenol and a high % recovery for 2,4-Dinitrotoluene.

PAH-LOW

The wq195247 MS has a high surrogate % recovery for 2,4,6-Tribromophenol.

Metals

Due to the % moisture of the samples, the laboratory could not achieve the project requested detection limit for Be and Cd on L0501881-02 through 07.

The Laboratory could not achieve the project requested detection limit for Se on L0501881-02 through 07.

The WG195435-2MS % recoveries for Al, Fe, Mn and Mg are invalid because the sample concentrations are greater than four times the spike amounts added.

The WG195435-2 MS % recovery for Cr is outside the acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 103%.



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-01

Date Collected: 21-FEB-2005 11:30

CB-6 (5'-6')

Date Received: 24-FEB-2005

Sample Matrix: SOIL

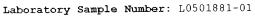
Date Reported : 03-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D	ATE	ID
					PREP	ANAL	
Solids, Total	83.	8	0.10	30 2540G		0302 20:1	3 PD
Volatile Organics by GC/MS	8260			1 00000		-,-	• ;
Methylene chloride	ND	ug/kg	30.	1 8260B		0228 19:1	S BT
1,1-Dichloroethane	ND	ug/kg ug/kg	4.4				
Chloroform	ND	ug/kg	4.4				
Carbon tetrachloride	ND	ug/kg	3.0				
1,2-Dichloropropane	ND	ug/kg	10.				
Dibromochloromethane	ND	ug/kg	3.0				
1,1,2-Trichloroethane	ND	ug/kg	4.4				
Tetrachloroethene	ND	ug/kg	3.0				
Chlorobenzene	ND	ug/kg	3.0				
Trichlorofluoromethane	ND	ug/kg	15.				
1,2-Dichloroethane	ND	ug/kg ug/kg	3.0				
1,1,1-Trichloroethane	ND	ug/kg	3.0				
Bromodichloromethane	ND	ug/kg	3.0				
trans-1,3-Dichloropropene	ND	ug/kg	3.0				
cis-1,3-Dichloropropene	ND	ug/kg	3.0				
1,1-Dichloropropene	ND	ug/kg ug/kg	15.				
Bromoform	ND	ug/kg ug/kg	12.				
1,1,2,2-Tetrachloroethane	ND	ug/kg ug/kg	3.0				
Benzene	ND	ug/kg ug/kg	3.0	•			
Toluene	ND	ug/kg ug/kg	4.4				
Ethylbenzene	ND	ug/kg	3.0				
Chloromethane	ND	ug/kg ug/kg	15.				
Bromomethane	ND	ug/kg	5.9				
Vinyl chloride	ND	ug/kg ug/kg	5.9				
Chloroethane	ND	ug/kg	5.9				
1,1-Dichloroethene	ND	ug/kg ug/kg	3.0				
trans-1,2-Dichloroethene	ND	ug/kg ug/kg	4.4				
Trichloroethene	ND	ug/kg ug/kg	3.0				
1,2-Dichlorobenzene	ND ND	ug/kg ug/kg	15.				
1,3-Dichlorobenzene	ND	ug/kg ug/kg	15.				
1,4-Dichlorobenzene	ND ND	ug/kg ug/kg	15. 15.				
Methyl tert butyl ether	ND ND	ug/kg ug/kg	5.9				
p/m-Xylene	ND ND	ug/kg ug/kg					
o-Xylene	ND ND		3.0				
cis-1,2-Dichloroethene		ug/kg	3.0				
cis-1,2-Dichloroethene Dibromomethane	ND ND	ug/kg ug/kg	3.0 30.				



CB-6 (5'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continue	ed		1 82608	0228 19:15 BT
1,4-Dichlorobutane	ND	ug/kg	30.		
Todomethane	ND	ug/kg	30.		
1,2,3-Trichloropropane	ND	ug/kg	30.		
Styrene	ND	ug/kg	3.0		
Dichlorodifluoromethane	ND	ug/kg	30.		
Acetone	ND	ug/kg	30.		
Carbon disulfide	ND	ug/kg	30.		
2-Butanone	ND	ug/kg	30.		
Vinyl acetate	ND	ug/kg	30.		
4-Methyl-2-pentanone	ND	ug/kg	30.		
2-Hexanone	ND	ug/kg	30.		
Ethyl methacrylate	ND	ug/kg	30.		
Acrolein	ND	ug/kg	74.		
	ND	ug/kg	30.		
Acrylonitrile Bromochloromethane	ND	ug/kg	15.		
	ND	ug/kg	59.		
Tetrahydrofuran	ND	ug/kg	15.		
2,2-Dichloropropane	ND ND	ug/kg	12.		
1,2-Dibromoethane	ND ND	ug/kg ug/kg	15.		
1,3-Dichloropropane	ND ND	ug/kg ug/kg	3.0		
1,1,1,2-Tetrachloroethane		ug/kg ug/kg	15.		
Bromobenzene	ND		3.0		
n-Butylbenzene	ND	ug/kg	3.0		
sec-Butylbenzene	ND	ug/kg	15.		
tert-Butylbenzene	ND	ug/kg			
o-Chlorotoluene	ND	ug/kg	15.		
p-Chlorotoluene	ND	ug/kg	15.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	15.		
Hexachlorobutadiene	ND	ug/kg	15.		
Isopropylbenzene	ND	ug/kg	3.0		
p-Isopropyltoluene	ND	ug/kg	3.0		
Naphthalene	ND	ug/kg	15.	•	
n-Propylbenzene	ND	ug/kg	3.0		
1,2,3-Trichlorobenzene	ND	ug/kg	15.		
1,2,4-Trichlorobenzene	ND	ug/kg	15.		
1,3,5-Trimethylbenzene	ND	ug/kg	15.		
1,2,4-Trimethylbenzene	ND	ug/kg	15.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	15.		
Ethyl ether	ND	ug/kg	15.		
Surrogate(s)	Recovery		QC Cr	riteria	
1,2-Dichloroethane-d4	92.0	%			
Toluene-d8	96.0	્રે			
4-Bromofluorobenzene	98.0	0/0			
Dibromofluoromethane	90.0	96			



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-02

MW/CB-7 (6'-8')

SOIL

Date Collected: 22-FEB-2005 14:25 Date Received : 24-FEB-2005

Date Reported : 03-MAR-2005

Condition of Sample: Satisfactory

Sample Matrix:

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D.	TE	ID
					PREP	ANAL	
Solids, Total	87.	ફ	0.10	30 2540G		0226 14:1	4 PD
Total Metals		An a series		1 3051			
Aluminum, Total	8000	mg/kg	4.6	1 6010B	0301 21:00	0303 07:5	7 RW
Antimony, Total	ND	mg/kg	2.3	1 6010B	0301 21:00	0303 07:5	7 RW
Arsenic, Total	2.3	mg/kg	0.46	1 6010B	0301 21:00	0303 07:5	7 RW
Barium, Total	54.	mg/kg	0.46	1 6010B	0301 21:00	0303 07:5	7 RW
Beryllium, Total	ND	mg/kg	0.1149	1 6010B	0301 21:00	0303 07:5	7 RW
Cadmium, Total	ND	mg/kg	0.1149	1 6010B	0301 21:00	0303 07:5	7 RW
Calcium, Total	12000	mg/kg	4.6	1 6010B	0301 21:00	0303 07:5	7 RW
Chromium, Total	11.	mg/kg	0.46	1 6010B	0301 21:00	0303 07:5	7 RW
Cobalt, Total	6.7	mg/kg	0.92	1 6010B	0301 21:00	0303 07:5	7 RW
Copper, Total	27.	mg/kg	0.46	1 6010B	0301 21:00	0303 07:5	7 RW
Iron, Total	12000	mg/kg	2.3	1 6010B	0301 21:00	0303 07:5	7 RW
Lead, Total	23.	mg/kg	2.3	1 6010B	0301 21:00	0303 07:5	7 RW
Magnesium, Total	7300	mg/kg	4.6	1 6010B	0301 21:00	0303 07:5	7 RW
Manganese, Total	410	mg/kg	0.46	1 6010B	0301 21:00	0303 07:5	7 RW
Mercury, Total	ND	mg/kg	0.09	1 7471A	0228 19:25	0301 16:20	DM C
Nickel, Total	10.7	mg/kg	0.460	1 6010B	0301 21:00	0303 07:53	7 RW
Potassium, Total	2200	mg/kg	110	1 - 6010B	0301 21:00	0303 07:5	7 RW
Selenium, Total	ND	mg/kg	0.230	1 6010B	0301 21:00	0303 07:50	7 RW
Silver, Total	ND	mg/kg	0.46	1 6010B	0301 21:00	0303 07:57	7 RW
Sodium, Total	1200	mg/kg	92.	1 6010B	0301 21:00	0303 07:57	7 RW
Thallium, Total	ND	mg/kg	0.46	1 6010B	0301 21:00	0303 07:57	RW
Vanadium, Total	16.	mg/kg	0.46	1 6010B	0301 21:00	0303 07:57	7 RW
Zinc, Total	29.	mg/kg	2.3	1 6010B	0301 21:00	0303 07:57	7 RW
Volatile Organics by GC/MS	8260			1 8260B		0228 19:53	BT
Methylene chloride	ND	ug/kg	28.				
1,1-Dichloroethane	ND	ug/kg	4.2				
Chloroform	ND	ug/kg	4.2				
Carbon tetrachloride	ND	ug/kg	2.8				
1,2-Dichloropropane	ND	ug/kg	9.8				
Dibromochloromethane	ND	ug/kg	2.8				
1,1,2-Trichloroethane	ND	ug/kg	4.2				
Tetrachloroethene	ND	ug/kg	2.8				
Chlorobenzene	ND	ug/kg	2.8				
Trichlorofluoromethane	ND	ug/kg	14.				

Laboratory Sample Number: L0501881-02

MW/CB-7 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 continu	ed	, ,	1 8260B	0228 19:53 BT
1,2-Dichloroethane	ND	ug/kg	2.8		
1,1,1-Trichloroethane	ND	ug/kg	2.8		
Bromodichloromethane	ND	ug/kg	2.8		
trans-1,3-Dichloropropene	ND	ug/kg	2.8		
cis-1,3-Dichloropropene	ND	ug/kg	2.8		
1,1-Dichloropropene	ND	ug/kg	14.		
Bromoform	ND	ug/kg	11.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8		
Benzene	ND	ug/kg	2.8		
Toluene	ND	ug/kg	4.2		
Ethylbenzene	ND	ug/kg	2.8	•	
Chloromethane	ND	ug/kg	14.		
Bromomethane	ND	ug/kg	5.6		
Viny1 chloride	ND	ug/kg	5.6		
Chloroethane	ND	ug/kg	5.6		
1,1-Dichloroethene	ND	ug/kg	2.8		
trans-1,2-Dichloroethene	ND	ug/kg	4.2		
Trichloroethene	ND	ug/kg	2.8		
1,2-Dichlorobenzene	ND	ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg	14.		
1,4-Dichlorobenzene	ND	ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg	5.6		
p/m-Xylene	ND	ug/kg	2.8		
o-Xylene	ND	ug/kg	2.8		
cis-1,2-Dichloroethene	ND	ug/kg	2.8		
Dibromomethane	ND	ug/kg	28.		
1,4-Dichlorobutane	ND	ug/kg	28.		
Iodomethane	ND	ug/kg	28.		
1,2,3-Trichloropropane	ND	ug/kg	28.		
	ND	ug/kg	2.8		
Styrene Dichlorodifluoromethane	ND	ug/kg	28.		
Acetone	ND	ug/kg	28.	•	
Carbon disulfide	ND	ug/kg	28.		
	ND	ug/kg	28.		
2-Butanone	ND	ug/kg	28.		
Vinyl acetate	ND ND	ug/kg ug/kg	28.		
4-Methyl-2-pentanone		ug/kg ug/kg	28.		
2-Hexanone	ND ND	·	28.		
Ethyl methacrylate		ug/kg	70.		
Acrolein	ND	ug/kg	28.		
Acrylonitrile	ND	ug/kg	14.		
Bromochloromethane	ND	ug/kg	14. 56.		
Tetrahydrofuran	ND	ug/kg			
2,2-Dichloropropane	ND	ug/kg	14.		
1,2-Dibromoethane	ND	ug/kg	11.		
1,3-Dichloropropane	ND	ug/kg	14.		
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.8		
Bromobenzene	ND	ug/kg	14.		
n-Butylbenzene	ND	ug/kg	2.8		
sec-Butylbenzene	ND	ug/kg	2.8		



Laboratory Sample Number: L0501881-02

MW/CB-7 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	260 continu	ied		1 8260B	0228 19:53 BT
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.8		
p-Isopropyltoluene	ND	ug/kg	2.8		
Naphthalene	ND	ug/kg	14.		
n-Propylbenzene	ND	ug/kg	2.8		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC Cr:	iteria	
1,2-Dichloroethane-d4	95.0	ક			
Toluene-d8	98.0	&			
4- Bromofluorobenzene	109.	ે			
Dibromofluoromethane	90.0	00			
SVOC's by GC/MS 8270				1 8270C	0226 11:00 0301 21:23 HL
Acenaphthene	ND	ug/kg	190		
Benzidine	ND	ug/kg	1900		
1,2,4-Trichlorobenzene	ND	ug/kg	190		
Hexachlorobenzene	ND	ug/kg	190		
Bis(2-chloroethyl)ether	ND	ug/kg	190		
l-Chloronaphthalene	ND	ug/kg	190		
2-Chloronaphthalene	ND	ug/kg	230		
l,2-Dichlorobenzene	ND	ug/kg	190		
L,3-Dichlorobenzene	ND	ug/kg	190		
L,4-Dichlorobenzene	ND	ug/kg	190		
3,3'-Dichlorobenzidine	ND	ug/kg	1900		
2,4-Dinitrotoluene	ND	ug/kg	230		
2,6-Dinitrotoluene	ND	ug/kg	190		
Azobenzene	ND	ug/kg	190		
Fluoranthene	ND	ug/kg	190		
-Chlorophenyl phenyl ether	ND	ug/kg	190		
-Bromophenyl phenyl ether	ND	ug/kg	190		
Bis(2-chloroisopropyl)ether	ND	ug/kg	190		
sis(2-chloroethoxy)methane	ND	ug/kg	190		
lexachlorobutadiene	ND	ug/kg	380		
Mexachlorocyclopentadiene	ND	ug/kg	380		
exachloroethane	ND	ug/kg ug/kg	190		
sophorone	ND	ug/kg ug/kg	190		
	110	uy/ky	エラひ		
aphthalene	ип	na/ka	100		
-	ND ND	ug/kg ug/kg	190 190		

Laboratory Sample Number: L0501881-02

MW/CB-7 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D ATE ID PREP ANAL

SVOC's by GC/MS 8270 continue	id o ja i o o	gen taget		1 8270C	0226 11:00 0301 21:23 HL
n-Nitrosodi-n-propylamine	ND	ug/kg	190		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	380		
Butyl benzyl phthalate	ND	ug/kg	190		
Di-n-butylphthalate	ND	ug/kg	190		
Di-n-octylphthalate	ND	ug/kg	190		
Diethyl phthalate	ND	ug/kg	190		
Dimethyl phthalate	ND	ug/kg	190		
Benzo(a) anthracene	ND	ug/kg	190		
Benzo(a)pyrene	ND	ug/kg	190		
Benzo(b) fluoranthene	ND	ug/kg	190		
Benzo(k)fluoranthene	ND	ug/kg	190		
Chrysene	ND	ug/kg	190		
Acenaphthylene	ND	ug/kg	190		
Anthracene	ND	ug/kg	190		
Benzo(ghi)perylene	ND	ug/kg	190		
Fluorene	ND	ug/kg	190		
Phenanthrene	ND	ug/kg	190		
Dibenzo(a,h)anthracene	ND	ug/kg	190		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190		
Pyrene	ND	ug/kg	190		
Benzo(e)pyrene	ND	ug/kg	190		
Biphenyl	ND	ug/kg	190		
Perylene	ND	ug/kg	190		
Aniline	ND	ug/kg	380		
4-Chloroaniline	ND	ug/kg	190		
1-Methylnaphthalene	ND	ug/kg	190		
2-Nitroaniline	ND	ug/kg	190		
3-Nitroaniline	ND	ug/kg	190		
4-Nitroaniline	ND	ug/kg	270		
Dibenzofuran	ND	ug/kg	190		
a,a-Dimethylphenethylamine	ND	ug/kg	1900		
Hexachloropropene	ND	ug/kg	380	-	
Nitrosodi-n-butylamine	ND	ug/kg	380		
2-Methylnaphthalene	ND	ug/kg	310		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	770		
Pentachlorobenzene	ND	ug/kg	770		
a-Naphthylamine	ND	ug/kg ug/kg	770		
b-Naphthylamine	ND	ug/kg ug/kg	770		
Phenacetin	ND ND	ug/kg ug/kg	380		
	ND	ug/kg ug/kg	770		
Dimethoate 4-Aminobiphenyl	ND ND	ug/kg ug/kg	380		
4-Aminobiphenyi Pentachloronitrobenzene		ug/kg ug/kg	380		
	ND ND	ug/kg ug/kg	380		
Isodrin		ug/kg ug/kg	380		
p-Dimethylaminoazobenzene	ND	ug/kg ug/kg	770		
Chlorobenzilate	ND		770		
3-Methylcholanthrene	ND	ug/kg	570		
Ethyl Methanesulfonate	ND	ug/kg			
Acetophenone	ND	ug/kg	770		
Nitrosodipiperidine	ND	ug/kg	770		



Laboratory Sample Number: L0501881-02

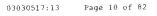
MW/CB-7 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
SVOC's by GC/MS 8270 continue	4			1 8270C		
7,12-Dimethylbenz(a)anthracene	e ND	ug/kg	380	1 82/0C	0226 11:00 03	01 21:23 HL
n-Nitrosodimethylamine	ND	ug/kg	1900			
2,4,6-Trichlorophenol	ND	ug/kg	1900			
p-Chloro-m-cresol	ND	ug/kg	190			
2-Chlorophenol	ND	ug/kg ug/kg	230			
2,4-Dichlorophenol	ND	ug/kg ug/kg	380			
2,4-Dimethylphenol	ND	ug/kg	380			
2-Nitrophenol	ND	ug/kg	770			
4-Nitrophenol	ND	ug/kg ug/kg	380			
2,4-Dinitrophenol	ND	ug/kg ug/kg	770			
4,6-Dinitro-o-cresol	ND	ug/kg ug/kg	770			
Pentachlorophenol	ND	ug/kg ug/kg	770			
Phenol	ND	ug/kg ug/kg	270			
2-Methylphenol	ND					
3-Methylphenol/4-Methylphenol	ND	ug/kg	230			
2,4,5-Trichlorophenol	ND	ug/kg	230			
2,6-Dichlorophenol	ND	ug/kg	190			
Benzoic Acid	ND	ug/kg	380			
Benzyl Alcohol	ND	ug/kg	1900			
Carbazole	ND	ug/kg	380			
Pyridine	ND	ug/kg	190			
2-Picoline	ND	ug/kg	1900			
Pronamide	ND	ug/kg	770			
Methyl methanesulfonate	ND	ug/kg ug/kg	770 770			
Surrogate(s)	Recovery		QC Crit	eria		
2-Fluorophenol	71.0	સ્	25-120			
Phenol-d6	89.0	%	10-120			
Nitrobenzene-d5	93.0	용	23-120			
2-Fluorobiphenyl	79.0	8	30-120			
2,4,6-Tribromophenol	71.0	ક	19-120	-		
4-Terphenyl-d14	130.	%	18-120			
PAH by GC/MS SIM 8270M				1 8270C-M	0226 11:00 030	2 02:44 RL
Acenaphthene	ND	ug/kg	7.7			
2-Chloronaphthalene	ND	ug/kg	7.7			
fluoranthene	ND	ug/kg	7.7			
dexachlorobutadiene	ND	ug/kg	19.			
Naphthalene	ND	ug/kg	7.7			
Benzo(a)anthracene	ND	ug/kg	7.7			
Benzo(a)pyrene	ND	ug/kg	7.7			
Benzo(b)fluoranthene	ND	ug/kg	7.7			
senzo(k)fluoranthene	ND	ug/kg	7.7			
hrysene	ND	ug/kg	7.7			
cenaphthylene	ND	ug/kg	7.7			
nthracene	ND	ug/kg	7.7			
senzo(ghi)perylene	ND	ug/kg	7.7			
luorene	ND	ug/kg	7.7			
henanthrene	ND	ug/kg	7.7			

Laboratory Sample Number: L0501881-02

MW/CB-7 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
PAH by GC/MS SIM 8270M continu	red		2	1 8279C-M	0226 11:00 0302 02:44 AL
Dibenzo(a,h)anthracene	ND	ug/kg	7.7		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.7		
Pyrene	ND	ug/kg	7.7		
1-Methylnaphthalene	ND	ug/kg	7.7		
2-Methylnaphthalene	ND	ug/kg	7.7		
Pentachlorophenol	ND	ug/kg	31.		
Hexachlorobenzene	ND	ug/kg	31.		
Perylene	ND	ug/kg	7.7		
Biphenyl	ND	ug/kg	7.7		
2,6-Dimethylnaphthalene	ND	ug/kg	7.7		
1-Methylphenanthrene	ND	ug/kg	7.7		
Benzo(e) Pyrene	ND	ug/kg	7.7		
Hexachloroethane	ND	ug/kg	31.		
nexaciioroechane		57 5			
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	68.0	%	25-120		
Phenol-d6	87.0	ક	10-120		
Nitrobenzene-d5	72.0	8	23-120		
2-Fluorobiphenyl	64.0	8	30-120		
2,4,6-Tribromophenol	84.0	&	19-120	i	
4-Terphenyl-d14	92.0	ે	18-120	i	
Polychlorinated Biphenyls	:			1 8082	0225 13:10 0301 18:07 ЈВ
Aroclor 1221	ND	ug/kg	38.3		
Aroclor 1232	ND	ug/kg	38.3		
Aroclor 1242/1016	ND	ug/kg	38.3		
Aroclor 1248	ND	ug/kg	38.3		
Aroclor 1254	ND	ug/kg	38.3		
Aroclor 1260	ND	ug/kg	38.3		
Surrogate(s)	Recovery		QC Cri	teria	
2,4,5,6-Tetrachloro-m-xylene	81.0	8	30-150)	
Decachlorobipheny1	110.	ક	30-150)	
pcodonize mon-pro					
Organochlorine Pesticides	\$ 4 J			1 8081	0225 11:40 0301 15:15 BW
Delta-BHC	ND	ug/kg	3.83		
Lindane	ND	ug/kg	3.83		
Alpha-BHC	ND	ug/kg	3.83		
Beta-BHC	ND	ug/kg	3.83		
Heptachlor	ND	ug/kg	3.83		
Aldrin	ND	ug/kg	3.83		
Heptachlor epoxide	ND	ug/kg	3.83		
Endrin	ND	ug/kg	3.83		
Endrin aldehyde	ND	ug/kg	3.83		
Endrin ketone	ND	ug/kg	3.83		
Dieldrin	ND	ug/kg	3.83		
4,4'-DDE	ND	ug/kg	3.83		
4,4'-DDD	ND	ug/kg	3.83		
		ug/kg	3.83		



Laboratory Sample Number: L0501881-02

MW/CB-7 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Organochlorine Pesticides con	tinued		4.5	1 8081	0225 11:40 0301 15:15 BW
Endosulfan I	ND	ug/kg	3.83		,
Endosulfan II	ND	ug/kg	3.83		
Endosulfan sulfate	ND	ug/kg	3.83		
Methoxychlor	ND	ug/kg	3.83		
Toxaphene	ND	ug/kg	15.3		
Chlordane	ND	ug/kg	15.3		
cis-Chlordane	ND	ug/kg	3.83		
trans-Chlordane	ND	ug/kg	3.83		
Surrogate(s)	Recovery		QC Cri	teria	
2,4,5,6-Tetrachloro-m-xylene	64.0	ક	30-150		
Decachlorobiphenyl	71.0	8	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-03

Date Collected: 22-FEB-2005 19:50

MW/CB-8 (12'-14')

Date Received : 24-FEB-2005

Sample Matrix: SOI

Date Reported: 03-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE I	
					PREP	ANAL
Solids, Total	91.	ફ	0.10	30 25 4 0G		0226 14:14 PD
Total Metals				1 3051		
Aluminum, Total	4900	mg/kg	4.4	1 6010B	0301 21:00	0303 07:59 RW
Antimony, Total	ND	mg/kg	2.2	1 6010B	0301 21:00	0303 07:59 RW
Arsenic, Total	2.1	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Barium, Total	30.	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Beryllium, Total	0.1709	mg/kg	0.1090	1 6010B	0301 21:00	0303 07:59 RW
Cadmium, Total	ND	mg/kg	0.1090	I 6010B	0301 21:00	0303 07:59 RW
Calcium, Total	860	mg/kg	4.4	1 6010B	0301 21:00	0303 07:59 RW
Chromium, Total	7.5	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Cobalt, Total	4.6	mg/kg	0.87	1 6010B	0301 21:00	0303 07:59 RW
Copper, Total	10.	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Iron, Total	10000	mg/kg	2.2	1 6010B	0301 21:00	0303 07:59 RW
Lead, Total	8.7	mg/kg	2.2	1 6010B	0301 21:00	0303 07:59 RW
Magnesium, Total	1700	mg/kg	4.4	1 6010B	0301 21:00	0303 07:59 RW
Manganese, Total	320	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Mercury, Total	ND	mg/kg	0.08	1 7471A	0228 19:25	0301 16:21 DM
Nickel, Total	8.57	mg/kg	0.436	1 6010B	0301 21:00	0303 07:59 RW
Potassium, Total	410	mg/kg	110	1 6010B	0301 21:00	0303 07:59 RW
Selenium, Total	0.366	mg/kg	0.218	1 6010B	0301 21:00	0303 07:59 RW
Silver, Total	ND	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Sodium, Total	220	mg/kg	87.	1 6010B	0301 21:00	0303 07:59 RW
Thallium, Total	ND	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Vanadium, Total	8.8	mg/kg	0.44	1 6010B	0301 21:00	0303 07:59 RW
Zinc, Total	24.	mg/kg	2,2	1 6010B	0301 21:00	0303 07:59 RW
Volatile Organics by GC/MS	3260			1 8260B		0228 20:31 BT
Methylene chloride	ND	ug/kg	27.			
1,1-Dichloroethane	ND	ug/kg	4.0			
Chloroform	ND	ug/kg	4.0			
Carbon tetrachloride	ND	ug/kg	2.7			
1,2-Dichloropropane	ND	ug/kg	9.4			
Dibromochloromethane	ND	ug/kg	2.7			
1,1,2-Trichloroethane	ND	ug/kg	4.0			
Tetrachloroethene	ND	ug/kg	2.7			
Chlorobenzene	ND	ug/kg	2.7			
Trichlorofluoromethane	ND	ug/kg	13.			



Laboratory Sample Number: L0501881-03

MW/CB-8 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD		ATE	ID
					PREP	ANAL	
Volatile Organics by GC/MS	8260 contin	ue d		1 8260B		0228 20:31	
1,2-Dichloroethane	ND	ug/kg	2.7	- 45000		0220 20:31	BT
1,1,1-Trichloroethane	ND	ug/kg	2.7				
Bromodichloromethane	ND	ug/kg	2.7				
trans-1,3-Dichloropropene	ND	ug/kg	2.7				
cis-1,3-Dichloropropene	ND	ug/kg	2.7				
1,1-Dichloropropene	ND	ug/kg	13.				
Bromoform	ND	ug/kg	11.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7				
Benzene	ND	ug/kg	2.7				
Toluene	ND	ug/kg	4.0				
Ethylbenzene	ND	ug/kg	2.7				
Chloromethane	ND	ug/kg	13.				
Bromomethane	ND	ug/kg	5.4				
Vinyl chloride	ND	ug/kg	5.4				
Chloroethane	ND	ug/kg	5.4				
1,1-Dichloroethene	ND	ug/kg	2.7				
trans-1,2-Dichloroethene	ND	ug/kg	4.0				
Trichloroethene	ND	ug/kg	2.7				
1,2-Dichlorobenzene	ND	ug/kg	13.				
l,3-Dichlorobenzene	ND	ug/kg	13.				
l,4-Dichlorobenzene	ND	ug/kg	13.				
Methyl tert butyl ether	ND	ug/kg	5.4				
o/m-Xylene	ND	ug/kg	2.7				
D-Xylene	ND	ug/kg	2.7				
cis-1,2-Dichloroethene	ND	ug/kg ug/kg	2.7				
Dibromomethane	ND	ug/kg	27.				
,4-Dichlorobutane	ND	ug/kg ug/kg	27.				
Codomethane	ND	ug/kg	27.				
.,2,3-Trichloropropane	ND	ug/kg ug/kg	27.				
Styrene	ND	ug/kg ug/kg	2.7				
Dichlorodifluoromethane	ND	ug/kg	27.				
cetone	ND	ug/kg ug/kg	27.	•			
arbon disulfide	ND	ug/kg ug/kg	27.				
-Butanone	ND	ug/kg	27.				
inyl acetate	ND	ug/kg ug/kg					
-Methy1-2-pentanone	ND		27.				
-Hexanone	ND	ug/kg	27.				
thyl methacrylate	ND	ug/kg	27.				
crolein	ND	ug/kg	27.				
crylonitrile	ND	ug/kg	67.				
romochloromethane	ND	ug/kg	27.				
etrahydrofuran	ND	ug/kg	13.				
,2-Dichloropropane	ND	ug/kg	54.				
,2-Dibromoethane		ug/kg	13.				
,3-Dichloropropane	ND	ug/kg	11.				
,1,1,2-Tetrachloroethane	ND	ug/kg	13.				
romobenzene	ND	ug/kg	2.7				
-Butylbenzene	ND	ug/kg	13.				
ec-Butylbenzene	ND	ug/kg	2.7				
se bucyrbenzene	ND	ug/kg	2.7				

Laboratory Sample Number: L0501881-03

MW/CB-8 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	260 continu	ied-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 8260B	0228 20:31 BT
tert-Butylbenzene	ND	ug/kg	13.		
o-Chlorotoluene	ND	ug/kg	13.		
o-Chlorotoluene	ND	ug/kg	13.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	13.		
Hexachlorobutadiene	ND	ug/kg	13.		
Isopropylbenzene	ND	ug/kg	2.7		
p-Isopropyltoluene	ND	ug/kg	2.7		
Naphthalene	ND	ug/kg	13.		
n-Propylbenzene	ND	ug/kg	2.7		
1,2,3-Trichlorobenzene	ND	ug/kg	13.		
1,2,4-Trichlorobenzene	ND	ug/kg	13.		
1,3,5-Trimethylbenzene	ND	ug/kg	13.		
1,2,4-Trimethylbenzene	ND	ug/kg	13.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	13.		
Ethyl ether	ND	ug/kg	13.		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	97.0	90			
Toluene-d8	98.0	%			
4-Bromofluorobenzene	107.	8			
Dibromofluoromethane	92.0	ફ			
SVOC's by GC/MS 8270				1 8270C	0226 11:00 0301 14:57 H
Acenaphthene	ND	ug/kg	180		
Benzidine	ND	ug/kg	1800		
1,2,4-Trichlorobenzene	ND	ug/kg	180		
Hexachlorobenzene	ND	ug/kg	180		
Bis(2-chloroethyl)ether	ND	ug/kg	180		
1-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
1,2-Dichlorobenzene	ND	ug/kg	180	-	
1,3-Dichlorobenzene	ND	ug/kg	180		
1,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,6-Dinitrotoluene	ND	ug/kg	180		
Azobenzene	ND	ug/kg	180		
Fluoranthene	ND	ug/kg	180		
4-Chlorophenyl phenyl ether	ND	ug/kg	180		
4-Bromophenyl phenyl ether	ND	ug/kg	180		
Bis(2-chloroisopropyl)ether	ND	ug/kg	180		
Bis(2-chloroethoxy)methane	ND	ug/kg	180		
Hexachlorobutadiene	ND	ug/kg	370		
Hexachlorocyclopentadiene	ND	ug/kg	370		
Hexachloroethane	ND	ug/kg	180		
Isophorone	ND	ug/kg	180		
Naphthalene	ND	uq/kg	180		
Nitrobenzene	ND	ug/kg	180		



Laboratory Sample Number: L0501881-03

MW/CB-8 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD		TE	ID
					PREP	ANAL	
SVOC's by GC/MS 8270 continu	ed			1 8270c	0226 11:00	0301:14.5	7 771
n-Nitrosodi-n-propylamine	ND	ug/kg	180	2 02/20	0220 11.00	0301 14:5	/ HL
Bis(2-ethylhexyl)phthalate	ND	ug/kg	370				
Butyl benzyl phthalate	ND	ug/kg	180				
Di-n-butylphthalate	ND	ug/kg	180				
Di-n-octylphthalate	ND	ug/kg	180				
Diethyl phthalate	ND	ug/kg	180				
Dimethyl phthalate	ND	ug/kg	180				
Benzo(a)anthracene	ND	ug/kg	180				
Benzo(a)pyrene	ND	ug/kg ug/kg	180				
Benzo(b) fluoranthene	ND	ug/kg ug/kg	180				
Benzo(k) fluoranthene	ND	ug/kg ug/kg	180				
Chrysene	ND						
Acenaphthylene	ND	ug/kg	180				
Anthracene	ND	ug/kg ug/kg	180 180				
Benzo(ghi)perylene	ND						
Fluorene	ND	ug/kg	180				
Phenanthrene		ug/kg	180				
Dibenzo(a,h)anthracene	ND ND	ug/kg	180				
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180				
Pyrene	ND	ug/kg	180				
Benzo(e)pyrene	ND	ug/kg	180				
Biphenyl		ug/kg	180				
Perylene	ND	ug/kg	180				
Aniline	ND	ug/kg	180				
	ND	ug/kg	370				
L-Methylnaphthalene	ND	ug/kg	180				
2-Nitroaniline	ND	ug/kg	180				
B-Nitroaniline	ND	ug/kg	180				
-Nitroaniline	ND	ug/kg	180				
Dibenzofuran	ND	ug/kg	260				
	ND	ug/kg	180				
a,a-Dimethylphenethylamine	ND	ug/kg	1800	•			
Mexachloropropene	ND	ug/kg	370				
Vitrosodi-n-butylamine	ND	ug/kg	370				
2-Methylnaphthalene	ND	ug/kg	290				
.,2,4,5-Tetrachlorobenzene	ND	ug/kg	730				
entachlorobenzene	ND	ug/kg	730				
-Naphthylamine	ND	ug/kg	730				
-Naphthylamine	ND	ug/kg	730				
henacetin	NĐ	ug/kg	370				
rimethoate	ND	ug/kg	730				
-Aminobiphenyl	ND	ug/kg	370				
entachloronitrobenzene	ND	ug/kg	370				
sodrin	ND	ug/kg	370				
-Dimethylaminoazobenzene	ND	ug/kg	370				
hlorobenzilate	ND	ug/kg	730				
-Methylcholanthrene	ND	ug/kg	730				
thyl Methanesulfonate	ND	ug/kg	550				
cetophenone	ND	ug/kg	730				
itrosodipiperidine	ND	ug/kg	730				

Laboratory Sample Number: L0501881-03

MW/CB-8 (12'-14')

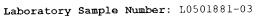
PARAME TER	RESULT	UNITS	RDL	REF 1	METHOD	DA' PREP	TE ANAL	ID
do /vg 0070			2		8270C	0226 11:00	0301 145	.7 Ht.
SVOC's by GC/MS 8270 continued		ug/kg	370	* * *	02100 0,5	V220 23100	0001 (4144	
7,12-Dimethylbenz(a)anthracene		ug/kg ug/kg	1800					
n-Nitrosodimethylamine	ND	ug/kg ug/kg	180					
2,4,6-Trichlorophenol	ND ND	ug/kg ug/kg	180					
p-Chloro-m-cresol	ND	ug/kg ug/kg	220					
2-Chlorophenol	ND	ug/kg ug/kg	370					
2,4-Dichlorophenol	ND	ug/kg ug/kg	370					
2,4-Dimethylphenol	ND	ug/kg ug/kg	730					
2-Nitrophenol	ND	ug/kg	370					
4-Nitrophenol	ND	ug/kg	730					
2,4-Dinitrophenol	ND	ug/kg ug/kg	730					
4,6-Dinitro-o-cresol		ug/kg ug/kg	730					
Pentachlorophenol	ND	ug/kg	260					
Phenol	ND ND	ug/kg ug/kg	220					
2-Methylphenol	ND	ug/kg ug/kg	220					
3-Methylphenol/4-Methylphenol		ug/kg ug/kg	180					
2,4,5-Trichlorophenol	ND	ug/kg ug/kg	370					
2,6-Dichlorophenol	ND	ug/kg ug/kg	1800					
Benzoic Acid	ND	ug/kg ug/kg	370					
Benzyl Alcohol	ND	ug/kg ug/kg	180					
Carbazole	ND	ug/kg ug/kg	1800					
Pyridine	ND	ug/kg ug/kg	730					
2-Picoline	ND	ug/kg ug/kg	730					
Pronamide Methyl methanesulfonate	ND ND	ug/kg	730					
Surrogate(s)	Recovery		QC Cr:	iteria	ı			
2-Fluorophenol	70.0	8	25-120	0				
Pheno1-d6	80.0	&	10-12	0				
Nitrobenzene-d5	68.0	olo	23-12	0				
2-Fluorobiphenyl	67.0	ક	30-12	0				
2,4,6-Tribromophenol	67.0	8	19-12	0				
4-Terphenyl-d14	92.0	%	18-12	0				
PAH by GC/MS SIM 8270M				1 '	8270C-M	0226 11:00	0302 03:	26 R
Acenaphthene	ND	ug/kg	7.3					
2-Chloronaphthalene	ND	ug/kg	7.3					
Fluoranthene	ND	ug/kg	7.3					
Hexachlorobutadiene	ND	ug/kg	18.					
Naphthalene	ND	ug/kg	7.3					
Benzo(a)anthracene	ND	ug/kg	7.3					
Benzo(a) pyrene	ND	ug/kg	7.3					
Benzo(b) fluoranthene	ND	ug/kg	7.3					
Benzo(k) fluoranthene	ND	ug/kg	7.3					
Chrysene	ND	ug/kg	7.3					
Acenaphthylene	ND	ug/kg	7.3					
Anthracene	ND	ug/kg	7.3					
Benzo(ghi)perylene	ND	ug/kg	7.3					
Fluorene	ND	ug/kg	7.3					
Phenanthrene	ND	ug/kg	7.3					



Laboratory Sample Number: L0501881-03

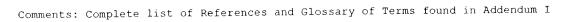
MW/CB-8 (12'-14')

ARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
PAH by GC/MS SIM 8270M contir	nued			1 8270C-M	0226 11:00 0302 03:26 RL
Dibenzo(a,h)anthracene	ND	ug/kg	7.3		THE TIME SHOP OF THE PARTY
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.3		
Pyrene	ND	ug/kg	7.3		
1-Methylnaphthalene	ND	ug/kg	7.3		
2-Methylnaphthalene	ND	ug/kg	7.3		
Pentachlorophenol	ND	ug/kg	29.		
Hexachlorobenzene	ND	ug/kg	29.		
Perylene	ND	ug/kg	7.3		
Biphenyl	ND	ug/kg	7.3		
2,6-Dimethylnaphthalene	ND	ug/kg	7.3		
l-Methylphenanthrene	ND	ug/kg	7.3		
Benzo(e)Pyrene	ND	ug/kg	7.3		
Hexachloroethane	ND	ug/kg	29.		
Surrogate(s)	Pogoworu		00 0-1		
2-Fluorophenol	Recovery 61.0	0.	QC Crit	eria	
Phenol-d6	78.0	90	25-120		
Nitrobenzene-d5			10-120		
2-Fluorobiphenyl	64.0	90	23-120		
2,4,6-Tribromophenol	61.0	8	30-120		
	73.0	8	19-120		
4-Terphenyl-d14	78.0	ઇ	18-120		
Polychlorinated Biphenyls				1 8082	0225 13:10 0301 17:39 JB
Aroclor 1221	ND	ug/kg	36.6		
Aroclor 1232	ND	ug/kg	36.6		
Aroclor 1242/1016	ND	ug/kg	36.6		
Aroclor 1248	ND	ug/kg	36.6		
Aroclor 1254	ND	ug/kg	36.6		
Aroclor 1260	ND	ug/kg	36.6		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	76.0	8	30-150		
Decachlorobiphenyl	109.	9	30-150		
Organochlorine Pesticides				1 8081	0225 11:40 0301 14:46 BW
elta-BHC	ND	ug/kg	3.66	1 0001	0223 11:40 0301 14:46 BW
indane	ND	ug/kg	3.66		
lpha-BHC	ND	ug/kg ug/kg	3.66		
Seta-BHC	ND	ug/kg ug/kg	3.66		
Meptachlor	ND	ug/kg ug/kg			
drin	ND	ug/kg ug/kg	3.66		
eptachlor epoxide	ND		3.66		
Indrin	ND	ug/kg	3.66		
ndrin aldehyde		ug/kg	3.66		
indrin aldenyde Indrin ketone	ND	ug/kg	3.66		
	ND	ug/kg	3.66		
oieldrin	ND	ug/kg	3.66		
, 4'-DDE	ND	ug/kg	3.66		
,4'-DDD	ND	ug/kg	3.66		
,4'-DDT	ND	ug/kg	3.66		



MW/CB-8 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF M	ETHOD	DA' PREP	TE ANAL	ID
Organochlorine Pesticides con	tinued			1 8	081	0225 11:40	0301 14:4	e bw
Endosulfan I	ND	ug/kg	3.66					
Endosulfan II	ND	ug/kg	3.66					
Endosulfan sulfate	ND	ug/kg	3.66					
Methoxychlor	ND	ug/kg	3.66					
Toxaphene	ND	ug/kg	14.6					
Chlordane	ND	ug/kg	14.6					
cis-Chlordane	ND	ug/kg	3.66					
trans-Chlordane	ND	ug/kg	3.66					
Surrogate(s)	Recovery		QC Cri	iteria				
2,4,5,6-Tetrachloro-m-xylene	56.0	%	30-150)				
Decachlorobiphenyl	71.0	8	30-150)				





MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-04

Date Collected: 23-FEB-2005 07:15

MW/CB-9 (4'-6') Sample Matrix: SOIL

Date Received: 24-FEB-2005 Date Reported : 03-MAR-2005

Condition of Sample: Satisfactory

Field Prep:

None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Solids, Total	88.	8	0.10	30	2540G		0226 14:14	PD
Total Metals				1	3051			
Aluminum, Total	4700	mg/kg	4.5	1	6010B	0301 21:00	0303 08:12	pw
Antimony, Total	ND	mg/kg	2.2	1	6010B		0303 08:12	
Arsenic, Total	2.7	mg/kg	0.45	1	6010B		0303 08:12	
Barium, Total	46.	mg/kg	0.45	1	6010B		0303 08:12	
Beryllium, Total	ND	mg/kg	0.1118	1			0303 08:12	
Cadmium, Total	ND	mg/kg	0.1118	1	6010B	0301 21:00		
Calcium, Total	4800	mg/kg	4.5	1	6010B	0301 21:00		
Chromium, Total	10.	mg/kg	0.45	1	6010B	0301 21:00		
Cobalt, Total	5.4	mg/kg	0.89	1	6010B	0301 21:00		
Copper, Total	37.	mg/kg	0.45	1	6010B	0301 21:00		
Iron, Total	7800	mg/kg	2.2	1	6010B	0301 21:00		
Lead, Total	93.	mq/kq	2.2	1	6010B	0301 21:00		
Magnesium, Total	1500	mq/kq	4.5	1	6010B	0301 21:00		
Manganese, Total	120	mg/kg	0.45	1	6010B	0301 21:00		
Mercury, Total	0.21	mg/kg	0.09		7471A	0228 19:25		
Nickel, Total	10.1	mg/kg	0.447	1	6010B	0301 21:00		
Potassium, Total	320	mg/kg	110		6010B			
Selenium, Total	0.558	mg/kg	0.224		6010B	0301 21:00		
Silver, Total	ND	mg/kg	0.45	1	6010B	0301 21:00		
Sodium, Total	970	mg/kg	89.			0301 21:00		
Thallium, Total	ND	mg/kg	0.45	_	6010B 6010B	0301 21:00		
Vanadium, Total	11.	mg/kg	0.45			0301 21:00		
Zinc, Total	20.	mg/kg	2.2		6010B 6010B	0301 21:00 0301 21:00		
Volatile Organics by GC/MS	8260			1	8260B		0228 21:10	ጥው
Methylene chloride	ND	ug/kg	28.	-			VLEU 21.10	וט
1,1-Dichloroethane	ND	ug/kg	4.3					
Chloroform	ND	ug/kg	4.3					
Carbon tetrachloride	ND	ug/kg	2.8					
1,2-Dichloropropane	ND	ug/kg	9.9					
Dibromochloromethane	ND	ug/kg ug/kg	2.8					
1,1,2-Trichloroethane	ND	ug/kg ug/kg	4.3					
Tetrachloroethene	ND	ug/kg ug/kg	2.8					
Chlorobenzene	ND	ug/kg ug/kg	2.8					
Trichlorofluoromethane	ND	ug/kg ug/kg	14.					

Laboratory Sample Number: L0501881-04

MW/CB-9 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS	9260 continu	ed		1 8260B	0228 21:10 BT
1,2-Dichloroethane	ND	ug/kg	2.8		
1,1,1-Trichloroethane	ND	ug/kg	2.8		
Bromodichloromethane	ND	ug/kg	2.8		
trans-1,3-Dichloropropene	ND	ug/kg	2.8		
	ND	ug/kg	2.8		
cis-1,3-Dichloropropene	ND	ug/kg	14.		
1,1-Dichloropropene	ND	ug/kg	11.		
Bromoform 1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8		
	ND	ug/kg	2.8		
Benzene	ND	ug/kg	4.3		
Toluene		ug/kg	2.8		
Ethylbenzene	ND	ug/kg	14.		
Chloromethane	ND	ug/kg ug/kg	5.7		
Bromomethane	ND	ug/kg ug/kg	5.7		
Vinyl chloride	ND	ug/kg ug/kg	5.7		
Chloroethane	ND		2.8		
1,1-Dichloroethene	ND	ug/kg	4.3		
trans-1,2-Dichloroethene	ND	ug/kg	2.8		
Trichloroethene	ND	ug/kg	14.		
1,2-Dichlorobenzene	ND	ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg	14.		
1,4-Dichlorobenzene	ND	ug/kg			
Methyl tert butyl ether	ND	ug/kg	5.7		
p/m-Xylene	ND	ug/kg	2.8		
o-Xylene	ND	ug/kg	2.8		
cis-1,2-Dichloroethene	ND	ug/kg	2.8		
Dibromomethane	ND	ug/kg	28.		
1,4-Dichlorobutane	ND	ug/kg	28.		
Iodomethane	ND	ug/kg	28.		
1,2,3-Trichloropropane	ND	ug/kg	28.		
Styrene	ND	ug/kg	2.8		
Dichlorodifluoromethane	ND	ug/kg	28.	-	
Acetone	ND	ug/kg	28.		
Carbon disulfide	ND	ug/kg	28.		
2-Butanone	ND	ug/kg	28.		
Vinyl acetate	ND	ug/kg	28.		
4-Methyl-2-pentanone	ND	ug/kg	28.		
2-Hexanone	ND	ug/kg	28.		
Ethyl methacrylate	ND	ug/kg	28.		
Acrolein	ND	ug/kg	71.		
Acrylonitrile	ND	ug/kg	28.		
Bromochloromethane	ND	ug/kg	14.		
Tetrahydrofuran	ND	ug/kg	57.		
2,2-Dichloropropane	ND	ug/kg	14.		
1,2-Dibromoethane	ND	ug/kg	11.		
1,3-Dichloropropane	ND	ug/kg	14.		
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.8		
Bromobenzene	ND	ug/kg	14.		
n-Butylbenzene	ND	ug/kg	2.8		
sec-Butylbenzene	ND	ug/kg	2.8		



Laboratory Sample Number: L0501881-04

MW/CB-9 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	260 continu	ied	Sec. 2	1 8260B	0228 21:10 BT
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.8		
p-Isopropyltoluene	ND	ug/kg	2.8		
Naphthalene	ND	ug/kg	14.		
n-Propylbenzene	ND	ug/kg	2.8		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethy1benzene	ND	ug/kg	14.		
1,2,4-Trimethy1benzene	ND	ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC Cr:	iteria	
1,2-Dichloroethane-d4	103.	8			
Toluene-d8	98.0	%			
4-Bromofluorobenzene	111.	8			
Dibromofluoromethane	71.0	ò			
SVOC's by GC/MS 8270				1 8270C	0226 11:00 0301 15:23 HL
Acenaphthene	ND	ug/kg	190		100 11,00 0001 10123 110
Benzidine	ND	ug/kg	1900		
1,2,4-Trichlorobenzene	ND	ug/kg	190		
Hexachlorobenzene	ND	ug/kg	190		
Bis(2-chloroethyl)ether	ND	ug/kg	190		
1-Chloronaphthalene	ND	ug/kg	190		
2-Chloronaphthalene	ND	ug/kg	230		
1,2-Dichlorobenzene	ND	ug/kg	190	_	
1,3-Dichlorobenzene	ND	ug/kg	190	-	
1,4-Dichlorobenzene	ND	ug/kg	190		
3,3'-Dichlorobenzidine	ND	ug/kg	1900		
2,4-Dinitrotoluene	ND	ug/kg	230		
2,6-Dinitrotoluene	ND	ug/kg	190		
Azobenzene	ND	ug/kg	190		
Fluoranthene	ND	ug/kg	190		
4-Chlorophenyl phenyl ether	ND	ug/kg	190		
4-Bromophenyl phenyl ether	ND	ug/kg	190		
Bis(2-chloroisopropyl)ether	ND	ug/kg	190		
Bis(2-chloroethoxy)methane	ND	ug/kg	190		
Hexachlorobutadiene	ND	ug/kg	380		
Hexachlorocyclopentadiene	ND	ug/kg	. 380		
Hexachloroethane	ND	ug/kg ug/kg	190		
Sophorone	ND	ug/kg ug/kg	190		
•	ND	ug/kg ug/kg	190		
vapntnaiene			エンリ		
Naphthalene Nitrobenzene	ND	uq/kq	190		



Laboratory Sample Number: L0501881-04

MW/CB-9 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D ATE ID PREP ANAL
SVOC's by GC/MS 8270 continue	ed -			1 ,8270C	0226 11;00 0301 15;23 HL
n-Nitrosodi-n-propylamine	ND	ug/kg	190		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	380		
Butyl benzyl phthalate	ND	ug/kg	190		
Di-n-butylphthalate	ND	ug/kg	190		
Di-n-octylphthalate	ND	ug/kg	190		
Diethyl phthalate	ND	ug/kg	190		
Dimethyl phthalate	ND	ug/kg	190		
Benzo(a)anthracene	ND	ug/kg	190		
Benzo(a) pyrene	ND	ug/kg	190		
Benzo(b) fluoranthene	ND	ug/kg	190		
Benzo(k) fluoranthene	ND	ug/kg	190		
Chrysene	ND	ug/kg	190		
Acenaphthylene	ND	ug/kg	190		
Acenaphthylene Anthracene	ND	ug/kg	190		
Benzo(ghi)perylene	ND	ug/kg	190		
Benzo(gni) peryrene Fluorene	ND	ug/kg	190		
Phenanthrene	ND	ug/kg	190		
Dibenzo(a,h)anthracene	ND	ug/kg	190		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190		
Pyrene	ND	ug/kg	190		
Benzo(e)pyrene	ND	ug/kg	190		
Bipheny1	ND	ug/kg	190		
Perylene	ND	ug/kg	190		
Aniline	ND	ug/kg	380		
4-Chloroaniline	ND	ug/kg	190		
1-Methylnaphthalene	ND	ug/kg	190		
2-Nitroaniline	ND	ug/kg	190		
3-Nitroaniline	ND	ug/kg	190		
4-Nitroaniline	ND	ug/kg	260		
Dibenzofuran	ND	ug/kg	190		
	ND	ug/kg	1900		
a,a-Dimethylphenethylamine	ND	ug/kg ug/kg	380	•	
Hexachloropropene	ND	ug/kg ug/kg	380		
Nitrosodi-n-butylamine	ND ND	ug/kg ug/kg	300		
2-Methylnaphthalene	ND ND	ug/kg ug/kg	760		
1,2,4,5-Tetrachlorobenzene	ND ND	ug/kg ug/kg	760		
Pentachlorobenzene		ug/kg ug/kg	760		
a-Naphthylamine	ND ND	, ,	760		
b-Naphthylamine	ND ND	ug/kg	380		
Phenacetin	ND	ug/kg	760		
Dimethoate	ND	ug/kg			
4-Aminobiphenyl	ND	ug/kg	380 380		
Pentachloronitrobenzene	ND	ug/kg			
Isodrin	ND	ug/kg	380		
p-Dimethylaminoazobenzene	ND	ug/kg	380		
Chlorobenzilate	ND	ug/kg	760		
3-Methylcholanthrene	ND	ug/kg	760		
Ethyl Methanesulfonate	ND	ug/kg	570		
Acetophenone	ND	ug/kg	760		
Nitrosodipiperidine	ND	ug/kg	760		



Laboratory Sample Number: L0501881-04

MW/CB-9 (4'-6')

				PREP	ANAL	
d			1 8270C	0226 11:00	nani iskaa	
e ND	ua/ka	380		0220 11.00	0001.15.23	1179
ND						
ND						
ND						
ND						
ND						
	, ,					
ND	ug/kg	760				
Recovery		QC Crit	teria			
32.0	8	25-120				
34.0	%	10-120				
31.0	ક					
30.0	8					
35.0	9					
47.0	8	18-120				
			1 8270C-M	0226 11:00 0	302 04:09	RT.
ND	ug/kg	7.6				
ND	ug/kg	7.6				
30.	ug/kg	7.6				
ND						
ND						
16.						
	- "					
	, ,					
17.	ug/kg ug/kg	7.6				
	e ND ND ND ND ND ND ND ND ND ND ND ND ND N	e ND	e ND	Pe ND ug/kg 380 ND ug/kg 1900 ND ug/kg 190 ND ug/kg 190 ND ug/kg 230 ND ug/kg 380 ND ug/kg 380 ND ug/kg 380 ND ug/kg 380 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 230 ND ug/kg 230 ND ug/kg 230 ND ug/kg 190 ND ug/kg 190 ND ug/kg 1900 ND ug/kg 1900 ND ug/kg 1900 ND ug/kg 1900 ND ug/kg 1900 ND ug/kg 1900 ND ug/kg 1900 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 1900 ND ug/kg 1900 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 760 ND ug/kg 766 ND ug/kg 7.6 11 8270C-M ND ug/kg 7.6 12. ug/kg 7.6 15. ug/kg 7.6 15. ug/kg 7.6 18. ug/kg 7.6 ND ug/kg 7.6	e ND	B ND

Laboratory Sample Number: L0501881-04

MW/CB-9 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
PAH by GC/MS SIM 8270M continu	ıed		· • • • • • • • • • • • • • • • • • • •	1 8270C-M	0226 11:00 0302 04:09 RL
Dibenzo(a,h)anthracene	ND	ug/kg	7.6		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.6		
Pyrene	32.	ug/kg	7.6		
l-Methylnaphthalene	ND	ug/kg	7.6		
2-Methylnaphthalene	ND	ug/kg	7.6		
Pentachlorophenol	ND	ug/kg	30.		
Hexachlorobenzene	ND	ug/kg	30.		
Perylene	ND	ug/kg	7.6		
Biphenyl	ND	ug/kg	7.6		
2,6-Dimethylnaphthalene	ND	ug/kg	7.6		
1-Methylphenanthrene	ND	ug/kg	7.6		
Benzo(e) Pyrene	12.	ug/kg	7.6		
Hexachloroethane	ND	ug/kg	30.		
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	61.0	%	25-12	0	
Phenol-d6	78.0	ફ	10-12	0	
Nitrobenzene-d5	66.0	%	23-12	0	
2-Fluorobiphenyl	59.0	ક	30-12	0	
2,4,6-Tribromophenol	80.0	%	19-12	0	
4-Terphenyl-d14	90.0	%	18-12	0	
Polychlorinated Biphenyls				1 8082	0225 13;10 0301 18;35 Л
Aroclor 1221	ND	ug/kg	37.9		
Aroclor 1232	ND	ug/kg	37.9		
Aroclor 1242/1016	ND	ug/kg	37.9		
Aroclor 1248	ND	ug/kg	37.9		
Aroclor 1254	ND	ug/kg	37.9		
Aroclor 1260	ND	ug/kg	37.9		
Surrogate(s)	Recovery		QC Cr	iteria	
2,4,5,6-Tetrachloro-m-xylene	77.0	96	30-15	0	
Decachlorobiphenyl	113.	8	30-15	0	
Organochlorine Pesticides				1 8081	0225 11:40 0301 15:44 B
Delta-BHC	ND	ug/kg	3.79		
Lindane	ND	ug/kg	3.79		
Alpha-BHC	ND	ug/kg	3.79		
Beta-BHC	ND	ug/kg	3.79		
Heptachlor	ND	ug/kg	3.79		
Aldrin	ND	ug/kg	3.79		
Heptachlor epoxide	ND	ug/kg	3.79		
Endrin	ND	ug/kg	3.79		
Endrin aldehyde	ND	ug/kg	3.79		
Endrin ketone	ND	ug/kg	3.79		
Dieldrin	ND	ug/kg	3.79		
4,4'-DDE	ND	ug/kg	3.79		
4, 4'-DDD	ND	ug/kg	3.79		
4,4'-DDT	ND	ug/kg	3.79		



Laboratory Sample Number: L0501881-04

MW/CB-9 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA'	ľE	ID	
						PREP	ANAL		
Organochlorine Pesticides con	ntinued			1	8081	0225 11:40	0201 15	·	
Endosulfan I	ND	ug/kg	3.79	•	0001	0225 11:40	0301 15;	44 BW	
Endosulfan II	ND	ug/kg	3.79						
Endosulfan sulfate	ND	ug/kg	3.79						
Methoxychlor	ND	ug/kg	3.79						
l'oxaphene	ND	ug/kg	15.2						
Chlordane	ND	ug/kg	15.2						
cis-Chlordane	ND	ug/kg	3.79						
trans-Chlordane	ND	ug/kg	3.79						
Surrogate(s)	Recovery		QC Cri	teria	.				
2,4,5,6-Tetrachloro-m-xylene	64.0	8	30-150						
Decachlorobiphenyl	67.0	8	30-150						



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-05

Date Collected: 23-FEB-2005 07:35

MW/CB-9 (14'-16')

Date Received : 24-FEB-2005

Sample Matrix: SOIL Date Reported: 03-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS RDL	REF METHOD	DATE ID			
FARALISTER					PREP	ANAL	
Solids, Total	92.	95	0.10	30 2540G		0226 14:14 P	PD
Total Metals				1 3051			
Aluminum, Total	1800	mg/kg	4.3	1 60108	0301 21:00	0303 08:14 R	RW
Antimony, Total	ND	mg/kg	2.1	1 6010B	0301 21:00	0303 08:14 R	RW
Arsenic, Total	0.90	mg/kg	0.43	1 6010B		0303 08:14 R	
Barium, Total	41.	mg/kg	0.43	1 6010B		0303 08:14 R	
Beryllium, Total	0.1293	mg/kg	0.1074	1 6010B		0303 08:14 R	
Cadmium, Total	ND	mg/kg	0.1074	1 6010B		0303 08:14 P	
Calcium, Total	3600	mg/kg	4.3	1 6010B		0303 08:14 F	
Chromium, Total	7.7	mg/kg	0.43	1 6010B		0303 08:14 F	
Cobalt, Total	2.9	mg/kg	0.86	1 6010B		0303 08:14 F	
Copper, Total	12.	mg/kg	0.43	1 6010B		0303 08:14 F	
Iron, Total	5100	mg/kg	2.1	1 6010B		0303 08:14 F	
Lead, Total	4.9	mg/kg	2.1	1 6010B		0303 08:14 F	
Magnesium, Total	1700	mg/kg	4.3	1 6010B		0303 08:14 F	
Manganese, Total	330	mg/kg	0.43	1 6010B		0303 08:14 F	
Mercury, Total	ND	mg/kg	0.08	1 7471A		0301 16:32 I	
Nickel, Total	7.15	mg/kg	0.429	1 6010B		0303 08:14 F	
Potassium, Total	380	mg/kg	110	i 6010B		0303 08:14 9	
Selenium, Total	ND	mg/kg	0.215	1 6010B		0303 08:14 1	
Silver, Total	ND	mg/kg	0.43	1 6010B		0303 08:14 I	
Sodium, Total	ND	mg/kg	86.	1 6010B		0 0 3 0 3 0 8 : 1 4 1	
Thallium, Total	ND	mg/kg	0.43	1 6010B		0303 08:14 1	
Vanadium, Total	6.5	mg/kg	0.43	1 6010B		0 0303 08:14 1	
Zinc, Total	11.	mg/kg	2.1	1 6010B	0301 21:0	0 0303 08:14	RW
Volatile Organics by GC/MS	8260			1 8260B		0228 21:49	BT
Methylene chloride	ND	ug/kg	27.				
1,1-Dichloroethane	ND	ug/kg	4.1				
Chloroform	ND	ug/kg	4.1				
Carbon tetrachloride	ND	ug/kg	2.7				
1,2-Dichloropropane	ND	ug/kg	9.5				
Dibromochloromethane	ND	ug/kg	2.7				
1,1,2-Trichloroethane	ND	ug/kg	4.1				
Tetrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
Trichlorofluoromethane	ND	ug/kg	14.				



Laboratory Sample Number: L0501881-05

MW/CB-9 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatila Organia, h., com	ria da l		···· -		
Volatile Organics by GC/MS . 1,2-Dichloroethane				1 8260B	0228 21:49 BT
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane	ND	ug/kg	2.7		
trans-1,3-Dichloropropene	ND	ug/kg	2.7		
cis-1,3-Dichloropropene	ND	ug/kg	2.7		
1,1-Dichloropropene	ND	ug/kg	2.7		
Bromoform	ND	ug/kg	14.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	11.		
Benzene	ND	ug/kg	2.7		
Toluene	ND	ug/kg	2.7		
Ethylbenzene	ND	ug/kg	4.1		
Chloromethane	ND	ug/kg	2.7		
Bromomethane	ND	ug/kg	14.		
Vinyl chloride	ND	ug/kg	5.4		
Chloroethane	ND	ug/kg	5.4		
1,1-Dichloroethene	ND	ug/kg	5.4		
	ND	ug/kg	2.7		
trans-1,2-Dichloroethene	ND	ug/kg	4.1		
Frichloroethene	ND	ug/kg	2.7		
1,2-Dichlorobenzene	ND	ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg	14.		
1,4-Dichlorobenzene	ND	ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg	5.4		
o/m-Xylene	ND	ug/kg	2.7		
D-Xylene	ND	ug/kg	2.7		
cis-1,2-Dichloroethene	ND	ug/kg	2.7		
Dibromomethane	ND	ug/kg	27.		
1,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
,2,3-Trichloropropane	ND	ug/kg	27.		
Styrene	ND	ug/kg	2.7		
Dichlorodifluoromethane	ND	ug/kg	27.	•	
Acetone	ND	ug/kg	27.		
Carbon disulfide	ND	ug/kg	27.		
2-Butanone	ND	ug/kg	27.		
inyl acetate	ND	ug/kg	27.		
-Methyl-2-pentanone	ND	ug/kg	27.		
-Hexanone	ND	ug/kg	27.		
thyl methacrylate	ND	ug/kg	27.		
crolein	ND	ug/kg	68.		
crylonitrile	ND	ug/kg	27.		
romochloromethane	ND	ug/kg	14.		
etrahydrofuran	ND	ug/kg	54.		
,2-Dichloropropane	ND	ug/kg	14.		
,2-Dibromoethane	ND	ug/kg	11.		
,3-Dichloropropane	ND	ug/kg	14.		
,1,1,2-Tetrachloroethane	ND	ug/kg	2.7		
romobenzene	ND	ug/kg	14.		
-Butylbenzene	ND	ug/kg	2.7		
ec-Butylbenzene	ND	ug/kg	2.7		



Laboratory Sample Number: L0501881-05

MW/CB-9 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D ATE II PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ied	. ,	1 8260B	0228 21:49 BT
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
	ND	ug/kg	2.7		
Isopropylbenzene	ND	ug/kg	2.7		
p-Isopropyltoluene	ND	ug/kg	14.		
Naphthalene	ND	ug/kg	2.7		
n-Propylbenzene			14.		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND		14.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	97.0	8			
Toluene-d8	96.0	ojo			
4-Bromofluorobenzene	109.	8			
Dibromofluoromethane	93.0	%			
SVOC's by GC/MS 8270				1 8270C	0226 11:00 0301 15:49 H
Acenaphthene	ND	ug/kg	180		
Benzidine	ND	ug/kg	1800		
1,2,4-Trichlorobenzene	ND	ug/kg	180		
Hexachlorobenzene	ND	ug/kg	180		
Bis(2-chloroethyl)ether	ND	ug/kg	180		
1-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
1,2-Dichlorobenzene	ND	ug/kg	180		
1,3-Dichlorobenzene	ND	ug/kg ug/kg	180		
1,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,4-Dinitrotoluene	ND	ug/kg ug/kg	180		
•	ND	ug/kg ug/kg	180		
Azobenzene	ND ND	ug/kg ug/kg	180		
Fluoranthene	ND ND	ug/kg ug/kg	180		
4-Chlorophenyl phenyl ether		ug/kg ug/kg	180		
4-Bromophenyl phenyl ether	ND	ug/kg ug/kg	180		
Bis (2-chloroisopropyl) ether	ND		180		
Bis(2-chloroethoxy)methane	ND	ug/kg	360		
Hexachlorobutadiene	ND	ug/kg	360		
Hexachlorocyclopentadiene	ND	ug/kg			
Hexachloroethane	ND	ug/kg	180		
Isophorone	ND	ug/kg	180		
Naphthalene	ND	ug/kg	180		
Nitrobenzene	ND	ug/kg	180		
NDPA/DPA	ND	ug/kg	540		



Laboratory Sample Number: L0501881-05

MW/CB-9 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continue	~d	·			
n-Nitrosodi-n-propylamine	ND	/ / /	100	1 8270C	0226 11:00 0301 15:49 HL
Bis(2-ethylhexyl)phthalate		ug/kg	180		
Butyl benzyl phthalate	ND	ug/kg	360		
Di-n-butylphthalate	ND	ug/kg	180		
Di-n-octylphthalate	ND	ug/kg	180		
Diethyl phthalate	ND	ug/kg	180		
Dimethyl phthalate	ND	ug/kg	180		
Benzo(a)anthracene	ND	ug/kg	180		
Benzo(a) pyrene	ND	ug/kg	180		
Benzo(a) pyrene Benzo(b) fluoranthene	ND	ug/kg	180		
	ND	ug/kg	180		
Benzo(k)fluoranthene	ND	ug/kg	180		
Chrysene	ND	ug/kg	180		
Acenaphthylene	ND	ug/kg	180		
Anthracene	ND	ug/kg	180		
Benzo(ghi)perylene	ND	ug/kg	180		
Fluorene	ND	ug/kg	180		
Phenanthrene	ND	ug/kg	180		
Dibenzo(a,h)anthracene	ND	ug/kg	180	1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180		
Pyrene	ND	ug/kg	180		
Benzo(e)pyrene	ND	ug/kg	180		
Biphenyl	ND	ug/kg	180		
Perylene	ND	ug/kg	180		
Aniline	ND	ug/kg	360		
1-Chloroaniline	ND	ug/kg	180		
-Methylnaphthalene	ND	ug/kg	180		
2-Nitroaniline	ND	ug/kg	180		
3-Nitroaniline	ND	ug/kg	180		
-Nitroaniline	ND	ug/kg	250		
Dibenzofuran	ND	ug/kg	180		
,a-Dimethylphenethylamine	ND	ug/kg	1800	-	
lexachloropropene	ND	ug/kg	360		
litrosodi-n-butylamine	ND	ug/kg	360		
-Methylnaphthalene	ND	ug/kg	290		
,2,4,5-Tetrachlorobenzene	ND	ug/kg	720		
entachlorobenzene	ND	ug/kg	720		
-Naphthylamine	ND	ug/kg	720		
-Naphthylamine	ND	ug/kg	720		
henacetin	ND	ug/kg	360		
imethoate	ND	ug/kg	720		
-Aminobiphenyl	ND	ug/kg	360		
entachloronitrobenzene	ND	ug/kg	360		
sodrin	ND	ug/kg	360		
-Dimethylaminoazobenzene	ND	ug/kg	360		
hlorobenzilate	ND	ug/kg	720		
-Methylcholanthrene	ND	ug/kg	720		
thyl Methanesulfonate	ND	ug/kg	540		
cetophenone	ND	ug/kg	720		
		44/14	, , ,		

Laboratory Sample Number: L0501881-05

MW/CB-9 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued				1 8270C	0226 11:00 0301 15:49 HL
7,12-Dimethylbenz(a)anthracene		ug/kg	360		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
n-Nitrosodimethylamine	ND	ug/kg	1800		
2,4,6-Trichlorophenol	ND	ug/kg	180		
p-Chloro-m-cresol	ND	ug/kg	180		
2-Chlorophenol	ND	ug/kg	220		
2,4-Dichlorophenol	ND	ug/kg ug/kg	360		
2,4-Dimethylphenol	ND	ug/kg	360		
2-Nitrophenol	ND	ug/kg	720		
4-Nitrophenol	ND	ug/kg	360		
-	ND	ug/kg	720		
2,4-Dinitrophenol 4,6-Dinitro-o-cresol	ND	ug/kg	720		
	ND	ug/kg	720		
Pentachlorophenol Phenol	ND	ug/kg ug/kg	250		
Phenoi 2-Methylphenol	ND	ug/kg ug/kg	220		
3-Methylphenol/4-Methylphenol	ND	ug/kg	220		
	ND	ug/kg	180		
2,4,5-Trichlorophenol 2,6-Dichlorophenol	ND	ug/kg	360		
Benzoic Acid	ND	ug/kg ug/kg	1800		
Benzyl Alcohol	ND	ug/kg	360		
Carbazole	ND	ug/kg ug/kg	180		
	ND	ug/kg ug/kg	1800		
Pyridine 2-Picoline	ND	ug/kg ug/kg	720		•
	ND	ug/kg ug/kg	720		
Pronamide Methyl methanesulfonate	ND	ug/kg	720		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	75.0	8	25-120		
Phenol-d6	85.0	ક	10-120		
Nitrobenzene-d5	76.0	8	23-120		
2-Fluorobiphenyl	74.0	%	30-120		
2,4,6-Tribromophenol	72.0	ફ	19-120	_	
4-Terphenyl-d14	98.0	્ર	18-120		
PAH by GC/MS SIM 8270M				1 8270C-M	0226 11:00 0302 04:52 RI
Acenaphthene	ND	ug/kg	7.2		
2-Chloronaphthalene	ND	ug/kg	7.2		
Fluoranthene	ND	ug/kg	7.2		
Hexachlorobutadiene	ND	ug/kg	18.		
Naphthalene	ND ·	ug/kg	7.2		
Benzo(a)anthracene	ND	ug/kg	7.2		
Benzo(a)pyrene	ND	ug/kg	7.2		
Benzo(b) fluoranthene	ND	ug/kg	7.2		
Benzo(k) fluoranthene	ND	ug/kg	7.2		
Chrysene	ND	ug/kg	7.2		
Acenaphthylene	ND	ug/kg	7.2		
Anthracene	ND	ug/kg	7.2		
Benzo(ghi)perylene	ND	ug/kg	7.2		
Fluorene	ND	ug/kg	7.2		
Phenanthrene	ND	ug/kg	7.2		



Laboratory Sample Number: L0501881-05

MW/CB-9 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
PAH by GC/MS SIM 8270M contin	ued	2		1 8270C-M	0226 11:00 0302 04:52 RL
Dibenzo(a,h)anthracene	ND	ug/kg	7.2	2 02/00 H	0420 11100 0302 04:32 RB
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.2		
Pyrene	ND	ug/kg	7.2		
1-Methylnaphthalene	ND	ug/kg	7.2		
2-Methylnaphthalene	ND	ug/kg	7.2		
Pentachlorophenol	ND	ug/kg	29.		
Hexachlorobenzene	ND	ug/kg	29.		
Perylene	ND	ug/kg	7.2		
Biphenyl	ND	ug/kg	7.2		
2,6-Dimethylnaphthalene	ND	ug/kg	7.2		
1-Methylphenanthrene	ND	ug/kg	7.2		
Benzo(e) Pyrene	ND	ug/kg	7.2		
Hexachloroethane	ND	ug/kg	29.		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	70.0	%	25-120	ccria	
Phenol-d6	98.0	8	10-120		
Nitrobenzene-d5	78.0	8	23-120		
2-Fluorobiphenyl	69.0	8	30-120		
2,4,6-Tribromophenol	84.0	8	19-120		
4-Terphenyl-d14	90.0	8	18-120		
Polychlorinated Biphenyls				1 8082	0225 13:10 0301 19:04 дв
Aroclor 1221	ND	ug/kg	36.2	, vvvg.	2252 \$2:10 0201 12:04 9D
Aroclor 1232	ND	ug/kg	36.2		
Aroclor 1242/1016	ND	ug/kg	36.2		
Aroclor 1248	ND	ug/kg	36.2		
Aroclor 1254	ND	ug/kg	36.2		
Aroclor 1260	ND	ug/kg	36.2		
Surrogate(s)	Recovery		QC Crit	teria	
2,4,5,6-Tetrachloro-m-xylene	82.0	%	30-150		
Decachlorobiphenyl	111.	8	30-150		
Organochlorine Pesticides				1 8081	0225 11:40 0301 16:13 BW
Delta-BHC	ND	ug/kg	3.62		
Lindane	ND	ug/kg	3.62		
Alpha-BHC	ND	ug/kg	3.62		
Beta-BHC	ND	ug/kg	3.62		
Heptachlor	ND	ug/kg	3.62		
Aldrin	ND	ug/kg	3.62		
leptachlor epoxide	ND	ug/kg	3.62		
Endrin	ND	ug/kg	3.62		
Endrin aldehyde	ND	ug/kg	3.62		
Endrin ketone	ND	ug/kg	3.62		
ieldrin	ND	ug/kg	3.62		
,4'-DDE	ND	ug/kg	3.62		
, 4 ' - DDD	ND	ug/kg	3.62		
, 4 '-DDT	ND	ug/kg	3.62		

Laboratory Sample Number: L0501881-05

MW/CB-9 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DAT	E ID
··					PREP	ANAL
Organochlorine Pesticides con	tinued	33.		1 8081	0225 11:40	0301 16:13 BW
Endosulfan I	ND	ug/kg	3.62			
Endosulfan II	ND	ug/kg	3.62			
Endosulfan sulfate	ND	ug/kg	3.62			
Methoxychlor	ND	ug/kg	3.62			
Toxaphene	ND	ug/kg	14.5			
Chlordane	ND	ug/kg	14.5			
cis-Chlordane	ND	ug/kg	3.62			
trans-Chlordane	ND	ug/kg	3.62			
Surrogate(s)	Recovery		QC Cr	iteria		
2,4,5,6-Tetrachloro-m-xylene	50.0	ે	30-15	0		
Decachlorobiphenyl	57.0	%	30-15	0		





MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-06

Date Collected: 23-FEB-2005 10:20

Sample Matrix:

CB-10 (2'-4') SOIL

Date Received: 24-FEB-2005 Date Reported : 03-MAR-2005

None

Condition of Sample: Satisfactory

Field Prep:

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	TE	ID
					PREP	ANAL	
Solids, Total	91.	9	0.10	30 2540G		0226 14:14	PD
Total Metals			*,;	1 3051			
Aluminum, Total	6700	mg/kg	4.4	1 6010B	0004		
Antimony, Total	ND	mg/kg	2.2	1 6010B	0301 21:00		
Arsenic, Total	2.5	mg/kg	0.44		0301 21:00		
Barium, Total	51.	mg/kg	0.44		0301 21:00		
Beryllium, Total	ND	mg/kg	0.109		0301 21:00		
Cadmium, Total	ND	mg/kg	0.109	1 6010B	0301 21:00		
Calcium, Total	2200	mg/kg	4.4	1 6010B	0301 21:00		
Chromium, Total	11.	mg/kg		1 6010B	0301 21:00		
Cobalt, Total	6.1	· . ·	0.44	1 6010B	0301 21:00	0303 08:17	RW
Copper, Total	20.	mg/kg	0.87	1 6010B	0301 21:00		
Iron, Total	11000	mg/kg	0.44	1 6010B	0301 21:00		
Lead, Total	40.	mg/kg	2.2	1 6010B	0301 21:00		
Magnesium, Total	2400	mg/kg	2.2	1 6010B	0301 21:00	0303 08:17	RW
Manganese, Total	330	mg/kg	4.4	1 6010B	0301 21:00		
Mercury, Total	0.24	mg/kg	0.44	1 6010B	0301 21:00		
Nickel, Total		mg/kg	0.08	1 7471A	0228 19:25	0301 16:34	DM
Potassium, Total	10.4	mg/kg	0.437	1 6010B	0301 21:00	0303 08:17	RW
Selenium, Total	1000	mg/kg	110	1 - 6010B	0301 21:00	0303 08:17	RW
Silver, Total	0.365	mg/kg	0.218	1 6010B	0301 21:00	0303 08:17	RW
Sodium, Total	ND	mg/kg	0.44	1 6010B	0301 21:00	0303 08:17	RW
	180	mg/kg	87.	1 6010B	0301 21:00	0303 08:17	RW
Thallium, Total	ND	mg/kg	0.44	1 6010B	0301 21:00	0303 08:17	RW
anadium, Total	14.	mg/kg	0.44	1 6010B	0301 21:00	0303 08:17	RW
inc, Total	30.	mg/kg	2.2	1 6010B	0301 21:00	0303 08:17	RW
olatile Organics by GC/MS	8260			1 8260B		0228 22:27	рт
ethylene chloride	ND	ug/kg	27.				
,1-Dichloroethane	ND	ug/kg	4.1				
hloroform	ND	ug/kg	4.1				
arbon tetrachloride	ND	ug/kg	2.7				
,2-Dichloropropane	ND	ug/kg	9.5				
ibromochloromethane	ND	ug/kg	2.7				
,1,2-Trichloroethane	ND	ug/kg	4.1				
etrachloroethene	ND	ug/kg	2.7				
hlorobenzene	ND	ug/kg	2.7				
richlorofluoromethane	ND	ug/kg	14.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0501881-06 CB-10 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 continu	ıed		1 8260B	6228 22:27 BT
1,2-Dichloroethane	ND	ug/kg	2.7		
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane	ND	ug/kg	2.7		
trans-1,3-Dichloropropene	ND	ug/kg	2.7		
cis-1,3-Dichloropropene	ND	ug/kg	2.7		
1,1-Dichloropropene	ND	ug/kg	14.		
Bromoform	ND	ug/kg	11.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7		
Benzene	ND	ug/kg	2.7		
Toluene	ND	ug/kg	4.1		
Ethylbenzene	ND	ug/kg	2.7		
Chloromethane	ND	ug/kg	14.		
Bromomethane	ND	ug/kg	5.4		
Vinyl chloride	ND	ug/kg	5.4		
Chloroethane	ND	ug/kg	5.4		
1,1-Dichloroethene	ND	ug/kg	2.7		
trans-1,2-Dichloroethene	ND	ug/kg	4.1		
Trichloroethene	ND	ug/kg	2.7		
1,2-Dichlorobenzene	ND	ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg	14.		
1,4-Dichlorobenzene	ND	ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg	5.4		
p/m-Xylene	ND	ug/kg	2.7		
o-Xylene	ND	ug/kg	2.7		
cis-1,2-Dichloroethene	ND	ug/kg	2.7		
Dibromomethane	ND	ug/kg	27.		
1,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
1,2,3-Trichloropropane	ND	ug/kg	27.		
	ND	ug/kg	2.7		
Styrene Dichlorodifluoromethane	ND	ug/kg	27.		
Acetone	ND	ug/kg	27.	•	
Carbon disulfide	ND	ug/kg	27.		
2-Butanone	ND	ug/kg	27.		
Vinyl acetate	ND	ug/kg	27.		
-	ND	ug/kg	27.		
4-Methyl-2-pentanone	ND	ug/kg	27.		
2-Hexanone	ND ND	ug/kg ug/kg	27.		
Ethyl methacrylate	ND	ug/kg ug/kg	68.		
Acrolein	ND	ug/kg ug/kg	27.		
Acrylonitrile	ND	ug/kg ug/kg	14.		
Bromochloromethane	ND	ug/kg ug/kg	54.		
Tetrahydrofuran	ND	ug/kg ug/kg	14.		
2,2-Dichloropropane	ND	ug/kg ug/kg	11.		
1,2-Dibromoethane		ug/kg ug/kg	14.		
1,3-Dichloropropane	ND	ug/kg ug/kg	2.7		
1,1,1,2-Tetrachloroethane	ND	ug/kg ug/kg	14.		
Bromobenzene	ND	ug/kg ug/kg	2.7		
n-Butylbenzene	ND		2.7		
sec-Butylbenzene	ND	ug/kg	۷.1		



Laboratory Sample Number: L0501881-06

CB-10 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	260 continu	ed		1 8260B	0228 22:27 BT
tert-Butylbenzene	ND	ug/kg	14.	1 02000	0220 22:27 BT
o-Chlorotoluene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.7		
o-Isopropyltoluene	ND	ug/kg	2.7		
Naphthalene	ND	ug/kg	14.		
n-Propylbenzene	ND	ug/kg	2.7		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
l,2,4-Trimethylbenzene	ND	ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Gurrogate(s)	Recovery		QC Cr	iteria	
l,2-Dichloroethane-d4	98.0	용			
Coluene-d8	98.0	8			
l-Bromofluorobenzene	120.	ે			
Dibromofluoromethane	95.0	96			
SVOC's by GC/MS 8270				1 8270C	0226 11:00 0301 16:16 HL
Acenaphthene	ND	ug/kg	180		
Benzidine	ND	ug/kg	1800		
,2,4-Trichlorobenzene	ND	ug/kg	180		
dexachlorobenzene	ND	ug/kg	180		
Bis(2-chloroethyl)ether	ND	ug/kg	180		
-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
.,2-Dichlorobenzene	ND	ug/kg	180	•	
.,3-Dichlorobenzene	ND	ug/kg	180		
,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,6-Dinitrotoluene	ND	ug/kg	180		
zobenzene	ND	ug/kg	180		
'luoranthene	ND	ug/kg	180		
-Chlorophenyl phenyl ether	ND	ug/kg	180		
-Bromophenyl phenyl ether	ND	ug/kg	180		
sis(2-chloroisopropyl)ether	ND	ug/kg	180		
is(2-chloroethoxy)methane	ND	ug/kg	180		
exachlorobutadiene	ND	ug/kg	370		
exachlorocyclopentadiene	ND	ug/kg	370		
exachloroethane	ND	ug/kg	180		
sophorone	ND	ug/kg	180		
Japhthalene	ND	ug/kg	180		
Mitrobenzene	ND	ug/kg	180		
IDPA/DPA	ND	ug/kg	550		



Laboratory Sample Number: L0501881-06

CB-10 (2'-4')

					PREP ANAL
and the second of the second o			٠ ((١ ١ ١ ١ ١ ١ ١ ١ ١ ١ ١ ١ ١ ١ ١ ١ ١		0000 11.00 000 15.00
SVOC's by GC/MS 8270 continue				W. 1 .85.100	0226 11:00 0301 16:16 HL
n-Nitrosodi-n-propylamine	ND	ug/kg	180		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	370		
Butyl benzyl phthalate	ND	ug/kg	180		
Di-n-butylphthalate	ND	ug/kg	180		
Di-n-octylphthalate	ND	ug/kg	180		
Diethyl phthalate	ND	ug/kg	180		
Dimethyl phthalate	ND	ug/kg	180		
Benzo(a)anthracene	ND	ug/kg	180		
Benzo(a)pyrene	ND	ug/kg	180		
Benzo(b)fluoranthene	ND	ug/kg	180		
Benzo(k)fluoranthene	ND	ug/kg	180		
Chrysene	ND	ug/kg	180		
Acenaphthylene	ND	ug/kg	180		
Anthracene	ND	ug/kg	180		
Benzo(ghi)perylene	ND	ug/kg	180		
Fluorene	ND	ug/kg	180		
Phenanthrene	ND	ug/kg	180		
Dibenzo(a,h)anthracene	ND	ug/kg	180		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180		
Pyrene	ND	ug/kg	180		
Benzo(e)pyrene	ND	ug/kg	180		
Biphenyl	ND	ug/kg	180		
Perylene	ND	ug/kg	180		
Aniline	ND	ug/kg	370		
4-Chloroaniline	ND	ug/kg	180		
l-Methylnaphthalene	ND	ug/kg	180		
2-Nitroaniline	ND	ug/kg	180		
3-Nitroaniline	ND	ug/kg	180		
4-Nitroaniline	ND	ug/kg	260		
Dibenzofuran	ND	ug/kg	180		
a,a-Dimethylphenethylamine	ND	ug/kg	1800		
Hexachloropropene	ND	ug/kg	370		
Nitrosodi-n-butylamine	ND	ug/kg	370		
2-Methylnaphthalene	ND	ug/kg	290		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	730		
Pentachlorobenzene	ND	ug/kg	730		
a-Naphthylamine	ND	ug/kg	730		
b-Naphthylamine	ND	ug/kg	730		
Phenacetin	ND	ug/kg	370		
Dimethoate	ND	ug/kg	730		
4-Aminobiphenyl	ND	ug/kg	370		
Pentachloronitrobenzene	ND	ug/kg	370		
Isodrin	ND	ug/kg	370		
p-Dimethylaminoazobenzene	ND	ug/kg	370		
Chlorobenzilate	ND	ug/kg	730		
3-Methylcholanthrene	ND	ug/kg	730		
Ethyl Methanesulfonate	ND	ug/kg	550		
-	ND	ug/kg	730		
Acetophenone Nitrosodipiperidine	ND	ug/kg ug/kg	730		



Laboratory Sample Number: L0501881-06

CB-10 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF N	ÆTHOD	DATE ID		
						PREP	ANAL	10
SVOC's by GC/MS 8270 continue	ed .						-	
7,12-Dimethylbenz(a)anthracer	ne ND	ug/kg	270	1 1	270C	0226 11:00	0301 16:1	6 HL
n-Nitrosodimethylamine	ND	ug/kg	370					
2,4,6-Trichlorophenol	ND		1800					
p-Chloro-m-cresol	ND	ug/kg	180					
2-Chlorophenol	ND	ug/kg	180					
2,4-Dichlorophenol	ND	ug/kg	220					
2,4-Dimethylphenol	ND	ug/kg	370					
2-Nitrophenol	ND	ug/kg	370					
4-Nitrophenol		ug/kg	730					
2,4-Dinitrophenol	ND	ug/kg	370					
4,6-Dinitro-o-cresol	ND	ug/kg	730					
Pentachlorophenol	ND	ug/kg	730					
Phenol	ND	ug/kg	730					
2-Methylphenol	ND	ug/kg	260					
3-Methylphonol /4 Math	ND	ug/kg	220					
3-Methylphenol/4-Methylphenol		ug/kg	220					
2,4,5-Trichlorophenol	ND	ug/kg	180					
2,6-Dichlorophenol Benzoic Acid	ND	ug/kg	370					
	ND	ug/kg	1800					
Benzyl Alcohol	ND	ug/kg	370					
Carbazole	ND	ug/kg	180					
Pyridine	ND	ug/kg	1800					
2-Picoline	ND	ug/kg	730					
Pronamide	ND	ug/kg	730					
Methyl methanesulfonate	ND	ug/kg	730					
Surrogate(s)	Recovery		QC Crit	eria				
2-Fluorophenol	65.0	용	25-120	·ciid				
Phenol-d6	72.0	8	10-120					
litrobenzene-d5	65.0	ુ	23-120					
-Fluorobiphenyl	60.0	8	30-120					
,4,6-Tribromophenol	71.0	8	19-120	_				
-Terphenyl-d14	92.0	ક	18-120					
AH by GC/MS SIM 8270M				1 00	700 10			
cenaphthene	ND	ug/kg	7.3	1 827	UC-M	0226 11:00 0	302 05:34	RL
-Chloronaphthalene	ND	ug/kg	7.3					
luoranthene	39.	ug/kg	7.3					
exachlorobutadiene	ND	ug/kg	18.					
aphthalene	ND	ug/kg	7.3					
enzo(a)anthracene	22.	ug/kg ug/kg	7.3					
enzo(a)pyrene	17.	ug/kg ug/kg	7.3					
enzo(b)fluoranthene	22.	ug/kg ug/kg	7.3					
enzo(k)fluoranthene	17.	ug/kg ug/kg						
nrysene	26.	, ,	7.3					
cenaphthylene	ND	ug/kg	7.3					
nthracene	ND	ug/kg	7.3					
enzo(ghi)perylene	12.	ug/kg	7.3					
luorene		ug/kg	7.3					
nenanthrene	ND	ug/kg	7.3					
	21.	ug/kg	7.3					

Laboratory Sample Number: L0501881-06

CB-10 (2'-4')

PARAMETER	RESULT	UNITS	RDL I	REF METHOD	DATE ID PREP ANA L
	Lia .			1 8270C~M	0226 11:00 0302 05:34 RL
PAH by GC/MS SIM 8270M continu	ND	ug/kg	7.3	4	
Dibenzo(a,h)anthracene	10.	ug/kg	7.3		
Indeno(1,2,3-cd)Pyrene	39.	ug/kg	7.3		
Pyrene	ND	ug/kg	7.3		
l-Methylnaphthalene	ND	ug/kg	7.3		
2-Methylnaphthalene	ND	ug/kg	29.		
Pentachlorophenol Hexachlorobenzene	ND	ug/kg	29.		
	ND	ug/kg	7.3		
Perylene	ND	ug/kg	7.3		
Biphenyl	ND	ug/kg	7.3		
2,6-Dimethylnaphthalene	ND	ug/kg	7.3		
1-Methylphenanthrene	16.	ug/kg	7.3		
Benzo(e) Pyrene	ND	ug/kg	29.		
Hexachloroethane	110	~9, ~ 9			
Surrogate/s)	Recovery		QC Crit	eria	
Surrogate(s) 2-Fluorophenol	65.0	8	25-120		
Phenol-d6	83.0	90	10-120		
Nitrobenzene-d5	72.0	9	23-120		
2-Fluorobiphenyl	61.0	8	30-120		
2,4,6-Tribromophenol	84.0	9	19-120		
4-Terphenyl-d14	87.0	%	18-120		
4-leibhenli air					
Polychlorinated Biphenyls	200			1 8082	0225 13:10 0301 19:32 JB
Aroclor 1221	ND	ug/kg	36.6		
Aroclor 1232	ND	ug/kg	36.6		
Aroclor 1242/1016	ND	ug/kg	36.6		
Aroclor 1248	ND	ug/kg	36.6		
Aroclor 1254	ND	ug/kg	36.6		
Aroclor 1260	ND	ug/kg	36.6		
Comparate (a)	Recovery		OC Cri	teria	
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene	85.0	8	30-150		
Decachlorobiphenyl	121.	8	30-150		
Decachioropiphenyi					
Organochlorine Pesticides				1 8081	9225 11:40 0301 16:41 BW
Delta-BHC	ND	ug/kg	3.66		
Lindane	ND	ug/kg	3.66		
Alpha-BHC	ND	ug/kg	3.66		
Beta-BHC	ND	ug/kg	3.66		
Heptachlor	ND	ug/kg	3.66		
Aldrin	ND	ug/kg	3.66		
Heptachlor epoxide	ND	ug/kg	3.66		
Endrin	ND	ug/kg	3.66		
Endrin aldehyde	ND	ug/kg	3.66		
Endrin ketone	ND	ug/kg	3.66		
Dieldrin	ND	ug/kg	3.66		
4,4'-DDE	ND	ug/kg	3.66		
4,4'-DDD	ND	ug/kg	3.66		
4,4'-DDT	ND	ug/kg	3.66		



Laboratory Sample Number: L0501881-06

CB-10 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE		ID		
						PREP	ANA	ANAL		
Organochlorine Pesticides o	continued			1	8081	0225 11:40	3301 T6	· 41 '19W		
Endosulfan I	ND	ug/kg	3.66			- La, 10	2201 10	+47 DM		
Endosulfan II	ND	ug/kg	3.66							
Endosulfan sulfate	ND	ug/kg	3.66							
Methoxychlor	ND	ug/kg	3.66							
Toxaphene	ND	ug/kg	14.6							
Chlordane	ND	ug/kg	14.6							
cis-Chlordane	ND	ug/kg	3.66							
trans-Chlordane	ИD	ug/kg	3.66							
Surrogate(s)	Recovery		QC Cri	teria						
2,4,5,6-Tetrachloro-m-xylen	e 63.0	용	30-150							
Decachlorobiphenyl	72.0	%	30-150							



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-07

Date Collected: 23-FEB-2005 10:50

CB-10 (7'-8')

Date Received: 24-FEB-2005

SOIL Sample Matrix:

Date Reported: 03-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Vial

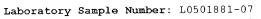
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA PREP	TE I	ID
Solids, Total	89.	%	0.10	30 2540G		0226 14:14	PD
Total Metals				1 3051		- 1 2	. 0
Aluminum, Total	6900	mg/kg	4.4	1 6010B	0301 21:00	0303 08:35	RW
Antimony, Total	ND	mg/kg	2.2	1 6010B	0301 21:00	0303 08:35	RW
Arsenic, Total	2.9	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	R₩
Barium, Total	35.	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	RW
Beryllium, Total	ND	mg/kg	0.1110	1 6010B	0301 21:00	0303 08:35	RW
Cadmium, Total	ND	mg/kg	0.1110	1 6010B	0301 21:00	0303 08:35	RW
Calcium, Total	2300	mg/kg	4.4	1 6010B	0301 21:00	0303 08:35	R₩
Chromium, Total	9.9	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	RW
Cobalt, Total	4.9	mg/kg	0.89	1 6010B	0301 21:00	0303 08:35	RW
Copper, Total	20.	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	RW
Iron, Total	11000	mg/kg	2.2	1 6010B	0301 21:00	0303 08:35	RW
Lead, Total	67.	mg/kg	2.2	1 6010B	0301 21:00	0303 08:35	RW
Magnesium, Total	1700	mg/kg	4.4	1 6010B	0301 21:00	0303 08:35	R₩
Manganese, Total	280	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	RW
Mercury, Total	0.67	mg/kg	0.08	1 7471A	0228 19:25	0301 16:36	DM
Nickel, Total	7.94	mg/kg	0.444	1 6010B	0301 21:00	0303 08:35	RW
Potassium, Total	380	mg/kg	110	1 6010B	0301 21:00	0303 08:35	RW
Selenium, Total	0.442	mg/kg	0.222	1 6010B	0301 21:00	0303 08:35	RW
Silver, Total	ND	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	RW
Sodium, Total	240	mg/kg	89.	1 6010B	0301 21:00	0303 08:35	RW
Thallium, Total	ND	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	RW
Vanadium, Total	13.	mg/kg	0.44	1 6010B	0301 21:00	0303 08:35	RW
Zinc, Total	26.	mg/kg	2.2	1 6010B	0301 21:00	0303 08:35	RW
Volatile Organics by GC/MS	8260			1 8260B		0228 23:05	BT
Methylene chloride	ND	ug/kg	27.				
1,1-Dichloroethane	ND	ug/kg	4.1				
Chloroform	ND	ug/kg	4.1				
Carbon tetrachloride	ND	ug/kg	2.7				
1,2-Dichloropropane	ND	ug/kg	9.6				
Dibromochloromethane	ND	ug/kg	2.7				
1,1,2-Trichloroethane	ND	ug/kg	4.1				
Tetrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
Trichlorofluoromethane	ND	ug/kg	14.				



Laboratory Sample Number: L0501881-07

CB-10 (7'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS (0000	i			
1,2-Dichloroethane	ND			1 8260B	0228 23:05 BT
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane		ug/kg	2.7		
trans-1,3-Dichloropropene	ND	ug/kg	2.7		
cis-1,3-Dichloropropene	ND	ug/kg	2.7		
1,1-Dichloropropene	ND	ug/kg	2.7		
Bromoform	ND	ug/kg	14.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	11.		
Benzene	ND	ug/kg	2.7		
roluene	ND	ug/kg	2.7		
Ethylbenzene	ND	ug/kg	4.1		
Chloromethane	ND	ug/kg	2.7		
Bromomethane	ND	ug/kg	14.		
Vinyl chloride	ND	ug/kg	5.5		
Chloroethane	ND	ug/kg	5.5		
l,1-Dichloroethene	ND	ug/kg	5.5		
trans-1,2-Dichloroethene	ND	ug/kg	2.7		
	ND	ug/kg	4.1		
Trichloroethene	ND	ug/kg	2.7		
L,2-Dichlorobenzene	ND	ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg	14.		
1,4-Dichlorobenzene	ND	ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg	5.5		
o/m-Xylene	ND	ug/kg	2.7		
o-Xylene	ND	ug/kg	2.7		
cis-1,2-Dichloroethene	ND	ug/kg	2.7		
Dibromomethane	ND	ug/kg	27.		
.,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
.,2,3-Trichloropropane	ND	ug/kg	27.		
Styrene	ND	ug/kg	2.7		
Dichlorodifluoromethane	ND	ug/kg	27.	•	
cetone	ND	ug/kg	27.		
Carbon disulfide	ND	ug/kg	27.		
-Butanone	ND	ug/kg	27.		
'inyl acetate	ND	ug/kg	27.		
-Methyl-2-pentanone	ND	ug/kg	27.		
-Hexanone	ND	ug/kg	27.		
thyl methacrylate	ND	ug/kg	27.		
crolein	ND	ug/kg	68.		
crylonitrile	ND	ug/kg	27.		
romochloromethane	ND	ug/kg	14.		
etrahydrofuran	ND	ug/kg	55.		
,2-Dichloropropane	ND	ug/kg	14.		
,2-Dibromoethane	ND	ug/kg	11.		
,3-Dichloropropane	ND	ug/kg	14.		
,1,1,2-Tetrachloroethane	ND	ug/kg	2.7		
romobenzene	ND	ug/kg	14.		
-Butylbenzene	ND	ug/kg	2.7		
ec-Butylbenzene	ND	ug/kg	2.7		



CB-10 (7'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ied	1.3.7.1	1 8260B	0228 23:05 BT
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.7		
p-Isopropyltoluene	ND	ug/kg	2.7		
Naphthalene	ND	ug/kg	14.		
n-Propylbenzene	ND	ug/kg	2.7		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC C1	riteria	
1,2-Dichloroethane-d4	97.0	%	~		
Toluene-d8	97.0	%			
4-Bromofluorobenzene	115.	00			
Dibromofluoromethane	93.0	%			
SVOC's by GC/MS 8270	**			1 8270¢	0226 11:00 0301 16:41 HL
Acenaphthene	ND	ug/kg	190		
Benzidine	ND	ug/kg	1900		
1,2,4-Trichlorobenzene	ND	ug/kg	190		
Hexachlorobenzene	ND	ug/kg	190		
Bis(2-chloroethyl)ether	ND	ug/kg	190		
1-Chloronaphthalene	ND	ug/kg	190		
2-Chloronaphthalene	ND	ug/kg	220		
1,2-Dichlorobenzene	ND	ug/kg	190		
1,3-Dichlorobenzene	ND	ug/kg	190		
1,4-Dichlorobenzene	ND	ug/kg	190		
3,3'-Dichlorobenzidine	ND	ug/kg	1900		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,6-Dinitrotoluene	ND	ug/kg	190		
Azobenzene	ND	ug/kg	190		
Fluoranthene	ND	ug/kg	190		
4-Chlorophenyl phenyl ether	ND	ug/kg	190		
4-Bromophenyl phenyl ether	ND	ug/kg	190		
Bis(2-chloroisopropyl)ether	ND	ug/kg	190		
Bis(2-chloroethoxy)methane	ND	ug/kg	190		
Hexachlorobutadiene	ND	ug/kg	370		
Hexachlorocyclopentadiene	ND	ug/kg	370		
Hexachloroethane	ND	ug/kg	190		
Isophorone	ND	ug/kg ug/kg	190		
Naphthalene	ND	ug/kg ug/kg	190		
Nitrobenzene	ND	ug/kg	190		



Laboratory Sample Number: L0501881-07

CB-10 (7'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE			
					PREP ANAL			
SVOC's by GC/MS 8270 continu	ed/fin(_(e de la faction	Matha (A)	1 82700	0226 11:00	0301 16:41	н.	
n-Nitrosodi-n-propylamine	ND	ug/kg	190					
Bis(2-ethylhexyl)phthalate	ND	ug/kg	370					
Butyl benzyl phthalate	ND	ug/kg	190					
Di-n-butylphthalate	ND	ug/kg	190					
Di-n-octylphthalate	ND	ug/kg	190					
Diethyl phthalate	ND	ug/kg	190					
Dimethyl phthalate	ND	ug/kg	190					
Benzo(a) anthracene	ND	ug/kg	190					
Benzo(a)pyrene	ND	ug/kg	190					
Benzo(b)fluoranthene	ND	ug/kg	190					
Benzo(k)fluoranthene	ND	ug/kg	190					
Chrysene	ND	ug/kg	190					
Acenaphthylene	ND	ug/kg	190					
Anthracene	ND	ug/kg	190					
Benzo(ghi)perylene	ND	ug/kg	190					
Fluorene	ND	ug/kg	190					
Phenanthrene	ND	ug/kg	190					
Dibenzo(a,h)anthracene	ND	ug/kg	190					
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190					
Pyrene	ND	ug/kg	190					
Benzo(e)pyrene	ND	ug/kg	190					
Biphenyl	ND	ug/kg	190					
Perylene	ND	ug/kg	190					
Aniline	ND	ug/kg	370					
4-Chloroaniline	ND	ug/kg	190					
1-Methylnaphthalene	ND	ug/kg	190					
2-Nitroaniline	ND	ug/kg	190					
3-Nitroaniline	ND	ug/kg	190					
4-Nitroaniline	ND	ug/kg ug/kg	260					
Dibenzofuran	ND	ug/kg	190					
a,a-Dimethylphenethylamine	ND	ug/kg	1900					
Hexachloropropene	ND	ug/kg	370	•				
Nitrosodi-n-butylamine	ND	ug/kg	370					
2-Methylnaphthalene	ND	ug/kg	300					
1,2,4,5-Tetrachlorobenzene	ND	ug/kg ug/kg	750					
Pentachlorobenzene	ND	ug/kg	750					
a-Naphthylamine	ND	ug/kg ug/kg	750					
o-Naphthylamine	ND							
Phenacetin	ND	ug/kg	750 370					
Dimethoate	ND	ug/kg	370 750					
1-Aminobiphenyl	ND	ug/kg ug/kg	750 370					
Pentachloronitrobenzene	ND	ug/kg ug/kg	370					
Sodrin	ND		370					
D-Dimethylaminoazobenzene		ug/kg	370					
Chlorobenzilate	ND	ug/kg	370					
3-Methylcholanthrene	ND	ug/kg	750					
thyl Methanesulfonate	ND	ug/kg	750					
schyl methanesulfonate scetophenone	ND	ug/kg	560					
	ND	ug/kg	750					
litrosodipiperidine	ND	ug/kg	750					

Laboratory Sample Number: L0501881-07

CB-10 (7'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued			-	1 8270C	0226 11:00 0301 16:41 HL
7,12-Dimethylbenz(a)anthracene		ug/kg	370		
n-Nitrosodimethylamine	ND	ug/kg	1900		
2,4,6-Trichlorophenol	ND	ug/kg	190		
p-Chloro-m-cresol	ND	ug/kg	190		
2- C hlorophenol	ND	ug/kg	220		
2-Chiorophenoi 2,4-Dichlorophenol	ND	ug/kg	370		
•	ND	ug/kg	370		
2,4-Dimethylphenol	ND	ug/kg	750		
2-Nitrophenol	ND	ug/kg ug/kg	370		
4-Nitrophenol		ug/kg ug/kg	750		
2,4-Dinitrophenol	ND	ug/kg ug/kg	750		
4,6-Dinitro-o-cresol	ND	ug/kg ug/kg	750		
Pentachlorophenol	ND	ug/kg ug/kg	260		
Phenol	ND	ug/kg ug/kg	220		
2-Methylphenol	ND		220		
3-Methylphenol/4-Methylphenol	ND	ug/kg ug/kg	190		
2,4,5-Trichlorophenol	ND	ug/kg ug/kg	370		
2,6-Dichlorophenol	ND		1900		
Benzoic Acid	ND	ug/kg	370		
Benzyl Alcohol	ND	ug/kg	190		
Carbazole	ND	ug/kg	1900		
Pyridine	ND	ug/kg	750		
2-Picoline	ND	ug/kg	750		
Pronamide	ND	ug/kg	750 750		
Methyl methanesulfonate	ND	ug/kg	730		
Surrogate(s)	Recovery		QC Crit	teria	
2-Fluorophenol	60.0	8	25-120		
Phenol-d6	65.0	ક્ષ	10-120		
Nitrobenzene-d5	57.0	8	23-120		
2-Fluorobiphenyl	57.0	%	30-120		
2,4,6-Tribromophenol	60.0	%	19-120	•	
4-Terphenyl-d14	90.0	8	18-120		
PAH by GC/MS SIM 8270M				1 8270C-M	0226 11:00 0302 06:17 RL
Acenaphthene	ND	ug/kg	7.5		
2-Chloronaphthalene	ND	ug/kg	7.5		
Fluoranthene	37.	ug/kg	7.5		
Hexachlorobutadiene	ND.	ug/kg	19.		
Naphthalene	ND	ug/kg	7.5		
Benzo(a)anthracene	22.	ug/kg	7.5		
Benzo(a) pyrene	21.	ug/kg	7.5		
Benzo(a) pyrene Benzo(b) fluoranthene	27.	ug/kg	7.5		
Benzo(k) fluoranthene	20.	ug/kg	7.5		
	25.	ug/kg ug/kg	7.5		
Chrysene	ND	ug/kg	7.5		
Acenaphthylene		ug/kg ug/kg	7.5		
Anthracene	ND 17.	ug/kg ug/kg	7.5		
Benzo(ghi)perylene			7.5		
Fluorene	ND	ug/kg	7.5		
Phenanthrene	19.	ug/kg	1.5		



Laboratory Sample Number: L0501881-07

CB-10 (7'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					DATE ID PREP ANAL
PAH by GC/MS SIM 8270M conti	nued			1 8270C-M	
Dibenzo(a,h)anthracene	ND	ug/kg	7.5	1 02/0C-M	0226 11:00 0302 06:17 RL
Indeno(1,2,3-cd)Pyrene	15.	ug/kg	7.5		
Pyrene	41.	ug/kg	7.5		
1-Methylnaphthalene	ND	ug/kg	7.5		
2-Methylnaphthalene	ND	ug/kg	7.5		
Pentachlorophenol	ND	ug/kg	30.		
Hexachlorobenzene	ND	ug/kg	30.		
Perylene	ND	ug/kg	7.5		
Biphenyl	ND	ug/kg	7.5		
2,6-Dimethylnaphthalene	ND	ug/kg ug/kg	7.5		
1-Methylphenanthrene	ND	ug/kg ug/kg			
Benzo(e) Pyrene	21.	ug/kg ug/kg	7.5		
Hexachloroethane	ND		7.5		
	ND	ug/kg	30.		
Surrogate(s)	Recovery		QC Crit	teria	
2-Fluorophenol	60.0	90	25-120		
Phenol-d6	80.0	%	10-120		
Nitrobenzene-d5	64.0	8	23-120		
2-Fluorobiphenyl	60.0	8	30-120		
2,4,6-Tribromophenol	74.0	9	19-120		
4-Terphenyl-d14	93.0	96	18-120		
Polychlorinated Biphenyls					
Aroclor 1221	ND			1 8082	0225 13:10 0301 20:29 лв
Aroclor 1232		ug/kg	37.4		
Aroclor 1242/1016	ND	ug/kg	37.4		
Aroclor 1248	ND	ug/kg	37.4		
Aroclor 1254	ND	ug/kg	37.4		
Aroclor 1260	ND	ug/kg	37.4		
1200	ND	ug/kg	37.4		
Surrogate(s)	Recovery		QC Crit	eria e	
,4,5,6-Tetrachloro-m-xylene	72.0	કુ	30-150		
ecachlorobiphenyl	103.	%	30-150		
rganochlorine Pesticides					
elta-BHC	ND	(1		1 8081	0225 11:40 0301 17:10 BW
indane	ND ND	ug/kg	3.74		
lpha-BHC		ug/kg	3.74		
eta-BHC	ND	ug/kg	3.74		
eptachlor	ND	ug/kg	3.74		
ldrin	ND	ug/kg	3.74		
eptachlor epoxide	ND	ug/kg	3.74		
eptachior epoxide ndrin	ND	ug/kg	3.74		
	ND	ug/kg	3.74		
ndrin aldehyde	ND	ug/kg	3.74		
ndrin ketone	ND	ug/kg	3.74		
ieldrin	ND	ug/kg	3.74		
4'-DDE	ND	ug/kg	3.74		
, 4'-DDD	ND	ug/kg	3.74		
4'-DDT	ND	ug/kg	3.74		

Laboratory Sample Number: L0501881-07

CB-10 (7'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Organochlorine Pesticides con	timed			1 8081	0225 11:40 0301 17:10 BW
Endosulfan I	ND	ug/kg	3.74		
Endosulfan II	ND	ug/kg	3.74		
Endosulfan sulfate	ND	ug/kg	3.74		
Methoxychlor	ND	ug/kg	3.74		
Toxaphene	ND	ug/kg	15.0		
Chlordane	ND	ug/kg	15.0		
cis-Chlordane	ND	ug/kg	3.74		
trans-Chlordane	ND	ug/kg	3.74		
Surrogate(s)	Recovery		QC Cr	iteria	
2,4,5,6-Tetrachloro-m-xylene	63.0	8	30-15	0	
Decachlorobiphenyl	79.0	8	30-15	0	



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-08

Date Collected: 23-FEB-2005 11:30

FIELD BLANK

Date Received : 24-FEB-2005 Date Reported : 03-MAR-2005

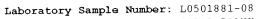
Sample Matrix: WATER

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 6-Amber, 1-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	II
						PREP	AN	AL
Total Metals				1	3015		in the	
Aluminum, Total	ND	mg/l	0.10	1	6010B	0228 15:45	0302	11·07 pw
Antimony, Total	ND	mg/l	0.006	1	6010B	0228 15:45		
Arsenic, Total	ND	mg/l	0.005	1	6010B	0228 15:45		
Barium, Total	ND	mg/l	0.01	1	6010B	0228 15:45		
Beryllium, Total	ND	mg/l	0.0025	1	6010B	0228 15:45		
Cadmium, Total	ND	mg/l	0.0025	1	6010B	0228 15:45		
Calcium, Total	ND	mq/l	0.10	1	6010B	0228 15:45		
Chromium, Total	ND	mg/l	0.01	1	6010B	0228 15:45		
Cobalt, Total	ND	mg/1	0.02	1	6010B	0228 15:45		
Copper, Total	ND	mg/l	0.01	1	6010B	0228 15:45		
Iron, Total	ND	mg/l	0.05	1	6010B	0228 15:45		
Lead, Total	ND	mq/l	0.010	1	6010B	0228 15:45		
Magnesium, Total	ND	mg/l	0.10	1	6010B	0228 15:45		
Manganese, Total	ND	mg/l	0.01	1	6010B	0228 15:45		
Mercury, Total	ND	mg/l	0.0002	1	7470A	0301 17:45		
Nickel, Total	ND	mg/l	0.010	1	6010B	0228 15:45		
Potassium, Total	ND	mg/l	2.5	1	6010B	0228 15:45		
Selenium, Total	ND	mg/l	0.005	1	6010B	0228 15:45		
Silver, Total	ND	mq/l	0.007		6010B	0228 15:45		
Sodium, Total	ND	mg/l	2.0		6010B	0228 15:45		
Thallium, Total	ND	mq/l	0.005		6010B	0228 15:45		
Vanadium, Total	ND	mg/l	0.01		6010B	0228 15:45		
Zinc, Total	ND	mg/l	0.05		6010B	0228 15:45		
Volatile Organics by GC/MS	8260			1	8260B		0225 1	8:05 BT
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
l,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
l,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Frichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					



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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS	8260 continu	ned		1 8260B	0225 18:05 BT
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
	ND	ug/l	2.5		
1,1-Dichloropropene	ND	ug/l	2.0		
Bromoform	ND	ug/l	0.50		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.75		
Toluene	ND	ug/l	0.50		
Ethylbenzene	ND	ug/l	2.5		
Chloromethane		ug/l	1.0		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/1	1.0		
Chloroethane	ND	-	0.50		
1,1-Dichloroethene	ND	ug/l	0.75		
trans-1,2-Dichloroethene	ND	ug/l	0.73		
Trichloroethene	ND	ug/l	2.5		
1,2-Dichlorobenzene	ND	ug/l	2.5		
1,3-Dichlorobenzene	ND	ug/l			
1,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	ND	ug/l	1.0		
p/m-Xylene	ND	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0	•	
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
	ND	ug/l	0.50		
sec-Butylbenzene	ND ND	ug/l	2.5		
tert-Butylbenzene	MD	ug/l	2.5		



Laboratory Sample Number: L0501881-08

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS 8	260 contin	ued		1 8260B	0225 18:05 BT
p-Chlorotoluene	ND	ug/l	2.5		0223.10:03 B)
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50		
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		Q C Cri	tería	
1,2-Dichloroethane-d4	120.	સ	×2 011		
Toluene-d8	101.	8			
4-Bromofluorobenzene	107.	8			
Dibromofluoromethane	106.	8			
SVOC's by GC/MS 8270			-	1 8270C	· ·
Acenaphthene	ND	ug/l	5.0	1 82/00	0225 11:45 0301 23:25 HL
Benzidine	ND	ug/l	50.		
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ND	ug/l	5.0		
l-Chloronaphthalene	ND	ug/l	5.0		
2-Chloronaphthalene	ND	ug/l	6.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
,3-Dichlorobenzene	ND	ug/l	5.0		
,4-Dichlorobenzene	ND	ug/l	5.0		
3,3'-Dichlorobenzidine	ND	ug/l	50.	•	
2,4-Dinitrotoluene	ND	_			
2,6-Dinitrotoluene	ND	ug/l ug/l	6.0		
zobenzene	ND	ug/l ug/l	5.0 5.0		
luoranthene	ND	-			
-Chlorophenyl phenyl ether	ND	ug/l	5.0		
-Bromophenyl phenyl ether	ND	ug/l	5.0		
is(2-chloroisopropyl)ether	ND ND	ug/l	5.0		
is (2-chloroethoxy) methane	ND ND	ug/l	5.0		
exachlorobutadiene	ND ND	ug/l	5.0		
exachlorocyclopentadiene	ND ND	ug/l	10.		
exachloroethane		ug/l	10.		
sophorone	ND	ug/l	5.0		
aphthalene	ND	ug/l	5.0		
itrobenzene	ND	ug/l	5.0		
DPA/DPA	ND	ug/l	5.0		
· · · · · · · · · · · · · · · · · · ·	ND	ug/l	15.		
-Nitrosodi-n-propylamine	ND	ug/l	5.0		
is(2-ethylhexyl)phthalate	ND	ug/l	10.		



Laboratory Sample Number: L0501881-08

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
70.010 0070	. 8 . 3			1 8270C	0225 11:45 0301 23:25 HL
SVOC's by GC/MS 8270 continued		ug/l	5.0	<u> </u>	
Butyl benzyl phthalate	ND		5.0		
Di-n-butylphthalate	ND	ug/l	5.0		
Di-n-octylphthalate	ND	ug/l	5.0		
Diethyl phthalate	ND	ug/l	5.0		
Dimethyl phthalate	ND	ug/l	5.0		
Benzo(a) anthracene	ND	ug/l	5.0		
Benzo(a)pyrene	ND	ug/l	5.0		
Benzo(b)fluoranthene	ND	ug/l	5.0		
Benzo(k)fluoranthene	ND	ug/l			
Chrysene	ND	ug/l	5.0		
Acenaphthylene	ND	ug/l	5.0		
Anthracene	ND	ug/1	5.0		
Benzo(ghi)perylene	ND	ug/l	5.0		
Fluorene	ND	ug/l	5.0		
Phenanthrene	ND	ug/l	5.0		
Dibenzo(a,h)anthracene	ND	ug/l	5.0		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0		
Pyrene	ND	ug/l	5.0		
Benzo(e)pyrene	ND	ug/l	5.0		
Biphenyl	ND	ug/l	5.0		
Perylene	ND	ug/l	5.0		
Aniline	ND	ug/l	10.		
4-Chloroaniline	ND	ug/l	5.0		
1-Methylnaphthalene	ND	ug/l	5.0		
2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l	5.0		
4-Nitroaniline	ND	ug/l	7.0		
Dibenzofuran	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/l	10.		
2-Methylnaphthalene	ND	ug/l	8.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
4-Aminobiphenyl	ND	ug/l	10.		
Pentachloronitrobenzene	ND	ug/l	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	10.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	20.		
7,12-Dimethylbenz(a)anthracene		ug/l	10.		
n-Nitrosodimethylamine	ND	ug/l	50.		



Laboratory Sample Number: L0501881-08 FIELD BLANK

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
SVOC's by GC/MS 8270 continue	a file	A Part of the second	· · · · · · · · · · · · · · · · · · ·	1 8270c	0225 11:45 0301 23:25 HL
2,4,6-Trichlorophenol	ND	ug/l	5.0		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
p-Chloro-m-cresol	ND	ug/l	5.0		
2-Chlorophenol	ND	ug/l	6.0		
2,4-Dichlorophenol	ND	ug/l	10.		
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	ug/l	10.		
2,4-Dinitrophenol	ND	ug/l	20.		
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	20.		
Phenol	ND	ug/l	7.0		
2-Methylphenol	ND	ug/l	6.0		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0		
2,4,5-Trichlorophenol	ND	ug/l	5.0		
2,6-Dichlorophenol	ND	ug/l	10.		
Benzoic Acid	ND	ug/l ug/l	50.		
Benzyl Alcohol	ND				
Carbazole	ND	ug/l	10.		
Pyridine	ND	ug/l	5.0		
2-Picoline	ND	ug/l	50.		
Pronamide	ND	ug/l	20.		
Methyl methanesulfonate	ND	ug/l ug/l	20. 20.		
Surrogate(s)	Recovery		OC Cr	iteria	
2-Fluorophenol	40.0	8	20 01.	rccria	
Phenol-d6	34.0	98			
Nitrobenzene-d5	93.0	8			
2-Fluorobiphenyl	81.0	%			
2,4,6-Tribromophenol	78.0	96			
4-Terphenyl-d14	111.	%			
PAH by GC/MS SIM 8270M				- 1 8270С-м	0225 11:45 0301 23:08 RL
Acenaphthene	ND	ug/l	0.20		11,40 0301 Z3:00 KB
2-Chloronaphthalene	ND	ug/l	0.20		
Fluoranthene	ND	ug/l	0.20		
lexachlorobutadiene	ND	ug/l	0.50		
Japhthalene	ND	ug/l	0.20		
Benzo(a)anthracene	ND	ug/l	0.20		
Benzo(a)pyrene	ND	ug/l	0.20		
Benzo(b) fluoranthene	ND	ug/l	0.20		
Benzo(k)fluoranthene	ND	ug/l	0.20		
Chrysene	ND	ug/l	0.20		
cenaphthylene	ND	ug/l	0.20		
nthracene	ND	ug/l ug/l			
enzo(ghi)pervlene	ND	ug/l ug/l	0.20		
'luorene	ND	ug/l ug/l	0.20		
Phenanthrene	ND	-	0.20		
Dibenzo(a,h)anthracene	ND	ug/l	0.20		
ndeno(1,2,3-cd) Pyrene		ug/l	0.20		
(1,2,5 ca) Extens	ND	ug/l	0.20		



Laboratory Sample Number: L0501881-08

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PARAMETER	RESULT	UNITS	RDL REF	METHOD	DATE ID PREP ANAL
PAH by GC/MS SIM 8270M continu	ıed			8270C-M	-0225 11:45 0301 23:08 RL
Pyrene	ND	ug/l	0.20		
1-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	ND	ug/l	0.80		
Hexachlorobenzene	ND	ug/l	0.80		
Perylene	ND	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l	0.20		
1-Methylphenanthrene	ND	ug/l	0.20		
Benzo(e) Pyrene	ND	ug/l	0.20		
Hexachloroethane	ND	ug/l	0.80		
Surrogate(s)	Recovery		QC Criteri	a	
2-Fluorophenol	45.0	8	21-120		
Phenol-d6	39.0	8	10-120		
Nitrobenzene-d5	78.0	96	23-120		
2-Fluorobiphenyl	75.0	8	43-120		
2,4,6-Tribromophenol	99.0	%	10-120		
4-Terphenyl-d14	90.0	%	33-120		
Polychlorinated Biphenyls			. 1	8082	0225 14:50 0228 19:35 JB
Aroclor 1221	ND	ug/l	0.500		
Aroclor 1232	ND	ug/l	0.500		
Aroclor 1242/1016	ND	ug/l	0.500		
Aroclor 1248	ND	ug/l	0.500		
Aroclor 1254	ND	ug/l	0.500		
Aroclor 1254 Aroclor 1260	ND	ug/l	0.500		
AIGCIGI 1200					
Surrogate(s)	Recovery		QC Criter:	ia	
2,4,5,6-Tetrachloro-m-xylene	70.0	96	30-150		
Decachlorobiphenyl	66.0	%	30-150	-	
Organochlorine Pesticides			,	1 8081	0228 16:20 0301 19:21 JE
Delta-BHC	ND	ug/l	0.020		
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l	0.020		
Heptachlor epoxide	ND	ug/l	0.020		
-	ND	ug/l	0.040		
Endrin aldehyde	ND	ug/1	0.040		
Endrin aldehyde	ND	ug/l	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND ND	ug/l	0.040		
4, 4'-DDD		ug/l	0.040		
4,4'-DDT	ND	ug/1 ug/1	0.020		
Endosulfan I	ND	-	0.020		
Endosulfan II	ND	ug/l	0.040		



Laboratory Sample Number: L0501881-08

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	TE	ID
					PREP	ANAL	
Organochlorine Pesticides con	ntinued		,				
Endosulfan sulfate	ND	ug/l	0.040	1 8081	0228 16:20	0301 19:2	1 JB
Methoxychlor	ND	ug/l	0.200				
Toxaphene	ND	ug/l	0.200				
Chlordane	ND	ug/l	0.200				
cis-Chlordane	ND	ug/l ug/l	0.200				
trans-Chlordane	ND	J					
	ND	ug/l	0.020				
Surrogate(s)	Recovery		QC Cri	teria			
2,4,5,6-Tetrachloro-m-xylene	60.0	ક	30-150	CCLIQ			
Decachlorobiphenyl	39.0	8	30-150				

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0501881-09

Date Collected: 08-FEB-2005 15:18

TRIP BLANK

Date Received: 24-FEB-2005

WATER Sample Matrix:

Date Reported : 03-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					PREP ANAU
Volatile Organics by GC/MS	8260			1 8260B	0225 18:42 BT
Methylene chloride	ND	ug/l	5.0		
1,1-Dichloroethane	ND	ug/l	0.75		
Chloroform	ND	ug/l	0.75		
Carbon tetrachloride	ND	ug/l	0.50		
1,2-Dichloropropane	ND	ug/l	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.50		
Chlorobenzene	ND	ug/l	0.50		
Trichlorofluoromethane	ND	ug/l	2.5		
1,2-Dichloroethane	ND	ug/l	0.50		
1,1,1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/l	2.0		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.50		
Toluene	ND	ug/l	0.75		
Ethylbenzene	ND	ug/l	0.50		
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
1,1-Dichloroethene	ND	ug/l	0.50		
trans-1,2-Dichloroethene	ND	ug/l	0.75		
Trichloroethene	ND	ug/l	0.50		
1,2-Dichlorobenzene	ND	ug/l	2.5		
1,3-Dichlorobenzene	ND	ug/l	2.5		
1,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	ND	ug/l	1.0		
p/m-Xylene	ND	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		



Laboratory Sample Number: L0501881-09 TRIP BLANK

PARAMETER	RESULT UNITS		RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS	8260 contin	ued 1		1 8260B	. ,
1,2,3-Trichloropropane	ND	ug/l	5.0	.1 6260B ·	0225 18:42 BT
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l			
Tetrahydrofuran	ND	ug/l	2.5		
2,2-Dichloropropane	ND	-	10.		
1,2-Dibromoethane	ND	ug/l	2.5		
1,3-Dichloropropane	ND	ug/l	2.0		
1,1,1,2-Tetrachloroethane	ND	ug/l	2.5		
Bromobenzene	ND	ug/l	0.50		
n-Butylbenzene	ND	ug/l	2.5		
sec-Butylbenzene	ND	ug/1	0.50		
tert-Butylbenzene	ND	ug/l	0.50		
o-Chlorotoluene	ND	ug/l	2.5		
D-Chlorotoluene	ND ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane		ug/l	2.5		
Rexachlorobutadiene	ND	ug/l	2.5		
Isopropylbenzene	ND	ug/l	1.0		
O-Isopropyltoluene	ND	ug/l	0.50		
Isopropy:toldene Iaphthalene	ND	ug/l	0.50		
n-Propylbenzene	ND	ug/l	2.5		
,,2,3-Trichlorobenzene	ND	ug/l	0.50		
.,2,4-Trichlorobenzene	ND	ug/l	2.5		
	ND	ug/l	2.5		
.,3,5-Trimethylbenzene	ND	ug/l	2.5		
,2,4-Trimethylbenzene	ND	ug/l	2.5		
rans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
thyl ether	ND	ug/l	2.5		
urrogate(s)	Recovery		00.00		
,2-Dichloroethane-d4	120.	8	QC Criter	îia .	
oluene-d8	101.				
-Bromofluorobenzene	99.0	96			
ibromofluoromethane	· - · -	06			
	109.	엉			

Laboratory Job Number: L0501881

Parameter		Value 1	Value 2	Units	RPD	RPD Limits
	Solids, Tota	l for samr	ale(s) 02-07	(L0501862-	-01, WG19	95174-1)
	OUTTON, TORR.	82.	83.	9	1	
Solids, Total		02.				
	Solids, To	tal for sa	ample(s) 01	(L0501881-0)1, WG19	5525-1)
Solids, Total		83.	82.	90	1	
501105/ 1111						
	Total Meta	ls for sar	mple(s) 08	L0501853-01	1, WG195	289-1)
Cadmium, Total		ND	ND	mg/l	NC	20
Chromium, Total		ND	ND	mg/l	NC	20
Copper, Total		ND	ND	mg/l	NC	20
Iron, Total		ND	ND	mg/l	NC	20
Lead, Total		ND	ND	mg/l	NC	20
Manganese, Total		ND	ND	mg/l	NC	20
	Motal Metal	s for sam	ple(s) 02-0	7 (L0501881	-03, WG1	95435-1)
7.2 Common Matro 1	iocar mecar	4900	4900	mg/kg	0	35
Aluminum, Total		ND	ND	mg/kg	NC	35
Antimony, Total		2.1	2.2	mg/kg	5	35
Arsenic, Total		30.	28.	mg/kg	7	35
Barium, Total			0.1662	mg/kg	3	35
Beryllium, Total		0.1709		mg/kg	NC	35
Cadmium, Total		ND	ND	mg/kg	8	35
Calcium, Total		860	930	, ,	3	35
Chromium, Total		7.5	7.3	mg/kg	0	35
Cobalt, Total		4.6	4.6	mg/kg	10	35
Copper, Total		10.	11.	mg/kg		35
Iron, Total		10000	10000	mg/kg	0	35
Lead, Total		8.7	6.8	mg/kg	25	
Magnesium, Total		1700	1800	mg/kg	6	35
Manganese, Total		320	320	mg/kg	0	35
Nickel, Total		8.57	8.72	mg/kg	2	35
Potassium, Total		410	420	mg/kg	2	35
Selenium, Total		0.366	0.349	mg/kg .	. 5	35
Silver, Total		ND	ND	mg/kg	NC	35
Sodium, Total		220	220	mg/kg	0	35
Thallium, Total		ND	ND	mg/kg	NC	35
Vanadium, Total		8.8	8.8	mg/kg	0	35
		24.	24.	mg/kg	0	35
Zinc, Total					1 05 130	105212 21
	Total Meta		mple(s) 02-0)/ (LU50188)	1-03, WG	7203T2#31
Mercury, Total		ND	ND	mg/kg	NC	35
	Total Met	als for s	ample(s) 08	(L0501881-	08, W G19	5405-3)
Mercury, Total	10001 1100	ND	ND	mg/l	NC	20

Laboratory Job Number: L0501881

% Recove	ry QC Criteria	
tals LCS for sample(s) 08	(WG195289-4)	
105	75-125	
98	75-125	
104	75-125	
105	75-125	
98	75-125	
104	75-125	
95		
95		
96		
96		
95		
	•	
S LCS for sample (m) 02 02		
103		
	70 140	
	70-140	
95	70-140	
95 104	70-140 70-140	
95 104 99	70-140 70-140 70-140	
95 104 99 97	70-140 70-140 70-140 70-140	
95 104 99 97 102	70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95	70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95	70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95	70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95	70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 99	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 99 95 108	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 99	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 99 95 108	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 108 98	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 108 98 95	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 108 98 95 95	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 108 98 95 95 95	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
95 104 99 97 102 95 95 95 108 98 95 95 95 85 110 100	70-140 70-140	
95 104 99 97 102 95 95 95 108 98 95 95 95 85 110	70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140 70-140	
	etais LCS for sample(s) 08 105 98 104 105 98 104 95 95 96 96 96 96 95 100 100 96 94 95 112 99 98 94 96 94 96 94	98

Laboratory Job Number: L0501881

Total Metals LCS for sample(s) 08 (WG195405-1) Gercury, Total 100 70-130 Volatile Organics by GC/MS 8260 LCS for sample(s) 08-09 (WG195061-5) Chlorobenzene 85 Chlorobenzene 81 Coluene 83 Chloroethene 84 Coluene 84 Coluene 84 Coluene 84 Coluene-d8 103 Chlorobenzene 100 Chlorobenzene 100 Chlorobenzene 104 Coluene-d8 100 Chlorobenzene 104 Coluene-d8 104 Volatile Organics by GC/MS 8260 LCS for sample(s) 01-07 (WG195363-7) Chlorobenzene 98 Chlorobenzene 98 Chlorobenzene 98 Chlorobenzene 98 Chlorobenzene 98 Chlorobenzene 99	Parameter	% Recovery QC Criteria	
Total Metals LCS for sample(s) 08 (WG195405-1) ercury, Total Volatile Organics by GC/MS 8260 LCS for sample(s) 08-09 (WG195061-5) hlorobenzene enzene 61 foluene 83 ,1-Dichloroethene 84 surrogate(s) ,1,2-Dichloroethane-d4 foluene-d8 d-Bromofluoromethane 104 Volatile Organics by GC/MS 8260 LCS for sample(s) 01-07 (WG195363-7) hlorobenzene 80 hloromethane 100 80 hloromethane 100 80 hloromethane 100 80 hloromethane 100 80 hloromethane 100 80 hlorobenzene 80 hloromethane 100 80 hlorom	Total Matale Inc for	r sample(s) 02-07 (WG195313-1)	
Volatile Organics by GC/MS 8260 LCS for sample(s) 08-09 (WG195061-5)	Mercury, Total	99 70-130	
Volatile Organics by GC/MS 8260 LCS for sample(s) 08-09 (WG195061-5) Minor Notice Notic	Total Metals LCS	for sample(s) 08 (WG195405-1)	
## Process of the content of the con	Mercury, Total	100 70-130	
## Step	Volatile Organics by GC/MS 8	260 LCS for sample(s) 08-09 (WG195061-5)	
Service Signature Signat	Chlorobenzene	85	
	Benzene		
Carrogate (s) 111 103 104 101 104 101 104	Toluene		
### Caurogate(s) 1,2-Dichloroethane-d4	l, l-Dichloroethene		
1,2-Dichloroethane-d4	Trichloroethene	8 4	
103 100	Surrogate(s)	2.2.2	
100	1,2-Dichloroethane-d4		
104 104 104 104 104 104 104 104 104 104 105	Toluene-d8		
Volatile Organics by GC/MS 8260 LCS for sample(s) 01-07 (WG195363-7) Chlorobenzene			
Chlorobenzene Benzene Toluene 1,1-Dichloroethene 7,1-Dichloroethene 80			
Renzene 98 Benzene 97 1,1-Dichloroethene 97 Trichloroethene 97 Trichloroethene 98 Surrogate(s) 1,2-Dichloroethane-d4 98 Toluene-d8 99 4-Bromofluorobenzene 104 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 08 (WG195105-2) Acenaphthene 78 1,2,4-Trichlorobenzene 68 2-Chloronaphthalene 79 1,2-Dichlorobenzene 57 1,4-Dichlorobenzene 56 2,4-Dinitrotoluene 120 2,6-Dinitrotoluene 120 2,6-Dinitrotoluene 199 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78	Volatile Organics by GC/MS 8	3260 LCS for sample(s) 01-07 (WG195363-7)	
Toluene 97 1,1-Dichloroethene 97 Trichloroethene 98 Surrogate(s) 1,2-Dichloroethane-d4 98 Toluene-d8 104 A-Bromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 08 (WG195105-2) Acenaphthene 78 1,2-A-Trichlorobenzene 68 2-Chloronaphthalene 79 1,2-Dichlorobenzene 57 1,4-Dichlorobenzene 57 1,4-Dichlorobenzene 120 2,6-Dinitrotoluene 110 Fluoranthene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 94 Anthracene 996 Hexachloropropene 62 P-Chloro-M-Cresol 78	Chlorobenzene	100	
1,1-Dichloroethene	Benzene		
Trichloroethene	Toluene	- ·	
Surrogate(s) 1,2-Dichloroethane-d4 701uene-d8 4-Bromofluorobenzene Dibromofluoromethane SVOC's by GC/MS 8270 LCS for sample(s) 08 (WG195105-2) Acenaphthene 78 1,2,4-Trichlorobenzene 2-Chloronaphthalene 1,2-Dichlorobenzene 2,4-Dichlorobenzene 3,4-Dichlorobenzene 2,6-Dinitrotoluene 110 79 1,4-Dichlorobenzene 3,6-Dinitrotoluene 110 79 1-Chlorophenyl phenyl ether n-Nitrosodi-n-propylamine Butyl benzyl phthalate Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol 98 88 99 4-Base (WG195105-2) 8			
1,2-Dichloroethane-d4 98 Toluene-d8 99 4-Bromofluorobenzene 104 Dibromofluoromethane 96 SVOC's by GC/MS 8270 LCS for sample(s) 08 (WG195105-2) Acenaphthene 78 1,2,4-Trichlorobenzene 68 2-Chloronaphthalene 79 1,2-Dichlorobenzene 57 1,4-Dichlorobenzene 120 2,4-Dinitrotoluene 110 Fluoranthene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 96 Pyrene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78	Trichloroethene	90	
1,2-Dichirocethane	Surrogate(s)	0.0	
## A-Bromofluorobenzene	•		
SVOC's by GC/MS 8270 LCS for sample(s) 08 (WG195105-2) Acenaphthene		- -	
SVOC's by GC/MS 8270 LCS for sample(s) 08 (WG195105-2)			
Acenaphthene 1,2,4-Trichlorobenzene 2-Chloronaphthalene 1,2-Dichlorobenzene 57 1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene 110 Fluoranthene 4-Chlorophenyl phenyl ether n-Nitrosodi-n-propylamine Butyl benzyl phthalate Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol 88 88 87 88 88 88 88 88 88 88 88 88 88			
Acenaphthele 68 1, 2, 4-Trichlorobenzene 79 2-Chloronaphthalene 57 1, 2-Dichlorobenzene 56 2, 4-Dinitrotoluene 120 2, 6-Dinitrotoluene 110 Fluoranthene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 51 Pyrene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78	SVOC's by GC/MS 8270	LCS for sample(s) 08 (WG195105-2)	
79 1,2-Dichlorobenzene 57 1,4-Dichlorobenzene 56 2,4-Dinitrotoluene 120 2,6-Dinitrotoluene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 99 Hexachloropropene 62 P-Chloro-M-Cresol 78			
2-Chlorohaphthatene 57 1,2-Dichlorobenzene 56 2,4-Dinitrotoluene 120 2,6-Dinitrotoluene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 96 Hexachloropropene 96 P-Chloro-M-Cresol 78			
1,4-Dichlorobenzene 56 2,4-Dinitrotoluene 120 2,6-Dinitrotoluene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 96 Hexachloropropene 96 P-Chloro-M-Cresol 78			
1,4-Dinitrotoluene 120 2,4-Dinitrotoluene 110 Fluoranthene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 96 Hexachloropropene 96 P-Chloro-M-Cresol 78			
2,4-Dinitrotoluene 110 2,6-Dinitrotoluene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 96 Pyrene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78			
Fluoranthene 99 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 64 Butyl benzyl phthalate 87 Anthracene 96 Pyrene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78			
Fluoranthene 4-Chlorophenyl phenyl ether 85 n-Nitrosodi-n-propylamine 84 Butyl benzyl phthalate 87 Anthracene Pyrene Pyrene Hexachloropropene P-Chloro-M-Cresol 87	- ·		
n-Nitrosodi-n-propylamine Butyl benzyl phthalate Anthracene Pyrene Hexachloropropene P-Chloro-M-Cresol 64 87 87 64 87 64 87 64 87 64 87 64 87 64 64 87 64 64 87 64 87 64 64 87 64 64 87 64 64 87 64 64 67 68 68 69 69 60 60 60 60 60 60 60 60	Fluorantnene		
Butyl benzyl phthalate 87 Anthracene 51 Pyrene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78	4-Chiorophenyi phenyi ether		
Anthracene 51 Pyrene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78	N-Microsour-H-brobyramine		
Pyrene 96 Hexachloropropene 62 P-Chloro-M-Cresol 78			
Hexachloropropene 62 P-Chloro-M-Cresol 78			
P-Chloro-M-Cresol 78	-		
2 Childrophonol		58	
	2-Chlorophenol	50	

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Parameter	% Recovery	QC Criteria	
SVOC's by GC/MS 8270	TCS for sample(e) 0	O' /Watherine Ai	
2-Nitrophenol	76	o (MGT32E02-5).	
4-Nitrophenol	50		
2,4-Dinitrophenol	70		
Pentachlorophenol	91		
Phenol	29		
	23		
Surrogate(s)			
2-Fluorophenol	40		
Phenol-d6	35		
Nitrobenzene-d5	88		
2-Fluorobiphenyl	89		
2,4,6-Tribromophenol	82		
4-Terphenyl-d14	110		
SVOC's by GC/MS 8270 To	e for complete on	200	
SVOC's by GC/MS 8270 LCS Acenaphthene	s ror sample(s) 02-0		
1,2,4-Trichlorobenzene	80	31-137	
2-Chloronaphthalene	79	38-107	
1,2-Dichlorobenzene	86		
1,4-Dichlorobenzene	70		
2,4-Dinitrotoluene	70	28-104	
2,6-Dinitrotoluene	122	28-89	
Fluoranthene	119		
4-Chlorophenyl phenyl ether	104		
n-Nitrosodi-n-propylamine	90		
Butyl benzyl phthalate	72	41-126	
Anthracene	95		
Pyrene	56		
Hexachloropropene	101	35-142	
	86		
P-Chloro-M-Cresol	89	26-103	
2-Chlorophenol	70	25-102	
2-Nitrophenol	78		
4-Nitrophenol	95	11-114	
2,4-Dinitrophenol	20		
Pentachlorophenol	79	17-109	
Phenol	70	26-90	
urrogate(s)			
-Fluorophenol	72	25 120	
henol-d6	88	25-120	
itrobenzene-d5	92	10-120	
-Fluorobiphenyl		23-120	
,4,6-Tribromophenol	91	30-120	
-Terphenyl-d14	8 4	19-120	
F	115	18-120	

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Parameter	% Recovery	QC Criteria	
PAH by GC/MS SIM 8270M LCS f	or sample(s) 0	8 (WG195104-2)	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	72	46-118	
Acenaphthene	73		
2-Chloronaphthalene	97		
Fluoranthene	49		
Anthracene	86	26-127	
Pyrene Pentachlorophenol	101	9-103	
Surrogate(s)		01 100	
2-Fluorophenol	51	21-120	
Phenol-d6	47	10-120	
Nitrobenzene-d5	91	23-120	
2-Fluorobiphenyl	79	43-120	
2,4,6-Tribromophenol	107	10-120	
4-Terphenyl-dl4	94	33-120	
PAH by GC/MS SIM 8270M LCS fo	r sample(s) 02	-07 (WG195247-2)	
Acenaphthene	68	40-140	
2-Chloronaphthalene	71	40-140	
Fluoranthene	8 8	40-140	
Anthracene	49	40-140	
Pyrene	80	40-140	
Pentachlorophenol	82	40-140	
Surrogate(s)	0.0	25-120	
2-Fluorophenol	80	10-120	
Phenol-d6	105	23-120	
Nitrobenzene-d5	88	30-120	
2-Fluorobiphenyl	75	19-120	
2,4,6-Tribromophenol	110	18-120	
4-Terphenyl-d14	86		
Polychlorinated Biphenyls LCS	for sample(s)	08 (WG195206-2)	
Aroclor 1242/1016	/5	30-130	
Aroclor 1260	8 4	30-150	
Surrogate(s)	7.0	30-150	
2,4,5,6-Tetrachloro-m-xylene	70	30-150	
Decachlorobiphenyl	76		
Polychlorinated Biphenyls LCS	for sample(s)	02-07 (WG195255-2)	
Aroclor 1242/1016	85	40-140	
Aroclor 1260	111	40-140	
Surrogate(s)	0.7	30-150	
2,4,5,6-Tetrachloro-m-xylene	83		
Decachlorobiphenyl	114	30-150	

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Parameter	% Recovery	QC Criteria
Organochlorine Pesticides to	way of green was	
Delta-BHC	for sample(s)	02-07 (WG195251-2)
Lindane	30	
Alpha-BHC	65	46-127
Beta-BHC	61	
Heptachlor	66	
Aldrin	67	35-130
Heptachlor epoxide	67	34-132
Endrin	72	
Endrin aldehyde	87	42-139
Endrin ketone	49	
Dieldrin	67	
1,4'-DDE	78	31-134
1, 4'-DDD	80	
1,4'-DDT	78	
Indosulfan I	91	23-134
Endosulfan II	66	
indosulfan II Indosulfan sulfate	77	
Methoxychlor	62	
is-Chlordane	92	
rans-Chlordane	72	
rans-chiordane	68	
urrogate(s)		
4.5.6-Totachi		
,4,5,6-Tetrachloro-m-xylene ecachlorobiphenyl	60	30-150
seach for obtineny i	79	30-150
0.0000000000000000000000000000000000000		
organochiorine Pesticides LCS elta-BHC	for sample(s)	08 (WG195340-2)
indane	63	
lpha-BHC	70	
рна-внс еtа-ВНС	69	
eptachlor	72	
eptachior Ldrin	80	_
	72	
eptachlor epoxide	76	
ndrin	102	
drin aldehyde	76	
drin ketone	80	
eldrin	83	
4'-DDE	83	
4'-DDD	83	
4'-DDT	91	
dosulfan I	74	
dosulfan II	74	
1. 16		
dosulfan sulfate	8.2	
thoxychlor	82	
dosulfan sulfate thoxychlor s-Chlordane ans-Chlordane	82 121 79	

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Parameter	% Recovery	QC Criteria	
Organochlorine Pesticides LCS	S for sample(s)	08 (WG195340-2)	* · · · · · · · · · · · · · · · · · · ·
Surrogate(s)			
2,4,5,6-Tetrachloro-m-xylene	66	30-150	
Decachlorobiphenyl	66	30-150	
Total Metals SPIKE for sample	(s) 08 (L050185	3-02, WG195289-2)	
Aluminum, Total	110	75-125	
Antimony, Total	100	75-125	
Arsenic, Total	105	75-125	
Barium, Total	107	75-125	
Barrum, Total Beryllium, Total	98	75-125	
	105	75-125	
Cadmium, Total	90	75-125	
Calcium, Total	95	75-125	
Chromium, Total	96	75-125	
Cobalt, Total	92	75-125	
Copper, Total	100	75-125	
Iron, Total	103	75-125	
Lead, Total	102	75-125	
Magnesium, Total	98	75-125	
Manganese, Total	96 95	75-125	
Nickel, Total		75-125	
Potassium, Total	120	75-125	
Selenium, Total	111		
Silver, Total	99	75-125	
Sodium, Total	108	75-125	
Thallium, Total	98	75-125	
Vanadium, Total	98	75~125	
Zinc, Total	94	75-125	
Total Metals SPIKE for sample	(s):02-07 (L050	1881-03, WG195435-2)	
Aluminum, Total	0	70-140	
Antimony, Total	82	70-140	
Arsenic, Total	99	70-140	
Barium, Total	92	70-140	
Beryllium, Total	99	70-140	
Beryllium, Total	99	70-140	
Cadmium, Total	78	70-140	
Calcium, Total	74	70-140	
Chromium, Total	94	70-140	
Cobalt, Total	101	70-140	
Copper, Total	0	70-140	
Iron, Total	91	70-140	
Lead, Total	23	70-140	
Magnesium, Total	0	70-140	
Manganese, Total	89	70-140	
Nickel, Total		70-140	
Potassium, Total	87	70-140	
Selenium, Total	89	70-140	
Silver, Total	99	/0-140	

Laboratory Job Number: L0501881

Parameter	% Recovery QC Criteria
Total Metals SPIKE for sample(s) Sodium, Total Thallium, Total Vanadium, Total Zinc, Total	02-07 (L0501881-03, WG195435-2) 112 70-140 97 70-140 88 70-140 82 70-140
Total Metals SPIKE for sample(s) Mercury, Total	02-07 (L0501881-03, WG195313-2) 109 70-130
Total Metals SPIKE for sample(s Mercury, Total) 08 (L0502002-09, WG195405-2) 120 70-130

Laboratory Job Number: L0501881

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limit
		v 00 00	/T 0501/195±03	wg1.95061-2)	
Volatile Organics by GC/MS 8260	for sample(83 83	1		
Chlorobenzene	84	84	1		
Benzene	83		4		
Toluene	86	83	2		
1,1-Dichloroethene	92	90	6		
Trichloroethene	77	82	6		
Surrogate(s)		116	2		
1,2-Dichloroethane-d4	114	116	2		
Toluene-d8	102	100			
4-Bromofluorobenzene	102	105	3		
Dibromofluoromethane	107	102	5		
Volatile Organics by GC/MS 8260	for sample	(s) 01-07	(L0501881-07	, WG195363-2)
Chlorobenzene	90	97			
Benzene	93	93	0		
Toluene	87	90	3		
1,1-Dichloroethene	90	90	0		
Trichloroethene	91	93	2		
Trichloroethene					
Surrogate(s)	95	94	1		
1,2-Dichloroethane-d4	98	98	0		
Toluene-d8	103	105	2		
4-Bromofluorobenzene	95	94	1		
Dibromofluoromethane		-			
SVOC's by GC/MS 8270 for	r sample(s)	08 (L050	1881-08, WG195 5	105-4)	
Acenaphthene	8.1	/ /	9		
1,2,4-Trichlorobenzene	77	68	12		
2-Chloronaphthalene	85	77	10		
1,2-Dichlorobenzene	68	60	13		
1,4-Dichlorobenzene	64	60	6.		
2,4-Dinitrotoluene	128	112	17		
2,6-Dinitrotoluene	120	110	9		
Fluoranthene	110	89	21		
4-Chlorophenyl phenyl ether	89	81	9		
n-Nitrosodi-n-propylamine	64	60	6		
Butyl benzyl phthalate	94	77	20		
Anthracene	55	47	16		
• • • • • • • • • • • • • • • • • • • •	100	85	16		
Pyrene Hexachloropropene	81	68	17		
P-Chloro-M-Cresol	83	77	8		
	64	57	12		
2-Chlorophenol	81	72	12		
2-Nitrophenol	86	77	10		
4-Nitrophenol	79	79	0		
2,4-Dinitrophenol	100	85	16		
Pentachlorophenol		45	9		
Phenol	49	40			

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49 52 80 79 70 95 02-07 (L0501 69 64 67 59 56 83	13 13 12 11 18		
49 52 80 79 70 95 02-07 (L0501 69 64 67 59 56 83	13 13 12 11 18 18 18 1881-07, WG	195246-4) 50	
52 80 79 70 95 02-07 (L0501 69 64 67 59 56 83	13 12 11 18 18 18 1881-07, WG:	50	
52 80 79 70 95 02-07 (L0501 69 64 67 59 56 83	13 12 11 18 18 18 1881-07, WG:	50	
80 79 70 95 02-07 (L0501 69 64 67 59 56 83	12 11 18 18 18 1881-07, WG:	50	
79 70 95 02-07 (L0501 69 64 67 59 56 83	11 18 18 1881-07, WG:	50	
70 95 02-07 (L0501 69 64 67 59 56 83	18 18 1881-07, WG:	50	
95 02-07 (L0501 69 64 67 59 56 83	18 1881-07, WG: 8 0	50	
69 64 67 59 56 83	8 0	50	
69 64 67 59 56 83	8 0	50	
64 67 59 56 83	0		
67 59 56 83			31-137
59 56 83	U		38-107
56 83	0	50	
83	8	50	
	9	50	28-104
85	2 2	50	28-89
85		50	
77	3	50	
48	3	50	
83	10	50	41-126
48	2	50	
80	0	50	
67	6	50	35-142
77	3	50	
57	5	50	26-103
5 <i>6</i>	5	50	25-102
	7	50	
83	5	50	11-114
55	31	50	
45	14	50	17-109
55	2.	50	26-90
60	8		25-120
70	7		10-120
63	8		23-120
71	1		30-120
94	4		19-120
87	3		18-120
08 (L050188	31-08. WG199	5104-45	
68	0		46-118
68			40-118
			26 125
43			26-127 9-103
	68 68 81	68 0 68 0 81 5 43 9 77 5	68 0 40 81 5 40 43 9 40 77 5 40

Laboratory Job Number: L0501881

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limit
PAH by GC/MS SIM 8270M fo	or sample(s)	08 (L050	1881-08, WG19	5104-4)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Surrogate(s)					
2-Fluorophenol	66	61	8		21-120
Phenol-d6	73	67	9		10-120
Nitrobenzene-d5	84	76	10		23-120
2-Fluorobiphenyl	71	68	4		43-120
2,4,6-Tribromophenol	104	92	12		10-120
4-Terphenyl-d14	87	80	8		33-120
PAH by GC/MS SIM 8270M for	r sample(s)	02-07 (LC	501881-02, WG	195247-4)	
Acenaphthene	65	47	32	50	40-140
2-Chloronaphthalene	63	44	36	50	40-140
Fluoranthene	110	91	19	50	40-140
Anthracene	52	44	17	50	40-140
	86	73	16	50	40-140
Pyrene Pentachlorophenol	64	69	8	50	40-140
Surrogate(s)					05 100
2-Fluorophenol	70	53	28		25-120
Phenol-d6	92	68	30		10-120
Nitrobenzene-d5	75	56	29		23-120
2-Fluorobiphenyl	65	50	26		30-120
2,4,6-Tribromophenol	128	90	35		19-120
4-Terphenyl-d14	99	88	12		18-120
Polychlorinated Biphenyls	for sample	(s) 08 (L	0501881-08, W		0.150
Aroclor 1242/1016	76	79	4	30	30-150
Aroclor 1260	84	84	0	30	30-150
Surrogate(s)					20 150
2,4,5,6-Tetrachloro-m-xylene	82	82	0.		30-150
Decachlorobiphenyl	77	78	1		30-150
Polychlorinated Biphenyls	for sample(s) 02-07 (L0501881-03,	WG195255-4)	10.140
Aroclor 1242/1016	70	61	14	30	40-140
Aroclor 1260	104	81	25	50	40-140
Surrogate(s)					30-150
2,4,5,6-Tetrachloro-m-xylene	73	55	28		30-150
Decachlorobiphenyl	108	70	43		30-130
Organochlorine Pesticides	for sample(s) 02-07	(L0501881-03,	WG195251-4)	
Delta-BHC	53	54	2	30	46-127
Lindane	67	64	4	50	40-12/
	63	62	1	50	
Alpha-BHC					
Alpha-BHC Beta-BHC	67	63	6 2	50 50	35-130

Laboratory Job Number: L0501881

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limit
					MS/MSD LIMIT
Organochlorine Pesticides Aldrin	for sample(s) 02-07 (L0	501881-01	3. WG195253_4Y :-	
	67	67	0	50	
Heptachlor epoxide	68	66	4		34-132
Endrin	83	80	3	50	
Endrin aldehyde	51	48	6	50	42-139
Endrin ketone	68	69	1	50	
Dieldrin	73	71	2	50	
4,4'-DDE	73	71	3	50	31-134
4,4'-DDD	72	73	2	50	
4,4'-DDT	87	85		50	
Endosulfan I	63	61	3	50	23-134
Endosulfan II	72	73	3	50	
Endosulfan sulfate	65		1	50	
Methoxychlor	87	67 87	3	50	
cis-Chlordane	68		1	50	
rans-Chlordane	64	66	3	50	
	04	63	1	50	
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	65	64	2		
Decachlorobiphenyl	73	71	3		30-150
		_	3		30-150
Organochlorine Pesticide	s for sample(s) 08 (L050	1881-08	WG195340-4)	
erca-BHC	62	61	2	30	
indane	65	65	0		
lpha-BHC	62	62	0	30 30	
eta-BHC	71	68	4	• •	
eptachlor	76	7.4	3	30	
ldrin	68	67	1	30	
eptachlor epoxide	73	71	3	30	
ndrin	101	99	2	30	
ndrin aldehyde	64	60	6	30	
ndrin ketone	81	77		30	
ieldrín	80	79	5.	30	
,4'-DDE	88	82	1	30	
, 4'-DDD	80	62 75	7	30	
, 4'~DDT	94	· -	6	30	
ndosulfan I	71	89	5	30	
ndosulfan II	74	70	1	30	
ndosulfan sulfate		71	4	30	
ethoxychlor	84	78	7	30	
s-Chlordane	127	120	6	30	
cans-Chlordane	79 73	76	4	30	
	73	71	3	30	
rrogate(s)					
4,5,6-Tetrachloro-m-xylene	62	6.1	_		
cachlorobiphenyl		61	2		30-150
F1 +	61	60	2		30-150



Laboratory Job Number: L0501881

	RESULT	UNITS	RDL 1	REF METHOD	DATE ID
PARAMETER	RESOLI	011210			PREP ANAL
			vinat of ob	0.31	
Blank A	Analysis for sa	imple(s) 08	(MPT3270	1 3015	
Total Metals				1 3013	
_	ND	mg/l	0.10	1 6010B	0228 15:45 0302 10:53 RW
Aluminum, Total	ND ND	mg/l	0.006	1 6010B	0228 15:45 0302 10:53 RW
Antimony, Total		mg/l	0.005	1 6010B	0228 15:45 0302 10:53 RW
Arsenic, Total	ND ND	mg/l	0.01	1 6010B	0228 15:45 0302 10:53 RW
Barium, Total	ND	mg/l	0.0025	1 6010B	0228 15:45 0302 10:53 RW
Beryllium, Total	ND ND	mg/l	0.0025	1 6010B	0228 15:45 0302 10:53 RW
Cadmium, Total		mg/l	0.10	1 6010B	0228 15:45 0302 10:53 RW
Calcium, Total	ND	mg/l	0.01	1 6010B	0228 15:45 0302 10:53 RW
Chromium, Total	ND	mg/l	0.02	1 6010B	0228 15:45 0302 10:53 RW
Cobalt, Total	ND	mg/l	0.01	1 6010B	0228 15:45 0302 10:53 RW
Copper, Total	ND	mg/1	0.05	1 6010B	0228 15:45 0302 10:53 RW
Iron, Total	ND	mg/l	0.010	1 6010B	0228 15:45 0302 10:53 RW
Lead, Total	ND		0.10	1 6010B	0228 15:45 0302 10:53 RW
Magnesium, Total	ND	mg/l	0.01	1 6010B	0228 15:45 0302 10:53 RW
Manganese, Total	ND	mg/l	0.010	1 6010B	0228 15:45 0302 10:53 RW
Nickel, Total	ND	mg/l	2.5	1 6010B	0228 15:45 0302 10:53 RW
Potassium, Total	ND	mg/l	0.005	1 6010B	0228 15:45 0302 10:53 R
Selenium, Total	ND	mg/1	0.007	1 6010B	0228 15:45 0302 10:53 RV
Silver, Total	ND	mg/l	2.0	1 6010B	0228 15:45 0302 10:53 RV
Sodium, Total	ND	mg/l	0.005	1 6010B	0228 15:45 0302 10:53 RI
Thallium, Total	ND	mg/l	0.003	1 6010B	0228 15:45 0302 10:53 RI
Vanadium, Total	ND	mg/l		1 6010B	0228 15:45 0302 10:53 R
Zinc, Total	ND	mg/l	0.05	1 00105	
	nalysis for sam	male(s) 02-	07 (WG195	3435-3)	
	narysis for san	ubre (p)	•	1 3051	
Total Metals					
	ИД	mg/kg	4.0	1 6010B	0301 21:00 0303 07:51 R
Aluminum, Total	ND	mg/kg	2.0	1 6010B	0301 21:00 0303 07:51 P
Antimony, Total	ND	mg/kg	0.40	1 6010B	0301 21:00 0303 07:51 F
Arsenic, Total	ND	mg/kg	0.40	1 6010B	0301 21:00 0303 07:51 F
Barium, Total	ND	mg/kg	0.100	O 1 6010B	0301 21:00 0303 07:51 F
Beryllium, Total	ND	mg/kg	0.100	O 1 6010B	0301 21:00 0303 07:51 F
Cadmium, Total	ND	mg/kg	4.0	1 6010B	0301 21:00 0303 07:51 I
Calcium, Total	ND	mg/kg	0.40	1 6010B	0301 21:00 0303 07:51 1
Chromium, Total		mg/kg	0.80	1 6010B	0301 21:00 0303 07:51
Cobalt, Total	ND	mg/kg	0.40	1 6010B	0301 21:00 0303 07:51
Copper, Total	ND	mg/kg	2.0	1 6010B	0301 21:00 0303 07:51
Iron, Total	ND	mg/kg	2.0	1 6010B	0301 21:00 0303 07:51
Lead, Total	ND		4.0	1 6010B	0301 21:00 0303 07:51
Magnesium, Total	ND	mg/kg	0.40	1 6010B	0301 21:00 0303 07:51
Manganese, Total	ND	mg/kg	0.400		0301 21:00 0303 07:51
Nickel, Total	ND	mg/kg	100	1 6010B	0301 21:00 0303 07:51
Potassium, Total	ND	mg/kg			0301 21:00 0303 07:51
Selenium, Total	ND	mg/kg	0.200		0301 21:00 0303 07:51
Silver, Total	ND	mg/kg	0.40		0301 21:00 0303 07:51
Sodium, Total	ND	mg/kg	80.	1 6010B	0301 23.00

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	מ	ATE ID
					PREP	40
Blank Analy	AS A SELON C	1.44 1.5 t. 1. 1. a. 1				
Total Metals	sis for sam	pie(s) 02-	-07 (WG195			
,				1 3051		
Thallium, Total	ND		_			
Vanadium, Total	ND	mg/kg	0.40	1 6010B	0301 21:00	0 0303 07:51 RW
Zinc, Total	ND ND	mg/kg	0.40	1 6010B		0303 07:51 RW
	ND	mg/kg	2.0	1 6010B		0303 07:51 RW
Total Metale Blank Analy	sis for samm	le(s) 02-	07 INCTOS	919 AV *	, ,	
Total Metals		20,07,02	or (MGISS.	313-4)		
Mercury, Total	ND	mg/kg	0.08	1 7471A	0000 10 1-	
					0228 19:25	0301 16:16 DM
Blank Ana: Total Metals	lysis for sa	mple(s) 0	8 (WG1954)	05-4)		
Gear mendis				•		
Mercury, Total						
is a surficient of the surfici	ND	mg/l	0.0002	1 7470A	0301 17:45	0302 12:18 DM
Blank Analys						3302 12.10 DM
Blank Analys Olatile Organics by GC/MS 8	ers for samp	le(s) 08-(9 (WG1950	(61-6)		
Methylene chloride				1 8260B		0225 11:09 BT
.,1-Dichloroethane	ND	ug/l	5.0			
hloroform	ND	ug/l	0.75			
arbon tetrachloride	ND	ug/l	0.75			
,2-Dichloropropane	ND	ug/l	0.50			
ibromochloromethane	ND	ug/l	1.8			
,1,2-Trichloroethane	ND	ug/l	0.50			
etrachloroethene	ND	ug/l	0.75			
hlorobenzene	ND	ug/l	0.50			
richlorofluoromethane	ND	ug/l	0.50			
,2-Dichloroethane	ND	ug/l	2.5			
,1,1-Trichloroethane	ND	ug/l	0.50			
romodichloromethane	ND	ug/l	0.50			
range1 3 Dichlere	ND	ug/l	0.50			
rans-1,3-Dichloropropene	ND	ug/l	0.50			
is-1,3-Dichloropropene	ND	ug/l	0.50			
1-Dichloropropene	ND	ug/l	2.5			
	ND	ug/l	2.0			
1,2,2-Tetrachloroethane	ND	ug/l	0.50			
enzene	ND	ug/l	0.50			
luene	ND	ug/l	0.75			
hylbenzene	ИD	ug/l	0.50			
loromethane	ND	ug/l	2.5			
omomethane	ND	ug/l	1.0			
nyl chloride	ND	ug/l	1.0			
loroethane	ND	ug/l	1.0			
1-Dichloroethene	ND	ug/1	0.50			
ans-1,2-Dichloroethene	ИD	ug/1	0.75			
ichloroethene	ND	ug/l	0.75			
2-Dichlorobenzene	ND	ug/l	0.00			



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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Blank Analysis	for samp	ole(s) 08-09	(WG195	(061-6)	0225 11:0	9 BT
Volatile Organics by GC/MS 826	0 continu	ied	-	1 8260B	0223 1470	
1,3-Dichlorobenzene	ND	ug/l	2.5			
1,4-Dichlorobenzene	ND	ug/l	2.5			
Methyl tert butyl ether	ND	ug/l	1.0			
p/m-Xylene	ND	ug/l	0.50			
o-Xylene	ND	ug/l	0.50			
cis-1,2-Dichloroethene	ND	ug/l	0.50			
Dibromomethane	ND	ug/l	5.0			
1,4-Dichlorobutane	ND	ug/l	5.0			
Iodomethane	ND	ug/l	5.0			
1,2,3-Trichloropropane	ND	ug/l	5.0			
Styrene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
Acetone	ND	ug/l	5.0			
Carbon disulfide	ND	ug/l	5.0			
2-Butanone	ND	ug/l	5.0			
Vinyl acetate	ND	ug/l	5.0			
4-Methyl-2-pentanone	ND	ug/l	5.0			
2-Hexanone	ND	ug/l	5.0			
Ethyl methacrylate	ND	ug/l	5.0			
Acrolein	ND	ug/l	12.			
Acrylonitrile	ND	ug/l	5.0			
Bromochloromethane	ND	ug/l	2.5			
Tetrahydrofuran	ИD	ug/l	10.			
2,2-Dichloropropane	ND	ug/l	2.5			
1,2-Dibromoethane	ND	ug/l	2.0			
1,2-Dibromoethane	ND	ug/l	2.5			
1,3-Dichloropropane 1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
	ND	ug/l	2.5			
Bromobenzene	ND	ug/l	0.50			
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	ug/l	2.5			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/1	1.0			
Hexachlorobutadiene	ND	ug/l	0.50)		
Isopropylbenzene	ND	ug/l	0.50)		
p-Isopropyltoluene	ND	ug/1	2.5			
Naphthalene	ND	ug/l	0.50)		
n-Propylbenzene	ND	ug/l	2.5			
1,2,3-Trichlorobenzene	ND	ug/l	2.5			
1,2,4-Trichlorobenzene	ND ND	ug/l	2.5			
1,3,5-Trimethylbenzene		ug/l	2.5			
1,2,4-Trimethylbenzene	ND	ug/l	2.5			
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5			
Ethyl ether	ИD	ug/1	2.0			

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analy Volatile Organics by GC/MS	sis for sam	ple(s) 08-	-09 (WG19	5061-6)	
	0200 CONCIN	ued		1 8260B	8325 11-00 pm
Surrogate(s)	Recovery		QC Cr	iteria	0225 11:09 BT
1,2-Dichloroethane-d4	114.	ક			
Toluene-d8	102.	%			
4-Bromofluorobenzene	105.	왕			
Dibromofluoromethane	104.	%			
Blank Analy	sis for samp	n]e(s) 01_	07 /Waio	F262 AV	
Volatile Organics by GC/MS	8260	re(3) 01-	07 (MG13:		
Methylene chloride	ND	na /ka	٠.	1 8260B	0228 16:41 BT
1,1-Dichloroethane	ND	ug/kg	25.		
Chloroform	ND	ug/kg	3.8		
Carbon tetrachloride	ND	ug/kg	3.8		
1,2-Dichloropropane		ug/kg	2.5		
Dibromochloromethane	ND ND	ug/kg	8.8		
1,1,2-Trichloroethane		ug/kg	2.5		
Tetrachloroethene	ND	ug/kg	3.8		
Chlorobenzene	ND	ug/kg	2.5		
Prichlorofluoromethane	ND	ug/kg	2.5		
1,2-Dichloroethane	ND	ug/kg	12.		
L,1,1-Trichloroethane	ND	ug/kg	2.5		
Bromodichloromethane	ND	ug/kg	2.5		
rans-1,3-Dichloropropene	ND	ug/kg	2.5		
cis-1,3-Dichloropropene	ND	ug/kg	2.5		
1-Dighland	ND	ug/kg	2.5		
.,1-Dichloropropene Gromoform	ND	ug/kg	12.		
	ND	ug/kg	10.		
,1,2,2-Tetrachloroethane	ND	ug/kg	2.5		
enzene	ND	ug/kg	2.5		
oluene	ND	ug/kg	3.8		
thylbenzene	ND	ug/kg	2.5		
hloromethane	ND	ug/kg	12.	•	
romomethane	ND	ug/kg	5.0		
inyl chloride	ND	ug/kg	5.0		
hloroethane	ND	ug/kg	5.0		
,1-Dichloroethene	ND	ug/kg ug/kg	2.5		
rans-1,2-Dichloroethene	ND	ug/kg ug/kg	3.8		
richloroethene	ND	ug/kg ug/kg	2.5		
,2-Dichlorobenzene	ND	ug/kg ug/kg			
,3-Dichlorobenzene	ND	* -	12.		
4-Dichlorobenzene	ND	ug/kg	12.		
ethyl tert butyl ether	ND	ug/kg	12.		
m-Xylene	ND	ug/kg	5.0		
Xylene	ND	ug/kg	2.5		
.s-1,2-Dichloroethene		ug/kg	2.5		
bromomethane	ND	ug/kg	2.5		
4-Dichlorobutane	ND	ug/kg	25.		
edomethane	ИD	ug/kg	25.		
	ND	ug/kg	25.		



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PARAMETER	RESULT	UNITS	RDL	REF METHOD	D AT I PREP	ANAL ID
			uaci o	5363-8)		
Blank Analysi	s for sampi	e(s) 01-0/	(MGT3	1 8260B	0	228 16:41 BT
Volatile Organics by GC/MS 82	60 continue	uq/kg	25.	•		
1,2,3-Trichloropropane	ND	ug/kg	2.5			
Styrene	ND	ug/kg	25.			
Dichlorodifluoromethane	ND	ug/kg	25.			
Acetone	ND	ug/kg	25.			
Carbon disulfide	ND	ug/kg	25.			
2-Butanone	ND	ug/kg	25.			
Vinyl acetate	ND	ug/kg	25.			
4-Methyl-2-pentanone	ND	ug/kg	25.			
2-Hexanone	ND	ug/kg	25.			
Ethyl methacrylate	ND	ug/kg	62.			
Acrolein	ND	ug/kg	25.			
Acrylonitrile	ND	ug/kg	12.			
Bromochloromethane	ND	ug/kg	50.			
Tetrahydrofuran	ND	ug/kg	12.			
2,2-Dichloropropane	ND	ug/kg	10.			
1,2-Dibromoethane	ND	ug/kg	10.			
1.3-Dichloropropane	ИD	ug/kg	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/kg				
Bromobenzene	ND	ug/kg	12. 2.5			
n-Butylbenzene	ND	ug/kg				
sec-Butylbenzene	ND	ug/kg	2.5			
tert-Butylbenzene	ND	ug/kg	12.			
o-Chlorotoluene	ND	ug/kg	12.			
p-Chlorotoluene	ИD	ug/kg	12.			
1,2-Dibromo-3-chloropropane	ИD	ug/kg	12.			
Hexachlorobutadiene	ND	ug/kg	12.			
Isopropylbenzene	ND	ug/kg	2.5			
p-Isopropyltoluene	ND	ug/kg	2.5			
Naphthalene	ND	ug/kg	12.	•		
n-Propylbenzene	ИD	ug/kg	2.5			
1,2,3-Trichlorobenzene	ND	ug/kg	12.			
1,2,4-Trichlorobenzene	ND	ug/kg	12.			
1,3,5-Trimethylbenzene	ND	ug/kg	12.			
1,2,4-Trimethylbenzene	ND	ug/kg	12.			
trans-1,4-Dichloro-2-butene	ND	ug/kg	12.			
Ethyl ether	ND	ug/kg	12.			
<i>1</i> -			0.0	Cuitoria		
Surrogate(s)	Recovery		QC	Criteria		
1,2-Dichloroethane-d4	101.	96				
Toluene-d8	96.0	્રે				
4-Bromofluorobenzene	113.	ું				
Dibromofluoromethane	90.0	%				
Blank Ana	alysis for s	sample(s)	08 (WG1	95105-1)	0225 11-6	15 0301 21:47
SVOC's by GC/MS 8270				1 82/00	0225 11:4	10 0501 #1111
Acenaphthene	ND	ug/l	5.0)		

Laboratory Job Number: L0501881

Blank Analy SVOC's by GC/MS 8270 continue Benzidine 1,2,4-Trichlorobenzene Hexachlorobenzene Bis(2-chloroethyl)ether 1-Chloronaphthalene 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene	ysis for s ed ND ND	ample(s) 0	3 (WG195		PREP ANAL	
Benzidine 1,2,4-Trichlorobenzene Hexachlorobenzene Bis(2-chloroethyl)ether 1-Chloronaphthalene 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND ND	ample(s) 0	Water			
Benzidine 1,2,4-Trichlorobenzene Hexachlorobenzene Bis(2-chloroethyl)ether 1-Chloronaphthalene 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND ND			105-1)		
1,2,4-Trichlorobenzene Hexachlorobenzene Bis(2-chloroethyl)ether 1-Chloronaphthalene 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene				1 827DC	0225 11:45 0301 21:47	
Hexachlorobenzene Bis(2-chloroethyl)ether 1-Chloronaphthalene 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND	ug/l	50.		11(15 0501 21(4)	/: Hb
Bis(2-chloroethyl)ether 1-Chloronaphthalene 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene		ug/l	5.0			
1-Chloronaphthalene 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND	ug/l	5.0			
2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND	ug/l	5.0			
1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND	ug/l	5.0			
l,3-Dichlorobenzene	ИD	ug/l	6.0			
l,4-Dichlorobenzene	ND	ug/l	5.0			
L,4-Dichlorobenzene	ND	ug/l	5.0			
21 5: 12	ND	ug/l	5.0			
3,3'-Dichlorobenzidine	ND	ug/l	50.			
2,4-Dinitrotoluene	ND	ug/l	6.0			
2,6-Dinitrotoluene	ND	ug/l	5.0			
zobenzene	ND	ug/l	5.0			
luoranthene	ND	ug/l	5.0			
-Chlorophenyl phenyl ether	ND	ug/l	5.0			
-Bromophenyl phenyl ether	ND	ug/l	5.0			
is(2-chloroisopropyl)ether	ND	ug/l	5.0			
is(2-chloroethoxy)methane	ND	ug/l				
exachlorobutadiene	ND		5.0			
exachlorocyclopentadiene	ND	ug/l	10.			
exachloroethane	ND	ug/1	10.			
sophorone	ND	ug/l	5.0			
aphthalene		ug/l	5.0			
itrobenzene	ND	ug/l	5.0			
DPA/DPA	ND	ug/l	5.0			
-Nitrosodi-n-propylamine	ND	ug/l	15.			
is(2-ethylhexyl)phthalate	ND	ug/l	5.0			
atyl benzyl phthalate	ND	ug/l	10.			
i-n-butylphthalate	ND	ug/l	5.0			
i-n-octylphthalate	ND	ug/l	5.0	•		
ethyl phthalate	ND	ug/l	5.0			
methyl phthalate	ND	ug/l	5.0			
emechyl phichalate	ND	ug/l	5.0			
nzo(a)anthracene	ND	ug/l	5.0			
nzo(a)pyrene	ND	ug/l	5.0			
nzo(b)fluoranthene	ND	ug/l	5.0			
nzo(k)fluoranthene	ND	ug/l	5.0			
rysene	ND	ug/l	5.0			
enaphthylene	ND	ug/l	5.0			
thracene	ND	ug/l	5.0			
nzo(ghi)perylene	ND	ug/l	5.0			
uorene	ND	ug/l	5.0			
enanthrene	ND	ug/l				
oenzo(a,h)anthracene	ND	-	5.0			
dono/1 2 2 - 41	ND	ug/l	5.0			
rene	ND	ug/l	7.0			
370 (a) numana	ND	ug/l ug/l	5.0 5.0			



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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
		11-7-1 00	(WC105	105-11	
Blank Analysi	s for s	ample(s) us	(MGT3)	1 8270C	0225 11:45 0301 21:47 HL
SVOC's by GC/MS 8270 continued	ME		5.0	• , ••••	
Biphenyl	ND	ug/l	5.0		
Perylene	ND	ug/1	10.		
Aniline	ND	ug/l	5.0		
4-Chloroaniline	ND	ug/l	5.0		
1-Methylnaphthalene	ND	ug/l	5.0		
2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l			
4-Nitroaniline	ND	ug/l	7.0		
Dibenzofuran	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/l	10.		
2-Methylnaphthalene	ND	ug/l	8.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
4-Aminobiphenyl	ND	ug/l	10.		
Pentachloronitrobenzene	ND	ug/l	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	10.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	20.		
7,12-Dimethylbenz(a)anthracene	e ND	ug/l	10.		
n-Nitrosodimethylamine	ND	ug/l	50.		
2,4,6-Trichlorophenol	ND	ug/l	5.0		
p-Chloro-m-cresol	ND	ug/l	5.0		
2-Chlorophenol	ND	ug/l	6.0		
2,4-Dichlorophenol	ND	ug/l	10.		
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	ug/l	10.		
2,4-Dinitrophenol	ND	ug/l	20.		
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	20.		
	ND	ug/l	7.0		
Phenol	ND	ug/1	6.0		
2-Methylphenol		ug/1	6.0		
3-Methylphenol/4-Methylphenol	ND	ug/l	5.0		
2,4,5-Trichlorophenol	ND	ug/l	10.		
2,6-Dichlorophenol		ug/l	50.		
Benzoic Acid	ND	uy/1	٠.		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
	·				PREP ANAL
Blank Ana	Ivois for -				
SVOC's by GC/MS 8270 contin	lysis for s	ample(s) (8 (WG195	105-1)	•
Benzyl Alcohol	ND	(3		1 8270C	0225 11:45 0301 21:47 HL
Carbazole	ND	ug/l	10.		22777 Mg
Pyridine	ND	ug/l	5.0		
2-Picoline	ND	ug/l	50.		
Pronamide	ND	ug/l	20.		
Methyl methanesulfonate	ND ND	ug/l	20.		
1 1111111111111111111111111111111111111	ND	ug/l	20.		
Surrogate(s)	Recovery				
2-Fluorophenol	43.0	0	QC Cr	iteria	
Phenol-d6	35.0	8			
Nitrobenzene-d5	88.0	8			
2-Fluorobiphenyl	77.0	8			
2,4,6-Tribromophenol	80.0	90			
4-Terphenyl-d14	116.	8 8			
	110.	ъ			
Blank Analys	is for samn	16/61:02 0	17 /rrance		
	ox bamp	16(3) 02-0	/ (WG195		
Acenaphthene	ND	110 / le ~		1 8270C	0226 11:00 0301 19:44 HL
Benzidine	ND	ug/kg	170		
,2,4-Trichlorobenzene	ND	ug/kg	1700		
lexachlorobenzene	ND	ug/kg	170		
is(2-chloroethyl)ether	ND	ug/kg	170		
-Chloronaphthalene	ND	ug/kg	170		
-Chloronaphthalene	ND	ug/kg	170		
,2-Dichlorobenzene	ND	ug/kg	200		
,3-Dichlorobenzene	ND	ug/kg	170		
,4-Dichlorobenzene	ND	ug/kg	170		
,3'-Dichlorobenzidine	ND	ug/kg	170		
,4-Dinitrotoluene	ND	ug/kg	1700		
,6-Dinitrotoluene	ND	ug/kg	200	•	
zobenzene	ND	ug/kg	170		
luoranthene	ND	ug/kg	170		
-Chlorophenyl phenyl ether	ND	ug/kg	170		
-Bromophenyl phenyl ether	ND	ug/kg	170		
s(2-chloroisopropyl)ether	ND	ug/kg	170		
s(2-chloroethoxy)methane	ND	ug/kg	170		
exachlorobutadiene	ND ND	ug/kg	170		
xachlorocyclopentadiene	ND	ug/kg	330		
xachloroethane	ND	ug/kg	330		
ophorone	ND	ug/kg	170		
phthalene		ug/kg	170		
trobenzene	ND ND	ug/kg	170		
PA/DPA		ug/kg	170		
Nitrosodi-n-propylamine	ND	ug/kg	500		
s(2-ethylhexyl)phthalate	ND	ug/kg	170		
tyl benzyl phthalate	ND	ug/kg	330		
Evenarace	ND	ug/kg	170		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis	for samp	ole(s) 02-07	(WG19	5246-1) 1 8270C	0226 11:00 0301 19:44 HL
SVOC's by GC/MS 8270 continued	l my		170	1 02	
Di-n-butylphthalate	ND	ug/kg	170		
Di-n-octylphthalate	ND	ug/kg			
Diethyl phthalate	ND	ug/kg	170		
Dimethyl phthalate	ИD	ug/kg	170		
Benzo(a)anthracene	ND	ug/kg	170		
Benzo(a)pyrene	ND	ug/kg	170		
Benzo(b) fluoranthene	ND	ug/kg	170		
Benzo(k) fluoranthene	ND	ug/kg	170		
Chrysene	ND	ug/kg	170		
Acenaphthylene	ND	ug/kg	170		
Anthracene	ND	ug/kg	170		
Benzo(ghi)perylene	ND	ug/kg	170		
Fluorene	ND	ug/kg	170		
Phenanthrene	ND	ug/kg	170		
Dibenzo(a,h)anthracene	ND	ug/kg	170		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	170		
	ND	ug/kg	170		
Pyrene	ND	ug/kg	170		
Benzo(e)pyrene	ND	ug/kg	170		
Biphenyl	ND	ug/kg	170		
Perylene	ND	ug/kg	330		
Aniline 4-Chloroaniline	ND	ug/kg	170		
	ND	ug/kg	170		
1-Methylnaphthalene	ND	ug/kg	170		
2-Nitroaniline	ND	ug/kg	170		
3-Nitroaniline	ND	ug/kg	230		
4-Nitroaniline	ND	ug/kg	170		
Dibenzofuran	ND	ug/kg	1700)	
a,a-Dimethylphenethylamine	ND	ug/kg	330		
Hexachloropropene	ND	ug/kg	330		
Nitrosodi-n-butylamine	ND	ug/kg	270		
2-Methylnaphthalene	ND	ug/kg	670		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	670		
Pentachlorobenzene	ND	ug/kg	670		
a-Naphthylamine	ND	ug/kg	670		
b-Naphthylamine	ND	ug/kg	330		
Phenacetin	ND ND	ug/kg	670		
Dimethoate	ND ND	ug/kg	330		
4-Aminobiphenyl		ug/kg	330		
Pentachloronitrobenzene	ND	ug/kg	330		
Isodrin	ND	ug/kg ug/kg	330		
p-Dimethylaminoazobenzene	ND	ug/kg	670		
Chlorobenzilate	ND	ug/kg ug/kg	670		
3-Methylcholanthrene	ND		500		
Ethyl Methanesulfonate	ND	ug/kg	670		
Acetophenone	ND	ug/kg	670		
Nitrosodipiperidine	ND	ug/kg	070	,	

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				PREP ANAL
is for sam	ple(s) 02-	07 (WG19	5246-11	
ed			1 8270C	0226 11.06 0261 1
ne ND	ug/kg	330	1 02100	0226 11:00 0301 19:44 1
ND				
ND				
	, ,			
	_			
	- "			
	J. J	170		
	ug/kg	1700		
	- "	670		
	ug/kg	670		
ND	ug/kg	670		
Recovery		QC Cri	teria	
84.0	્રે	25-120		
102.	8	10-120		
108.	ૄ	23-120	•	
90.0	%	30-120		
70.0	96	19-120		
124.	%	18-120		
sis for sa	mple(s) 08	(WG1951	04-1)	
			*	0225 11:45 0301 18:57 RL
ND	ug/l	0.20		11.45 U301 10:5/ RL
ND				
ND	-			
	**			
	-			
	-			
	-			
	-			
	-			
	-			
	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND ug/kg ND ug/kg <td>ND ug/kg 1700 ND ug/kg 170 ND ug/kg 170 ND ug/kg 200 ND ug/kg 330 ND ug/kg 330 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 230 ND ug/kg 230 ND ug/kg 200 1 ND ug/kg 170 ND ug/kg 170 ND ug/kg 330 ND ug/kg 170 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 670 ND ug/kg 670 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 Recovery QC Cri 84.0 % 25-120 102. % 10-120 108. % 23-120 90.0 % 30-120 70.0 % 19-120 124. % 18-120 rsis for sample(s) 08 (WG1951 ND ug/l 0.20</td> <td>ND ug/kg 1700 ND ug/kg 170 ND ug/kg 170 ND ug/kg 200 ND ug/kg 330 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 230 ND ug/kg 670 ND ug/kg 230 ND ug/kg 200 1 ND ug/kg 230 ND ug/kg 200 1 ND ug/kg 170 ND ug/kg 170 ND ug/kg 170 ND ug/kg 330 ND ug/kg 170 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 170 ND ug/kg 670 ND ug/l 0.20</td>	ND ug/kg 1700 ND ug/kg 170 ND ug/kg 170 ND ug/kg 200 ND ug/kg 330 ND ug/kg 330 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 230 ND ug/kg 230 ND ug/kg 200 1 ND ug/kg 170 ND ug/kg 170 ND ug/kg 330 ND ug/kg 170 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 670 ND ug/kg 670 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 1700 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 Recovery QC Cri 84.0 % 25-120 102. % 10-120 108. % 23-120 90.0 % 30-120 70.0 % 19-120 124. % 18-120 rsis for sample(s) 08 (WG1951 ND ug/l 0.20	ND ug/kg 1700 ND ug/kg 170 ND ug/kg 170 ND ug/kg 200 ND ug/kg 330 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 230 ND ug/kg 670 ND ug/kg 230 ND ug/kg 200 1 ND ug/kg 230 ND ug/kg 200 1 ND ug/kg 170 ND ug/kg 170 ND ug/kg 170 ND ug/kg 330 ND ug/kg 170 ND ug/kg 330 ND ug/kg 670 ND ug/kg 670 ND ug/kg 670 ND ug/kg 170 ND ug/kg 670 ND ug/l 0.20

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP A	ID NAL
		- : : :		(O.4. 1)	1	
Blank Ana	lysis for sa	mple(s) 08	(MGT951	1 8270C-M	0225 11:45 0301	18:57 RL
PAH by GC/MS SIM 8270M cont	inued	(3	0 20	1 8270C-H	V225 11.40 0052	20,00
Anthracene	ND	ug/l	0.20			
Benzo(ghi)perylene	ND	ug/l	0.20			
Fluorene	ND	ug/l	0.20			
Phenanthrene	ND	ug/l	0.20			
Dibenzo(a,h)anthracene	ND	ug/l	0.20			
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20			
Pyrene	ND	ug/l	0.20			
1-Methylnaphthalene	ND	ug/l	0.20			
2-Methylnaphthalene	ND	ug/l	0.20			
Pentachlorophenol	ND	ug/l	0.80			
Hexachlorobenzene	ND	ug/l	0.80			
Perylene	ND	ug/l	0.20			
Biphenyl	ND	ug/l	0.20			
2,6-Dimethylnaphthalene	ND	ug/l	0.20			
1-Methylphenanthrene	ND	uq/l	0.20			
	ND	ug/l	0.20			
Benzo(e)Pyrene Hexachloroethane	ND	ug/l	0.80			
	Recovery		oc cr	iteria		
Surrogate(s)	41.0	%	21-12			
2-Fluorophenol	32.0	06	10-12			
Phenol-d6	77.0	%	23-12			
Nitrobenzene-d5		000	43-12			
2-Fluorobiphenyl	70.0	8	10-12			
2,4,6-Tribromophenol	94.0	90	33-12			
4-Terphenyl-d14	92.0					
	ysis for sam	ple(s) 02-	07 (WG19	95247-1) 1 8270C-M	0226 11:00 03	01 23:51 RL
PAH by GC/MS SIM 8270M		/ le er	6.7	1 02,004		
Acenaphthene	ND	ug/kg	6.7	-		
2-Chloronaphthalene	ND	ug/kg				
Fluoranthene	ND	ug/kg	6.7			
Hexachlorobutadiene	ND	ug/kg	17.			
Naphthalene	ND	ug/kg	6.7			
Benzo(a)anthracene	ND	ug/kg	6.7			
Benzo(a)pyrene	ND	ug/kg	6.7			
Benzo(b) fluoranthene	ND	ug/kg	6.7			
Benzo(k)fluoranthene	ND	ug/kg	6.7			
Chrysene	ND	ug/kg	6.7			
Acenaphthylene	ND	ug/kg	6.7			
Anthracene	ND	ug/kg	6.7			
Benzo(ghi)perylene	ND	ug/kg	6.7			
Fluorene	ND	ug/kg	6.7			
	ND	ug/kg	6.7			
Phenanthrene	ND	ug/kg	6.7			
Dibenzo(a,h)anthracene	ND	ug/kg	6.7			
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	6.7			
Pyrene	MD	ug/ng	~ ·			

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
		· · · · · · · · · · · · · · · · · · ·				
Blank Analys PAH by GC/MS SIM 8270M conti	is for sam	ple(s) 02-0	7 (WG195	247-1)	G 4 4 3	, f.,
1-Methylnaphthalene		*	•	1 8270C-M	0226 11:00 0301 23:5	51 RL
2-Methylnaphthalene	ND	ug/kg	6.7			,
Pentachlorophenol	ND	ug/kg	6.7			
Hexachlorobenzene	ND	ug/kg	27.			
Perylene	ND	ug/kg	27.			
Biphenyl	ND	ug/kg	6.7			
	ND	ug/kg	6.7			
2,6-Dimethylnaphthalene	ND	ug/kg	6.7			
1-Methylphenanthrene	ND	ug/kg	6.7			
Benzo(e) Pyrene	ND	ug/kg	6.7			
Hexachloroethane	ND	ug/kg	27.			
Surrogate(s)	Recovery		QC Crit	eria		
2-Fluorophenol	72.0	%	25-120	CIIU		
Phenol-d6	93.0	9	10-120			
Nitrobenzene-d5	78.0	96	23-120			
2-Fluorobiphenyl	67.0	96	30-120			
2,4,6-Tribromophenol	77.0	96	19~120			
1-Terphenyl-d14	83.0	%	18-120			
Blank Analy	sis for sa	mnln(a) 00	/TIG1 05 00	<i>-</i>		
Polychlorinated Biphenyls	515 TOT 54	mpre(s) 08	(WG19520	•		100
Aroclor 1221	ND	u ~ / 1	0 500	1 8082	0225 14:50 0228 17:41	JB
Aroclor 1232	ND	ug/l	0.500			
Aroclor 1242/1016	ND	ug/l	0.500			
aroclor 1248	ND	ug/l	0.500			
aroclor 1254	ND	ug/l	0.500			
roclor 1260	ND	ug/l	0.500			
	ир	ug/l	0.500			
urrogate(s)	Recovery		QC Crite	eria		
,4,5,6-Tetrachloro-m-xylene	71.0	ે	30-150			
ecachlorobiphenyl	82.0	96	30-150			
Blank Analysi	s for sampl	e(s) 02-07	(WG19525	55-1)		
orychrorinated Biphenyls	-		,	1 8082	0005 10:10 0000	
roclor 1221	ND	ug/kg	33.3	± 000Z	0225 13:10 0301 15:17	JB
roclor 1232	ND	ug/kg	33.3			
roclor 1242/1016	ND	ug/kg	33.3			
roclor 1248	ND	ug/kg	33.3			
roclor 1254	ND	ug/kg	33.3			
roclor 1260	ND	ug/kg	33.3			
ırrogate(s)	Recovery		00.0			
4,5,6-Tetrachloro-m-xylene			QC Crite	ria		
ecachlorobiphenyl	88.0 119.	_	30-150			
			30-150			

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis	for samp	10/2 02-0	7 : (WG1.95	(251-1)	
	TOT Samp	10 (2)		1 8081	0225 11:40 0301 12:52 BW
Organochlorine Pesticides	ND	ug/kg	3.33		
Delta-BHC	ND	ug/kg	3.33		
Lindane	ND	ug/kg	3.33		
Alpha-BHC	ND	ug/kg ug/kg	3.33		
Beta-BHC		ug/kg ug/kg	3.33		
Heptachlor	ND	ug/kg	3.33		
Aldrin	ND	ug/kg ug/kg	3.33		
Heptachlor epoxide	ND		3.33		
Endrin	ND	ug/kg	3.33		
Endrin aldehyde	ND	ug/kg	3.33		
Endrin ketone	ND	ug/kg			
Dieldrin	ND	ug/kg	3.33		
4,4'-DDE	ND	ug/kg	3.33		
4,4'-DDD	ND	ug/kg	3.33		
4,4'-DDT	ND	ug/kg	3.33		
Endosulfan I	ND	ug/kg	3.33		
Endosulfan II	ND	ug/kg	3.33		
Endosulfan sulfate	ND	ug/kg	3.33		
Methoxychlor	ND	ug/kg	3.33		
Toxaphene	ND	ug/kg	13.3		
Chlordane	ND	ug/kg	13.3		
cis-Chlordane	ND	ug/kg	3.33		
trans-Chlordane	ND	ug/kg	3.33		
Surrogate(s)	Recovery		QC Cr	iteria	
2,4,5,6-Tetrachloro-m-xylene	75.0	8	30-15	0	
Decachlorobiphenyl	84.0	ક	30-15	0	
Blank Analy	sis for s	ample(s) 0	8 (WG195	340-1)	
Organochlorine Pesticides				1 8081	0228 16:20 0301 16:58 JE
Delta-BHC	ND	ug/l	0.020	F	
Lindane	ND	ug/l	0.020	1	
Alpha-BHC	ND	ug/l	0.020)	
Beta-BHC	ND	ug/l	0.020)	
Heptachlor	ND	ug/l	0.020)	
Aldrin	ND	ug/l	0.020)	
Heptachlor epoxide	ND	ug/l	0.020)	
Endrin	ND	ug/l	0.040)	
Endrin aldehyde	ND	uq/l	0.040)	
Endrin ardenyde Endrin ketone	ND	ug/l	0.040)	
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND	ug/l	0.040		
·	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.020		
Endosulfan I	ND	ug/l	0.04		
Endosulfan II	ND	ug/l	0.04		
Endosulfan sulfate	ND	ug/ ±	3.01	-	

Laboratory Job Number: L0501881

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DAT	E ID
					PREP	ANAL
Blank Anal	ysis for sa	mple(s) 0	1 (WG1953	40-11		
Organochlorine Pesticides con	ntinued		. (1 8081	0000 44	
Methoxychlor	ND	ug/l	0.200	1. 0001	0228 16:20 0	301 16:58 JB
loxaphene	ND	ug/l	0.200			
Chlordane	ND	ug/l	0.200			
is-Chlordane	ND	ug/l	0.020			
rans-Chlordane	ND	ug/l	0.020			
urrogate(s)	Recovery		QC Crit	taria		
2,4,5,6-Tetrachloro-m-xylene	66.0 ¹	9	30-150	-6110		
Decachlorobiphenyl	68.0	96	30-150			

ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

- 1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

GLOSSARY OF TERMS AND SYMBOLS

Reference number in which test method may be found. METHOD Method number by which analysis was performed. Initials of the analyst. TD Not detected in comparison to the reported detection limit. ND Not Ignitable. NI ug/cart Micrograms per Cartridge.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive Westborough, Massachusetts 01581-1019 (508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: AKRF, Inc.

Laboratory Job Number: L0502002

Address: 116 E. 27th Street

7th Floor

New York, NY 10016

Date Received: 28-FEB-2005

Attn: Mr. Axel Schwendt

Date Reported: 07-MAR-2005

Project Number: 10470-0213

Delivery Method: Fed Ex

Site: COLUMBIA

			LOCATION
L0502002-02 L0502002-03 L0502002-04 L0502002-05 L0502002-06 L0502002-07 L0502002-08 L0502002-09	MW/CB-11 (2'-4') MW/CB-11 (14.5'-16') MW/CB-12 (6'-8') MW/CB-12 (18.5'-20') MW/CB-13 (2'-4') MW/CB-13 (6'-8') MW/CB-14 (2'-4') MW/CB-14 (6'-8') FIELD BLANK TRIP BLANK	HARLEM, HARLEM, HARLEM, HARLEM, HARLEM, HARLEM, HARLEM, HARLEM, HARLEM,	NY NY NY NY NY NY NY

Authorized by: Scott McLean

This document electronically signed

03070515:32 Page 1 of 83

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0502002

Report Submission

The VOA vial for sample MW/CB-11 14.5'-16' was received broken, and was not analyzed at the authorization of the client.

Semi-Volatile Organics

L0502002-09 has high surrogate % recoveries for Nitrobenzene-d5 and 4-Terphenyl-d14.

The wg195374 LCS has a high % recovery for 2,4-Dinitrotoluene.

The wg195374 MS has high % recoveries for p-Chloro-m-cresol, 2,4-Dinitrotoluene, 4-nitrophenol, and Pentachlorophenol

The wg195374 MS has high surrogate % recovery for 4-Terphenyl-d14.

The wg195374 MSD has high % recoveries for 2,4-Dinitrotoluene, 4-nitrophenol, and Pentachlorophenol.

The wg195440 LCS has a low \mathsection recovery for 2,4-Dinitrophenol, and a high \mathsection recovery for 2,4-Dinitrotoluene.

The wg195440 MS has high % recoveries for 2,4-Dinitrotoluene and 4-nitrophenol.

The wg195440 MS/MSD have high surrogate % recoveries for 4-Terphenyl-d14.

Pesticides

The wg195397 Matrix Spike/ Matrix Spike Duplicate have the surrogate % recoveries for Decachlorobiphenyl above acceptance criteria,

Mercury

The wg195548-2 MS % recovery is outside the acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 108%.

L0502002-05, and -06 were re-analyzed on 5x dilution for Ca in order to quantitate the sample within the range of the calibration.

The result is reported as a greater than value for the compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound which exceeded the range of the calibration.

The wg195659 MS % recoveries for Al, Ca, Fe, Mn is invalid because the sample concentration is greater than four times the spike amount added.

The wg195659 MS % recovery for Mg is outside the acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 105%.

The wg195659 Duplicate RPD for Ca is outside of the acceptance criteria for the method. The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-01

MW/CB-11 (2'-4')

Date Collected: 24-FEB-2005 10:15

Sample Matrix:

SOIL

Date Received : 28-FEB-2005 Date Reported : 07-MAR-2005

Condition of Sample: Satisfactory

Field Prep:

None

Number & Type of Containers: 1-Vial

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	D.	ATE	ID
				PREP	ANAL		
Solids, Total	89.	8	0.10	30 2540G		0302 20:23	7 PD
Volatile Organics by GC/MS	8260			1 0000			
Methylene chloride	ND	ug/kg	28.	1 8260B		0301 10:56	5 BT
1,1-Dichloroethane	ND	ug/kg	4.2				
Chloroform	ND	ug/kg ug/kg	4.2				
Carbon tetrachloride	ND	ug/kg	2.8				
1,2-Dichloropropane	ND	ug/kg	9.8				
Dibromochloromethane	ND	ug/kg	2.8				
1,1,2-Trichloroethane	ND	ug/kg ug/kg	4.2				
Tetrachloroethene	ND	ug/kg	2.8				
Chlorobenzene	ND	ug/kg ug/kg	2.8				
Trichlorofluoromethane	ND	ug/kg	14.				
1,2-Dichloroethane	ND	ug/kg ug/kg	2.8				
1,1,1-Trichloroethane	ND	ug/kg	2.8				
Bromodichloromethane	ND	ug/kg ug/kg	2.8				
trans-1,3-Dichloropropene	ND	ug/kg ug/kg	2.8				
cis-1,3-Dichloropropene	ND	ug/kg	2.8				
1,1-Dichloropropene	ND	ug/kg	14.				
Bromoform	ND	ug/kg	11.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8				
Benzene	13.	ug/kg	2.8	•			
l'oluene	4.5	ug/kg	4.2				
Ethylbenzene	ND	ug/kg	2.8				
Chloromethane	ND	ug/kg	14.				
Bromomethane	ND	ug/kg	5.6				
/inyl chloride	ND	ug/kg	5.6				
Chloroethane	ND	ug/kg	5.6				
,1-Dichloroethene	ND	ug/kg ug/kg	2.8				
rans-1,2-Dichloroethene	ND	ug/kg ug/kg	4.2				
richloroethene	ND	ug/kg ug/kg	2.8				
.,2-Dichlorobenzene	ND	ug/kg	14.				
,3-Dichlorobenzene	ND	ug/kg ug/kg	14.				
,4-Dichlorobenzene	ND	ug/kg ug/kg	14.				
ethyl tert butyl ether	ND	ug/kg ug/kg	5.6				
/m-Xylene	ND	ug/kg ug/kg	2.8				
-Xylene	ND	ug/kg ug/kg	2.8				
is-1,2-Dichloroethene	ND	ug/kg ug/kg	2.8				
ibromomethane	ND	ug/kg ug/kg	28.				

Laboratory Sample Number: L0502002-01

MW/CB-11 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA PREP	TE ID ANAL
Volatile Organics by GC/MS 82	260 continue	ed .		1 8260B		0301 10:56 BT
	ND	ug/kg	28.			
1,4-Dichlorobutane	ND	ug/kg	28.			
Iodomethane	ND	ug/kg	28.			
1,2,3-Trichloropropane	ND	ug/kg	2.8			
Styrene	ND	ug/kg	28.			
Dichlorodifluoromethane	ND	ug/kg	28.			
Acetone	ND	ug/kg ug/kg	28.			
Carbon disulfide		ug/kg ug/kg	28.			
2-Butanone	ND	ug/kg ug/kg	28.			
Vinyl acetate	ND		28.			
4-Methyl-2-pentanone	ND	ug/kg	28.			
2-Hexanone	ND	ug/kg	28.			
Ethyl methacrylate	ND	ug/kg	70.			
Acrolein	ND	ug/kg	28.			
Acrylonitrile	ND	ug/kg				
Bromochloromethane	ND	ug/kg	14.			
Tetrahydrofuran	ND	ug/kg	56.			
2,2-Dichloropropane	ND	ug/kg	14.			
1,2-Dibromoethane	ND	ug/kg	11.			
1,3-Dichloropropane	ND	ug/kg	14.			
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.8			
Bromobenzene	ND	ug/kg	14.			
n-Butylbenzene	ND	ug/kg	2.8			
sec-Butylbenzene	ND	ug/kg	2.8			
tert-Butylbenzene	ND	ug/kg	14.			
o-Chlorotoluene	ND	ug/kg	14.			
p-Chlorotoluene	ND	ug/kg	14.			
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.			
Hexachlorobutadiene	ND	ug/kg	14.			
Isopropylbenzene	ND	ug/kg	2.8			
p-Isopropyltoluene	ND	ug/kg	2.8			
Naphthalene	ND	ug/kg	14.			
n-Propylbenzene	ND	ug/kg	2.8			
1,2,3-Trichlorobenzene	ND	ug/kg	14.			
1,2,4-Trichlorobenzene	ND	ug/kg	14.			
1,3,5-Trimethylbenzene	ND	ug/kg	14.			
1,2,4-Trimethylbenzene	ND	ug/kg	14.			
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.			
Ethyl ether	ND	ug/kg	14.			
Surrogate(s)	Recovery		QC C	riteria		
1.2-Dichloroethane-d4	96.0	ૄ				
Toluene-d8	99.0	%				
4-Bromofluorobenzene	124.	olo				
Dibromofluoromethane	92.0	%				



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-02

MW/CB-11 (14.5'-16')

Date Collected: 24-FEB-2005 11:45

Date Received : 28-FEB-2005 Sample Matrix: SOIL Date Reported : 07-MAR-2005

Condition of Sample: Satisfactory Field Prep: None

Number & Type of Containers: 2-Amber, 1-Plastic

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAI	•
Solids, Total	80.	9	0.10	30	2540G	****	0302 20	27 PD
Total Metals				1	3051			
Aluminum, Total	5200	mg/kg	5.0	1	6010B	0202.20.00	0004 44	
Antimony, Total	ND	mg/kg	2.5	1	6010B	0303 20:00		
Arsenic, Total	1.8	mq/kq	0.50	1	6010B	0303 20:00		
Barium, Total	47.	mg/kg	0.50		6010B	0303 20:00		
Beryllium, Total	0.2809	mg/kg	0.1250		6010B	0303 20:00		
Cadmium, Total	ND	mg/kg	0.1250		6010B	0303 20:00		
Calcium, Total	7500	mg/kg	5.0			0303 20:00		
Chromium, Total	8.9	mg/kg	0.50		6010B	0303 20:00		
Cobalt, Total	3.9	mg/kg	1.0		6010B	0303 20:00		
Copper, Total	9.3	mg/kg	0.50		6010B 6010B	0303 20:00		
Iron, Total	8500	mg/kg	2.5		6010B	0303 20:00		
Lead, Total	23.	mg/kg	2.5		6010B	0303 20:00		
Magnesium, Total	1500	mg/kg	5.0		6010B	0303 20:00		
Manganese, Total	260	mg/kg	0.50			0303 20:00		
Mercury, Total	ND	mg/kg	0.10		6010B	0303 20:00		
Nickel, Total	6.6	mg/kg	0.50		7471A	0302 18:20		
Potassium, Total	340	mg/kg	120		6010B	0303 20:00		
Selenium, Total	ND	mg/kg mg/kg	0.250		6010B	0303 20:00		
Silver, Total	ND	mg/kg	0.230		6010B	0303 20:00		
Sodium, Total	200	mg/kg	100		6010B	0303 20:00		
Thallium, Total	ND	mg/kg	0.50		6010B	0303 20:00		
Vanadium, Total	8.9	mg/kg mg/kq	0.50		6010B	0303 20:00		
Zinc, Total	19.	mg/kg	2.5		6010B 6010B	0303 20:00 0303 20:00		
SVOC's by GC/MS 8270				1 8	3270C	0301 20:10	0200	
cenaphthene	ND	ug/kg	210			0301 20:10	0302 16:4	ID HL
enzidine	ND	ug/kg	2100					
.,2,4-Trichlorobenzene	ND	ug/kg	210					
lexachlorobenzene	ND	ug/kg	210					
is(2-chloroethyl)ether	ND	ug/kg	210					
-Chloronaphthalene	ND	ug/kg	210					
-Chloronaphthalene	ND	ug/kg	250					
,2-Dichlorobenzene	ND	ug/kg	210					
,3-Dichlorobenzene	ND	ug/kg	210					
,4-Dichlorobenzene	ND	ug/kg ug/kg	210					

Laboratory Sample Number: L0502002-02

MW/CB-11 (14.5'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
dated and the				1 8270C	0301 20:10 0302 16:46 HL
SVOC's by GC/MS 8270 continue	ND	ug/kg	2100		
3,3'-Dichlorobenzidine	ND	ug/kg	250		
2,4-Dinitrotoluene	ND	ug/kg	210		
2,6-Dinitrotoluene	ND	ug/kg	210		
Azobenzene	ND	ug/kg	210		
Fluoranthene		ug/kg	210		
4-Chlorophenyl phenyl ether	ND ND	ug/kg ug/kg	210		
4-Bromophenyl phenyl ether	ND	ug/kg	210		
Bis(2-chloroisopropyl)ether		ug/kg	210		
Bis(2-chloroethoxy)methane	ND	ug/kg	420		
Hexachlorobutadiene	ND	ug/kg ug/kg	420		
Hexachlorocyclopentadiene	ND	ug/kg ug/kg	210		
Hexachloroethane	ND	ug/kg ug/kg	210		
Isophorone	ND	ug/kg ug/kg	210		
Naphthalene	ND	ug/kg ug/kg	210		
Nitrobenzene	ND	•	620		
NDPA/DPA	ND	ug/kg ug/kg	210		
n-Nitrosodi-n-propylamine	ND		420		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	210		
Butyl benzyl phthalate	ND	ug/kg	210		
Di-n-butylphthalate	ND	ug/kg	210		
Di-n-octylphthalate	ND	ug/kg	210		
Diethyl phthalate	ND	ug/kg	210		
Dimethyl phthalate	ND	ug/kg	210		
Benzo(a)anthracene	ND	ug/kg	210		
Benzo(a)pyrene	ND	ug/kg			
Benzo(b) fluoranthene	ND	ug/kg	210		
Benzo(k)fluoranthene	ND	ug/kg	210		
Chrysene	ND	ug/kg	210		
Acenaphthylene	ND	ug/kg	210		
Anthracene	ND	ug/kg	210		
Benzo(ghi)perylene	ND	ug/kg	210	•	
Fluorene	ND	ug/kg	210		
Phenanthrene	ИD	ug/kg	210		
Dibenzo(a,h)anthracene	ND	ug/kg	210		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	210		
Pyrene	ND	ug/kg	210		
Benzo(e)pyrene	ND	ug/kg	210		
Biphenyl	ND	ug/kg	210		
Perylene	ND	ug/kg	210		
Aniline	ND	ug/kg	420		
4-Chloroaniline	ND	ug/kg	210		
1-Methylnaphthalene	ND	ug/kg	210		
2-Nitroaniline	ND	ug/kg	210		
3-Nitroaniline	ND	ug/kg	210		
4-Nitroaniline	ND	ug/kg	290		
Dibenzofuran	ND	ug/kg	210		
a,a-Dimethylphenethylamine	ND	ug/kg	2100)	
Hexachloropropene	ND	ug/kg	420		
Nitrosodi-n-butylamine	ND	ug/kg	420		



Laboratory Sample Number: L0502002-02

MW/CB-11 (14.5'-16')

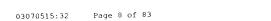
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID		
					PREP	ANAL	
SVOC's by GC/MS 8270 continue	d'						
2-Methylnaphthalene	ND	na /lea	220	1 8270C	0301 20:10	0302 16:46	HL
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	330				
Pentachlorobenzene	ND	ug/kg	830				
a-Naphthylamine	ND	ug/kg	830				
o-Naphthylamine		ug/kg	830				
Phenacetin	ND	ug/kg	830				
Dimethoate	ND	ug/kg	420				
1-Aminobiphenyl	ND	ug/kg	830				
Pentachloronitrobenzene	ND	ug/kg	420				
Isodrin	ND	ug/kg	420				
D-Dimethylaminoazobenzene	ND	ug/kg	420				
Chlorobenzilate	ND	ug/kg	420				
	ND	ug/kg	830				
3-Methylcholanthrene	ND	ug/kg	830				
Cthyl Methanesulfonate	ND	ug/kg	620				
Acetophenone	ND	ug/kg	830				
Vitrosodipiperidine	ND	ug/kg	830				
,12-Dimethylbenz(a)anthracen		ug/kg	420				
-Nitrosodimethylamine	ND	ug/kg	2100				
,4,6-Trichlorophenol	ND	ug/kg	210				
-Chloro-m-cresol	ND	ug/kg	210				
-Chlorophenol	ND	ug/kg	250				
,4-Dichlorophenol	ND	ug/kg	420				
,4-Dimethylphenol	ND	ug/kg	420				
-Nitrophenol	ND	ug/kg	830				
-Nitrophenol	ND	ug/kg	420				
,4-Dinitrophenol	ND	ug/kg	830				
,6-Dinitro-o-cresol	ND	ug/kg	830				
entachlorophenol	ND	ug/kg	830				
henol	ND	ug/kg	290				
-Methylphenol	ND	ug/kg	250				
-Methylphenol/4-Methylphenol	ND	ug/kg	250				
,4,5-Trichlorophenol	ND	ug/kg	210	•			
,6-Dichlorophenol	ND	ug/kg	420				
enzoic Acid	ND	ug/kg	2100				
enzyl Alcohol	ND	ug/kg	420				
arbazole	ND	ug/kg	210				
yridine	ND	ug/kg	2100				
-Picoline	ND	ug/kg ug/kg	830				
conamide	ND	ug/kg ug/kg	830				
ethyl methanesulfonate	ND	ug/kg ug/kg	830				
urrogate(s)	Recovery		QC Crite	ria			
Fluorophenol	66.0	8	25-120	± ± U			
enol-d6	81.0	90	10-120				
trobenzene-d5	83.0	9	23-120				
Fluorobiphenyl	68.0	%					
4,6-Tribromophenol	79.0	76 96	30-120				
		70	19-120				



Laboratory Sample Number: L0502002-02

MW/CB-11 (14.5'-16')

PAH by GC/MS SIM 8270M Acenaphthene ND Ug/kg 8.3 2-Chloronaphthalene ND Ug/kg 8.3 Fluoranthene ND Ug/kg 8.3 Hexachlorobutadiene ND Ug/kg 8.3 Hexachlorobutadiene ND Ug/kg 8.3 Hexachlorobutadiene ND Ug/kg 8.3 Benzo(a)anthracene ND Ug/kg 8.3 Benzo(a)pyrene ND Ug/kg 8.3	70С-M 0301 20:10 0302 20:50 RL
Acenaphthene ND ug/kg 8.3 2-Chloronaphthalene ND ug/kg 8.3 Fluoranthene ND ug/kg 8.3 Hexachlorobutadiene ND ug/kg 21. Naphthalene ND ug/kg 8.3 Benzo(a)anthracene ND ug/kg 8.3 Benzo(a)pyrene ND ug/kg 8.3	
2-Chloronaphthalene ND ug/kg 8.3 Fluoranthene ND ug/kg 8.3 Hexachlorobutadiene ND ug/kg 21. Naphthalene ND ug/kg 8.3 Benzo(a)anthracene ND ug/kg 8.3 Benzo(a)pyrene ND ug/kg 8.3	
Fluoranthene ND ug/kg 8.3 Hexachlorobutadiene ND ug/kg 21. Naphthalene ND ug/kg 8.3 Benzo(a)anthracene ND ug/kg 8.3 Benzo(a)pyrene ND ug/kg 8.3	
Hexachlorobutadiene ND ug/kg 21. Naphthalene ND ug/kg 8.3 Benzo(a)anthracene ND ug/kg 8.3 Benzo(a)pyrene ND ug/kg 8.3	
Naphthalene ND ug/kg 8.3 Benzo(a)anthracene ND ug/kg 8.3 Benzo(a)pyrene ND ug/kg 8.3	
Naphthalene Benzo(a) anthracene ND ug/kg 8.3 Benzo(a) pyrene ND ug/kg 8.3	
Benzo(a) pyrene ND ug/kg 8.3	
Benzo(a) pyrene	
Renge (b) fluoranthene ND ug/kg 8.3	
Benzo(b) Huoranchene	
Benzo(k) Huoranthene	
Chrysene	
Acenaphthylene	
Anthracene	
Benzo(ghi) peryiene	
Fluorene	
Phenanthrene	
Dibenzo (a, n) anchi acene	
Indeno(1,2,3-cd) Fylene	
Pyrene	
1-Methythaphthatene	
Z-MetnyInaphthalene	
Pentachiorophenoi	
Hexachioropenzene 23	
Perylene	
Biphenyi	
2,6-Dimethylhaphthalene	
I-Methylphenanthiene AB 0 3	
Benzo(e) Pyrene	
Hexachloroethane ND ug/kg 33.	
Surrogate(s) Recovery QC Criteria	
2-Fluorophenol 62.0 % 25-120 .	
Phenol-d6 82.0 % 10-120	
Nitrobenzene-d5 66.0 % 23-120	
2-Fluorobiphenyl 60.0 % 30-120	
2.4.6-Tribromophenol 84.0 % 19-120	
4-Terphenyl-d14 86.0 % 18-120	
Polychlorinated Biphenyls	0301 16:00 0302 18:10 BW
Aroclor 1221 ND ug/kg 41.7	
Aroctor 1221	
Aroctor 1232	
Aroctor 1242/1010	
Aroclor 1246	
Arocior 1254	
Aroclor 1260 ND ug/kg 41.7	



Laboratory Sample Number: L0502002-02

MW/CB-11 (14.5'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD		mm
				ILLI PETROD	DA PREP	TE II ANAL
Polychlorinated Biphenyls co	ntinued				· · · · · · · · · · · · · · · · · · ·	
Surrogate(s)	Recovery		QC Crit	1 8082	0301 16:00	0302 18:10 BW
2,4,5,6-Tetrachloro-m-xylene	72.0	o _l o	30-150	eria		
Decachlorobiphenyl	100.	90	30-150			
Organochlorine Pesticides						
Delta-BHC	ND	ug/kg	4.17	1 8081	0301 14:30	0302 17:59 ЈВ
indane	ND	ug/kg	4.17			
lpha-BHC	ND	ug/kg	4.17			
Seta-BHC	ND	ug/kg ug/kg	4.17			
[eptachlor	ND	ug/kg	4.17			
ldrin	ND	ug/kg ug/kg	4.17			
eptachlor epoxide	ND	ug/kg				
ndrin	ND	ug/kg ug/kg	4.17			
ndrin aldehyde	ND	ug/kg ug/kg	4.17 4.17			
ndrin ketone	ND	ug/kg ug/kg	4.17			
ieldrin	ND	ug/kg ug/kg				
,4'-DDE	ND	ug/kg ug/kg	4.17			
,4'-DDD	ND	ug/kg ug/kg	4.17			
,4'-DDT	ND		4.17			
ndosulfan I	ND	ug/kg	4.17			
ndosulfan II	ND	ug/kg	4.17			
ndosulfan sulfate	ND	ug/kg	4.17			
ethoxychlor	ND	ug/kg	4.17			
oxaphene	ND	ug/kg	4.17			
nlordane	ND	ug/kg	16.7			
is-Chlordane	ND ND	ug/kg	16.7			
Cans-Chlordane	ND ND	ug/kg	4.17			
	IAD	ug/kg	4.17			
rrogate(s)	Recovery		QC Crite	ria		
4,5,6-Tetrachloro-m-xylene	70.0	%	30-150	· - u		
cachlorobiphenyl	76.0	0/0	30-150			

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-03

L0502002-03 MW/CB-12 (6'-8')

Date Collected: 24-FEB-2005 15:30 Date Received : 28-FEB-2005

Sample Matrix:

SOIL

Date Reported : 07-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Solids, Total	87.	ક	0.10	30 2540G	0302 20:27 PD
Total Metals				1 3051 .	
Total Metals					00 00 0204 10.04 PW
Aluminum, Total	2700	mg/kg	4.6	1 6010B	0303 20:00 0304 10:04 RW 0303 20:00 0304 10:04 RW
Antimony, Total	ND	mg/kg	2.3	1 6010B	0303 20:00 0304 10:04 RW
Arsenic, Total	1.2	mg/kg	0.46	1 6010B	
Barium, Total	32.	mg/kg	0.46	1 6010B	0303 20:00 0304 10:04 RW
Beryllium, Total	0.1212	mg/kg	0.1143	1 6010B	0303 20:00 0304 10:04 RW
Cadmium, Total	ND	mg/kg	0.1143	1 6010B	0303 20:00 0304 10:04 RW
Calcium, Total	5500	mg/kg	4.6	1 6010B	0303 20:00 0304 10:04 RW
Chromium, Total	5.9	mg/kg	0.46	1 6010B	0303 20:00 0304 10:04 RW
	2.8	mg/kg	0.91	1 6010B	0303 20:00 0304 10:04 RW
Cobalt, Total	10.	mg/kg	0.46	1 6010B	0303 20:00 0304 10:04 RW
Copper, Total	5400	mg/kg	2.3	1 6010B	0303 20:00 0304 10:04 RW
Iron, Total	5.7	mg/kg	2.3	1 6010B	0303 20:00 0304 10:04 RW
Lead, Total	1400	mg/kg	4.6	1 6010B	0303 20:00 0304 10:04 RW
Magnesium, Total	260	mg/kg	0.46	1 6010B	0303 20:00 0304 10:04 RW
Manganese, Total	ND	mg/kg	0.09	1 7471A	0302 18:20 0303 10:26 DM
Mercury, Total	5.8	mg/kg	0.46	1 6010B	0303 20:00 0304 10:04 RW
Nickel, Total	320	mg/kg	110	1 6010B	0303 20:00 0304 10:04 RW
Potassium, Total	ND	mg/kg	0.229	1 6010B	0303 20:00 0304 10:04 RW
Selenium, Total	ND ND	mg/kg	0.46	1 6010B	0303 20:00 0304 10:04 RW
Silver, Total	150	mg/kg	91.	1 6010B	0303 20:00 0304 10:04 RW
Sodium, Total		mg/kg	0.46	1 6010B	0303 20:00 0304 10:04 RW
Thallium, Total	ND		0.46	1 6010B	0303 20:00 0304 10:04 RW
Vanadium, Total	7.2	mg/kg	2.3	1 6010B	0303 20:00 0304 10:04 RW
Zinc, Total	13.	mg/kg	2.9	1	
Volatile Organics by GC/MS	8260			1 8260B	0301 12:13 BT
voidille Organics by Ochin	ND	ug/kg	28.		
Methylene chloride	ND	ug/kg	4.1		
1,1-Dichloroethane	ND	ug/kg	4.1		
Chloroform	ND	ug/kg	2.8		
Carbon tetrachloride	ND	ug/kg	9.7		
1,2-Dichloropropane	ND	ug/kg	2.8		
Dibromochloromethane	ND	ug/kg	4.1		
1,1,2-Trichloroethane	ND	ug/kg	2.8		
Tetrachloroethene		ug/kg	2.8		
Chlorobenzene	ND	ug/kg	14.		
Trichlorofluoromethane	ND	ug/kg	T. A.		



Laboratory Sample Number: L0502002-03

MW/CB-12 (6'-8')

PARAMETER	RESULT	UNITS	RDL	DEE VE				
		-11410	KDL	REF METHOD	DAT		ID	
					PREP	ANAL		
Volatile Organics by GC/MS	8260 contin	haur		the the same and	· · · · · · · · · · · · · · · · · · ·			
1,2 Dichioroethane	ND	ug/kg	2.0	1 8260B	ó	301 12:1	3 ВТ	
1,1,1-Trichloroethane	ND	ug/kg ug/kg	2.8					
Bromodichloromethane	ND	ug/kg	2.8					
trans-1,3-Dichloropropene	ND		2.8					
cis-1,3-Dichloropropene	ND	ug/kg	2.8					
1,1-Dichloropropene	ND	ug/kg	2.8					
Bromoform	ND	ug/kg	14.					
1,1,2,2-Tetrachloroethane	ND	ug/kg	11.					
Benzene		ug/kg	2.8					
Toluene	ND	ug/kg	2.8					
Ethylbenzene	ND	ug/kg	4.1					
Chloromethane	ND	ug/kg	2.8					
Bromomethane	ND	ug/kg	14.					
Vinyl chloride	ND	ug/kg	5.5					
Chloroethane	ND	ug/kg	5.5					
1,1-Dichloroethene	ND	ug/kg	5.5					
trans-1,2-Dichloroethene	ND	ug/kg	2.8					
Prichloroethene	ND	ug/kg	4.1					
2-Dichlere	ND	ug/kg	2.8					
1,2-Dichlorobenzene	ND	ug/kg	14.					
,3-Dichlorobenzene	ND	ug/kg	14.					
.,4-Dichlorobenzene	ND	ug/kg	14.					
Methyl tert butyl ether	ND	ug/kg	5.5					
o/m-Xylene	ND	ug/kg	2.8					
-Xylene	ND	ug/kg	2.8					
is-1,2-Dichloroethene	ND	ug/kg						
ibromomethane	ND	ug/kg	2.8					
,4-Dichlorobutane	ND		28.					
odomethane	ND	ug/kg	28.					
,2,3-Trichloropropane	ND	ug/kg	28.					
tyrene	ND	ug/kg	28.					
ichlorodifluoromethane	ND	ug/kg	2.8					
Cetone	ND ND	ug/kg	28.	•				
arbon disulfide		ug/kg	28.					
-Butanone	ND	ug/kg	28.					
nyl acetate	ND	ug/kg	28.					
Methyl-2-pentanone	ND	ug/kg	28.					
Hexanone	ND	ug/kg	28.					
hyl methacrylate	ND	ug/kg	28.					
rolein	ND	ug/kg	28.					
rylonitrile	ND	ug/kg	69.					
omochloromethane	ND	ug/kg	28.					
omochioromethane trahydrofuran	ND	ug/kg	14.					
2-Dichler	ND	ug/kg	55.					
2-Dichloropropane	ND	ug/kg	14.					
2-Dibromoethane	ND	ug/kg	11.					
3-Dichloropropane	ND	ug/kg	14.					
1,1,2-Tetrachloroethane	ND	ug/kg	2.8					
omobenzene	ND	ug/kg						
Butylbenzene	ND	ug/kg	14.					
-Butylbenzene	ND	ug/kg ug/kg	2.8					

Laboratory Sample Number: L0502002-03

MW/CB-12 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
				1 8260B	0301 12:13 BT
Volatile Organics by GC/MS 82	60 continu	ied ug/kg	14.	1 05000	
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND		14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg ug/kg	14.		
Hexachlorobutadiene	ND		2.8		
Isopropylbenzene	ND	ug/kg	2.8		
p-Isopropyltoluene	ND	ug/kg	14.		
Naphthalene	ND	ug/kg	2.8		
n-Propylbenzene	ND	ug/kg	14.		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg			
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1.2.4-Trimethylbenzene	ND	ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery	7	QC Cr	iteria	
1,2-Dichloroethane-d4	96.0	8			
Toluene-d8	96.0	8			
Toluene-do 4-Bromofluorobenzene	117.	8			
Dibromofluoromethane	90.0	%			
Dibromoffdolomethane				1 8270C	0301 20:10 0302 19:16 HL
SVOC's by GC/MS 8270			100	1 8270C	0301 20.20
Acenaphthene	ИD	ug/kg	190		
Benzidine	ND	ug/kg	1900		
1,2,4-Trichlorobenzene	ND	ug/kg	190		
Hexachlorobenzene	ND	ug/kg	190		
Bis(2-chloroethyl)ether	ND	ug/kg	190		
1-Chloronaphthalene	ND	ug/kg	190		
2-Chloronaphthalene	ND	ug/kg	230		
1,2-Dichlorobenzene	ND	ug/kg	190	-	
1,3-Dichlorobenzene	ND	ug/kg	190		
1,4-Dichlorobenzene	ND	ug/kg	190		
3,3'-Dichlorobenzidine	ND	ug/kg	1900		
2,4-Dinitrotoluene	ND	ug/kg	230		
2,6-Dinitrotoluene	ND	ug/kg	190		
Azobenzene	ND	ug/kg	190		
Fluoranthene	ND	ug/kg	190		
4-Chlorophenyl phenyl ether	ND	ug/kg	190		
4-Entorophenyl phenyl ether	ND	ug/kg	190		
Bis(2-chloroisopropyl)ether	ND	ug/kg	190		
Bis(2-chloroethoxy)methane	ND	ug/kg	190		
Hexachlorobutadiene	ND	ug/kg	380		
Hexachlorocyclopentadiene	ND	ug/kg	380		
Hexachloroethane	ND	ug/kg	190		
	ND	ug/kg	190		
Isophorone	ND	ug/kg	190		
Naphthalene	ND	ug/kg	190		
Nitrobenzene	ND	ug/kg	570		



Laboratory Sample Number: L0502002-03

MW/CB-12 (6'-8')

PARAMETER	RESULT	UNITS RDL	REF METHOD	DD DATE I		
				IGF PETHOD	DATE ID PREP ANAL	
SVOC's by GC/MS 8270 contin						
n-Nitrosodi-n-propylamine				1 8270C	0301 20:10 0302 19:16 HL	
Bis (2-ethylhexyl) phthalate	ND	ug/kg	190			
Butyl benzyl phthalate	ND	ug/kg	380			
Di-n-butylphthalate	ND	ug/kg	190			
Di-n-octylphthalate	ND	ug/kg	190			
Diethyl phthalate	ND	ug/kg	190			
Dimethyl phthalate	ND	ug/kg	190			
Benzo(a) anthracene	ND	ug/kg	190			
Benzo(a) pyrene	ND	ug/kg	190			
Benzo(b) fluoranthene	ND	ug/kg	190			
Benzo(k) fluoranthene	ND	ug/kg	190			
Chrysene	ND	ug/kg	190			
Acenaphthylene	ND	ug/kg	190			
Anthracene	ND	ug/kg	190			
Benzo(ghi)perylene	ND	ug/kg	190			
Fluorene	ND	ug/kg	190			
Phenanthrene	ND	ug/kg	190			
Dibenzo(a,h)anthracene	ND	ug/kg	190			
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190			
Pyrene	ND	ug/kg	190			
Benzo(e)pyrene	ND	ug/kg	190			
Biphenyl	ND	ug/kg	190			
Perylene	ND	ug/kg	190			
Miline	ND	ug/kg	190			
-Chloroaniline	ND	ug/kg	380			
-Methylnaphthalene	ND	ug/kg	190			
-Nitroaniline	ND	ug/kg	190			
-Nitroaniline	ND	ug/kg	190			
-Nitroaniline	ND	ug/kg	190			
ibenzofuran	ND	ug/kg	270			
,a-Dimethylphenethylamine	ND	ug/kg	190			
exachloropropene	ND	ug/kg	1900	•		
itrosodi-n-butylamine	ND	ug/kg	380			
-Methylnaphthalene	ND	ug/kg	380			
, 2, 4, 5-Tetrachlorobenzene	ND	ug/kg	310			
entachlorobenzene	ND	ug/kg	770			
-Naphthylamine	ND	ug/kg	770			
-Naphthylamine	ND	ug/kg	770			
nenacetin	ND	ug/kg	770			
imethoate	ND	ug/kg	380			
-Aminobiphenyl	ND	ug/kg	770			
entachloronitrobenzene	ND	ug/kg	380			
sodrin	ND	ug/kg	380			
-Dimethylaminoazobenzene	ND	ug/kg	380			
lorobenzilate	ND	ug/kg	380			
Methylcholanthrene	ND	ug/kg	770			
hethylcholanthrene hyl Methanesulfonate	ND	ug/kg	770			
etophenone	ND	ug/kg	570			
trosodipiperidine	ND	ug/kg	770			
crosographerigine	ИD	ug/kg	770			

Laboratory Sample Number: L0502002-03

MW/CB-12 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE I PREP ANAL	D
				1	8270C	0301 20:10 0302 19:16 H	ль
SVOC's by GC/MS 8270 continued		ug/kg	380	_			
7,12-Dimethylbenz(a)anthracene	ND	ug/kg ug/kg	1900				
n-Nitrosodimethylamine	ND	ug/kg ug/kg	190				
2,4,6-Trichlorophenol	ND	ug/kg ug/kg	190				
p-Chloro-m-cresol	ND	ug/kg ug/kg	230				
2-Chlorophenol	ND	ug/kg ug/kg	380				
2,4-Dichlorophenol	ND	ug/kg ug/kg	380				
2,4-Dimethylphenol	ND	ug/kg ug/kg	770				
2-Nitrophenol	ND	-	380				
4-Nitrophenol	ND	ug/kg	770				
2,4-Dinitrophenol	ND	ug/kg	770				
4,6-Dinitro-o-cresol	ND	ug/kg	770				
Pentachlorophenol	ND	ug/kg	270				
Phenol	ND	ug/kg	230				
2-Methylphenol	ND	ug/kg	230				
3-Methylphenol/4-Methylphenol	ND	ug/kg	190				
2,4,5-Trichlorophenol	ND	ug/kg	380				
2,6-Dichlorophenol	ND	ug/kg	1900				
Benzoic Acid	ND	ug/kg	380				
Benzyl Alcohol	ИD	ug/kg	190				
Carbazole	ND	ug/kg	1900				
Pyridine	ИD	ug/kg	770				
2-Picoline	ND	ug/kg	770				
Pronamide	ND	ug/kg	770				
Methyl methanesulfonate	ND	ug/kg	770				
	Description		QC Cr	iter	ia		
Surrogate(s)	Recovery	8	25-12				
2-Fluorophenol	72.0	8	10-12				
Phenol-d6	89.0	8	23-12				
Nitrobenzene-d5	93.0	8	30-12				
2-Fluorobiphenyl	77.0	9	19-12				
2,4,6-Tribromophenol	73.0	· 0 26	18-13		•		
4-Terphenyl-d14	118.	6	10 1				
THE CALL GOLD					1 8270C-N	0301 20:10 0302 21:3	5 R
PAH by GC/MS SIM 8270M	ND	uq/kg	7.7				
Acenaphthene	ND	ug/kg	7.7				
2-Chloronaphthalene	ND	ug/kg	7.7				
Fluoranthene	ND	ug/kg	19.				
Hexachlorobutadiene	ND	ug/kg	7.7				
Naphthalene	ND	ug/kg	7.7				
Benzo(a)anthracene	ND	ug/kg	7.7				
Benzo(a)pyrene	ND ND	ug/kg	7.7				
Benzo(b) fluoranthene	ND	ug/kg	7.7				
Benzo(k)fluoranthene	ND ND	ug/kg ug/kg	7.7				
Chrysene		ug/kg ug/kg	7.7				
Acenaphthylene	ND	ug/kg	7.7				
Anthracene	ND	ug/kg	7.7				
Benzo(ghi)perylene	ND	ug/kg ug/kg	7.7				
Fluorene	ND		7.7				
Phenanthrene	ND	ug/kg	, , ,				



Laboratory Sample Number: L0502002-03

MW/CB-12 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D. 2. MT		
			101	KEF METHOD	DATE ID PREP ANAL		
PAH by GC/MS SIM 8270M cont							
Dibenzo(a,h)anthracene				1 8270C-M	0301 20:10 0302 21:35 RL		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.7		21,35 Ri		
Pyrene	ND	ug/kg	7.7				
1-Methylnaphthalene	ND	ug/kg	7.7				
2-Methylnaphthalene	ND	ug/kg	7.7				
Pentachlorophenol	ND	ug/kg	7.7				
Hexachlorophenol Hexachlorobenzene	110	ug/kg	31.				
Perylene	ND	ug/kg	31.				
	ND	ug/kg	7.7				
Biphenyl	ND	ug/kg	7.7				
2,6-Dimethylnaphthalene	ND	ug/kg	7.7				
l-Methylphenanthrene	ND	ug/kg	7.7				
Benzo(e)Pyrene	ND	ug/kg	7.7				
Hexachloroethane	ND	ug/kg	31.				
Gurrogate(s)	Recovery		00.0-1				
2-Fluorophenol	71.0	95	QC Crit	ceria			
Phenol-d6	94.0	9	25-120				
Nitrobenzene-d5	79.0		10-120				
2-Fluorobiphenyl	70.0	8	23-120				
2,4,6-Tribromophenol	82.0	98	30-120				
-Terphenyl-d14	91.0	000	19-120 18-120				
olychlorinated Biphenyls			10 120				
roclor 1221				1 8082	0301 16:00 0302 17:42 BW		
roclor 1232	ND	ug/kg	38.3		10.00 0302 17:42 BW		
roclor 1242/1016	ND	ug/kg	38.3				
roclor 1248	ND	ug/kg	38.3				
roclor 1254	ND	ug/kg	38.3				
roclor 1260	ND	ug/kg	38.3				
1260	ND	ug/kg	38.3				
urrogate(s)	Recovery		QC Crite	ani a			
,4,5,6-Tetrachloro-m-xylene	77.0	્ર	30-150	ET T'd			
ecachlorobiphenyl	99.0	8	30-150				
ganochlorine Pesticides							
elta-BHC	ND	1107/100	2 02	1 8081	0301 14:30 0302 17:31 JB		
ndane	ND	ug/kg	3.83				
pha-BHC	ND	ug/kg	3.83				
ta-BHC		ug/kg	3.83				
ptachlor	ND ND	ug/kg	3.83				
drin		ug/kg	3.83				
ptachlor epoxide	ND ND	ug/kg	3.83				
drin	ND	ug/kg	3.83				
drin aldehyde	ND	ug/kg	3.83				
drin ketone	ND	ug/kg	3.83				
eldrin	ND	ug/kg	3.83				
4'-DDE	ND	ug/kg	3.83				
4'-DDD	ND	ug/kg	3.83				
4'-DDT	ND	ug/kg	3.83				
1 DD1	ND	ug/kg	3.83				



Laboratory Sample Number: L0502002-03

MW/CB-12 (6'-8')

PARAMETER	RESULT	UNITS	RDL REF METHOD	DATE ID PREP ANAL
Organochlorine Pesticides con Endosulfan I Endosulfan II Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane trans-Chlordane	tinued ND ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	1 8081 3.83 3.83 3.83 3.83 15.3 15.3 3.83 3.83	0301 14:30 0302 17;31 JB
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	Recovery 70.0 83.0	ું ગું	QC Criteria 30-150 30-150	



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-04

MW/CB-12 (18.5'-20')

Date Collected: 24-FEB-2005 16:00

Sample Matrix:

SOIL

Date Received : 28-FEB-2005 Date Reported : 07-MAR-2005

Field Prep:

None

Condition of Sample: Satisfactory

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	D.3.
					DATE ID PREP ANAL
Solids, Total	94.	o _o	0.10		
Tion of Manager		ŭ	0.10	30 2540G	0302 20:27 PD
Total Metals				1 3051	
Aluminum, Total	2000				
Antimony, Total	ND	mg/kg	4.2	1 6010B	0303 20:00 0304 10:34 RW
Arsenic, Total		mg/kg	2.1	1 6010B	0303 20:00 0304 10:34 RW
Barium, Total	0.89	mg/kg	0.42	1 6010B	0303 20:00 0304 10:34 RW
Beryllium, Total	24.	mg/kg	0.42	1 6010B	0303 20:00 0304 10:34 RW
Cadmium, Total	0.1196	mg/kg	0.1046	1 6010B	0303 20:00 0304 10:34 RW
Calcium, Total	ND	mg/kg	0.1046	1 6010B	0303 20:00 0304 10:34 RW
Chromium, Total	740	mg/kg	4.2	1 6010B	0303 20:00 0304 10:34 RW
Cobalt, Total	6.4	mg/kg	0.42	1 6010B	0303 20:00 0304 10:34 RW
Copper, Total	2.5	mg/kg	0.84	1 6010B	0303 20:00 0304 10:34 RW
Iron, Total	9.4	mg/kg	0.42	1 6010B	0303 20:00 0304 10:34 RW
Lead, Total	4300	mg/kg	2.1	1 6010B	0303 20:00 0304 10:34 RW
	6.4	mg/kg	2.1	1 6010B	0303 20:00 0304 10:34 RW
Magnesium, Total	780	mg/kg	4.2	1 6010B	0303 20:00 0304 10:34 RW
Manganese, Total	200	mg/kg	0.42	1 6010B	0303 20:00 0304 10:34 RW
Mercury, Total	ND	mg/kg	0.08		0303 20:00 0304 10:34 RW
Nickel, Total	5.7	mg/kg	0.42		0302 18:20 0303 10:31 DM
Potassium, Total	220	mg/kg	100	- 00102	0303 20:00 0304 10:34 RW
Selenium, Total	ND	mg/kg	0.209	1 - 6010B	0303 20:00 0304 10:34 RW
Silver, Total	ND	mg/kg	0.42	1 6010B	0303 20:00 0304 10:34 RW
Sodium, Total	110	mg/kg	· - -	1 6010B	0303 20:00 0304 10:34 RW
Challium, Total	ND	mg/kg	84.	1 6010B	0303 20:00 0304 10:34 RW
anadium, Total	6.2		0.42	1 6010B	0303 20:00 0304 10:34 RW
inc, Total	7.7	mg/kg	0.42	1 6010B	0303 20:00 0304 10:34 RW
		mg/kg	2.1	1 6010B	0303 20:00 0304 10:34 RW
olatile Organics by GC/MS	8260				
ethylene chloride	ND	ug/kg	25	1 8260B	0301 12:51 BT
,1-Dichloroethane	ND		25.		
hloroform	ND	ug/kg	3.8		
arbon tetrachloride	ND	ug/kg	3.8		
,2-Dichloropropane	ND ND	ug/kg	2.5		
ibromochloromethane	ND	ug/kg	8.8		
,1,2-Trichloroethane		ug/kg	2.5		
etrachloroethene	ND	ug/kg	3.8		
nlorobenzene	ND	ug/kg	2.5		
cichlorofluoromethane	ND	ug/kg	2.5		
or raor owe challe	ND	ug/kg	12.		

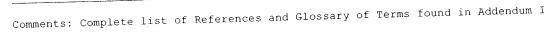
Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502002-04

MW/CB-12 (18.5'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DAT PREP	E ID ANAL
			, e	1 8260B		0301 12:51 BT
Volatile Organics by GC/MS	8260 continu	ied ug/kg	2.5			
1.2-Dichloroethane	ND	ug/kg	2.5			
1,1,1-Trichloroethane	ND	ug/kg	2.5			
Bromodichloromethane	ND	ug/kg	2.5			
trans-1,3-Dichloropropene	ND	ug/kg	2.5			
cis-1,3-Dichloropropene	ND	ug/kg	12.			
1,1-Dichloropropene	ND	ug/kg	10.			
Bromoform	ND	ug/kg	2.5			
1,1,2,2-Tetrachloroethane	ИD	ug/kg	2.5			
Benzene	ND	ug/kg				
Toluene	ND	ug/kg	3.8			
Ethylbenzene	ND	ug/kg	2.5			
Chloromethane	ИD	ug/kg	12.			
Bromomethane	ND	ug/kg	5.0			
Vinyl chloride	ND	ug/kg	5.0			
Chloroethane	ND	ug/kg	5.0			
1,1-Dichloroethene	ND	ug/kg	2.5			
trans-1,2-Dichloroethene	ND	ug/kg	3.8			
Trichloroethene	ИD	ug/kg	2.5			
1,2-Dichlorobenzene	ND	ug/kg	12.			
1,3-Dichlorobenzene	ND	ug/kg	12.			
1,4-Dichlorobenzene	ND	ug/kg	12.			
Methyl tert butyl ether	ND	ug/kg	5.0			
p/m-Xylene	ND	ug/kg	2.5			
o-Xylene	ND	ug/kg	2.5			
cis-1,2-Dichloroethene	ND	ug/kg	2.5			
Dibromomethane	ND	ug/kg	25.			
1,4-Dichlorobutane	ИD	ug/kg	25.			
Iodomethane	ND	ug/kg	25.			
1,2,3-Trichloropropane	ND	ug/kg	25.			
Styrene	ND	ug/kg	2.5			
Dichlorodifluoromethane	ND	ug/kg	25.	•		
Acetone	ND	ug/kg	25.			
Carbon disulfide	ИD	ug/kg	25.			
2-Butanone	ND	ug/kg	25.			
Vinyl acetate	ND	ug/kg	25.			
4-Methyl-2-pentanone	ND	ug/kg	25.			
2-Hexanone	ND	ug/kg	25.			
Ethyl methacrylate	ND	ug/kg	25.			
	ND	ug/kg	63.			
Acrolein Acrylonitrile	ND.	ug/kg	25.			
Bromochloromethane	ND	ug/kg	12.			
Tetrahydrofuran	ND	ug/kg	50.			
2,2-Dichloropropane	ND	ug/kg	12.			
1,2-Dibromoethane	ND	ug/kg	10.			
1,3-Dichloropropane	ND	ug/kg	12.			
1,1,1,2-Tetrachloroethane		ug/kg	2.5			
	ND	ug/kg	12.			
Bromobenzene	ND	ug/kg	2.5			
n-Butylbenzene sec-Butylbenzene	ND	ug/kg	2.5			





Laboratory Sample Number: L0502002-04

MW/CB-12 (18.5'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II PREP ANAL
					PREP ANAL
Volatile Organics by GC/MS	8260 contin	ued		1 8260B	
tert-Butylbenzene	ND	ug/kg	12.	1 02001	0301 12:51 BT
o-Chlorotoluene	ND	ug/kg	12.		
p-Chlorotoluene	ND	ug/kg	12.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	12.		
Hexachlorobutadiene	ND	ug/kg	12.		
Isopropylbenzene	ND	ug/kg	2.5		
p-Isopropyltoluene	ND	ug/kg	2.5		
Naphthalene	ND	ug/kg	12.		
n-Propylbenzene	ND	ug/kg	2.5		
1,2,3-Trichlorobenzene	ND	ug/kg	12.		
1,2,4-Trichlorobenzene	ND	ug/kg	12.		
l,3,5-Trimethylbenzene	ND	ug/kg	12.		
l,2,4-Trimethylbenzene	ND	ug/kg	12.		
crans-1,4-Dichloro-2-butene	ND	ug/kg	12.		
Ethyl ether	ND	ug/kg	12.		
		~9/ ng	12.		
Surrogate(s)	Recovery		QC Cri	teria	
,2-Dichloroethane-d4	98.0	90	-		
Coluene-d8	94.0	8			
-Bromofluorobenzene	115.	8			
Dibromofluoromethane	94.0	%			
VOC's by GC/MS 8270					
cenaphthene	ND	ua /ka	100	1 8270C	0301 20:10 0302 19:40 HL
enzidine	ND	ug/kg ug/kg	180		
,2,4-Trichlorobenzene	ND		1800		
exachlorobenzene	ND	ug/kg	180		
is(2-chloroethyl)ether	ND	ug/kg	180		
-Chloronaphthalene	ND	ug/kg	180		
-Chloronaphthalene	ND	ug/kg	180		
,2-Dichlorobenzene	ND	ug/kg	210		
,3-Dichlorobenzene	ND	ug/kg	180	•	
,4-Dichlorobenzene	ND	ug/kg	180		
,3'-Dichlorobenzidine	ND	ug/kg	180		
,4-Dinitrotoluene	ND	ug/kg	1800		
,6-Dinitrotoluene	ND	ug/kg	210		
zobenzene	ND	ug/kg	180		
luoranthene	ND	ug/kg	180		
-Chlorophenyl phenyl ether	ND	ug/kg	180		
-Bromophenyl phenyl ether	ND	ug/kg	180		
s(2-chloroisopropyl)ether	ND	ug/kg	180		
s(2-chloroethoxy)methane		ug/kg	180		
exachlorobutadiene	ND	ug/kg	180		
exachlorocyclopentadiene	ND	ug/kg	350		
xachloroethane	ND	ug/kg	350		
ophorone	ND	ug/kg	180		
phthalene	ND	ug/kg	180		
	ND	ug/kg	180		
trobenzene	ND	ug/kg	180		

Laboratory Sample Number: L0502002-04

MW/CB-12 (18.5'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					0301 20:10 0302 19:40 HL
SVOC's by GC/MS 8270 continue	d		100	1 8270C	0301 20:10 0302 32:40 112
n-Nitrosodi-n-propylamine	ND	ug/kg	180		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	350		
Butyl benzyl phthalate	ND	ug/kg	180		
Di-n-butylphthalate	ND	ug/kg	180		
Di-n-octylphthalate	ND	ug/kg	180		
Diethyl phthalate	ND	ug/kg	180		
Dimethyl phthalate	ND	ug/kg	180		
Benzo(a) anthracene	ND	ug/kg	180		
Benzo(a) pyrene	ND	ug/kg	180		
Benzo(b) fluoranthene	ND	ug/kg	180		
Benzo(k) fluoranthene	ND	ug/kg	180		
Chrysene	ND	ug/kg	180		
Acenaphthylene	ND	ug/kg	180		
Anthracene	ND	ug/kg	180		
Benzo(ghi)perylene	ND	ug/kg	180		
Fluorene	ND	ug/kg	180		
Phenanthrene	ND	ug/kg	180		
Dibenzo(a, h) anthracene	ND	ug/kg	180		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180		
	ND	ug/kg	180		
Pyrene	ND	ug/kg	180		
Benzo(e)pyrene	ND	ug/kg	180		
Biphenyl	ND	ug/kg	180		
Perylene	ND	ug/kg	350		
Aniline	ND	ug/kg	180		
4-Chloroaniline	ND	uq/kg	180		
1-Methylnaphthalene	ND	ug/kg	180		
2-Nitroaniline	ND	ug/kg	180		
3-Nitroaniline	ND	ug/kg	250		
4-Nitroaniline	ND	ug/kg	180		
Dibenzofuran	ND	ug/kg	1800		
a,a-Dimethylphenethylamine	ND	ug/kg	350		
Hexachloropropene	ND	ug/kg	350		
Nitrosodi-n-butylamine	ND	ug/kg	280		
2-Methylnaphthalene	ND	ug/kg	710		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	710		
Pentachlorobenzene	ND	ug/kg	710		
a-Naphthylamine	ND	ug/kg	710		
b-Naphthylamine	ND	ug/kg	350		
Phenacetin		ug/kg	710		
Dimethoate	ND ND	ug/kg	350		
4-Aminobiphenyl		ug/kg	350		
Pentachloronitrobenzene	ND	ug/kg	350		
Isodrin	ND	ug/kg	350		
p-Dimethylaminoazobenzene	ND	ug/kg ug/kg	710		
Chlorobenzilate	ND	-	710		
3-Methylcholanthrene	ND	ug/kg	530		
Ethyl Methanesulfonate	ND	ug/kg	710	~	
Acetophenone	ND	ug/kg	710		
Nitrosodipiperidine	ND	ug/kg	710		



Laboratory Sample Number: L0502002-04

MW/CB-12 (18.5'-20')

PARAMETER	RESULI	UNITS	RDL	REF METH	OD DATE ID
					DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	٠, ما				
7,12-Dimethylbenz(a)anthrace	ea VD			1 8270C	0301 20:10 0302 19:40 HL
n-Nitrosodimethylamine		ug/kg	350		13,44 HF
2,4,6-Trichlorophenol	ND	ug/kg	1800		
p-Chloro-m-cresol	ND	ug/kg	180		
2-Chlorophenol	ND	ug/kg	180		
2,4-Dichlorophenol	ND	ug/kg	210		
2,4-Dimethylphenol	ND	ug/kg	350		
2-Nitrophenol	ND	ug/kg	350		
4-Nitrophenol	ND	ug/kg	710		
2,4-Dinitrophenol	ND	ug/kg	350		
4,6-Dinitro-o-cresol	ND	ug/kg	710		
Pentachlorophenol	ND	ug/kg	710		
Phenol	ND	ug/kg	710		
2-Methylphenol	ND	ug/kg	250		
3-Methylphenol/4-Methylphenol	ND	ug/kg	210		
2,4,5-Trichlorophenol	ND	ug/kg	210		
2,6-Dichlorophenol	ND	ug/kg	180		
Benzoic Acid	ND	ug/kg	350		
Benzyl Alcohol	ND	ug/kg	1800		
Carbazole	ND	ug/kg	350		
Pyridine	ND	ug/kg	180		
Picoline	ND	ug/kg	1800		
ronamide	ND	ug/kg	710		
ethyl methanesulfonate	ND ND	ug/kg	710		
		ug/kg	710		
urrogate(s)	Recovery		QC Crit		
-Fluorophenol	64.0	읭	25-120	eria	
henol-d6	81.0	90	10-120		
itrobenzene-d5	82.0	8	23~120		
-Fluorobiphenyl	73.0	8	30-120		
,4,6-Tribromophenol	64.0	8	19-120		
-Terphenyl-d14	119.	00	18-120	-	
AH by GC/MS SIM 8270M					
cenaphthene	ND	ug/kg	7 1	1 8270C-M	0301 20:10 0302 22:20 RL
-Chloronaphthalene	ND	ug/kg ug/kg	7.1		
uoranthene	ND	ug/kg ug/kg	7.1		
exachlorobutadiene	ND	ug/kg ug/kg	7.1		
phthalene	ND		18.		
nzo(a)anthracene	ND	ug/kg ug/kg	7.1		
nzo(a)pyrene	ND	ug/kg ug/kg	7.1		
nzo(b)fluoranthene	ND	ug/kg ug/kg	7.1		
nzo(k)fluoranthene	ND	ug/kg ug/kg	7.1		
rysene	ND	ug/kg ug/kg	7.1		
enaphthylene	ND	ug/kg ug/kg	7.1		
thracene	ND		7.1		
nzo(ghi)perylene	ND	ug/kg	7.1		
uorene	ND	ug/kg ug/kg	7.1		
enanthrono	ND	ug/kg ug/kg	7.1 7.1		

Laboratory Sample Number: L0502002-04

MW/CB-12 (18.5'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
				1 8270C-M	0301 20:10 0302 22:20 RL
PAH by GC/MS SIM 8270M conti	nued .	•		1 82700-11	
Dibenzo(a,h)anthracene	ИD	ug/kg	7.1		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.1		
Pyrene	ND	ug/kg	$7.1 \\ 7.1$		
1-Methylnaphthalene	ND	ug/kg			
2-Methylnaphthalene	ND	ug/kg	7.1 28.		
Pentachlorophenol	ND	ug/kg	28.		
Hexachlorobenzene	ND	ug/kg			
Perylene	ND	ug/kg	7.1		
Biphenyl	ND	ug/kg	7.1		
2,6-Dimethylnaphthalene	ND	ug/kg	7.1		
1-Methylphenanthrene	ND	ug/kg	7.1		
Benzo(e) Pyrene	ND	ug/kg	7.1		
Hexachloroethane	ND	ug/kg	28.		
	Recovery		QC C	riteria	
Surrogate(s)	62.0	%	25-1		
2-Fluorophenol		96	10-1		
Phenol-d6	83.0	9	23-1		
Nitrobenzene-d5	70.0	%	30-1		
2-Fluorobiphenyl	64.0	70 0/0	19-1		
2,4,6-Tribromophenol	75.0	%	18-1		
4-Terphenyl-d14	90.0	6	10 -		40 70 DW
Polychlorinated Biphenyls				1 8082	0301 16:00 0302 18:39 BW
Polychlorinated Biphenyia	ND	ug/kg	35.		
Aroclor 1221	ND	ug/kg	35.		
Aroclor 1232	ND	ug/kg	35.		
Aroclor 1242/1016	ND	ug/kg	35.		
Aroclor 1248	ND	ug/kg	35.	5	
Aroclor 1254	ND	ug/kg	35.	5	
Aroclor 1260	112				
Surrogate(s)	Recovery			Criteria	
2,4,5,6-Tetrachloro-m-xyle	ne 76.0	96		150	
Decachlorobiphenyl	98.0	&	30-	150	
				1 8081	0301 14:30 0302 18:28 J
Organochlorine Pesticides	ND	ug/kg	3.5	55	
Delta-BHC	ND	ug/kg	3.5	55	
Lindane	ND	ug/kg	3.5	55	
Alpha-BHC	ND	ug/kg	3.	55	
Beta-BHC	ND ND	ug/kg	3.	55	
Heptachlor	ND	ug/kg	3.		
Aldrin		ug/kg	3.		
Heptachlor epoxide	ND	ug/kg	3.		
Endrin	ND	ug/kg	3.		
Endrin aldehyde	ND	ug/kg ug/kg		55	
Endrin ketone	ND	ug/kg		55	
Dieldrin	ND	ug/kg ug/kg		55	
4,4'-DDE	ND	ug/kg ug/kg		55	
4,4'-DDD	ND			55	
4,4'-DDT	ND	ug/kg	٥.		



Laboratory Sample Number: L0502002-04

MW/CB-12 (18.5'-20')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA PREP	TE ANAL	ID
Organochlorine Pesticides co Endosulfan I Endosulfan II Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane	ntinued ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	3.55 3.55 3.55 3.55 14.2 14.2 3.55 3.55	1	8081	0301 14:30	0302 18;2	8. јв
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	Recovery 64.0 73.0	90	QC Crit 30-150 30-150	eria				

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-05

MW/CB-13 (2'-4')

Sample Matrix:

SOIL

Date Collected: 25-FEB-2005 07:30

Date Received: 28-FEB-2005 Date Reported : 07-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Vial

	RESULT	UNITS	RDL	REF METHOD	DATE ID		
ARAMETER	KE3011	01.22 2			PREP ANAL		
olids, Total	90.	98	0.10	30 2540G	0304 10:00 ST		
				1 3051			
otal Metals							
m hal	2000	mg/kg	4.4	1 6010B	0303 20:00 0304 10:37 RW		
Aluminum, Total	ND	mq/kq	2.2	1 6010B	0303 20:00 0304 10:37 RW		
Antimony, Total	3.4	mg/kg	0.44	1 6010B	0303 20:00 0304 10:37 RW		
Arsenic, Total	39.	mg/kg	0.44	1 6010B	0303 20:00 0304 10:37 RW		
Barium, Total	ND	mg/kg	0.1111	1 6010B	0303 20:00 0304 10:37 RW		
Beryllium, Total	0.1222	mg/kg	0.1111	1 6010B	0303 20:00 0304 10:37 RW		
Cadmium, Total	>10000	mg/kg	4.4	1 6010B	0303 20:00 0304 10:37 RW		
Calcium, Total	48000	mg/kg	22.	1 6010B	0303 20:00 0304 13:18 RW		
Calcium, Total	3.7	mg/kg	0.44	1 6010B	0303 20:00 0304 10:37 RW		
Chromium, Total	2.4	mg/kg	0.89	1 6010B	0303 20:00 0304 10:37 RW		
Cobalt, Total		mg/kg	0.44	1 6010B	0303 20:00 0304 10:37 RW		
Copper, Total	13.	mg/kg	2.2	1 6010B	0303 20:00 0304 10:37 RW		
Iron, Total	3600	mg/kg	2.2	1 6010B	0303 20:00 0304 10:37 RW		
Lead, Total	170	mg/kg mg/kg	4.4	1 6010B	0303 20:00 0304 10:37 RW		
Magnesium, Total	2300		0.44	1 6010B	0303 20:00 0304 10:37 RW		
Manganese, Total	210	mg/kg	0.09	1 7471A	0302 18:20 0303 10:35 DM		
Mercury, Total	0.28	mg/kg	0.44	1 6010B	0303 20:00 0304 10:37 RW		
Nickel, Total	4.9	mg/kg	110	1 6010B	0303 20:00 0304 10:37 RW		
Potassium, Total	650	mg/kg	0.222	1 6010B	0303 20:00 0304 10:37 RW		
Selenium, Total	ND	mg/kg	0.222	1 6010B	0303 20:00 0304 10:37 RW		
Silver, Total	ND	mg/kg		1 6010B	0303 20:00 0304 10:37 RW		
Sodium, Total	760	mg/kg	89.		0303 20:00 0304 10:37 RM		
Thallium, Total	ND	mg/kg	0.44		0303 20:00 0304 10:37 RV		
Vanadium, Total	6.2	mg/kg	0.44	-	0303 20:00 0304 10:37 RV		
Zinc, Total	130	mg/kg	2.2	1 6010B	0303 20.00 04-1 2		
				1 8260B	0303 15:01 B		
Volatile Organics by GC/M	5 020U	ug/kg	28.				
Methylene chloride	ND	ug/kg	4.2				
1,1-Dichloroethane	ND	ug/kg	4.2				
Chloroform	ND	ug/kg ug/kg	2.8				
Carbon tetrachloride	ND		9.9				
1,2-Dichloropropane	ND	ug/kg	2.8				
Dibromochloromethane	ND	ug/kg	4.2				
1,1,2-Trichloroethane	ND	ug/kg					
Tetrachloroethene	ND	ug/kg	2.8				
Chlorobenzene	ND	ug/kg	2.8				



Laboratory Sample Number: L0502002-05

MW/CB-13 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II		
			100	KEF MEIHOD	DA PREP	ANAL	ID
Volatile Organics by GC/MS	9360 13		······································				
Trichlorofluoromethane				1 8260B		0303 15:0	1 " AT
1,2-Dichloroethane	ND	ug/kg	14.				
1,1,1-Trichloroethane	ND	ug/kg	2.8				
Bromodichloromethane	ND	ug/kg	2.8				
trans-1,3-Dichloropropene	ND	ug/kg	2.8				
cis-1,3-Dichloropropene	ND	ug/kg	2.8				
1,1-Dichloropropene	ND	ug/kg	2.8				
Bromoform	ND	ug/kg	14.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	11.				
Benzene	ND	ug/kg	2.8				
roluene	ND	ug/kg	2.8				
Ethylbenzene	ND	ug/kg	4.2				
Chloromethane	ND	ug/kg	2.8				
Bromomethane	ND	ug/kg	14.				
/inyl chloride	ND	ug/kg	5.6				
Chloroethane	ND	ug/kg	5.6				
,1-Dichloroethene	ND	ug/kg	5.6				
grans-1,2-Dichloroethene	ND	ug/kg	2.8				
richloroethene	ND	ug/kg	4.2				
,,2-Dichlorobenzene	ND	ug/kg	2.8				
,3-Dichlorobenzene	ND	ug/kg	14.				
,4-Dichlorobenzene	ND	ug/kg	14.				
ethyl tert butyl ether	ND	ug/kg	14.				
/m-Xylene	ND	ug/kg	5.6				
-Xylene	ND	ug/kg	2.8				
is-1,2-Dichloroethene	ND	ug/kg	2.8				
ibromomethane	ND	ug/kg	2.8				
,4-Dichlorobutane	ND	ug/kg	28.				
odomethane	ND	ug/kg	28.				
,2,3-Trichloropropane	ND	ug/kg	28.				
tyrene	ND	ug/kg	28.				
ichlorodifluoromethane	ND	ug/kg	2.8				
Cetone	ND	ug/kg	28.				
arbon disulfide	ND	ug/kg	28.				
-Butanone	ND	ug/kg	28.				
nyl acetate	ND	ug/kg	28.				
Methyl-2-pentanone	ND	ug/kg	28.				
Hexanone	ND	ug/kg	28.				
hyl methacrylate	ND	ug/kg	28.				
rolein	ND	ug/kg	28.				
rylonitrile	ND	ug/kg	70.				
omochloromethane	ND	ug/kg	28.				
trahydrofuran	ND	ug/kg	14.				
2-Dichloropropane	ND	ug/kg	56.				
2-Dibromoethane	ND	ug/kg	14.				
3-Dichloropropane	ND	ug/kg	11.				
1,1,2-Tetrachloroethane	ND	ug/kg	14.				
omobenzene	ND	ug/kg	2.8				
Butylbenzene	ND	ug/kg	14.				
age Arpenzene	ND	ug/kg	2.8				

Laboratory Sample Number: L0502002-05 MW/CB-13 (2'-4')

Volatile Organics by GC/MS sec-Butylbenzene tert-Butylbenzene o-Chlorotoluene p-Chlorotoluene 1,2-Dibromo-3-chloropropane Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4 Toluene-d8	ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	2.8 14. 14.	1 (82608)	0303 15;01 BT
sec-Butylbenzene tert-Butylbenzene o-Chlorotoluene p-Chlorotoluene 1,2-Dibromo-3-chloropropane Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg	14.	1 82608	,0002
sec-Butylbenzene tert-Butylbenzene o-Chlorotoluene p-Chlorotoluene 1,2-Dibromo-3-chloropropane Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg	14.		
tert-Butylbenzene o-Chlorotoluene p-Chlorotoluene 1,2-Dibromo-3-chloropropane Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND ND e ND ND ND	ug/kg ug/kg			
o-Chlorotoluene p-Chlorotoluene 1,2-Dibromo-3-chloropropane Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND ND ND ND	ug/kg	14.		
p-Chlorotoluene 1,2-Dibromo-3-chloropropane Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	e ND ND ND		14.		
1,2-Dibromo-3-chloropropane Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg			
Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND		14.		
Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4		ug/kg	14. 2.8		
p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	N3 FD	ug/kg			
Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg	2.8		
n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg	14.		
1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg	2.8		
1,2,4-Trichlorobenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg	14.		
1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg	14.		
1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg	14.		
trans-1,4-Dichloro-2-buten Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ND	ug/kg	14.		
Ethyl ether Surrogate(s) 1,2-Dichloroethane-d4	ne ND	ug/kg	14.		
1,2-Dichloroethane-d4	ND	ug/kg	14.		
1,2-Dichloroethane-d4	Recovery	?	QC Cı	riteria	
	98.0	ું			
	94.0	8			
4-Bromofluorobenzene	105.	8			
Dibromofluoromethane	85.0	ઇ			
SVOC's by GC/MS 8270				1 8270¢	0301 20:10 0302 20:05 HI
Acenaphthene	ND	ug/kg	180		
Benzidine	ND	ug/kg	1800		
1,2,4-Trichlorobenzene	ND	ug/kg	180		
Hexachlorobenzene	ND	ug/kg	180		
Bis (2-chloroethyl) ether	ND	ug/kg	180		
1-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
1,2-Dichlorobenzene	ND	ug/kg	180		
1,3-Dichlorobenzene	ND	ug/kg	180		
1,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800)	
2,4-Dinitrotoluene	ND	ug/kg	220		
2,4-Dinitrotoluene	ND	ug/kg	180		
	ND	ug/kg	180		
Azobenzene	ND	ug/kg	180		
Fluoranthene		ug/kg	180		
4-Chlorophenyl phenyl ethe		ug/kg	180		
4-Bromophenyl phenyl ether Bis(2-chloroisopropyl)eth	her ND	ug/kg	180		
Bis (2-chlorosthoxy) methan		ug/kg	180		
Bis(2-cnioroechoxy/mechai	ND	ug/kg	370		
Hexachlorobutadiene		ug/kg	370		
Hexachlorocyclopentadien					
Hexachloroethane	-	ug/kg	180		
Isophorone	ND	ug/kg	180 180		
Naphthalene Nitrobenzene	-				



Laboratory Sample Number: L0502002-05

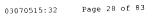
MW/CB-13 (2'-4')

PARAMETER	RESULT	UNITS	RDL	DEE	Manuar	
			101	NE F	METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 contin						
NDPA/DPA				1	8270C	0301 20:10 0302 20:05 HL
n-Nitrosodi-n-propylamine	ND	ug/kg	560			20:10 0302 20:05 HL
Bis (2-ethylhexyl) phthalate	ND	ug/kg	180			
Butyl benzyl phthalate	ND	ug/kg	370			
Di-n-butylphthalate	ND	ug/kg	180			
Di-n-octylphthalate	ND	ug/kg	180			
Diethyl phthalate	ND	ug/kg	180			
Dimethyl phthalate	ND	ug/kg	180			
Benzo(a) anthracene	ND	ug/kg	180			
Benzo(a) pyrene	ND	ug/kg	180			
Benzo(b) fluoranthene	ND	ug/kg	180			
Benzo(k) fluoranthene	ND	ug/kg	180			
Chrysene	ND	ug/kg	180			
Acenaphthylene	ND	ug/kg	180			
Anthracene	ND	ug/kg	180			
Benzo(ghi)perylene	ND	ug/kg	180			
Fluorene	ND	ug/kg	180			
Phenanthrene	ND	ug/kg	180			
Dibenzo(a,h)anthracene	ND	ug/kg	180			
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180			
Pyrene	ND	ug/kg	180			
Benzo(e)pyrene	ND	ug/kg	180			
Biphenyl	ND	ug/kg	180			
Perylene	ND	ug/kg	180			
miline	ND	ug/kg	180			
-Chloroaniline	ND	ug/kg	370			
-Methylnaphthalene	ND	ug/kg	180			
-Nitroaniline	ND	ug/kg	180			
-Nitroaniline	ND	ug/kg	180			
-Nitroaniline	ND	ug/kg	180			
ibenzofuran	ND	ug/kg	260			
,a-Dimethylphenethylamine	ND	ug/kg	180	_		
exachloropropene	ИD	ug/kg	1800			
itrosodi-n-butylamine	ND	ug/kg	370			
-Methylnaphthalene	ND	ug/kg	370			
2 4 5-Motor-13	ND	ug/kg	300			
2,4,5-Tetrachlorobenzene entachlorobenzene	ND	ug/kg	740			•
-Naphthylamine	ND	ug/kg	740			
Naphthylamine	ND	ug/kg	740			
enacetin	ND	ug/kg	740			
methoate	ND	ug/kg	370			
Aminobiphenyl	ND	ug/kg	740			
ntachloronitrobenzene	ND	ug/kg	370			
odrin	ND	ug/kg	370			
	ND	ug/kg	370			
Dimethylaminoazobenzene	ND	ug/kg	370			
lorobenzilate	ND	ug/kg	740			
Methylcholanthrene	ND	ug/kg	740			
nyl Methanesulfonate etophenone	ND	ug/kg	560			
scobiteuoue	ND	ug/kg	740			

Laboratory Sample Number: L0502002-05

MW/CB-13 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DAT PREP	E ANAL	ID
					8270C	0301 20:10	0302 20:0	15 HL
SVOC's by GC/MS 8270 continued			740	1	32,00			
Nitrosodipiperidine	ИD	ug/kg	370					
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	1800					
n-Nitrosodimethylamine	ND	ug/kg	1800					
2,4,6-Trichlorophenol	ND	ug/kg	180					
p-Chloro-m-cresol	ИD	ug/kg	220					
2-Chlorophenol	ND	ug/kg	370					
2,4-Dichlorophenol	ND	ug/kg	370					
2,4-Dimethylphenol	ND	ug/kg						
2-Nitrophenol	ND	ug/kg	740					
4-Nitrophenol	ND	ug/kg	370					
2,4-Dinitrophenol	ND	ug/kg	740					
4,6-Dinitro-o-cresol	ND	ug/kg	740					
Pentachlorophenol	ND	ug/kg	740					
Phenol	ND	ug/kg	260					
2-Methylphenol	ND	ug/kg	220					
3-Methylphenol/4-Methylphenol	ND	ug/kg	220					
2,4,5-Trichlorophenol	ND	ug/kg	180					
2,4,5-filenforophenol	ND	ug/kg	370					
	ND	ug/kg	1800					
Benzoic Acid	ND	ug/kg	370					
Benzyl Alcohol	ND	ug/kg	180					
Carbazole	ND	ug/kg	1800					
Pyridine	ND	ug/kg	740					
2-Picoline	ND	ug/kg	740					
Pronamide	ND	ug/kg	740					
Methyl methanesulfonate	ND	49,9						
- 1-1-1	Recovery		QC Cr	iter	ia			
Surrogate(s)	69.0	%	25-12	0				
2-Fluorophenol	108.	96	10-12	0				
Phenol-d6	113.	8	23-12	0				
Nitrobenzene-d5	94.0	%	30-12	0	_			
2-Fluorobiphenyl	62.0	%	19-12	0				
2,4,6-Tribromophenol	110.	%	18-12					
4-Terphenyl-d14	TTO.	V						
PAH by GC/MS SIM 8270M					1 8270C-M	0301 20:1	.0 0302 2	3:05 R
	ND	ug/kg	7.4					
Acenaphthene 2-Chloronaphthalene	ND	ug/kg	7.4					
	57.	ug/kg	7.4					
Fluoranthene	ND	ug/kg	18.					
Hexachlorobutadiene	ND	ug/kg	7.4					
Naphthalene	25.	ug/kg	7.4					
Benzo(a) anthracene	19.	ug/kg	7.4					
Benzo(a)pyrene	15.	ug/kg	7.4					
Benzo(b)fluoranthene	24.	ug/kg	7.4					
Benzo(k) fluoranthene	28.	ug/kg	7.4					
Chrysene		ug/kg ug/kg	7.4					
Acenaphthylene	ND	ug/kg ug/kg	7.4					
Anthracene	ND		7.4					
Benzo(ghi)perylene	14.	ug/kg	7.4					
Fluorene	ND	ug/kg	, . 4					



Laboratory Sample Number: L0502002-05

MW/CB-13 (2'-4')

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	DATE ID
					DATE ID PREP ANAL
PAH by GC/MS SIM 8270M cont.	inuad	· · · · · · · · · · · · · · · · · · ·			
Phenanthrene	36.	(1		1 8270C-M	0301 20:10 0302 23:05 RL
Dibenzo(a,h)anthracene		ug/kg	7.4		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.4		
Pyrene	12.	ug/kg	7.4		
1-Methylnaphthalene	51.	ug/kg	7.4		
2-Methylnaphthalene	ND	ug/kg	7.4		
Pentachlorophenol	ND	ug/kg	7.4		
Hexachlorobenzene	ND	ug/kg	30.		
Perylene	ND	ug/kg	30.		
Biphenyl	ND	ug/kg	7.4		
	ND	ug/kg	7.4		
2,6-Dimethylnaphthalene	ND	ug/kg	7.4		
1-Methylphenanthrene	ND	ug/kg	7.4		
Benzo(e) Pyrene	18.	ug/kg	7.4		
Hexachloroethane	ND	ug/kg	30.		
Surrogate(s)	Recovery		QC Crit	reria	
2-Fluorophenol	61.0	%	25-120	cera	
Phenol-d6	114.	8	10-120		
Nitrobenzene-d5	88.0	96	23-120		
2-Fluorobiphenyl	87.0	용	30-120		
2,4,6-Tribromophenol	77.0	96	19-120		
-Terphenyl-d14	90.0	ે	18-120		
olychlorinated Biphenyls				2.2.	
roclor 1221	ND	ug/kg	37.0	1 8082	0301 16:00 0302 19:07 BW
roclor 1232	ND	ug/kg	37.0		
roclor 1242/1016	ND	ug/kg	37.0		
roclor 1248	ND	ug/kg	37.0		
roclor 1254	ND	ug/kg			
roclor 1260	ND	ug/kg	37.0 37.0		
urrogate(s)	Recovery		00.0		
,4,5,6-Tetrachloro-m-xylene	73.0	Q.	QC Crite	eria	
ecachlorobiphenyl	87.0	o S	30-150 30-150		
ganochlorine Pesticides					
4'-DDD	ND	ug/kg	3.70	1 8081	0301 14:30 0302 18:56 JB
ndosulfan II	ND	ug/kg	3.70		
ganochlorine Pesticides					
lta-BHC	ND	uq/ka	3.70	1 8081	0301 14:30 0302 18:56 JB
ndane	ND	ug/kg ug/kg	3.70		
pha-BHC	ND	ug/kg ug/kg			
ta-BHC	ND	ug/kg ug/kg	3.70		
ptachlor	ND	- "	3.70		
drin	ND	ug/kg	3.70		
ptachlor epoxide	ND	ug/kg	3.70		
drin		ug/kg	3.70		
drin aldehyde	ND	ug/kg	3.70		
	ND	ug/kg	3.70		

Laboratory Sample Number: L0502002-05

MW/CB-13 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA PREP	TE I ANAL	ΣD
Organochlorine Pesticides con Endrin ketone Dieldrin 4,4'-DDE 4,4'-DDT Endosulfan I Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane trans-Chlordane	tinued ND ND ND 7.63 ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	3.70 3.70 3.70 3.70 3.70 3.70 3.70 14.8 14.8 3.70 3.70	1. 8081	0301, 14:30	0302 19:56	JB.
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	Recovery 63.0 66.0	00	QC Cr: 30-15 30-15				

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-06

MW/CB-13 (6'-8')

Date Collected: 25-FEB-2005 07:50

Sample Matrix:

SOIL

Date Received : 28-FEB-2005 Date Reported : 07-MAR-2005

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	me	
					PREP	ANAL	ID
Solids, Total	88.	98	0.10	30 2540G			
Total Metals				30 2340G		0302 20:21	7 PD
				1 3051			
Aluminum, Total	1900	mg/kg	4.5				
Antimony, Total	ND	mg/kg	2.3	1 6010B	0303 20:00		
Arsenic, Total	2.0	mg/kg mg/kg		1 6010B	0303 20:00		
Barium, Total	25.		0.45	1 6010B	0303 20:00	0304 10:39	RW
Beryllium, Total	ND	mg/kg	0.45	1 6010B	0303 20:00	0304 10:39	RW
Cadmium, Total	ND	mg/kg	0.1131	1 6010B	0303 20:00	0304 10:39	RW
Calcium, Total	>10000	mg/kg	0.1131	1 6010B	0303 20:00	0304 10:39	RW
Calcium, Total		mg/kg	4.5	1 6010B	0303 20:00	0304 10:39	RW
Chromium, Total	16000	mg/kg	23.	1 6010B	0303 20:00		
Cobalt, Total	4.4	mg/kg	0.45	1 6010B	0303 20:00		
Copper, Total	2.2	mg/kg	0.90	1 6010B	0303 20:00 (
Iron, Total	10.	mg/kg	0.45	1 6010B	0303 20:00 (
Lead, Total	4500	mg/kg	2.3	1 6010B	0303 20:00 (
Magnesium, Total	11.	mg/kg	2.3	1 6010B	0303 20:00 (
	1900	mg/kg	4.5	1 6010B	0303 20:00 (
Manganese, Total	240	mg/kg	0.45	1 6010B	0303 20:00 0		
Mercury, Total	ND	mg/kg	0.09	1 7471A	0302 18:20 0		
Nickel, Total	4.5	mg/kg	0.45	1 - 6010B			
Potassium, Total	520	mg/kg	110	1 6010B	0303 20:00 0		
Selenium, Total	ND	mg/kg	0.226	1 6010B	0303 20:00 0		
Silver, Total	ND	mg/kg	0.45	1 6010B	0303 20:00 0		
Sodium, Total	1500	mg/kg	90.	1 6010B	0303 20:00 0		
hallium, Total	ND	mg/kg	0.45	1 6010B	0303 20:00 0		
anadium, Total	7.4	mg/kg	0.45		0303 20:00 0		
inc, Total	18.	mg/kg	2.3	1 6010B 1 6010B	0303 20:00 0 0303 20:00 0		
olatilo Opennia to po pu					0303 20:00 0	304 10:39	RW
olatile Organics by GC/MS ethylene chloride				1 8260B	0.	303 15:39 1	מיים
,l-Dichloroethane	ND	ug/kg	27.		0.		01
,1-Dichioroethane hloroform	ND	ug/kg	4.1				
	ND	ug/kg	4.1				
arbon tetrachloride	ND	ug/kg	2.7				
,2-Dichloropropane	ND	ug/kg	9.6				
ibromochloromethane	ND	ug/kg	2.7				
,1,2-Trichloroethane	ND	ug/kg	4.1				
etrachloroethene	ND	ug/kg	2.7				
nlorobenzene	ND	ug/kg	2.7				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502002-06

MW/CB-13 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					0303 15:39 BT
Volatile Organics by GC/MS 8	260 continu	ied	14.	1 82608	. 0303 15:39 51
Trichlorofluoromethane	ND	ug/ kg	2.7		
1,2-Dichloroethane	ND	ug/kg			
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane	ND	ug/kg	2.7 2.7		
trans-1,3-Dichloropropene	ND	ug/kg			
cis-1,3-Dichloropropene	ND	ug/kg	2.7		
1,1-Dichloropropene	ND	ug/kg	14.		
Bromoform	ND	ug/kg	11.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7		
Benzene	ИD	ug/kg	2.7		
Toluene	ND	ug/kg	4.1		
Ethylbenzene	ND	ug/kg	2.7		
Chloromethane	ND	ug/kg	14.		
Bromomethane	ND	ug/kg	5.5		
Vinyl chloride	ND	ug/kg	5.5		
Chloroethane	ND	ug/kg	5.5		
1,1-Dichloroethene	ND	ug/kg	2.7		
trans-1,2-Dichloroethene	ND	ug/kg	4.1		
Trichloroethene	ND	ug/kg	2.7		
1,2-Dichlorobenzene	ND	ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg	14.		
1,4-Dichlorobenzene	ND	ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg	5.5		
	ND	ug/kg	2.7		
p/m-Xylene	ND	ug/kg	2.7		
o-Xylene cis-1,2-Dichloroethene	ND	ug/kg	2.7		
	ND	ug/kg	27.		
Dibromomethane	ND	ug/kg	27.		
1,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
1,2,3-Trichloropropane	ND	uq/kg	2.7	•	
Styrene	ND	ug/kg	27.		
Dichlorodifluoromethane	56.	ug/kg	27.		
Acetone	ND.	ug/kg	27.		
Carbon disulfide	ND	ug/kg	27.		
2-Butanone	ND	ug/kg	27.		
Vinyl acetate	ND	ug/kg	27.		
4-Methyl-2-pentanone	ND	ug/kg	27.		
2-Hexanone	ND	ug/kg	27.		
Ethyl methacrylate		ug/kg	69.		
Acrolein	ND	ug/kg	27.		
Acrylonitrile	ND	ug/kg ug/kg	14.		
Bromochloromethane	ND	ug/kg	55.		
Tetrahydrofuran	ND	ug/kg ug/kg	14.		
2,2-Dichloropropane	ND		11.		
1,2-Dibromoethane	ND	ug/kg	14.		
1.3-Dichloropropane	ND	ug/kg	2.7		
1,1,1,2-Tetrachloroethane	ND	ug/kg	14.		
Bromobenzene	ND	ug/kg			
n-Butylbenzene	ND	ug/kg	2.7		



Laboratory Sample Number: L0502002-06

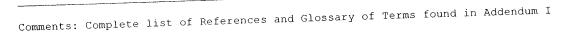
MW/CB-13 (6'-8')

PARAMETER	RESUL	UNITS				
		- 01113	RDL	REF METHOD	DATE PREP A	ID
Volatile Organia					TIGE A	NAL
Volatile Organics by GC/MS sec-Butylbenzene	8260 conti	nued		1 8260B		
tert-Butylbenzene	ND	ug/kg	2.7	1 95008	0303	15:39 BT
o-Chlorotoluene	ND	ug/kg	14.			
p-Chlorotoluene	ND	ug/kg	14.			
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.			
Hexachlorobutadiene	ND	ug/kg	14.			
Isopropylbenzene	ND	ug/kg	14.			
p-Isopropyltoluene	ND	ug/kg	2.7			
Naphthalene	ND	ug/kg	2.7			
n-Propylbenzene	ИD	ug/kg	14.			
1,2,3-Trichlorobenzene	ND	ug/kg	2.7			
1,2,4-Trichlorobenzene	ND	ug/kg	14.			
.,3,5-Trimethylbenzene	ND	ug/kg	14.			
.,2,4-Trimethylbenzene	ND	ug/kg	14.			
rans-1,4-Dichloro-2-butene	ND	ug/kg	14.			
Sthyl ether	ND	ug/kg	14.			
	ND	ug/kg	14.			
urrogate(s)						
,2-Dichloroethane-d4	Recovery		QC Cri	teria		
oluene-d8	101.	96				
-Bromofluorobenzene	97.0	ે				
ibromofluoromethane	107.	%				
and a successful and	91.0	8				
OC's by GC/MS 8270						
cenaphthene	MD			1 8270C	0301 20:10 0302 20	
enzidine	ND	ug/kg	190		0001 20:10 0302 20):30 HT
2,4-Trichlorobenzene	ND	ug/kg	1900			
xachlorobenzene	ND ND	ug/kg	190			
s(2-chloroethvl)ether	ND	ug/kg	190			
Chloronaphthalene	ND	ug/kg	190			
Chloronaphthalene	ND	ug/kg	190			
2-Dichlorobenzene	ND	ug/kg	230	•		
3-Dichlorobenzene	ND	ug/kg	190			
4-Dichlorobenzene	ND	ug/kg	190			
3'-Dichlorobenzidine	ND ND	ug/kg	190			
1-Dinitrotoluene	ND	ug/kg	1900			
5-Dinitrotoluene	ND	ug/kg	230			
benzene	ND	ug/kg	190			
oranthene	ND	ug/kg	190			
hlorophenyl phenyl ether	ND	ug/kg	190			
romophenyl phenyl ethor	ND	ug/kg	190			
(2-chloroisopropyllathor	ND	ug/kg	190			
(2-chloroethoxy)methano	ND	ug/kg	190			
achlorobutadiene	ND	ug/kg	190			
achlorocyclopentadiene	ND	ug/kg	380			
achloroethane	ND	ug/kg	380			
phorone		ug/kg	190			
hthalene	ND ND	ug/kg	190			
robenzene	ND	ug/kg	190			
	MIN	ug/kg	190			

Laboratory Sample Number: L0502002-06

MW/CB-13 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
						34 773
SVOC's by GC/MS 8270 continu	ıed			1 8270C	0301 20:10 0302 20:	50 HL.
SVOC. S. DY GCYMP 0210 COLLEGE	ИD	ug/kg	570			
NDPA/DPA n-Nitrosodi-n-propylamine	ND	ug/kg	190			
Bis(2-ethylhexyl)phthalate	ND	ug/kg	380			
Butyl benzyl phthalate	ND	ug/kg	190			
Butyl benzyl phthalate Di-n-butylphthalate	ND	ug/kg	190			
Di-n-butyiphthalate	ND	ug/kg	190			
Di-n-octylphthalate	ND	ug/kg	190			
Diethyl phthalate	ND	ug/kg	190			
Dimethyl phthalate	ND	ug/kg	190			
Benzo(a) anthracene	ND	ug/kg	190			
Benzo(a) pyrene	ND	ug/kg	190			
Benzo(b) fluoranthene	ND	ug/kg	190			
Benzo(k) fluoranthene	ND	ug/kg	190			
Chrysene	ND	ug/kg	190			
Acenaphthylene	ND	ug/kg	190			
Anthracene	ND	ug/kg	190			
Benzo(ghi)perylene	ND	uq/kg	190			
Fluorene	ND	ug/kg	190			
Phenanthrene	ND	ug/kg	190			
Dibenzo(a,h)anthracene	ND	ug/kg	190			
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190			
Pyrene	ND	ug/kg	190			
Benzo(e)pyrene	ND	ug/kg	190			
Biphenyl	ND	ug/kg	190			
Perylene	ND	ug/kg	380			
Aniline	ND	ug/kg	190			
4-Chloroaniline	ND	ug/kg	190			
1-Methylnaphthalene	ND	ug/kg	190			
2-Nitroaniline	ND	ug/kg	190			
3-Nitroaniline	ND	ug/kg	260			
4-Nitroaniline	ND	ug/kg	190	-		
Dibenzofuran		ug/kg	1900			
a,a-Dimethylphenethylamine	ND ND	ug/kg	380			
Hexachloropropene	ND	ug/kg	380			
Nitrosodi-n-butylamine	ND	ug/kg	300			
2-Methylnaphthalene		ug/kg	760			
1,2,4,5-Tetrachlorobenzen	e ND	ug/kg	760			
Pentachlorobenzene	ND	ug/kg	760			
a-Naphthylamine	ND ND	ug/kg	760			
b-Naphthylamine		ug/kg	380			
Phenacetin	ND	ug/kg	760			
Dimethoate	ND	ug/kg	380			
4-Aminobiphenyl	ND	ug/kg	380			
Pentachloronitrobenzene	ND	ug/kg	380			
Tsodrin	ND	ug/kg	380			
p-Dimethylaminoazobenzene	e ND	ug/kg	760			
Chlorobenzilate	ND	ug/kg	760			
3-Methylcholanthrene	ND	ug/kg ug/kg	570			
Ethyl Methanesulfonate	ND	ug/kg	760			
Acetophenone	ND	ug/kg	, 50			





Laboratory Sample Number: L0502002-06

MW/CB-13 (6'-8')

PARAMETER	RESUL!	T IDITEO					
	14001	r units	RDL	REF METHOI	DA DA	TE	ID
					PREP	ANAL	
SVOC's by GC/MS 8270 continu	ed						
Niciosodipiperidine	17.5			1 8270C	0301 20:10	0204 86 66	. 1.3 .
7,12-Dimethylbenz(a)anthrasa	na ND	ug/kg	760		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0302 20:30	r HL
"" Nicrosodimethylamine	ND	ug/kg	380				
2,4,6-Trichlorophenol	ND	ug/kg	1900				
p-Chloro-m-cresol		ug/kg	190				
2-Chlorophenol	ND	ug/kg	190				
2,4-Dichlorophenol	ND	ug/kg	230				
2,4-Dimethylphenol	ND	ug/kg	380				
2-Nitrophenol	ND	ug/kg	380				
4-Nitrophenol	ND	ug/kg	760				
2,4-Dinitrophenol	ND	ug/kg	380				
4,6-Dinitro-o-cresol	ND	ug/kg	760				
Pentachlorophenol	ND	ug/kg	760				
Phenol	ND	ug/kg	760				
2-Methylphenol	ND	ug/kg	260				
3-Methylphenol/4-Methylphenol	ИD	ug/kg	230				
2,4,5-Trichlorophenol	ND	ug/kg	230				
2,6-Dichlorophenol	ND	ug/kg	190				
Senzoic Acid	ND	ug/kg	380				
Senzyl Alcohol	ND	ug/kg	1900				
arbazole	ND	ug/kg	380				
Yridine	ND	ug/kg	190				
-Picoline	ND	ug/kg					
	ND	ug/kg	1900				
ronamide	ND	ug/kg ug/kg	760				
ethyl methanesulfonate	ND	ug/kg ug/kg	760 760				
urrogate(s)	_	- 3	, 00				
-Fluorophenol	Recovery		QC Crit	eria			
nenol-d6	79.0	9	25-120				
itrobenzene-d5	99.0	ક	10-120				
Fluorobiphenyl	101.	8	23-120				
4,6-Tribromophenol	82.0	8	30-120				
Terphenyl-d14	74.0	olo	19-120				
	115.	%	18-120				
H by GC/MS SIM 8270M							
enaphthene enaphthene	ND	n ~ /1	_	1 8270C-M	0301 20:10 0304	02.42 ~~	
Unioronaphthalene	ND	ug/kg	7.6			02:4/ KL	
uoranthene	ND	ug/kg	7.6				
xachlorobutadiene	ND	ug/kg	7.6				
hthalene	ND ND	ug/kg	19.				
120(a)anthracene		ug/kg	7.6				
nzo(a)pyrene	ND	ug/kg	7.6				
120(b)fluoranthene	1D	ug/kg	7.6				
IZO(k)fluoranthene	ID	ug/kg	7.6				
'Vsene	ID	ug/kg	7.6				
naphthylene	ID	ug/kg	7.6				
hracene	D	ug/kg	7.6				
ZO(ghi) nervlene	D	ug/kg	7.6				
orene	D	ug/kg	7.6				
И	D	ug/kg	7.6				

Laboratory Sample Number: L0502002-06

MW/CB-13 (6'-8')

ARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
			<u> </u>		20.70.200 02:47 RI
AH by GC/MS SIM 8270M contin	ued	×		1 8270C-M	0301 20:10 0304 02:47 RL
Phenanthrene	17.	ug/kg	7.6		
oibenzo(a,h)anthracene	ND	ug/kg	7.6		
Indeno(1,2,3-cd) Pyrene	ND	ug/kg	7.6		
	22.	ug/kg	7.6		
Pyrene L-Methylnaphthalene	ND	ug/kg	7.6		
2-Methylnaphthalene	ND	ug/kg	7.6		
Z-Methylhaphtharene Pentachlorophenol	760	ug/kg	30.		
Hexachlorobenzene	ND	ug/kg	30.		
	ND	ug/kg	7.6		
Perylene	ND	ug/kg	7.6		
Biphenyl 2,6-Dimethylnaphthalene	ND	ug/kg	7.6		
2,6-DimethyInaphthatene	ND	ug/kg	7.6		
1-Methylphenanthrene	ND	ug/kg	7.6		
Benzo(e) Pyrene	ND	ug/kg	30.		
Hexachloroethane					
	Recovery			riteria	
Surrogate(s)	66.0	%	25-12		
2-Fluorophenol	90.0	%	10-12	20	
Phenol-d6	68.0	%	23-12		
Nitrobenzene-d5	64.0	%	30-1	20	
2-Fluorobiphenyl	90.0	%	19-1		
2,4,6-Tribromophenol	68.0	%	18-1	20	
4-Terphenyl-d14	00.0				0301 16:00 0302 19:36 BW
Polychlorinated Biphenyls				1 8082	0301 16:00 0302 13:30 5
Polycotorinated bipnony==	ND	ug/kg	37.9		
Aroclor 1221	ND	ug/kg	37.9		
Aroclor 1232	ND	ug/kg	37.9		
Aroclor 1242/1016	ND	ug/kg	37.9		
Aroclor 1248	ND	ug/kg	37.9		
Aroclor 1254	ND	ug/kg	37.9)	
Aroclor 1260				:	
	Recovery	√		Criteria	
Surrogate(s)		y B	30-3		
2,4,5,6-Tetrachloro-m-xyler	90.0	8	30-	150	
Decachlorobiphenyl	, , , ,				0301 14:30 0302 19:25 J
Organochlorine Pesticides			· .	1 8081	6201 11100 and
Delta-BHC	ND	ug/kg	3.7		
	ND	ug/kg	3.7		
Lindane	ND	ug/kg	3.7		
Alpha-BHC	ND	ug/kg	3.7		
Beta-BHC	ND	ug/kg	3.7		
Heptachlor	ND	ug/kg	3.7		
Aldrin	ND	ug/kg	3.7		
Heptachlor epoxide	ND	ug/kg	3.7		
Endrin	ND	ug/kg	3.7		
Endrin aldehyde	ND	ug/kg	3.7		
Endrin ketone	ND	ug/kg	3.		
Dieldrin	ND	ug/kg	3.		
4,4'-DDE	ND	ug/kg	3.	79	
4,4'-DDD	1417				



Laboratory Sample Number: L0502002-06

MW/CB-13 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Organochlorine Pesticides co	ntinued			1 0001	
4,4'-DDT	ND	ug/kg	3.79	1 8081	0301 14:30 0302 19:25 JB
Endosulfan I	ND	ug/kg	3.79		
Endosulfan II	ND	ug/kg	3.79		
Indosulfan sulfate	ND	ug/kg	3.79		
Methoxychlor	ND	ug/kg	3.79		
'oxaphene	ND	ug/kg	15.2		
Chlordane	ND	ug/kg	15.2		
is-Chlordane	ND	ug/kg	3.79		
rans-Chlordane	ND	ug/kg	3.79		
urrogate(s)	Recovery		00.0.		
2,4,5,6-Tetrachloro-m-xylene		Q.	QC Cri	teria	
ecachlorobiphenyl			-		
Decachlorobiphenyl	61.0 71.0	90	30-150 30-150		

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-07

MW/CB-14 (2'-4')

Date Collected: 25-FEB-2005 09:30

Date Reported : 07-MAR-2005

Date Received : 28-FEB-2005

Sample Matrix:

SOIL

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Vial

	RESULT	UNITS	RDL	REF METHOD	DATE ID
PARAMETER	KESOLI	32122			PREP ANAL
		0	0.10	30 2540G	0304 10:00 ST
Solids, Total	86.	%	0.10	30 23400	
Volatile Organics by GC/MS 8	260			1 8260B	0303 16:17 BT
Methylene chloride	ND	ug/kg	30.		
1,1-Dichloroethane	ND	ug/kg	4.5		
Chloroform	ND	ug/kg	4.5		
Carbon tetrachloride	ND	ug/kg	3.0		
1,2-Dichloropropane	ND	ug/kg	10.		
Dibromochloromethane	ND	ug/kg	3.0		
1,1,2-Trichloroethane	ND	ug/kg	4.5		
Tetrachloroethene	ND	ug/kg	3.0		
Chlorobenzene	ND	ug/kg	3.0		
Trichlorofluoromethane	ND	ug/kg	15.		
1,2-Dichloroethane	ND	ug/kg	3.0		
1,1,1-Trichloroethane	ND	ug/kg	3.0		
Bromodichloromethane	ND	ug/kg	3.0		
trans-1,3-Dichloropropene	ND	ug/kg	3.0		
cis-1,3-Dichloropropene	ND	ug/kg	3.0		
1,1-Dichloropropene	ND	ug/kg	15.		
	ND	ug/kg	12.		
Bromoform 1,1,2,2-Tetrachloroethane	ND	ug/kg	3.0	*	
	ND	ug/kg	3.0		
Benzene	ND	ug/kg	4.5		
Toluene	ND	ug/kg	3.0		
Ethylbenzene	ND	ug/kg	15.		
Chloromethane	ND	ug/kg	6.0		
Bromomethane	ND	ug/kg	6.0		
Vinyl chloride	ND	ug/kg	6.0		
Chloroethane	ND	ug/kg	3.0		
1,1-Dichloroethene	ND	ug/kg	4.5		
trans-1,2-Dichloroethene		ug/kg	3.0		
Trichloroethene	ND	ug/kg ug/kg	15.		
1,2-Dichlorobenzene	ND	ug/kg ug/kg	15.		
1,3-Dichlorobenzene	ND	ug/kg ug/kg	15.		
1,4-Dichlorobenzene	ND	, ,	6.0		
Methyl tert butyl ether	ND	ug/kg	3.0		
p/m-Xylene	ND	ug/kg	3.0		
o-Xylene	ND	ug/kg	3.0		
cis-1,2-Dichloroethene	ND	ug/kg			
Dibromomethane	ND	ug/kg	30.		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502002-07

MW/CB-14 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD		3.000	
					1111100	PREP	ATE ANAL	ID
Volatile Organics by GC/MS	8260 gantis						·	
1,4-Dichlorobutane	ND			1	8260B		0303 16:1	7 BT
Iodomethane	ND	ug/kg	30.				-11.	
1,2,3-Trichloropropane	ND	ug/kg	30.					
Styrene	ND	ug/kg	30.					
Dichlorodifluoromethane		ug/kg	3.0					
Acetone	ND	ug/kg	30.					
Carbon disulfide	ND	ug/kg	30.					
2-Butanone	ND	ug/kg	30.					
/inyl acetate	ND	ug/kg	30.					
1-Methyl-2-pentanone	ND	ug/kg	30.					
2-Hexanone	ND	ug/kg	30.					
Ethyl methacrylate	ND	ug/kg	30.					
crolein	ND	ug/kg	30.					
crylonitrile	ND	ug/kg	74.					
romochloromethane	ND	ug/kg	30.					
etrahydrofuran	ND	ug/kg	15.					
,2-Dichloropropane	ND	ug/kg	60.					
,2-Dibromoethane	ND	ug/kg	15.					
,3-Dichloropropane	ND	ug/kg	12.					
,1,1,2-Tetrachloroethane	ND	ug/kg	15.					
romobenzene	ND	ug/kg	3.0					
-Butylbenzene	ND	ug/kg	15.					
ec-Butylbenzene	ND	ug/kg	3.0					
ert-Butylbenzene	ND	ug/kg	3.0					
-Chlorotoluene	ND	ug/kg	15.					
-Chlorotoluene	ND	ug/kg	15.					
2-Dibromo-3-chloropropane	ND	ug/kg	15.					
exachlorobutadiene	ND	ug/kg	15.					
opropylbenzene	ND	ug/kg	15.					
·Isopropyltoluene	ND	ug/kg	3.0					
phthalene	ND	ug/kg	3.0					
Propylbenzene	ND	ug/kg	15.					
2,3-Trichlorobenzene	ND	ug/kg	3.0					
2,4-Trichlorobenzene	ND	ug/kg	15.					
3,5-Trimethylbenzene	ND	ug/kg	15.					
2 A-Trimethylbenzene	ND	ug/kg	15.					
2,4-Trimethylbenzene	ND	ug/kg	15.					
ans-1,4-Dichloro-2-butene	ND	ug/kg	15.					
hyl ether	ND	ug/kg	15.					
rrogate(s)	Recovery		00.0.11					
2-Dichloroethane-d4	98.0	엉	QC Criter	ıa				
luene-d8	94.0	76 016						
Bromofluorobenzene	110.	olo Olo						
promofluoromethane	82.0	õ						

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-08

MW/CB-14 (6'-8')

SOIL

Date Collected: 25-FEB-2005 10:10

Date Received: 28-FEB-2005 Date Reported: 07-MAR-2005

Sample Matrix:

Field Prep: None

Satisfactory Condition of Sample:

Number & Type of Containers: 2-Amber, 1-Vial

		UNITS	RDL	REF METHOD	DATE ID
PARAMETER	RESULT	UNITS	KD1	1.02	PREP ANAL
m-to.	86.	9	0.10	30 2540G	0302 20:27 PD
Solids, Total					
Total Metals				1 3051	
	3200	mg/kg	4.6	1 6010B	0303 20:00 0304 10:42 RW
Aluminum, Total	ND	mg/kg	2.3	1 6010B	0303 20:00 0304 10:42 RW
Antimony, Total	1.6	mq/kg	0.46	1 6010B	0303 20:00 0304 10:42 RW
Arsenic, Total	34.	mg/kg	0.46	1 6010B	0303 20:00 0304 10:42 RW
Barium, Total	0.1435	mg/kg	0.1142	1 6010B	0303 20:00 0304 10:42 RW
Beryllium, Total		mg/kg	0.1142		0303 20:00 0304 10:42 RW
Cadmium, Total	ND	mg/kg	4.6	1 6010B	0303 20:00 0304 10:42 RW
Calcium, Total	4100	mg/kg	0.46	1 6010B	0303 20:00 0304 10:42 RW
Chromium, Total	6.2		0.91	1 6010B	0303 20:00 0304 10:42 RW
Cobalt, Total	4.4	mg/kg	0.46	1 6010B	0303 20:00 0304 10:42 RW
Copper, Total	10.	mg/kg	2.3	1 6010B	0303 20:00 0304 10:42 RW
Iron, Total	6900	mg/kg	2.3	1 6010B	0303 20:00 0304 10:42 RW
Lead, Total	6.9	mg/kg	4.6	1 6010B	0303 20:00 0304 10:42 RW
Magnesium, Total	2100	mg/kg	0.46	1 6010B	0303 20:00 0304 10:42 RW
Manganese, Total	280	mg/kg	0.40	1 7471A	0302 18:20 0303 10:40 DM
Mercury, Total	ND	mg/kg		1 6010B	0303 20:00 0304 10:42 RW
Nickel, Total	7.1	mg/kg	0.46	-	0303 20:00 0304 10:42 RW
Potassium, Total	540	mg/kg	110	1 6010B 1 6010B	0303 20:00 0304 10:42 RW
Selenium, Total	ND	mg/kg	0.228		0303 20:00 0304 10:42 RW
Silver, Total	ND	mg/kg	0.46		0303 20:00 0304 10:42 RW
Sodium, Total	350	mg/kg	91.	= :	0303 20:00 0304 10:42 RW
Thallium, Total	ND	mg/kg	0.46	1 6010B	0303 20:00 0304 10:42 RW
Vanadium, Total	7.7	mg/kg	0.46	1 6010B	0303 20:00 0304 10:42 RW
Zinc, Total	16.	mg/kg	2.3	1 6010B	0303 20.00 0304 10.75
	2 0260			1 8260B	0303 16:55 BT
Volatile Organics by GC/MS	ND ND	ug/kg	29.		
Methylene chloride	ND	ug/kg	4.4		
1,1-Dichloroethane	ND	ug/kg ug/kg	4.4		
Chloroform	ND	ug/kg ug/kg	2.9		
Carbon tetrachloride	ND		10.		
1,2-Dichloropropane	ND	ug/kg	2.9		
Dibromochloromethane	ND	ug/kg	4.4		
1,1,2-Trichloroethane	ND	ug/kg	2.9		
Tetrachloroethene	ND	ug/kg			
Chlorobenzene	ND	ug/kg	2.9		
Trichlorofluoromethane	ND	ug/kg	14.		



Laboratory Sample Number: L0502002-08

PARAMETER	RESULT	UNITS				
		ONITS	RDL	REF METHOD	DATE	ID
					PREP ANAL	
Volatile Organics by GC/MS	8260 conti	nned				
-, - prenior de luane	ND			1 8260B	0303 16:	SE om
1,1,1-Trichloroethane	ND	ug/kg	2.9		4000 101	23 BT
Bromodichloromethane		ug/kg	2.9			
trans-1,3-Dichloropropene	ND	ug/kg	2.9			
cis-1,3-Dichloropropene	ND	ug/kg	2.9			
1,1-Dichloropropene	ND	ug/kg	2.9			
Bromoform	ND	ug/kg	14.			
1,1,2,2-Tetrachloroethane	ND	ug/kg	12.			
Benzene	ND	ug/kg	2.9			
Toluene	ND	ug/kg	2.9			
Ethylbenzene	ND	ug/kg	4.4			
Chloromethane	ND	ug/kg	2.9			
Bromomethane	ND	ug/kg	14.			
Vinyl chloride	ND	ug/kg	5.8			
Chloroethane	ND	ug/kg	5.8			
1 1-Dichlers	ND	ug/kg	5.8			
1,1-Dichloroethene	ND	ug/kg	2.9			
trans-1,2-Dichloroethene	ND	ug/kg	4.4			
Trichloroethene	ND	ug/kg	2.9			
1,2-Dichlorobenzene	ND	ug/kg	14.			
,3-Dichlorobenzene	ND	ug/kg ug/kg				
,4-Dichlorobenzene	ND	ug/kg	14.			
Methyl tert butyl ether	ND	ug/kg	14.			
o/m-Xylene	ND	ug/kg ug/kg	5.8			
-Xylene	ND	_	2.9			
is-1,2-Dichloroethene	ND	ug/kg	2.9			
ibromomethane	ND	ug/kg	2.9			
,4-Dichlorobutane	ND	ug/kg	29.			
odomethane	ND	ug/kg	29.			
,2,3-Trichloropropane	ND	ug/kg	29.			
tyrene		ug/kg	29.			
ichlorodifluoromethane	ND	ug/kg	2.9			
cetone	ND	ug/kg	29.			
arbon disulfide	ND	ug/kg	29.			
Butanone	ND	ug/kg	29.			
nyl acetate	ND	ug/kg	29.			
Methyl-2-pentanone	ND	ug/kg	29.			
Hexanone	ND	ug/kg	29.			
hyl methacrylate	ND	ug/kg	29.			
rolein	ND	ug/kg	29.			
rylonitrile	ND	ug/kg	73.			
omochloromethane	ND	ug/kg	29.			
omochioromethane trahydrofuran	ND	ug/kg	14.			
2-Diables	ND	ug/kg	58.			
2-Dichloropropane	ND	ug/kg	14.			
2-Dibromoethane	ND	ug/kg				
3-Dichloropropane	ND	ug/kg	12.			
1,1,2-Tetrachloroethane	ND	ug/kg ug/kg	14.			
mobenzene	ND		2.9			
Butylbenzene	ND	ug/kg	14.			
-Butylbenzene		ug/kg	2.9			
	140	ug/kg	2.9			

Laboratory Sample Number: L0502002-08

MW/CB-14 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
			.,.		0303 16:55 BT
Volatile Organics by GC/MS 8	260 continu	ied		1 8260B	6300, 20747 4
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.9		
Isopropythenzene	ND	ug/kg	2.9		
p-Isopropyltoluene	ND	ug/kg	14.		
Naphthalene	ND	ug/kg	2.9		
n-Propylbenzene 1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
trans-1,4-Dichiolo-2 bacene	ND	ug/kg	14.		
Ethyl ether					
a	Recover	У	QC C1	riteria	
Surrogate(s)	100.	8			
1,2-Dichloroethane-d4	94.0	%			
Toluene-d8	108.	8			
4-Bromofluorobenzene	94.0	%			
Dibromofluoromethane					0301 20:10 0302 20:55 HI
SVOC's by GC/MS 8270				1 8270C	0301 20120 222
Acenaphthene	ND	ug/kg	190		
Benzidine	ND	ug/kg	1900		
1,2,4-Trichlorobenzene	ND	ug/kg	190		
Hexachlorobenzene	ND	ug/kg	190		
Bis (2-chloroethyl) ether	ND	ug/kg	190		
1-Chloronaphthalene	ND	ug/kg	190		
2-Chloronaphthalene	ND	ug/kg	230		
1,2-Dichlorobenzene	ND	ug/kg	190	•	
1,3-Dichlorobenzene	ND	ug/kg	190		
1,4-Dichlorobenzene	ND	ug/kg	190	_	
3,3'-Dichlorobenzidine	ND	ug/kg	190	J	
2,4-Dinitrotoluene	ND	ug/kg	230		
2,4-Binitrotoluene 2,6-Dinitrotoluene	ND	ug/kg	190		
	ND	ug/kg	190		
Azobenzene	ND	ug/kg	190		
Fluoranthene 4-Chlorophenyl phenyl ethe	er ND	ug/kg	190		
4-Chlorophenyl phenyl ether	ND	ug/kg	190		
Bis(2-chloroisopropyl)ethe	er ND	ug/kg	190		
Bis (2-chloroethoxy) methane		ug/kg	190		
Hexachlorobutadiene	ND	ug/kg	390		
Hexachloropyclopentadiene Hexachlorocyclopentadiene	ND	ug/kg	390		
Hexachiorocyclopencadiene	ND	ug/kg	190		
Hexachloroethane	ND	ug/kg	190		
Isophorone	ND	ug/kg	190		
Naphthalene	ND	ug/kg	190		
Nitrobenzene NDPA/DPA	ND	ug/kg	58)	



Laboratory Sample Number: L0502002-08

MW/CB-14 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
SVOC's by GC/MS 8270 continu	ued	* . * 1		× .	
n-Nitrosodi-n-propylamine	ND	ug/kg	190	1 8270C	0301 20:10 0302 20:55 HL
Bis(2-ethylhexyl)phthalate	ND	ug/kg	390		
Butyl benzyl phthalate	ND	ug/kg	190		
Di-n-butylphthalate	ND	ug/kg	190		
Di-n-octylphthalate	ND	ug/kg			
Diethyl phthalate	ND	ug/kg ug/kg	190 190		
Dimethyl phthalate	ND	ug/kg ug/kg			
Benzo(a)anthracene	ND	ug/kg ug/kg	190		
Benzo(a)pyrene	ND	ug/kg ug/kg	190		
Benzo(b)fluoranthene	ND	ug/kg ug/kg	190		
Benzo(k)fluoranthene	ND	ug/kg ug/kg	190		
Chrysene	ND	*	190		
Acenaphthylene	ND	ug/kg ug/kg	190		
Anthracene	ND		190		
Benzo(ghi)perylene	ND	ug/kg	190		
Fluorene	ND	ug/kg ug/kg	190		
Phenanthrene	ND	ug/kg ug/kg	190		
Dibenzo(a,h)anthracene	ND	ug/kg ug/kg	190		
Indeno(1,2,3-cd)pyrene	ND	ug/kg ug/kg	190		
Pyrene	ND	ug/kg ug/kg	190		
Benzo(e)pyrene	ND	ug/kg	190		
Biphenyl	ND	ug/kg ug/kg	190		
Perylene	ND	ug/kg ug/kg	190		
Aniline	ND	ug/kg ug/kg	190		
-Chloroaniline	ND	ug/kg ug/kg	390		
-Methylnaphthalene	ND	ug/kg ug/kg	190		
-Nitroaniline	ND	ug/kg ug/kg	190		
-Nitroaniline	ND	ug/kg ug/kg	190		
-Nitroaniline	ND	ug/kg ug/kg	190		
ibenzofuran	ND	ug/kg ug/kg	270		
,a-Dimethylphenethylamine	ND	ug/kg	190		
exachloropropene	ND	ug/kg ug/kg	1900		
itrosodi-n-butylamine	ND	ug/kg ug/kg	390		
-Methylnaphthalene	ND	- ~	390		
,2,4,5-Tetrachlorobenzene	ND	ug/kg ug/kg	310		
entachlorobenzene	ND		780		
-Naphthylamine	ND	ug/kg	780		
-Naphthylamine	ND	ug/kg	780		
nenacetin	ND	ug/kg	780		
imethoate	ND	ug/kg	390		
-Aminobiphenyl	ND	ug/kg ug/kg	780		
entachloronitrobenzene	ND		390		
sodrin	ND	ug/kg	390		
-Dimethylaminoazóbenzene	ND	ug/kg	390		
lorobenzilate	ND	ug/kg	390		
Methylcholanthrene	ND	ug/kg	780		
hyl Methanesulfonate	ND	ug/kg	780		
etophenone	ND ND	ug/kg	580		
trosodipiperidine		ug/kg	780		
-t-Lastanic	ND	ug/kg	780		

Laboratory Sample Number: L0502002-08

MW/CB-14 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA! PREP	ee anal	ID
						0301 20:10	0200 204 55	. wr:
SVOC's by GC/MS 8270 continued		12 m	390	.1	8270C	0301 20:10	0,302 ,2015	, tha
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	1900					
n-Nitrosodimethylamine	ND	ug/kg						
2,4,6-Trichlorophenol	ND	ug/kg	190					
p-Chloro-m-cresol	ND	ug/kg	190					
2-Chlorophenol	ND	ug/kg	230					
2,4-Dichlorophenol	ND	ug/kg	390					
2,4-Dimethylphenol	ND	ug/kg	390					
2-Nitrophenol	ND	ug/kg	780					
4-Nitrophenol	ND	ug/kg	390					
2,4-Dinitrophenol	ND	ug/kg	780					
4,6-Dinitro-o-cresol	ND	ug/kg	780					
Pentachlorophenol	ND	ug/kg	780					
Phenol	ND	ug/kg	270					
2-Methylphenol	ND	ug/kg	230					
3-Methylphenol/4-Methylphenol	ND	ug/kg	230					
2,4,5-Trichlorophenol	ND	ug/kg	190					
2,4,5-Trichiorophenol	ND	ug/kg	390					
2,6-Dichlorophenol	ND	ug/kg	1900					
Benzoic Acid	ND	ug/kg	390					
Benzyl Alcohol	ND	ug/kg	190					
Carbazole	ND	ug/kg	1900					
Pyridine	ND	ug/kg	780					
2-Picoline	ND	ug/kg	780					
Pronamide	ND	ug/kg	780					
Methyl methanesulfonate	ND	ag,g						
	Recovery		QC C1	iter	ia			
Surrogate(s)	71.0	%	25-12	20				
2-Fluorophenol	89.0	%	10-12	20				
Phenol-d6	96.0	%	23-13	20				
Nitrobenzene-d5	79.0	8	30-13	20				
2-Fluorobiphenyl	68.0	96	19-1	20				
2,4,6-Tribromophenol	115.	o ₀	18-1	20	-			
4-Terphenyl-d14	113.	0						, •
0.0704					1 8270C-M	0301 20:	10 0304 03	:29 R
PAH by GC/MS SIM 8270M	ND	ug/kg	7.8					
Acenaphthene		ug/kg	7.8					
2-Chloronaphthalene	ND	ug/kg ug/kg	7.8					
Fluoranthene	ND	ug/kg ug/kg	19.					
Hexachlorobutadiene	ND	ug/kg ug/kg	7.8					
Naphthalene	ND	ug/kg ug/kg	7.8					
Benzo(a) anthracene	ND	ug/kg ug/kg	7.8					
Benzo(a)pyrene	ND		7.8					
Benzo(b) fluoranthene	ND	ug/kg	7.8					
Benzo(k)fluoranthene	ND	ug/kg	7.8					
Chrysene	ND	ug/kg	7.8					
Acenaphthylene	ND	ug/kg						
Anthracene	ИD	ug/kg	7.8					
Benzo(ghi)perylene	ND	ug/kg	7.8					
Fluorene	ND	ug/kg	7.8					
Phenanthrene	ND	ug/kg	7.8					



Laboratory Sample Number: L0502002-08

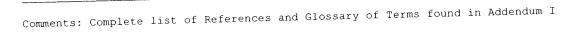
MW/CB-14 (6'-8')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					DATE ID PREP ANAL
PAH by GC/MS SIM 8270M cont	inued	· ·			
Dibenzo(a,h)anthracene	ND			1 8270C-M	0301 20:10 0304 03:29 RL
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.8		
Pyrene		ug/kg	7.8		
1-Methylnaphthalene	ND	ug/kg	7.8		
2-Methylnaphthalene	ND	ug/kg	7.8		
Pentachlorophenol	ND	ug/kg	7.8		
Hexachlorobenzene	150	ug/kg	31.		
Perylene	ND	ug/kg	31.		
Biphenyl	ND	ug/kg	7.8		
2,6-Dimethylnaphthalene	ND	ug/kg	7.8		
1-Methylphoneth	ND	ug/kg	7.8		
1-Methylphenanthrene Benzo(e)Pyrene	ND	ug/kg	7.8		
Howard and the	ND	ug/kg	7.8		
Hexachloroethane	ND	ug/kg	31.		
Surrogate(s)	Recovery		00.0-14		
2-Fluorophenol	68.0	8	QC Crit	eria	
Phenol-d6	88.0	8	25-120		
Nitrobenzene-d5	75.0		10-120		
2-Fluorobiphenyl	66.0	8	23-120		
2,4,6-Tribromophenol	92.0	용	30-120		
-Terphenyl-d14	74.0	%	19-120		
	74.0	96	18-120		
olychlorinated Biphenyls roclor 1221		•		1 8082	0301 16:00 0302 20:04 BW
roclor 1232	ND	ug/kg	38.8		0301 18:00.0305 50:04 BM
	ND	ug/kg	38.8		
roclor 1242/1016	ND	ug/kg	38.8		
roclor 1248	ND	ug/kg	38.8		
roclor 1254	ND	ug/kg	38.8		
roclor 1260	ND	ug/kg	38.8		
urrogate(s)	Recovery				
,4,5,6-Tetrachloro-m-xylene	86.0	o	QC Crite	eria	
ecachlorobiphenyl	105.	8	30-150		
	105.	o _o	30-150		
rganochlorine Pesticides				1 8081	0704 ***
elta-BHC	ND	ug/kg	3.88	1 9091	0301 14:30 0302 19:54 JB
indane	ND	ug/kg	3.88		
-pha-BHC	ND	ug/kg	3.88		
eta-BHC	ND	ug/kg	3.88		
ptachlor	ND	ug/kg	3.88		
drin	ND	ug/kg	3.88		
ptachlor epoxide	ND	ug/kg ug/kg			
drin	ND		3.88		
drin aldehyde	ND	ug/kg	3.88		
drin ketone	ND	ug/kg	3.88		
eldrin		ug/kg	3.88		
4'-DDE	ND	ug/kg	3.88		
4'-DDD	ND	ug/kg	3.88		
4'-DDT	ND	ug/kg	3.88		
- 221	ND	ug/kg	3.88		

Laboratory Sample Number: L0502002-08

MW/CB-14 (6'-8')

PARAMETER	RESULT	UNITS	RDL REF METHOD	DATE ID PREP ANAL
Organochlorine Pesticides con Endosulfan I Endosulfan II Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane trans-Chlordane	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	1 8081 3.88 3.88 3.88 3.88 15.5 15.5 3.88 3.88	.0301 14:30 0302 19:54 JB
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	Recovery 62.0 69.0	୍ବର ବ୍ୟବ	QC Criteria 30-150 30-150	





MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-09

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Date Collected: 25-FEB-2005 11:00

Sample Matrix:

WATER

Date Received : 28-FEB-2005 Date Reported : 07-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 6-Amber, 1-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
Total Metals		······································	·····	······································	
11000110				1 3015	
Aluminum, Total	ND	m~/1	0.10		
Antimony, Total	ND	mg/l	0.10	1 6010B	0303 18:00 0304 09:08 RW
Arsenic, Total	ND	mg/l	0.050	1 6010B	0303 18:00 0304 09:08 RW
Barium, Total	ND	mg/l	0.005	1 6010B	0303 18:00 0304 09:08 RW
Beryllium, Total	ND	mg/l	0.01	1 6010B	0303 18:00 0304 09:08 RW
Cadmium, Total	ND	mg/l	0.003	1 6010B	0303 18:00 0304 09:08 RW
Calcium, Total	ND	mg/l	0.003	1 6010B	0303 18:00 0304 09:08 RW
Chromium, Total	ND	mg/l	0.10	1 6010B	0303 18:00 0304 09:08 RW
Cobalt, Total	ND	mg/l	0.01	1 6010B	0303 18:00 0304 09:08 RW
Copper, Total	ND ND	mg/l	0.02	1 6010B	0303 18:00 0304 09:08 RW
Iron, Total	0.12	mg/l	0.01	1 6010B	0303 18:00 0304 09:08 RW
Lead, Total	_	mg/l	0.05	1 6010B	0303 18:00 0304 09:08 RW
Magnesium, Total	ND	mg/l	0.050	1 6010B	0303 18:00 0304 09:08 RW
Manganese, Total	ND	mg/l	0.10	1 6010B	0303 18:00 0304 09:08 RW
Mercury, Total	ND	mg/l	0.01	1 6010B	0303 18:00 0304 09:08 RW
Nickel, Total	ND	mg/l	0.0002	1 7470A	0301 17:45 0302 12:29 DM
Potassium, Total	ND	mg/l	0.010	1 6010B	0303 18:00 0304 09:08 RW
Selenium, Total	ND	mg/l	2.5	1 6010B	0303 18:00 0304 09:08 RW
Silver, Total	ND	mg/l	0.005	1 6010B	0303 18:00 0304 09:08 RW
Sodium, Total	ND	mg/l	0.007	1 - 6010B	0303 18:00 0304 09:08 RW
Thallium, Total	ND	mg/l	2.0	1 6010B	0303 18:00 0304 09:08 RW
Vanadium, Total	ND	mg/l	0.005	1 6010B	0303 18:00 0304 09:08 RW
Zinc, Total	ND	mg/l	0.01	1 6010B	0303 18:00 0304 09:08 RW
ine, iotal	ND	mg/l	0.05	1 6010B	0303 18:00 0304 09:08 RW
olatile Organics by GC/M	S 8260				
lethylene chloride	ND	ug/l	F 0	1 8260B	0301 15:27 BT
,1-Dichloroethane	ND	ug/l	5.0		
hloroform	ND	2.	0.75		
arbon tetrachloride	ND	ug/l	0.75		
,2-Dichloropropane	ND	ug/l	0.50		
ibromochloromethane	ND ND	ug/l	1.8		
,1,2-Trichloroethane	ND ND	ug/l	0.50		
etrachloroethene	ND ND	ug/l	0.75		
hlorobenzene	ND	ug/l	0.50		
richlorofluoromethane		ug/l	0.50		
,2-Dichloroethane	ND	ug/l	2.5		
,1,1-Trichloroethane	ND	ug/l	0.50		
-, - TTTCIITOTOECHQUE	ND	ug/l	0.50		

Laboratory Sample Number: L0502002-09

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PARAMETER	RESULT	UNITS	RDL	REF METHOD		TE	ID
PAKAMEIEK					PREP	ANAL	
Volatile Organics by GC/MS 82	260 continu	ied		1 8260B		0301 15:2	.7 BT
Volatile Organics by GC/M3 02	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	2.5				
1,1-Dichloropropene	ND	ug/l	2.0				
Bromoform	ND	ug/l	0.50				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.75				
Toluene	ND	ug/l	0.50				
Ethylbenzene	ND	ug/l	2.5				
Chloromethane	ND	ug/l	1.0				
Bromomethane		ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	0.50				
1,1-Dichloroethene	ND	ug/l	0.75				
trans-1,2-Dichloroethene	ND	ug/l	0.50				
Trichloroethene	ND	ug/l	2.5				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	1.0				
Methyl tert butyl ether	ND	ug/l	0.50				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ИD	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	5.0				
Dibromomethane	ND	ug/1 ug/1	5.0				
1,4-Dichlorobutane	ND	ug/1	5.0				
Iodomethane	ND	ug/1	5.0				
1,2,3-Trichloropropane	ND	ug/l	0.50				
Styrene	ND	ug/1 ug/1	5.0				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/1 ug/1	5.0				
Carbon disulfide	ND	ug/l	5.0	-			
2-Butanone	ND	ug/1 ug/1	5.0				
Vinyl acetate	ND	ug/1 ug/1	5.0				
4-Methyl-2-pentanone	ND	ug/1	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND		12.				
Acrolein	ND	ug/l ug/l	5.0				
Acrylonitrile	ND		2.5				
Bromochloromethane	ND	ug/l	10.				
Tetrahydrofuran	ND	ug/l	2.5				
2,2-Dichloropropane	ND	ug/1	2.0				
1,2-Dibromoethane	ND	ug/l	2.5				
1.3-Dichloropropane	ND	ug/l	0.50	1			
1,1,1,2-Tetrachloroethane	ND	ug/l	2.5	•			
Bromobenzene	ND	ug/1	0.50)			
n-Butylbenzene	ND	ug/1	0.50				
sec-Butylbenzene	ND	ug/l		,			
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				



Laboratory Sample Number: L0502002-09

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 contin	nod			
p-Chlorotoluene	ND ND		_ :	1 8260B	0301 15:27 BT
1,2-Dibromo-3-chloropropane		ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	2.5		
Isopropylbenzene	ND	ug/l	1.0		
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	0.50		
n-Propylbenzene	ND	ug/l	2.5		
1,2,3-Trichlorobenzene	ND	ug/l	0.50		
1 2 4-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		00.0		
1,2-Dichloroethane-d4	123.	olo	QC Cri	Leria	
Toluene-d8	101.	o Se			
4-Bromofluorobenzene	116.	o ol			
Dibromofluoromethane	113.	6 %			
SVOC's by GC/MS 8270					
Acenaphthene				1 8270C	0301 12:35 0302 18:51 HL
Benzidine	ND	ug/l	5.0		
,2,4-Trichlorobenzene	ND	ug/l	50.		
lexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ND	ug/l	5.0		
-Chloronaphthalene	ND	ug/l	5.0		
-Chloronaphthalene	ND	ug/l	5.0		
,2-Dichlorobenzene	ND	ug/l	6.0		
, 2-Dichloropenzene	ND	ug/l	5.0		
,3-Dichlorobenzene	ND	ug/l	5.0		
,4-Dichlorobenzene	ND	ug/l	5.0	•	
,3'-Dichlorobenzidine	ND	ug/l	50.		
,4-Dinitrotoluene	ND	ug/l	6.0		
,6-Dinitrotoluene	ND	ug/l	5.0		
zobenzene	ND	ug/l	5.0		
luoranthene	ND	ug/l	5.0		
-Chlorophenyl phenyl ether	ND	ug/l	5.0		
-Bromophenyl phenyl ether	ND	ug/l	5.0		
is(2-chloroisopropyl)ether	ND	ug/l	5.0		
is(2-chloroethoxy)methane	ND	ug/l	5.0		
exachlorobutadiene	ND	ug/l	10.		
exachlorocyclopentadiene	ND	ug/l ug/l	10.		
exachloroethane	ND	ug/l	5.0		
sophorone	ND	ug/1 ug/l			
aphthalene	ND	-	5.0		
trobenzene	ND	ug/l	5.0		
PPA/DPA		ug/l	5.0		
Nitrosodi-n-propylamine	ND	ug/l	15.		
s(2-ethylhexyl)phthalate	ND	ug/l	5.0		
- /- contineval) bucustate	ND	ug/l	10.		



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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continue	đ			1 8270C	0301 12:35 0302 18:51 HL
Butyl benzyl phthalate	ND	ug/l	5.0		
Di-n-butylphthalate	ND	ug/l	5.0		
Di-n-octylphthalate	ND	ug/l	5.0		
Diethyl phthalate	ND	ug/l	5.0		
Dimethyl phthalate	ND	ug/l	5.0		
Benzo(a) anthracene	ND	ug/l	5.0		
Benzo(a) pyrene	ND	ug/l	5.0		
Benzo(b) fluoranthene	ND	ug/l	5.0		
Benzo(k) fluoranthene	ND	ug/l	5.0		
Chrysene	ND	ug/l	5.0		
Acenaphthylene	ND	ug/l	5.0		
Anthracene	ND	ug/l	5.0		
Benzo(ghi)perylene	ND	ug/l	5.0		
Fluorene	ND	ug/l	5.0		
Phenanthrene	ND	ug/l	5.0		
Dibenzo(a, h) anthracene	ND	ug/l	5.0		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0		
Pyrene	. ND	ug/l	5.0		
Benzo(e)pyrene	ND	ug/l	5.0		
Biphenyl	ND	ug/l	5.0		
Perylene	ND	ug/l	5.0		
Aniline	ND	ug/l	10.		
4-Chloroaniline	ND	ug/l	5.0		
1-Methylnaphthalene	ND	ug/l	5.0		
2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l	5.0		
4-Nitroaniline	ND	ug/l	7.0		
Dibenzofuran	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/l	10.	-	
2-Methylnaphthalene	ND	ug/l	8.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
4-Aminobiphenyl	ND	ug/l	10.		
Pentachloronitrobenzene	ND	ug/l	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	10.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	20.		
7,12-Dimethylbenz(a)anthrac	ene ND	ug/l	10.		
n-Nitrosodimethylamine	ND	ug/l	50.		



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PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	DATE I
					PREP ANAL
SVOC's by GC/MS 8270 continu	ıed	3.41.4			
2,4,6-Trichlorophenol	ND	ug/l		1 8270C	0301 12:35 0302 18:51 H
p-Chloro-m-cresol	ND	ug/1 ug/l	5.0		
2-Chlorophenol	ND	-	5.0		
2,4-Dichlorophenol	ND	ug/l	6.0		
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	10.		
4-Nitrophenol	ND	ug/l	20.		
2,4-Dinitrophenol	ND	ug/l	10.		
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	20.		
Phenol	ND	ug/l	20.		
2-Methylphenol	ND ND	ug/l	7.0		
3-Methylphenol/4-Methylpheno	l ND	ug/l	6.0		
2,4,5-Trichlorophenol	ND ND	ug/l	6.0		
2,6-Dichlorophenol		ug/l	5.0		
Benzoic Acid	ND	ug/l	10.		
Benzyl Alcohol	ND	ug/l	50.		
Carbazole	ND	ug/l	10.		
Pyridine	ND	ug/l	5.0		
2-Picoline	ND	ug/l	50.		
Pronamide	ND	ug/l	20.		
lethyl methanesulfonate	ND ND	ug/l ug/l	20. 20.		
		ug/ i	20.		
urrogate(s) -Fluorophenol	Recovery		QC Cri	teria	
henol-d6	64.0	00			
	50.0	왕			
itrobenzene-d5	131.	8			
-Fluorobiphenyl	111.	용			
,4,6-Tribromophenol	101.	8			
-Terphenyl-d14	136.	8			
AH by GC/MS SIM 8270M				1 0000	
cenaphthene	ND	ug/l	0.20	1 8270C-M	0301 12:35 0304 02:04 RL
-Chloronaphthalene	ND	ug/l	0.20		
luoranthene	ND	ug/l	0.20		
exachlorobutadiene	ND	ug/l	0.50		
aphthalene	ND	ug/l	0.30		
enzo(a)anthracene	ND	ug/l			
enzo(a)pyrene	ND	-	0.20		
enzo(b)fluoranthene	ND	ug/l	0.20		
enzo(k) fluoranthene	ND	ug/l	0.20		
rysene	ND	ug/l	0.20		
cenaphthylene	ND	ug/l	0.20		
nthracene	ND	ug/l	0.20		
enzo(ghi)perylene		ug/l	0.20		
uorene	ND	ug/l	0.20		
enanthrene	ND	ug/l	0.20		
benzo(a,h)anthracene	ND	ug/l	0.20		
deno(1,2,3-cd)Pyrene	ND	ug/l	0.20		
General Pyrene	ND	ug/l	0.20		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
				i oparina vi	0301 12:35 0304 02:04 RL
PAH by GC/MS SIM 8270M continu	ed			1 8270C-M	9301 12,33 0334,0240. 3-
Pyrene	ND	ug/l	0.20		
1-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	6.5	ug/l	0.80		
Hexachlorobenzene	ND	ug/l	0.80		
Perylene	ND	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l	0.20		
2, 6-Dimethylmaphtharene	ND	ug/l	0.20		
1-Methylphenanthrene	ND	ug/l	0.20		
Benzo(e)Pyrene Hexachloroethane	ND	ug/l	0.80		
	Deservowii		OC Cri	teria	
Surrogate(s)	Recovery	9.	21-120		
2-Fluorophenol	55.0	્ર હ	10-120		
Phenol-d6	44.0	8	23-120		
Nitrobenzene-d5	89.0	%	43-120		
2-Fluorobiphenyl	80.0	8			
2,4,6-Tribromophenol	93.0	90	10-120		
4-Terphenyl-d14	82.0	%	33-120	•	
Polychlorinated Biphenyls				1 8082	.0301 16:15 0302 13:54 BW
	ND	ug/l	0.500		
Aroclor 1221	ND	ug/l	0.500		
Aroclor 1232	ND	ug/l	0.500		
Aroclor 1242/1016	ND	ug/l	0.500		
Aroclor 1248	ND	ug/l	0.500		
Aroclor 1254	ND	ug/l	0.500		
Aroclor 1260	ND	~7/ =			
Surrogate(s)	Recovery			iteria	
2,4,5,6-Tetrachloro-m-xylene	86.0	8	30-15	0	
Decachlorobiphenyl	57.0	%	30-15	0 .	
				1 8081	0301 12:35 0302 15:14 B
Organochlorine Pesticides	ND	uq/l	0.020		
Delta-BHC	ND	ug/l	0.020		
Lindane		ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/1	0.020		
Heptachlor	ND	ug/l ug/l	0.020		
Aldrin	ND	ug/l ug/l	0.020		
Heptachlor epoxide	ND	-	0.020		
Endrin	ND	ug/l	0.040		
Endrin aldehyde	ND	ug/l	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l			
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.020		
Endosulfan II	ND	ug/l	0.04	Ü	



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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Organochlorine Pesticides co Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane trans-Chlordane	ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l	0.040 0.200 0.200 0.200 0.200 0.020	1 8081	0301 12:35 0302 15:14 BW
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	Recovery 67.0 37.0	96 96	QC Crite 30-150 30-150	≎ria	

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502002-10

Date Collected: 10-FEB-2005 15:30

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Sample Matrix: WATER

Date Received : 28-FEB-2005 Date Reported : 07-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	PREP	ATE ANAL	ID
			<u>, , , , , , , , , , , , , , , , , , , </u>					
Volatile Organics by GC/MS	8260			. 1	8260B		0301 16:	04 BT
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/1	0.50					
1,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
	ND	ug/l	0.50					
Chlorobenzene Trichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
1, Z-Dichioroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane Bromodichloromethane	ND	ug/l	0.50					
Bromodichioromechane	ND	ug/l	0.50					
trans-1,3-Dichloropropene	ND	ug/l	0.50					
cis-1,3-Dichloropropene	ND	ug/l	2.5					
1,1-Dichloropropene	ND	ug/l	2.0					
Bromoform	ND	ug/l	0.50					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.75		-			
Toluene	ND	ug/l	0.50					
Ethylbenzene	ND	ug/l	2.5					
Chloromethane	ND ND	ug/l	1.0					
Bromomethane	ND	ug/1	1.0					
Vinyl chloride	ND	ug/l	1.0					
Chloroethane	ND ND	ug/l	0.50					
1,1-Dichloroethene		ug/l	0.75					
trans-1,2-Dichloroethene	ND ND	ug/1	0.50					
Trichloroethene		ug/1	2.5					
1,2-Dichlorobenzene	ND	ug/1 ug/1	2.5					
1,3-Dichlorobenzene	ND	ug/1 ug/l	2.5					
1,4-Dichlorobenzene	ND	ug/1 ug/l	1.0					
Methyl tert butyl ether	ND	ug/l	0.50					
p/m-Xylene	ND	_	0.50					
o-Xylene	ND	ug/l	0.50					
cis-1,2-Dichloroethene	ND	ug/l	5.0					
Dibromomethane	ND	ug/l	5.0					
1,4-Dichlorobutane	ND	ug/l	5.0					
Iodomethane	ND	ug/l	5.0					



Laboratory Sample Number: L0502002-10

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PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	D.	ATE	ID	
						PREP	ANAL	יב
Volatile Organics by GC/MS	8260 contin	ned						
1,2,3-Trichloropropane	ND	ug/l	5.0	1 8260B			0301 16:04	4 BT
Styrene	ND	ug/l						
Dichlorodifluoromethane	ND	ug/l	0.50					
Acetone	ND	-	5.0					
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	5.0					
Vinyl acetate	ND	ug/l	5.0					
4-Methyl-2-pentanone		ug/l	5.0					
2-Hexanone	ND	ug/l	5.0					
Ethyl methacrylate	ND	ug/l	5.0					
Acrolein	ND	ug/l	5.0					
Acrylonitrile	ND	ug/l	12.					
Bromochloromethane	ND	ug/l	5.0					
Tetrahydrofuran	ND	ug/l	2.5					
	ND	ug/l	10.					
2,2-Dichloropropane	ND	ug/l	2.5					
.,2-Dibromoethane	ND	ug/l	2.0					
.,3-Dichloropropane	ND	ug/l	2.5					
,1,1,2-Tetrachloroethane	ND	ug/l	0.50					
romobenzene	ND	ug/l	2.5					
-Butylbenzene	ND	ug/l	0.50					
ec-Butylbenzene	ND	ug/l	0.50					
ert-Butylbenzene	ND	ug/l	2.5					
-Chlorotoluene	ND	ug/l	2.5					
-Chlorotoluene	ND	ug/l	2.5					
,2-Dibromo-3-chloropropane	ND	ug/l	2.5					
exachlorobutadiene	ND	ug/l	1.0					
sopropylbenzene	ND	ug/l	0.50					
-Isopropyltoluene	ND	ug/l	0.50					
aphthalene	ND	ug/l	2.5					
-Propylbenzene	ND	ug/l						
,2,3-Trichlorobenzene	ND		0.50					
,2,4-Trichlorobenzene	ND	ug/l	2.5	•				
,3,5-Trimethylbenzene	ND	ug/l	2.5					
,2,4-Trimethylbenzene	ND	ug/l	2.5					
rans-1,4-Dichloro-2-butene		ug/l	2.5					
thyl ether	ND	ug/l	2.5					
	ND	ug/l	2.5					
ırrogate(s)	Recovery		QC Criter					
2-Dichloroethane-d4	124.	e	QC Critei	:1a				
luene-d8	101.	6 %						
Bromofluorobenzene	114.							
bromofluoromethane	110.	%						



Laboratory Job Number: L0502002

Parameter	Value 1	. Value 2	Units	RPD	RPD Limits	
- Colid	is, Total for samp	Le(s) 01-04,06	,08 (L0502)	002-01,	WG195527-1)	
Solids, Total	89.	89.	%	0		
	olids, Total for s	10/0\ 05 0°	/ /T.0502048	-01, WG1	95696-1)	
	olids, Total for s	92.	%	1		
Solids, Total	93.					
Tot	tal Metals for sam	ple(s) 02-06,)8 (L050200	2-03, WG	195659-1)	
Aluminum, Total	2700	3000	mg/kg	11.	50	
	ND	ND	mg/kg	NC	35	
Antimony, Total	1.2	1.4	mg/kg	15	35	
Arsenic, Total	32.	35.	mg/kg	9	35	
Barium, Total	0.1212	0.1441	mg/kg	17	35	
Beryllium, Total	ND	ND	mg/kg	NC	35	
Cadmium, Total	5500	3200	mg/kg	53	35	
Calcium, Total	5.9	6.1	mg/kg	3	35	
Chromium, Total	2.8	3.1	mg/kg	10	35	
Cobalt, Total	10.	11.	mg/kg	10	35	
Copper, Total	5400	5900	mg/kg	9	35	
Iron, Total	5.7	6.7	mg/kg	16	35	
Lead, Total	1400	1600	mg/kg	13	35	
Magnesium, Total	260	290	mg/kg	11	35	
Manganese, Total		6.3	mg/kg	8	35	
Nickel, Total	5.8	320	mq/kg	0	35	
Potassium, Total	320	ND	mg/kg	NC	35	
Selenium, Total	ND	ND	mg/kg	NC	35	
Silver, Total	ND	ND 150	mg/kg	0	35	
Sodium, Total	150		mg/kg	NС	35	
Thallium, Total	ND	ND	mg/kg	3	35	
Vanadium, Total	7.2	7.4	mg/kg	21	35	
Zinc, Total	13.	16.				
	Total Metals for	sample(s) 09	(L0501881-	08, WG19	5405-3)	•
Mercury, Total	ND	ND	mg/l	. NC	20	
	otal Metals for sa		08 /7.05020	02-04. V	iG195548-3)	
	otal Metals for sa	mpie(s) U2-U6 ND	,00 (103020 mg/kg	NC NC	35	
Mercury, Total	ND	1412	9 9			

Laboratory Job Number: L0502002

Parameter	% Recovery	QC Criteria	
		z- orrceria	
Total Metals 1	CG for		
Aluminum, Total	CS for sample(s) 02-06,08	(WG195659-4)	
Antimony, Total	99	70-140	
Arsenic, Total	90	70-140	
Barium, Total	104	70-140	
Beryllium, Total	94	70-140	
Cadmium, Total	97	70-140	
Calcium, Total	102	70-140	
Chromium, Total	95	70-140	
Cobalt, Total	94	70-140	
Copper, Total	95	70-140	
Iron, Total	94	70-140	
Lead, Total	95	70-140	
Magnesium, Total	108	70-140	
Managanaa m	100		
Manganese, Total	95	70-140	
Vickel, Total	95	70-140	
Potassium, Total	85	70-140	
Selenium, Total	107	70-140	
ilver, Total	100	70-140	
odium, Total	95	70-140	
hallium, Total		70-140	
anadium, Total	98	70-140	
inc, Total	95	70-140	
	95	70-140	
Total Metals	LCS for sample(s) 09 (WG		
luminum, Total	Tot sample(s) 09 (WG	195724-2)	
ntimony, Total	105	75-125	
senic, Total	100	75-125	
arium, Total	108	75-125	
ryllium, Total	100	75-125	
dmium, Total	. 102	75-125	
lcium, Total	108	75-125	
romium, Total	100	75-125	
balt, Total	100	75-125	
pper, Total	100	75-125	
on, Total	100	75-125	
ad, Total	97	75-125	
gnesium, Total	106	75-125	
nganese, Total	100	75-125	
ckel, Total	100	75-125	
cassium, Total	100	75-125 75-125	
enium, Total	97	75-125 75-125	
ver, Total	113		
ium m-+ 1	1.00	75-125	
ium, Total		75-125	
llium, Total	^ ~	75-125	
adium, Total	1.00	75-125	
c, Total		75-125	
	102	75-125	

Laboratory Job Number: L0502002

	% Recovery QC Criteria
Parameter	No. 10 Percentage and the second seco
Total Metals LCS fo	or sample(s) 09 (WG195405-1) 100 70-130
Mercury, Total	100 70-130
deredry, 22	7-(c) 02-06 08 (WG195548-1)
	sample(s) 02-06,08 (WG195548-1) 104 70-130
Mercury, Total	— · · ·
onganics by GC/MS 82	60 LCS for sample(s) 09-10 (WG195265-7) 96
Volatile Organics of	
Chlorobenzene	93
Benzene	95
Toluene 1,1-Dichloroethene	99
Trichloroethene	100
Surrogate(s)	117
1,2-Dichloroethane-d4	102
Toluene-d8	106
4-Bromofluorobenzene	108
Dibromofluoromethane	
Volatile Organics by GC/MS 8	260 LCS for sample(s) 05-08 (WG195684-3)
Chlorobenzene	97
Benzene	95
Toluene	95
1,1-Dichloroethene	98
Trichloroethene	
Surrogate(s)	94
1,2-Dichloroethane-d4	95
Toluene-d8	99
4-Bromofluorobenzene	92
Dibromofluoromethane	00 04 (WC105363-9)
Volatile Organics by GC/MS 82	60 LCS for sample(s) 01,03-04 (WG195363-9)
Chlorobenzene	
Benzene	95 92
Toluene	93
1,1-Dichloroethene	93
Trichloroethene	
Surrogate(s)	96
1,2-Dichloroethane-d4	97
Toluene-d8	105
4-Bromofluorobenzene	94
Dibromofluoromethane	
	0 LCS for sample(s) 09 (WG195374-2) 82
Acenaphthene	76
1.2,4-Trichlorobenzene	85
2-Chloronaphthalene	~ · · · · · · · · · · · · · · · · · · ·

Laboratory Job Number: L0502002

Parameter	% Recov	ery QC Criteria		
SUCCE I COMMISSION OF THE SUCCESSION OF THE SUCC			······································	
SVOC's by GC/MS 8270 1,2-Dichlorobenzene	LCS for sample (s) 09 (WG195374-2)		
1,4-Dichlorobenzene	66	,		
2,4-Dinitrotoluene	64			
2,6-Dinitrotoluene	130			
Fluoranthene	123			
4-Chlorophenyl phenyl ether	110			
n-Nitrosodi-n-propylamine	94			
Butyl benzyl phthalate	71			
Anthracene	97			
Pyrene	57			
Hexachloropropene	105			
P-Chloro-M-Cresol	77			
2-Chlorophenol	86			
2-Nitrophenol	65			
4-Nitrophenol	81			
2,4-Dinitrophenol	58			
Pentachlorophenol	79			
Phenol	100			
	33			
Surrogate(s)				
2-Fluorophenol	4.5			
Phenol-d6	45			
Nitrobenzene-d5	38			
?-Fluorobiphenyl	90			
2,4,6-Tribromophenol	88 88			
-Terphenyl-d14	115			
SVOC's by GC/MS 8270 LCS cenaphthene	for sample (a) on	5.5.5.		
cenaphthene	71	-06,08 (WG195440-2)	,	
,2,4-Trichlorobenzene	72	31-137		
-Chloronaphthalene	78	38-107		
,2-Dichlorobenzene	62	-		
,4-Dichlorobenzene	63	20. 10.		
,4-Dinitrotoluene	105	28-104		
,6-Dinitrotoluene	104	28-89		
luoranthene	89			
-Chlorophenyl phenyl ether	81			
-Nitrosodi-n-propylamine	62	43 106		
tyl benzyl phthalate	80	41-126		
thracene	48			
rene	86	25 140		
xachloropropene	79	35-142		
Chloro-M-Cresol	82	26-103		
Chlorophenol	63	25-103		
Nitrophenol	70	23-102		
Nitrophenol	85	11 114		
4-Dinitrophenol	29	11-114		
ntachlorophenol	78	17-109		
	, v	1/-109		

Laboratory Job Number: L0502002

Parameter	% Recovery	QC Criteria	
SVOC's by GC/MS 8270 LCS f	10(e) 02-	06.08 (WG195440-2)	
SVOC's by GC/MS 8270 LCS i	or sample(s) 02	26-90	
Phenol	Ü2		
Surrogate(s)	65	25-120	
2-Fluorophenol	80	10-120	
Phenol-d6	84	23-120	
Nitrobenzene-d5	• •	30-120	
2-Fluorobiphenyl	84	19-120	
2,4,6-Tribromophenol	77	18-120	
	100		
PAH by GC/MS SIM 8270M	LCS for sample(s	09 (WG195375-2)	A STATE OF S
FAIT DY GOTTES	67	46-118	
Acenaphthene	62		
2-Chloronaphthalene	76		
Fluoranthene	46		
Anthracene	72	26-127	
Pyrene	76	9-103	
Pentachlorophenol			
Surrogate(s)	51	21-120	
2-Fluorophenol	43	10-120	
Phenol-d6	78	23-120	
Nitrobenzene-d5	, o 66	43-120	
2-Fluorobiphenyl	88	10-120	
2,4,6-Tribromophenol	72	33-120	
4-Terphenyl-d14	, -		
PAH by GC/MS SIM 8270M LC	S for sample(s)	02-06,08 (WG195443-2)	
	75		
Acenaphthene 2-Chloronaphthalene	78	40-140	
2-Chioronaphenarene	97	40-140	
Fluoranthene	51	40-140	
Anthracene	78	40-140	
Pyrene	91	40-140	
Pentachlorophenol			
Surrogate(s)	88	25-120	
2-Fluorophenol	116	10-120	
Phenol-d6	97	23-120	
Nitrobenzene-d5	83	30-120	
2-Fluorobiphenyl	114	19-120	
2,4,6-Tribromophenol	95	18-120	
4-Terphenyl-d14			
Polychlorinated Biphenyls	LCS for sample(s) 02-06,08 (WG195395-2)	
Aroclor 1242/1016	0.0		
Aroclor 1242/1010 Aroclor 1260	104	40-140	
Aroctor 1700			

Laboratory Job Number: L0502002

Parameter	% Recove	ery QC Criteria	
Polychlorinated Biphenyls 10s	2 - 6 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	<u>.</u>	
Polychlorinated Biphenyls LCS	o ror sample(s)	02-06,08 (WG195395-2)	
Surrogate(s)			
2,4,5,6-Tetrachloro-m-xylene	77	20 150	
Decachlorobiphenyl	105	30-150 30-150	
Polychlorinated Riphenula	Too e.		
Polychlorinated Biphenyls Aroclor 1242/1016	LCS for sample	(s) 09 (WG195425-2)	
Aroclor 1260	90	30-150	
	118	30~150	
Surrogate(s)			
2,4,5,6-Tetrachloro-m-xylene	0.4		
Decachlorobiphenyl	81	30-150	
	112	30-150	
Organochlorine Pesticides 1 Delta-BHC	LCS for sample	's) 09 (WC10E277 0)	
	55	(MG193317-2)	
Lindane	67		
Alpha-BHC	67		
Beta-BHC	66		
Meptachlor	69		
aldrin	70		
eptachlor epoxide	69		
ndrin	88		
ndrin aldehyde	58		
ndrin ketone	63		
ieldrin	65		
,4'-DDE	78		
,4'-DDD	78 79		
, 4'-DDT			
ndosulfan I	78		
ndosulfan II	74		
ndosulfan sulfate	72		
ethoxychlor	57	•	
is-Chlordane	86		
ans-Chlordane	77		
	74		
urrogate(s)			
4,5,6-Tetrachloro-m-xylene	64	30-150	
cachlorobiphenyl	45	30-150	
Organochlorine Pesticides ICS f			
Organochlorine Pesticides LCS f lta-BHC	or sample(s) 0:	2-06,08 (WG195397-2)	
ndane	61		
pha-BHC	68	46-127	
ta-BHC	65		
ptachlor	66		
drin	70	35-130	
ptachlor epoxide	70	34-132	
drin	73		
	88	42-139	

Laboratory Job Number: L0502002

Continued

Parameter	% Recovery	Or currents	
		AC AS INC195397-2)	
Organochlorine Pesticides LCS	for sample(s) U2-	06,00 (WG133327 14)	
Endrin aldehyde	52 72		
Endrin ketone	72 79	31-134	
Dieldrin	79 79	31 101	
4,4'-DDE	79 78		
4, 4'-DDD		23-134	
4,4'-DDT	94	29 29 -	
Endosulfan I	68 77		
Endosulfan II			
Endosulfan sulfate	66		
Methoxychlor	92		
cis-Chlordane	73		
trans-Chlordane	69		
Surrogate(s)	68	30-150	
2,4,5,6-Tetrachloro-m-xylene	83	30-150	
Decachlorobiphenyl			
Total Metals SPIKE for sample	(s) 02-06,08 (L050	2002-03, WG195659-	2)
Total Metals Silks	0		
Aluminum, Total	83	70-140	
Antimony, Total	100	70-140	
Arsenic, Total	85	70-140	
Barium, Total	94	70-140	
Beryllium, Total	95	70-140	
Cadmium, Total	0	70-140	
Calcium, Total	78	70-140	
Chromium, Total	88	70-140	
Cobalt, Total	96	70-140	
Copper, Total	0	70-140	
Iron, Total	104	70-140	
Lead, Total	66	70-140	
Magnesium, Total	4 4	70-140	
Manganese, Total	88	70-140	
Nickel, Total	85	70-140	
Potassium, Total	94	70-140	
Selenium, Total	95	70-140	
Silver, Total	103	70-140	
Sodium, Total	93	70-140	
Thallium, Total	82	70-140	
Vanadium, Total	88	70-140	
Zinc, Total		002-09 WG195405-21	1
Total Metals SPIKE for sa	mple(s) 09 (L0502	70-130	
Mercury, Total	120	10 200	
130400011		502002-05. WG19554	8-2)
Total Metals SPIKE for sampl	e(s) 02-06,08 (LO	70-130	
Morcury Total	9		

Mercury, Total

Laboratory Job Number: L0502002

Parameter	MS %	MSD %	RPD	777	
				RPD Limit	MS/MSD Limit
Volatile Organics by GC/MS (Chlorobenzene Benzene	3260 for en	mm 1 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2			
Chlorobenzene by GC/MS	124	white(s): 03-10	(L0501896-01,	WG195265-21	
	122		14	2,	
Toluene		106	14		
1,1-Dichloroethene	123	107	14		
Trichloroethene	132	114	15		
	127	106	18		
Surrogate(s)					
1,2-Dichloroethane-d4					
Toluene-d8	98	94	4		
4-Bromofluorobenzene	100	98	2		
Dibromofluoromethane	104	103	1		
raoromechane	100	96	4		
Volatile Organia			4		
Volatile Organics by GC/MS 826 Chlorobenzene Benzene	0 for samp	Le(s) 01 03-0	/ / / / / / / / / / / / / / / / / / / /		
Benzene	90	97	(F0201881-02)	, WG195363-2)	
Coluene	93	93	,	•	
	87	90	0		
,1-Dichloroethene	90	· -	3		
richloroethene	91	90	0		
	71	93	2		
urrogate(s)					
,2-Dichloroethane-d4	0.5				
oluene-d8	95	94	1		
-Bromofluorobenzene	98	98	0		
ibromofluoromethane	103	105	2		
	95	94	1		
Volatile Organics by GC/MS 826 nlorobenzene enzene			-		
nlorobenzene	0 for sampl	e(s) 05-08 (T	0502002 00 5		
enzene	91	79	14	3195684-2)	
luene	91	74	21		
1-Dichloroethene	88	71	21		
ichloroethene	93	78	_ _		
remidioethene	98	85	18		
rrosst. /)		0.5	14 .		
rrogate(s)					
2-Dichloroethane-d4	95	104			
luene-d8	94	104	9		
Bromofluorobenzene	96	97	3		
promofluoromethane	95	102	6		
		98	3		
SVOC's by GC/MS 8270 for					
naphthene	sample(s)	09 (L0502002-	09, WG195374~A	1.1	
/ = ±±±CH±Orohenzana		86	0	: /	
hloronaphthalene	77	86	11		
-Dichlorobenzene	86	95	10		
-Dichlorobenzene	68	72	6		
-Dinitrotoluene	68	72	6		
-Dinitrotoluene	135	138			
Pranthene	130	130	2		
olowant and a second	120	110	0		
nlorophenyl phenyl ether	99	99	9		
			0		

Laboratory Job Number: L0502002

	Continued				
	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Parameter					2 July 1 (1)
SVOC's by GC/MS 8270 fq	r sample(s) 09	(L05020	02-09, WG195	374-4)	
SVOC's by GC/MS 82/0 10	72	77	7		
o-Nitrosodi-n-propylamine	100	100	0		
Butyl benzyl phthalate	63	59	7		
Anthracene	110	110	0		
Pyrene	86	95	10		
Hexachloropropene	90	99	10		
P-Chloro-M-Cresol	68	74	8		
2-Chlorophenol	81	90	11		
2-Nitrophenol	98	94	3		
4-Nitrophenol	95	100	5		
2,4-Dinitrophenol	107	107	0		
Pentachlorophenol	52	59	13		
Phenol	3.2				
Surrogate(s)	59	65	10		
2-Fluorophenol	61	67	9		
Phenol-d6	91	99	8		
Nitrobenzene-d5	90	99	10		
2-Fluorobiphenyl	94	90	4		
2.4.6-Tribromophenol	123	119	3		
4-Terphenyl-d14 SVOC's by GC/MS 8270 for	sample(s) 02-	-06,08 (I	.0502002-02.	WG195440-47	31-137
SVOC's by GC/MS 8270 101	74	82	10	50	38-107
Aconaphthene	65	77	1/	50	
1 2.4-Trichlorobenzene	7.4	89	18	50	
2-Chloronaphthalene	58	67	14	50	28-104
1,2-Dichlorobenzene	58	65	11	50	28-89
1,4-Dichlorobenzene	132	131	0	50	
2,4-Dinitrotoluene	120	130	8	50	
2,6-Dinitrotoluene	110	110	0	50	
Fluoranthene	91	94	3	50	41-126
4-Chlorophenyl phenyl ether	62	74	18	50	
n-Nitrosodi-n-propylamine	100	110	10	50	
Butyl benzyl phthalate	58	60	3 0	50	35-142
Anthracene	110	110	=	50	
Pyrene	70	77	10	50	26-103
Hexachloropropene	90	96	6	50	25-102
P-Chloro-M-Cresol	61	71	15 23	50	
2-Chlorophenol	67	8 4		50	11-114
2-Nitrophenol	117	110	9	50	
4-Nitrophenol	98	96	2 3	50	17-109
2,4-Dinitrophenol	68	66	18	50	26-90
Pentachlorophenol Phenol	61	73	10		
			- 4		25-120
Surrogate(s)	63	74	16		10-120
2-Fluorophenol	78	91	15		
Phenol-d6					

Laboratory Job Number: L0502002

Parameter	MS %	MSD 8	RPD	DDD T	
			, RFD	RPD Limit	MS/MSD Limit
SVOC's by GC/MS 8270 for Nitrobenzene-d5	sample/el 0	2 06 00 4	0500000		
	81	2-06,08 (I	0502002-02;	WG195440-4)	1.5
2-Fluorobiphenyl	80	95	16		23-120
2,4,6-Tribromophenol		94	16		30-120
4-Terphenyl-d14	93	97	4		19-120
	123	127	3		18-120
PAH by GC/MS SIM 8270M Acenaphthene	for sample(s) 09 (L05	02002-09 MC1	0527E 4)	
	72	77	7		
2-Chloronaphthalene	72	72	0	40	46-118
Fluoranthene	86	86	0	40	
Anthracene	54	50		40	
Pyrene	81	81	8	40	
Pentachlorophenol	91		0	40	26-127
	91	100	9	40	9-103
Surrogate(s)					
2-Fluorophenol	71	5.5			
Phenol-d6	73	75	5		21-120
Nitrobenzene-d5		80	9		10-120
?-Fluorobiphenyl	85	90	6		23-120
2,4,6-Tribromophenol	74	75	1		43-120
-Terphenyl-d14	100	99	1		10-120
corphenyl di4	81	78	4		33-120
PAH by GC/MS SIM 8270M for cenaphthene	sample(s) 0	2-06.08 ().	050200202	707.05 4.40	
	65	65	0		
-Chloronaphthalene	62	62	0	50	40-140
luoranthene	91	86	6	50	40-140
nthracene	50	48		50	40-140
yrene	82	67	4	50	40-140
entachlorophenol	69	57	20	50	40-140
	0.5	37	19	50	40-140
urrogate(s)					
-Fluorophenol	69	73	_		
nenol-d6	91	73 97	6 .		25-120
itrobenzene-d5	74	80	6		10-120
-Fluorobiphenyl	66		8		23-120
4,6-Tribromophenol	114	68	3		30-120
Terphenyl-d14		104	9		19-120
-	92	85	8		18-120
Polychlorinated Biphenyls for oclor 1242/1016	r sample(s)	02-06,08 (L0502002-03	WC105205 41	
	88	78	13	WG195395-4) 50	10
oclor 1260	106	92	14		40-140
			7.4	50	40-140
rrogate(s)					
4,5,6-Tetrachloro-m-xylene	78	73	7		
cachlorobiphenyl	103	90			30-150
		20	13		30-150

Laboratory Job Number: L0502002

Parameter	MS %	MSD	% RPD	RPD Limit	MS/MSD Limit
	for sample(s)	09	10502002-09,	WG195425-4)	
Polychlorinated Biphenyls	93	90	3	30	30-150
Aroclor 1242/1016	117	111	5	30	30-150
Aroclor 1260	117	112			
Surrogate(s)	87	89	2		30-150
2,4,5,6-Tetrachloro-m-xylene		66	14		30-150
Decachlorobiphenyl	76				
Organochlorine Pesticides	for sample(s		(L0502002-09,	WG195377-4)	
Delta-BHC	57	50		30	
Lindane	68	58	16	30	
	67	57	16	30	
Alpha-BHC	67	58	14	30	
Beta-BHC	70	53	28		
Heptachlor	70	64	9	30	
Aldrin	72	62	15	30	
Heptachlor epoxide	86	78	10	30	
Endrin	62	50	21	30	
Endrin aldehyde	68	59	14	30	
Endrin ketone	69	59	16	30	
Dieldrin	76	70	8	30	
4,4'-DDE		72	7	30	
4,4'-DDD	77	70	8	30	
4,4'-DDT	76	66	7	30	
Endosulfan I	71		16	30	
Endosulfan II	74	63	19	30	
Endosulfan sulfate	63	52		30	
Methoxychlor	87	79	_	30	
cis-Chlordane	75	70		30	
trans-Chlordane	72	66	9	30	
Surrogate(s)			0		30-150
2,4,5,6-Tetrachloro-m-xylene	67	61			30-150
Decachlorobiphenyl	48	47			
Organochlorine Pesticides	for sample(s)	02-06	5,08 (L0502002	-03, WG195397-4	1)
	60	51			46-127
Delta-BHC	66	60		50	40-127
Lindane	64	5	9 8	50	
Alpha-BHC	83	7	1 16	50	25 120
Beta-BHC	66	6	1 9	50	35-130
Heptachlor	67	6	0 10	50	34-132
Aldrin	69	6	4 7	50	
Heptachlor epoxide	82	8	-	50	42-139
Endrin	56		0 12	50	
Endrin aldehyde			2 1	50	
Endrin ketone	73		1 3	50	31-134
	73		-	50	
Dieldrin	<u> </u>	~	7		
Dieldrin 4,4'-DDE	7 4 72		3 2 2	50	

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Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Organochlorine Pesticides for 4,4'-DDT Endosulfan I Endosulfan II Endosulfan sulfate Methoxychlor cis-Chlordane trans-Chlordane	sample(s) 88 63 73 71 89 64	02-06,08 86 60 73 69 85 65 62	(L0502002-03, 2 5 0 3 5 2 4	50 50 50 50 50 50 50 50 50	23-134
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	127 151	122 152	4 1		30-150 30-150

Laboratory Job Number: L0502002

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analys	is for sampl	le(s) 02-06	,08 (WG19	95659-3) 1 3051	
Total Metals				1 3051	
10000		43	4 0	1 6010B	0303 20:00 0304 09:55 RW
Aluminum, Total	ND	mg/kg	4.0 2.0	1 6010B	0303 20:00 0304 09:55 RW
Antimony, Total	ND	mg/kg		1 60108	0303 20:00 0304 09:55 RW
Arsenic, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Barium, Total	ND	mg/kg	0.40	_	0303 20:00 0304 09:55 RW
Beryllium, Total	ND	mg/kg	0.1000		0303 20:00 0304 09:55 RW
Cadmium, Total	ND	mg/kg	0.1000		0303 20:00 0304 09:55 RW
Calcium, Total	ND	mg/kg	4.0	1 6010B	0303 20:00 0304 09:55 RW
Chromium, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Cobalt, Total	ND	mg/kg	0.80	1 6010B	0303 20:00 0304 09:55 RW
Copper, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Iron, Total	ND	mg/kg	2.0	1 6010B	0303 20:00 0304 09:55 RW
	ND	mg/kg	2.0	1 6010B	
Lead, Total	ND	mg/kg	4.0	1 6010B	0303 20:00 0304 09:55 RW
Magnesium, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Manganese, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Nickel, Total	ND	mg/kg	100	1 6010B	0303 20:00 0304 09:55 RW
Potassium, Total	ND	mg/kg	0.200	1 6010B	0303 20:00 0304 09:55 RW
Selenium, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Silver, Total	ND	mg/kg	80.	1 6010B	0303 20:00 0304 09:55 RW
Sodium, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Thallium, Total	ND	mg/kg	0.40	1 6010B	0303 20:00 0304 09:55 RW
Vanadium, Total	ND	mg/kg	2.0	1 6010B	0303 20:00 0304 09:55 RW
Zinc, Total		-			
Blank Ar	nalysis for	sample(s) (9 (WG195	405-4)	
Total Metals					r 0202 12.19 DM
Mercury, Total	ND	mg/l	0.000)2 1 7470A	0301 17:45 0302 12:18 DM
	ysis for sam	ple(s) 02-0	06,08 (WG	3195548-4)	
Total Metals	1	-			
Mercury, Total	ND	mg/kg	0.08	1 7471A	0302 18:20 0303 10:20 DM
	lysis for sa	ample(s) 09	-10 (WG1	95265-8)	
Volatile Organics by GC/M	s 8260	*		1 8260B	0301 14:51 B
Volatile Organics by GC/H	ND	ug/l	5.0		
Methylene chloride	ND	ug/l	0.75		
1,1-Dichloroethane	ND	ug/l	0.75		
Chloroform	ND	ug/l	0.50		
Carbon tetrachloride	ИD	ug/l	1.8		
1,2-Dichloropropane	ND	ug/1	0.50		
Dibromochloromethane		ug/1	0.75		
1,1,2-Trichloroethane	ND ND	ug/1	0.50		
Tetrachloroethene	ND	ug/1 ug/l	0.50		
Chlorobenzene Trichlorofluoromethane	ND ND	ug/1 ug/l	2.5		

Laboratory Job Number: L0502002

PARAMETER	RESULT	UNITS	RDL	REF METHOD		
			TOL	KER METHOD	DATE	ID
					PREP ANA	L
Blank Anal	ysis for sar	no to lotan	ia of the installation			
	8260 conta	mbre(s) (a	-10 (MG19			
-, 2 Dichioroethane	ND			1 8260B	0301 1	1 - 51 : pm
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
1,1-Dichloropropene	ND	ug/l	0.50			
Bromoform		ug/l	2.5			
1,1,2,2-Tetrachloroethane	ND	ug/l	2.0			
Benzene	ND	ug/l	0.50			
roluene	ND	ug/l	0.50			
Ethylbenzene	ND	ug/l	0.75			
Chloromethane	ND	ug/l	0.50			
Bromomethane	ND	ug/l	2.5			
inyl chloride	ND	ug/l	1.0			
Chloroethane	ND	ug/l	1.0			
,1-Dichloroethene	ИD	ug/l	1.0			
rans-1,2-Dichloroethene	ND	ug/l	0.50			
richloroethene	ND	ug/l	0.75			
,2-Dichlorobenzene	ND	ug/l	0.50			
,3-Dichlorobenzene	ND	ug/l	2.5			
,4-Dichlorobenzene	ND	ug/l	2.5			
othul taut	ND	ug/l	2.5			
ethyl tert butyl ether /m-Xylene	ND	ug/l	1.0			
-Xylene	ND	ug/l	0.50			
	ND	ug/l	0.50			
is-1,2-Dichloroethene	ND	ug/l	0.50			
ibromomethane	ND	ug/l	5.0			
4-Dichlorobutane	ND	ug/l	5.0			
odomethane	ND	ug/l	5.0			
2,3-Trichloropropane	ND	ug/l	5.0			
yrene	ND	ug/l		•		
chlorodifluoromethane	ND	ug/l	0.50			
etone	ND	ug/1	5.0			
rbon disulfide	ND		5.0			
Butanone	ND	ug/l	5.0			
nyl acetate	ND	ug/l	5.0			
Methyl-2-pentanone	ND	ug/l	5.0			
Hexanone	ND	ug/l	5.0			
hyl methacrylate		ug/l	5.0			
rolein	ND	ug/l	5.0			
rylonitrile	ND	ug/l	12.			
pmochloromethane	ND	ug/l	5.0			
rahydrofuran	ND	ug/l	2.5			
2-Dichloropropane	ND	ug/l	10.			
-Dibromoethane	ND	ug/l	2.5			
-Dichloropropane	ND	ug/l	2.0			
,1,2-Tetrachloroethane	ИD	ug/l	2.5			
, +, 2 - retrachioroethane	ND	ug/l	0.50			

Laboratory Job Number: L0502002

		INITEC	RDL	REF METHOD	DA	TE.	ID
ARAMETER	RESULT	UNITS			PREP	ANAL	
Blank Analysis	for sam	ple(s) 09-10	(WG19	5265-8) 1 8260B		0301 14:5	1 BT
Volatile Organics by GC/MS 826	50 contin	ueu	2.5	. 1 02000			
Bromobenzene	ИD						
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5 2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l					
Hexachlorobutadiene	ND	ug/l	1.0 0.50				
Isopropylbenzene	ND	ug/l					
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
	Recove	CV	QC C	riteria			
Surrogate(s)	124.	8					
1,2-Dichloroethane-d4	102.	%					
Toluene-d8	115.	96					
4-Bromofluorobenzene	110.	06					
Dibromofluoromethane							
Blank Analysis	for sam	ple(s) 01,03	-04 (W	3195363-107 1 8260B		0301 0	9:40 B
Volatile Organics by GC/MS 8	3260	*	25.	1 0200			
Methylene chloride	ND	ug/kg					
1,1-Dichloroethane	ND	ug/kg	3.8	-			
Chloroform	ND	ug/kg	3.8				
Carbon tetrachloride	ND	ug/kg	2.5				
1,2-Dichloropropane	ND	ug/kg	8.8				
Dibromochloromethane	ND	ug/kg	2.5				
1,1,2-Trichloroethane	ND	ug/kg	3.8				
Tetrachloroethene	ND	ug/kg	2.5				
Chlorobenzene	ND	ug/kg	2.5				
Trichlorofluoromethane	ND	ug/kg	12				
1,2-Dichloroethane	ND	ug/kg	2.5				
1,1,1-Trichloroethane	ND	ug/kg	2.				
Bromodichloromethane	ND	ug/kg	2.				
trans-1,3-Dichloropropene	ND	ug/kg	2.				
cis-1,3-Dichloropropene	ND	ug/kg	2.				
	ND	ug/kg	12				
C1S-1, 3-DICHIOTOPTOPONO	ND						
1,1-Dichloropropene		ug/kg	10				
1,1-Dichloropropene	ND	ug/kg ug/kg	2.	5			
1,1-Dichloropropene				5			

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analys	3 - 6 -				
Blank Analys Volatile Organics by GC/MS	is for sampl	e(s) 01,0	3-04 (WG1	95363-10)	
Toluene	ezee contin	ued	38 3	1 8260B	0301 09:40 BT
Ethylbenzene	ND	ug/kg	3.8		0301 03:40 BT
Chloromethane	ND	ug/kg	2.5		
Bromomethane	ND	ug/kg	12.		
Vinyl chloride	ND	ug/kg	5.0		
Chloroethane	ND	ug/kg	5.0		
1,1-Dichloroethene	ND	ug/kg	5.0		
trangel 2 Dieta	ND	ug/kg	2.5		
trans-1,2-Dichloroethene Frichloroethene	ND	ug/kg	3.8		
1 2 Districtione	ND	ug/kg	2.5		
1,2-Dichlorobenzene	ND	ug/kg	12.		
1,3-Dichlorobenzene	ND	ug/kg	12.		
l,4-Dichlorobenzene	ND	ug/kg	12.		
Methyl tert butyl ether	ND	ug/kg	5.0		
o/m-Xylene	ND	ug/kg	2.5		
-Xylene	ND	ug/kg	2.5		
cis-1,2-Dichloroethene	ND	ug/kg			
Dibromomethane	ND	ug/kg ug/kg	2.5		
,4-Dichlorobutane	ND		25.		
odomethane	ND	ug/kg	25.		
,2,3-Trichloropropane	ND	ug/kg	25.		
tyrene	ND	ug/kg	25.		
ichlorodifluoromethane	ND	ug/kg	2.5		
cetone	ND	ug/kg	25.		
arbon disulfide		ug/kg	25.		
-Butanone	ND	ug/kg	25.		
inyl acetate	ND	ug/kg	25.		
-Methyl-2-pentanone	ND	ug/kg	25.		
-Hexanone	ND	ug/kg	25.		
thyl methacrylate	ND	ug/kg	25.		
crolein	ND	ug/kg	25.		
crylonitrile	ND	ug/kg	62.		
Comochloromethane	ИD	ug/kg	25.		
etrahydrofuran	ND	ug/kg	12.		
2 Dieble	ND	ug/kg	50.		
2-Dichloropropane	ND	ug/kg	12.		
2-Dibromoethane	ND	ug/kg	10.		
3-Dichloropropane	ND	ug/kg	12.		
1,1,2-Tetrachloroethane	ND	ug/kg	2.5		
omobenzene	ND	ug/kg	12.		
Butylbenzene	ND	ug/kg			
c-Butylbenzene	ND	ug/kg ug/kg	2.5		
rt-Butylbenzene	ND	ug/kg ug/kg	2.5		
Chlorotoluene	ND		12.		
Chlorotoluene	ND	ug/kg	12.		
2-Dibromo-3-chloropropage	ND	ug/kg	12.		
kachlorobutadiene		ug/kg	12.		
ppropylbenzene	ND	ug/kg	12.		
1 / 22 CITECITO	ND	ug/kg	2.5		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					. 99.5 c
Blank Analysis	for sample	(s) 01,03-	04 (WG1	95363-10) 1 8260B	0301 09:40 BT
Volatile Organics by GC/MS-82	60 continu	ieu	2.5		
p-Isopropyltoluene	ND	49, 9	12.		
Naphthalene	ND	ug/kg	2.5		
n-Propylbenzene	ИD	ug/kg	12.		
1,2,3-Trichlorobenzene	ND	ug/kg	12.		
1,2,4-Trichlorobenzene	ND	ug/kg	12.		
1,3,5-Trimethylbenzene	ND	ug/kg	12.		
1,2,4-Trimethylbenzene	ND	ug/kg			
trans-1,4-Dichloro-2-butene	ND	ug/kg	12.		
Ethyl ether	ND	ug/kg	12.		
	Recovery		QC C	riteria	
Surrogate(s)	100.	9			
1,2-Dichloroethane-d4	97.0	8			
Toluene-d8	118.	8			
4-Bromofluorobenzene	88.0	%			
Dibromofluoromethane	88.0	0			at a first
Blank Analys	ie for sam	nple(s) 05-	08 (WG1	.95684-4)	
Blank Analys	2260			1 8260B	0303 10:30 B
Volatile Organics by GC/MS 8	ND	ug/kg	25.		
Methylene chloride	ND	uq/kg	3.8		
1,1-Dichloroethane	ND	ug/kg	3.8		
Chloroform	ND	ug/kg	2.5		
Carbon tetrachloride		ug/kg	8.8		
1,2-Dichloropropane	ND	ug/kg	2.5		
Dibromochloromethane	ND	ug/kg	3.8		
1,1,2-Trichloroethane	ND	ug/kg	2.5		
Tetrachloroethene	ND	ug/kg	2.5		
Chlorobenzene	ND	ug/kg	12.		
Trichlorofluoromethane	ND	-	2.5		
1,2-Dichloroethane	ND	ug/kg	2.5		
1,1,1-Trichloroethane	ND	ug/kg	2.5		
Bromodichloromethane	ND	ug/kg	2.5		
trans-1,3-Dichloropropene	ИD	ug/kg	2.5		
cis-1,3-Dichloropropene	ND	ug/kg	12.		
1,1-Dichloropropene	ND	ug/kg	10.		
Bromoform	ND	ug/kg	2.5		
1,1,2,2-Tetrachloroethane	ND	ug/kg			
Benzene	ND	ug/kg	2.5		
Toluene	ND	ug/kg	3.8		
Ethylbenzene	ND	ug/kg	2.5		
Chloromethane	ND	ug/kg	12		
Bromomethane	ND	ug/kg	5.		
Vinyl chloride	ND	ug/kg	5.		
Chloroethane	ND	ug/kg	5.		
1,1-Dichloroethene	ND	ug/kg	2.		
trans-1,2-Dichloroethene	ND	ug/kg	3.		
Trichloroethene	ND	ug/kg	2.	5	
Trichtoroethene					

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	
					PREP ANA	ID r.
Blank Anal	ysis for sar	mple(s) 05	-08 (พิศาค	5684-41		
	8260 contir	nued		1 82609		1. 1.
r, z-pronitoropenzene	ND	ug/kg	12.	1 826UB	0303 10	:30 BT
1,3-Dichlorobenzene	ND	ug/kg	12.			
1,4-Dichlorobenzene	ND	ug/kg	12.			
Methyl tert butyl ether	ND	ug/kg	5.0			
p/m-Xylene	ND	ug/kg	2.5			
o-Xylene	ND	ug/kg	2.5			
cis-1,2-Dichloroethene	ND	ug/kg	2.5			
Dibromomethane	ND	ug/kg	25.			
1,4-Dichlorobutane	ND	ug/kg	25. 25.			
Iodomethane	ND	ug/kg ug/kg				
1,2,3-Trichloropropane	ND	ug/kg ug/kg	25.			
Styrene	ND	ug/kg ug/kg	25.			
Dichlorodifluoromethane	ND		2.5			
Acetone	ND	ug/kg	25.			
Carbon disulfide	ND	ug/kg	25.			
2-Butanone	ND	ug/kg	25.			
inyl acetate	ND	ug/kg	25.			
-Methyl-2-pentanone	ND	ug/kg	25.			
-Hexanone		ug/kg	25.			
thyl methacrylate	ND	ug/kg	25.			
crolein	ND	ug/kg	25.			
crylonitrile	ND	ug/kg	62.			
romochloromethane	ND	ug/kg	25.			
etrahydrofuran	ND	ug/kg	12.			
,2-Dichloropropane	ND	ug/kg	50.			
,2-Dibromoethane	ND	ug/kg	12.			
,3-Dichloropropane	ND	ug/kg	10.			
,1,1,2-Tetrachloroethane	ND	ug/kg	12.			
romobenzene	ND	ug/kg	2.5			
-Butylbenzene	ND	ug/kg	12.			
ec-Butylbenzene	ND	ug/kg	2.5			
ert-Butylbenzene	ND	ug/kg	2.5			
-Chlorotoluene	ND	ug/kg	12.			
Chloret 1	ND	ug/kg	12.			
Chlorotoluene	ND	ug/kg	12.			
2-Dibromo-3-chloropropane	ND	ug/kg	12.			
xachlorobutadiene	ND	ug/kg	12.			
opropylbenzene	ND	ug/kg	2.5			
Isopropyltoluene	ND	ug/kg	2.5			
phthalene	ИD	ug/kg	12.			
Propylbenzene	ND	ug/kg				
2,3-Trichlorobenzene	ND	ug/kg	2.5			
2,4-Trichlorobenzene	ND	ug/kg	12.			
3,5-Trimethylbenzene	ND	ug/kg ug/kg	12.			
2,4-Trimethylbenzene	ND		12.			
ans-1,4-Dichloro-2-butene	ND	ug/kg	12.			
nyl ether	ND	ug/kg	12.			
	1112	ug/kg	12.			

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis	for samp	ole(s) 05-0	8 (WG195	684-4) 1 8260B	0303 10:30 BT
Volatile Organics by GC/MS 820	0 continu	ieu		iteria	
Surrogate(s)	Vecovery	%	20 02.		
1,2-Dichloroethane-d4	101.	to go			
Toluene-d8	94.0	-			
4-Bromofluorobenzene	115.	%			
Dibromofluoromethane	87.0	8			
Blank Analy	sis for s	ample(s) 09	(WG195	374-1) 1 8270C	0301 12:35 0302 17:11 HL
SVOC's by GC/MS 8270			5.0	2 02.11	
Acenaphthene	ND	ug/1	50.		
Benzidine	ND	ug/1	5.0		
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ИD	ug/l	5.0		
1-Chloronaphthalene	ND	ug/l			
2-Chloronaphthalene	ND	ug/l	6.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
1,3-Dichlorobenzene	ND	ug/l	5.0		
1,4-Dichlorobenzene	ND	ug/l	5.0		
3,3'-Dichlorobenzidine	ND	ug/l	50.		
2,4-Dinitrotoluene	ND	ug/l	6.0		
2,6-Dinitrotoluene	ND	ug/l	5.0		
	ND	ug/l	5.0		
Azobenzene	ND	ug/l	5.0		
Fluoranthene 4-Chlorophenyl phenyl ether	ND	ug/l	5.0		
4-Chlorophenyi phenyi ether	ND	ug/l	5.0		
4-Bromophenyl phenyl ether	ND	ug/l	5.0		
Bis (2-chloroisopropyl) ether	ND	ug/l	5.0		
Bis (2-chloroethoxy) methane	ND	ug/l	10.		
Hexachlorobutadiene	ND	ug/l	10.	-	
Hexachlorocyclopentadiene	ND	ug/l	5.0		
Hexachloroethane	ND	ug/l	5.0		
Isophorone	ND	ug/l	5.0		
Naphthalene	ND	ug/l	5.0		
Nitrobenzene	ND	ug/l	15.		
NDPA/DPA	ND	ug/l	5.0		
n-Nitrosodi-n-propylamine	ND	ug/l	10.		
Bis(2-ethylhexyl)phthalate	ND	ug/1	5.0		
Butyl benzyl phthalate	ND	ug/1	5.0		
Di-n-butylphthalate		ug/l	5.0		
Di-n-octylphthalate	ND	ug/l	5.0		
Diethyl phthalate	ИD	ug/l	5.0		
Dimethyl phthalate	ND	ug/l	5.0		
Benzo(a)anthracene	ИD	ug/1	5.0		
Benzo(a)pyrene	ND	ug/1	5.0		
Benzo(b) fluoranthene	ND	ug/l ug/l	5.0		
Benzo(k)fluoranthene	ND	-	5.0		
Chrysene	ND	ug/l	<i>J</i> . (•	

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DAME		
_					DATE II PREP ANAL		
							
Blank Anal SVOC's by GC/MS 8270 continu	ysis for s	ample(s) (9 (WG195	374-1)	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co		
Acenaphthylene	ea	* **		1 8270C	0301 12:35 0302 17:11 HI		
Anthracene	ND	ug/l	5.0	•	12.33 0302 17:11 HI		
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indepo(1 2 2 adv	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene Pyrene	ND	ug/l	7.0				
	ND	ug/l	5.0				
Benzo(e)pyrene	ND	ug/l	5.0				
Biphenyl	ND	ug/l	5.0				
Perylene	ND	ug/l	5.0				
Aniline	ND	ug/l	10.				
1-Chloroaniline	ND	ug/l	5.0				
-Methylnaphthalene	ND	ug/l	5.0				
2-Nitroaniline	ND	ug/l	5.0				
-Nitroaniline	ND	ug/l	5.0				
-Nitroaniline	ND	ug/l	7.0				
ibenzofuran	ND	ug/l	5.0				
,a-Dimethylphenethylamine	ND	ug/l	50.				
exachloropropene	ND	ug/l					
itrosodi-n-butylamine	ND	ug/l	10.				
-Methylnaphthalene	ND	-	10.				
,2,4,5-Tetrachlorobenzene	ND	ug/l	8.0				
entachlorobenzene	ND	ug/l	20.				
-Naphthylamine	ND	ug/l	20.				
-Naphthylamine	ND	ug/l	20.				
nenacetin	ND	ug/l	20.				
imethoate		ug/l	10.				
-Aminobiphenyl	ND	ug/l	20.				
entachloronitrobenzene	ND	ug/l	10.	•			
sodrin	ND	ug/l	10.				
Dimethylaminoazobenzene	ND	ug/l	10.				
lorobenzilate	ND	ug/l	10.				
Methylcholanthrene	ND	ug/l	20.				
hyl Methanesulfonate	ND	ug/l	20.				
etophenone	ND	ug/l	15.				
trosodipiperidine	ND	ug/l	20.				
12-Dimathylbon-/-	ND	ug/l	20.				
12-Dimethylbenz(a)anthracene Nitrosodimethylamine		ug/l	10.				
4,6-Trichlorophenol	ND	ug/l	50.				
Chloro-m-cresol	ND	ug/l	5.0				
	ND	ug/l	5.0				
Chlorophenol	ND	ug/l	6.0				
4-Dichlorophenol	ND	ug/l	10.				
1-Dimethylphenol	ND	ug/l	10.				
Nitrophenol Nitrophenol	ND	ug/l	20.				
		J	_ ~ .				

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PARAMETER	RESULT	UNITS	RDL	REF M	ETHOD	PREP	ANA	L ID
					,			
Blank Analys	is for sa	ample(s) 09	(WG1953	374-1)	270C	0301 12:3	5 0302 1	7:11 HL
SVOC's by GC/MS 8270 continued			20.	1 .	2.00			
2,4-Dinitrophenol	ND	ug/l	20.					
4,6-Dinitro-o-cresol	ИD	ug/l	20.					
Pentachlorophenol	ND	ug/l	7.0					
Phenol	ND	ug/l	6.0					
2-Methylphenol	ND	ug/l						
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0					
2,4,5-Trichlorophenol	ND	ug/l	5.0					
2,6-Dichlorophenol	ND	ug/l	10.					
Benzoic Acid	ND	ug/l	50.					-
Benzyl Alcohol	ND	ug/l	10.					
Carbazole	ND	ug/l	5.0					
Pyridine	ND	ug/l	50.					
2-Picoline	ND	ug/l	20.					
Pronamide	ND	ug/l	20.					
Methyl methanesulfonate	ND	ug/l	20.					
Surrogate(s)	Recover		QC C:	riteria	L			
2-Fluorophenol	42.0	8						
Phenol-d6	34.0	%						
Nitrobenzene-d5	84.0	96						
2-Fluorobiphenyl	70.0	8						
2,4,6-Tribromophenol	73.0	%						
4-Terphenyl-d14	111.	એ						
Blank Analysi	s for sam	ple(s) 02-0	6,08 (W	G19544	0-1) 8270C	0301 20	10 0302	15:05
SVOC's by GC/MS 8270	• .			1	8270C	V301 20		
Acenaphthene	ND	ug/kg	170					
Benzidine	ND	ug/kg	1700)				
1,2,4-Trichlorobenzene	ND	ug/kg	170	-				
Hexachlorobenzene	ND	ug/kg	170					
Bis (2-chloroethyl) ether	ND	ug/kg	170					
1-Chloronaphthalene	ND	ug/kg	170					
2-Chloronaphthalene	ND	ug/kg	200					
1,2-Dichlorobenzene	ND	ug/kg	170					
1,2-Dichlorobenzene	ND	ug/kg	170					
1,4-Dichlorobenzene	ND	ug/kg	170					
T,4-DICHTOLODGHZene		/1	170	0				
a as nightarchangidine	ND	ug/kg						
3,3'-Dichlorobenzidine	ND ND	ug/kg ug/kg	200					
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene			200 170					
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene 2,6-Dinitrotoluene	ND ND	ug/kg	200 170 170					
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene 2,6-Dinitrotoluene Azobenzene	ND ND ND	ug/kg ug/kg	200 170 170 170					
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene 2,6-Dinitrotoluene Azobenzene Fluoranthene	ND ND ND ND	ug/kg ug/kg ug/kg	200 170 170 170					
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene 2,6-Dinitrotoluene Azobenzene Fluoranthene 4-Chlorophenyl phenyl ether	ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg	200 170 170 170 170) }				
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene 2,6-Dinitrotoluene Azobenzene Fluoranthene 4-Chlorophenyl phenyl ether 4-Bromophenyl phenyl ether	ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg	200 170 170 170) }				
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene 2,6-Dinitrotoluene Azobenzene Fluoranthene 4-Chlorophenyl phenyl ether 4-Bromophenyl phenyl ether Bis(2-chloroisopropyl)ether	ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	200 170 170 170 170))				
3,3'-Dichlorobenzidine 2,4-Dinitrotoluene 2,6-Dinitrotoluene Azobenzene Fluoranthene 4-Chlorophenyl phenyl ether 4-Bromophenyl phenyl ether	ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	200 170 170 170 170 170)))				

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	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analysis	for same	lo/a) no	06 00 15		
	u ror samb	ie(s) 02-	06,08 (WG		
achlorocyclopentadiene	ND			1 8270C	0301 20:10 0302 15:05 HL
achloroethane	ND	ug/kg	330		
phorone	ND	ug/kg	170		
hthalene	ND	ug/kg	170		
robenzene		ug/kg	170		
A/DPA	ND	ug/kg	170		
itrosodi-n-propylamine	ND	ug/kg	500		
(2-ethylhexyl)phthalate	ND	ug/kg	170		
yl benzyl phthalate	ND	ug/kg	330		
n-butylphthalate	ND	ug/kg	170		
n-octylphthalate	ND	ug/kg	170		
thyl phthalate	ND	ug/kg	170		
ethyl phthalate	ND	ug/kg	170		
o(a)anthracene	ND	ug/kg	170		
o(a)pyrene	ND	ug/kg	170		
o(b)fluoranthene	ND	ug/kg	170		
o(k)fluoranthene	ND	ug/kg	170		
sene	ND	ug/kg	170		
aphthylene	ND	ug/kg	170		
racene	ND	ug/kg	170		
o(ghi)perylene	ND	ug/kg	170		
rene	ND	ug/kg	170		
anthrene	ND	ug/kg	170		
	ND	ug/kg	170		
nzo(a,h)anthracene	ND	ug/kg	170		
no(1,2,3-cd)pyrene	ND	ug/kg	170		
	ND	ug/kg	170		
o(e)pyrene enyl	ND	ug/kg	170		
	ND	ug/kg	170		
lene	ND	ug/kg	170		
ne	ND	ug/kg	330	•	
oroaniline	ND	ug/kg	170		
hylnaphthalene	ND	ug/kg	170		
roaniline	ND	ug/kg	170		
roaniline	ND	ug/kg	170		
roaniline	ND	ug/kg	230		
zofuran	ND	ug/kg	170		
imethylphenethylamine	ND	ug/kg ug/kg	1700		
hloropropene	ND	ug/kg	330		
sodi-n-butylamine	AD.	ug/kg	330		
hylnaphthalene :	4D	ug/kg ug/kg	270		
,5-Tetrachlorobenzene	1D	ug/kg			
chlorobenzene	1D	ug/kg	670		
nthylamine ,		-	670		
nthylamine n		ug/kg	670		
cetin		ug/kg	670		
00240					
r noato		ug/kg ug/kg	330 670		

Laboratory Job Number: L0502002

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					- 1
Blank Analysi	s for sampl	e(s) 02-06	,08 (WG1	95440-1)	0301 20:10 0302 15:05 HL
SVOC's by GC/MS 8270 continu	ed	,		1 8270C	0301 20.10
SVOC'S by GC/Mb 02/0 out	ND	ug/kg	330		
4-Aminobiphenyl Pentachloronitrobenzene	ND	ug/kg	330		
	ND	ug/kg	330		
Isodrin	ND	ug/kg	330		
p-Dimethylaminoazobenzene	ND	ug/kg	670		
Chlorobenzilate	ND	ug/kg	670		
3-Methylcholanthrene	ND	ug/kg	500		
Ethyl Methanesulfonate	ND	ug/kg	670		
Acetophenone	ND	ug/kg	670		
Nitrosodipiperidine		ug/kg	330		
7,12-Dimethylbenz(a)anthrac	ND	ug/kg	1700		
n-Nitrosodimethylamine	ND	ug/kg	170		
2,4,6-Trichlorophenol	ND	ug/kg	170		
p-Chloro-m-cresol	ND	ug/kg	200		
2-Chlorophenol	ND	ug/kg	330		
2,4-Dichlorophenol	ND	ug/kg	330		
2,4-Dimethylphenol	ND	ug/kg	670		
2-Nitrophenol	ND	ug/kg	330		
4-Nitrophenol	ND	ug/kg	670		
2,4-Dinitrophenol	ND	ug/kg	670		
4,6-Dinitro-o-cresol	ND	ug/kg	670		
Pentachlorophenol	ND	ug/kg	230		
Phenol	ND	ug/kg	200		
2-Methylphenol		ug/kg	200		
3-Methylphenol/4-Methylphen	nol ND	ug/kg	170		
2,4,5-Trichlorophenol	ИD	ug/kg	330		
2,6-Dichlorophenol	ND	ug/kg	1700		
Benzoic Acid	ND	ug/kg	330		
Benzyl Alcohol	ND	ug/kg	170		
Carbazole	ND	ug/kg	1700	•	
Pyridine	ND	ug/kg	670		
2-Picoline	ND	ug/kg	670		
Pronamide	ND	ug/kg	670		
Methyl methanesulfonate	ND	ug/ kg	*		
	_		oc c	Criteria	
Surrogate(s)	Recove	-	25-1		
2-Fluorophenol	86.0	0,0	10-1		
Phenol-d6	104.		23-1		
Nitrobenzene-d5	106.	9 0.	30-1		
2-Fluorobiphenyl	91.0	% o.	19-		
2,4,6-Tribromophenol	74.0	% 0.	18-		
4-Terphenyl-d14	118.	olo Olo	10		
Rlank A	nalysis for	sample(s)	09 (WG1	95375-1)	0301 12:35 0303 19:05 RI
PAH by GC/MS SIM 8270M	-			1 8270C-M	0301 12.33 0000 1
PAH DY GC/MS SIM 02/01	ND	ug/l	0.2		
Acenaphthene	ND	ug/l	0.2	0	
2-Chloronaphthalene	Í4 D	9,			

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0502002

PARAMETER	RESULT	UNITS	RDL	REF METHOD)	\ mr
					PREP	ATE ID
	-					
PAH by GC/MS SIM 8270M CC	Analysis for	sample(s)	09 (WG195	375-1)		
Fluoranthene	are time a			1 8270С-м	0301 10.0c	0303 19:05 RL
Hexachlorobutadiene	ND	ug/l	0.20		0041 12:35	0303 19:05 RL
Naphthalene	ND	ug/l	0.50			
Benzo(a)anthracene	ND	ug/l	0.20			
Benzo(a)pyrene	ND	ug/l	0.20			
Benzo(b) fluoranthene	ND	ug/l	0.20			
Benzo(k) fluoranthene	ND	ug/l	0.20			
Chrysene	ND	ug/l	0.20			
Acenaphthylene	ND	ug/l	0.20			
Anthracene	ND	ug/l	0.20			
Benzo(ghi)perylene	ND	ug/l	0.20			
Fluorene	ND	ug/l	0.20			
Phenanthrene	ND	ug/l	0.20			
Dibenzo(a,h)anthracene	ND	ug/l	0.20			
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20			
Pyrene	ND	ug/l	0.20			
-Methylnaphthalene	ND	ug/l	0.20			
P-Methylnaphthalene	ND	ug/l	0.20			
Pentachlorophenol	ND	ug/l	0.20			
exachlorobenzene	ND	ug/l	0.80			
erylene	ND	ug/l	0.80			
iphenyl	ND	ug/l	0.20			
6-Dimonthul	ND	ug/l	0.20			
,6-Dimethylnaphthalene	ND	ug/l	0.20			
-Methylphenanthrene enzo(e)Pyrene	ND	ug/l	0.20			
enzo(e) Pyrene	ND	ug/l	0.20			
exachloroethane	ND	ug/l	0.80			
ırrogate(s)						
Fluorophenol	Recovery		QC Crite	eria		
nenol-d6	46.0	9	21-120	_		
trobenzene-d5	37.0	ઇ	10-120	•		
Fluorobiphenyl	73.0	8	23-120			
4,6-Tribromophenol	65.0	용	43-120			
Terphenyl-d14	84.0	ଚ	10-120			
1 4 4 4 4 4	84.0	9	33-120			
Blank Analys H by GC/MS SIM 8270M	is for sample	(s) 02-06,	08 (WG195	443-1)		
enaphthene	ND	ug/kg	6 7	1 8270€~M	0301 20:10 030	2 17:49 RT.
Chloronaphthalene	ND		6.7			
loranthene	ND	ug/kg	6.7			
Rachlorobutadiene	ND	ug/kg	6.7			
ohthalene	ND	ug/kg	17.			
izo(a)anthracene	ND	ug/kg	6.7			
izo(a)pyrene	ND	ug/kg	6.7			
zo(b)fluoranthene	ND	ug/kg	6.7			
zo(k)fluoranthene		ug/kg	6.7			
***************************************	ND	ug/kg	6.7			

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0502002

		****TMC	RDL	REF METHOD	DATE	ID
PARAMETER	RESULT	UNITS	KDL	1122	PREP ANAL	
					15 5 5 5 5 5	
Blank Analysis	for sample	(s) 02-06	,08 (WG	195443-1) 1 8270C-M	0301 20:10 0302 17:4	9 RL
PAH by GC/MS SIM 8270M continu	ied		6.7			
Chrysene	ND	ug/kg	6.7			
Acenaphthylene	ND	ug/kg	6.7			
Anthracene	ND	ug/kg	6.7			
Benzo(ghi)perylene	ND	ug/kg	6.7			
Fluorene	ND	ug/kg	6.7			
Phenanthrene	ND	ug/kg	6.7			
Dibenzo(a,h)anthracene	ИD	ug/kg	6.7			
Indeno(1,2,3-cd) Pyrene	ND	ug/kg	6.7			
	ND	ug/kg	6.7			
Pyrene 1-Methylnaphthalene	ND	ug/kg				
2-Methylnaphthalene	ND	ug/kg	6.7 27.			
Pentachlorophenol	ND	ug/kg				
Hexachlorobenzene	ND	ug/kg	27.			
	ND	ug/kg	6.7			
Perylene	ИD	ug/kg	6.7			
Biphenyl 2,6-Dimethylnaphthalene	ND	ug/kg	6.7			
1-Methylphenanthrene	ND	ug/kg	6.7			
1-Methylphenanchi	ND	ug/kg	6.7			
Benzo(e)Pyrene Hexachloroethane	ND	ug/kg	27.			
Hexachioloechane			20	Criteria		
=to(s)	Recovery					
Surrogate(s) 2-Fluorophenol	79.0	%	25-			
Phenol-d6	103.	olo		120		
Nitrobenzene-d5	86.0	용		120		
2-Fluorobiphenyl	78.0	%		120		
2,4,6-Tribromophenol	80.0	%				
2,4,6-Triblemophenos	88.0	ક	18-	-120		
4-Terphenyl-d14			00 00 1	(WC195395-1)		
Blank Analys	is for samp	le(s) 02-	06,00	i 8082	0301.16:00 0302 1	5:20 BW
Polychlorinated Biphenyls		ug/kg	33			
Aroclor 1221	ND	ug/kg	33			
Aroclor 1232	ND	ug/kg	33			
Aroclor 1242/1016	ND	ug/kg	33			
Aroclor 1248	ND	ug/kg	33			
Aroclor 1254	ND	ug/kg ug/kg	33			
Aroclor 1260	ND	ug/kg	J-0	•		
ALOGICA			OC	: Criteria		
Surrogate(s)	Recover	У		-150		
2,4,5,6-Tetrachloro-m-xyler	ne 77.0	8)-150		
Decachlorobiphenyl	106.	8				
Rlank And	alysis for	sample(s)	09 (WC	3195425-1) 1 8082	0301 16:15 0302	12:00 B
Polychlorinated Biphenyls	-				* - · ·	
bolacutoringred promate	ND	ug/l		.500		
1001		ug/l	0	.500		
Aroclor 1221	ND					
Aroclor 1221 Aroclor 1232 Aroclor 1242/1016	ND ND	ug/l		.500		

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0502002

PARAMETER	RESULT	UNITS	RDL	DFF '	ATZ MITTOR				
			TOIL	KER I	ETHOD	τ.	DA REP		ID
	·							ANAI	•
Blank Anal Polychlorinated Bink	ysis for	sample(s) (9 (WG1954	25-11	g erge		-		······
Polychlorinated Biphenyls co Aroclor 1248	ntinued				000				
Aroclor 1254	ND	ug/l	0.500	1 .0	002	0301	16:15	0302 12:	00 BW
Aroclor 1260	ND	ug/l	0.500						
A10C101 1260	ND	ug/l	0.500						
Surrogate(s)	Recovery	7							
2,4,5,6-Tetrachloro-m-xylene	79.0	8	QC Cris	teria					
Decachlorobiphenyl	107.	9	30-150 30-150						
Blank Anal.									
Blank Analy Organochlorine Pesticides	sis for s	ample(s) 0	9 (WG19537						
Delta-BHC	ND	na /3	0	1 80	81	0301 1	2:35 0	302 13:1	9 BW
Lindane	ND	ug/1	0.020						- Jn
Alpha-BHC	ND	ug/l	0.020						
Beta-BHC	ND	ug/l	0.020						
Heptachlor	ND	ug/l	0.020						
Aldrin	ND	ug/l	0.020						
Heptachlor epoxide		ug/l	0.020						
Indrin	ND	ug/l	0.020						
Endrin aldehyde	ND	ug/l	0.040						
indrin ketone	ND	ug/l	0.040						
ieldrin	ND	ug/l	0.040						
, 4'-DDE	ND	ug/l	0.040						
,4'-DDD	ND	ug/l	0.040						
,4'-DDT	ND	ug/l	0.040						
ndosulfan I	ND	ug/l	0.040						
ndosulfan II	ND	ug/l	0.020						
ndosulfan sulfate	ND	ug/l	0.040						
ethoxychlor	ND	ug/l	0.040						
Oxaphene	ND	ug/l	0.200						
nlordane	ND	ug/l	0.200						
is-Chlordane	ND	ug/l	0.200	•					
rans-Chlordane	ND	ug/l	0.020						
curordane	ND	ug/l	0.020						
rrogate(s)	Recovery		00 0						
4,5,6-Tetrachloro-m-xylana	68.0	9	QC Crite	ria					
cachlorobiphenyl	60.0	6 9	30-150 30-150						
Blank Analysis	for news								
Blank Analysis i ganochlorine Pesticides	or samble	(s) 02-06,	08 (WG1953						
1ta-BHC	ND	ug/kg	2 22	1 8081		0301 14:3	0302	15:07	JB
ndane	ND	ug/kg ug/kg	3.33					,	
ona-BHC	ND		3.33						
ta-BHC	ND	ug/kg	3.33						
otachlor	ND	ug/kg	3.33						
drin	ND	ug/kg	3.33						
)tachlor opouta-		ug/kg	3.33						
A	ND	ug/kg	3.33						

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0502002

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DAT PREP	E ID ANAL
Blank Ana Organochlorine Pesticide Endrin Endrin aldehyde Endrin ketone Dieldrin 4,4'-DDE 4,4'-DDT Endosulfan I Endosulfan II Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane trans-Chlordane	lysis for sample s continued ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	3.33 3.33 3.33 3.33 3.33 3.33 3.33 3.3	95397-1)	0301 14:30	0302 15:07 JB
Surrogate(s) 2,4,5,6-Tetrachloro-m-x Decachlorobiphenyl	Recovery ylene 76.0 84.0	ু ১ ১ ১ ১	QC Cr 30-15 30-15			

ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

- 1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-
- 30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF.

GLOSSARY OF TERMS AND SYMBOLS

Reference number in which test method may be found. METHOD Method number by which analysis was performed.

Initials of the analyst.

ND Not detected in comparison to the reported detection limit.

ug/cart Micrograms per Cartridge.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive Westborough, Massachusetts 01581-1019 (508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: AKRF, Inc.

Address: 440 Park Avenue South

New York, NY 10016 Date Received: 05-MAR-2005

Attn: Mr. Axel Schwendt Date Reported: 14-MAR-2005

Project Number: 10470-0213

Delivery Method: Fed Ex

Site: COLUMBIA

3100.		
TOTAL NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
ALPHA SAMPLE NUMBER L0502261-01 L0502261-02 L0502261-03 L0502261-05 L0502261-06 L0502261-07 L0502261-08 L0502261-09 L0502261-10 L0502261-11 L0502261-12 L0502261-13 L0502261-14 L0502261-15	CB-15 (2'-4') CB-15 (14'-16') MW/CB-16 (4'-6') MW/CB-16 (10'-12') MW/CB-17 (1'-2') MW/CB-17 (2'-4') MW/CB-18 (4'-6') MW/CB-19 (1'-2') MW/CB-19 (8'-10') MW/CB-20 (1'-2') MW/CB-21 (16'-18') MW/CB-22 (12'-14') FIELD BLANK TRIP BLANK	HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY HARLEM, NY

Authorized by: James Todaro

This document electronically signed

03140508:48 Page 1 of 108

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0502261

Report Submission

The samples were received in the laboratory at a temperature of 9 degrees Celsius.

The VOC container for CB-15 was received in the laboratory broken.

PAH-LOW

10502261-01 and -09 has elevated limits of detection due to the 10x dilutions required by the elevated concentrations of target compounds in the sample.

Volatile Organics

 $\tt L0502261-03$ has a low surrogate % recovery for <code>Dibromofluoromethane. This</code> is due to a matrix effect (concrete dust in soil).

 ${\tt L0502261-09}$ has elevated limits of detection due to the 8x dilutions required by the elevated concentrations of non-target compounds in the sample.

Semi-Volatile Organics by Method 8270C

The wg195910 LCS has a low % recovery for 2,4-Dinitrophenol.

Pesticides

L0502261-01 has elevated limits of detection due to the 20×10^{-5} dilutions required by the elevated concentrations of target compounds in the sample. The Surrogate % Recoveries were not recovered due to the dilutions required to quantitate the samples.

Metals

L0502261-01 Sample was diluted 5X for the analysis of Ca . The dilution was necessary to quantitate the sample within the calibration curve.

 ${\tt L0502261-06}$ Sample was diluted 5X for the analysis of Cd and Se. The dilution was necessary because of spectral interferences encountered during the analysis. The Sample was also diluted 5X for the analysis of Ca . The dilution was necessary to quantitate the sample within the calibration curve.

The wg195938-2 MS % recoveries for Al, Fe, and Mn are invalid because the sample concentrations are greater than four times the spike amount added.

The wg195938-2 MS % recoveries for Ca, Cr, and Mg are outside the acceptance criteria for the method. A post analytical spike was performed with acceptable % recoveries of 101% for Cr, 90% for Ca, and 114% for Mg.

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-01 CB-15 (2'-4') Date Collected: 28-FEB-2005 08:05

Date Received : 05-MAR-2005

Sample Matrix:

SOIL

Date Reported : 14-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber

	DECH M	UNITS	RDL	REF METHOD	DATE ID		
ARAMETER	RESULT	ONIIS	102	-	PREP ANAL		
	87.	9	0.10	30 2540G	0307 21:06 HG		
Solids, Total	87.	o					
rotal Metals				1 3051			
	4800	mq/kg	4.6	1 6010B	0308 15:00 0309 07:11 RW		
Aluminum, Total	ND	mq/kg	2.3	1 6010B	0308 15:00 0309 07:11 RW		
Antimony, Total	4.2	mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Arsenic, Total	130	mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Barium, Total	ND	mg/kg	0.1142	1 6010B	0308 15:00 0309 07:11 RW		
Beryllium, Total	0.3298	mg/kg	0.1142	1 6010B	0308 15:00 0309 07:11 RW		
Cadmium, Total	49000	mg/kg	23.	1 6010B	0308 15:00 0309 10:10 RW		
Calcium, Total		mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Chromium, Total	9.5	mg/kg	0.91	1 6010B	0308 15:00 0309 07:11 RW		
Cobalt, Total	3.2	mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Copper, Total	71.	mg/kg	2.3	1 6010B	0308 15:00 0309 07:11 RW		
Iron, Total	7700		2.3	1 6010B	0308 15:00 0309 07:11 RW		
Lead, Total	210	mg/kg	4.6	1 6010B	0308 15:00 0309 07:11 RW		
Magnesium, Total	7900	mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Manganese, Total	200	mg/kg	0.40	1 7471A	0309 20:15 0310 12:09 DM		
Mercury, Total	0.38	mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Nickel, Total	9.0	mg/kg		-	0308 15:00 0309 07:11 RW		
Potassium, Total	1000	mg/kg	110	-	0308 15:00 0309 07:11 RW		
Selenium, Total	ND	mg/kg	0.228	-	0308 15:00 0309 07:11 RW		
Silver, Total	ND	mg/kg	0.46	_	0308 15:00 0309 07:11 RW		
Sodium, Total	660	mg/kg	91.	-	0308 15:00 0309 07:11 RW		
Thallium, Total	ND	mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Vanadium, Total	8.3	mg/kg	0.46	1 6010B	0308 15:00 0309 07:11 RW		
Zinc, Total	160	mg/kg	2.3	1 6010B	0308 13.00 0302 1		
Volatile Organics by GC/MS	8260			1 8260B	0309 10:06 BT		
Volatile Organics by GC/IL	ND	ug/kg	29.				
Methylene chloride	ND	ug/kg	4.3				
1,1-Dichloroethane	ND	ug/kg	4.3				
Chloroform	ND	ug/kg	2.9				
Carbon tetrachloride	ND	ug/kg	10.				
1,2-Dichloropropane	ND ND	ug/kg	2.9				
Dibromochloromethane	ND	ug/kg	4.3				
1,1,2-Trichloroethane		ug/kg	2.9				
Tetrachloroethene	ND	ug/kg	2.9				
Chlorobenzene	ND		14.				
Trichlorofluoromethane	ND	ug/kg					

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-01

CB-15 (2'-4')

PARAMETER	RESULT	UNITS	RDL	DEE ACTION			
		011110	KDL	REF METHOD		ATE	ID
	·				PREP	ANAL	
Volatile Organics by GC/MS	8260 conti	nned	196 3 3 3				
1,2-Dichioroethane	ND	ug/kg	2.9	1 8260B		0309 10:0	6 BT
1,1,1-Trichloroethane	ND	ug/kg ug/kg					
Bromodichloromethane	ND	ug/kg	2.9				
trans-1,3-Dichloropropene	ND	ug/kg ug/kg	2.9				
cis-1,3-Dichloropropene	ND		2.9				
1,1-Dichloropropene	ND	ug/kg	2.9				
Bromoform	ND	ug/kg	14.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	12.				
Benzene		ug/kg	2.9				
Toluene	ND	ug/kg	2.9				
Ethylbenzene	ND	ug/kg	4.3				
Chloromethane	ND	ug/kg	2.9				
Bromomethane	ND	ug/kg	14.				
Vinyl chloride	ND	ug/kg	5.8				
Chloroethane	ND	ug/kg	5.8				
.,1-Dichloroethene	ND	ug/kg	5.8				
rans-1,2-Dichloroethene	ND	ug/kg	2.9				
richloroethene	ND	ug/kg	4.3				
,2-Dichlorobenzene	ND	ug/kg	2.9				
3-Dichland	ND	ug/kg	14.				
,3-Dichlorobenzene	ND	ug/kg	14.				
,4-Dichlorobenzene	ND	ug/kg	14.				
ethyl tert butyl ether	ND	ug/kg	5.8				
/m-Xylene	ND	ug/kg	2.9				
-Xylene	ND	ug/kg	2.9				
is-1,2-Dichloroethene	ND	ug/kg	2.9				
ibromomethane	ND	ug/kg	2.9				
.4-Dichlorobutane	ND	ug/kg	29. 29.				
odomethane	ND	ug/kg ug/kg					
2,3-Trichloropropane	ND		29.				
yrene	ND	ug/kg	29.				
chlorodifluoromethane	ND	ug/kg	2.9				
etone	ND	ug/kg	29.	•			
rbon disulfide	ND	ug/kg	29.				
Butanone	ND	ug/kg	29.				
nyl acetate	ND	ug/kg	29.				
Methyl-2-pentanone		ug/kg	29.				
Hexanone	ND	ug/kg	29.				
hyl methacrylate	ND	ug/kg	29.				
rolein	ND	ug/kg	29.				
rylonitrile	ND	ug/kg	72.				
omochloromethane	ND	ug/kg	29.				
trahydrofuran	ND	ug/kg	14.				
2-Dichloropropane	ND	ug/kg	58.				
2-Dibromoethane	ND	ug/kg	14.				
S-Dichlomoethane	ND	ug/kg	12.				
3-Dichloropropane	ND	ug/kg	14.				
,1,2-Tetrachloroethane	ND	ug/kg	2.9				
omobenzene	ND	ug/kg	14.				
utylbenzene	ND	ug/kg	2.9				
-Butylbenzene	ND	ug/kg	2.9				

Laboratory Sample Number: L0502261-01 CB-15 (2'-4')

DATE TD REF METHOD RDL UNITS RESULT PARAMETER PREP ANAL 0309 10:06 BT 1 8260B : . Volatile Organics by GC/MS 8260 continued ug/kg 14. ND tert-Butylbenzene 14. ug/kg ND o-Chlorotoluene ug/kg 14. ND p-Chlorotoluene 14. ND ug/kg 1,2-Dibromo-3-chloropropane 14. ug/kg ND Hexachlorobutadiene ug/kg 2.9 ND Isopropylbenzene 2.9 ug/kg ND p-Isopropyltoluene 14. ug/kg ND Naphthalene 2.9 ug/kg ND n-Propylbenzene 14. ug/kg ND 1,2,3-Trichlorobenzene 14. ND ug/kg 1,2,4-Trichlorobenzene 14. ug/kg ND 1,3,5-Trimethylbenzene 14. ug/kg ND 1,2,4-Trimethylbenzene 14. ug/kg trans-1,4-Dichloro-2-butene ND 14. ug/kg ND Ethyl ether QC Criteria Recovery Surrogate(s) 왕 104. 1,2-Dichloroethane-d4 용 101. Toluene-d8 122. 일 4-Bromofluorobenzene g, 95.0 Dibromofluoromethane 0308 11:15 0309 18:08 HL 1 8270C SVOC's by GC/MS 8270 190 ug/kg ND Acenaphthene 1900 ug/kg ND Benzidine ug/kg 190 ND 1,2,4-Trichlorobenzene 190 ug/kg ND Hexachlorobenzene 190 ug/kg ND Bis(2-chloroethyl)ether 190 ug/kg ND 1-Chloronaphthalene ug/kg 230 ND 2-Chloronaphthalene ug/kg 190 ND 1,2-Dichlorobenzene 190 ug/kg ND 1,3-Dichlorobenzene 190 ug/kg ND 1,4-Dichlorobenzene 1900 ug/kg ND 3,3'-Dichlorobenzidine 230 ug/kg ND 2,4-Dinitrotoluene 190 ug/kg ИD 2,6-Dinitrotoluene 190 ug/kg ND Azobenzene 190 970 ug/kg Fluoranthene 190 ND ug/kg 4-Chlorophenyl phenyl ether 190 ug/kg 4-Bromophenyl phenyl ether ND 190 ug/kg ND Bis(2-chloroisopropyl)ether 190 ug/kg ND Bis(2-chloroethoxy)methane 380 ug/kg ND Hexachlorobutadiene 380 ug/kg ND Hexachlorocyclopentadiene 190 ug/kg ND Hexachloroethane ug/kg 190

Comments: Complete list of References and Glossary of Terms found in Addendum I

ug/kg

ug/kg

ug/kg

190

190

570

ND

ND

ND

ND



Isophorone

NDPA/DPA

Naphthalene

Nitrobenzene

Laboratory Sample Number: L0502261-01

CB-15 (2'-4')

PARAMETER	RESULT	UNITS	RDL	DEE Manue	
			1011	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 contin	mod				
n-Nitrosodi-n-propylamine				1 8270C	0308 11:15 0309 18:08 HL
Bis (2-ethylhexyl) phthalate	ND	ug/kg	190		11.12 0309 Is:08 HF
Butyl benzyl phthalate	ND	ug/kg	380		
Di-n-butylphthalate	ND	ug/kg	190		
Di-n-octylphthalate	ND	ug/kg	190		
Diethyl phthalate	ND	ug/kg	190		
Dimethyl phthalate	ND	ug/kg	190		
Benzo(a) anthracene	ND	ug/kg	190		
Benzo(a) pyrene	500	ug/kg	190		
Benzo(b) fluoranthene	510	ug/kg	190		
Benzo(k) fluoranthene	400	ug/kg	190		
Chrysene	470	ug/kg	190		
Acenaphthylene	540	ug/kg	190		
Anthracene	ND	ug/kg	190		
Benzo(ghi)perylene	ND	ug/kg	190		
Fluorene	370	ug/kg	190		
Phenanthrene	ND	ug/kg	190		
	490	ug/kg	190		
Dibenzo(a,h)anthracene	ND	ug/kg	190		
Indeno(1,2,3-cd)pyrene Pyrene	330	ug/kg	190		
Benzo(e)pyrene	900	ug/kg	190		
Siphenyl	360	ug/kg	190		
Perylene	ND	ug/kg	190		
niline	ND	ug/kg	190		
-Chloroaniline	ND	ug/kg	380		
-Chioroaniine	ND	ug/kg	190		
-Methylnaphthalene	ND	ug/kg	190		
-Nitroaniline	ND	ug/kg	190		
-Nitroaniline	ND	ug/kg	190		
-Nitroaniline	ND	ug/kg	270		
ibenzofuran	ND	ug/kg	190		
,a-Dimethylphenethylamine	ND	ug/kg	1900		
exachloropropene	ND	ug/kg	380		
itrosodi-n-butylamine	ND	ug/kg	380		
-Methylnaphthalene	ND	ug/kg	310		
2,4,5-Tetrachlorobenzene	ND	ug/kg	770		
entachlorobenzene	ND	ug/kg	770		
Naphthylamine	ND	ug/kg	770		
Naphthylamine	ND	ug/kg	770		
enacetin	ND	ug/kg	-		
methoate	ND	ug/kg	380 770		
Aminobiphenyl	ND	ug/kg	380		
ntachloronitrobenzene	ND	ug/kg			
odrin	ND	ug/kg	380 380		
Dimethylaminoazobenzene	ND	ug/kg ug/kg			
lorobenzilate	ND		380		
Methylcholanthrene	ND	ug/kg	770		
nyl Methanesulfonate	ND	ug/kg	770		
etophenone		ug/kg	570		
rosodipiperidine		-			
crosodipiperidine	ND ND	ug/kg ug/kg	770 770		

Laboratory Sample Number: L0502261-01

CB-15 (2'-4')

ARAMETER	RESULT	UNITS	RDL	REF M	ETHOD	DAT PREP	ANAL	ID
VOC's by GC/MS 8270 continued			-	1 8	270C	0308 11:15	0309 18:0	98 HL
,12-Dimethylbenz(a)anthracene	ND	ug/kg	380					
-Nitrosodimethylamine	ND	ug/kg	1900					
,4,6-Trichlorophenol	ND	ug/kg	190					
2,4,6-Trichtorophenoi	ND	ug/kg	190					
o-Chloro-m-cresol	ND	ug/kg	230					
2-Chlorophenol	ND	ug/kg	380					
2,4-Dichlorophenol	ND	ug/kg	380					
2,4-Dimethylphenol	ND	ug/kg	770					
2-Nitrophenol	ND	ug/kg	380					
4-Nitrophenol	ND	ug/kg	770					
2,4-Dinitrophenol	ND	ug/kg	770			-		
4,6-Dinitro-o-cresol	ND	ug/kg	770					
Pentachlorophenol	ND	ug/kg	270					
Phenol	ND	ug/kg	230					
2-Methylphenol	ND	ug/kg	230					
3-Methylphenol/4-Methylphenol	ND	ug/kg	190					
2,4,5-Trichlorophenol	ND	ug/kg	380					
2,6-Dichlorophenol	ND	ug/kg	1900					
Benzoic Acid	ND	ug/kg	380					
Benzyl Alcohol	ND	ug/kg	190					
Carbazole	ND	ug/kg	1900					
Pyridine	ND	ug/kg	770					
2-Picoline	ND	ug/kg	770					
Pronamide	ND	ug/kg	770					
Methyl methanesulfonate								
a	Recovery		QC Cr		ì			
Surrogate(s)	62.0	90	25-12					
2-Fluorophenol	78.0	8	10-12					
Phenol-d6 Nitrobenzene-d5	63.0	%	23-12					
2-Fluorobiphenyl	75.0	8	30-12					
2,4,6-Tribromophenol	92.0	olo	19-12					
4-Terphenyl-d14	90.0	%	18-12	:0				
				1	8270C-M	0308 11:	15 0311 0	9:51 F
PAH by GC/MS SIM 8270M		ug/kg	77.					
Acenaphthene	ND	ug/kg ug/kg	77.					
2-Chloronaphthalene	ND		77.					
Fluoranthene	1200	ug/kg	190					
Hexachlorobutadiene	ND	ug/kg	77.					
Naphthalene	ND	ug/kg ug/kg	77.					
Benzo(a)anthracene	600	, ,	77.					
Benzo(a)pyrene	580	ug/kg	77.					
Benzo(b) fluoranthene	710	ug/kg	77.					
Benzo(k)fluoranthene	480	ug/kg	77.					
Chrysene	580	ug/kg	77.					
Acenaphthylene	98.	ug/kg	77.					
Anthracene	140	ug/kg	77.					
Benzo(ghi)perylene	410	ug/kg	77.					
Fluorene	ИD	ug/kg						
Phenanthrene	530	ug/kg	77.					



Laboratory Sample Number: L0502261-01

CB-15 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
PAH by GC/MS SIM 8270M cont	i i				
Dibenzo(a, h) anthracene			* ÷	1 8270C-M	0308 11:15 0311 09:51 RL
Indeno(1,2,3-cd) Pyrene	79.	ug/kg	77.		
Pyrene	340	ug/kg	77.		
1-Methylnaphthalene	980	ug/kg	77.		
2-Methylnaphthalene	ND	ug/kg	77.		
Pentachlorophenol	ND	ug/kg	77.		
Hexachlorobenzene	ND	ug/kg	310		
Perylene	ND	ug/kg	310		
Biphenyl	160	ug/kg	77.		
	ND	ug/kg	77.		
2,6-Dimethylnaphthalene	ND	ug/kg	77.		
1-Methylphenanthrene	100	ug/kg	77.		
Benzo(e) Pyrene	450	ug/kg	77.		
Hexachloroethane	ND	ug/kg	310		
•		97 7-9	310		
Surrogate(s)	Recovery		QC Crit	oni-	
2-Fluorophenol	69.0	%	25-120	erra	
Phenol-d6	91.0	es es	10-120		
Nitrobenzene-d5	66.0	96			
2-Fluorobiphenyl	83.0	%	23-120		
2,4,6-Tribromophenol	103.	96	30-120		
4-Terphenyl-d14	88.0	0/0	19-120		
		0	18-120		
Polychlorinated Biphenyls					
Aroclor 1221	ND	110 / 100	20. 2	1 8082	0308 12:15 0309 21:52 ЈВ
Aroclor 1232	ND	ug/kg	38.3		
roclor 1242/1016	ND	ug/kg	38.3		
roclor 1248	ND	ug/kg	38.3		
roclor 1254	ND	ug/kg	38.3		
roclor 1260	ND	ug/kg	38.3		
	ND	ug/kg	38.3		
urrogate(s)	Recovery				
,4,5,6-Tetrachloro-m-xylene	86.0	2	QC Crite	ria	
ecachlorobiphenyl		%	30-150		
11	139.	90	30-150		
rganochlorine Pesticides					
elta-BHC	ИD	(1		1 8081	0308 13:20 0310 18:12 BW
indane	ND	ug/kg	76.6		The second section of the section of the sect
lpha-BHC	ND	ug/kg	76.6		
eta-BHC	ND	ug/kg	76.6		
eptachlor	ND	ug/kg	76.6		
ldrin	ИD	ug/kg	76.6		
eptachlor epoxide	ND	ug/kg	76.6		
edrin	ND	ug/kg	76.6		
drin aldehyde	ND	ug/kg	76.6		
drin keter-	ND	ug/kg	76.6		
drin ketone	ND	ug/kg	76.6		
eldrin	ND	ug/kg	76.6		
4'-DDE	95.9	ug/kg	76.6		
4'-DDD	ND	ug/kg ug/kg	76.6		
4'-DDT	183.	ug/kg ug/kg	76.6		

Laboratory Sample Number: L0502261-01 CB-15 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA' PREP	TE I ANAL	D
Organochlorine Pesticides cont Endosulfan I Endosulfan II Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane trans-Chlordane	tinued ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	76.6 76.6 76.6 76.6 306. 306. 76.6	1 8081 .	0308 13:20	0310:18:12 E	BW
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	Recovery ND ND	% %	QC Cri 30-150 30-150				







MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-02

CB-15 (14'-16')

Date Collected: 28-FEB-2005 08:25

Sample Matrix:

SOIL

Date Received : 05-MAR-2005 Date Reported : 14-MAR-2005

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 2-Amber, 1-Plastic, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	
			101	KEF METHOD	DATE ID PREP ANAT.
					PREP ANAL
Solids, Total	89.	ક	0 10		
		۰	0.10	30 2540G	0307 21:06 HG
Total Metals				1 3051	
Aluminum, Total	4200			1 3051	
Antimony, Total	4300	mg/kg	4.5	1 6010B	0308 15:00 0309 07:13 RW
Arsenic, Total	ND	mg/kg	2.2	1 6010B	0308 15:00 0309 07:13 RW
Barium, Total	1.4	mg/kg	0.45	1 6010B	0308 15:00 0309 07:13 RW
Beryllium, Total	22.	mg/kg	0.45	1 6010B	0308 15:00 0309 07:13 RW
Cadmium, Total	0.1691	mg/kg	0.1122	1 6010B	
Calcium, Total	ND	mg/kg	0.1122	1 6010B	0308 15:00 0309 07:13 RW
Chromium, Total	830	mg/kg	4.5	1 6010B	0308 15:00 0309 07:13 RW
Cobalt, Total	7.3	mg/kg	0.45	1 6010B	0308 15:00 0309 07:13 RW
	2.9	mg/kg	0.90	1 6010B	0308 15:00 0309 07:13 RW
Copper, Total	7.0	mg/kg	0.45		0308 15:00 0309 07:13 RW
Iron, Total	6900	mg/kg	2.2		0308 15:00 0309 07:13 RW
Lead, Total	4.6	mg/kg	2.2	1 6010B	0308 15:00 0309 07:13 RW
Magnesium, Total	970	mg/kg	4.5	1 6010B	0308 15:00 0309 07:13 RW
Manganese, Total	140	mg/kg	0.45	1 6010B	0308 15:00 0309 07:13 RW
fercury, Total	ND	mg/kg		1 6010B	0308 15:00 0309 07:13 RW
ickel, Total	4.9	mg/kg mg/kg	0.09	1 7471A	0309 20:15 0310 12:11 DM
otassium, Total	250	· -	0.45	1 6010B	0308 15:00 0309 07:13 RW
elenium, Total	0.242	mg/kg	110	1 - 6010B	0308 15:00 0309 07:13 RW
ilver, Total	ND	mg/kg	0.224	1 6010B	0308 15:00 0309 07:13 RW
odium, Total	120	mg/kg	0.45	1 6010B	0308 15:00 0309 07:13 RW
hallium, Total	ND	mg/kg	90.	1 6010B	0308 15:00 0309 07:13 RW
anadium, Total		mg/kg	0.45	1 6010B	0308 15:00 0309 07:13 RW
inc, Total	7.4	mg/kg	0.45	1 6010B	0308 15:00 0309 07:13 RW
	13.	mg/kg	2.2	1 6010B	0308 15:00 0309 07:13 RW
olatile Organics by GC/N	1S 8260				144
ethylene chloride	ND	ug/kg	20	1 8260B	0309 10:44 BT
1-Dichloroethane	ND	ug/kg ug/kg	28.		
nloroform	ND		4.2		
arbon tetrachloride	ND	ug/kg	4.2		
2-Dichloropropane	ND	ug/kg	2.8		
bromochloromethane	ND	ug/kg	9.8		
1,2-Trichloroethane	ND ND	ug/kg	2.8		
trachloroethene	-· -	ug/kg	4.2		
lorobenzene	ND	ug/kg	2.8		
ichlorofluoromethane	ND	ug/kg	2.8		
- or read rome challe	ND	ug/kg	14.		

Laboratory Sample Number: L0502261-02

CB-15 (14'-16')

ARAMETER	RESULT	UNITS	RDL	REF METHOD	DAT! PREP	E ANAL	ID
				1 8260B	. (309 10:4	14 BT
Volatile Organics by GC/MS 826	0 continu	ied ·	2.8	i 8260B			
1,2-Dichloroethane	ND		2.8				
1,1,1-Trichloroethane	ND	ug/kg	2.8				
Bromodichloromethane	ND	ug/kg	2.8				
trans-1,3-Dichloropropene	ND	ug/kg					
cis-1,3-Dichloropropene	ND	ug/kg	2.8				
1,1-Dichloropropene	ND	ug/kg	14.				
Bromoform	ND	ug/kg	11.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8				
Benzene	ND	ug/kg	2.8				
Toluene	ND	ug/kg	4.2				
Ethylbenzene	ND	ug/kg	2.8				
Chloromethane	ND	ug/kg	14.				
Bromomethane	ND	ug/kg	5.6				
Vinyl chloride	ND	ug/kg	5.6				
Chloroethane	ND	ug/kg	5.6				
Chloroethane	ND	ug/kg	2.8				
1,1-Dichloroethene trans-1,2-Dichloroethene	ND	ug/kg	4.2				
trans-1, 2-Dienioloccheme	ND	ug/kg	2.8				
Trichloroethene	ND	ug/kg	14.				
1,2-Dichlorobenzene	ND	ug/kg	14.				
1,3-Dichlorobenzene	ND	ug/kg	14.				
1,4-Dichlorobenzene	ND	ug/kg	5.6				
Methyl tert butyl ether	ND	ug/kg	2.8				
p/m-Xylene	ND	ug/kg	2.8				
o-Xylene	ND	ug/kg	2.8				
cis-1,2-Dichloroethene	ND	ug/kg	28.				
Dibromomethane	ND	ug/kg	28.				
1,4-Dichlorobutane	ND	ug/kg	28.				
Iodomethane	ND	ug/kg	28.				
1,2,3-Trichloropropane	ND	ug/kg	2.8				
Styrene	ND	ug/kg	28.	-			
Dichlorodifluoromethane	ND	ug/kg	28.				
Acetone	ND	ug/kg	28.				
Carbon disulfide	ND	ug/kg	28.				
2-Butanone	ND	ug/kg	28.				
Vinyl acetate	ND	ug/kg	28.				
4-Methyl-2-pentanone	ND	ug/kg	28.				
2-Hexanone	ND	ug/kg	28.				
Ethyl methacrylate	ND	ug/kg	70.				
Acrolein	ND	uq/kg	28.				
Acrylonitrile	ND	ug/kg	14.				
Bromochloromethane	ND	ug/kg	56.				
Tetrahydrofuran	ND	uq/kg	14.				
2,2-Dichloropropane	ND	ug/kg	11.				
1,2-Dibromoethane	ND	ug/kg	14.				
1,3-Dichloropropane	ND	uq/kg	2.8	1			
1,1,1,2-Tetrachloroethane	ND	ug/kg	14.				
Bromobenzene	ND ND	ug/kg	2.8				
n-Butylbenzene sec-Butylbenzene	ND ND	ug/kg	2.8				



Laboratory Sample Number: L0502261-02

CB-15 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS 8	260 contin	ued		1 8260B	0200 10 11 2
tert-Butylbenzene	ND	ug/kg	14.	1 0200 <u>0</u>	0309 10:44 BT
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.8		
p-Isopropyltoluene	ND	ug/kg	2.8		
Naphthalene	ND	ug/kg	14.		
n-Propylbenzene	ND	ug/kg ug/kg	2.8		
1,2,3-Trichlorobenzene	ND	ug/kg ug/kg			
1,2,4-Trichlorobenzene	ND	ug/kg ug/kg	14. 14.		
1,3,5-Trimethylbenzene	ND	ug/kg ug/kg			
1,2,4-Trimethylbenzene	ND		14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
, , , , , , , , , , , , , , , , , , , ,	ND	ug/kg	14.		
Surrogate(s)	Recovery		OC Cr	iteria	
1,2-Dichloroethane-d4	108.	90	QC CI	rcerra	
Toluene-d8	97.0	9			
4-Bromofluorobenzene	110.	8			
Dibromofluoromethane	99.0	96			
SVOC's by GC/MS 8270					
Acenaphthene	ND.	,,		1 8270C	0308 11:15 0309 17:42 HL
Benzidine	ND	ug/kg	190		
1,2,4-Trichlorobenzene	ND	ug/kg	1900		
dexachlorobenzene	ND	ug/kg	190		
Bis(2-chloroethyl)ether	ND	ug/kg	190		
L-Chloronaphthalene	ND	ug/kg	190		
2-Chloronaphthalene	ND	ug/kg	190		
1,2-Dichlorobenzene	ND	ug/kg	220		
.,3-Dichlorobenzene	ND	ug/kg	190	•	
.,4-Dichlorobenzene	ND	ug/kg	190		
3,3'-Dichlorobenzidine	ND	ug/kg	190		
,,3 -bichiofobenziaine ,,4-Dinitrotoluene	ND	ug/kg	1900		
,6-Dinitrotoluene	ND	ug/kg	220		
zobenzene	ND	ug/kg	190		
	ND	ug/kg	190		
'luoranthene	ND	ug/kg	190		
-Chlorophenyl phenyl ether	ND	ug/kg	190		
-Bromophenyl phenyl ether	ND	ug/kg	190		
is(2-chloroisopropyl)ether	ND .	ug/kg	190		
is(2-chloroethoxy)methane	ИD	ug/kg	190		
exachlorobutadiene	ND	ug/kg	370		
exachlorocyclopentadiene	ND	ug/kg	370		
exachloroethane	ND	ug/kg	190		
sophorone	ND	ug/kg	190		
aphthalene	ND	ug/kg	190		
itrobenzene	ND	ug/kg	190		
DPA/DPA	ND	ug/kg	560		



Laboratory Sample Number: L0502261-02 CB-15 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					0308 11:15 0309 17:42 HL
SVOC's by GC/MS 8270 continue				1 8270C	0308 II:15 0309 17542 NG
n-Nitrosodi-n-propylamine	ND	ug/kg	190		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	370		
Butyl benzyl phthalate	ND	ug/kg	190		
Di-n-butylphthalate	ND	ug/kg	190		
Di-n-octylphthalate	ND	ug/kg	190		
Diethyl phthalate	ND	ug/kg	190		
Dimethyl phthalate	ND	ug/kg	190		
Benzo(a)anthracene	ND	ug/kg	190		
Benzo(a)pyrene	ND	ug/kg	190		
Benzo(b)fluoranthene	ND	ug/kg	190		
Benzo(k)fluoranthene	ND	ug/kg	190		
Chrysene	ND	ug/kg	190		
Acenaphthylene	ND	ug/kg	190		
Anthracene	ND	ug/kg	190		
Benzo(ghi)perylene	ND	ug/kg	190		
Fluorene	ND	ug/kg	190		
Phenanthrene	ND	ug/kg	190		
Dibenzo(a,h)anthracene	ND	ug/kg	190		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190		
Pyrene	ND	ug/kg	190		
Benzo(e)pyrene	ND	ug/kg	190		
Biphenyl	ND	ug/kg	190		
Perylene	ND	ug/kg	190		
Aniline	ND	ug/kg	370		
4-Chloroaniline	ND	ug/kg	190		
1-Methylnaphthalene	ND	ug/kg	190		
2-Nitroaniline	ND	ug/kg	190		
3-Nitroaniline	ND	ug/kg	190		
4-Nitroaniline	ND	ug/kg	260		
Dibenzofuran	ND	ug/kg	190		
a,a-Dimethylphenethylamine	ND	ug/kg	1900	*	
Hexachloropropene	ND	ug/kg	370		
Nitrosodi-n-butylamine	ND	ug/kg	370		
2-Methylnaphthalene	ND	ug/kg	300		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	750		
Pentachlorobenzene	ND	ug/kg	750		
a-Naphthylamine	ND	ug/kg	750		
b-Naphthylamine	ND	ug/kg	750		
Phenacetin	ND	ug/kg	370		
Dimethoate	ND	ug/kg	750		
4-Aminobiphenyl	ND	ug/kg	370		
Pentachloronitrobenzene	ND	ug/kg	370		
Isodrin	ND	ug/kg	370		
p-Dimethylaminoazobenzene	ND	ug/kg	370		
Chlorobenzilate	ND	ug/kg	750		
	ND	ug/kg	750		
3-Methylcholanthrene Ethyl Methanesulfonate	ND	ug/kg	560		
	ND	ug/kg	750		
Acetophenone					



Laboratory Sample Number: L0502261-02

CB-15 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA'	re	ID
						PREP	ANAL	
SVOC's by GC/MS 8270 continue	d				.0000		:	
7,12-Dimethylbenz(a)anthracen	e ND	ug/kg	370	. 1	8270C	0308.11:15	0309 17:42	2 HE
n-Nitrosodimethylamine	ND	ug/kg	1900					
2,4,6-Trichlorophenol	ND	ug/kg ug/kg	1900					
p-Chloro-m-cresol	ND	ug/kg ug/kg	190					
2-Chlorophenol	ND	ug/kg	220					
2,4-Dichlorophenol	ND	ug/kg	370					
2,4-Dimethylphenol	ND	ug/kg	370					
2-Nitrophenol	ND	ug/kg	750					
4-Nitrophenol	ND	ug/kg	370					
2,4-Dinitrophenol	ND	ug/kg ug/kg	750					
4,6-Dinitro-o-cresol	ND	ug/kg	750					
Pentachlorophenol	ND	ug/kg ug/kg	750					
Phenol	ND	ug/kg ug/kg	260					
2-Methylphenol	ND	ug/kg ug/kg	220					
3-Methylphenol/4-Methylphenol	ND	ug/kg ug/kg						
2,4,5-Trichlorophenol	ND	·	220 190					
2,6-Dichlorophenol	ND	ug/kg ug/kg	370					
Benzoic Acid	ND	ug/kg ug/kg						
Benzyl Alcohol	ND	ug/kg ug/kg	1900					
Carbazole	ND	ug/kg ug/kg	370					
Pyridine	ND	ug/kg ug/kg	190					
2-Picoline	ND	, ,	1900					
Pronamide	ND	ug/kg ug/kg	750					
Methyl methanesulfonate	ND	ug/kg ug/kg	750 750					
Surrogate(s)	Recovery		QC Crit	eria				
2-Fluorophenol	53.0	%	25-120	CLIA				
Phenol-d6	60.0	8	10-120					
Nitrobenzene-d5	54.0	96	23-120					
?-Fluorobiphenyl	52.0	8	30-120					
2,4,6-Tribromophenol	82.0	8	19-120					
-Terphenyl-d14	87.0	96	18-120	-				
PAH by GC/MS SIM 8270M				1 8	3270C- M	0308 11:15 03	200 22.40	Th T
cenaphthene	ND	ug/kg	7.5			0300 11.13 03	103.22.40	KL
-Chloronaphthalene	ND	ug/kg	7.5					
luoranthene	ND	ug/kg	7.5					
exachlorobutadiene	ND	ug/kg	19.					
aphthalene	ND	ug/kg	7.5					
enzo(a)anthracene	ND	ug/kg	7.5					
enzo(a)pyrene	ND	ug/kg	7.5					
enzo(b)fluoranthene	ND	ug/kg	7.5					
enzo(k)fluoranthene	ND	ug/kg	7.5					
hrysene	ND	ug/kg	7.5					
cenaphthylene	ND	ug/kg	7.5					
nthracene	ND	ug/kg	7.5					
enzo(ghi)perylene	ND	ug/kg	7.5					
luorene	ND	ug/kg	7.5					
henanthrene	ND	ug/kg	7.5					



Laboratory Sample Number: L0502261-02 CB-15 (14'-16')

PARAMETER	RESULT	UNITS	RDL 1	REF 1	METHOD	DATE II PREP ANAL
- 100 are 0070V	und.			1	9270C-M	0308 11:15 0309 22:40 R
PAH by GC/MS SIM 8270M continu	ND	ug/kg	7.5	-		
Dibenzo(a,h)anthracene	ND	ug/kg	7.5			
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.5			
Pyrene	ND	ug/kg	7.5			
l-Methylnaphthalene	ND	ug/kg	7.5			
2-Methylnaphthalene	ND	ug/kg	30.			
Pentachlorophenol	ND	ug/kg	30.			
Hexachlorobenzene	ND	ug/kg	7.5			
Perylene		ug/kg	7.5			
Biphenyl	ND	ug/kg ug/kg	7.5			
2,6-Dimethylnaphthalene	ND	ug/kg ug/kg	7.5			
1-Methylphenanthrene	ND	ug/kg ug/kg	7.5			
Benzo(e) Pyrene	ND	ug/kg ug/kg	30.			
Hexachloroethane	ND	ug/kg	50.			
	Recovery		OC Crit	eria	ı	
Surrogate(s)		%	25-120			
2-Fluorophenol	54.0	%	10-120			
Phenol-d6	68.0		23~120			
Nitrobenzene-d5	56.0	96 96	30-120			
2-Fluorobiphenyl	49.0	6 %	19-120			
2,4,6-Tribromophenol	89.0	8	18-120			
4-Terphenyl-d14	74.0	ð	10-120			
Polychlorinated Biphenyls				. 1	8082	0308 12:15 0309 21:23
Aroclor 1221	ND	ug/kg	37.4			
Aroclor 1232	ND	ug/kg	37.4			
Aroclor 1242/1016	ND	ug/kg	37.4			
Aroclor 1248	ND	ug/kg	37.4			
Aroclor 1254	ND	ug/kg	37.4			
Aroclor 1260	ND	ug/kg	37.4			
	_		OC Cri	tari	a	
Surrogate(s)	Recovery	0	30-150		a	
2,4,5,6-Tetrachloro-m-xylene	74.0	%	30-150			
Decachlorobiphenyl	82.0	8	20-130			
Organochlorine Pesticides			, e.f. *	1	8081	0308 13:20 0310 17:16
Delta-BHC	ND	ug/kg	3.74			
Lindane	ND	ug/kg	3.74			
Alpha-BHC	ND	ug/kg	3.74			
Beta-BHC	ND	ug/kg	3.74			
Heptachlor	ND	ug/kg	3.74			
Aldrin	ND	ug/kg	3.74			
Heptachlor epoxide	ND	ug/kg	3.74			
	ND	ug/kg	3.74			
Endrin	ND	ug/kg	3.74			
Endrin aldehyde	ND	ug/kg	3.74			
Endrin ketone	ND	ug/kg	3.74			
Dieldrin	ND	ug/kg	3.74			
4,4'-DDE		ug/kg	3.74			
4,4'-DDD	ND	ug/kg ug/kg	3.74			
4,4'-DDT	ND	ug/kg	3.13			



Laboratory Sample Number: L0502261-02

CB-15 (14'-16')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DAT	E ID
					PREP	ANAL
Organochlorine Pesticides (continued			1 8081		
Endosulfan I	ND	ug/kg	3.74	1 0001 .	0308 13:20 0	310 17:16 BW
Endosulfan II	ND	ug/kg	3.74			
Endosulfan sulfate	ND	ug/kg	3.74			
Methoxychlor	ND	ug/kg	3.74			
Toxaphene	ND	ug/kg	15.0			
Chlordane	ND	ug/kg	15.0			
cis-Chlordane	ND	ug/kg	3.74			
trans-Chlordane	ND	ug/kg	3.74			
Surrogate(s)	Recovery		QC Crit	romin		
2,4,5,6-Tetrachloro-m-xylen	e 61.0	90	30-150	GLIG		
Decachlorobiphenyl	72.0	00	30-150			

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-03

Date Collected: 28-FEB-2005 11:30

MW/CB-16 (4'-6')

Date Received: 05-MAR-2005

Sample Matrix: SOIL

Date Reported: 14-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		D
PARAMETER					PREP A	NAL	
n a ' a	90.	90	0.10	30 2540G	030	9 16:15 3	JS
Solids, Total	30.				020	9 11:23 1	יים
Volatile Organics by GC/MS 8	3260		27.	1 8260B	030	9 11.23 9	
Methylene chloride	ND	ug/kg	4.1				
1,1-Dichloroethane	ND	ug/kg					
Chloroform	ND	ug/kg	4.1				
Carbon tetrachloride	ND	ug/kg	2.7				
1,2-Dichloropropane	ИD	ug/kg	9.6				
Dibromochloromethane	ND	ug/kg	2.7				
1,1,2-Trichloroethane	ND	ug/kg	4.1				
Tetrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
Trichlorofluoromethane	ND	ug/kg	14.				
1,2-Dichloroethane	ND	ug/kg	2.7				
1,1,1-Trichloroethane	ND	ug/kg	2.7				
Bromodichloromethane	ND	ug/kg	2.7				
trans-1,3-Dichloropropene	ND	ug/kg	2.7				
cis-1,3-Dichloropropene	ND	ug/kg	2.7				
1,1-Dichloropropene	ND	ug/kg	14.				
Bromoform	ND	ug/kg	11.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7	-			
Benzene	ND	ug/kg	2.7				
Toluene	29.	ug/kg	4.1				
Ethylbenzene	31.	ug/kg	2.7				
Chloromethane	ND	ug/kg	14.				
Bromomethane	ND	ug/kg	5.5				
Vinyl chloride	ND	ug/kg	5.5				
Chloroethane	ND	ug/kg	5.5				
1,1-Dichloroethene	ND	ug/kg	2.7				
trans-1,2-Dichloroethene	ND	ug/kg	4.1				
Trichloroethene	ND	ug/kg	2.7				
1,2-Dichlorobenzene	ND	ug/kg	14.				
1,3-Dichlorobenzene	ND	ug/kg	14.				
1,4-Dichlorobenzene	ND	ug/kg	14.				
Methyl tert butyl ether	7.0	ug/kg	5.5				
p/m-Xylene	210	ug/kg	2.7				
o-Xylene	160	ug/kg	2.7				
cis-1,2-Dichloroethene	ND	ug/kg	2.7				
Dibromomethane	ND	uq/kg	27.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-03

MW/CB-16 (4'-6')

Styrene ND ug/kg 2.7 Dichlorodifluoromethane ND ug/kg 27. Acetone 95. ug/kg 27. Carbon disulfide ND ug/kg 27. 2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 27. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. Itzandrofuran ND ug/kg 2.7	ID
1,4-Dichlorobutane	L
1,4-Dichlorobutane	
Iodomethane ND ug/kg 27. 1,2,3-Trichloropropane ND ug/kg 27. Styrene ND ug/kg 27. Dichlorodifluoromethane ND ug/kg 27. Acetone 95. ug/kg 27. Carbon disulfide ND ug/kg 27. Carbon disulfide ND ug/kg 27. 2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 27. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. 2,2-Dichloropropane ND ug/kg 14. 1,3-Dichloropropane ND ug/kg 2.7	:23 BT
1,2,3-Trichloropropane ND ug/kg 27. Styrene ND ug/kg 27. Dichlorodifluoromethane ND ug/kg 27. Acetone 95. ug/kg 27. Carbon disulfide ND ug/kg 27. 2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 27. Acrolein ND ug/kg 27. Bromochloromethane ND ug/kg 27. Bromochloromethane ND ug/kg 27. Petrahydrofuran ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 14. 1,3-Dichloropropane ND ug/kg 2.7 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
Styrene ND ug/kg 2.7 Dichlorodifluoromethane ND ug/kg 27. Acetone 95. ug/kg 27. Carbon disulfide ND ug/kg 27. 2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 27. Acrolein ND ug/kg 27. Bromochloromethane ND ug/kg 27. Bromochloromethane ND ug/kg 14. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 14. 1,3-Dichloropropane ND ug/kg 2.7	
Dichlorodifluoromethane ND ug/kg 27. Acetone 95. ug/kg 27. Carbon disulfide ND ug/kg 27. 2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 27. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 2.7	
Acetone 95. ug/kg 27. Carbon disulfide ND ug/kg 27. 2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 27. Acrolein ND ug/kg 27. Bromochloromethane ND ug/kg 27. Bromochloromethane ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 14. Carbon ND ug/kg 27. Carbon ND ug/kg 14. Carbon ND ug/kg 27. Carbon ND ug/kg 14. Carbon ND ug/kg 27. Carbon ND ug/kg 27. Carbon ND ug/kg 14. Carbon ND ug/kg 14. Carbon ND ug/kg 14. Carbon ND ug/kg 27. Carbon ND ug	
Carbon disulfide ND ug/kg 27. 2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 27. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 14. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
2-Butanone ND ug/kg 27. Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 68. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 14. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 14. 1,3-Dichloropropane ND ug/kg 2.7	
Vinyl acetate ND ug/kg 27. 4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 68. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 55. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 2.7	
4-Methyl-2-pentanone ND ug/kg 27. 2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 68. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 27. Ettrahydrofuran ND ug/kg 14. Tetrahydrofuran ND ug/kg 55. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 14. 1,3-Dichloropropane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 14. 1,1,2-Tetrachloroethane ND ug/kg 2.7	
2-Hexanone ND ug/kg 27. Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 68. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 55. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 2.7	
Ethyl methacrylate ND ug/kg 27. Acrolein ND ug/kg 68. Acrylonitrile ND ug/kg 27. Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 55. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 14. 1,3-Dichloropropane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 14. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
Acrolein	
Acrylonitrile ND ug/kg 68. Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 55. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 12. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
Bromochloromethane ND ug/kg 14. Tetrahydrofuran ND ug/kg 55. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 14. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
Tetrahydrofuran ND ug/kg 55. 2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 14. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
2,2-Dichloropropane ND ug/kg 14. 1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 14. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
1,2-Dibromoethane ND ug/kg 11. 1,3-Dichloropropane ND ug/kg 14. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
1,3-Dichloropropane ND ug/kg 14. 1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
1,1,1,2-Tetrachloroethane ND ug/kg 2.7	
Bromobenzene ND ug/kg 2.7	
n-Butulhanana	
cog_Putulbara	
tort Dutalland	
tert-Butylbenzene ND ug/kg 14.	
p-Chlorotoluene ND ug/kg 14.	
1,2-Dibromo-3-chloropropane ND ug/kg 14.	
Hexachlorobutadiene ND ug/kg 14.	
Isopropylbenzene 9.6 ug/kg 2.7	
p-Isopropyltoluene 10. ug/kg 2.7	
Japhthalene 110 ug/kg 14.	
n-Propylbenzene 28. ug/kg 2.7	
.,2,3-Trichlorobenzene ND ug/kg 14.	
.,2,4-Trichlorobenzene ND ug/kg 14.	
,3,5-Trimethylbenzene 300 ug/kg 14.	
,2,4-Trimethylbenzene 580 ug/kg 14.	
rans-1,4-Dichloro-2-butene ND ug/kg 14.	
thyl ether ND ug/kg 14.	
urrogate(s) Recovery QC Criteria	
,2-Dichloroethane-d4 104. %	
oluene-d8 92.0 %	
-Bromofluorobenzene 96.0 %	
ibromofluoromethane 47.0 %	

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-04

MW/CB-16 (10'-12')

SOIL Sample Matrix:

Condition of Sample: Satisfactory

Field Prep: None

Date Collected: 28-FEB-2005 11:45

Date Received: 05-MAR-2005

Date Reported: 14-MAR-2005

Number & Type of Containers: 2-Amber, 1-Vial

	RESULT	UNITS	RDL	REF METHOD	DA'	
PARAMETER	1000	• • • • • • • • • • • • • • • • • • • •			PREP	ANAL
m-hol	82.	ફ	0.10	30 2540G		0307 21:06 HG
Solids, Total	02.					
Total Metals				1 3051		
Aluminum, Total	3600	mg/kg	4.8	1 6010B		0309 07:26 RW
Antimony, Total	ND	mg/kg	2.4	1 6010B		0309 07:26 RW
Arsenic, Total	1.8	mg/kg	0.48	1 6010B		0309 07:26 RW
Barium, Total	32.	mg/kg	0.48	1 6010B		0309 07:26 RW
Beryllium, Total	0.2554	mg/kg	0.1198			0309 07:26 RW
Cadmium, Total	ND	mg/kg	0.1198	1 6010B		0309 07:26 RW
Calcium, Total	2600	mg/kg	4.8	1 6010B		0309 07:26 RW
Chromium, Total	6.7	mg/kg	0.48	1 6010B		0309 07:26 RW
Cobalt, Total	4.9	mg/kg	0.96	1 6010B		0309 07:26 RW
	17.	mg/kg	0.48	1 6010B		0309 07:26 RW
Copper, Total	8800	mg/kg	2.4	1 6010B		0309 07:26 RW
Iron, Total	6.6	mg/kg	2.4	1 6010B		0309 07:26 RW
Lead, Total	1700	mq/kg	4.8	1 6010B		0309 07:26 RW
Magnesium, Total	370	mg/kg	0.48	1 6010B		0309 07:26 RW
Manganese, Total	ND	mg/kg	0.09	1 7471A		0310 12:20 DM
Mercury, Total	10.	mg/kg	0.48	1 6010B		0309 07:26 RW
Nickel, Total	900	mg/kg	120	1 6010B		0309 07:26 RW
Potassium, Total	ND	mg/kg	0.240	1 6010B	0308 15:00	0309 07:26 RW
Selenium, Total	ND	mg/kg	0.48	1 6010B	0308 15:0	0309 07:26 RW
Silver, Total	120	mq/kg	96.	1 6010B	0308 15:0	0309 07:26 RW
Sodium, Total	ND	mg/kg	0.48	1 6010B	0308 15:0	0 0309 07:26 RW
Thallium, Total	10.	mg/kg	0.48	1 6010B	0308 15:0	0 0309 07:26 RW
Vanadium, Total Zinc, Total	23.	mg/kg	2.4	1 6010B	0308 15:0	0 0309 07:26 R
	0260			1 8260B		0309 12:39 B
Volatile Organics by GC/MS	0 Z 0 U	ug/kg	31.			
Methylene chloride	ND	ug/kg ug/kg	4.7			
1,1-Dichloroethane	ND	ug/kg ug/kg	4.7			
Chloroform	ND	- "	3.1			
Carbon tetrachloride	ND	ug/kg	11.			
1,2-Dichloropropane	ND	ug/kg	3.1			
Dibromochloromethane	ND	ug/kg	4.7			
1,1,2-Trichloroethane	ND	ug/kg	3.1			
Tetrachloroethene	ND	ug/kg	3.1			
Chlorobenzene	ND	ug/kg				
Trichlorofluoromethane	ND	ug/kg	16.			

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-04

MW/CB-16 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
**************************************					PREP ANAL
Volatile Organics by GC/MS	8260 contin	ned			
1,2-Dichloroethane	ND	ug/kg	2 1	1 8260B	0309 12:39 BT
1,1,1-Trichloroethane	ND		3.1		
Bromodichloromethane	ND	ug/kg	3.1		
trans-1,3-Dichloropropene	ND	ug/kg	3.1		
cis-1,3-Dichloropropene	ND	ug/kg	3.1		
1,1-Dichloropropene	ND	ug/kg	3.1		
Bromoform	ND	ug/kg	16.		
1,1,2,2-Tetrachloroethane		ug/kg	12.		
Benzene	ND	ug/kg	3.1		
Toluene	ND	ug/kg	3.1		
Ethylbenzene	ND	ug/kg	4.7		
Chloromethane	ND	ug/kg	3.1		
Bromomethane	ND	ug/kg	16.		
Vinyl chloride	ND	ug/kg	6.2		
Chloroethane	ND	ug/kg	6.2		
1,1-Dichloroethene	ND	ug/kg	6.2		
	ND	ug/kg	3.1		
trans-1,2-Dichloroethene Trichloroethene	ND	ug/kg	4.7		
	ND	ug/kg	3.1		
1,2-Dichlorobenzene	ND	ug/kg	16.		
1,3-Dichlorobenzene	ND	ug/kg	16.		
,4-Dichlorobenzene	ND	ug/kg	16.		
Methyl tert butyl ether	ND	ug/kg	6.2		
o/m-Xylene	ND	ug/kg	3.1		
D-Xylene	ИD	ug/kg	3.1		
cis-1,2-Dichloroethene	ND	ug/kg	3.1		
Dibromomethane	ND	ug/kg	31.		
,4-Dichlorobutane	ND	ug/kg	31.		
odomethane	ND	ug/kg	31.		
,2,3-Trichloropropane	ND	ug/kg	31.		
tyrene	ND	ug/kg	3.1		
ichlorodifluoromethane	ND	ug/kg	31.		
cetone	ND	ug/kg	31.	•	
arbon disulfide	ND	ug/kg	31.		
-Butanone	ND	ug/kg	31.		
inyl acetate	ND	ug/kg	31.		
-Methyl-2-pentanone	ND	ug/kg ug/kg	31.		
-Hexanone	ND	ug/kg ug/kg			
thyl methacrylate	ND		31.		
crolein	ND	ug/kg	31.		
crylonitrile	ND	ug/kg	78.		
comochloromethane	ND	ug/kg	31.		
etrahydrofuran		ug/kg	16.		
2-Dichloropropane	ND ND	ug/kg	62.		
2-Dibromoethane		ug/kg	16.		
3-Dichloropropane	ND	ug/kg	12.		
1,1,2-Tetrachloroethane	ND	ug/kg	16.		
comobenzene	ND	ug/kg	3.1		
Butylbenzene	ND	ug/kg	16.		
c-Butylbenzene	ND	ug/kg	3.1		
c parlineuseue	ND	ug/kg	3.1		

Laboratory Sample Number: L0502261-04

MW/CB-16 (10'-12')

ARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
- by CC/MC 926	50 continu	ıed		1 8260B	0309 12:39 BT
Volatile Organics by GC/MS 826	ND	ug/kg	16.		
tert-Butylbenzene	ND	ug/kg	16.		
o-Chlorotoluene	ND	ug/kg	16.		
o-Chlorotoluene	ND	ug/kg	16.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	16.		
Hexachlorobutadiene	ND	uq/kg	3.1		
Isopropylbenzene	ND	ug/kg	3.1		
p-Isopropyltoluene	ND	ug/kg	16.		
Naphthalene	ND	ug/kg	3.1		
n-Propylbenzene	ND	ug/kg	16.		
1,2,3-Trichlorobenzene	ND	ug/kg	16.		
1,2,4-Trichlorobenzene	ND	ug/kg	16.		
1,3,5-Trimethylbenzene	ND	ug/kg	16.		
1,2,4-Trimethylbenzene	ND ND	ug/kg ug/kg	16.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	16.		
Ethyl ether	ND	~9/ /9	-		
	Recovery	,	QC Cr	itería	
Surrogate(s)	101.	%	_		
1,2-Dichloroethane-d4	96.0	%			
Toluene-d8	106.	%			
4-Bromofluorobenzene	96.0	%			
Dibromofluoromethane	50.0				
SVOC's by GC/MS 8270				1 8270C	0308 11:15 0309 18:33 HL
	ND	ug/kg	200		
Acenaphthene	ND	ug/kg	2000		
Benzidine 1,2,4-Trichlorobenzene	ND	ug/kg	200		
Hexachlorobenzene	ND	ug/kg	200		
Bis(2-chloroethyl)ether	ND	ug/kg	200		
1-Chloronaphthalene	ND	ug/kg	200		
2-Chloronaphthalene	ND	ug/kg	240		
1,2-Dichlorobenzene	ND	ug/kg	200		
1,3-Dichlorobenzene	ND	ug/kg	200		
1,4-Dichlorobenzene	ND	ug/kg	200		
3,3'-Dichlorobenzidine	ND	ug/kg	2000		
2,4-Dinitrotoluene	ND	ug/kg	240		
2,4-Dinitrotoluene	ND	ug/kg	200		
Azobenzene	ND	ug/kg	200		
Azobenzene Fluoranthene	ND	ug/kg	200		
4-Chlorophenyl phenyl ether	ND	ug/kg	200		
4-Entorophenyl phenyl ether	ND	ug/kg	200		
Bis(2-chloroisopropyl)ether	ND	ug/kg	200		
Bis(2-chloroethoxy) methane	ND	ug/kg	200		
Hexachlorobutadiene	ND	ug/kg	410		
Hexachlorocyclopentadiene	ND	ug/kg	410		
Hexachloroethane	ND	ug/kg	200		
	ND	ug/kg	200		
Isophorone	ND	ug/kg	200		
Naphthalene	ND	ug/kg	200		
Nitrobenzene NDPA/DPA	ND	ug/kg	610		



Laboratory Sample Number: L0502261-04

MW/CB-16 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continu	ed			1 8270c	0300 10 15 16
n-Nitrosodi-n-propylamine	ND	ug/kg	200	1. 02/00:	0308 11:15 0309 18:33 HL
Bis(2-ethylhexyl)phthalate	ND	ug/kg	410		
Butyl benzyl phthalate	ND	ug/kg	200		
Di-n-butylphthalate	ND	ug/kg	200		
Di-n-octylphthalate	ND	ug/kg	200		
Diethyl phthalate	ND	ug/kg	200		
Dimethyl phthalate	ND	ug/kg	200		
Benzo(a)anthracene	ND	ug/kg	200		
Benzo(a)pyrene	ND	ug/kg	200		
Benzo(b) fluoranthene	ND	ug/kg	200		
Benzo(k) fluoranthene	ND	ug/kg	200		
Chrysene	ND	ug/kg ug/kg	200		
Acenaphthylene	ND	ug/kg	200		
Anthracene	ND	ug/kg ug/kg	200		
Benzo(ghi)perylene	ND	ug/kg ug/kg	200		
Fluorene	ND	ug/kg ug/kg	200		
Phenanthrene	ND	ug/kg ug/kg	200		
Dibenzo(a,h)anthracene	ND	ug/kg ug/kg	200		
Indeno(1,2,3-cd)pyrene	ND	ug/kg ug/kg			
Pyrene	ND	ug/kg ug/kg	200 200		
Benzo(e)pyrene	ND	ug/kg ug/kg	200		
Biphenyl	ND	ug/kg ug/kg			
Pervlene	ND		200		
Aniline	ND	ug/kg	200		
4-Chloroaniline	ND	ug/kg	410		
l-Methylnaphthalene	ND	ug/kg	200		
2-Nitroaniline	ND	ug/kg	200		
3-Nitroaniline	ND ND	ug/kg	200		
4-Nitroaniline	ND	ug/kg	200		
Dibenzofuran	ND	ug/kg	280		
a,a-Dimethylphenethylamine		ug/kg	200		
Hexachloropropene	ND	ug/kg	2000	•	
Jitrosodi-n-butylamine	ND	ug/kg	410		
2-Methylnaphthalene	ND	ug/kg	410		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	320		
Pentachlorobenzene	ND	ug/kg	810		
-Naphthylamine	ND	ug/kg	810		
-Naphthylamine -Naphthylamine	ND	ug/kg	810		
Phenacetin	ND	ug/kg	810		
	ND	ug/kg	410		
Dimethoate	ND	ug/kg	810		
-Aminobiphenyl	ND	ug/kg	410		
Pentachloronitrobenzene	ND	ug/kg	410		
sodrin	ND	ug/kg	410		
-Dimethylaminoazobenzene	ND	ug/kg	410		
hlorobenzilate	ND	ug/kg	810		
-Methylcholanthrene	ND	ug/kg	810		
thyl Methanesulfonate	ND	ug/kg	610		
cetophenone	ND	ug/kg	810		
itrosodipiperidine	ND	ug/kg	810		



Laboratory Sample Number: L0502261-04

MW/CB-16 (10'-12')

PARAMETER	RESULT	UNITS	RDL I	REF METHO	
					PREP ANAL
SVOC's by GC/MS 8270 continued				1 8270C	0308 11:15 0309 18:33 HL
7,12-Dimethylbenz(a)anthracene		ug/kg	410		
n-Nitrosodimethylamine	ND	ug/kg	2000		
2,4,6-Trichlorophenol	ND	ug/kg	200		
p-Chloro-m-cresol	ND	ug/kg	200		
2-Chlorophenol	ND	ug/kg	240		
2,4-Dichlorophenol	ND	ug/kg	410		
2,4-Dimethylphenol	ND	ug/kg	410		
2-Nitrophenol	ND	ug/kg	810		
4-Nitrophenol	ND	ug/kg	410		
2,4-Dinitrophenol	ND	ug/kg	810		
4,6-Dinitro-o-cresol	ND	ug/kg	810		
Pentachlorophenol	ND	ug/kg	810		
Phenol	ND	ug/kg	280		
2-Methylphenol	ND	ug/kg	240		
3-Methylphenol/4-Methylphenol	ND	ug/kg	240		
2,4,5-Trichlorophenol	ND	ug/kg	200		
2,6-Dichlorophenol	ND	ug/kg	410		
Benzoic Acid	ND	ug/kg	2000		
Benzyl Alcohol	ND	ug/kg	410		
<u>-</u>	ND	ug/kg	200		
Carbazole	ND	ug/kg	2000		
Pyridine 2-Picoline	ND	ug/kg	810		
Pronamide	ND	ug/kg	810		
Methyl methanesulfonate	ND	ug/kg	810		
Surrogate(s)	Recovery		QC Crit	eria	
2-Fluorophenol	57.0	8	25-120		
Phenol-d6	62.0	%	10-120		
Nitrobenzene-d5	54.0	%	23-120		
2-Fluorobiphenyl	53.0	%	30-120		
2,4,6-Tribromophenol	56.0	8	19-120		
4-Terphenyl-d14	72.0	%	18-120		
PAH by GC/MS SIM 8270M				1 82700	С-M 0308 11:15 0309 23:24 RL
Acenaphthene	ND	ug/kg	8.1		
2-Chloronaphthalene	ND	ug/kg	8.1		
Fluoranthene	ИD	ug/kg	8.1		
Hexachlorobutadiene	ND	ug/kg	20.		
Naphthalene	ND	ug/kg	8.1		
Benzo(a)anthracene	ND	ug/kg	8.1		
Benzo(a)pyrene	ND	ug/kg	8.1		
Benzo(b) fluoranthene	ND	ug/kg	8.1		
Benzo(k)fluoranthene	ND	ug/kg	8.1		
Chrysene	ND	ug/kg	8.1		
Acenaphthylene	ND	ug/kg	8.1		
Anthracene	ND	ug/kg	8.1		
Benzo(ghi)perylene	ND	ug/kg	8.1		
Fluorene	ND	ug/kg	8.1		
Phenanthrene	ND	ug/kg	8.1		



Laboratory Sample Number: L0502261-04

MW/CB-16 (10'-12')

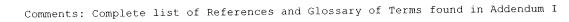
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID		
					PREP ANAL		
PAH by GC/MS SIM 8270M conti	nued			1 8270C-M			
Dibenzo(a,h)anthracene	ND	ug/kg	8.1	1 82/0C-M	0308 11:15 0309 23:24 RL		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	8.1				
Pyrene	ND	ug/kg	8.1				
1-Methylnaphthalene	ND	ug/kg	8.1				
2-Methylnaphthalene	ND	ug/kg	8.1				
Pentachlorophenol	ND	ug/kg	32.				
Hexachlorobenzene	ND	ug/kg	32.				
Perylene	ND	ug/kg	8.1				
Biphenyl	ND	ug/kg	8.1				
2,6-Dimethylnaphthalene	ND	ug/kg	8.1				
1-Methylphenanthrene	ND	ug/kg ug/kg	8.1				
Benzo(e) Pyrene	ND	ug/kg ug/kg	8.1				
Hexachloroethane	ND						
	140	ug/kg	32.				
Surrogate(s)	Recovery		00 001				
2-Fluorophenol	52.0	%	QC Crit	_eria			
Phenol-d6	66.0	e e	25-120				
Vitrobenzene-d5	55.0	8	10-120				
2-Fluorobiphenvl	47.0	6 %	23-120				
2,4,6-Tribromophenol	67.0	6 %	30-120				
-Terphenyl-d14	50.0	9	19-120				
_	00.0	0	18-120				
olychlorinated Biphenyls				1 8082	0308 12:15 0309 22:49 ЈВ		
roclor 1221	ND	ug/kg	40.6		0300 12:13 0309 22:49 JB		
roclor 1232	ND	ug/kg	40.6				
roclor 1242/1016	ND	ug/kg	40.6				
roclor 1248	ND	ug/kg	40.6				
roclor 1254	ND	ug/kg	40.6				
roclor 1260	ND	ug/kg	40.6				
urrogate(s)	Recovery		00.0.11				
,4,5,6-Tetrachloro-m-xylene	80.0	9	QC Crit	erıa			
ecachlorobiphenyl	85.0	8	30-150 30-150				
			20-130				
rganochlorine Pesticides				1 8081	0308 13:20 0310 18:41 BW		
elta-BHC	ND	ug/kg	4.06	-	10:60 0010 10:41 BW		
indane	ND	ug/kg	4.06				
lpha-BHC	ND	ug/kg	4.06				
eta-BHC	ND	ug/kg	4.06				
eptachlor	ND	ug/kg	4.06				
ldrin	ND	ug/kg	4.06				
eptachlor epoxide	ND	ug/kg	4.06				
ndrin	ND	ug/kg	4.06				
ndrin aldehyde	ND	ug/kg ug/kg	4.06				
ndrin ketone	ND	ug/kg ug/kg	4.06				
eldrin	ND	ug/kg ug/kg					
4'-DDE	ND		4.06				
	MD	ug/kg	4.06				
4'-DDD	ND	ug/kg	4.06				



Laboratory Sample Number: L0502261-04

MW/CB-16 (10'-12')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA'I PREP	E ID ANAL
Organochlorine Pesticides con	tinueđ			1 8081	0308 13:20	0310 18:41 BW
Endosulfan I	ND	ug/kg	4.06			
Endosulfan II	ND	ug/kg	4.06			
Endosulfan sulfate	ND	ug/kg	4.06			
Methoxychlor	ND	ug/kg	4.06			
Toxaphene	ND	ug/kg	16.3			
Chlordane	ND	ug/kg	16.3			
cis-Chlordane	ND	ug/kg	4.06			
trans-Chlordane	ND	ug/kg	4.06			
Surrogate(s)	Recovery		QC Cri	teria		
2,4,5,6-Tetrachloro-m-xylene	63.0	%	30-150)		
Decachlorobiphenyl	74.0	8	30-150)		





MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-05

MW/CB-17 (1'-2')

Date Collected: 28-FEB-2005 14:10

None

Sample Matrix: SOIL Date Received: 05-MAR-2005 Date Reported: 14-MAR-2005

Condition of Sample:

Satisfactory Field Prep:

Number & Type of Containers: 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE I		
					PREP	ANAL	
Solids, Total	94.	્ર	0.10	30 2540G		0200 16 1	
Wolabila Oromaia I agama	20.00			30 23400		0309 16:1	5 JS
Volatile Organics by GC/MS Methylene chloride				1 8260B		0309 13:1	7 BT
1,1-Dichloroethane	ND	ug/kg	27.				
Chloroform	ND	ug/kg	4.1				
Carbon tetrachloride	ND	ug/kg	4.1				
	ND	ug/kg	2.7				
1,2-Dichloropropane	ND	ug/kg	9.5				
Dibromochloromethane	ND	ug/kg	2.7				
1,1,2-Trichloroethane	ND	ug/kg	4.1				
Tetrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
Trichlorofluoromethane	ND	ug/kg	14.				
1,2-Dichloroethane	ND	ug/kg	2.7				
1,1,1-Trichloroethane	ND	ug/kg	2.7				
Bromodichloromethane	ND	ug/kg	2.7				
trans-1,3-Dichloropropene	ND	ug/kg	2.7				
cis-1,3-Dichloropropene	ND	ug/kg	2.7				
1,1-Dichloropropene	ND	ug/kg	14.				
Bromoform	ND	ug/kg	11.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7				
Benzene	ND	ug/kg	2.7				
Toluene	ND	ug/kg	4.1				
Ethylbenzene	ND	ug/kg	2.7				
Chloromethane	ND	ug/kg	14.				
Bromomethane	ND	ug/kg	5.4				
Vinyl chloride	ND	ug/kg ug/kg	5.4				
Chloroethane	ND	ug/kg ug/kg	5.4				
l,1-Dichloroethene	ND	ug/kg	2.7				
trans-1,2-Dichloroethene	ND						
Frichloroethene	ND	ug/kg	4.1				
1,2-Dichlorobenzene	ND	ug/kg	2.7				
l,3-Dichlorobenzene	ND ND	ug/kg	14.				
4-Dichlorobenzene		ug/kg	14.				
Methyl tert butyl ether	ND	ug/kg	14.				
o/m-Xylene	ND	ug/kg	5.4				
o-Xylene	ND	ug/kg	2.7				
	ND	ug/kg	2.7				
cis-1,2-Dichloroethene	ND	ug/kg	2.7				
Dibromomethane	ND	ug/kg	27.				



Laboratory Sample Number: L0502261-05

MW/CB-17 (1'-2')

					PREP ANAL
Volatile Organics by GC/MS 83	260 continu	ed		1 8260B	0309 13:17 BT
1,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
1,2,3-Trichloropropane	ND	ug/kg	27.		
	ND	ug/kg	2.7		
Styrene Dichlorodifluoromethane	ND	ug/kg	27.		
Acetone	ND	ug/kg	27.		
Carbon disulfide	ND	ug/kg	27.		
2-Butanone	ND	ug/kg	27.		
	ND	ug/kg	27.		
Vinyl acetate 4-Methyl-2-pentanone	ND	ug/kg	27.		
2-Hexanone	ND	ug/kg	27.		
Ethyl methacrylate	ND	ug/kg	27.		
-	ND	ug/kg	68.		
Acrolein	ND	ug/kg	27.		
Acrylonitrile Bromochloromethane	ND	ug/kg	14.		
	ND	ug/kg	54.		
Tetrahydrofuran	ND	ug/kg	14.		
2,2-Dichloropropane	ND	ug/kg	11.		
1,2-Dibromoethane	ND	ug/kg	14.		
1,3-Dichloropropane	ND	ug/kg	2.7		
1,1,1,2-Tetrachloroethane	ND	ug/kg	14.		
Bromobenzene	ND	ug/kg	2.7		
n-Butylbenzene	ND	ug/kg	2.7		
sec-Butylbenzene	ND	ug/kg	14.		
tert-Butylbenzene o-Chlorotoluene	ND	ug/kg	14.		
	ND	ug/kg	14.		
<pre>p-Chlorotoluene 1,2-Dibromo-3-chloropropane</pre>	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
	ND	ug/kg	2.7		
Isopropylbenzene	ND	ug/kg	2.7		
p-Isopropyltoluene	ND	ug/kg	14.	_	
Naphthalene	ND	ug/kg	2.7		
n-Propylbenzene	ND	ug/kg	14.		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC C	riteria	
1,2-Dichloroethane-d4	104.	8			
Toluene-d8	99.0	8			
4-Bromofluorobenzene	114.	%			
Dibromofluoromethane	99.0	ଚ			



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-06

MW/CB-17 (2'-4')

Date Collected: 28-FEB-2005 14:15

Sample Matrix:

SOIL

Date Received : 05-MAR-2005 Date Reported : 14-MAR-2005

Condition of Sample:

Satisfactory

Field Prep:

None

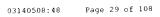
Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL,	REF	METHOD	DATE		ID
						PREP	ANAL	
Solids, Total	95.	o _o	0.10	30	2540G		0307 21:0	
				50	20100		0307 21:0	ь нс
Total Metals				1	3051			
Aluminum, Total	1300	mg/kg	4.2	1	6010B	0200 15 00	0309 07:2	
Antimony, Total	ND	mg/kg	2.1	1	6010B			
Arsenic, Total	3.3	mq/kq	0.42	1	6010B		0309 07:2	
Barium, Total	18.	mg/kg	0.42	1	6010B		0309 07:2	
Beryllium, Total	0.1124	mg/kg	0.1041	1			0309 07:2	
Cadmium, Total	ND	mg/kg	0.5204	1		0308 15:00		
Calcium, Total	47000	mg/kg	21.		6010B	0308 15:00		
Chromium, Total	4.2	mg/kg	0.42	1	6010B	0308 15:00		
Cobalt, Total	2.3			1	6010B	0308 15:00		
Copper, Total	7.0	mg/kg	0.83	1	6010B	0308 15:00		
Iron, Total	3400	mg/kg	0.42	1	6010B	0308 15:00		
Lead, Total	4.7	mg/kg	2.1	1	6010B	0308 15:00		
Magnesium, Total	2300	mg/kg	2.1	1	6010B	0308 15:00		
Manganese, Total		mg/kg	4.2	1	6010B	0308 15:00	0309 07:28	3 RW
Mercury, Total	180	mg/kg	0.42	1	6010B	0308 15:00	0309 07:28	B RW
Nickel, Total	ND	mg/kg	0.09	1	7471A	0309 20:15	0310 12:22	2 DM
Potassium, Total	8.4	mg/kg	0.42	1	6010B	0308 15:00	0309 07:28	RW
	290	mg/kg	100	1 -	6010B	0308 15:00	0309 07:28	RW
Selenium, Total	ND	mg/kg	1.04	1	6010B	0308 15:00	0309 10:13	B RW
Silver, Total	ND	mg/kg	0.42	1	6010B	0308 15:00	0309 07:28	RW
Sodium, Total	440	mg/kg	83.	1	6010B	0308 15:00	0309 07:28	RW
Thallium, Total	ND	mg/kg	0.42	1	6010B	0308 15:00	0309 07:28	RW
Vanadium, Total	4.9	mg/kg	0.42	1	6010B	0308 15:00	0309 07:28	RW
Zinc, Total	9.6	mg/kg	2.1	1	6010B	0308 15:00		
Volatile Organics by GC/MS	8260			1	8260B		0300:13:56	Tam.
Methylene chloride	ND	ug/kg	27.	1	05 00D		0309 13:56	151
1,1-Dichloroethane	ND	ug/kg	4.0					
Chloroform	ND	ug/kg	4.0					
Carbon tetrachloride	ND	ug/kg ug/kg	2.7					
1,2-Dichloropropane	ND	ug/kg ug/kg	9.4					
Dibromochloromethane	ND	ug/kg ug/kg	2.7					
1,1,2-Trichloroethane	ND							
Tetrachloroethene	ND ND	ug/kg	4.0					
Chlorobenzene		ug/kg	2.7					
Frichlorofluoromethane	ND	ug/kg	2.7					
enangemoroutioioine	ND	ug/kg	13.					

Laboratory Sample Number: L0502261-06

MW/CB-17 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82		ied	2.7	1 8260B	0309 13:56 BT
1,2-Dichloroethane	ND	ug/kg	2.7		
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane	ND	ug/kg	2.7		
trans-1,3-Dichloropropene	ND	ug/kg	2.7		
cis-1,3-Dichloropropene	ND	ug/kg	13.		
1,1-Dichloropropene	ND	ug/kg			
Bromoform	ND	ug/kg	11. 2.7		
1,1,2,2-Tetrachloroethane	ND	ug/kg			
Benzene	ND	ug/kg	2.7		
Toluene	ND	ug/kg	4.0		
Ethylbenzene	ND	ug/kg	2.7		
Chloromethane	ND	ug/kg	13.		
Bromomethane	ND	ug/kg	5.3		
Vinyl chloride	ND	ug/kg	5.3		
Chloroethane	ND	ug/kg	5.3		
1,1-Dichloroethene	ND	ug/kg	2.7		
trans-1,2-Dichloroethene	ND	ug/kg	4.0		
Trichloroethene	ND	ug/kg	2.7		
1,2-Dichlorobenzene	ND	ug/kg	13.		
1,3-Dichlorobenzene	ND	ug/kg	13.		
1,4-Dichlorobenzene	ND	ug/kg	13.		
Methyl tert butyl ether	ND	ug/kg	5.3		
p/m-Xylene	ND	ug/kg	2.7		
o-Xylene	ND	ug/kg	2.7		
cis-1,2-Dichloroethene	ND	ug/kg	2.7		
Dibromomethane	ND	ug/kg	27.		
1,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
1,2,3-Trichloropropane	ND	ug/kg	27.		
Styrene	ND	ug/kg	2.7		
Dichlorodifluoromethane	ND	ug/kg	27.	•	
Acetone	ND	ug/kg	27.		
Carbon disulfide	ND	ug/kg	27.		
2-Butanone	ND	ug/kg	27.		
Vinyl acetate	ND	ug/kg	27.		
4-Methyl-2-pentanone	ИД	ug/kg	27.		
2-Hexanone	ND	ug/kg	27.		
Ethyl methacrylate	ND	ug/kg	27.		
Acrolein	ND	ug/kg	67.		
Acrylonitrile	ND	ug/kg	27.		
Bromochloromethane	ND	ug/kg	13.		
Tetrahydrofuran	ND	ug/kg	53.		
2,2-Dichloropropane	ND	ug/kg	13.		
1,2-Dibromoethane	ND	ug/kg	11.		
1,3-Dichloropropane	ND	ug/kg	13.		
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.7		
Bromobenzene	ND	ug/kg	13.		
n-Butylbenzene	ND	ug/kg	2.7		
sec-Butylbenzene	ND	ug/kg	2.7		



Laboratory Sample Number: L0502261-06

MW/CB-17 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID		
					PREP ANAL		
Volatile Organics by GC/MS 8	260 contin	nod					
tert-Butylbenzene	ND	ug/kg	10	1 82608	0309 13:56 BT		
o-Chlorotoluene	ND		13.				
p-Chlorotoluene	ND	ug/kg	13.				
1,2-Dibromo-3-chloropropane	ND	ug/kg ug/kg	13.				
Hexachlorobutadiene	ND	ug/kg ug/kg	13.				
Isopropylbenzene	ND	ug/kg ug/kg	13. 2.7				
p-Isopropyltoluene	ND	ug/kg ug/kg	2.7				
Naphthalene	ND	ug/kg ug/kg	13.				
n-Propylbenzene	ND	ug/kg ug/kg	2.7				
1,2,3-Trichlorobenzene	ND	ug/kg ug/kg					
1,2,4-Trichlorobenzene	ND	ug/kg ug/kg	13.				
1,3,5-Trimethylbenzene	ND	ug/kg ug/kg	13.				
1,2,4-Trimethylbenzene	ND		13.				
trans-1,4-Dichloro-2-butene	ND	ug/kg ug/kg	13.				
Ethyl ether	ND		13.				
<u> </u>	1477	ug/kg	13.				
Surrogate(s)	Recovery		00.0				
1,2-Dichloroethane-d4	105.	95	QC Cr	iteria			
Toluene-d8	98.0	9					
4-Bromofluorobenzene	109.	8					
Dibromofluoromethane	98.0	8					
	50.0	5					
SVOC's by GC/MS 8270				1 8270C	0000 00 00		
Acenaphthene	ND	ug/kg	180	1 82700	0308 11:15 0309 18:59 HL		
Benzidine	ND	ug/kg	1800				
1,2,4-Trichlorobenzene	ND	ug/kg	180				
Hexachlorobenzene	ND	ug/kg	180				
Bis(2-chloroethyl)ether	ND	ug/kg	180				
l-Chloronaphthalene	ND	ug/kg	180				
2-Chloronaphthalene	ND	ug/kg	210				
,2-Dichlorobenzene	ND	ug/kg	180				
,3-Dichlorobenzene	ND	ug/kg	180	•			
,4-Dichlorobenzene	ND	ug/kg	180				
,3'-Dichlorobenzidine	ND	ug/kg	1800				
,4-Dinitrotoluene	ND	ug/kg ug/kg	210				
,6-Dinitrotoluene	ND	ug/kg ug/kg	180				
zobenzene	ND	ug/kg ug/kg	180				
luoranthene	ND						
-Chlorophenyl phenyl ether	ND ND	ug/kg ug/kg	180				
-Bromophenyl phenyl ether	ND	ug/kg	180				
is(2-chloroisopropyl)ether	ND	ug/kg ug/kg	180				
is(2-chloroethoxy)methane	ND		180				
exachlorobutadiene	ND	ug/kg	180				
exachlorocyclopentadiene	ND	ug/kg	350				
exachloroethane	ND	ug/kg	350				
sophorone	ND	ug/kg	180				
aphthalene		ug/kg	180				
itrobenzene	ND	ug/kg	180				
DPA/DPA	ND	ug/kg	180				
,	ND	ug/kg	530				

Laboratory Sample Number: L0502261-06

MW/CB-17 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE IC PREP ANAL
SVOC's by GC/MS 8270 continue	đ			1	8270C	0308 11:15 0309 18:59 HI
n-Nitrosodi-n-propylamine	ND	ug/kg	180			
Bis(2-ethylhexyl)phthalate	ND	ug/kg	350			
Butyl benzyl phthalate	ND	ug/kg	180			
Di-n-butylphthalate	ND	ug/kg	180			
Di-n-octylphthalate	ND	ug/kg	180			
Diethyl phthalate	ND	ug/kg	180			
Dimethyl phthalate	ND	ug/kg	180			
Benzo(a)anthracene	ND	ug/kg	180			
Benzo(a) pyrene	ND	ug/kg	180			
Benzo(b) fluoranthene	ND	ug/kg	180			
Benzo(k) fluoranthene	ND	ug/kg	180			
Chrysene	ND	ug/kg	180			
Acenaphthylene	ND	ug/kg	180			
Anthracene	ND	ug/kg	180			
Benzo(ghi)perylene	ND	ug/kg	180			
Fluorene	ND	ug/kg	180			
Phenanthrene	ND	ug/kg	180			
Dibenzo(a,h)anthracene	ND	ug/kg	180			
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180			
	ND	ug/kg	180			
Pyrene	ND	ug/kg	180			
Benzo(e) pyrene	ND	ug/kg	180			
Biphenyl	ND	ug/kg	180			
Perylene	ND	ug/kg	350			
Aniline	ND	ug/kg	180			
4-Chloroaniline	ND	ug/kg	180			
1-Methylnaphthalene	ND	ug/kg	180			
2-Nitroaniline	ND	ug/kg	180			
3-Nitroaniline	ND	ug/kg ug/kg	240			
4-Nitroaniline	ND	ug/kg ug/kg	180			
Dibenzofuran		ug/kg ug/kg	1800			
a,a-Dimethylphenethylamine	ND	ug/kg ug/kg	350		•	
Hexachloropropene	ND	ug/kg ug/kg	350			
Nitrosodi-n-butylamine	ND	ug/kg ug/kg	280			
2-Methylnaphthalene	ND		700			
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	700			
Pentachlorobenzene	ND	ug/kg	700			
a-Naphthylamine	ND	ug/kg	700			
b-Naphthylamine	ND	ug/kg				
Phenacetin	ND	ug/kg	350			
Dimethoate	ND	ug/kg	700			
4-Aminobiphenyl	ND	ug/kg	350			
Pentachloronitrobenzene	ND	ug/kg	350			
Isodrin	ND	ug/kg	350			
p-Dimethylaminoazobenzene	ND	ug/kg	350			
Chlorobenzilate	ND	ug/kg	700			
3-Methylcholanthrene	ND	ug/kg	700			
Ethyl Methanesulfonate	ND	ug/kg	530			
Acetophenone	ND	ug/kg	700			
Nitrosodipiperidine	ND	ug/kg	700			



Laboratory Sample Number: L0502261-06

MW/CB-17 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF :	METHOD	DATE I
						PREP ANAL
SVOC's by GC/MS 8270 continue	ad.					
7,12-Dimethylbenz(a)anthracer	A NT		25.0	. 1	8270C	0308 11:15 0309 18;59 ӊ
n-Nitrosodimethylamine	ND	ug/kg	350			
2,4,6-Trichlorophenol	ND	ug/kg	1800			
p-Chloro-m-cresol	ND	ug/kg	180			
2-Chlorophenol	ND	ug/kg	180			
2,4-Dichlorophenol	ND	ug/kg	210			
2,4-Dimethylphenol	ND	ug/kg	350			
2-Nitrophenol	ND	ug/kg	350			
4-Nitrophenol	ND	ug/kg	700			
2,4-Dinitrophenol	ND	ug/kg	350			
4,6-Dinitro-o-cresol	ND	ug/kg	700			
Pentachlorophenol	ND	ug/kg	700			
Phenol	ND	ug/kg	700			
2-Methylphenol	ND	ug/kg	240			
3-Methylphenol/4-Methylphenol	ND	ug/kg	210			
2,4,5-Trichlorophenol	ND	ug/kg	210			
2,6-Dichlorophenol	ND	ug/kg	180			
Benzoic Acid	ND	ug/kg	350			
Benzyl Alcohol	ND	ug/kg	1800			
Carbazole	ND	ug/kg	350			
Pyridine	ND	ug/kg	180			
2-Picoline	ND	ug/kg	1800			
Pronamide	ND	ug/kg	700			
Methyl methanesulfonate	ND	ug/kg ug/kg	700 700			
Gurrogate(s)	Recovery		00.0.1.			
-Fluorophenol	75.0	0.	QC Crit	eria		
henol-d6	83.0	8	25-120			
itrobenzene-d5	75.0	% o	10-120			
-Fluorobiphenyl	73.0	o ₁ o	23-120			
,4,6-Tribromophenol	75.0		30-120			
-Terphenyl-d14	85.0	90	19-120 18-120	-		
AH by GC/MS SIM 8270M		•	10-120			
cenaphthene	ND			1 82	70C-M	0308 11:15 0310 19:46 RL
-Chloronaphthalene	ND	ug/kg	7.0			
luoranthene	ND	ug/kg	7.0			
exachlorobutadiene	ND	ug/kg	7.0			
aphthalene	ND	ug/kg	18.			
enzo(a)anthracene	9.3	ug/kg	7.0			
enzo(a) anchracene enzo(a) pyrene	ND	ug/kg	7.0			
enzo(a)pyrene enzo(b)fluoranthene	ND	ug/kg	7.0			
enzo(k)fluoranthene	ND	ug/kg	7.0			
orysene	ND	ug/kg	7.0			
cenaphthylene	ND	ug/kg	7.0			
thracene	ND	ug/kg	7.0			
	ND	ug/kg	7.0			
enzo(ghi)perylene .uorene	ND	ug/kg	7.0			
	ND	ug/kg	7.0			
enanthrene	12.	ug/kg	7.0			



Laboratory Sample Number: L0502261-06

MW/CB-17 (2'-4')

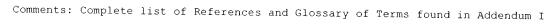
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
00700				1 8270C-M	0308 11:15:0310 19:46 RL
PAH by GC/MS SIM 8270M continu	ND	ug/kg	7.0		
Dibenzo(a,h)anthracene	ND	ug/kg	7.0		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.0		
Pyrene	ND	ug/kg ug/kg	7.0		
1-Methylnaphthalene		ug/kg	7.0		
2-Methylnaphthalene	ND	ug/kg ug/kg	28.		
Pentachlorophenol	ND ND	ug/kg ug/kg	28.		
Hexachlorobenzene		ug/kg ug/kg	7.0		
Perylene	ND	ug/kg	7.0		
Biphenyl	ND	ug/kg ug/kg	7.0		
2,6-Dimethylnaphthalene	ND	ug/kg ug/kg	7.0		
1-Methylphenanthrene	ND	ug/kg ug/kg	7.0		
Benzo(e)Pyrene	ND		28.		
Hexachloroethane	ND	ug/kg	20.		
Surrogate(s)	Recovery		QC Cri		
2-Fluorophenol	68.0	8	25-120		
Phenol-d6	92.0	%	10-120		
Nitrobenzene-d5	79.0	િ	23-120)	
2-Fluorobiphenyl	67.0	%	30-120)	
2,4,6-Tribromophenol	83.0	왕	19-120)	
4-Terphenyl-d14	69.0	%	18-120)	
m a lawinghad Dinhonula				1 8082	0308 12:15 0309 23:18 JB
Polychlorinated Biphenyls	ND	ug/kg	35.1		
Aroclor 1221	ND	ug/kg	35.1		
Aroclor 1232	ND	ug/kg	35.1		
Aroclor 1242/1016	ND	ug/kg	35.1		
Aroclor 1248	ND	ug/kg	35.1		
Aroclor 1254	ND	ug/kg ug/kg	35.1		
Aroclor 1260	ND	ug/ kg	50.5		
Surrogate(s)	Recovery		-	iteria	
2,4,5,6-Tetrachloro-m-xylene	50.0	્રે	30-15		
Decachlorobiphenyl	59.0	%	30-15	0	
Organochlorine Pesticides				1 8081	0308 13:20 0310 19:09 BV
Delta-BHC	ND	ug/kg	3.51		
	ND	ug/kg	3.51		
Lindane	ND	ug/kg	3.51		
Alpha-BHC	ND	ug/kg	3.51		
Beta-BHC	ND	ug/kg	3.51		
Heptachlor	ND	ug/kg	3.51		
Aldrin	ND	ug/kg	3.51		
Heptachlor epoxide	ND	ug/kg	3.51		
Endrin	ND	ug/kg	3.51		
Endrin aldehyde	ND	ug/kg	3.51		
Endrin ketone	ND	ug/kg ug/kg	3.51		
Dieldrin		ug/kg ug/kg	3.51		
4,4'-DDE	ND	ug/kg ug/kg	3.51		
4,4'-DDD	ND		3.51		
4,4'-DDT	ND	ug/kg	3.31		



Laboratory Sample Number: L0502261-06

MW/CB-17 (2'-4')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Organochlorine Pesticides cor	tinued			1 8081	0308 13:20 0310 19:09 BW
Endosulfan I	ND	ug/kg	3.51	. 1 0001	0308 13:20 0310 19:09 BW
Endosulfan II	ND	ug/kg	3.51		
Endosulfan sulfate	ND	ug/kg	3.51		
Methoxychlor	ND	ug/kg	3.51		
Toxaphene	ND	ug/kg	14.0		
Chlordane	ND	ug/kg	14.0		
cis-Chlordane	ND	ug/kg	3.51		
trans-Chlordane	ND	ug/kg	3.51		
Surrogate(s)	Recovery		OC Cri	lteria	
2,4,5,6-Tetrachloro-m-xylene	55.0	ે	30-150		
Decachlorobiphenyl	64.0	olo	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-07

Date Collected: 02-MAR-2005 11:30

Sample Matrix: SOIL

Date Received: 05-MAR-2005 MW/CB-18 (4'-6') Date Reported: 14-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
. <u> </u>					PREP	ANAL	
Solids, Total	91.	ે	0.10	30 2540G		0307 21:0	6 HG
Potal Metals				1 3051			
TOTAL MCCALO							
Aluminum, Total	3800	mg/kg	4.4	1 6010B	0308 15:00		
Antimony, Total	ND	mg/kg	2.2	1 6010B	0308 15:00		
Arsenic, Total	2.2	mg/kg	0.44	1 6010B		0309 07:3	
Barium, Total	33.	mg/kg	0.44	1 6010B		0309 07:3	
Beryllium, Total	0.1160	mg/kg	0.1098	1 6010B		0309 07:3	
Cadmium, Total	ND	mg/kg	0.1098	1 6010B		0309 07:3	
Calcium, Total	5700	mg/kg	4.4	1 6010B		0309 07:3	
Chromium, Total	6.4	mg/kg	0.44	1 6010B		0309 07:3	
Cobalt, Total	4.1	mg/kg	0.88	1 6010B	0308 15:00	0309 07:3	1 RW
Copper, Total	13.	mg/kg	0.44	1 6010B		0309 07:3	
Iron, Total	8600	mg/kg	2.2	1 6010B	0308 15:00	0309 07:3	1 RW
Lead, Total	8.2	mg/kg	2.2	1 6010B	0308 15:00	0309 07:3	1 RW
Magnesium, Total	3000	mg/kg	4.4	1 6010B	0308 15:00	0309 07:3	1 RW
Manganese, Total	280	mg/kg	0.44	1 6010B		0309 07:3	
Mercury, Total	ND	mg/kg	0.09	1 7471A	0309 20:1	5 0310 12:2	4 DM
Nickel, Total	8.0	mg/kg	0.44	1 6010B	0308 15:00	0309 07:3	31 RW
Potassium, Total	340	mg/kg	110	1 6010B	0308 15:00	0309 07:3	31 RW
Selenium, Total	ND	mg/kg	0.220	1 6010B	0308 15:0	0309 07:3	31 RW
Silver, Total	ND	mq/kq	0.44	1 6010B	0308 15:0	0309 07:3	31 RW
Sodium, Total	160	mg/kg	88.	1 6010B	0308 15:0	0309 07:3	31 RW
Thallium, Total	ND	mg/kg	0.44	1 6010B	0308 15:0	0 0309 07:3	31 RW
Vanadium, Total	7.4	mg/kg	0.44	1 6010B	0308 15:0	0 0309 07:	31 RW
Zinc, Total	27.	mg/kg	2.2	1 6010B	0308 15:0	0 0309 07:	31 RW
Volatile Organics by GC/MS	8260			1 8260B		0309 14:	34 B1
Methylene chloride	ND	ug/kg	27.				
1,1-Dichloroethane	ND	ug/kg	4.1				
Chloroform	ND	ug/kg	4.1				
Carbon tetrachloride	ND	ug/kg	2.7				
1.2-Dichloropropane	ND	ug/kg	9.6				
Dibromochloromethane	ND	ug/kg	2.7				
1,1,2-Trichloroethane	ND	ug/kg	4.1				
Tetrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
Trichlorofluoromethane	ND	ug/kg	14.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-07

MW/CB-18 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS	8260 continu	ied		1 8260B	0309 14:34 BT
1,2-Dichloroethane	ND	ug/kg	2.7	1 02000	V309 14:34 BT
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane	ND	ug/kg	2.7		
trans-1,3-Dichloropropene	ND	ug/kg	2.7		
cis-1,3-Dichloropropene	ND	ug/kg	2.7		
1,1-Dichloropropene	ИD	ug/kg	14.		
Bromoform	ND	ug/kg	11.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7		
Benzene	ND	ug/kg	2.7		
Toluene	ND	ug/kg	4.1		
Ethylbenzene	ND	ug/kg	2.7		
Chloromethane	ND	ug/kg	14.		
Bromomethane	ND	ug/kg	5.5		
Vinyl chloride	ND	ug/kg	5.5		
Chloroethane	ND	ug/kg	5.5		
1,1-Dichloroethene	ND	ug/kg ug/kg	2.7		
trans-1,2-Dichloroethene	ND	ug/kg ug/kg	4.1		
Trichloroethene	ND	ug/kg ug/kg	2.7		
1,2-Dichlorobenzene	ND	ug/kg ug/kg	14.		
1,3-Dichlorobenzene	ND	ug/kg ug/kg	14.		
l,4-Dichlorobenzene	ND	ug/kg ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg ug/kg	5.5		
o/m-Xylene	ND	ug/kg ug/kg	2.7		
o-Xylene	ND	ug/kg ug/kg	2.7		
cis-1,2-Dichloroethene	ND	ug/kg ug/kg	2.7		
Dibromomethane	ND	ug/kg ug/kg	27.		
l,4-Dichlorobutane	ND	ug/kg ug/kg	27.		
Iodomethane	ND	ug/kg ug/kg	27.		
1,2,3-Trichloropropane	ND		27.		
Styrene	ND	ug/kg			
Dichlorodifluoromethane	ND	ug/kg	2.7		
Acetone	ND	ug/kg	27.	•	
Carbon disulfide		ug/kg	27.		
2-Butanone	ND	ug/kg	27.		
inyl acetate	ND	ug/kg	27.		
-Methyl-2-pentanone	ND	ug/kg	27.		
Methyr-2-pentanone Hexanone	ND	ug/kg	27.		
	ND	ug/kg	27.		
Cthyl methacrylate	ND	ug/kg	27.		
	ND	ug/kg	68.		
crylonitrile	ND	ug/kg	27.		
romochloromethane	ND	ug/kg	14.		
etrahydrofuran	ND	ug/kg	55.		
,2-Dichloropropane	ND	ug/kg	14.		
,2-Dibromoethane	ND	ug/kg	11.		
,3-Dichloropropane	ND	ug/kg	14.		
,1,1,2-Tetrachloroethane	ND	ug/kg	2.7		
romobenzene	ND	ug/kg	14.		
-Butylbenzene	ND	ug/kg	2.7		
ec-Butylbenzene	ND	ug/kg	2.7		

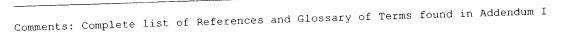
Laboratory Sample Number: L0502261-07

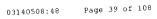
MW/CB-18 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continu	ned				
n-Nitrosodi-n-propylamine	ND			1 8270C	0308 11:15 0309 19:25 HL
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180		
Butyl benzyl phthalate		ug/kg	370		
Di-n-butylphthalate	ND	ug/kg	180		
Di-n-octylphthalate	ND	ug/kg	180		
Diethyl phthalate	ND	ug/kg	180		
Dimethyl phthalate	ND	ug/kg	180		
Benzo(a)anthracene	ND	ug/kg	180		
Benzo(a)pyrene	ND	ug/kg	180		
Benzo(b) fluoranthene	ND	ug/kg	180		
Benzo(k) fluoranthene	ND	ug/kg	180		
Chrysene	ND	ug/kg	180		
Acenaphthylene	ND	ug/kg	180		
Anthracene	ND	ug/kg	180		
Benzo(ghi)perylene	ND	ug/kg	180		
Fluorene	ND	ug/kg	180		
Phenanthrene	ND	ug/kg	180		
Dibenzo(a,h)anthracene	ND	ug/kg	180		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180		
Pyrene	ND	ug/kg	180		
Senzo(e)pyrene	ND	ug/kg	180		
Siphenyl	ND	ug/kg	180		
Perylene	ND	ug/kg	180		
miline	ND	ug/kg	180		
-Chloroaniline	ND	ug/kg	370		
-Methylnaphthalene	ND	ug/kg	180		
-Nitroaniline	ND	ug/kg	180		
-Nitroaniline	ND	ug/kg	180		
-Nitroaniline	ND	ug/kg	180		
ibenzofuran	ND	ug/kg	260		
,a-Dimethylphenethylamine	ND	ug/kg	180		
exachloropropene	ND	ug/kg	1800	•	
itrosodi-n-butylamine	ND	ug/kg	370		
-Methylnaphthalene	ND	ug/kg	370		
2,4,5-Tetrachlorobenzene	ND	ug/kg	290		
entachlorobenzene	ND	ug/kg	730		
-Naphthylamine	ND	ug/kg	730		
-Naphthylamine	ND	ug/kg	730		
nenacetin	ND	ug/kg	730		
methoate	ND	ug/kg	370		
Aminobiphenyl	ND	ug/kg	730		
entachloronitrobenzene	ND	ug/kg	370		
odrin	ND	ug/kg	370		
Dimethylaminoazobenzene	ND	ug/kg	370		
lorobenzilate	ND	ug/kg	370		
Methylcholanthrene	ND	ug/kg	730		
hethylcholanthrene hyl Methanesulfonate	ND	ug/kg	730		
etophenone	ND	ug/kg	550		
trosodipiperidine	ND	ug/kg	730		
crosourbiberiaine	ND	ug/kg	730		

Laboratory Sample Number: L0502261-07 MW/CB-18 (4'-6')

	RESULT	UNITS	RDL	REF METHOD	DATE ID
PARAMETER					PREP ANAL
			a		0308 11:15 0309 19:25 HL
SVOC's by GC/MS 8270 continued				1 8270C	0304 11,13 0203 13.00
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	370		
n-Nitrosodimethylamine	ND	ug/kg	1800		
2,4,6-Trichlorophenol	ND	ug/kg	180		
2,4,6-Trichiorophenoi	ND	ug/kg	180		
p-Chloro-m-cresol	ND	ug/kg	220		
2-Chlorophenol	ND	ug/kg	370		
2,4-Dichlorophenol	ND	ug/kg	370		
2,4-Dimethylphenol	ND	ug/kg	730		
2-Nitrophenol	ND	ug/kg	370		
4-Nitrophenol		uq/kg	730		
2,4-Dinitrophenol	ND	ug/kg	730		
4,6-Dinitro-o-cresol	ND	ug/kg	730		
Pentachlorophenol	ND	ug/kg ug/kg	260		
Phenol	ND	ug/kg ug/kg	220		
2-Methylphenol	ND	-	220		
3-Methylphenol/4-Methylphenol	ND	ug/kg	180		
2,4,5-Trichlorophenol	ИD	ug/kg	370		
2,6-Dichlorophenol	ND	ug/kg			
Benzoic Acid	ND	ug/kg	1800		
Benzyl Alcohol	ND	ug/kg	370		
Carbazole	ND	ug/kg	180		
Pyridine	ND	ug/kg	1800		
Pyridine 2-Picoline	ND	ug/kg	730		
	ND	ug/kg	730		
Pronamide	ND	ug/kg	730		
Methyl methanesulfonate					
	Recovery			iteria	
Surrogate(s)	74.0	%	25-12	0	
2-Fluorophenol	83.0	%	10-12	0	
Phenol-d6	70.0	%	23-12	.0	
Nitrobenzene-d5	70.0	96	30-12	0	
2-Fluorobiphenyl	60.0	8	19-12	20 .	
2,4,6-Tribromophenol	88.0	%	18-12	20	
4-Terphenyl-dl4	00.0	v			
				1 8270C-M	0308 11:15 0310 16:51 R
PAH by GC/MS SIM 8270M	ND	ug/kg	7.3		
Acenaphthene	ND	ug/kg ug/kg	7.3		
2-Chloronaphthalene	ND		7.3		
Fluoranthene	49.	ug/kg	18.		
Hexachlorobutadiene	ND	ug/kg	7.3		
Naphthalene	ND	ug/kg			
Benzo(a) anthracene	35.	ug/kg	7.3		
Benzo(a) pyrene	61.	ug/kg	7.3		
Benzo(a) pyrenc Benzo(b) fluoranthene	47.	ug/kg	7.3		
Benzo(k) fluoranthene	66.	ug/kg	7.3		
	35.	ug/kg	7.3		
Chrysene	ND	ug/kg	7.3		
Acenaphthylene	ND	ug/kg	7.3		
Anthracene	50.	ug/kg	7.3		
Benzo(ghi)perylene	ND	ug/kg	7.3		
Fluorene	9.9	ug/kg	7.3		
Phenanthrene	3.3	497.69			





Laboratory Sample Number: L0502261-07

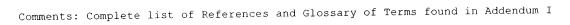
MW/CB-18 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
PAH by GC/MS SIM 8270M conti	nued			1 8270C-M	0308 11:15 0310 16:51 RL
Dibenzo(a,h)anthracene	13.	ug/kg	7.3		
Indeno(1,2,3-cd)Pyrene	47.	ug/kg	7.3		
Pyrene	49.	ug/kg	7.3		
l-Methylnaphthalene	ND	ug/kg	7.3		
2-Methylnaphthalene	ND	ug/kg	7.3		
Pentachlorophenol	ND	ug/kg	29.		
Hexachlorobenzene	ND	ug/kg	29.		
Perylene	19.	ug/kg	7.3		
Biphenyl	ND	ug/kg	7.3		
2,6-Dimethylnaphthalene	ND	ug/kg	7.3		
l-Methylphenanthrene	ND	ug/kg	7.3		
Benzo(e)Pyrene	42.	ug/kg	7.3		
Hexachloroethane	ND	ug/kg	29.		
_		-9/1-9	23.		
Surrogate(s)	Recovery		QC Crit	teria	
2-Fluorophenol	66.0	%	25-120		
Phenol-d6	89.0	%	10-120		
Nitrobenzene-d5	74.0	%	23-120		
2-Fluorobiphenyl	62.0	96	30-120		
2,4,6-Tribromophenol	75.0	ક	19-120		
1-Terphenyl-d14	73.0	%	18-120		
Polychlorinated Biphenyls				i 8082	0308 12:15 0309 23:46 JB
Aroclor 1221	ND	ug/kg	36.6	1 0002	0300 12.13 0309 23;46 JB:
Aroclor 1232	ND	ug/kg	36.6		
Aroclor 1242/1016	ND	ug/kg	36.6		
Aroclor 1248	ND	ug/kg	36.6		
Aroclor 1254	ND	ug/kg ug/kg	36.6		
aroclor 1260	ND	ug/kg	36.6		
Surrogate(s)	Recovery		00 0		
2,4,5,6-Tetrachloro-m-xylene	78.0	જ	QC Crit	erla	
Decachlorobiphenyl	83.0	8	30-150		
	03.0	ъ	30-150		
Organochlorine Pesticides				1 8981	0308 13:20 0311 10:40 BW
elta-BHC	ND	ug/kg	3.66		
indane	ND	ug/kg	3.66		
lpha-BHC	ND	ug/kg	3.66		
eta-BHC	ND	ug/kg	3.66		
leptachlor	ND	ug/kg	3.66		
ldrin	ND	ug/kg	3.66		
eptachlor epoxide	ND	ug/kg	3.66		
ndrin	ND	ug/kg	3.66		
ndrin aldehyde	ND	ug/kg	3.66		
ndrin ketone	ND	ug/kg	3.66		
ieldrin	ND	ug/kg	3.66		
,4'-DDE	ND	ug/kg	3.66		
,4'-DDD	ND	ug/kg	3.66		
, 4'-DDT	ND	ug/kg	3.66		

Laboratory Sample Number: L0502261-07

MW/CB-18 (4'-6')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Organochlorine Pesticides con	tinued		Naga (19	1 8081	0308 13:20 0311 10:40 BW
Endosulfan I	ND	ug/kg	3.66		
Endosulfan II	ND	ug/kg	3.66		
Endosulfan sulfate	ND	ug/kg	3.66		
Methoxychlor	ND	ug/kg	3.66		
Toxaphene	ND	ug/kg	14.6		
Chlordane	ND	ug/kg	14.6		
cis-Chlordane	ND	ug/kg	3.66		
trans-Chlordane	ND	ug/kg	3.66		
Surrogate(s)	Recovery		QC Cr	iteria	
2,4,5,6-Tetrachloro-m-xylene	62.0	%	30-15	0	
Decachlorobiphenyl	68.0	%	30-15	0	







MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-08

MW/CB-19 (1'-2')

Date Collected: 02-MAR-2005 14:15

Sample Matrix:

SOIL

Date Received : 05-MAR-2005 Date Reported : 14-MAR-2005

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 1-Vial

	DATE	D.	METHOD	REF	RDL	UNITS	RESULT	PARAMETER
ANAL		PREP						
							91.	Solids, Total
09 16:15	0309 16		2540G	3	0.10	%	91.	100001
							8260	Volatile Organics by GC/MS
09 15:12 1	0309 15		8260B	.1	0.7	110 / 100	ND	Methylene chloride
					27.	ug/kg ug/kg	ND	1,1-Dichloroethane
					4.1	ug/kg ug/kg	ND	Chloroform
					4.1	, ,	ND	Carbon tetrachloride
					2.7	ug/kg	ND	1,2-Dichloropropane
					9.6	ug/kg	ND	Dibromochloromethane
					2.7	ug/kg	ND ND	1,1,2-Trichloroethane
					4.1	ug/kg		Tetrachloroethene
					2.7	ug/kg	ND	Chlorobenzene
					2.7	ug/kg	ND	Trichlorofluoromethane
					14.	ug/kg	ND	1,2-Dichloroethane
					2.7	ug/kg	ND	1,1,1-Trichloroethane
					2.7	ug/kg	ND	Bromodichloromethane
					2.7	ug/kg	ND	
					2.7	ug/kg	ND	trans-1,3-Dichloropropene
					2.7	ug/kg	ND	cis-1,3-Dichloropropene
					14.	ug/kg	ND	1,1-Dichloropropene Bromoform
					11.	ug/kg	ND	· · · · · · · · · · · · · · · · · · ·
				-	2.7	ug/kg	ND	1,1,2,2-Tetrachloroethane
					2.7	ug/kg	ND	Benzene
					4.1	ug/kg	ND	Toluene
					2.7	ug/kg	ND	Ethylbenzene
					14.	ug/kg	ND	Chloromethane
					5.5	ug/kg	ND	Bromomethane
					5.5	ug/kg	ND	/inyl chloride
					5.5	ug/kg	ND	Chloroethane
					2.7	ug/kg	ND	,1-Dichloroethene
					4.1	ug/kg	ND	rans-1,2-Dichloroethene
					2.7	uq/kg	ND	'richloroethene
					14.	ug/kg ug/kg	ND	,2-Dichlorobenzene
					14.	ug/kg	ND	,3-Dichlorobenzene
						ug/kg ug/kg	ND	,4-Dichlorobenzene
					14.	ug/kg ug/kg	ND ND	ethyl tert butyl ether
					5.5	2 2	ND ND	/m-Xylene
					2.7	ug/kg	ND ND	-Xylene
					2.7	ug/kg		is-1,2-Dichloroethene
							·· =	ibromomethane
					2.7 27.	ug/kg ug/kg	ND ND	Dibromomethane

Laboratory Sample Number: L0502261-08

MW/CB-19 (1'-2')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE ID PREP ANAL
					8260B	0309 15:12 BT
Volatile Organics by GC/MS 82	60 continue	d	0.77	. 1	85 <i>0</i> 0B	03030 1314,2 54
1,4-Dichlorobutane	ND	ug/kg	27.			
Iodomethane	ND	ug/kg	27.			
1,2,3-Trichloropropane	ND	ug/kg	27.			
Styrene	ND	ug/kg	2.7			
Dichlorodifluoromethane	ND	ug/kg	27.			
Acetone	ND	ug/kg	27.			
Carbon disulfide	ND	ug/kg	27.			
2-Butanone	ND	ug/kg	27.			
Vinyl acetate	ND	ug/kg	27.			
4-Methyl-2-pentanone	ND	ug/kg	27.			
2-Hexanone	ND	ug/kg	27.			
Ethyl methacrylate	ND	ug/kg	27.			
Acrolein	ND	ug/kg	68.			
Acrylonitrile	ND	ug/kg	27.			
Bromochloromethane	ND	ug/kg	14.			
Tetrahydrofuran	ND	ug/kg	55.			
2,2-Dichloropropane	ND	ug/kg	14.			
1,2-Dibromoethane	ND	ug/kg	11.			
1,3-Dichloropropane	ND	ug/kg	14.			
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.7			
Bromobenzene	ND	ug/kg	14.			
n-Butylbenzene	ND	ug/kg	2.7			
sec-Butylbenzene	ND	ug/kg	2.7			
tert-Butylbenzene	ND	ug/kg	14.			
o-Chlorotoluene	ND	ug/kg	14.			
p-Chlorotoluene	ND	ug/kg	14.			
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.			
Hexachlorobutadiene	ND	ug/kg	14.			
Isopropylbenzene	ND	ug/kg	2.7			
p-Isopropyltoluene	ND	ug/kg	2.7			
Naphthalene	ND	ug/kg	14.			
n-Propylbenzene	ND	ug/kg	2.7			
1,2,3-Trichlorobenzene	ND	ug/kg	14.			
1,2,4-Trichlorobenzene	ND	ug/kg	14.			
1,3,5-Trimethylbenzene	ND	ug/kg	14.			
1,2,4-Trimethylbenzene	ND	ug/kg	14.			
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.			
Ethyl ether	ND	ug/kg	14.			
Surrogate(s)	Recovery		QC C	criter	ia	
1,2-Dichloroethane-d4	104.	%				
Toluene-d8	95.0	olo Olo				
4-Bromofluorobenzene	100.	%				
Dibromofluoromethane	80.0	%				



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-09

MW/CB-19 (8'-10')

Date Collected: 02-MAR-2005 14:30

Sample Matrix:

SOIL

Date Received : 05-MAR-2005 Date Reported : 14-MAR-2005

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD		ATE	ID
					PREP	ANAL	ענ
Solids, Total	91.	96	0.10				
m via se s	•	0	0.10	30 25 4 0G		0307 21:06	HG
Total Metals				1 3051			
Aluminum, Total	3500	mg/kg	4.3				
Antimony, Total	ND	mg/kg	2.2	1 6010B		0309 07:44	
Arsenic, Total	1.9			1 6010B		0309 07:44	
Barium, Total	37.	mg/kg	0.43	1 6010B	0308 15:00	0309 07:44	R₩
Beryllium, Total	0.1405	mg/kg	0.43	1 6010B	0308 15:00	0309 07:44	R₩
Cadmium, Total	ND	mg/kg	0.1078	1 6010B	0308 15:00	0309 07:44	RW
Calcium, Total	1400	mg/kg	0.1078	1 6010B	0308 15:00	0309 07:44	RW
Chromium, Total	6.2	mg/kg	4.3	1 6010B	0308 15:00	0309 07:44	RW
Cobalt, Total	3.8	mg/kg	0.43	I 6010B	0308 15:00	0309 07:44	RW
Copper, Total	11.	mg/kg	0.86	1 6010B	0308 15:00	0309 07:44	RW
Iron, Total	8300	mg/kg	0.43	1 6010B	0308 15:00	0309 07:44	RW
Lead, Total		mg/kg	2.2	1 6010B	0308 15:00	0309 07:44 1	RW
Magnesium, Total	11.	mg/kg	2.2	1 6010B	0308 15:00	0309 07:44 1	RW
Manganese, Total	1400	mg/kg	4.3	1 6010B	0308 15:00	0309 07:44 1	RW
Mercury, Total	130	mg/kg	0.43	1 6010B		0309 07:44 F	
Vickel, Total	ND	mg/kg	0.08	1 7471A		0310 12:26 [
Potassium, Total	7.1	mg/kg	0.43	1 6010B		0309 07:44 F	
Selenium, Total	340	mg/kg	110	1 - 6010B	0308 15:00		
Silver, Total	ND	mg/kg	0.216	1 6010B	0308 15:00		
Sodium, Total	ND	mg/kg	0.43	1 6010B	0308 15:00 (
Challium, Total	200	mg/kg	86.	1 6010B	0308 15:00 (
anadium, Total	ND	mg/kg	0.43	1 6010B	0308 15:00 (
	7.8	mg/kg	0.43	1 6010B	0308 15:00 (
inc, Total	20.	mg/kg	2.2	1 6010B	0308 15:00 (
olatile Organics by GC/MS	8260			1 8260B			
ethylene chloride	ND	ug/kg	, 210	1 8260B	0	1309 15:50 B	T
,1-Dichloroethane	ND	ug/kg	32.				
hloroform	ND	ug/kg ug/kg	32.				
arbon tetrachloride	ND	ug/kg ug/kg	21.				
,2-Dichloropropane	ND	ug/kg ug/kg	74.				
ibromochloromethane	ND	ug/kg ug/kg	21.				
,1,2-Trichloroethane	ND		32.				
etrachloroethene	ND	ug/kg					
nlorobenzene	ND	ug/kg	21.				
richlorofluoromethane	ND	ug/kg	21.				
one cridite	MD	ug/kg	100				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-09

MW/CB-19 (8'-10')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ıed		1 8260B	0309 15:50 BT
1,2-Dichloroethane	ND	ug/kg	21.		
1,2-Dichloroethane 1,1,1-Trichloroethane	ND	ug/kg	21.		
Bromodichloromethane	ND	ug/kg	21.		
trans-1,3-Dichloropropene	ND	ug/kg	21.		
cis-1,3-Dichloropropene	ND	ug/kg	21.		
1,1-Dichloropropene	ND	ug/kg	100		
	ND	ug/kg	84.		
Bromoform 1,1,2,2-Tetrachloroethane	ND	ug/kg	21.		
	ND	ug/kg	21.		
Benzene	ND	ug/kg	32.		-
Toluene	ND	ug/kg	21.		
Ethylbenzene	ND	ug/kg	100		
Chloromethane	ND	ug/kg	42.		
Bromomethane	ND	ug/kg	42.		
Vinyl chloride	ND	ug/kg	42.		
Chloroethane	ND	ug/kg	21.		
1,1-Dichloroethene trans-1,2-Dichloroethene	ND	ug/kg	32.		
Trichloroethene	ND	ug/kg	21.		
1,2-Dichlorobenzene	ND	ug/kg	100		
1,3-Dichlorobenzene	ND	ug/kg	100		
1,4-Dichlorobenzene	ND	ug/kg	100		
Methyl tert butyl ether	ND	ug/kg	42.		
	ND	ug/kg	21.		
p/m-Xylene	ND	ug/kg	21.		
o-Xylene cis-1,2-Dichloroethene	ND	ug/kg	21.		
	ND	ug/kg	210		
Dibromomethane 1,4-Dichlorobutane	ND	ug/kg	210		
	ND	ug/kg	210		
<pre>Iodomethane 1,2,3-Trichloropropane</pre>	ND	ug/kg	210		
	ND	ug/kg	21.		
Styrene Dichlorodifluoromethane	ND	ug/kg	210		
	ND	ug/kg	210		
Acetone Carbon disulfide	ND	ug/kg	210		
	ND	ug/kg	210		
2-Butanone Vinyl acetate	ND	ug/kg	210		
4-Methyl-2-pentanone	ND	ug/kg	210		
	ND	ug/kg	210		
2-Hexanone Ethyl methacrylate	ИD	ug/kg	210		
Acrolein	ND	ug/kg	530		
Acrolein Acrylonitrile	ND	ug/kg	210		
Bromochloromethane	ND	ug/kg	100		
Tetrahydrofuran	ND	ug/kg	420		
2,2-Dichloropropane	ND	ug/kg	100		
1,2-Dibromoethane	ND	ug/kg	84.		
1,2-Dibromoethane 1,3-Dichloropropane	ND	ug/kg	100		
1,1,1,2-Tetrachloroethane	ND	ug/kg	21.		
Bromobenzene	ND	ug/kg	100		
	ND	ug/kg	21.		
n-Butylbenzene sec-Butylbenzene	ND	ug/kg	21.		



Laboratory Sample Number: L0502261-09

MW/CB-19 (8'-10')

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF	METHOD	DATE		ID
						PREP	ANAL	
Volatile Organics by GC/MS 8	260 contin	ned			8260B			
tert-Butylbenzene	ND	ug/kg	100	Ŧ	8260B		0309.15:50) BT
o-Chlorotoluene	ND	ug/kg ug/kg	100					
p-Chlorotoluene	ND	ug/kg	100					
1,2-Dibromo-3-chloropropane	ND	ug/kg						
Hexachlorobutadiene	ND		100					
Isopropylbenzene	ND	ug/kg ug/kg	100 21.					
p-Isopropyltoluene	ND							
Naphthalene	ND	ug/kg	21.					
n-Propylbenzene	ND	ug/kg	100					
1,2,3-Trichlorobenzene		ug/kg	21.					
1,2,4-Trichlorobenzene	ND	ug/kg	100					
1,3,5-Trimethylbenzene	ND	ug/kg	100					
1,2,4-Trimethylbenzene	ND	ug/kg	100					
trans-1,4-Dichloro-2-butene	ND	ug/kg	100					
Ethyl ether	ND	ug/kg	100					
activit ether	ND	ug/kg	100					
Surrogate(s)	Recovery		QC Cr:	iteria				
1,2-Dichloroethane-d4	108.	96						
Toluene-d8	95.0	90						
4-Bromofluorobenzene	89.0	ક						
Dibromofluoromethane	99.0	ક						
SVOC's by GC/MS 8270				1	8270C 0	308 11:15	0309 19:51	шт
Acenaphthene	ND	ug/kg	180			000 11.15	0505 19.51	пĻ
Benzidine	ND	ug/kg	1800					
1,2,4-Trichlorobenzene	ND	ug/kg	180					
Hexachlorobenzene	ND	ug/kg	180					
Bis(2-chloroethyl)ether	ND	ug/kg	180					
l-Chloronaphthalene	ND	ug/kg	180					
2-Chloronaphthalene	ND	ug/kg	220					
l,2-Dichlorobenzene	ND	ug/kg	180	_				
l,3-Dichlorobenzene	ND	ug/kg	180					
l,4-Dichlorobenzene	ND	ug/kg	180					
3,3'-Dichlorobenzidine	ND	ug/kg	1800					
2,4-Dinitrotoluene	ND	ug/kg	220					
2,6-Dinitrotoluene	ND	ug/kg	180					
Azobenzene	ND	ug/kg	180					
Fluoranthene	ND	ug/kg	180					
l-Chlorophenyl phenyl ether	ND	ug/kg	180					
-Bromophenyl phenyl ether	ND	ug/kg	180					
Bis(2-chloroisopropyl)ether	ND	ug/kg	180					
Bis(2-chloroethoxy)methane	ND	ug/kg ug/kg	180					
exachlorobutadiene	ND	ug/kg	370					
exachlorocyclopentadiene	ND	ug/kg	370					
exachloroethane	ND	ug/kg ug/kg	180					
sophorone	ND	ug/kg ug/kg						
aphthalene	ND	ug/kg ug/kg	180					
itrobenzene	ND	ug/kg ug/kg	180					
			180					
IDPA/DPA	ND	ug/kg ug/kg	550					

Laboratory Sample Number: L0502261-09

MW/CB-19 (8'-10')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II PREP ANAL
TO 010 0070	<i>a</i>	<u> </u>		1 8270C	0308 11:15 0309 19:51 HI
SVOC's by GC/MS 8270 continue		ug/kg	180	1 02/40	
n-Nitrosodi-n-propylamine	ND	ug/kg ug/kg	370		
Bis(2-ethylhexyl)phthalate	ND	-	180		
Butyl benzyl phthalate	ND	ug/kg	180		
Di-n-butylphthalate	ND	ug/kg	180		
Di-n-octylphthalate	ND	ug/kg	180		
Diethyl phthalate	ND	ug/kg	180		
Dimethyl phthalate	ND	ug/kg	180		
Benzo(a)anthracene	ND	ug/kg			
Benzo(a)pyrene	ND	ug/kg	180		
Benzo(b)fluoranthene	ND	ug/kg	180		
Benzo(k)fluoranthene	ND	ug/kg	180		
Chrysene	ND	ug/kg	180		
Acenaphthylene	ND	ug/kg	180		
Anthracene	220	ug/kg	180		
Benzo(ghi)perylene	ND	ug/kg	180		
Fluorene	ND	ug/kg	180		
Phenanthrene	1400	ug/kg	180		
Dibenzo(a,h)anthracene	ND	ug/kg	180		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180		
Pyrene	ND	ug/kg	180		
Benzo(e)pyrene	ND	ug/kg	180		
Biphenyl	ND	ug/kg	180		
Perylene	ND	ug/kg	180		
Aniline	ND	ug/kg	370		
4-Chloroaniline	ND	ug/kg	180		
1-Methylnaphthalene	ND	ug/kg	180		
2-Nitroaniline	ND	ug/kg	180		
3-Nitroaniline	ND	ug/kg	180		
4-Nitroaniline	ND	ug/kg	260		
Dibenzofuran	ND	ug/kg	180		
a,a-Dimethylphenethylamine	ND	ug/kg	1800	-	
Hexachloropropene	ND	ug/kg	370		
Nitrosodi-n-butylamine	ND	ug/kg	370		
2-Methylnaphthalene	ND	ug/kg	290		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	730		
Pentachlorobenzene	ND	ug/kg	730		
a-Naphthylamine	ND	ug/kg	730		
b-Naphthylamine	ND	ug/kg	730		
Phenacetin	ND	ug/kg	370		
Dimethoate	ND	ug/kg	730		
4-Aminobiphenyl	ND	ug/kg	370		
Pentachloronitrobenzene	ND	ug/kg	370		
Isodrin	ND	ug/kg	370		
p-Dimethylaminoazobenzene	ND	ug/kg	370		
Chlorobenzilate	ND	ug/kg	730		
3-Methylcholanthrene	ND	ug/kg	730		
Ethyl Methanesulfonate	ND	ug/kg	550		
Acetophenone	ND	ug/kg	730		
Nitrosodipiperidine	ND	ug/kg	730		



Laboratory Sample Number: L0502261-09

MW/CB-19 (8'-10')

	UNITS	\mathtt{RDL}		MT: mt: ^~			
		101	VEE	METHOD	DA PREP	TE ANAL	ID
	·						
∌d .			1	8270c	0308 11.15	0200 10.2	
	ug/kg	370			0000 11.15	V309 19:5.	I HI.
	ug/kg	1800					
	ug/kg	180					
	ug/kg	180					
ИD	ug/kg	220					
ND	ug/kg	370					
ND	ug/kg	370					
ND	ug/kg	730					
ИD	ug/kg	370					
ND	ug/kg						
ND	ug/kg						
ND							
ND							
ND							
ND							
ND							
ND							
ND							
ND		·					
ND							
ND	ug/kg ug/kg	730					
Dage							
			eria				
		25-120					
		10-120					
		23-120					
		30-120					
		19-120	-				
80.0	ર્જ	18-120					
			1 827	'0С- м	0200 27 27		
370	ug/kg	73.	4 021	v∪-m	0308 11:15 031	0 20:30 R	L
ИD	ug/kg						
ND	ug/kg						
ND							
ND							
ND							
ND							
ND							
ND	-						
	- 0						
1500	ug/kg ug/kg	73. 73.					
	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ne ND ug/kg Recovery 71.0 % 80.0 % 80.0 % 80.0 % 80.0 % 80.0 % 80.0 % 80.0 % 80.0 % 80.0	ne ND ug/kg 370 ND ug/kg 1800 ND ug/kg 180 ND ug/kg 180 ND ug/kg 180 ND ug/kg 370 ND ug/kg 370 ND ug/kg 730 ND ug/kg 220 ND ug/kg 220 ND ug/kg 220 ND ug/kg 220 ND ug/kg 180 ND ug/kg 180 ND ug/kg 180 ND ug/kg 180 ND ug/kg 730 ND ug/kg 730 Recovery QC Crit 25-120 <td< td=""><td>NE ND</td><td>ND</td><td>## PREP Section Prep Prep </td><td>PREP ANAL and 1 8270C 0308 11:15 0309 19:5 and ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 220 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 220 ND ug/kg 220 ND ug/kg 370 ND ug/kg 730 ND ug/kg 370 ND ug/kg 730 ND ug/kg 1800 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 1800 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 73.</td></td<>	NE ND	ND	## PREP Section Prep Prep	PREP ANAL and 1 8270C 0308 11:15 0309 19:5 and ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 220 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 220 ND ug/kg 220 ND ug/kg 370 ND ug/kg 730 ND ug/kg 370 ND ug/kg 730 ND ug/kg 1800 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 370 ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 1800 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 1800 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 730 ND ug/kg 73.

Laboratory Sample Number: L0502261-09

MW/CB-19 (8'-10')

ARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
andre atte and manting	=d·			1 8270C-M	0308 11:15 0310 20:30 RL
PAH by GC/MS SIM 8270M continue	ND	ug/kg	73.		
Dibenzo(a,h)anthracene	ND	ug/kg	73.		
Indeno(1,2,3-cd)Pyrene	210	ug/kg	73.		
Pyrene	550	ug/kg	73.		
l-Methylnaphthalene		ug/kg	73.		
2-Methylnaphthalene	ND	ug/kg	290		
Pentachlorophenol	ND	ug/kg	290		
Hexachlorobenzene	ND	ug/kg	73.		
Perylene	ND	ug/kg	73.		
Biphenyl	ND	-	73.		
2,6-Dimethylnaphthalene	3100	ug/kg	73.		
1-Methylphenanthrene	1100	ug/kg	73.		
Benzo(e)Pyrene	ND	ug/kg	290		
Hexachloroethane	ND	ug/kg	230		
aumogato(s)	Recovery			iteria	
Surrogate(s)	80.0	%	25-12		
2-Fluorophenol	102.	ફ	10-12		
Phenol-d6	80.0	%	23-12	20	
Nitrobenzene-d5	87.0	96	30-12	20	
2-Fluorobiphenyl	103.	%	19-12	20	
2,4,6-Tribromophenol	92.0	96	18-12	20	
4-Terphenyl-d14	52.0	•			0308 12:15 0310 00:15 JB
Polychlorinated Biphenyls		/1	26 6	1 8082	0300 12:15; 0310; 00:15; 05
Aroclor 1221	ND	ug/kg	36.6		
Aroclor 1232	ND	ug/kg	36.6		
Aroclor 1242/1016	ND	ug/kg	36.6		
Aroclor 1248	ND	ug/kg	36.6		
Aroclor 1254	ND	ug/kg	36.6		
Aroclor 1260	ND	ug/kg	36.6		
	Recovery		QC C	riteria	
Surrogate(s)	84.0	8	30-1	50	
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	105.	%	30-1	50	
				1 8081	0308 13:20 0310 20:06 BW
Organochlorine Pesticides		/ 1	3.66		
Delta-BHC	ND	ug/kg	3.66		
Lindane	ND	ug/kg	3.66		
Alpha-BHC	ND	ug/kg		_	
Beta-BHC	ND	ug/kg	3.66		
Heptachlor	ND	ug/kg	3.66		
Aldrin	ND	ug/kg	3.66		
Heptachlor epoxide	ND	ug/kg	3.60		
Endrin	ND	ug/kg	3.6		
Endrin aldehyde	ND	ug/kg	3.6		
Endrin ketone	ND	ug/kg	3.6		
Dieldrin	ND	ug/kg	3.6		
4,4'-DDE	ND	ug/kg	3.6		
4,4'-DDD	ND	ug/kg	3.6		
4,4'-DDT	ИD	ug/kg	3.6	6	



Laboratory Sample Number: L0502261-09

MW/CB-19 (8'-10')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	
					PREP	ANAL
Organochlorine Pesticides con	itinued					
Endosulfan I	ND	ug/kg	3.66	1 8081	0308 13:20	0310 20:06 BW
Endosulfan II	ND	ug/kg	3.66			
Endosulfan sulfate	ND	ug/kg ug/kg	3.66			
Methoxychlor	ND	ug/kg	3.66			
'oxaphene	ND	ug/kg	14.6			
hlordane	ND	ug/kg	14.6			
is-Chlordane	ND	ug/kg	3.66			
rans-Chlordane	ND	ug/kg	3.66			
urrogate(s)	Recovery		00 0 1			
,4,5,6-Tetrachloro-m-xylene	71.0	8	QC Crite	eria		
ecachlorobiphenyl	92.0	8	30-150			
* '-4	22.0	6	30-150			

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-10

Date Collected: 03-MAR-2005 09:45

MW/CB-20 (1'-2')

Date Received: 05-MAR#2005

Sample Matrix:

SOIL

Date Reported: 14-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Vial

22 D 21 COURT D	RESULT	UNITS	RDL	REF METHOD	DAT		ID
PARAMETER	NB5022				PREP	ANAL	
	88.	90	0.10	30 2540G	· ·	309 16:1	5 JS
Solids, Total	00.	v				309 16:2	o ከሙ
Volatile Organics by GC/MS 8	260		0.0	1 8260B	ľ.	309 16:2	8 51
Methylene chloride	ND	ug/kg	28.				
1,1-Dichloroethane	ND	ug/kg	4.2				
Chloroform	ND	ug/kg	4.2				
Carbon tetrachloride	ND	ug/kg	2.8				
1,2-Dichloropropane	ND	ug/kg	9.8				
Dibromochloromethane	ND	ug/kg	2.8				
1,1,2-Trichloroethane	ND	ug/kg	4.2				
Tetrachloroethene	ND	ug/kg	2.8				
Chlorobenzene	ND	ug/kg	2.8				
Trichlorofluoromethane	ND	ug/kg	14.				
1,2-Dichloroethane	ND	ug/kg	2.8				
1,1,1-Trichloroethane	ND	ug/kg	2.8				
Bromodichloromethane	ND	ug/kg	2.8				
trans-1,3-Dichloropropene	ND	ug/kg	2.8				
cis-1,3-Dichloropropene	ND	ug/kg	2.8				
Cls-1, 3-Dichiotopropene	ND	ug/kg	14.				
1,1-Dichloropropene	ND	uq/kg	11.				
Bromoform	ND	uq/kg	2.8				
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8				
Benzene	ND	ug/kg	4.2				
Toluene	ND	ug/kg	2.8				
Ethylbenzene		ug/kg	14.				
Chloromethane	ND ND	ug/kg	5.6				
Bromomethane	-	ug/kg ug/kg	5.6				
Vinyl chloride	ND	ug/kg ug/kg	5.6				
Chloroethane	ND		2.8				
1,1-Dichloroethene	ND	ug/kg	4.2				
trans-1,2-Dichloroethene	ND	ug/kg	2.8				
Trichloroethene	ND	ug/kg	14.				
1,2-Dichlorobenzene	ND	ug/kg	14.				
1,3-Dichlorobenzene	ND	ug/kg					
1,4-Dichlorobenzene	ND	ug/kg	14.				
Methyl tert butyl ether	ND	ug/kg	5.6				
p/m-Xylene	ND	ug/kg	2.8				
o-Xylene	ND	ug/kg	2.8				
cis-1,2-Dichloroethene	ND	ug/kg	2.8				
Dibromomethane	ND	uq/kg	28.				



Laboratory Sample Number: L0502261-10

MW/CB-20 (1'-2')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		
					PREP	TE ID ANAL	
Volatile Organics by GC/MS	8260 continu	ıed		1 8260B		0309 16:28 BT	
1,4-Dichlorobutane	ND	ug/kg	28.	2 .02000		0303 16:26 84	
Iodomethane	ND	ug/kg	28.				
1,2,3-Trichloropropane	ND	ug/kg	28.				
Styrene	ND	ug/kg	2.8				
Dichlorodifluoromethane	ND	ug/kg	28.				
Acetone	ND	ug/kg	28.				
Carbon disulfide	ND	ug/kg	28.				
2-Butanone	ND	ug/kg	28.				
Vinyl acetate	ND	ug/kg	28.				
4-Methyl-2-pentanone	ND	ug/kg	28.				
2-Hexanone	ND	ug/kg	28.				
Ethyl methacrylate	ND	ug/kg	28.				
Acrolein	ND	ug/kg	70.				
Acrylonitrile	ND	ug/kg	28.				
Bromochloromethane	ND	ug/kg	14.				
Tetrahydrofuran	ND	ug/kg ug/kg	56.				
2,2-Dichloropropane	ND	ug/kg ug/kg	14.				
1,2-Dibromoethane	ND	ug/kg ug/kg	11.				
1,3-Dichloropropane	ND	ug/kg ug/kg	14.				
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.8				
Bromobenzene	ND	ug/kg ug/kg	14.				
n-Butylbenzene	ND	ug/kg	2.8				
sec-Butylbenzene	ND	ug/kg ug/kg	2.8				
tert-Butylbenzene	ND	ug/kg ug/kg	14.				
o-Chlorotoluene	ND	ug/kg	14.				
o-Chlorotoluene	ND	ug/kg	14.				
1,2-Dibromo-3-chloropropane	ND	ug/kg ug/kg	14.				
Hexachlorobutadiene	ND	ug/kg	14.				
Isopropylbenzene	ND	ug/kg	2.8				
-Isopropyltoluene	ND	ug/kg ug/kg	2.8				
aphthalene	ND	ug/kg	14.	_			
n-Propylbenzene	ND	ug/kg ug/kg	2.8	•			
.,2,3-Trichlorobenzene	ND	ug/kg ug/kg	14.				
.,2,4-Trichlorobenzene	ND	ug/kg ug/kg	14.				
.,3,5-Trimethylbenzene	ND	ug/kg ug/kg	14.				
.,2,4-Trimethylbenzene	ND	ug/kg ug/kg	14.				
rans-1,4-Dichloro-2-butene	ND	ug/kg ug/kg	14.				
thyl ether	ND	ug/kg ug/kg	14.				
urrogate(s)	Recovery		QC Crite	ria			
,2-Dichloroethane-d4	104.	9	20 01100				
oluene-d8	101.	%					
-Bromofluorobenzene	101.	%					
ibromofluoromethane	97.0	%					

ALPHA ANALYTICAL LABORATORIES

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0502261-11

Sample Matrix:

Date Collected: 03-MAR-2005 10:00

Date Received: 05-MAR-2005 MW/CB-20 (18'-20') Date Reported: 14-MAR-2005 SOIL

Satisfactory Condition of Sample:

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	
t warm t mi					PREP	ANAL
Solids, Total	91.	%	0.10	30 2540G		0307 21:06 но
001140, 10041						
Total Metals		•		1 3051		
Aluminum, Total	2900	mg/kg	4.4	1 6010B		0309 07:47 R
Antimony, Total	ND	mg/kg	2.2	1 6010B		0309 07:47 R
Arsenic, Total	1.1	mg/kg	0.44	1 6010B		0309 07:47 R
Barium, Total	19.	mg/kg	0.44	1 6010B		0309 07:47 R
Beryllium, Total	0.1133	mg/kg	0.1089	1 6010B		0309 07:47 R
Cadmium, Total	ND	mg/kg	0.1089	1 6010B		0309 07:47 R
Calcium, Total	440	mg/kg	4.4	1 6010B		0309 07:47 R
Chromium, Total	6.8	mg/kg	0.44	1 6010B		0309 07:47 R
Cobalt, Total	2.8	mg/kg	0.87	1 6010B	0308 15:00	0309 07:47 R
Copper, Total	11.	mg/kg	0.44	1 6010B		0309 07:47 R
Iron, Total	5500	mg/kg	2.2	1 6010B	0308 15:00	0309 07:47 P
Lead, Total	4.7	mg/kg	2.2	1 6010B	0308 15:00	0309 07:47 P
Magnesium, Total	910	mq/kg	4.4	1 6010B	0308 15:00	0309 07:47 F
Manganese, Total	190	mg/kg	0.44	1 6010B		0309 07:47 F
Mercury, Total	ND	mg/kg	0.08	1 7471A	0309 20:15	0310 12:28 I
Nickel, Total	5.7	mq/kg	0.44	1 6010B	0308 15:00	0309 07:47 F
Potassium, Total	230	mg/kg	110	1 6010B	0308 15:00	0309 07: 4 7 F
	ND	mg/kg	0.218	1 6010B	0308 15:00	0309 07:47 F
Selenium, Total	ND	mg/kg	0.44	1 6010B	0308 15:00	0 0309 07:47 1
Silver, Total	110	mg/kg	87.	1 60108	0308 15:00	0 0309 07: 4 7 F
Sodium, Total	ND	mg/kg	0.44	1 6010B	0308 15:0	0 0309 07:47 1
Thallium, Total	7.8	mg/kg	0.44	1 6010B	0308 15:0	0 0309 07:47 1
Vanadium, Total Zinc, Total	9.1	mg/kg	2.2	1 6010B	0308 15:0	0 0309 07:47 1
	9260			1 8260B		0309 17:06
Volatile Organics by GC/MS		ug/kg	27.	2 22002		
Methylene chloride	ND	ug/kg ug/kg	4.1			
1,1-Dichloroethane	ND	ug/kg ug/kg	4.1			
Chloroform	ND		2.7			
Carbon tetrachloride	ND	ug/kg	9.6			
1,2-Dichloropropane	ND	ug/kg	2.7			
Dibromochloromethane	ND	ug/kg				
1,1,2-Trichloroethane	ND	ug/kg	4.1			
Tetrachloroethene	ND	ug/kg	2.7			
Chlorobenzene	ND	ug/kg	2.7			
Trichlorofluoromethane	ND	ug/kg	14.			



Laboratory Sample Number: L0502261-11

MW/CB-20 (18'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS	8260 continu	ıed		1 8260B	
1,2-Dichloroethane	ND	ug/kg	2.7	1 02008	0309 17:06 BT
1,1,1-Trichloroethane	ND	ug/kg	2.7		
Bromodichloromethane	ND	ug/kg ug/kg	2.7		
trans-1,3-Dichloropropene	ND	ug/kg	2.7		
cis-1,3-Dichloropropene	ND	ug/kg	2.7		
1,1-Dichloropropene	ND	ug/kg ug/kg	14.		
Bromoform	ND	ug/kg	11.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7		
Benzene	ND	ug/kg	2.7		
Toluene	ND	ug/kg ug/kg	4.1		
Ethylbenzene	ND	ug/kg ug/kg	2.7		
Chloromethane	ND	ug/kg ug/kg	14.		
Bromomethane	ND	ug/kg	5.5		
Vinyl chloride	ND				
Chloroethane	ND	ug/kg	5.5		
1,1-Dichloroethene	ND	ug/kg	5.5		
trans-1,2-Dichloroethene	ND	ug/kg	2.7		
Trichloroethene	ND ND	ug/kg	4.1		
1,2-Dichlorobenzene	ND	ug/kg	2.7		
1,3-Dichlorobenzene	ND	ug/kg	14.		
l,4-Dichlorobenzene	ND	ug/kg	14.		
Methyl tert butyl ether	ND	ug/kg	14.		
o/m-Xylene	ND	ug/kg	5.5		
o-Xylene		ug/kg	2.7		
cis-1,2-Dichloroethene	ND	ug/kg	2.7		
Dibromomethane	ND	ug/kg	2.7		
l,4-Dichlorobutane	ND	ug/kg	27.		
Iodomethane	ND	ug/kg	27.		
1,2,3-Trichloropropane	ND	ug/kg	27.		
Styrene	ND	ug/kg	27.		
Dichlorodifluoromethane	ND	ug/kg	2.7		
Acetone	ND	ug/kg	27.	•	
Carbon disulfide	ND	ug/kg	27.		
:-Butanone	ND	ug/kg	27.		
inyl acetate	ND	ug/kg	27.		
•	ND	ug/kg	27.		
-Methyl-2-pentanone	ND	ug/kg	27.		
-Hexanone	ND	ug/kg	27.		
Cthyl methacrylate	ND	ug/kg	27.		
crolein	ND	ug/kg	69.		
crylonitrile	ND	ug/kg	27.		
romochloromethane	ND	ug/kg	14.		
etrahydrofuran	ND	ug/kg	55.		
,2-Dichloropropane	ND	ug/kg	14.		
,2-Dibromoethane	ND	ug/kg	11.		
,3-Dichloropropane	ND	ug/kg	14.		
,1,1,2-Tetrachloroethane	ND	ug/kg	2.7		
romobenzene	ND	ug/kg	14.		
-Butylbenzene	ND	ug/kg	2.7		
ec-Butylbenzene	ND	ug/kg	2.7		

Laboratory Sample Number: L0502261-11

MW/CB-20 (18'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ıed		1 8260B	0309 17:06 BT
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	2.7		
1 13	ND	ug/kg	2.7		
p-Isopropyltoluene	ND	ug/kg	14.		
Naphthalene	ND	ug/kg	2.7		
n-Propylbenzene	ND	ug/kg	14.		
1,2,3-Trichlorobenzene	ND	ug/kg	14.		
1,2,4-Trichlorobenzene	ND	ug/kg	14.		
1,3,5-Trimethylbenzene		ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	101.	%			
Toluene-d8	95.0	8			
4-Bromofluorobenzene	95.0	ૄ			
Dibromofluoromethane	96.0	%			
SVOC's by GC/MS 8270				1 8270C	0308 11:15 0309 20:17 HL
Acenaphthene	ND	ug/kg	180		
Benzidine	ND	ug/kg	1800		
1,2,4-Trichlorobenzene	ND	ug/kg	180		
Hexachlorobenzene	ND	ug/kg	180		
Bis (2-chloroethyl) ether	ND	ug/kg	180		
1-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
1,2-Dichlorobenzene	ND	ug/kg	180	-	
1,3-Dichlorobenzene	ND	ug/kg	180		
1,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,6-Dinitrotoluene	ND	ug/kg	180		
Azobenzene	ND	ug/kg	180		
Fluoranthene	ND	ug/kg	180		
4-Chlorophenyl phenyl ether	ND	ug/kg	180		
4-Bromophenyl phenyl ether	ND	ug/kg	180		
	ND	ug/kg ug/kg	180		
Bis (2-chloroisopropyl) ether	ND	ug/kg ug/kg	180		
Bis(2-chloroethoxy)methane	ND	ug/kg	370		
Hexachlorobutadiene	ND	ug/kg ug/kg	370		
Hexachlorocyclopentadiene		ug/kg ug/kg	180		
Hexachloroethane	ND	ug/kg ug/kg	180		
Isophorone	ND	ug/kg ug/kg	180		
Naphthalene	ND	2 2	180		
Nitrobenzene	ND	ug/kg	550		
NDPA/DPA	ND	ug/kg	220		



Laboratory Sample Number: L0502261-11

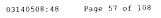
MW/CB-20 (18'-20')

PARAMETER	RESULT	UNITS	RDL	REF MET	HOD	DA	TE	ID
						PREP	ANAL	
SVOC's by GC/MS 8270 continu	ed			1 8270	c	0308 il:15	0200 00 15	
n-Nitrosodi-n-propylamine	ND	ug/kg	180	‡ 0 270	C	0396 11:13	0309 20:17	HL
Bis(2-ethylhexyl)phthalate	ND	ug/kg	370					
Butyl benzyl phthalate	ND	ug/kg	180					
Di-n-butylphthalate	ND	ug/kg	180					
Di-n-octylphthalate	ND	ug/kg	180					
Diethyl phthalate	ND	ug/kg	180					
Dimethyl phthalate	ND	ug/kg	180					
Benzo(a)anthracene	ND	ug/kg	180					
Benzo(a)pyrene	ND	ug/kg ug/kg	180					
Benzo(b) fluoranthene	ND	ug/kg ug/kg	180					
Benzo(k)fluoranthene	ND	ug/kg ug/kg	180					
Chrysene	ND	ug/kg ug/kg	180					
Acenaphthylene	ND	ug/kg ug/kg	180					
Anthracene	ND	ug/kg ug/kg	180					
Benzo(ghi)perylene	ND	ug/kg ug/kg	180					
Fluorene	ND	ug/kg ug/kg	180					
Phenanthrene	ND	ug/kg ug/kg	180					
Dibenzo(a,h)anthracene	ND							
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180					
Pyrene	ND	ug/kg	180					
Benzo(e)pyrene	ND	ug/kg ug/kg	180					
Biphenyl	ND		180					
Perylene	ND	ug/kg	180					
Aniline	ND	ug/kg	180					
1-Chloroaniline	ND	ug/kg	370 180					
l-Methylnaphthalene	ND	ug/kg						
2-Nitroaniline	ND	ug/kg	180					
B-Nitroaniline	ND	ug/kg	180					
4-Nitroaniline	ND	ug/kg	180					
Dibenzofuran	ND	ug/kg	260					
,a-Dimethylphenethylamine		ug/kg	180					
Hexachloropropene	ND	ug/kg	1800	-				
Vitrosodi-n-butylamine	ND	ug/kg	370					
2-Methylnaphthalene	ND	ug/kg	370					
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	290					
Pentachlorobenzene	ND	ug/kg	730					
	ND	ug/kg	730					
a-Naphthylamine o-Naphthylamine	ND	ug/kg	730					
	ND	ug/kg	730					
Phenacetin	ND	ug/kg	370					
Dimethoate	ND	ug/kg	730					
-Aminobiphenyl	ND	ug/kg	370					
entachloronitrobenzene	ND	ug/kg	370					
sodrin	ND	ug/kg	370					
-Dimethylaminoazobenzene	ND	ug/kg	370					
hlorobenzilate	ND	ug/kg	730					
-Methylcholanthrene	ND	ug/kg	730					
thyl Methanesulfonate	ND	ug/kg	550					
cetophenone	ND	ug/kg	730					
itrosodipiperidine	ND	ug/kg	730					

Laboratory Sample Number: L0502261-11

MW/CB-20 (18'-20')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE ID PREP ANAL
2010 0010 certinad				1	8270C	0308 11:15 0309 20:17 HL
svoc's by GC/MS 8270 continued		ug/kg	370	-		
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	1800			
n-Nitrosodimethylamine		ug/kg ug/kg	180			
2,4,6-Trichlorophenol	ND	ug/kg ug/kg	180			
p-Chloro-m-cresol	ND	ug/kg ug/kg	220			
2-Chlorophenol	ND	ug/kg ug/kg	370			
2,4-Dichlorophenol	ND		370			
2,4-Dimethylphenol	ND	ug/kg	730			
2-Nitrophenol	ND	ug/kg	370			
4-Nitrophenol	ND	ug/kg	730			
2,4-Dinitrophenol	ND	ug/kg	730			
4,6-Dinitro-o-cresol	ND	ug/kg				
Pentachlorophenol	ND	ug/kg	730			
Phenol	ND	ug/kg	260			
2-Methylphenol	ND	ug/kg	220			
3-Methylphenol/4-Methylphenol	ND	ug/kg	220			
2,4,5-Trichlorophenol	ND	ug/kg	180			
2,6-Dichlorophenol	ND	ug/kg	370			
Benzoic Acid	ND	ug/kg	1800			
Benzyl Alcohol	ND	ug/kg	370			
Carbazole	ND	ug/kg	180			
Pyridine	ND	ug/kg	1800			
2-Picoline	ND	ug/kg	730			
Pronamide	ND	ug/kg	730			
Methyl methanesulfonate	ND	ug/kg	730			
Surrogate(s)	Recovery		QC Cri		ia	
2-Fluorophenol	63.0	%	25-120			
Phenol-d6	71.0	%	10-120			
Nitrobenzene-d5	62.0	8	23-120			
2-Fluorobiphenyl	60.0	8	30-120			
2,4,6-Tribromophenol	74.0	%	19-120		•	
4-Terphenyl-d14	85.0	%	18-120)		
PAH by GC/MS SIM 8270M					1 8270C-M	0308 11:15 0310 17:35 RL
Acenaphthene	ND	ug/kg	7.3			
2-Chloronaphthalene	ND	ug/kg	7.3			
Fluoranthene	ND	ug/kg	7.3			
Hexachlorobutadiene	ND	ug/kg	18.			
Naphthalene	ND	ug/kg	7.3			
Benzo(a) anthracene	ND	ug/kg	7.3			
Benzo(a) pyrene	ND	ug/kg	7.3			
Benzo(b) fluoranthene	ND	ug/kg	7.3			
Benzo(k) fluoranthene	ND	ug/kg	7.3			
Chrysene	ND	ug/kg	7.3			
Acenaphthylene	ND	ug/kg	7.3			
	ND	ug/kg	7.3			
Anthracene Benzo(ghi)perylene	ND	ug/kg	7.3			
	ND	ug/kg	7.3			
Fluorene	ND	ug/kg ug/kg	7.3			
Phenanthrene	ND	ug/ kg	,			



Laboratory Sample Number: L0502261-11

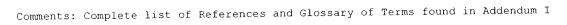
MW/CB-20 (18'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
PAH by GC/MS SIM 8270M contir	nued			1 8270C-M	0308 11:15 0310 17:35 RL
Dibenzo(a,h)anthracene	ND	ug/kg	7.3		111 TT/10 COTO 1/100 MI
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.3		
Pyrene	ND	ug/kg	7.3		
1-Methylnaphthalene	ND	ug/kg	7.3		
2-Methylnaphthalene	ND	ug/kg	7.3		
Pentachlorophenol	ND	ug/kg	29.		
Hexachlorobenzene	ND	ug/kg	29.		
Perylene	ND	ug/kg	7.3		
Biphenyl	ND	ug/kg	7.3		
2,6-Dimethylnaphthalene	ND	ug/kg	7.3		
1-Methylphenanthrene	ND	ug/kg	7.3		
Benzo(e)Pyrene	ND	ug/kg	7.3		
Hexachloroethane	ND	ug/kg	29.		
Surrogate(s)	Recovery		QC Crit	eria	
2-Fluorophenol	57.0	&	25-120	.01.10	
Phenol-d6	74.0	96	10-120		
Nitrobenzene-d5	63.0	96	23-120		
2-Fluorobiphenyl	53.0	96	30-120		
2,4,6-Tribromophenol	81.0	96	19-120		
4-Terphenyl-d14	69.0	8	18-120		
Polychlorinated Biphenyls				1 8082	0308 12:15 0310 00:43 јв
Aroclor 1221	ND	ug/kg	36.6	- 0002	0000 12.13 0310 00:43 0B
Aroclor 1232	ND	ug/kg	36.6		
Aroclor 1242/1016	ND	ug/kg	36.6		
Aroclor 1248	ND	ug/kg	36.6		
Aroclor 1254	ND	ug/kg	36.6		
Aroclor 1260	ND	ug/kg	36.6		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	79.0	용	30-150		
Decachlorobiphenyl	85.0	96	30-150		
Organochlorine Pesticides				1 8081	0308 13:20 0310 20:34 BW
Oelta-BHC	ND	ug/kg	3.66		-100 X2150 0010. 50104 DM
Lindane	ND	ug/kg	3.66		
Alpha-BHC	ND	ug/kg	3.66		
Beta-BHC	ND	ug/kg	3.66		
leptachlor	ND	ug/kg	3.66		
Aldrin	ND	ug/kg	3.66		
leptachlor epoxide	ND	ug/kg	3.66		
Endrin	ND	ug/kg	3.66		
ndrin aldehyde	ND	ug/kg	3.66		
ndrin ketone	ND	ug/kg	3.66		
ieldrin	ND	ug/kg	3.66		
,4'-DDE	ND	ua/ka	3.66		
,4'-DDE ,4'-DDD	ND ND	ug/kg ug/kg	3.66 3.66		

Laboratory Sample Number: L0502261-11

MW/CB-20 (18'-20')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Organochlorine Pesticides con	tinued			1 8081	0308 13:20 0310 20:34 BW
Endosulfan I	ND	ug/kg	3.66		
Endosulfan II	ND	ug/kg	3.66		
Endosulfan sulfate	ND	ug/kg	3.66		
Methoxychlor	ND	ug/kg	3.66		
Toxaphene	ND	ug/kg	14.6		
Chlordane	ND	ug/kg	14.6		
cis-Chlordane	ND	ug/kg	3.66		
trans-Chlordane	ND	ug/kg	3.66		•
Surrogate(s)	Recovery		QC Cri	iteria	
2,4,5,6-Tetrachloro-m-xylene	53.0	96	30-150)	
Decachlorobiphenyl	58.0	96	30-150)	





MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-12

MW/CB-21 (16'-18')

Date Collected: 03-MAR-2005 13:30
Date Received: 05-MAR-2005

Sample Matrix:

SOIL

Date Reported: 14-MAR-2005

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 2-Amber, 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	TE	ID
					PREP	ANAL	
Solids, Total	90.	90	0.10	30 2540G		0307 21:06	HG
Total Metals				1 3051			
Aluminum, Total	4300	mg/kg	4.4	1 6010B	0000 45 44		
Antimony, Total	ND	mg/kg	2.2	1 6010B	0308 15:00		
Arsenic, Total	2.1	mg/kg	0.44		0308 15:00		
Barium, Total	26.	mg/kg	0.44	1 6010B	0308 15:00		
Beryllium, Total	0.1567	mg/kg	0.1094	1 6010B	0308 15:00		
Cadmium, Total	ND	mg/kg mg/ka		1 6010B	0308 15:00		
Calcium, Total	930	2. 3	0.1094	1 6010B	0308 15:00		
Chromium, Total	7.1	mg/kg	4.4	1 6010B	0308 15:00		
Cobalt, Total	4.3	mg/kg	0.44	1 6010B	0308 15:00	0309 07:50	RW
Copper, Total	4.3 11.	mg/kg	0.88	1 6010B	0308 15:00		
Iron, Total		mg/kg	0.44	1 6010B	0308 15:00	0309 07:50	RW
Lead, Total	9700	mg/kg	2.2	1 6010B	0308 15:00	0309 07:50	RW
Magnesium, Total	6.1	mg/kg	2.2	1 6010B	0308 15:00	0309 07:50	RW
Manganese, Total	1600	mg/kg	4.4	1 6010B	0308 15:00	0309 07:50	RW
Mercury, Total	310	mg/kg	0.44	1 6010B	0308 15:00	0309 07:50	RW
Nickel, Total	ND	mg/kg	0.09	1 7471A	0309 20:15	0310 12:29	DM
•	8.5	mg/kg	0.44	1 6010B	0308 15:00	0309 07:50	RW
Potassium, Total	390	mg/kg	110	1 - 6010B	0308 15:00	0309 07:50	RW
Selenium, Total	0.246	mg/kg	0.219	1 6010B	0308 15:00	0309 07:50	RW
Silver, Total	ND	mg/kg	0.44	1 6010B	0308 15:00	0309 07:50	RW
Sodium, Total	ND	mg/kg	88.	1 6010B	0308 15:00	0309 07:50	RW
Thallium, Total	ND	mg/kg	0.44	1 6010B	0308 15:00	0309 07:50	RW
Vanadium, Total	8.5	mg/kg	0.44	1 6010B	0308 15:00	0309 07:50	RW
Zinc, Total	24.	mg/kg	2.2	1 6010B	0308 15:00		
Volatile Organics by GC/MS	8260			1 8260B	1	0309 17:44	вт
Methylene chloride	ND	ug/kg	27.				_
l,l-Dichloroethane	ND	ug/kg	4.1				
Chloroform	ND	ug/kg	4.1				
Carbon tetrachloride	ND	ug/kg	2.7				
l,2-Dichloropropane	ND	ug/kg	9.6				
Dibromochloromethane	ND	ug/kg	2.7				
1,1,2-Trichloroethane	ND	ug/kg	4.1				
letrachloroethene	ND	ug/kg	2.7				
Chlorobenzene	ND	ug/kg	2.7				
richlorofluoromethane	ND	ug/kg	14.				

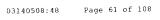
Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-12

MW/CB-21 (16'-18')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by GC/MS 8	260 continu	ıed		1 8260B	0309 17:44	вт
1,2-Dichloroethane	ND	uq/kg	2.7			
1,1,1-Trichloroethane	ND	ug/kg	2.7			
Bromodichloromethane	ND	ug/kg	2.7			
trans-1,3-Dichloropropene	ND	ug/kg	2.7			
cis-1,3-Dichloropropene	ND	ug/kg	2.7			
1,1-Dichloropropene	ND	ug/kg	14.			
Bromoform	ND	ug/kg	11.			
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.7			
Benzene	ND	ug/kg	2.7			
	ND	ug/kg	4.1			
Toluene	ND	ug/kg	2.7			
Ethylbenzene	ND	ug/kg	14.			
Chloromethane	ND	ug/kg	5.5			
Bromomethane Vinyl chloride	ND	ug/kg	5.5			
Chloroethane	ND	ug/kg	5.5			
1,1-Dichloroethene	ND	ug/kg	2.7			
trans-1,2-Dichloroethene	ND	ug/kg	4.1			
Trichloroethene	ND	ug/kg	2.7			
1,2-Dichlorobenzene	ND	ug/kg	14.			
1,3-Dichlorobenzene	ND	ug/kg	14.			
1,4-Dichlorobenzene	ND	ug/kg	14.			
Methyl tert butyl ether	ND	ug/kg	5.5			
p/m-Xylene	ND	ug/kg	2.7			
o-Xylene	ND	ug/kg	2.7			
cis-1,2-Dichloroethene	ND	ug/kg	2.7			
Dibromomethane	ND	ug/kg	27.			
1,4-Dichlorobutane	ND	ug/kg	27.			
Iodomethane	ND	ug/kg	27.			
1,2,3-Trichloropropane	ND	ug/kg	27.			
Styrene	ND	ug/kg	2.7			
Dichlorodifluoromethane	ND	ug/kg	27.			
Acetone	ND	ug/kg	27.			
Carbon disulfide	ND	ug/kg	27.			
2-Butanone	ND	ug/kg	27.			
Vinyl acetate	ND	ug/kg	27.			
4-Methyl-2-pentanone	ND	ug/kg	27.			
2-Hexanone	ND	ug/kg	27.			
Ethyl methacrylate	ND	ug/kg	27.			
Acrolein	ND	ug/kg	68.			
Acrylonitrile	ND	ug/kg	27.			
Bromochloromethane	ND	ug/kg	14.			
Tetrahydrofuran	ND	ug/kg	55.			
2,2-Dichloropropane	ND	ug/kg	14.			
1,2-Dibromoethane	ND	ug/kg	11.			
1,3-Dichloropropane	ND	ug/kg	14.			
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.7			
Bromobenzene	ND	ug/kg	14.			
n-Butylbenzene	ND	ug/kg	2.7			
n-Butylbenzene sec-Butylbenzene	ND	ug/kg	2.7			



Laboratory Sample Number: L0502261-12

MW/CB-21 (16'-18')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 contin	ued			
tert-Butylbenzene	ND			1 8260B	0309 17:44 BT
o-Chlorotoluene	ND	ug/kg	14.		
p-Chlorotoluene	ND	ug/kg	14.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg	14.		
Isopropylbenzene	ND	ug/kg	14.		
p-Isopropyltoluene	ND	ug/kg	2.7		
Naphthalene	ND	ug/kg	2.7		
n-Propylbenzene	ND	ug/kg	14.		
1,2,3-Trichlorobenzene	ND	ug/kg	2.7		
1,2,4-Trichlorobenzene		ug/kg	14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg	14.		
crans-1,4-Dichloro-2-butene	ND	ug/kg	14.		
Ethyl ether	ND	ug/kg	14.		
1	ND	ug/kg	14.		
Surrogate(s)	Recovery		00.0		
,2-Dichloroethane-d4	105.	8	QC Cri	teria	
Coluene-d8	96.0	9			
-Bromofluorobenzene	100.	6 8			
Dibromofluoromethane	97.0	8			
****		· ·			
VOC's by GC/MS 8270				1 8270C	0200 12 15 0000
cenaphthene	ND	ug/kg	180	2 02/00	0308 11:15 0309 20:42 HL
enzidine	ND	ug/kg	1800		
,2,4-Trichlorobenzene	ND	ug/kg	180		
exachlorobenzene	ND	ug/kg	180		
is(2-chloroethyl)ether	ND	ug/kg	180		
-Chloronaphthalene	ND	ug/kg	180		
-Chloronaphthalene	ND	ug/kg	220		
,2-Dichlorobenzene	ND	ug/kg	180		
,3-Dichlorobenzene	ND	ug/kg	180	-	
,4-Dichlorobenzene	ND	ug/kg	180		
3'-Dichlorobenzidine	ND	ug/kg	1800		
4-Dinitrotoluene	ND	ug/kg	220		
6-Dinitrotoluene	ND	ug/kg	180		
zobenzene	ND	ug/kg	180		
luoranthene	ND	ug/kg	180		
-Chlorophenyl phenyl ether	ND	ug/kg	180		
Bromophenyl phenyl ether	ND	ug/kg	180		
s(2-chloroisopropyl)ether	ND	ug/kg	180		
s(2-chloroethoxy)methane	ND	ug/kg	180		
xachlorobutadiene	ND	ug/kg	370		
xachlorocyclopentadiene	ND	ug/kg	370		
xachloroethane	ND	ug/kg ug/kg	180		
ophorone	ND	ug/kg ug/kg	180		
phthalene	ND	ug/kg ug/kg			
trobenzene	ND	ug/kg ug/kg	180		
PA/DPA	***	447 K.C	180		



Laboratory Sample Number: L0502261-12

MW/CB-21 (16'-18')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP ANAL	ID
·••						FREE AND	
				1	8270C .	0308 11:15 0309 20:42	HL
SVOC's by GC/MS 8270 continue	a .	uq/kg	180				
n-Nitrosodi-n-propylamine	ND	ug/kg	370				
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180				
Butyl benzyl phthalate	ND	ug/kg	180				
Di-n-butylphthalate	ND	ug/kg	180				
Di-n-octylphthalate	ND	ug/kg	180				
Diethyl phthalate	ND	ug/kg	180				
Dimethyl phthalate	ND	ug/kg	180				
Benzo(a)anthracene	ND	ug/kg	180				
Benzo(a)pyrene	ND	ug/kg ug/kg	180				
Benzo(b) fluoranthene	ND	ug/kg ug/kg	180				
Benzo(k) fluoranthene	ND	-	180				
Chrysene	ND	ug/kg ug/kg	180				
Acenaphthylene	ND	ug/kg ug/kg	180				
Anthracene	ND	ug/kg ug/kg	180				
Benzo(ghi)perylene	ND	-	180				
Fluorene	ND	ug/kg	180				
Phenanthrene	ND	ug/kg	180				
Dibenzo(a,h)anthracene	ND	ug/kg	180				
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180				
Pyrene	ND	ug/kg	180				
Benzo(e)pyrene	ND	ug/kg	180				
Biphenyl	ND	ug/kg	180				
Perylene	ND	ug/kg	370				
Aniline	ND	ug/kg	180				
4-Chloroaniline	ND	ug/kg	180				
1-Methylnaphthalene	ND	ug/kg	180				
2-Nitroaniline	ND	ug/kg	180				
3-Nitroaniline	ND	ug/kg	260				
4-Nitroaniline	ND	ug/kg	180				
Dibenzofuran	ND	ug/kg	1800				
a,a-Dimethylphenethylamine	ND	ug/kg	370		•		
Hexachloropropene	ND	ug/kg	370				
Nitrosodi-n-butylamine	ND	ug/kg	300				
2-Methylnaphthalene	ND	ug/kg	740				
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	740				
Pentachlorobenzene	ND	ug/kg	740				
a-Naphthylamine	ND	ug/kg	740				
b-Naphthylamine	ND	ug/kg	370				
Phenacetin	ND	ug/kg					
Dimethoate	ND	ug/kg	740				
4-Aminobiphenyl	ИД	ug/kg	370 370				
Pentachloronitrobenzene	ND	ug/kg					
Isodrin	ND	ug/kg	370				
p-Dimethylaminoazobenzene	ND	ug/kg	370				
Chlorobenzilate	ИD	ug/kg	740				
3-Methylcholanthrene	ND	ug/kg	740				
Ethyl Methanesulfonate	ND	ug/kg	560				
Acetophenone	ND	ug/kg	740				
Nitrosodipiperidine	ND	ug/kg	740				



Laboratory Sample Number: L0502261-12

MW/CB-21 (16'-18')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continue	od.				
7,12-Dimethylbenz(a)anthracen	A ND	110 / lea	270	1 8270C	0308 11:15 0309 20:42 HL
n-Nitrosodimethylamine	ND	ug/kg	370		
2,4,6-Trichlorophenol	ND	ug/kg	1800		
p-Chloro-m-cresol	ND	ug/kg	180		
2-Chlorophenol	ND	ug/kg	180		
2,4-Dichlorophenol	ND	ug/kg	220		
2,4-Dimethylphenol	ND	ug/kg	370		
2-Nitrophenol	ND	ug/kg	370		
1-Nitrophenol	ND	ug/kg	740		
2,4-Dinitrophenol	ND	ug/kg	370		
1,6-Dinitro-o-cresol	ND	ug/kg	740		
Pentachlorophenol		ug/kg	740		
Phenol	ND	ug/kg	740		
2-Methylphenol	ND	ug/kg	260		
3-Methylphenol/4-Methylphenol	ND	ug/kg	220		
2,4,5-Trichlorophenol	ND	ug/kg	220		
2,6-Dichlorophenol	ND	ug/kg	180		
Benzoic Acid	ND	ug/kg	370		
enzyl Alcohol	ND	ug/kg	1800		
Carbazole	ND	ug/kg	370		
yridine	ND	ug/kg	180		
Picoline	ND	ug/kg	1800		
ronamide	ND	ug/kg	740		
ethyl methanesulfonate	ND	ug/kg	740		
	ND	ug/kg	740		
urrogate(s)	Recovery		QC Crit	oria	
-Fluorophenol	62.0	90	25-120	erra	
henol-d6	68.0	96	10-120		
itrobenzene-d5	59.0	%	23-120		
-Fluorobiphenyl	56.0	%	30-120		
,4,6-Tribromophenol	76.0	90	19-120		
-Terphenyl-d14	84.0	%	18-120	•	
		· ·	10 120		
AH. by GC/MS SIM 8270M			•	1 8270C-M	0308 11:15 0310 18:19 RL
cenaphthene	ND	ug/kg	7.4		11.15 O310 10.15 RE
-Chloronaphthalene	ND	ug/kg	7.4		
luoranthene	ND	ug/kg	7.4		
exachlorobutadiene	ND	ug/kg	18.		
aphthalene	ND	ug/kg	7.4		
enzo(a)anthracene	ND	ug/kg	7.4		
enzo(a)pyrene	ND	ug/kg	7.4		
enzo(b) fluoranthene	ND	ug/kg	7.4		
enzo(k)fluoranthene	ND	ug/kg	7.4		
rysene	ND	ug/kg	7.4		
enaphthylene	ND	ug/kg	7.4		
thracene	ND	ug/kg	7.4		
enzo(ghi)perylene	ND	ug/kg	7.4		
uorene	ND	ug/kg	7.4		
enanthrene	ND	ug/kg	7.4		



Laboratory Sample Number: L0502261-12

MW/CB-21 (16'-18')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DAT PREP	E ANAL	ID
				1	8270C-M	0308 11:15	0310 18:	19 RL
PAH by GC/MS SIM 8270M continu	ed			,	02,00 11			
Dibenzo(a,h)anthracene	ND	ug/kg	7.4					
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.4					
Pyrene	ND	ug/kg	7.4					
1-Methylnaphthalene	ND	ug/kg	7.4					
2-Methylnaphthalene	ND	ug/kg	7.4					
Pentachlorophenol	ND	ug/kg	30.					
Hexachlorobenzene	ND	ug/kg	30.					
Perylene	ND	ug/kg	7.4					
Biphenyl	ND	ug/kg	7.4					
2,6-Dimethylnaphthalene	ND	ug/kg	7.4					
1-Methylphenanthrene	ND	ug/kg	7.4					
Benzo(e) Pyrene	ND	ug/kg	7.4					
Hexachloroethane	ND	ug/kg	30.					
Surrogate(s)	Recovery		QC Cri	teri	a			
2-Fluorophenol	55.0	8	25-120					
Phenol-d6	72.0	ૄ	10-120					
- ·	59.0	용	23-120					
Nitrobenzene-d5	50.0	%	30-120					
2-Fluorobiphenyl	81.0	8	19-120					
2,4,6-Tribromophenol 4-Terphenyl-d14	60.0	96	18-120	ŀ				
					0000	0308 12:15	TO DIED.	112 75
Polychlorinated Biphenyls		4	27. 0	1	8082	0308 12.1.	, 4510 01	,,,,,,,,
Aroclor 1221	ND	ug/kg	37.0					
Aroclor 1232	ND	ug/kg	37.0					
Aroclor 1242/1016	ND	ug/kg	37.0					
Aroclor 1248	ND	ug/kg	37.0					
Aroclor 1254	ND	ug/kg	37.0					
Aroclor 1260	ND	ug/kg	37.0					
Surrogate(s)	Recovery		QC Cri		.a			
2,4,5,6-Tetrachloro-m-xylene	81.0	8	30-150					
Decachlorobiphenyl	88.0	of	30-150	C				
Organochlorine Pesticides				1	8081	0308 13:2	0 0310 21	1:02 B
Delta-BHC	ND	ug/kg	3.70					
Lindane	ND	ug/kg	3.70					
	ND	ug/kg	3.70					
Alpha-BHC	ND	ug/kg	3.70					
Beta-BHC	ND	ug/kg	3.70					
Heptachlor	ND	ug/kg	3.70					
Aldrin	ND	ug/kg	3.70					
Heptachlor epoxide	ND	ug/kg	3.70					
Endrin	ND	ug/kg	3.70					
Endrin aldehyde	ИD	ug/kg	3.70					
Endrin ketone		ug/kg ug/kg	3.70					
Dieldrin	ND	ug/kg ug/kg	3.70					
4,4'-DDE	ND	ug/kg ug/kg	3.70					
4,4'-DDD	ND		3.70					
4,4'-DDT	ND	ug/kg	3.70					



Laboratory Sample Number: L0502261-12

MW/CB-21 (16'-18')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA		ID
Organochlorine Pesticides comendosulfan I Endosulfan II Endosulfan sulfate Methoxychlor Toxaphene Chlordane cis-Chlordane trans-Chlordane	ntinued ND ND ND ND ND ND ND ND ND N	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	3.70 3.70 3.70 3.70 14.8 14.8 3.70 3.70	1 8081	0308 13:20 (ANAL)2 BW
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	Recovery 60.0 72.0	96 96	QC Crite 30-150 30-150	eria			

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-13
MW/CB-22 (12'-14')

Date Collected: 04-MAR-2005 10:40

SOIL

Date Received : 05-MAR-2005 Date Reported : 14-MAR-2005

Sample Matrix: SOIL

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber, 1-Vial

	DE GIVE M	UNITS	RDL	REF METHOD	DA	TE ID
PARAMETER	RESULT	ONIIS	.02		PREP	ANAL
		0.	0.10	30 2540G		0307 21:06 HG
Solids, Total	90.	%	0.10			
Total Metals				1 3051		
Aluminum, Total	4000	mg/kg	4.4	1 6010B		0309 07:52 RW 0309 07:52 RW
Antimony, Total	ND	mg/kg	2.2	1 6010B		0309 07:52 RW
Arsenic, Total	3.0	mg/kg	0.44	1 6010B		0309 07:52 RW
	30.	mg/kg	0.44	1 6010B		
Barium, Total Beryllium, Total	0.1364	mg/kg	0.1097			0309 07:52 RW
	ND	mg/kg	0.1097			0309 07:52 RW
Cadmium, Total Calcium, Total	1100	mg/kg	4.4	1 6010B		0 0309 07:52 RW 0 0309 07:52 RW
	5.9	mg/kg	0.44	1 6010B		
Chromium, Total Cobalt, Total	4.2	mg/kg	0.88	1 6010B		0309 07:52 RW
CODAIL, IOLAI	11.	mg/kg	0.44	1 6010B		0 0309 07:52 RW
Copper, Total	8800	mg/kg	2.2	1 6010B		0 0309 07:52 RW
Iron, Total	9.3	mg/kg	2.2	1 6010B		0 0309 07:52 RW
Lead, Total	1500	mg/kg	4.4	1 6010B		0 0309 07:52 RW
Magnesium, Total	300	mg/kg	0.44	1 6010B		0 0309 07:52 RW
Manganese, Total	ND	mg/kg	0.09	1 7471A		5 0310 12:31 DM
Mercury, Total	7.8	mg/kg	0.44	1 6010B		0 0309 07:52 RW
Nickel, Total	390	mq/kg	110	1 6010B		0 0309 07:52 RW
Potassium, Total	0.235	mg/kg	0.219	1 6010B		0 0309 07:52 RW
Selenium, Total	ND	mg/kg	0.44	1 6010B		00 0309 07:52 RW
Silver, Total	ND	mg/kg	88.	1 6010B		00 0309 07:52 RW
Sodium, Total	ND	mg/kg	0.44	1 6010B		00 0309 07:52 RW
Thallium, Total	7.8	mq/kg	0.44	1 6010B		00 0309 07:52 RW
Vanadium, Total Zinc, Total	24.	mg/kg	2.2	1 6010B	0308 15:	00 0309 07:52 RW
	s 8260			1 8260B		0309 18:22 BT
Volatile Organics by GC/MS	ND	ug/kg	28.			
Methylene chloride	ND	ug/kg	4.2			
1,1-Dichloroethane	ND	ug/kg	4.2			
Chloroform	ND	ug/kg	2.8			
Carbon tetrachloride	ND	ug/kg	9.7			
1,2-Dichloropropane	ND	ug/kg	2.8			
Dibromochloromethane	ND	ug/kg	4.2			
1,1,2-Trichloroethane	ND	ug/kg	2.8			
Tetrachloroethene	ND	ug/kg	2.8			
Chlorobenzene		ug/kg	14.			
Trichlorofluoromethane	ND	ug/ng				

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-13

MW/CB-22 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD		D
					PREP ANAL	
Volatile Organics by GC/MS	8260 continu	ıed	. s. 11 ₂₅ 11	1 8260B	0309 18:22 B	
1,2-Dichloroethane	ND	ug/kg	2.8		1417 24122, 4	•
1,1,1-Trichloroethane	ND	ug/kg	2.8			
Bromodichloromethane	ND	ug/kg	2.8			
trans-1,3-Dichloropropene	ND	ug/kg	2.8			
cis-1,3-Dichloropropene	ND	ug/kg	2.8			
1,1-Dichloropropene	ND	ug/kg	14.			
Bromoform	ND	ug/kg	11.			
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.8			
Benzene	ND	ug/kg	2.8			
Toluene	ND	ug/kg	4.2			
Ethylbenzene	ND	ug/kg	2.8			
Chloromethane	ND	ug/kg	14.			
Bromomethane	ND	ug/kg	5.6			
Vinyl chloride	ND	ug/kg	5.6			
Chloroethane	ND	ug/kg	5.6			
1,1-Dichloroethene	ND	ug/kg	2.8			
trans-1,2-Dichloroethene	ND	ug/kg	4.2			
Trichloroethene	ND	ug/kg ug/kg	2.8			
1,2-Dichlorobenzene	ND	ug/kg ug/kg	14.			
1,3-Dichlorobenzene	ND	ug/kg ug/kg	14.			
1,4-Dichlorobenzene	ND	ug/kg ug/kg	14.			
Methyl tert butyl ether	ND	ug/kg ug/kg	5.6			
p/m-Xylene	ND	ug/kg ug/kg	2.8			
o-Xylene	ND	ug/kg ug/kg	2.8			
cis-1,2-Dichloroethene	ND	ug/kg ug/kg	2.8			
Dibromomethane	ND		28.			
1,4-Dichlorobutane	ND	ug/kg				
Iodomethane	ND	ug/kg	28.			
1,2,3-Trichloropropane	ND	ug/kg	28.			
Styrene	ND	ug/kg	28.			
Dichlorodifluoromethane		ug/kg	2.8			
Acetone	ND	ug/kg	28.	•		
Carbon disulfide	ND	ug/kg	28.			
Patanone	ND	ug/kg	28.			
inyl acetate	ND	ug/kg	28.			
-Methyl-2-pentanone	ND	ug/kg	28.			
:-Hexanone	ND	ug/kg	28.			
	ND	ug/kg	28.			
Sthyl methacrylate	ND	ug/kg	28.			
	ND	ug/kg	69.			
crylonitrile	ND	ug/kg	28.			
romochloromethane	ND	ug/kg	14.			
etrahydrofuran	ND	ug/kg	56.			
,2-Dichloropropane	ND	ug/kg	14.			
,2-Dibromoethane	ND	ug/kg	11.			
,3-Dichloropropane	ND	ug/kg	14.			
,1,1,2-Tetrachloroethane	ND	ug/kg	2.8			
romobenzene	ND	ug/kg	14.			
-Butylbenzene	ND	ug/kg	2.8		•	
ec-Butylbenzene	ND	ug/kg	2.8			

Laboratory Sample Number: L0502261-13

MW/CB-22 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	red ::::		1 8260B	0309 18:22 BT
	ND	ug/kg	14.		
tert-Butylbenzene	ND	ug/kg	14.		
o-Chlorotoluene	ND	ug/kg ug/kg	14.		
p-Chlorotoluene	ND	ug/kg ug/kg	14.		
1,2-Dibromo-3-chloropropane		ug/kg	14.		
Hexachlorobutadiene	ND	ug/kg ug/kg	2.8		
Isopropylbenzene	ND	ug/kg ug/kg	2.8		
p-Isopropyltoluene	ND	ug/kg	14.		
Naphthalene	ND	ug/kg ug/kg	2.8		
n-Propylbenzene	ND		14.		
1,2,3-Trichlorobenzene	ND	ug/kg ug/kg	14.		
1,2,4-Trichlorobenzene	ND		14.		
1,3,5-Trimethylbenzene	ND	ug/kg	14.		
1,2,4-Trimethylbenzene	ND	ug/kg	14.		
trans-1,4-Dichloro-2-butene	ND	ug/kg			
Ethyl ether	ND	ug/kg	14.		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	106.	%			
Toluene-d8	96.0	olo e			
4-Bromofluorobenzene	98.0	%			
Dibromofluoromethane	99.0	8			
SVOC's by GC/MS 8270				1 8270C	0308 11:15 0309 21:08 HL
Acenaphthene	ND	ug/kg	180		
Benzidine	ND	ug/kg	1800		
1,2,4-Trichlorobenzene	ND	ug/kg	180		
Hexachlorobenzene	ND	ug/kg	180		
Bis(2-chloroethyl)ether	ND	ug/kg	180		
1-Chloronaphthalene	ND	ug/kg	180		
2-Chloronaphthalene	ND	ug/kg	220		
1,2-Dichlorobenzene	ND	ug/kg	180	-	
1,3-Dichlorobenzene	ND	ug/kg	180		
1,4-Dichlorobenzene	ND	ug/kg	180		
3,3'-Dichlorobenzidine	ND	ug/kg	1800		
2,4-Dinitrotoluene	ND	ug/kg	220		
2,6-Dinitrotoluene	ND	ug/kg	180		
Azobenzene	ND	ug/kg	180		
Fluoranthene	ND	ug/kg	180		
4-Chlorophenyl phenyl ether	ND	ug/kg	180		
4-Bromophenyl phenyl ether	ND	ug/kg	180		
Bis(2-chloroisopropyl)ether	ND	ug/kg	180		
Bis(2-chloroethoxy)methane	ND	ug/kg	180		
Hexachlorobutadiene	ND	ug/kg	370		
Hexachlorocyclopentadiene	ND	ug/kg	370		
Hexachloroethane	ND	ug/kg	180		
Isophorone	ND	ug/kg	180		
Naphthalene	ND	ug/kg	180		
-	ND	ug/kg	180		
Nitrobenzene					



Laboratory Sample Number: L0502261-13

MW/CB-22 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continu	ied			1 8270C	
n-Nitrosodi-n-propylamine	ND	ug/kg	180	1 8270C	0308 11:15 0309 21:08 HL
Bis(2-ethylhexyl)phthalate	ND	ug/kg	370		
Butyl benzyl phthalate	220	ug/kg	180		
Di-n-butylphthalate	ND	ug/kg	180		
Di-n-octylphthalate	ND	ug/kg	180		
Diethyl phthalate	ND	ug/kg	180		
Dimethyl phthalate	ND	ug/kg	180		
Benzo(a)anthracene	ND	ug/kg	180		
Benzo(a)pyrene	ND	ug/kg ug/kg	180		
Benzo(b)fluoranthene	ND	ug/kg	180		
Benzo(k)fluoranthene	ND	ug/kg	180		
Chrysene	ND	ug/kg	180		
Acenaphthylene	ND	ug/kg ug/kg	180		
Anthracene	ND	ug/kg	180		
Benzo(ghi)perylene	ND	ug/kg	180		
Fluorene	ND	ug/kg ug/kg	180		
Phenanthrene	ND	ug/kg ug/kg	180		
Dibenzo(a,h)anthracene	ND	ug/kg ug/kg	180		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180		
Pyrene	ND	ug/kg ug/kg	180		
Benzo(e)pyrene	ND	ug/kg ug/kg	180		
Biphenyl	ND	ug/kg ug/kg			
Pervlene	ND		180		
Aniline	ND	ug/kg ug/kg	180		
I-Chloroaniline	ND		370		
-Methylnaphthalene	ND	ug/kg	180		
2-Nitroaniline	ND	ug/kg	180		
3-Nitroaniline	ND	ug/kg	180		
-Nitroaniline	ND	ug/kg	180		
Dibenzofuran	ND	ug/kg	260		
,a-Dimethylphenethylamine	ND	ug/kg	180		
exachloropropene	ND	ug/kg	1800	•	
itrosodi-n-butylamine	ND	ug/kg	370		
-Methylnaphthalene	ND	ug/kg	370		
,2,4,5-Tetrachlorobenzene	ND	ug/kg	300		
entachlorobenzene		ug/kg	740		
-Naphthylamine	ND	ug/kg	740		
-Naphthylamine	ND	ug/kg	740		
henacetin	ND ND	ug/kg	740		
imethoate		ug/kg	370		
-Aminobiphenyl	ND	ug/kg	740		
entachloronitrobenzene	ND	ug/kg	370		
sodrin	ND	ug/kg	370		
-Dimethylaminoazobenzene	ND	ug/kg	370		
hlorobenzilate	ND	ug/kg	370		
-Methylcholanthrene	ND	ug/kg	740		
-methylcholanthrene thyl Methanesulfonate	ND	ug/kg	740		
chy: Methanesulionate Cetophenone	ND	ug/kg	560		
	ND	ug/kg	740		
itrosodipiperidine	ND	ug/kg	740		

Laboratory Sample Number: L0502261-13

MW/CB-22 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued				. 1	8270C	0308 11:15 0309 21:08 HL
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	370			
n-Nitrosodimethylamine	ND	ug/kg	1800			
2,4,6-Trichlorophenol	ND	ug/kg	180			
p-Chloro-m-cresol	ND	ug/kg	180			
2-Chlorophenol	ND	ug/kg	220			
2,4-Dichlorophenol	ND	ug/kg	370			
2,4-Dimethylphenol	ND	ug/kg	370			
2-Nitrophenol	ND	ug/kg	740			
4-Nitrophenol	ИD	ug/kg	370			
2,4-Dinitrophenol	ND	ug/kg	740			
4,6-Dinitro-o-cresol	ND	ug/kg	740			
Pentachlorophenol	ND	ug/kg	740			
Phenol	ND	ug/kg	260			
2-Methylphenol	ND	ug/kg	220			
3-Methylphenol/4-Methylphenol	ND	ug/kg	220			
2,4,5-Trichlorophenol	ND	ug/kg	180			
2,6-Dichlorophenol	ND	ug/kg	370			
Benzoic Acid	ND	ug/kg	1800			
Benzyl Alcohol	ND	ug/kg	370			
Carbazole	ND	ug/kg	180			
Pyridine	ND	ug/kg	1800			
2-Picoline	ND	ug/kg	740			
Pronamide	ND	ug/kg	740			
Methyl methanesulfonate	ND	ug/kg	740			
Surrogate(s)	Recovery		QC Cri	teri	a	
2-Fluorophenol	71.0	%	25-120			
Phenol-d6	79.0	%	10-120			
Nitrobenzene-d5	68.0	્રે ક	23-120			
2-Fluorobiphenyl	68.0	ક	30-120			
2,4,6-Tribromophenol	80.0	%	19-120	-		
4-Terphenyl-d14	84.0	%	18-120			
PAH by GC/MS SIM 8270M				1	8270C-M	0308 11:15 0310 19:03 R
Acenaphthene	ND	ug/kg	7.4			
2-Chloronaphthalene	ND	ug/kg	7.4			
Fluoranthene	ND	ug/kg	7.4			
Hexachlorobutadiene	ND	ug/kg	18.			
Naphthalene	ND	ug/kg	7.4			
Benzo(a) anthracene	ND	ug/kg	7.4			
Benzo(a) pyrene	ND	ug/kg	7.4			
Benzo(b) fluoranthene	ND	ug/kg	7.4			
Benzo(k) fluoranthene	ND	ug/kg	7.4			
Chrysene	ND	ug/kg	7.4			
Acenaphthylene	ND	ug/kg	7.4			
Anthracene	ND	ug/kg	7.4			
Benzo(ghi)perylene	ND	ug/kg	7.4			
Fluorene	ND	ug/kg	7.4			
LIGOTOTIC	ND	ug/kg	7.4			



Laboratory Sample Number: L0502261-13

MW/CB-22 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID		
			101	ROI IMINOD	PREP ANAL		
PAH by GC/MS SIM 8270M conti	nued			1 8270C-M	0308 11:15 0310 19:03 RL		
Dibenzo(a,h)anthracene	ND	ug/kg	7.4	2 00,000 11	0300 11:13 0310 19:03 KL		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	7.4				
Pyrene	ND	ug/kg	7.4				
1-Methylnaphthalene	ND	ug/kg	7.4				
2-Methylnaphthalene	ND	ug/kg	7.4				
Pentachlorophenol	ND	ug/kg	30.				
Hexachlorobenzene	ND	ug/kg	30.				
Perylene	ND	ug/kg	7.4				
Biphenyl	ND	ug/kg	7.4				
2,6-Dimethylnaphthalene	ND	ug/kg	7.4				
1-Methylphenanthrene	ND	ug/kg	7.4				
Benzo(e) Pyrene	ND	ug/kg	7.4				
Hexachloroethane	ND	ug/kg	30.				
		497 119	50.				
Surrogate(s)	Recovery		QC Cri	toria			
2-Fluorophenol	65.0	8	25-120	cerra			
Phenol-d6	84.0	96	10-120				
Nitrobenzene-d5	71.0	8	23-120				
2-Fluorobiphenyl	61.0	%	30-120				
2,4,6-Tribromophenol	84.0	8	19-120				
4-Terphenyl-d14	67.0	96	18-120				
Polychlorinated Biphenyls				1 - 8082	0200 10 15 6070 75 75		
Aroclor 1221	ND	ug/kg	37.0	1 7 0002	0308 12:15 0310 01:41 339		
Aroclor 1232	ND	ug/kg	37.0				
Aroclor 1242/1016	ND	ug/kg	37.0				
Aroclor 1248	ND	ug/kg ug/kg	37.0				
Aroclor 1254	ND	ug/kg ug/kg	37.0				
Aroclor 1260	ND	ug/kg	37.0				
Surrogate(s)	Recovery		QC Crit	eria			
2,4,5,6-Tetrachloro-m-xylene	78.0	9	30-150	CLIA			
Decachlorobiphenyl	85.0	96	30-150				
Organochlorine Pesticides				1 8081	0308 13:20 0310 21:31 BW		
Delta-BHC	ND	ug/kg	3.70		5550 15.20 0510 21:31 BW		
indane	ND	ug/kg	3.70				
lpha-BHC	ND	ug/kg	3.70				
eta-BHC	ND	ug/kg	3.70				
eptachlor	ND	ug/kg ug/kg	3.70				
ldrin	ND	ug/kg ug/kg	3.70				
eptachlor epoxide	ND	ug/kg ug/kg	3.70				
ndrin	ND	ug/kg ug/kg	3.70				
ndrin aldehyde	ND	ug/kg ug/kg	3.70				
ndrin ketone	ND						
ieldrin	ND ND	ug/kg	3.70				
,4'-DDE		ug/kg	3.70				
,4'-DDD	ND	ug/kg	3.70				
,4'-DDT	ND	ug/kg	3.70		•		
,	ND	ug/kg	3.70				

Laboratory Sample Number: L0502261-13

MW/CB-22 (12'-14')

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA PREP	TE ANAL	ID
Organochlorine Pesticides con	tinued			1 8081	0308 13:20	0310 21:3	l BW
Endosulfan I	ND	ug/kg	3.70				
Endosulfan II	ND	ug/kg	3.70				
Endosulfan sulfate	ND	ug/kg	3.70				
Methoxychlor	ND	ug/kg	3.70				
Toxaphene	ND	ug/kg	14.8				
Chlordane	ND	ug/kg	14.8				
cis-Chlordane	ND	ug/kg	3.70				
trans-Chlordane	ND	ug/kg	3.70				
Surrogate(s)	Recovery		QC Cri	iteria			
2,4,5,6-Tetrachloro-m-xylene	66.0	ે	30-150	0			
Decachlorobiphenyl	77.0	ક	30-150	0			

Comments: Complete list of References and Glossary of Terms found in Addendum I

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MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-14

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Date Collected: 04-MAR-2005 09:30

Sample Matrix:

WATER

Date Received : 05-MAR-2005 Date Reported : 14-MAR-2005

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 6-Amber, 1-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	D.	ATE	ID
						PREP	ANAL	
Total Metals				1	3015	.:		
Aluminum Matal				-	7020			
Aluminum, Total	ND	mg/l	0.10	1	6010B	0308 15:40	0309 12:5	1 RW
Antimony, Total	ND	mg/l	0.050	1	60108	0308 15:40	0309 12:5	1 RW
Arsenic, Total	ND	mg/l	0.005	1	6010B	0308 15:40	0309 12:5	1 RW
Barium, Total	ND	mg/l	0.01	1	6010B	0308 15:40	0309 12:5	l RW
Beryllium, Total	ND	mg/l	0.005	1	6010B	0308 15:40	0309 12:5	1 RW
Cadmium, Total	ND	mg/l	0.005	1	6010B	0308 15:40	0309 12:53	l RW
Calcium, Total	0.12	mg/l	0.10	1	6010B	0308 15:40	0309 12:53	i RW
Chromium, Total	ND	mg/l	0.01	1	6010B	0308 15:40	0309 12:51	L RW
Cobalt, Total	ND	mg/l	0.02	1	6010B	0308 15:40	0309 12:51	l RW
Copper, Total	ND	mg/l	0.01	1	6010B	0308 15:40	0309 12:51	L RW
Iron, Total	ND	mg/l	0.05	1	6010B	0308 15:40	0309 12:51	RW
Lead, Total	ND	mg/l	0.050	1	6010B		0309 12:51	
Magnesium, Total	ND	mg/l	0.10	1	6010B		0309 12:51	
Manganese, Total	ND	mg/l	0.01	1	6010B		0309 12:51	
Mercury, Total	ND	mg/l	0.0002	1	7470A		0309 11:07	
Nickel, Total	ND	mg/l	0.025	1	6010B	0308 15:40		
Potassium, Total	ND	mg/l	2.5	1	6010B	0308 15:40		
Selenium, Total	ND	mg/l	0.005	1	6010B	0308 15:40		
Silver, Total	ND	mg/l	0.007		6010B	0308 15:40		
Sodium, Total	ND	mg/l	2.0	1	60108	0308 15:40		
Thallium, Total	ND	mg/l	0.005	1	6010B	0308 15:40		
Vanadium, Total	ND	mg/l	0.01	1	6010B	0308 15:40		
Zinc, Total	ND	mg/l	0.05	1	6010B	0308 15:40		
Volatile Organics by GC/MS	8260			1	8260B		0309 10:42	n) en
Methylene chloride	ND	ug/l	5.0	-			0505 10:42	11
l,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
l,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
.,1,2-Trichloroethane	ND	ug/l ug/l						
etrachloroethene	ND	-	0.75					
Chlorobenzene		ug/l	0.50					
richlorofluoromethane	ND	ug/l	0.50					
	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
.,1,1-Trichloroethane	ND	ug/l	0.50					

Laboratory Sample Number: L0502261-14

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 continu	ıed		1 8260B	0309 10:42 TT
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
,	ND	ug/l	2.0		
Bromoform 1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
	ND	ug/l	0.50		4
Benzene	2.6	ug/l	0.75		
Toluene	ND	ug/l	0.50		
Ethylbenzene		ug/l	2.5		
Chloromethane	ND	ug/1	1.0		
Bromomethane	ND	-	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l ug/l	0.50		
1,1-Dichloroethene	ND	-	0.75		
trans-1,2-Dichloroethene	ND	ug/l	0.73		
Trichloroethene	ND	ug/l	2.5		
1,2-Dichlorobenzene	ND	ug/l	2.5		
1,3-Dichlorobenzene	ND	ug/1	2.5		
1,4-Dichlorobenzene	ND	ug/l			
Methyl tert butyl ether	ND	ug/l	1.0		
p/m-Xylene	0.91	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	12.	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0	•	
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		



Laboratory Sample Number: L0502261-14

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS 8:	260 continu	ıed		1 8260B	0309 10:42 TT
p-Chlorotoluene	ND	uq/l	2.5	2 02.002	0309 10:42 11
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50		
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2,5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
1	.,,	ug/ I	2.5		
Surrogate(s)	Recovery		QC Cri	iteria	
1,2-Dichloroethane-d4	104.	%			
Toluene-d8	100.	8			
4-Bromofluorobenzene	94.0	ક			
Dibromofluoromethane	92.0	8			
SVOC's by GC/MS 8270				1 8270C	0700 14 14 1-1-1
Acenaphthene	ND	ug/l	5.0	1 02/00	0308 11:10 0309 16:24 HL
Benzidine	ND	ug/l	50.		
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ND	ug/l	5.0		
L-Chloronaphthalene	ND	ug/l	5.0		
2-Chloronaphthalene	ND	ug/l	6.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
1,3-Dichlorobenzene	ND	ug/l ug/l	5.0		
1,4-Dichlorobenzene	ND				
3,3'-Dichlorobenzidine	ND	ug/l	5.0 50.	•	
2,4-Dinitrotoluene	ND	ug/l			
2,6-Dinitrotoluene	ND	ug/l	6.0		
Azobenzene	ND	ug/l	5.0		
'luoranthene	ND	ug/l	5.0		
-Chlorophenyl phenyl ether	ND	ug/l	5.0		
-Bromophenyl phenyl ether		ug/l	5.0		
Sis(2-chloroisopropyl)ether	ND	ug/l	5.0		
sis(2-chloroethoxy)methane	ND ND	ug/l	5.0		
exachlorobutadiene	ND ND	ug/l	5.0		
exachlorocyclopentadiene	ND	ug/l	10.		
exachlorocyclopentadiene exachloroethane	ND	ug/l	10.		
sophorone	ND	ug/l	5.0		
aphthalene	ND	ug/l	5.0		
~	ND	ug/l	5.0		
itrobenzene	ND	ug/l	5.0		
DPA/DPA	ND	ug/l	15.		
-Nitrosodi-n-propylamine	ND	ug/l	5.0		
is(2-ethylhexyl)phthalate	ND	ug/l	10.		



Laboratory Sample Number: L0502261-14

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ARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II PREP ANAL
VOC's by GC/MS 8270 continued				1 8270C	0308 11:10 0309 16:24 HI
	ND	ug/l	5.0		
Di-n-butylphthalate	ND	ug/l	5.0		
	ND	ug/l	5.0		
	ND	ug/l	5.0		
	ND	ug/l	5.0		
Benzo(a) anthracene	ND	ug/l	5.0		
Benzo(a) pyrene	ND	ug/l	5.0		
Benzo(b) fluoranthene	ND	ug/l	5.0		
Benzo(k) fluoranthene	ND	ug/l	5.0		
Chrysene	ND	ug/l	5.0		
Acenaphthylene	ND	ug/l	5.0		
Anthracene	ND	ug/l	5.0		
Benzo(ghi)perylene	ND	ug/l	5.0		
Fluorene	ND	ug/l	5.0		
Phenanthrene	ND	ug/l	5.0		
Dibenzo(a,h)anthracene	ND	ug/l	5.0		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0		
Pyrene	ND	ug/l	5.0		
Benzo(e)pyrene	ND	ug/l	5.0		
Biphenyl	ND	ug/l	5.0		
Perylene	ND	ug/l	5.0		
Aniline	ND	ug/l	10.		
4-Chloroaniline	ND	ug/l	5.0		
1-Methylnaphthalene	ND	ug/l	5.0		
2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l	5.0		
4-Nitroaniline	ND	ug/l	7.0		
Dibenzofuran	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/l	10.	•	
2-Methylnaphthalene	ND	ug/l	8.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
4-Aminobiphenyl	ND	ug/l	10.		
Pentachloronitrobenzene	ND	ug/l	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	10.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	20.		
MICIOSOGIPATOCITATIO		ug/l	10.		
7,12-Dimethylbenz(a)anthracene	2 110				



Laboratory Sample Number: L0502261-14

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
SVOC's by GC/MS 8270 continue	d			1 8270C	0300 12 10 0700
2,4,6-Trichlorophenol	ND	ug/l	5.0	1 02/00	0308 11:10 0309 16:24 HL
p-Chloro-m-cresol	ND	ug/l	5.0		
2-Chlorophenol	ND	ug/l	6.0		
2,4-Dichlorophenol	ND	ug/l	10.		
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	ug/l	10.		
2,4-Dinitrophenol	ND	ug/l	20.		
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	20.		
Phenol	ND	ug/l	7.0		
2-Methylphenol	ND	ug/l	6.0		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0		
2,4,5-Trichlorophenol	ND	ug/l	5.0		
2,6-Dichlorophenol	ND	ug/l	10.		
Benzoic Acid	ND	ug/l	50.		
Benzyl Alcohol	ND	ug/l	10.		
Carbazole	ND	ug/l	5.0		
Pyridine	ND	ug/l	50.		
2-Picoline	ND	ug/l	20.		
Pronamide	ND	ug/l	20.		
Methyl methanesulfonate	ND	ug/l	20.		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	43.0	8	~		
Phenol-d6	32.0	8			
Nitrobenzene-d5	72.0	9			
?-Fluorobiphenyl	75.0	8			
2,4,6-Tribromophenol	87.0	96			
l-Terphenyl-d14	89.0	8			
PAH by GC/MS SIM 8270M				1 8270C-M	0308 11:10 0310 16:07 RL
cenaphthene	ND	ug/l	0.20		
-Chloronaphthalene	ND	ug/l	0.20		
luoranthene	ND	ug/l	0.20		
exachlorobutadiene	ND	ug/l	0.50		
aphthalene	ND	ug/l	0.20		
enzo(a)anthracene	ND	ug/l	0.20		
enzo(a)pyrene	ND	ug/l	0.20		
enzo(b)fluoranthene	ND	ug/l	0.20		
enzo(k)fluoranthene	ND	ug/l	0.20		
hrysene	ND	ug/l	0.20		
cenaphthylene	ND	ug/l	0.20		
nthracene	ND	ug/l	0.20		
enzo(ghi)perylene	ND	ug/l	0.20		
luorene	ND	ug/l	0.20		
henanthrene	ND	ug/l	0.20		
ibenzo(a,h)anthracene	ND	ug/l	0.20		
ndeno(1,2,3-cd)Pyrene	ND	ug/l	0.20		

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Laboratory Sample Number: L0502261-14 FIELD BLANK

PARAMETER	RESULT	UNITS	RDL F	REF METHOD	DATE ID PREP ANAL
0710 0710 0070V	and :			1 8270C-M	0308 11:10 0310 16:07 RL
PAH by GC/MS SIM 8270M continu		ug/l	0.20	2 02112	
Pyrene	ND	-	0.20		
l-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/1	0.20		
Pentachlorophenol	ND	ug/l			
Hexachlorobenzene	ND	ug/l	0.80		
Perylene	ND	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l	0.20		
1-Methylphenanthrene	ND	ug/l	0.20		
Benzo(e) Pyrene	ND	ug/l	0.20		
Hexachloroethane	ND	ug/l	0.80		
Surrogate(s)	Recovery		QC Crit	eria	
2-Fluorophenol	48.0	ે	21-120		
Phenol-d6	40.0	8	10-120		
Nitrobenzene-d5	77.0	%	23-120		
2-Fluorobiphenyl	63.0	ક	43-120		
2,4,6-Tribromophenol	83.0	ે	10-120		
4-Terphenyl-d14	75.0	8	33-120		
Polychlorinated Biphenyls				1 8082	0308 11:20 0309 15:03 BW
Aroclor 1221	ND	ug/l	0.500		
Aroclor 1232	ND	ug/l	0.500		
Aroclor 1242/1016	ND	ug/l	0.500		
Aroclor 1242/1010 Aroclor 1248	ND	ug/l	0.500		
	ND	ug/l	0.500		
Aroclor 1254	ND	ug/l	0.500		
Aroclor 1260	MD	ug/ ±			
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	78.0	8	30-150		
Decachlorobiphenyl	45.0	96	30-150	•	
Organochlorine Pesticides				1 8081	0308 11:15 0310 14:54 B
Delta-BHC	ND	ug/l	0.020		
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
	ND	ug/1	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l	0.020		
Heptachlor epoxide	ND	ug/l	0.040		
Endrin	ND	ug/l	0.040		
Endrin aldehyde		ug/1	0.040		
Endrin ketone	ND	-	0.040		
Dieldrin	ND	ug/1			
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.020		
Endosulfan II	ND	ug/l	0.040		

Laboratory Sample Number: L0502261-14

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PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE		ID
						PREP	ANAL	
Organochlorine Pesticides com	ntinued			1	8081	0308 11:15	0310 11 5	``.
Endosulfan sulfate	ND	ug/l	0.040	•	0001	0308 11:13	0310.14;5	4 BW
Methoxychlor	ND	ug/l	0.200					
Toxaphene	ND	ug/l	0.200					
Chlordane	ND	ug/l	0.200					
cis-Chlordane	ND	ug/l	0.020					
trans-Chlordane	ND	ug/l	0.020					
Surrogate(s)	Recovery		QC Crit	teria	1			
2,4,5,6-Tetrachloro-m-xylene	63.0	용	30-150		•			
Decachlorobiphenyl	37.0	ક	30-150					

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502261-15

Date Collected: 11-FEB-2005 14:30

TRIP BLANK WATER Sample Matrix:

Date Received: 05-MAR-2005 Date Reported: 14-MAR-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
olatile Organics by GC/MS 8	260			1 8260B	0309 11:22 TT
Methylene chloride	ND	ug/l	5.0		
1,1-Dichloroethane	ND	ug/l	0.75		
Chloroform	ND	ug/l	0.75		
Carbon tetrachloride	ND	ug/l	0.50		
1,2-Dichloropropane	ND	ug/l	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.50		
Chlorobenzene	ND	ug/l	0.50		
Trichlorofluoromethane	ND	ug/l	2.5		
1,2-Dichloroethane	ND	ug/l	0.50		
1.1.1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/l	2.0		•
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.50		
Toluene	ND	ug/l	0.75	•	
Ethylbenzene	ND	ug/l	0.50		
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
1,1-Dichloroethene	ND	ug/l	0.50		
trans-1,2-Dichloroethene	ND	ug/l	0.75		
Trichloroethene	ND	ug/l	0.50		
1,2-Dichlorobenzene	ND	ug/l	2.5		
1,3-Dichlorobenzene	ND	ug/l	2.5		
1,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	ND	ug/l	1.0		
p/m-Xylene	ND	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502261-15

TRIP BLANK

PARAMETER	RESULT	UNITS	RDL :	REF METHOD	DA	TE	ID
					PREP	ANAL	10
Volatile Organics by GC/MS	8260 contin	ned		1 8260B			
1,2,3-Trichloropropane	ND	ug/l	5.0	1 8260B		0309 11:22	2 TT
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	5.3	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	3 -					
Acrolein	ND	ug/l	5.0				
Acrylonitrile	ND	ug/l	12.				
Bromochloromethane	ND	ug/l	5.0				
Tetrahydrofuran	ND	ug/l	2.5				
2,2-Dichloropropane	ND	ug/l	10.				
1,2-Dibromoethane		ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.0				
1,1,2-Tetrachloroethane	ND	ug/l	2.5				
Bromobenzene	ND	ug/l	0.50				
-Butylbenzene	ND	ug/l	2.5				
sec-Butylbenzene	ND	ug/l	0.50				
ert-Butylbenzene	ND	ug/l	0.50				
o-Chlorotoluene	ND	ug/l	2.5				
-Chlorotoluene	ND	ug/l	2.5				
,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
exachlorobutadiene	ND	ug/l	2.5				
sopropylbenzene	ND	ug/l	1.0				
	ND	ug/l	0.50				
-Isopropyltoluene	ND	ug/l	0.50				
aphthalene	ND	ug/l	2.5				
-Propylbenzene	ND	ug/l	0.50				
,2,3-Trichlorobenzene	ND	ug/l	2.5	•			
,2,4-Trichlorobenzene	ND	ug/l	2.5				
,3,5-Trimethylbenzene	ND	ug/l	2.5				
,2,4-Trimethylbenzene	ND	ug/l	2.5				
rans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
thyl ether	ND	ug/l	2.5				
urrogate(s)	Recovery		OC Criter	ri a			
,2-Dichloroethane-d4	105.	8	£0 0x200x				
oluene-d8	101.	90					
-Bromofluorobenzene	95.0	%					
ibromofluoromethane		9					

Laboratory Job Number: L0502261

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
golide Total for	sample(s) 01	-02,04,06-07	7,09,11-13	(L050226	51-01, WG195840-1)
Solids, Total	87.	87.	ે	0	
				nri or	mo100000 10 ··· 55
Solids, Tota		e(s) 03,05,08	3,10 (L0502	701-05,	WG196030-1)
Solids, Total	94.	94.	%	0	
Total Metals for	sample(s) 0	L-02.04.06-0°	7,09,11-13	(L050226	61-02, WG195938-1)
Aluminum, Total	4300	4000	mg/kg	7	35
Antimony, Total	ND	ND	mg/kg	NC	35
Arsenic, Total	1.4	1.4	mg/kg	0	35
Barium, Total	22.	21.	mg/kg	5	35
Beryllium, Total	0.17	0.16	mg/kg	6	35
Cadmium, Total	ND	ND	mg/kg	NC	35
Calcium, Total	830.0	732.3	mg/kg	13	35
Chromium, Total	7.3	5.9	mg/kg	21	35
Cobalt, Total	2.9	2.8	mg/kg	4	35
Copper, Total	7.0	6.5	mg/kg	7	35
Iron, Total	6900	6500	mg/kg	6	35
Lead, Total	4.6	4.5	mg/kg	2	35
Magnesium, Total	970	850	mg/kg	13	35
Manganese, Total	140	130	mg/kg	7	35
Nickel, Total	4.9	4.5	mg/kg	9	35
Potassium, Total	250	240	mg/kg	4	35
Selenium, Total	0.242	0.252	mg/kg	4	35
Silver, Total	ND	ND	mg/kg	NC	35
Sodium, Total	120	120	mg/kg	0	35
Thallium, Total	ND	ND	mg/kg	NC	35
Vanadium, Total	7.4	6.8	mg/kg	8	35
Zinc, Total	13.	12.	mg/kg	8	35
m~+~1	Metals for s	ample(s) 14	(L0502261-	14, WG19	5923-3)
Mercury, Total	ND ND	ND	mg/l	- NC	20
Total Motale for	r sample(s) (1-02,04,06-0	7,09,11-13	(L05022	61-02, WG196045-3)
Mercury, Total	ND	ND	mg/kg	NC	35

Laboratory Job Number: L0502261

Parameter	% Recovery	QC Criteria	
Total Metals LCS for sa	ample(s) 01-02,04,06-07,0	9.11-13 (WG195938-4)	
Aruminum, Total	101	70-140	
Antimony, Total	86	70-140	
Arsenic, Total	103	70-140	
Barium, Total	96	70-140	
Beryllium, Total	96	70-140	
Cadmium, Total	99	70-140	
Calcium, Total	93	70-140	
Chromium, Total	93	70-140	
Cobalt, Total	91	70-140	
Copper, Total	97		
Iron, Total	96	70~140	
Lead, Total		70-140	
Magnesium, Total	104	70-140	
Manganese, Total	96	70-140	
Nickel, Total	91	70-140	
Potassium, Total	91	70-140	
Selenium, Total	86	70-140	
Silver, Total	105	70-140	
	101	70-140	
Sodium, Total	101	70-140	
Thallium, Total	99	70-140	
Vanadium, Total	91	70-140	
Zinc, Total	96	70-140	
Total Metals	LCS for sample(s) 14 (WG	196104-2)	
Tuminum, Total	110	75-125	
intimony, Total	103	75-125	
rsenic, Total	108	75-125	
arium, Total	105	75-125	
eryllium, Total	104	75-125	
admium, Total	108	75-125	
alcium, Total	99	75-125	
hromium, Total	100	75-125	
obalt, Total	100	75-125	
opper, Total	104	75–125	
ron, Total	100	75-125	
ead, Total	106	75-125	
agnesium, Total	100		
anganese, Total	100	75-125	
ickel, Total	99	75-125	
otassium, Total		75-125	
elenium, Total	100	75-125	
ilver, Total	115	75-125	
odium, Total	105	75-125	
nallium, Total	110	75-125	
•	98	75-125	
anadium, Total	102	75-125	
inc, Total	102	75-125	

Laboratory Job Number: L0502261

Parameter	% Recovery QC Criteria
Total Motals ICS	for sample(s) 14 (WG195923-1)
Mercury, Total	107 70-130
Total Metals LCS for sample	(s) 01-02,04,06-07,09,11-13 (WG196045-1)
Mercury, Total	105 70-130
Volatile Organics by GC/MS 82	260 LCS for sample(s) 14-15 (WG195579-12)
Chlorobenzene	107
Benzene	103
Toluene	108 99
1,1-Dichloroethene	98
Trichloroethene	50
Surrogate(s)	100
1,2-Dichloroethane-d4	102 103
Toluene-d8	101
4-Bromofluorobenzene	97
Dibromofluoromethane	
Volatile Organics by GC/MS	8260 LCS for sample(s) 01-13 (WG195684-5)
Chlorobenzene	100
Benzene	102
Toluene	98
1,1-Dichloroethene	98
Trichloroethene	99
Surrogate(s)	
1,2-Dichloroethane-d4	108
Toluene-d8	99
4-Bromofluorobenzene	103
Dibromofluoromethane	101
SVOC's by GC/MS 8270 LCS for sa	ample(s) 01-02,04,06-07,09,11-13 (WG195910-2)
Acenaphthene	28 21-13/
1,2,4-Trichlorobenzene	60 38-107
2-Chloronaphthalene	61
	58
1,2-Dichlorobenzene	
1,4-Dichlorobenzene	57 28-104
1,4-Dichlorobenzene 2,4-Dinitrotoluene	87 28-89
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene	87 28-89 87
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluoranthene	87 28-89 87 90
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluoranthene 4-Chlorophenyl phenyl ether	87 28-89 87 90 70
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluoranthene 4-Chlorophenyl phenyl ether n-Nitrosodi-n-propylamine	87 28-89 87 90 70 45 41-126
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluoranthene 4-Chlorophenyl phenyl ether n-Nitrosodi-n-propylamine Butyl benzyl phthalate	87 28-89 87 90 70
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluoranthene 4-Chlorophenyl phenyl ether n-Nitrosodi-n-propylamine Butyl benzyl phthalate Anthracene	87 28-89 87 90 70 45 41-126
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluoranthene 4-Chlorophenyl phenyl ether n-Nitrosodi-n-propylamine Butyl benzyl phthalate Anthracene Pyrene	87 28-89 87 90 70 45 41-126 89
1,4-Dichlorobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluoranthene 4-Chlorophenyl phenyl ether n-Nitrosodi-n-propylamine Butyl benzyl phthalate Anthracene	87 28-89 87 90 70 45 41-126 89 50 88 35-142

Laboratory Job Number: L0502261

Parameter	% Recovery QC Criteria
SVOC's by GC/MS 8270 LCS for sample	le(s) 01-02,04,06-07,09,11-13 (WG195910-2)
2-Nitrophenol	56
4-Nitrophenol	
2,4-Dinitrophenol	
Pentachlorophenol	32
Phenol	91 17-109
rhenor	53 26-90
Surrogate(s)	
2-Fluorophenol	61 25-120
Phenol-d6	69 10-120
Nitrobenzene-d5	62 23-120
2-Fluorobiphenyl	66 30–120
2,4,6-Tribromophenol	102 19-120
4-Terphenyl-d14	97 18-120
SVOC's by GC/MS 8270 LC	CS for sample(s) 14 (WG195928-2)
Acenaphthene	70
1,2,4-Trichlorobenzene	67
2-Chloronaphthalene	75
1,2-Dichlorobenzene	68
1,4-Dichlorobenzene	64
2,4-Dinitrotoluene	91
2,6-Dinitrotoluene	93
Fluoranthene	87
4-Chlorophenyl phenyl ether	80
n-Nitrosodi-n-propylamine	
Butyl benzyl phthalate	63
Anthracene	85
Pyrene	48
Hexachloropropene	85
P-Chloro-M-Cresol	58
2-Chlorophenol	79
2-Nitrophenol	67
-	73
-Nitrophenol	46
2,4-Dinitrophenol	79
Pentachlorophenol	97
Phenol	30
urrogate(s)	
-Fluorophenol	47
henol-d6	38
itrobenzene-d5	78
-Fluorobiphenyl	80
,4,6-Tribromophenol	99
-Terphenyl-d14	90

Laboratory Job Number: L0502261

Parameter	% Recovery	QC Criteria	
PAH by GC/MS SIM 8270M LCS for sampl	le(s) 01-02.04.06	5-07,09,11-13 (WG	:195911-2)
	46	40-140	
Acenaphthene	51	40-140	
2-Chloronaphthalene	74	40-140	
Fluoranthene	46	40-140	
Anthracene	71	40-140	
Pyrene	64	40-140	
Pentachlorophenol	04	10 110	
Surrogate(s)	57	25-120	
2-Fluorophenol		10-120	
Phenol-d6	72	23-120	
Nitrobenzene-d5	60		
2-Fluorobiphenyl	56	30-120	
2,4,6-Tribromophenol	84	19-120	
4-Terphenyl-d14	76	18-120	
PAH by GC/MS SIM 8270M Lo	CS for sample(s)	14 (WG195930-2)	
Acenaphthene	62	46-118	
2-Chloronaphthalene	67		
Fluoranthene	81		
Anthracene	48		
Pyrene	71	26-127	
Pentachlorophenol	87	9-103	
Surrogate(s)			
2-Fluorophenol	53	21-120	
Phenol-d6	45	10-120	
Nitrobenzene-d5	82	23-120	
2-Fluorobiphenyl	70	43-120	
2,4,6-Tribromophenol	85	10-120	
4-Terphenyl-dl4	77	33-120	
Polychlorinated Biphenyls LCS for sa	mple(s) 01-02,04	,06-07,09,11-13	(WG195912-2)
Aroclor 1242/1016	8 4	40-140	
Aroclor 1260	99	40-140	
Surrogate(s)			
2,4,5,6-Tetrachloro-m-xylene	87	30-150	
Decachlorobiphenyl	96	30-150	
Polychlorinated Biphenyls	LCS for sample(s	s) 14 (WG195925-2	2)
Aroclor 1242/1016	80	30-150	
Aroclor 1260	101	30-150	
Surrogate(s)			
2,4,5,6-Tetrachloro-m-xylene	80	30-150	
Decachlorobiphenyl	99	30-150	

Laboratory Job Number: L0502261

Parameter	% Recovery	QC Criteria
Organochlorine Pesticides LCS for sample	e(s) 01-02 04	06-07 09 11712 (FG105014 0)
Delta-BHC	66	00 01,03%11-13 (MG132314-5)
Lindane	67	46-127
Alpha-BHC	67	40-127
Beta-BHC	76	
Heptachlor	67	25 120
Aldrin	72	35-130
Heptachlor epoxide	71	34-132
Endrin	79	40.700
Endrin aldehyde	56	42-139
Endrin ketone	77	
Dieldrin	77	21.12.
4,4'-DDE		31-134
4,4'-DDD	76	
4,4'-DDT	70	
Endosulfan I	82	23-134
Endosulfan II	71	
Endosulfan sulfate	86	
Methoxychlor	67	
cis-Chlordane	79	
trans-Chlordane	78	
crans chioidane	74	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	69	30-150
Decachlorobiphenyl	85	30-150
Organochlorine Pesticides LCS	for sample(s)	14 (WG195926-2)
Delra-BHC	60	·
Lindane	63	
Alpha-BHC	62	
Beta-BHC	66	
Heptachlor	58	
	50	
Aldrin	62	•
Heptachlor epoxide		•
Heptachlor epoxide Endrin	62	•
Heptachlor epoxide Endrin Endrin aldehyde	62 70	•
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone	62 70 83	•
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin	62 70 83 52	•
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE	62 70 83 52 73	
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE 1,4'-DDD	62 70 83 52 73	
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE 1,4'-DDD	62 70 83 52 73 76	
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE 1,4'-DDD	62 70 83 52 73 76 77 65	
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE 1,4'-DDD	62 70 83 52 73 76 77 65 79	
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE 1,4'-DDD 1,4'-DDT Endosulfan I	62 70 83 52 73 76 77 65 79 66	
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE 1,4'-DDD 1,4'-DDT Endosulfan I Endosulfan II	62 70 83 52 73 76 77 65 79 66 81	
Heptachlor epoxide Endrin Endrin aldehyde Endrin ketone Dieldrin 1,4'-DDE 1,4'-DDD 1,4'-DDT Endosulfan I Endosulfan II	62 70 83 52 73 76 77 65 79 66	

Laboratory Job Number: L0502261

Parameter	% Recovery	QC Criteria	
Organochlorine Pesticides	LCS for sample(s)	14 (WG195926-2)	
Surrogate(s)	61	30-150	
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	61 60	30-150	
Total Metals SPIKE for sample(s) 01	-02,04,06-07,09,1	L-13 (L0502261-02, WG1	95938-2)
	0	70-140	
Aluminum, Total	76	70-140	
Antimony, Total	89	70-140	
Arsenic, Total	87	70-140	
Barium, Total	93	70-140	
Beryllium, Total	91	70-140	
Cadmium, Total	60	70-140	
Calcium, Total	52	70-140	
Chromium, Total	85	70-140	
Cobalt, Total	80	70-140	
Copper, Total	0	70-140	
Iron, Total	98	70-140	
Lead, Total	7	70-140	
Magnesium, Total	0	70-140	
Manganese, Total	81	70-140	
Nickel, Total	87	70-140	
Potassium, Total	78	70-140	
Selenium, Total	78 96	70-140	
Silver, Total	105	70-140	
Sodium, Total		70-140	
Thallium, Total	93	70-140	
Vanadium, Total	83	70-140	
Zinc, Total	71	70-140	
Total Metals SPIKE for sa	mple(s) 14 (L0502)	261-14, WG195923-2)	
Mercury, Total	126		
Total Metals SPIKE for sample(s)	1-02,04,06-07,09,	11-13 (L0502261-02, WG	196045-2)
Mercury, Total	111	70-130	

Laboratory Job Number: L0502261

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Volatile Organics by GC/MS 82	260 for sample	e(s) 14-15	(L0502006-02,	WG195579-21	· .
Chlorobenzene	106	103	3		,
Benzene	96	97	1		
Toluene	104	106	2		
1,1-Dichloroethene	71	73	3		
Trichloroethene	94	91	3		
Surrogate(s)					
1,2-Dichloroethane-d4	96	94	2		
Toluene-d8	102	103	1		
4-Bromofluorobenzene	96	92	4		
Dibromofluoromethane	92	95	3		
Volatile Organics by GC/MS 82	60 for sample	v(e) 01-13	./1.0502002_00	MCTOFCOA OL	
Chlorobenzene	91	79	14	WG193004-2)	
Benzene	91	74	21		
Toluene	88	71	21		
1,1-Dichloroethene	93	78	18		
Trichloroethene	98	85	14		
Surrogate(s)					
1,2-Dichloroethane-d4	95	104	0		
Toluene-d8	94	97	9		
4-Bromofluorobenzene	96		3		
Dibromofluoromethane	95	102 98	6 3		
SVOC's by GC/MS 8270 for sampl	0/01 01-02 04	06 07 00	11 12 (TRECO)	57 00 100105	
Acenaphthene	61 61				
1,2,4-Trichlorobenzene	59	59	3	50	31-137
2-Chloronaphthalene	61	53	11	50	38-107
1,2-Dichlorobenzene	51	56 48	9	50	
1,4-Dichlorobenzene	51		6	50	
2,4-Dinitrotoluene	77	48 80	6 .	50	28-104
2,6-Dinitrotoluene	80	80	4	50	28-89
Fluoranthene	85		0	50	
4-Chlorophenyl phenyl ether	72	85	0	50	
n-Nitrosodi-n-propylamine		69	4	50	
Butyl benzyl phthalate	43	41	7	50	41-126
Anthracene	85	85	0	50	
Pyrene	45	45	0	50	
Hexachloropropene	83	80	4	50	35-142
P-Chloro-M-Cresol	64	56	13	50	
2-Chlorophenol	73	71	3	50	26-103
•	52	48	8	50	25-102
2-Nitrophenol	52	48	8	50	
4-Nitrophenol	73	73	0	50	11-114
2,4-Dinitrophenol	57	41	33	50	
Pentachlorophenol	67	61	9	50	17-109
Phenol	47	45	4	50	26-90

Laboratory Job Number: L0502261

Continued

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limit
SVOC's by GC/MS 8270 for sample(s)	01-02,04	1,06-07,09,	11-13 (L05	02261-02, WG19	5910-4)
Surrogate(s)					
2-Fluorophenol	56	51	9		25-120
Phenol-d6	64	59	8		10-120
Nitrobenzene-d5	56	52	7		23-120
2-Fluorobiphenyl	68	59	14		30-120
2,4,6-Tribromophenol	102	101	1		19-120
4-Terphenyl-d14	89	87	2		18-120
SVOC's by GC/MS 8270 for s	ample(s)	14 (L05022	61-14, WG1	95928-4)	
Acenaphthene	67	72	7		
1,2,4-Trichlorobenzene	62	67	8		
2-Chloronaphthalene	72	77	7		
1,2-Dichlorobenzene	58	58	0		
1,4-Dichlorobenzene	53	58	9		
2,4-Dinitrotoluene	86	91	6		
2,6-Dinitrotoluene	86	91	6		
Fluoranthene	86	86	0		
4-Chlorophenyl phenyl ether	72	77	7		
n-Nitrosodi-n-propylamine	53	53	0		
Butyl benzyl phthalate	82	86	5		
Anthracene	47	47	0		
Pyrene	82	86	5		
Hexachloropropene	62	67	8		
P-Chloro-M-Cresol	77	82	6		
2-Chlorophenol	58	58	0		
2-Nitrophenol	62	62	0		
4-Nitrophenol	65	72	10		
2,4-Dinitrophenol	74	79	7		
Pentachlorophenol	91	94	3		
Phenol	38	41	8 .		
Surrogate(s)					
2-Fluorophenol	50	52	4		
Phenol-d6	48	53	10		
Nitrobenzene-d5	67	69	3		
2-Fluorobiphenyl	77	82	6		
2,4,6-Tribromophenol	93	98	5		
4-Terphenyl-d14	86	91	6		
PAH by GC/MS SIM 8270M for sample	(s) 01-02	,04,06-07,	09,11-13 (L0502261-02, ₩	G195911-4)
Acenaphthene	51	53	4	50	40-140
2-Chloronaphthalene	56	59	5	50	40-140
Fluoranthene	69	83	18	50	40-140
Anthracene	45	48	6	50	40-140
Pyrene	69	75	8	50	40-140
Pentachlorophenol	63	63	0	50	40-140

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Laboratory Job Number: L0502261

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
PAH by GC/MS SIM 8270M for sa	mple(s) 01-02	04,06-07,0	9,11-13 (L	0502261-02, WG	G195911-4)
Surrogate(s)					
2-Fluorophenol	60	60	0		25-120
Phenol-d6	78	77	1		10-120
Nitrobenzene-d5	63	63	0		23-120
2-Fluorobiphenyl	60	61	2		30-120
2,4,6-Tribromophenol	88	95	8		19-120
4-Terphenyl-d14	72	81	12		18-120
PAH by GC/MS SIM 8270M	for sample(s)	14 (L05022	261-14, WG	195930-4)	
Acenaphthene	58	62	7	40	46-118
2-Chloronaphthalene	67	67	0	40	70 110
Fluoranthene	77	77	0	40	
Anthracene	48	53	10	40	
Pyrene	72	77	7	40	26-127
Pentachlorophenol	89	91	2	40	9-103
Surrogate(s)					
2-Fluorophenol	63	66	5		21-120
Phenol-d6	64	71	10		10-120
Nitrobenzene-d5	76	83	9		23-120
2-Fluorobiphenyl	69	75	8		43-120
2,4,6-Tribromophenol	8 4	93	10		10-120
4-Terphenyl-d14	75	81	8		33-120
Polychlorinated Biphenyls for	sample(s) 01-	02,04,06-07	,09,11-13	(L0502261-02,	WG195912-4)
Aroclor 1242/1016	87	85	3	50	40-140
Aroclor 1260	98	96	3	50	40-140
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	85	79	7 -		30-150
Decachlorobiphenyl	91	89	2		30-150
Polychlorinated Bipheny	ls for sample(s) 14 (L050	2261-14, W	IG195925-4)	
Aroclor 1242/1016	8 4	84	0	30	30-150
Aroclor 1260	103	102	1	30	30-150
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	81	77	5		30-150
Decachlorobiphenyl	75	79	5		30-150
Organochlorine Pesticides for	sample(s) 01-	02,04,06-07	,09,11-13	(L0502261-02,	WG195914-4)
Delta-BHC	67	67	0	50	•
Lindane	69	65	6	50	46-127
Alpha-BHC	67	64	4	50	
Beta-BHC	7 4	81	9	50	
Heptachlor					



Laboratory Job Number: L0502261

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limit
Organochlorine Pesticides for	cample(s) 01	-02-04.06-0	7.09.11-13	(L0502261-02,	WG195914-4)
Aldrin	69	63	10	50	34-132
Heptachlor epoxide	71	70	3	50	
Heptachior epoxide Endrin	75	76	1	50	42-139
Endrin Endrin aldehyde	54	49	10	50	
Endrin aldenyde Endrin ketone	69	73	6	50	
Endrin ketone Dieldrin	76	74	2	50	31-134
	75	74	1	50	
4,4'-DDE	69	67	3	50	
4,4'-DDD	80	81	1	50	23-134
4,4'-DDT	71	69	3	50	
Endosulfan I	81	80	0	50	
Endosulfan II	57	60	5	50	
Endosulfan sulfate	77	75	2	50	
Methoxychlor	76	75	ī	50	
cis-Chlordane trans-Chlordane	74	72	3	50	
trans-chrordane	, 1	, <u>-</u>			
Surrogate(s)	62	60	3		30-150
2,4,5,6-Tetrachloro-m-xylene	62 81	81	0		30-150
Decachlorobiphenyl	81	9.1	U		30 130
Organochlorine Pesticid		e(s) 14 (L0	502261-14,	WG195926-4)	
Delta-BHC	61	68	11	30	
Lindane	66	72	9	30	
Alpha-BHC	64	69	8	30	
Beta-BHC	76	77	1	30	
Heptachlor	62	68	9	30	
Aldrin	66	72	9	30	
Heptachlor epoxide	70	78	11	30	
Endrin	78	84	7	30	
Endrin aldehyde	57	61	7	30	
Endrin ketone	72	78	8 .	30	
Dieldrin	75	81	8	30	
4,4'-DDE	77	83	8	30	
4,4'-DDD	72	72	0	30	
4,4'-DDT	79	85	7	30	
Endosulfan I	68	74	8	30	
Endosulfan II	72	83	14	30	
Endosulfan sulfate	62	67	8	30	
Methoxychlor	75	80	6	30	
cis-Chlordane	76	82	8	30	
trans-Chlordane	70	76	8	30	
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	64	71	10		30-150
					30-150

Laboratory Job Number: L0502261

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	TE	ID
					PREP	ANAL	
Blank Analysis	for sample(s) 01-	-02.04.06-	07 09 11-	13 /WC195939	_3\		
Total Metals	, , , , , , , , , , , , , , , , , , ,	02,01,00	0,,03,±±	1 3051	-5,		
Aluminum, Total	ND	mg/kg	4.0	1 6010B	0308 15:00	0300 07.0	4 547
Antimony, Total	ND	mg/kg	2.0	1 6010B	0308 15:00		
Arsenic, Total	ND	mg/kg	0.40	1 6010B	0308 15:00		
Barium, Total	ND	mg/kg	0.40	1 6010B	0308 15:00		
Beryllium, Total	ND	mg/kg	0.2000	1 6010B	0308 15:00		
Cadmium, Total	ND	mg/kg	0.4000	1 6010B	0308 15:00		
Calcium, Total	ND	mg/kg	4.0	1 6010B	0308 15:00		
Chromium, Total	ND	mg/kg	0.40	1 6010B	0308 15:00		
Cobalt, Total	ND	mg/kg	0.80	1 6010B	0308 15:00		
Copper, Total	ND	mg/kg	0.40	1 6010B	0308 15:00		
Iron, Total	ND	mg/kg	2.0	1 6010B	0308 15:00		
Lead, Total	ND	mg/kg	2.0	1 6010B			
Magnesium, Total	ND	mg/kg	4.0	1 6010B	0308 15:00		
Manganese, Total	ND	mg/kg	0.40	1 6010B	0308 15:00		
Nickel, Total	ND	mg/kg	1.0	1 6010B	0308 15:00		
Potassium, Total	ND	mg/kg	100	1 6010B	0308 15:00		
Selenium, Total	ир	mg/kg	0.800	1 6010B	0308 15:00		
Silver, Total	ND	mg/kg mg/kg	0.40		0308 15:00		
Sodium, Total	ND	mg/kg mg/kg	80.		0308 15:00		
Challium, Total	ND	mg/kg mg/kg	0.40	1 6010B	0308 15:00		
Vanadium, Total	ND	mg/kg	0.40	1 6010B	0308 15:00		
Zinc, Total	ND	mg/kg	2.0	1 6010B	0308 15:00		
	1415	mg/ kg	2.0	1 6010B	0308 15:00	0309 07:04	RW
	nk Analysis for sa	mple(s) 14	(WG19610	4-1)			
otal Metals		x		1 3015			
luminum, Total	ND	mg/l	0.10	1 6010B	0308 15:40	0309 12:36	RW
ntimony, Total	ND	mg/l	0.050	1- 6010B	0308 15:40		
rsenic, Total	ND	mg/l	0.005	1 6010B	0308 15:40		
arium, Total	ND	mg/l	0.01	1 6010B	0308 15:40		
eryllium, Total	ND	mg/l	0.005	1 6010B	0308 15:40		
admium, Total	ND	mg/l	0.005	1 6010B	0308 15:40		
alcium, Total	ND	mg/l	0.10	1 6010B	0308 15:40		
hromium, Total	ND	mg/l	0.01	1 6010B	0308 15:40		
obalt, Total	ND	mg/1	0.02	1 6010B	0308 15:40 (
opper, Total	ND	mg/l	0.01	1 6010B	0308 15:40 (
ron, Total	ND	mg/l	0.05	1 6010B			
ead, Total	ND	mg/l	0.050		0308 15:40 (
agnesium, Total	ND	mg/1	0.030	1 6010B	0308 15:40 (
anganese, Total	ND			1 6010B	0308 15:40 (
ickel, Total	ND	mg/l	0.01	1 6010B	0308 15:40 (
otassium, Total		mg/l	0.025	1 6010B	0308 15:40 (
elenium, Total	ND	mg/l	2.5	1 6010B	0308 15:40 (
ilver, Total	ND	mg/l	0.005	1 6010B	0308 15:40 (
	ND	mg/l	0.007	1 6010B	0308 15:40 (309 12:36	RW
odium, Total	ND	mg/l	2.0	1 6010B	0308 15:40 (200 12.26	no ra

Laboratory Job Number: L0502261

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Anal	vsis for sa	ample(s) 14	(WG1961	04-1)	4 KEARS
Total Metals				1 3015	
Thallium, Total	ND	mg/l	0.005	1 6010B	0308 15:40 0309 12:36 RW
Vanadium, Total	ND	mg/l	0.01	1 6010B	0308 15:40 0309 12:36 RW
Zinc, Total	ND	mg/l	0.05	1 6010B	0308 15:40 0309 12:36 RW
Blank Anal	ysis for sa	ample(s) 1	4 (WG1959	23-4)	
Total Metals		. 7			
Mercury, Total	ND	mg/l	0.0002	1 7470A	0308 15:30 0309 10:56 DM
Blank Analysis for sa	mple(s) 01	-02,04,06-	07,09,11-	13 (WG196045	-4)
Total Metals					
Mercury, Total	ND	mg/kg	0.08	1 7471A	0309 20:15 0310 12:06 DM
Blank Analys	is for sam	ple(s) 14-	15 (WG195	579-13)	
Volatile Organics by GC/MS 8				1 8260B	0309 08:43 TT
Methylene chloride	ND	ug/l	5.0		
1,1-Dichloroethane	ND	ug/l	0.75		
Chloroform	ND	ug/l	0.75		
Carbon tetrachloride	ND	ug/l	0.50		
1.2-Dichloropropane	ND	ug/l	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.50		
Chlorobenzene	ND	ug/l	0.50		
Trichlorofluoromethane	ND	ug/l	2.5		
1,2-Dichloroethane	ND	ug/l	0.50		
1,1,1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/l	2.0		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.50		
Toluene	ND	ug/l	0.75		
Ethylbenzene	ND	ug/l	0.50		
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
1,1-Dichloroethene	ND	ug/l	0.50		
trans-1,2-Dichloroethene	ND	ug/l	0.75		
Trichloroethene	ND	ug/l	0.50		
1.2-Dichlorobenzene	ND	ug/l	2.5		

Laboratory Job Number: L0502261

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analys	ic for some	-1-(-) 14	1.F . /12.G1.0	F. F. D. C. A. A. A. A. A. A. A. A. A. A. A. A. A.	
Volatile Organics by GC/MS 8	260 continu	ote(S) 14-	12: (MG13		
1,3-Dichlorobenzene	ND ND		2 -	1 8260B	0309 08:43 TT
1,4-Dichlorobenzene	ND	ug/1	2.5		
Methyl tert butyl ether	ND	ug/l	2.5		
p/m-Xylene	ND	ug/l	1.0		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	0.50		
1,4-Dichlorobutane		ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	5.0		
Dichlorodifluoromethane	ND	ug/l	0.50		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ИD	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50	•	
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
l,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
[sopropylbenzene	ND	ug/l	0.50		
o-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
,2,3-Trichlorobenzene	ND	ug/l	2.5		
.,2,4-Trichlorobenzene	ND	ug/l	2.5		
.,3,5-Trimethylbenzene	ND	ug/1 ug/l	2.5		
.,2,4-Trimethylbenzene	ND	ug/l ug/l	2.5		
rans-1,4-Dichloro-2-butene	ND	ug/l ug/l			
Sthyl ether			2.5		
-conju dener	ND	ug/l	2.5		



Laboratory Job Number: L0502261

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analys	is for sam	ple(s) 14-15	(WG19	95579-13)	
Volatile Organics by GC/MS 8	260 contin	ued		1 8260B	0309 08:43 TT
Surrogate(s)	Recovery		QC C1	riteria	
1,2-Dichloroethane-d4	104.	8			
Toluene-d8	101.	ે			
4-Bromofluorobenzene	108.	%			
Dibromofluoromethane	101.	96			
Blank Analys	is for sam	ple(s) 01-13	(WG1	95684-6)	
Volatile Organics by GC/MS 8				1 8260B	0309 09:28 BT
Methylene chloride	ND	ug/kg	25.		
1,1-Dichloroethane	ND	ug/kg	3.8		
Chloroform	ND	ug/kg	3.8		
Carbon tetrachloride	ND	ug/kg	2.5		
1,2-Dichloropropane	ND	ug/kg	8.8		
Dibromochloromethane	ND	ug/kg	2.5		
1,1,2-Trichloroethane	ND	ug/kg	3.8		
Tetrachloroethene	ND	ug/kg	2.5		
Chlorobenzene	ND	ug/kg	2.5		
Trichlorofluoromethane	ND	ug/kg	12.		
1,2-Dichloroethane	ND	ug/kg	2.5		
1,1,1-Trichloroethane	ND	ug/kg	2.5		
Bromodichloromethane	ND	ug/kg	2.5		
trans-1,3-Dichloropropene	ND	ug/kg	2.5		
cis-1,3-Dichloropropene	ND	ug/kg	2.5		
1,1-Dichloropropene	ND	ug/kg	12.		
Bromoform	ND	ug/kg	10.		
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.5		
Benzene	ND	ug/kg	2.5		
Toluene	ND	ug/kg	3.8		
Ethylbenzene	ND	ug/kg	2.5		
Chloromethane	ND	ug/kg	12.		
Bromomethane	ND	ug/kg	5.0		
Vinyl chloride	ND	ug/kg	5.0		
Chloroethane	ND	ug/kg	5.0		
1,1-Dichloroethene	ND	ug/kg	2.5		
trans-1,2-Dichloroethene	ND	ug/kg	3.8		
Trichloroethene	ND	ug/kg	2.5		
1,2-Dichlorobenzene	ND	ug/kg	12.		
1,3-Dichlorobenzene	ND	ug/kg	12.		
1,4-Dichlorobenzene	ND	ug/kg	12.		
Methyl tert butyl ether	ND	ug/kg	5.0		
p/m-Xylene	ND	ug/kg	2.5		
o-Xylene	ND	ug/kg	2.5		
cis-1,2-Dichloroethene	ND	ug/kg	2.5		
Dibromomethane	ND	ug/kg	25.		
1,4-Dichlorobutane	ND	ug/kg	25.		
Iodomethane	ND	ug/kg	25.		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analys	is for samp	ole(s) 01-	l3. (WG199	5684-6)	Commence of the Commence of th
Volatile Organics by GC/MS 8	260 continu	ied		1 8260B	0309 09:28 BT
1,2,3-Trichloropropane	ND	ug/kg	25.		0303 03.26 BI
Styrene	ND	ug/kg	2.5		
Dichlorodifluoromethane	ND	ug/kg	25.		
Acetone	ND	ug/kg	25.		
Carbon disulfide	ND	ug/kg	25.		
2-Butanone	ND	ug/kg	25.		
Vinyl acetate	ND	ug/kg	25.		
4-Methyl-2-pentanone	ND	ug/kg	25.		
2-Hexanone	ND	ug/kg	25.		
Ethyl methacrylate	ND	ug/kg	25.		
Acrolein	ND	ug/kg	62.		
Acrylonitrile	ND	ug/kg	25.		
Bromochloromethane	ND	ug/kg ug/kg	12.		
Tetrahydrofuran	ND	ug/kg ug/kg	50.		
2,2-Dichloropropane	ND				
1,2-Dibromoethane	ND	ug/kg	12.		
1,3-Dichloropropane		ug/kg	10.		
1,1,1,2-Tetrachloroethane	ND	ug/kg	12.		
Bromobenzene	ND	ug/kg	2.5		
n-Butylbenzene	ND	ug/kg	12.		
-	ND	ug/kg	2.5		
sec-Butylbenzene	ND	ug/kg	2.5		
tert-Butylbenzene D-Chlorotoluene	ND	ug/kg	12.		
	ND	ug/kg	12.		
p-Chlorotoluene	ND	ug/kg	12.		
1,2-Dibromo-3-chloropropane	ND	ug/kg	12.		
Hexachlorobutadiene	ND	ug/kg	12.		
Isopropylbenzene	ND	ug/kg	2.5		
o-Isopropyltoluene	ND	ug/kg	2.5		
Naphthalene	ND	ug/kg	12.	•	
1-Propylbenzene	ND	ug/kg	2.5		
,2,3-Trichlorobenzene	ND	ug/kg	12.		
,2,4-Trichlorobenzene	ND	ug/kg	12.		
.,3,5-Trimethylbenzene	ND	ug/kg	12.		
,2,4-Trimethylbenzene	ND	ug/kg	12.		
rans-1,4-Dichloro-2-butene	ND	ug/kg	12.		
thyl ether	ND	ug/kg	12.		
urrogate(s)	Recovery		OC Crit	-oria	
,2-Dichloroethane-d4	107.	%	AC CTT	-CTTQ	
oluene-d8	97.0	8			
-Bromofluorobenzene	111.	8			
ibromofluoromethane	92.0	8			
Blank Analysis for sam	ple(s) 01-0	02,04,06-07	7,09,11-1	13 (WG195910-1)	
VOC's by GC/MS 8270				1 8270C 0	308 11:15 0309 14:14 HL
cenaphthene	ND	ug/kg	170		

ALPHA ANALYTICAL LABORATORIES

QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0502261

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analysis for sam	ple(s) 01-	02,04,06-0	7,09,11-	-13 (WG195910-	1)
SVOC's by GC/MS 8270 continue	d			1 8270C	0308 11:15 0309 14:14 HL
Benzidine	ND	ug/kg	1700		
1,2,4-Trichlorobenzene	ND	ug/kg	170		•
Hexachlorobenzene	ND	ug/kg	170		
Bis(2-chloroethyl)ether	ND	ug/kg	170		
1-Chloronaphthalene	ND	ug/kg	170		
2-Chloronaphthalene	ND	ug/kg	200		
1,2-Dichlorobenzene	ND	ug/kg	170		
1,3-Dichlorobenzene	ND	ug/kg	170		
1,4-Dichlorobenzene	ND	ug/kg	170		
3,3'-Dichlorobenzidine	ND	ug/kg	1700		
2,4-Dinitrotoluene	ND	ug/kg	200		
2,6-Dinitrotoluene	ND	ug/kg	170		
Azobenzene	ND	ug/kg	170		
Fluoranthene	ND	ug/kg	170		
4-Chlorophenyl phenyl ether	ND	ug/kg	170		
4-Bromophenyl phenyl ether	ND	ug/kg	170		
Bis(2-chloroisopropyl)ether	ND	ug/kg	170		
Bis(2-chloroethoxy)methane	ND	ug/kg	170		
Hexachlorobutadiene	ND	ug/kg	330		
Hexachlorocyclopentadiene	ND	ug/kg	330		
Hexachloroethane	ND	ug/kg	170		
Isophorone	ND	ug/kg	170		
Naphthalene	ND	ug/kg	170		
Nitrobenzene	ND	ug/kg	170		
NDPA/DPA	ND	ug/kg	500		
n-Nitrosodi-n-propylamine	ND	ug/kg	170		
Bis(2-ethylhexyl)phthalate	ND	ug/kg	330		
Butyl benzyl phthalate	ND	ug/kg	170		
Di-n-butylphthalate	ND	ug/kg	170	•	
Di-n-octylphthalate	ND	ug/kg	170		
Diethyl phthalate	ND	ug/kg	170		
Dimethyl phthalate	ND	ug/kg	170		
Benzo(a) anthracene	ND	ug/kg	170		
Benzo(a) pyrene	ND	ug/kg	170		
Benzo(b) fluoranthene	ND	ug/kg	170		
Benzo(k) fluoranthene	ND	ug/kg	170		
	ND	ug/kg	170		
Chrysene Acenaphthylene	ND	ug/kg	170		
	ND	ug/kg	170		
Anthracene Benzo(ghi)perylene	ND	ug/kg	170		
Fluorene	ND	ug/kg	170		
	ND	ug/kg	170		
Phenanthrene	ND	ug/kg	170		
Dibenzo(a,h)anthracene	ND	ug/kg	170		
Indeno(1,2,3-cd)pyrene	ND ND	ug/kg ug/kg	170		
Pyrene		ug/kg	170		
Benzo(e)pyrene	ND	ug/ ng	1,0		



Laboratory Job Number: L0502261

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analysis for sar	mple(s) 01	-02.04.06-	07.09.11	-13 /WC195010_1	
SVOC's by GC/MS 8270 continue	ed	,,	0.,05,11		
Biphenyl	ND	ug/kg	170	1 82700	0308 11:15 0309 14:14 HL
Perylene	ND	ug/kg	170		
Aniline	ND	ug/kg ug/kg	330		
4-Chloroaniline	ND	ug/kg ug/kg	170		
1-Methylnaphthalene	ND	ug/kg	170		
2-Nitroaniline	ND	ug/kg	170		
3-Nitroaniline	ND	ug/kg ug/kg	170		
4-Nitroaniline	ND	ug/kg ug/kg			
Dibenzofuran	ND		230		
a,a-Dimethylphenethylamine	ND	ug/kg	170		
Hexachloropropene	ND	ug/kg	1700		
Nitrosodi-n-butylamine	ND	ug/kg	330		
2-Methylnaphthalene	ND	ug/kg	330		
1,2,4,5-Tetrachlorobenzene		ug/kg	270		
Pentachlorobenzene	ND	ug/kg	670		
a-Naphthylamine	ND	ug/kg	670		
o-Naphthylamine	ND	ug/kg	670		
Phenacetin	ND	ug/kg	670		
Dimethoate	ND	ug/kg	330		
I-Aminobiphenyl	ND	ug/kg	670		
Pentachloronitrobenzene	ND	ug/kg	330		
Sodrin	ND	ug/kg	330		
D-Dimethylaminoazobenzene	ND	ug/kg	330		
Chlorobenzilate	ND	ug/kg	330		
3-Methylcholanthrene	ND	ug/kg	670		
thyl Methanesulfonate	ND	ug/kg	670		
cetophenone	ND	ug/kg	500		
ditrosodipiperidine	ND	ug/kg	670		
	ND	ug/kg	670		
,12-Dimethylbenz (a) anthracene		ug/kg	330	•	
-Nitrosodimethylamine	ND	ug/kg	1700		
,4,6-Trichlorophenol	ND	ug/kg	170		
-Chloro-m-cresol	ND	ug/kg	170		
-Chlorophenol	ND	ug/kg	200		
,4-Dichlorophenol	ND	ug/kg	330		
,4-Dimethylphenol	ND	ug/kg	330		
-Nitrophenol	ND	ug/kg	670		
-Nitrophenol	ND	ug/kg	330		
,4-Dinitrophenol	ND	ug/kg	670		
,6-Dinitro-o-cresol	ND	ug/kg	670		
entachlorophenol	ND	ug/kg	670		
henol	ND	ug/kg	230		
-Methylphenol	ND	ug/kg	200		
-Methylphenol/4-Methylphenol	ND	ug/kg	200		
,4,5-Trichlorophenol	ND	ug/kg	170		
,6-Dichlorophenol	ND	ug/kg	330		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis for sa	imple(s) 01-	02,04,06-0	07,09,11-	-13 (WG195910-	-1) 0308 11:15 0309 14:14 HL
SVOC's by GC/MS 8270 continu		ug/kg	330		
Benzyl Alcohol	ND	ug/kg ug/kg	170		
Carbazole	ND	ug/kg ug/kg	1700		
Pyridine	ND	ug/kg ug/kg	670		
2-Picoline	ND	ug/kg ug/kg	670		
Pronamide	ND	ug/kg ug/kg	670		
Methyl methanesulfonate	ND	ug/kg	0.70		
Surrogate(s)	Recovery		~	iteria	
2-Fluorophenol	53.0	8	25-12		
Phenol-d6	63.0	8	10-12		
Nitrobenzene-d5	54.0	%	23-12		
2-Fluorobiphenyl	56.0	%	30-12		
2,4,6-Tribromophenol	60.0	ફ	19-12		
4-Terphenyl-d14	67.0	%	18-12	0	
Dlank Ana	lysis for s	ample(s) 1	4 (WG195	928-1)	
SVOC's by GC/MS 8270	TARE TOT R	~	,	1. 8270C	0308 11:10 0309 14:41 H
	ND	ug/l	5.0		
Acenaphthene Benzidine	ND	ug/l	50.		
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis (2-chloroethyl) ether	ND	ug/l	5.0		
1-Chloronaphthalene	ND	ug/l	5.0		
2-Chloronaphthalene	ND	ug/l	6.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
1,3-Dichlorobenzene	ND	ug/l	5.0		
1,4-Dichlorobenzene	ND	ug/l	5.0		
3,3'-Dichlorobenzidine	ND	ug/l	50.		
	ND	ug/l	6.0		
2,4-Dinitrotoluene 2,6-Dinitrotoluene	ND	ug/l	5.0		
Azobenzene	ND	ug/l	5.0		
Fluoranthene	ND	ug/l	5.0		
4-Chlorophenyl phenyl ether		ug/l	5.0		
4-Enterophenyl phenyl ether	ND	ug/l	5.0		
Bis (2-chloroisopropyl) ether		ug/l	5.0		
Bis(2-chloroethoxy)methane	ND	ug/l	5.0		
Hexachlorobutadiene	ND	ug/l	10.		
Hexachlorocyclopentadiene	ND	ug/l	10.		
Hexachlorocyclopentadiene Hexachloroethane	ND	ug/l	5.0		
Isophorone	ND	ug/l	5.0		
Naphthalene	ND	ug/l	5.0		
Nitrobenzene	ND	ug/l	5.0		
	ND	ug/l	15.		
NDPA/DPA	ND	ug/l	5.0		
	112				
n-Nitrosodi-n-propylamine Bis(2-ethylhexyl)phthalate	ND	ug/l	10.		

Laboratory Job Number: L0502261

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	TE	ID
					PREP	ANAL	
Plant In	- 1	· · · · · · · · · · · · · · · · · · ·					
SVOC's by GC/MS 8270 conti	alysis for s	ample(s)	14 (WG195	928-1)		, ,	
Di-n-butylphthalate	ND		1 - 4	1 8270C	0308 11:10	0309 14:4	1 HI.
Di-n-octylphthalate		ug/l	5.0				
Diethyl phthalate	ND	ug/l	5.0				
Dimethyl phthalate	ND	ug/l	5.0				
Benzo(a) anthracene	ND	ug/l	5.0				
Benzo(a)pyrene	ND	ug/l	5.0				
Benzo(b) fluoranthene	ND	ug/l	5.0				
Benzo(k) fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
	ND	ug/l	5.0				
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
Benzo(e)pyrene	ND	ug/l	5.0				
Siphenyl	ND	ug/l	5.0				
erylene	ND	ug/l	5.0				
niline	ND	ug/l					
-Chloroaniline	ND	=	10.				
-Methylnaphthalene	ND	ug/l	5.0				
-Nitroaniline	ND	ug/l	5.0				
-Nitroaniline	ND	ug/l	5.0				
-Nitroaniline		ug/l	5.0				
ibenzofuran	ND	ug/l	7.0				
,a-Dimethylphenethylamine	ND	ug/l	5.0				
exachloropropene	ND	ug/l	50.				
itrosodi-n-butylamine	ND	ug/l	10.	•			
-Methylnaphthalene	ND	ug/l	10.				
2,4,5-Tetrachlorobenzene	ND	ug/l	8.0				
entachlorobenzene	ND	ug/l	20.				
-Naphthylamine	ND	ug/l	20.				
Naphthylamine -Naphthylamine	ND	ug/l	20.				
Maphenylamine Menacetin	ND	ug/l	20.				
	ND	ug/l	10.				
methoate	ND	ug/l	20.				
Aminobiphenyl	ND	ug/l	10.				
ntachloronitrobenzene	ND	ug/l	10.				
odrin	ND	ug/l	10.				
Dimethylaminoazobenzene	ND	ug/l	10.				
lorobenzilate	ИD	ug/l	20.				
Methylcholanthrene	ND	ug/l					
hyl Methanesulfonate	ND	ug/l	20.				
etophenone	ND	_	15.				
trosodipiperidine	ND	ug/l	20.				
	1417	ug/l	20.				



Laboratory Job Number: L0502261

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP ANAL	ID
		7 / 1 7/4	/MC105	928-11		· C	
Blank Analys	is for	sample(s) 14	(MGT3A	1	8270C	0308 11:10 0309 14:4	1 HL
SVOC's by GC/MS 8270 continued		ng/1	10.				
7,12-Dimethylbenz(a)anthracene	ND	ug/l ug/l	50.				
n-Nitrosodimethylamine	ND	-	5.0				
2,4,6-Trichlorophenol	ND	ug/l	5.0				
p-Chloro-m-cresol	ИD	ug/1	6.0				
2-Chlorophenol	ND	ug/l	10.				
2,4-Dichlorophenol	ND	ug/l	10.				
2,4-Dimethylphenol	ND	ug/l	20.				
2-Nitrophenol	ND	ug/l	10.				
4-Nitrophenol	ND	ug/l					
2,4-Dinitrophenol	ND	ug/l	20.				
4,6-Dinitro-o-cresol	ND	ug/l	20.				
Pentachlorophenol	ND	ug/l	20.				
Phenol	ND	ug/l	7.0				
2-Methylphenol	ND	ug/l	6.0				
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0				
2,4,5-Trichlorophenol	ND	ug/l	5.0				
2,6-Dichlorophenol	ND	ug/l	10.				
Benzoic Acid	ND	ug/l	50.				
Benzyl Alcohol	ND	ug/l	10.				
	ND	ug/l	5.0				
Carbazole	ND	ug/l	50.				
Pyridine	ND	ug/l	20.				
2-Picoline	ND	ug/l	20.				
Pronamide	ND	ug/l	20.				
Methyl methanesulfonate		-					
Surrogate(s)	Recove	ry	QC (Criter	ia		
2-Fluorophenol	40.0	8					
Phenol-d6	29.0	96					
Nitrobenzene-d5	64.0	ે			-		
2-Fluorobiphenyl	64.0	8					
2,4,6-Tribromophenol	79.0	%					
4-Terphenyl-d14	90.0	%					
					(F701 0E 01	1 1)	
Blank Analysis for sa	mple(s)	01-02,04,06	-07,09,	11-13	(WG19591	0308 11:15 0309 1	9:42 P
PAH by GC/MS SIM 8270M					1 8270C-M	0300 11.10 000	
Acenaphthene	ND	ug/kg	6.7				
Acenaphthene 2-Chloronaphthalene	ND	ug/kg	6.7				
Fluoranthene	ND	ug/kg	6.7				
Hexachlorobutadiene	ND	ug/kg	17.				
	ND	ug/kg	6.7				
Naphthalene	ND	ug/kg	6.7				
Benzo(a)anthracene	ND	ug/kg	6.7				
Benzo(a)pyrene	ND	ug/kg	6.7	7			
Benzo(b) fluoranthene	ND	ug/kg	6.	7			
Benzo(k)fluoranthene	ND	ug/kg	6.7	7			
Chrysene Acenaphthylene	ND	ug/kg	6.	7			
a	ND	49, 49					

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis for	sample(s) 01-	-02.04:06-0	7 .09 11-	.13 /WC1.95.011.	-1)
PAH by GC/MS SIM 8270M con	tinued	02,02,00	,,05,11	1 8270C-M	0308 11:15 0309 19:42 RL
Anthracene	ND	ug/kg	6.7	1 02/0C-M	9300 11:15 9309 19:42 RE
Benzo(ghi)perylene	ND	ug/kg	6.7		
Fluorene	ND	ug/kg	6.7		
Phenanthrene	ND	ug/kg ug/kg	6.7		
Dibenzo(a,h)anthracene	ND	ug/kg ug/kg	6.7		
Indeno(1,2,3-cd) Pyrene	ND	ug/kg ug/kg	6.7		
Pyrene	ND	ug/kg ug/kg	6.7		
1-Methylnaphthalene	ND		6.7		
2-Methylnaphthalene		ug/kg			
Pentachlorophenol	ND	ug/kg	6.7		
Hexachlorobenzene	ND	ug/kg	27.		
	ND	ug/kg	27.		
Perylene	ND	ug/kg	6.7		
Biphenyl	ND	ug/kg	6.7		
2,6-Dimethylnaphthalene	ND	ug/kg	6.7		
1-Methylphenanthrene	ND	ug/kg	6.7		
Benzo(e) Pyrene	ND	ug/kg	6.7		
Hexachloroethane	ND	ug/kg	27.		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	57.0	ે	25-120		
Phenol-d6	76.0	90	10-120		
Nitrobenzene-d5	61.0	8	23-120		
2-Fluorobiphenyl	55.0	%	30-120		
2,4,6-Tribromophenol	73.0	ક	19-120		
4-Terphenyl-d14	62.0	olo	18-120		
	alysis for sa	mple(s) 14	(WG1959	30-1)	
PAH by GC/MS SIM 8270M				1 8270C-M	0308 11:10 0310 12:37 RL
Acenaphthene	ND	ug/l	0.20	•	
2-Chloronaphthalene	ND	ug/l	0.20		
Fluoranthene	ND	ug/l	0.20		
Hexachlorobutadiene	ND	ug/l	0.50		
Naphthalene	ND ·	ug/l	0.20		
Benzo(a)anthracene	ND	ug/l	0.20		
Benzo(a)pyrene	ND	ug/l	0.20		
Benzo(b)fluoranthene	ND	ug/l	0.20		
Benzo(k)fluoranthene	ND	ug/l	0.20		
Chrysene	ND	ug/l	0.20		
Acenaphthylene	ND	ug/l	0.20		
Anthracene	ND	ug/l	0.20		
Benzo(ghi)perylene	ND	ug/l	0.20		
Fluorene	ND	ug/l	0.20		
Phenanthrene	ND	ug/l	0.20		
Dibenzo(a,h)anthracene	ND	ug/l	0.20		
Indeno(1,2,3-cd)Pyrene	ND	ug/1 ug/l	0.20		
Pyrene	ND	-			
y r cire	עואו	ug/l	0.20		

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS



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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analy	sis for sam	mple(s) 1	4 (WG1959	30-1)	
PAH by GC/MS SIM 8270M continu	ned			1 8270C-M	0308 11:10 0310 12:37 RL
1-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	ND	ug/l	0.80		
Hexachlorobenzene	ND	ug/l	0.80		
	ND	ug/l	0.20		
Perylene	ND	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene			0.20		
1-Methylphenanthrene	ND	ug/l	0.20		
Benzo(e) Pyrene	ND	ug/l			
Hexachloroethane	ND	ug/l	0.80		
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	44.0	96	21-120)	
Phenol-d6	36.0	왕	10-120)	
Nitrobenzene-d5	65.0	용	23-120)	
2-Fluorobiphenyl	55.0	%	43-120)	
2,4,6-Tribromophenol	77.0	g F	10-120)	
4-Terphenyl-d14	73.0	8	33-120)	
Polychlorinated Biphenyls Aroclor 1221	ND.	ug/kg	33.3	1 8082	0308 12:15 0309 19:00 JB
Aroclor 1221 Aroclor 1232	ND .	ug/kg	33.3		
Aroclor 1242/1016	ND	ug/kg	33.3		
Aroclor 1242/1010 Aroclor 1248	ND	ug/kg	33.3		
	ND	ug/kg	33.3		
Aroclor 1254 Aroclor 1260	ND	ug/kg	33.3		
11100101 1100					
Surrogate(s)	Recovery		~ -	iteria	
2,4,5,6-Tetrachloro-m-xylene	72.0	%	30-150		
Decachlorobiphenyl	81.0	90	30-150	0	
Blank Analy	sis for sa	mple(s)	14 (WG195	925-1)	
Polychlorinated Biphenyls				1 8082	0308 11:20 0309 13:08 BW
Aroclor 1221	ND	ug/l	0.500		
Aroclor 1232	ND	ug/l	0.500		
Aroclor 1242/1016	ND	ug/l	0.500		
Aroclor 1248	ND	ug/l	0.500		
Aroclor 1254	ND	ug/l	0.500		
Aroclor 1260	ND	ug/l	0.500		
	_		00.0	t k a mi a	
Surrogate(s)	Recovery	_	_	iteria	
2,4,5,6-Tetrachloro-m-xylene	73.0	%	30-15		
Decachlorobiphenyl	97.0	8	30-15	U	



ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0502261

Continued

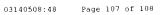
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	ID
					PREP ANAL	
Blank Analysis for sar	mple(s) 01-	02,04,06-	07,09,11	-13 (WG195914-	-1) : 4 y	27
Organochlorine Pesticides			and the	1 8081	0308 13:20 0310 15:22	BW
Delta-BHC	ND	ug/kg	3.33			
Lindane	ND	ug/kg	3.33			
Alpha-BHC	ND	ug/kg	3.33			
Beta-BHC	ND	ug/kg	3.33			
Heptachlor	ND	ug/kg	3.33			
Aldrin	ND	ug/kg	3.33			
Heptachlor epoxide	ND	ug/kg	3.33			
Endrin	ND	ug/kg	3.33			
Endrin aldehyde	ND	ug/kg	3.33			
Endrin ketone	ND	ug/kg	3.33			
Dieldrin	ND	ug/kg	3.33			
1,4'-DDE	ND	ug/kg	3.33			
1,4'-DDD	ND	ug/kg	3.33			
1,4'-DDT	ND	ug/kg	3.33			
Endosulfan I	ND	ug/kg	3.33			
Indosulfan II	ND	ug/kg	3.33			
Indosulfan sulfate	ND	ug/kg	3.33			
Methoxychlor	ND	ug/kg	3.33			
°oxaphene	ND	ug/kg	13.3			
Chlordane	ND	ug/kg	13.3			
is-Chlordane	ND	ug/kg	3.33			
rans-Chlordane	ND	ug/kg	3.33			
Surrogate(s)	Recovery		QC Cri	teria		
2,4,5,6-Tetrachloro-m-xylene	57.0	ે	30-150			
ecachlorobiphenyl	73.0	용	30-150			
Blank Analy	sis for sa	mple(s) 14	(WG1959	26-1)		
erganochlorine Pesticides				1 8081	0308 11:15 0310 13:00	BW
Pelta-BHC	ND	ug/l	0.020			
indane	ИD	ug/l	0.020			
lpha-BHC	ND	ug/l	0.020			
eta-BHC	ND	ug/l	0.020			
eptachlor	ND	ug/l	0.020			
ldrin	ND	ug/l	0.020			
eptachlor epoxide	ND	ug/l	0.020			
ndrin	ND	ug/l	0.040			
ndrin aldehyde	ND	ug/l	0.040			
ndrin ketone	ND	ug/l	0.040			
ieldrin	ND	ug/l	0.040			
, 4'-DDE	ND	ug/l	0.040			
,4'-DDD	ND	ug/l	0.040			
,4'-DDT	ND	ug/l	0.040			
ndosulfan I	ND	ug/l	0.020			
ndosulfan II	ND	ug/l	0.040			
ndosulfan sulfate	ND	ug/l	0.040			

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0502261

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID		
					PREP ANAL		
Blank Anal	ysis for s	ample(s)	14 (WG1959	26-1)			
Organochlorine Pesticides co				1 8081	0308 11:15 0310 13:00 BW		
Methoxychlor	ND	ug/l	0.200				
- Toxaphene	ND	ug/l	0.200				
Chlordane	ND	ug/l	0.200				
cis-Chlordane	ND	ug/l	0.020				
trans-Chlordane	ND	ug/l	0.020				
Surrogate(s)	Recovery	,	QC Cri	teria			
2,4,5,6-Tetrachloro-m-xylene	62.0	%	30-150	1			
Decachlorobiphenyl	86.0	જ	30-150)			



ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I IIIA, 1997.
- 30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

ND Not detected in comparison to the reported detection limit.

NI Not Ignitable.

ug/cart Micrograms per Cartridge.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive Westborough, Massachusetts 01581-1019 (508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: AKRF, Inc. Laboratory Job Number: L0502589

Address: 440 Park Avenue South

New York, NY 10016 Date Received: 15-MAR-2005

Attn: Mr. Axel Schwendt Date Reported: 21-MAR-2005

Project Number: 10470-0213 Delivery Method: Alpha

Site: COLUMBIA

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0502589-01	MW/CB-3 (GROUNDWATER)	HARLEM, NY
L0502589-02	MW/CB-4 (GROUNDWATER)	HARLEM, NY HARLEM, NY
L0502589-03 L0502589-04	MW/CB-5 (GROUNDWATER) MW/CB-11 (GROUNDWATER)	HARLEM, NY
1.0502589-05	MW/CB-18 (GROUNDWATER)	HARLEM, NY
L0502589-06	MW/CB-19 (GROUNDWATER)	HARLEM, NY
L0502589-07	MW/CB-1 (GROUNDWATER)	HARLEM, NY
L0502589-08	MW/CB-2 (GROUNDWATER)	HARLEM, NY
L0502589-09	MW/CB-17 (GROUNDWATER)	HARLEM, NY
L0502589-10	TRIP BLANK	HARLEM, NY
L0502589-11	FIELD BLANK	HARLEM, NY

Authorized by: Scott McLean

This document electronically signed

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I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0502589

Volatile Organics

L0502589-01 has elevated limits of detection due to the 5x dilution required by the elevated concentrations of non-target compounds in the sample.

L0502589-02 and -03 have elevated limits of detection due to the dilutions (10x and 40x) required by the elevated concentrations of target compounds in the samples.

PAH

 ${\tt L0502589-03}$ was re-analyzed on a 4.75x dilution in order to quantitate the sample within the range of the calibration. The result is reported as a greater than value for the compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound which exceeded the range of the calibration.

The MS/MSD % recoveries for Pentachlorophenol are above the acceptance criteria for the method.

SemiVolatile Organics

The MS/MSD % recoveries for Pentachlorophenol, and the MSD % recoveries for p-Chloro-m-cresol and 4-Nitrophenol, are above the acceptance criteria for the method.

PCB

The surrogate % recovery for Decachlorobiphenyl is below the acceptance criteria for the method on L0502589-04.

Pesticides

The surrogate % recovery for Decachlorobiphenyl is below the acceptance criteria for the method on L0502589-04.

L0502589-09 has an elevated limit of detection due to limited sample volume submitted for analysis.

The WG196452-4 MS/MSD % recoveries for Endrin Aldehyde are below the acceptance criteria for the method.

The WG196452-4 MS/MSD RPD for Delta-BHC is above the acceptance criteria for the method.

Dissolved Metals

L0502589-01 was diluted 5X for Mn and Na.

L0502589-02, -04, and -06 were diluted 10X for Na.

L0502589-02, -04, -05, -06 and -08 were diluted 10X for Ca.

The RPDs for the laboratory duplicates of Aluminum, Lead, and Zinc are above the acceptance criteria for the method.

The MS % recoveries for Calcium, Magnesium, Manganese, Selenium, and Sodium are invalid

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0502589

Continued

because the sample concentrations are greater than four times the spike amounts added.

The MS % recovery for Iron is above the acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 93%.

Total Metals

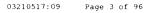
L0502589-01, -02, -04 and -06 were diluted 10x for Na.

L0502589-02, -04 and -06 were diluted 10x for Ca.

L0502589-01 and 08 were diluted 10x for Mn.

The MS % recoveries for Calcium and Sodium are invalid because the sample concentrations are greater than four times the spike amounts added.

The MS % recovery for Silver is below the acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 109%.



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-01

MW/CB-3 (GROUNDWATER)

Date Collected: 14-MAR-2005 08:00 Date Received: 15-MAR-2005

Sample Matrix:

WATER

Date Reported : 21-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	' METHOD	DATE		II	
						PREP	ANAL		
Total Metals									
100d1 Hoddis									
Aluminum, Total	3.43	mg/l	0.010	1	6020	0316 16:00	0317 12:1	4 RW	
Antimony, Total	ND	mg/l	0.0002	1	6020	0316 16:00	0317 12:1	4 RW	
Arsenic, Total	0.0010	mg/l	0.0004	1	6020	0316 16:00	0317 12:1	4 RW	
Barium, Total	0.5426	mg/l	0.0002	1	6020	0316 16:00	0317 12:1	4 RW	
Beryllium, Total	ND	mg/l	0.0005	1	6020	0316 16:00	0317 12:1	4 RW	
Cadmium, Total	ND	mg/l	0.0004	1	6020	0316 16:00	0317 12:1	4 RW	
Calcium, Total	113.	mg/l	0.200	1	6020	0316 16:00	0317 12:1	4 RW	
Chromium, Total	0.0090	mg/l	0.0002	1	6020	0316 16:00	0317 12:1	4 RW	
Cobalt, Total	0.0041	mg/l	0.0001	1	6020	0316 16:00	0317 12:1	4 RW	
Copper, Total	0.0338	mg/l	0.0005	1	6020	0316 16:00	0317 12:1	4 RW	
Iron, Total	9.29	mg/l	0.010	1	6020	0316 16:00			
Lead, Total	0.0095	mg/l	0.0002	1	6020	0316 16:00	0317 12:1	4 RW	
Magnesium, Total	42.3	mg/l	0.010	1	6020	0316 16:00	0317 12:1	4 RW	
Manganese, Total	5.662	mg/l	0.0020	1	6020	0316 16:00	0317 16:2	2 RW	
Mercury, Total	ND	mg/l	0.0002	1	7470A	0316 16:00	0317 11:5	3 DM	
Nickel, Total	0.0169	mg/l	0.0005	1	6020	0316 16:00	0317 12:1	4 RW	
Potassium, Total	9.01	mq/l	0.100	1	6020	0316 16:00	0317 12:1	4 RW	
Selenium, Total	ND	mg/l	0.001	1	6020	0316 16:00			
Silver, Total	ND	mg/l	0.0001	1 -	6020	0316 16:00			
Sodium, Total	169.	mg/l	1.00	1	6020	0316 16:00			
Thallium, Total	ND	mg/l	0.0001	1	6020	0316 16:00			
Vanadium, Total	0.0108	mg/l	0.0002	1	6020	0316 16:00			
Zinc, Total	0.0364	mg/l	0.0050	1		0316 16:00			
Dissolved Metals									
Aluminum, Dissolved	0.035	mg/l	0.010	1	6020	0316 16:00	0317 14:0	D RW	
Antimony, Dissolved	0.0012	mg/l	0.0002	1	6020	0316 16:00	0317 14:0) RW	
Arsenic, Dissolved	ND	mg/l	0.0004	1	6020	0316 16:00	0317 14:0) RW	
Barium, Dissolved	0.4670	mg/l	0.0002	1	6020	0316 16:00	0317 14:0) RW	
Beryllium, Dissolved	ND	mg/l	0.0005	1	6020	0316 16:00	0317 14:0) RW	
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0316 16:00	0317 14:0) RW	
Calcium, Dissolved	115.	mq/l	0.200	1	6020	0316 16:00			
Chromium, Dissolved	0.0003	mq/l	0.0002	1	6020	0316 16:00			
Cobalt, Dissolved	0.0002	mg/l	0.0001	1	6020	0316 16:00			
Copper, Dissolved	0.0030	mg/l	0.0005	1	6020	0316 16:00			
Iron, Dissolved	3.25	mg/l	0.010	1	6020	0316 16:00			

Laboratory Sample Number: L0502589-01

MW/CB-3 (GROUNDWATER)

Dissolved Metals Lead, Dissolved 0.0005 mg/l Magnesium, Dissolved 43.0 mg/l Manganese, Dissolved ND mg/l Mercury, Dissolved 0.0095 mg/l Nickel, Dissolved 0.0095 mg/l Potassium, Dissolved ND mg/l Selenium, Dissolved ND mg/l Silver, Dissolved ND mg/l Sodium, Dissolved ND mg/l Sodium, Dissolved ND mg/l Vanadium, Dissolved 159. mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Volatile Organics by GC/MS 8260 Methylene chloride ND ug/l 1,1-Dichloroethane ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l Tetrachloroethene ND ug/l Tetrachloroethene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l			PREP ANAL	
Gead, Dissolved 0.0005 mg/l Magnesium, Dissolved 43.0 mg/l Manganese, Dissolved 4.631 mg/l Mercury, Dissolved ND mg/l Nickel, Dissolved 0.0095 mg/l Potassium, Dissolved 8.02 mg/l Selenium, Dissolved ND mg/l Silver, Dissolved ND mg/l Sodium, Dissolved ND mg/l Sodium, Dissolved ND mg/l Sodium, Dissolved ND mg/l Thallium, Dissolved ND mg/l Thallium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved 0.0006 mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l ND ug/l Tetrachloroethane ND ug/l Tetrachloroethane ND ug/l Tetrachloroethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichloroethane ND ug/l Trichloroethane ND ug/l Trichloroethane ND ug/l Ug/l Trichloroethane ND ug/l Ug/l Trichloroethane ND ug/l Ug/l Trichloroethane ND ug/l Ug/l Ug/l Ug/l Ug/l Ug/l Ug/l Ug/l U			PREF ANALI	
dead, Dissolved 0.0005 mg/l dagnesium, Dissolved 43.0 mg/l danganese, Dissolved 4.631 mg/l dercury, Dissolved ND mg/l dickel, Dissolved 0.0095 mg/l dectassium, Dissolved 8.02 mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND mg/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, Dissolved ND ug/l delenium, DD ug/l delenium, Dissolved ND ug/l			A 1.5 (1.54)	-
Magnesium, Dissolved 43.0 mg/l Manganese, Dissolved 4.631 mg/l Mercury, Dissolved ND mg/l Nickel, Dissolved 8.02 mg/l Potassium, Dissolved ND mg/l Selenium, Dissolved ND mg/l Silver, Dissolved ND mg/l Sodium, Dissolved ND mg/l Manadium, Dissolved ND mg/l Manadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Valatile Organics by GC/MS 8260 Methylene chloride ND ug/l 1,1-Dichloroethane ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l Tetrachloroethene ND ug/l Tetrachloroethene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l			en en en en en en en en en en en en en e	
Manganese, Dissolved 4.631 mg/l Mercury, Dissolved ND mg/l Nickel, Dissolved 0.0095 mg/l Potassium, Dissolved 8.02 mg/l Selenium, Dissolved ND mg/l Silver, Dissolved ND mg/l Sodium, Dissolved ND mg/l Sodium, Dissolved ND mg/l Manadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved 0.0006 mg/l Vanadium, Dissolved 0.00119 mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved 0.00119 mg/l Volatile Organics by GC/MS 8260 Methylene chloride ND ug/l 1,1-Dichloroethane ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l Tetrachloroethene ND ug/l Tetrachloroethene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l		6020	0316 16:00 0317 14:	
Mercury, Dissolved ND mg/l Nickel, Dissolved 0.0095 mg/l Potassium, Dissolved 8.02 mg/l Selenium, Dissolved ND mg/l Silver, Dissolved ND mg/l Sodium, Dissolved ND mg/l Sodium, Dissolved ND mg/l Thallium, Dissolved ND mg/l Vanadium, Dissolved 0.0006 mg/l Vanadium, Dissolved 0.0006 mg/l Vanadium, Dissolved 0.00119 mg/l Valatile Organics by GC/MS 8260 Methylene chloride ND ug/l 1,1-Dichloroethane ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l Tetrachloroethane ND ug/l Tetrachloroethene ND ug/l Tetrachloroethene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l		6020	0316 16:00 0317 14:	
Nickel, Dissolved 0.0095 mg/l Potassium, Dissolved 8.02 mg/l Selenium, Dissolved ND mg/l Silver, Dissolved ND mg/l Sodium, Dissolved ND mg/l Sodium, Dissolved ND mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved 0.0006 mg/l Vanadium, Dissolved 0.0019 mg/l Vanadium, Dissolved ND mg/l Vanadium, Dissolved 0.0019 mg/l Valatile Organics by GC/MS 8260 Methylene chloride ND ug/l 1,1-Dichloroethane ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l Tetrachloroethane ND ug/l Tetrachloroethene ND ug/l Tetrachloroethene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l		6020	0316 16:00 0317 13:	
Potassium, Dissolved 8.02 mg/l Selenium, Dissolved ND mg/l Silver, Dissolved ND mg/l Sodium, Dissolved 159. mg/l Thallium, Dissolved ND mg/l Vanadium, Dissolved 0.0006 mg/l Vanadium, Dissolved 0.0019 mg/l Vanadium, Dissolved 0.0019 mg/l Vanadium, Dissolved 0.0019 mg/l Vanadium, Dissolved 0.0019 mg/l Valatile Organics by GC/MS 8260 Methylene chloride ND ug/l 1,1-Dichloroethane ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l 1,2-Dichloropropane ND ug/l Tetrachloroethane ND ug/l Tetrachloroethane ND ug/l Tetrachloroethene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l		7470A	0316 16:00 0317 11:	
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Silver, Dissolved ND mg/l Sodium, Dissolved 159. mg/l Thallium, Dissolved ND mg/l Vanadium, Dissolved 0.0006 mg/l Vanadium, Dissolved 0.0019 mg/l Vanadium, Dissolved 0.0119 mg/l Valatile Organics by GC/MS 8260 Methylene chloride ND ug/l 1,1-Dichloroethane ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l 1,1,2-Trichloroethane ND ug/l Tetrachloroethene ND ug/l Tetrachloroethene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l	0.100 1	6020	0316 16:00 0317 14:	
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Chloroform ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l 1,1,2-Trichloroethane ND ug/l Tetrachloroethene ND ug/l Chlorobenzene ND ug/l Trichlorofluoromethane ND ug/l T-ichlorofluoromethane ND ug/l T-ichlorofluoromethane ND ug/l	25.			
Chloroform ND ug/l Carbon tetrachloride ND ug/l 1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l 1,1,2-Trichloroethane ND ug/l Tetrachloroethene ND ug/l Chlorobenzene ND ug/l Trichlorofluoromethane ND ug/l Trichlorofluoromethane ND ug/l	3.8			
1,2-Dichloropropane ND ug/l Dibromochloromethane ND ug/l 1,1,2-Trichloroethane ND ug/l Tetrachloroethene ND ug/l Chlorobenzene ND ug/l Trichlorofluoromethane ND ug/l 1,2-Dichloroethane ND ug/l	3.8			
Dibromochloromethane ND ug/l 1,1,2-Trichloroethane ND ug/l Tetrachloroethene ND ug/l Chlorobenzene ND ug/l Trichlorofluoromethane ND ug/l 1,2-Dichloroethane ND ug/l	2.5			
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Tetrachloroethene ND ug/l Chlorobenzene ND ug/l Trichlorofluoromethane ND ug/l 1,2-Dichloroethane ND ug/l	2.5			
Tetrachloroethene ND ug/l Chlorobenzene ND ug/l Trichlorofluoromethane ND ug/l 1,2-Dichloroethane ND ug/l	3.8			
Trichlorofluoromethane ND ug/l 1,2-Dichloroethane ND ug/l	2.5			
Trichlorofluoromethane ND ug/l 1,2-Dichloroethane ND ug/l	2.5			
1,2-Dichloroethane ND ug/l	12.			
	2.5			
1,1,1-Trichloroethane ND ug/l	2.5			
Bromodichloromethane ND ug/l	2.5			
trans-1,3-Dichloropropene ND ug/l	2.5			
cis-1,3-Dichloropropene ND ug/l	2.5			
1,1-Dichloropropene ND ug/l	12.			
Bromoform ND ug/1	10.			
1,1,2,2-Tetrachloroethane ND ug/1	2.5			
Benzene ND ug/1	2.5			
Toluene ND ug/1	3.8			
Ethylbenzene ND ug/l	2.5			
Chloromethane ND ug/1	12.			
Bromomethane ND ug/1	5.0			
Vinyl chloride ND ug/l	5.0			
Chloroethane ND ug/1	5.0			
1,1-Dichloroethene ND ug/1	2.5			
trans-1,2-Dichloroethene ND ug/1	3.8			
Trichloroethene ND ug/1	2.5			
1,2-Dichlorobenzene ND ug/l	12.			
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•	12.			
,	5.0			
	2.5			
p/m-Xylene ND ug/l o-Xylene ND ug/l	2.5			



Laboratory Sample Number: L0502589-01

MW/CB-3 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS 8	260 continu	ed		1 8260B	0317 09:58 BT
cis-1,2-Dichloroethene	ND	uq/l	2.5		.,.,
Dibromomethane	ND	ug/l	25.		
1,4-Dichlorobutane	ND	ug/l	25.		
Iodomethane	ND	ug/l	25.		
1,2,3-Trichloropropane	ND	ug/l	25.		
Styrene	ND	ug/l	2.5		
Dichlorodifluoromethane	ND	ug/l	25.		
Acetone	ND	ug/l	25.		
Carbon disulfide	ND	ug/l	25.		
2-Butanone	ND	ug/l	25.		
Vinyl acetate	ND	ug/l	25.		
4-Methyl-2-pentanone	ND	ug/l	25.		
2-Hexanone	ND	ug/l	25.		
Ethyl methacrylate	ND	ug/l	25.		
Acrolein	ND	ug/l	62.		
Acrylonitrile	ND	ug/l	25.		
Bromochloromethane	ND	ug/l	12.		
Tetrahydrofuran	ND	ug/l	50.		
2,2-Dichloropropane	ND	ug/l	12.		
1,2-Dibromoethane	ND	ug/l	10.		
1,3-Dichloropropane	ND	ug/l	12.		
1,1,1,2-Tetrachloroethane	ND	ug/l	2.5		
Bromobenzene	ND	ug/l	12.		
n-Butylbenzene	ND	ug/l ug/l	2.5		
sec-Butylbenzene	2.5	ug/l	2.5		
tert-Butylbenzene	ND	-			
o-Chlorotoluene	ND	ug/l	12. 12.		
p-Chlorotoluene	ND	ug/l	12.		
1,2-Dibromo-3-chloropropane	ND	ug/l			
Hexachlorobutadiene	ND	ug/l	12.		
Isopropylbenzene		ug/l	5.0		
p-Isopropyltoluene	11.	ug/l	2.5		
	ND	ug/l	2.5		
Naphthalene	ND	ug/l	12.		
n-Propylbenzene	6.1	ug/l	2.5		
1,2,3-Trichlorobenzene	ND	ug/l	12.		
1,2,4-Trichlorobenzene	ND	ug/l	12.		
1,3,5-Trimethylbenzene	ND	ug/l	12.		
1,2,4-Trimethylbenzene	ND	ug/l	12.		
trans-1,4-Dichloro-2-butene	ND	ug/l	12.		
Ethyl ether	ND	ug/l	12.		
Surrogate(s)	Recovery	0	QC Cr	iteria	
1,2-Dichloroethane-d4	113.	96			
Toluene-d8	114.	8			
4-Bromofluorobenzene	115.	왕			
Dibromofluoromethane	106.	clo			
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 15:01 HL
Acenaphthene	ND	ug/l	4.8		

Laboratory Sample Number: L0502589-01

MW/CB-3 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II PREP ANAL
					A THE PARTY
SVOC's by GC/MS 8270 continue	d ·			1 8270C	0315 19:30 0317 15:01 H
Benzidine	ND	ug/l	48.		
1,2,4-Trichlorobenzene	ND	ug/l	4.8		
Hexachlorobenzene	ND	ug/l	4.8		
Bis(2-chloroethyl)ether	ND	ug/l	4.8		
1-Chloronaphthalene	ND	ug/l	4.8		
2-Chloronaphthalene	ND	ug/l	5.8		
1,2-Dichlorobenzene	ND	ug/l	4.8		
1,3-Dichlorobenzene	ND	ug/l	4.8		
1,4-Dichlorobenzene	ND	ug/l	4.8		
3,3'-Dichlorobenzidine	ND	ug/l	48.		
2,4-Dinitrotoluene	ND	ug/l	5.8		
2,6-Dinitrotoluene	ND	ug/l	4.8		
Azobenzene	ND	ug/l	4.8		
Fluoranthene	ND	ug/l	4.8		
4-Chlorophenyl phenyl ether	ND	ug/l	4.8		
4-Bromophenyl phenyl ether	ND	ug/l	4.8		
Bis(2-chloroisopropyl)ether	ND	ug/l	4.8		
Bis(2-chloroethoxy)methane	ND	ug/l	4.8		
Hexachlorobutadiene	ND	ug/l	9.7		
Hexachlorocyclopentadiene	ND	ug/l	9.7		
Hexachloroethane	ND	ug/l	4.8		
Isophorone	ND	ug/l	4.8		
Naphthalene	ND	ug/l	4.8		
Nitrobenzene	ND	ug/l	4.8		
NDPA/DPA	ND	ug/l	14.		
n-Nitrosodi-n-propylamine	ND	ug/l	4.8		
Bis(2-ethylhexyl)phthalate	ND	ug/l	9.7		
Butyl benzyl phthalate	ND	ug/l	4.8		
Di-n-butylphthalate	ND	ug/l	4.8		
Di-n-octylphthalate	ND	ug/l	4.8		
Diethyl phthalate	ND	ug/l	4.8		
Dimethyl phthalate	ND	ug/l	4.8		
Benzo(a) anthracene	ND	ug/l	4.8		
Benzo(a)pyrene	ND	ug/l	4.8		
Benzo(b) fluoranthene	ND	ug/l	4.8		
Benzo(k) fluoranthene	ND	ug/l	4.8		
Chrysene	ND	ug/l	4.8		
Acenaphthylene	ND	ug/l	4.8		
Anthracene	ND	ug/l	4.8		
Benzo(ghi)perylene	ND	ug/l	4.8		
Fluorene	ND	ug/l	4.8		
Phenanthrene	ND	ug/l	4.8		
Dibenzo(a,h)anthracene	ND	ug/l	4.8		
Indeno(1,2,3-cd)pyrene	ND	ug/l	6.8		
Pyrene	ND	ug/l	4.8		
Benzo(e)pyrene	ND	ug/l	4.8		
Biphenyl	ND	ug/l	4.8		
Perylene	ND	ug/l	4.8		
Aniline	ND	ug/l	9.7		



Laboratory Sample Number: L0502589-01

MW/CB-3 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued					
4-Chloroaniline			4 0	1 8270C	0315 19:30 0317 15:01 HL
1-Methylnaphthalene	ND ND	ug/l	4.8		
2-Nitroaniline		ug/l	4.8		
3-Nitroaniline	ND	ug/1	4.8		
4-Nitroaniline	ND	ug/l	4.8		
Dibenzofuran	ND	ug/l	6.8		
a,a-Dimethylphenethylamine	ND	ug/l	4.8		
Hexachloropropene	ND	ug/l	48.		
Nitrosodi-n-butylamine	ND	ug/l	9.7		
2-Methylnaphthalene	ND	ug/l	9.7		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	7.7		
Pentachlorobenzene	ND	ug/l	19.		
	ND	ug/l	19.		
a-Naphthylamine	ND	ug/1	19.		
o-Naphthylamine	ND	ug/l	19.		
Phenacetin	ND	ug/l	9.7		
Dimethoate	ND	ug/l	19.		
4-Aminobiphenyl	ND	ug/l	9.7		
Pentachloronitrobenzene	ND	ug/l	9.7		
Isodrin	ND	ug/l	9.7		
p-Dimethylaminoazobenzene	ND	ug/l	9.7		
Chlorobenzilate	ND	ug/l	19.		
3-Methylcholanthrene	ND	ug/l	19.		
Ethyl Methanesulfonate	ND	ug/l	14.		
Acetophenone	ND	ug/l	19.		
Nitrosodipiperidine	ND	ug/l	19.		
7,12-Dimethylbenz(a)anthracene		ug/l	9.7		
n-Nitrosodimethylamine	ND	ug/l	48.		
2,4,6-Trichlorophenol	ND	ug/l	4.8		
o-Chloro-m-cresol	ND	ug/l	4.8		
2-Chlorophenol	ND	ug/l	5.8		
2,4-Dichlorophenol	ND	ug/l	9.7	•	
2,4-Dimethylphenol	ND	ug/l	9.7		
2-Nitrophenol	ND	ug/l	19.		
-Nitrophenol	ND	ug/l	9.7		
2,4-Dinitrophenol	ND	ug/l	19.		
,6-Dinitro-o-cresol	ND	ug/l	19.		
Pentachlorophenol	ND	ug/l	19.		
Phenol	ND	ug/l	6.8		
-Methylphenol	ND	ug/l	5.8		
-Methylphenol/4-Methylphenol	ND	ug/l	5.8		
,4,5-Trichlorophenol	ND	ug/l	4.8		
,6-Dichlorophenol	ND	ug/l	9.7		
enzoic Acid	ND	ug/l	48.		
Benzyl Alcohol	ND	ug/l	9.7		
arbazole	ND	ug/l	4.8		
yridine	ND	ug/l	48.		
-Picoline	ND	ug/l	19.		
ronamide	ND	ug/l	19.		
Methyl methanesulfonate	ND	ug/l	19.		

Laboratory Sample Number: L0502589-01

MW/CB-3 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	ed			1 8270C	0315 19:30 0317 15:01 HL
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	44.0	ક			
Phenol-d6	38.0	૪			
Nitrobenzene-d5	88.0	%			
2-Fluorobiphenyl	85.0	90			
2,4,6-Tribromophenol	98.0	ુ			
4-Terphenyl-d14	87.0	8			
PAH by GC/MS SIM 8270M	4 × 4	4		1 8270C-M	0315 19:30 0316 13:53 RL
Acenaphthene	ND	ug/l	0.19		
2-Chloronaphthalene	ND	ug/l	0.19		
Fluoranthene	1.5	ug/l	0.19		
Hexachlorobutadiene	ND	ug/l	0.48		
Naphthalene	0.36	ug/l	0.19		
Benzo(a)anthracene	ND	ug/l	0.19		
Benzo(a)pyrene	ND	ug/l	0.19		
Benzo(b) fluoranthene	ND	ug/1	0.19		
Benzo(k) fluoranthene	ND	ug/l	0.19		
Chrysene	ND	ug/l	0.19		
Acenaphthylene	ND	ug/l	0.19		
Anthracene	ND	ug/l	0.19		
Benzo(ghi)perylene	ND	ug/l	0.19		
Fluorene	ND	ug/l	0.19		
Phenanthrene	0.99	ug/l	0.19		
Dibenzo(a,h)anthracene	ND	ug/l	0.19		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.19		
Pyrene	2.2	ug/l	0.19		
1-Methylnaphthalene	0.35	ug/l	0.19		
2-Methylnaphthalene	ND	ug/l	0.19		
Pentachlorophenol	ND	ug/l	0.77		
Hexachlorobenzene	ND	ug/l	0.77		
Perylene	ND	ug/l	0.19		
Biphenyl	ND	ug/l	0.19		
2,6-Dimethylnaphthalene	0.22	ug/l	0.19		
1-Methylphenanthrene	ND	ug/l	0.19		
Benzo(e) Pyrene	ND	ug/l	0.19		
Hexachloroethane	ND	ug/l	0.77		
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	58.0	8	21-12	0	
Phenol-d6	45.0	olo olo	10-12		
Nitrobenzene-d5	97.0	8	23-12		
2-Fluorobiphenyl	85.0	%	43-12	0	
2,4,6-Tribromophenol	88.0	%	10-12		
4-Terphenyl-d14	95.0	%	33-12		
Polychlorinated Biphenyls				1 8082	0315 22:15 0317 12:03 JB
Aroclor 1221	ND	ug/l	0.515		
Aroclor 1232	ND	ug/l	0.515		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502589-01

MW/CB-3 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Polychlorinated Binhamila and	· · · · · · · · · · · · · · · · · · ·				
Polychlorinated Biphenyls cor Aroclor 1242/1016				1 8082	0315 22:15 0317 12:03 JB
Aroclor 1248	ND	ug/l	0.515		
Aroclor 1254	ND	ug/l	0.515		
Aroclor 1260	ND	ug/l	0.515		
AIOCIOI 1200	ND	ug/l	0.515		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	86.0	8	30-150		
Decachlorobiphenyl	59.0	8	30-150		
Organochlorine Pesticides				1 8081	0025 44 42 42 42 4
Delta-BHC	ND	ug/l	0.020	T 900T	0315 22:20 0317 12:49 AK
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l	0.020		
Heptachlor epoxide	ND	ug/l	0.020		
Endrin .	ND	ug/l	0.040		
Endrin aldehyde	ND	ug/l	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/1	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan Î	ND	ug/l	0.020		
Endosulfan II	ND	ug/l	0.040		
Endosulfan sulfate	ND	ug/l	0.040		
Methoxychlor	ND	ug/l	0.200		
l'oxaphene	ND	ug/l	0.200		
Chlordane	ND	ug/l	0.200		
cis-Chlordane	ND	ug/l	0.020		
trans-Chlordane	ND	ug/l	0.020		
Surrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	73.0	%	30-150	- x ± U	
Decachlorobiphenyl	54.0	90	30-150		

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-02

Date Collected: 14-MAR-2005 09:40

WATER

MW/CB-4 (GROUNDWATER) Date Received: 15-MAR-2005 Date Reported: 21-MAR-2005

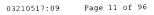
Sample Matrix:

Condition of Sample: Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE ID PREP ANAL
Total Metals			e i i i i i i i i i i i i i i i i i i i		-,	
10Cd1 Mecars						
Aluminum, Total	7.44	mg/l	0.010	1	6020	0316 16:00 0317 12:20 RW
Antimony, Total	0.0019	mg/l	0.0002	1	6020	0316 16:00 0317 12:20 RW
Arsenic, Total	0.0082	mg/l	0.0004	1	6020	0316 16:00 0317 12:20 RW
Barium, Total	1.013	mg/1	0.0002	1	6020	0316 16:00 0317 12:20 RW
Beryllium, Total	ND	mg/l	0.0005	1		0316 16:00 0317 12:20 RW
Cadmium, Total	0.0012	mg/l	0.0004	1	6020	0316 16:00 0317 12:20 RW
Calcium, Total	932.	mg/l	2.00	1	6020	0316 16:09 0317 16:28 RW
Chromium, Total	0.0658	mg/l	0.0002	1		0316 16:00 0317 12:20 RW
Cobalt, Total	0.0082	mg/l	0.0001	1	6020	0316 16:00 0317 12:20 RW
Copper, Total	0.0270	mg/l	0.0005	1	6020	0316 16:00 0317 12:20 RW
Iron, Total	29.9	mg/l	0.010	1	6020	0316 16:00 0317 12:20 RW
Lead, Total	0.0372	mg/1	0.0002	1	6020	0316 16:00 0317 12:20 RW
Magnesium, Total	51.0	mg/l	0.010	1	6020	0316 16:00 0317 12:20 RW
Manganese, Total	1.461	mg/1	0.0002	1	6020	0316 16:00 0317 12:20 RW
Mercury, Total	ND	mg/l	0.0002	1	7470A	0316 16:00 0317 11:55 DM
Nickel, Total	0.0167	mg/1	0.0005	1	6020	0316 16:00 0317 12:20 RW
Potassium, Total	36.0	mg/l	0.100	1	6020	0316 16:00 0317 12:20 RW
Selenium, Total	0.003	mg/l	0.001	1	6020	0316 16:00 0317 12:20 RW
Silver, Total	ND	mg/l	0.0001	1-	6020	0316 16:00 0317 12:20 RW
Sodium, Total	381.	mg/l	1.00	1	6020	0316 16:00 0317 16:28 RW
Thallium, Total	ND	mg/l	0.0001	1	6020	0316 16:00 0317 12:20 RW
Vanadium, Total	0.0204	mg/l	0.0002	1	6020	0316 16:00 0317 12:20 RW
Zinc, Total	0.7441	mg/l	0.0050	1	6020	0316 16:00 0317 12:20 RW
Dissolved Metals						
Aluminum, Dissolved	0.018	mg/l	0.010	1	6020	0316 16:00 0317 14:48 RW
Antimony, Dissolved	0.0059	mg/l	0.0002	1	6020	0316 16:00 0317 14:48 RW
Arsenic, Dissolved	0.0041	mq/1	0.0004	1	6020	0316 16:00 0317 14:48 RW
Barium, Dissolved	1.160	mg/l	0.0002	1	6020	0316 16:00 0317 14:48 RW
Beryllium, Dissolved	ND	mg/l	0.0005	3	6020	0316 16:00 0318 13:34 RW
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0316 16:00 0317 14:48 RW
Calcium, Dissolved	1260	mg/l	2.00	1	6020	0316 16:00 0317 17:00 RW
Chromium, Dissolved	0.0007	mg/l	0.0002	1	6020	0316 16:00 0317 14:48 RW
Cobalt, Dissolved	0.0069	mq/l	0.0001	. :	6020	0316 16:00 0317 14:48 RW
Copper, Dissolved	0.0277	mg/l	0.0005	. :	6020	0316 16:00 0317 14:48 RW
Iron, Dissolved	13.2	mg/l	0.010		6020	0316 16:00 0317 14:48 RW



Laboratory Sample Number: L0502589-02

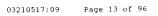
MW/CB-4 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Dissolved Metals								
presolved wergis								
Lead, Dissolved	0.0014	mg/l	0.0002	1	6020	0316 16:00	0317 14:48	B RW
Magnesium, Dissolved	51.1	mg/l	0.010	1	6020	0316 16:00	0317 14:48	B RW
Manganese, Dissolved	1.431	mg/l	0.0002	1	6020	0316 16:00	0317 14:48	B RW
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0316 16:00	0317 11:25	5 DM
Nickel, Dissolved	0.0151	mg/l	0.0005	1	6020	0316 16:00	0317 14:48	B RW
Potassium, Dissolved	41.4	mg/l	0.100	1	6020	0316 16:00	0317 14:48	3 RW
Selenium, Dissolved	0.003	mg/l	0.001	1	6020	0316 16:00	0317 14:48	3 RW
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00	0317 14:46	B RW
Sodium, Dissolved	487.	mg/l	1.00	1	6020	0316 16:00	0317 17:00	RW
fhallium, Dissolved	ND	mg/1	0.0001	1	6020	0316 16:00	0317 14:48	RW
Vanadium, Dissolved	0.0014	mg/l	0.0002	1	6020	0316 16:00	0317 14:48	RW
Zinc, Dissolved	0.5777	mg/l	0.0050	1	6020	0316 16:00	0317 14:48	B RW
Volatile Organics by GC/MS 8	260			1	8260B		0317 10:34	a Par
Methylene chloride	ND	ug/l	50.					
l,1-Dichloroethane	ND	ug/l	7.5					
Chloroform	ND	ug/l	7.5					
Carbon tetrachloride	ND	ug/l	5.0					
l,2-Dichloropropane	ND	ug/l	18.					
Dibromochloromethane	ND	ug/l	5.0					
1,1,2-Trichloroethane	ND	ug/l	7.5					
letrachloroethene	ND	ug/l	5.0					
Chlorobenzene	ND	ug/l	5.0					
Crichlorofluoromethane	ND	ug/l	25.					
1,2-Dichloroethane	ND	ug/l	5.0					
1,1,1-Trichloroethane	ND	ug/l	5.0					
Bromodichloromethane	ND	ug/l	5.0					
rans-1,3-Dichloropropene	ND	ug/l	5.0					
cis-1,3-Dichloropropene	ND	ug/l	5.0					
,1-Dichloropropene	ND	ug/l	25.					
romoform	ND	ug/l	20.					
.,1,2,2-Tetrachloroethane	ND	ug/l	5.0					
Benzene	ND	ug/l	5.0					
'oluene	ИD	ug/l	7.5					
thylbenzene	270	ug/l	5.0					
hloromethane	ND	ug/l	25.					
romomethane	ND	ug/l	10.					
inyl chloride	ND	ug/l	10.					
hloroethane	ND	ug/l	10.					
,1-Dichloroethene	ND	ug/l	5.0					
rans-1,2-Dichloroethene	ND	ug/l	7.5					
richloroethene	ИD	ug/l	5.0					
,2-Dichlorobenzene	ND	ug/l	25.					
,3-Dichlorobenzene	ND	ug/l	25.					
,4-Dichlorobenzene	ND	ug/l	25.					
ethyl tert butyl ether	ND	ug/l	10.					
/m-Xylene	640	ug/l	5.0					
-Xylene	88.	ug/l	5.0					

Laboratory Sample Number: L0502589-02

MW/CB-4 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ed		1 8260B	0317 10:34 BT
cis-1,2-Dichloroethene	ND	ug/l	5.0		
Dibromomethane	ND	ug/l	50.		
1,4-Dichlorobutane	ND	ug/l	50.		
Iodomethane	ND	ug/l	50.		
1,2,3-Trichloropropane	ND	ug/l	50.		
Styrene	ND	ug/l	5.0		
Dichlorodifluoromethane	ND	ug/l	50.		
Acetone	ND	ug/l	50.		
Carbon disulfide	ND	ug/l	50.		
	ND	ug/l	50.		
2-Butanone	ND	ug/l	50.		
Vinyl acetate	ND	ug/l	50.		
4-Methyl-2-pentanone	ND	ug/l	50.		
2-Hexanone Ethyl methacrylate	ND	ug/l	50.		
	ND	ug/l	120		
Acrolein	ND	ug/l	50.		
Acrylonitrile	ND	ug/l	25.		
Bromochloromethane	ND	ug/l	100		
Tetrahydrofuran	ND	ug/l	25.		
2,2-Dichloropropane	ND	ug/l	20.		
1,2-Dibromoethane	ND	ug/l	25.		
1,3-Dichloropropane	ND	ug/l	5.0		
1,1,1,2-Tetrachloroethane	ND	ug/l	25.		
Bromobenzene		ug/l	5.0		
n-Butylbenzene	ND	ug/l	5.0		
sec-Butylbenzene	ND	ug/l	25.		
tert-Butylbenzene	ND	-	25.		
o-Chlorotoluene	ND	ug/l ug/l	25.		
p-Chlorotoluene	ND	-	25.		
1,2-Dibromo-3-chloropropane	ND	ug/l	10.		
Hexachlorobutadiene	ND	ug/l	5.0		
Isopropylbenzene	410	ug/1	5.0	*	
p-Isopropyltoluene	ND	ug/1	25.		
Naphthalene	ND	ug/1	5.0		
n-Propylbenzene	160	ug/1	25.		
1,2,3-Trichlorobenzene	ND	ug/l			
1,2,4-Trichlorobenzene	ND	ug/l	25.		
1,3,5-Trimethylbenzene	ND	ug/l	25.		
1,2,4-Trimethylbenzene	ND	ug/l	25.		
trans-1,4-Dichloro-2-butene	ND	ug/l	25.		
Ethyl ether	ND	ug/l	25.		
Surrogate(s)	Recovery		QC Ci	riteria	
1,2-Dichloroethane-d4	108.	ે			
Toluene-d8	108.	%			
4-Bromofluorobenzene	110.	%			
Dibromofluoromethane	103.	%			
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 15:26 HL
Acenaphthene	ND	ug/l	4.8		



Laboratory Sample Number: L0502589-02

MW/CB-4 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID		
					PREP ANAL		
SVOC's by GC/MS 8270 continue	d			1 8270C	0315 19:30 0317 15:26 HL		
Benzidine	ND	ug/l	48.				
1,2,4-Trichlorobenzene	ND	ug/l	4.8				
Hexachlorobenzene	ND	ug/l	4.8				
Bis(2-chloroethyl)ether	ND	ug/l	4.8				
1-Chloronaphthalene	ND	ug/l	4.8				
2-Chloronaphthalene	ND	ug/l	5.8				
1,2-Dichlorobenzene	ND	ug/l	4.8				
1,3-Dichlorobenzene	ND	ug/l	4.8				
1,4-Dichlorobenzene	ND	ug/l	4.8				
3,3'-Dichlorobenzidine	ND	ug/l	48.				
2,4-Dinitrotoluene	ND	ug/l	5.8				
2,6-Dinitrotoluene	ND	ug/l	4.8				
Azobenzene	ND	ug/l	4.8				
Fluoranthene	ND	ug/l	4.8				
4-Chlorophenyl phenyl ether	ND	ug/l	4.8				
4-Bromophenyl phenyl ether	ND	ug/l	4.8				
Bis(2-chloroisopropyl)ether	ND	ug/l	4.8				
Bis (2-chloroethoxy) methane	ND	ug/l	4.8				
Hexachlorobutadiene	ND	ug/l	9.6				
Hexachlorocyclopentadiene	ND	ug/l	9.6				
Hexachloroethane	ND	ug/l	4.8				
Isophorone	ND	ug/l	4.8				
Naphthalene	ND	ug/l	4.8				
Nitrobenzene	ND	ug/l	4.8				
NDPA/DPA	ND	ug/l	14.				
n-Nitrosodi-n-propylamine	ND	ug/l	4.8				
Bis(2-ethylhexyl)phthalate	ND	ug/l	9.6				
Butyl benzyl phthalate	ND	ug/l	4.8				
Di-n-butylphthalate	ND	ug/l	4.8				
Di-n-octylphthalate	ND	ug/l	4.8				
Diethyl phthalate	ND	ug/l	4.8	•			
Dimethyl phthalate	ND	ug/l	4.8				
Benzo(a)anthracene	ND	ug/l	4.8				
Benzo(a)pyrene	ND	ug/l	4.8				
Benzo(b) fluoranthene	ND	ug/l	4.8				
Benzo(k) fluoranthene	ND	ug/l	4.8				
Chrysene	ND	ug/l ug/l	4.8				
Acenaphthylene	ND	ug/1 ug/1	4.8				
anthracene	ND	ug/1 ug/l	4.8				
Benzo(ghi)perylene	ND	_	4.8				
Cluorene	ND	ug/l					
Phenanthrene	ND	ug/l	4.8				
pibenzo(a,h)anthracene		ug/l	4.8				
Indeno(1,2,3-cd)pyrene	ND	ug/l	4.8				
rideno(1,2,3-cd)pyrene Pyrene	ND C =	ug/l	6.7				
enzo(e)pyrene	6.5	ug/l	4.8				
Senzo(e)pyrene Siphenyl	ND	ug/l	4.8				
	ND	ug/l	4.8				
erylene	ND	ug/l	4.8				
niline	ND	ug/l	9.6				



Laboratory Sample Number: L0502589-02

MW/CB-4 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued				1 8270C	0315 19:30 0317 15:26 HL
4-Chloroaniline	ND	ug/l	4.8		
1-Methylnaphthalene	ND	ug/l	4.8		
2-Nitroaniline	ND	ug/l	4.8		
3-Nitroaniline	ND	ug/l	4.8		
4-Nitroaniline	ND	ug/l	6.7		
Dibenzofuran	ND	ug/l	4.8		
a,a-Dimethylphenethylamine	ND	ug/l	48.		
Hexachloropropene	ND	ug/l	9.6		
Nitrosodi-n-butylamine	ND	ug/l	9.6		
2-Methylnaphthalene	ND	ug/l	7.7		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	19.		
Pentachlorobenzene	ND	ug/l	19.		
a-Naphthylamine	ND	ug/l	19.		
b-Naphthylamine	ND	ug/l	19.		
Phenacetin	ND	ug/l	9.6		
Dimethoate	ND	ug/l	19.		
4-Aminobiphenyl	ND	ug/l	9.6		
Pentachloronitrobenzene	ND	ug/l	9.6		
Isodrin	ND	ug/l	9.6		
p-Dimethylaminoazobenzene	ND	ug/l	9.6		
Chlorobenzilate	ND	ug/l	19.		
3-Methylcholanthrene	ND	ug/l	19.		
Ethyl Methanesulfonate	ND	ug/l	14.		
Acetophenone	ND	ug/l	19.		
Nitrosodipiperidine	ND	ug/l	19.		
7,12-Dimethylbenz(a)anthracene		ug/l	9.6		
n-Nitrosodimethylamine	ND	ug/l	48.		
2,4,6-Trichlorophenol	ND	ug/l	4.8		
p-Chloro-m-cresol	ND	ug/l	4.8		
2-Chlorophenol	ND	ug/l	5.8		
2,4-Dichlorophenol	ND	ug/l	9.6		
2,4-Dimethylphenol	ND	ug/l	9.6		
- ·	ND	ug/l	19.		
2-Nitrophenol	ND	ug/l	9.6		
4-Nitrophenol 2,4-Dinitrophenol	ND	ug/1	19.		
	ND	-	19.		
4,6-Dinitro-o-cresol	ND	ug/l ug/l	19.		
Pentachlorophenol		-	6.7		
Phenol	ND	ug/l	5.8		
2-Methylphenol	ND	ug/l	5.8		
3-Methylphenol/4-Methylphenol	ND	ug/l			
2,4,5-Trichlorophenol	ND	ug/l	4.8 9.6		
2,6-Dichlorophenol	ND	ug/l	9.6 48.		
Benzoic Acid	ND	ug/l			
Benzyl Alcohol	ND	ug/l	9.6		
Carbazole	ND	ug/l	4.8		
Pyridine	ND	ug/l	48.		
2-Picoline	ND	ug/l	19.		
Pronamide	ND	ug/l	19.		
Methyl methanesulfonate	ND	ug/l	19.		



Laboratory Sample Number: L0502589-02

MW/CB-4 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 contin	ued			1 8270C	0315 19:30 0317 15:26 HL
Surrogate(s)	Recovery		QC Cr.	iteria	
2-Fluorophenol	50.0	용			
Phenol-d6	39.0	ફ			
Nitrobenzene-d5	85.0	8			
2-Fluorobiphenyl	76.0	%			
2,4,6-Tribromophenol	94.0	용			
4-Terphenyl-d14	78.0	8			
PAH by GC/MS SIM 8270M		. 3		1 8270C-M	0315 19:30 0316 13:12 RL
Acenaphthene	ND	ug/l	0.19	2 02,700 11	0515 15.50 0516 13:12 RL
2-Chloronaphthalene	ND	ug/l	0.19		
Fluoranthene	3.2	ug/l	0.19		
Hexachlorobutadiene	ND	ug/l	0.48		
Naphthalene	0.46	ug/l	0.19		
Benzo(a)anthracene	ND	ug/l	0.19		
Benzo(a)pyrene	ND	ug/l	0.19		
Benzo(b) fluoranthene	ND	ug/l	0.19		
Benzo(k) fluoranthene	ND	ug/l	0.19		
Chrysene	ND	ug/l	0.19		
Acenaphthylene	ND	ug/l	0.19		
Anthracene	ND	ug/l	0.19		
Benzo(ghi)perylene	0.34	ug/l	0.19		
Fluorene	ND DN	ug/l	0.19		
Phenanthrene	1.3	ug/l	0.19		
Dibenzo(a,h)anthracene	ND	ug/l	0.19		
Indeno(1,2,3-cd)Pyrene	ND	ug/l			
Pyrene	7.4		0.19		
l-Methylnaphthalene	0.23	ug/l	0.19		
2-Methylnaphthalene	0.23	ug/l	0.19		
Pentachlorophenol	ND	ug/l	0.19		
Hexachlorobenzene	ND	ug/l	0.77		
Perylene	ND	ug/l	0.77	-	
Biphenyl	ND	ug/l	0.19		
2,6-Dimethylnaphthalene		ug/l	0.19		
-Methylphenanthrene	ND	ug/l	0.19		
Benzo(e)Pyrene	ND	ug/l	0.19		
lexachloroethane	ND ND	ug/l ug/l	0.19 0.77		
Surrogate (s)	Doggana		00 ~ :		
Surrogate(s) 2-Fluorophenol	Recovery	9	QC Cri		
reriuorophenoi Phenol-d6	56.0	9	21-120		
nenoi-d6 Litrobenzene-d5	45.0	90	10-120		
	90.0	8	23-120		
2-Fluorobiphenyl	81.0	96	43-120		
2,4,6-Tribromophenol	79.0	8	10-120		
1-Terphenyl-d14	81.0	96	33-120		
Polychlorinated Biphenyls				1 8082	0315 22:15 0316 23:03 JB
aroclor 1221	ND	ug/l	0.588		
roclor 1232	ND	ug/l	0.588		

Laboratory Sample Number: L0502589-02

MW/CB-4 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL RI	EF METHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls con	tinued			1 8082	0315 22:15 0316 23:03 JB
Aroclor 1242/1016	ND	ug/l	0.588		
Aroclor 1248	ND	ug/l	0.588		
Aroclor 1254	ND	ug/l	0.588		
Aroclor 1260	ND	ug/l	0.588		
Surrogate(s)	Recovery		QC Crite	ria	
2,4,5,6-Tetrachloro-m-xylene	65.0	%	30-150		
Decachlorobiphenyl	45.0	જે	30-150		
Organochlorine Pesticides				1 8081	0315 22:20 0317 13:18 AK
Delta-BHC	ND	ug/l	0.020		
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l	0.020		
Heptachlor epoxide	ND	ug/l	0.020		
Endrin	ND	ug/l	0.040		
Endrin aldehyde	ND	ug/l	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.020		
Endosulfan II	ND	ug/l	0.040		
Endosulfan sulfate	ND	ug/l	0.040		
Methoxychlor	ND	ug/l	0.200		
Toxaphene	ND	ug/l	0.200		
Chlordane	ND	ug/l	0.200		
cis-Chlordane	ND	ug/l	0.020	•	
trans-Chlordane	ND	ug/l	0.020		
Surrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	66.0	8	30-150		
Decachlorobiphenyl	34.0	%	30-150		

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-03

MW/CB-5 (GROUNDWATER)

Date Received : 15-MAR-2005

Date Collected: 14-MAR-2005 10:30

Sample Matrix:

WATER

Date Reported : 21-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	D.F	TE	ID
•						PREP	ANAL	
Total Metals						······································		
iotal metals								
Aluminum, Total	0.261	mq/l	0.010	1	6020	0316 16.00	0317 11:42	D D61
Antimony, Total	0.0013	mq/l	0.0002	1	6020		0317 11:42	
Arsenic, Total	0.0010	mq/l	0.0004	1	6020		0317 11:42	
Barium, Total	0.0526	mg/l	0.0002	1	6020		0317 11:42	
Beryllium, Total	ND	mg/l	0.0005	1	6020	0316 16:00		
Cadmium, Total	ND	mg/l	0.0004	1	6020			
Calcium, Total	49.7	mg/l	0.200	1	6020	0316 16:00		
Chromium, Total	0.0014	mg/l	0.0002	1	6020	0316 16:00		
Cobalt, Total	0.0003	mg/l	0.0001	1	6020	0316 16:00		
Copper, Total	0.0018	mg/l	0.0001	1		0316 16:00		
Iron, Total	0.534	mg/l	0.0003		6020	0316 16:00		
Lead, Total	0.0051	mg/l	0.0002	1	6020	0316 16:00		
Magnesium, Total	6.66	mg/l	0.0002	1	6020	0316 16:00		
Manganese, Total	0.0393			1	6020	0316 16:00		
Mercury, Total	ND	mg/l	0.0002	1	6020	0316 16:00		
Nickel, Total	0.0016	mg/l	0.0002		7470A	0316 16:00		
Potassium, Total	13.6	mg/1	0.0005		6020	0316 16:00	0317 11:42	RW
Selenium, Total		mg/l	0.100	1	6020	0316 16:00		
Silver, Total	0.001	mg/l	0.001	1	6020	0316 16:00	0317 11:42	RW
Sodium, Total	ND	mg/l	0.0001	1 -	6020	0316 16:00	0317 11:42	RW
Thallium, Total	42.7	mg/l	0.100	1	6020	0316 16:00	0317 11:42	RW
Vanadium, Total	ND	mg/l	0.0001	1	6020	0316 16:00	0317 11:42	RW
,	0.0010	mg/l	0.0002	1	6020	0316 16:00	0317 11:42	RW
Zinc, Total	0.0414	mg/l	0.0050	1	6020	0316 16:00	0317 11:42	RW
Dissolved Metals								
Aluminum, Dissolved	0.030	mg/l	0.010	,	5020			
Antimony, Dissolved	0.0024	mg/l	0.0002		6020	0316 16:00		
Arsenic, Dissolved	0.0010	mg/l	0.0002		6020	0316 16:00		
Barium, Dissolved	0.0445	mg/l	0.0004		6020	0316 16:00		
Beryllium, Dissolved	ND D	mg/l			6020	0316 16:00		
Cadmium, Dissolved	0.0009	-	0.0005		6020	0316 16:00		
Calcium, Dissolved	51.2	mg/l	0.0004		6020	0316 16:00		
Chromium, Dissolved		mg/l	0.200		6020	0316 16:00		
Cobalt, Dissolved	0.0003	mg/l	0.0002		6020	0316 16:00	0317 14:53	RW
Copper, Dissolved	0.0003	mg/l	0.0001	1 6	5020	0316 16:00	0317 14:53	RW
ron, Dissolved	0.0212	mg/l	0.0005	1 6	5020	0316 16:00	0317 14:53	RW
LOH, DISSOIVED	0.164	mg/l	0.010	1 6	5020	0316 16:00	0317 14:53	RW

Laboratory Sample Number: L0502589-03

MW/CB-5 (GROUNDWATER)

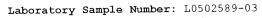
PARAMETER	RESULT	UNITS	RDL	REF :	METHOD	DATE ID PREP ANAL
						PRE MIN
issolved Metals						$\label{eq:second_second} \mathcal{S}_{\mathcal{A}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} = \frac{\mathbf{v}_{\mathcal{A}}}{\mathbf{v}_{\mathcal{A}}} =$
	0.0008	mg/l	0.0002	1	6020	0316 16:00 0317 14:53 RW
Lead, Dissolved	6.68	mg/l	0.010	1	6020	0316 16:00 0317 14:53 RW
Magnesium, Dissolved	0.0384	mg/l	0.0002	1	6020	0316 16:00 0317 14:53 RW
Manganese, Dissolved	ND	mg/l	0.0002	1	7470A	0316 16:00 0317 11:29 DM
Mercury, Dissolved	0.0057	mg/l	0.0005	1	6020	0316 16:00 0317 14:53 RW
Nickel, Dissolved	14.2	mg/l	0.100	1	6020	0316 16:00 0317 14:53 RW
Potassium, Dissolved	ND	mg/l	0.001	1	6020	0316 16:00 0317 14:53 RW
Selenium, Dissolved Silver, Dissolved	ND	mg/1	0.0001	1	6020	0316 16:00 0317 14:53 RW
	43.6	mg/l	0.100	1	6020	0316 16:00 0317 14:53 RW
Sodium, Dissolved Thallium, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00 0317 14:53 RW
Thalllum, Dissolved Vanadium, Dissolved	0.0008	mg/l	0.0002	1	6020	0316 16:00 0317 14:53 RW
Zinc, Dissolved	0.0192	mg/l	0.0050	1	6020	0316 16:00 0317 14:53 RW
Volatile Organics by GC/MS 8	3260			1	8260B	0317 11:10 BT
Methylene chloride	ND	ug/l	200			
1.1-Dichloroethane	ND	ug/l	30.			
Chloroform	ND	ug/l	30.			
Carbon tetrachloride	ND	ug/l	20.			
1,2-Dichloropropane	ND	ug/l	70.			
Dibromochloromethane	ND	ug/l	20.			
1,1,2-Trichloroethane	ND	ug/l	30.			
Tetrachloroethene	ND	ug/l	20.			
Chlorobenzene	ND	ug/l	20.			
Trichlorofluoromethane	ND	ug/l	100			
1,2-Dichloroethane	ND	ug/l	20.			
1,1,1-Trichloroethane	ND	ug/l	20.			
Bromodichloromethane	ND	ug/l	20.			
trans-1,3-Dichloropropene	ND	ug/l	20.			
cis-1,3-Dichloropropene	ND	ug/l	20.			
1,1-Dichloropropene	ND	ug/l	100			
Bromoform	ND	ug/l	80.			
1,1,2,2-Tetrachloroethane	ND	ug/l	20.			
Benzene	66.	ug/l	20.			
Toluene	130	ug/l	30.			
Ethylbenzene	ND	ug/l	20.			
Chloromethane	ND	ug/l	100			
Bromomethane	ND	ug/l	40.			
Vinyl chloride	ND	ug/l	40.			
Chloroethane	ND	ug/l	40.			
1,1-Dichloroethene	ND	ug/l	20.			
trans-1,2-Dichloroethene	ND	ug/l	30.			
Trichloroethene	ND`	ug/l	20.			
1,2-Dichlorobenzene	ND	ug/l	100			
1,3-Dichlorobenzene	ND	ug/l	100			
1,4-Dichlorobenzene	ND	ug/l	100			
Methyl tert butyl ether	ND	ug/l	40.			
p/m-Xylene	120	ug/l	20.			
o-Xylene	120	ug/l	20.			



Laboratory Sample Number: L0502589-03

MW/CB-5 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 continu	ıed		1 8260B	0317 11:10 BT
cis-1,2-Dichloroethene	ND	ug/l	20.	1 02008	031/;11:10 B1
Dibromomethane	ND	ug/l	200		
1,4-Dichlorobutane	ND	ug/l	200		
Iodomethane	ND	ug/l	200		
1,2,3-Trichloropropane	ND	ug/l	200		
Styrene	ND	ug/l	20.		
Dichlorodifluoromethane	ND	ug/l	200		
Acetone	ND	ug/l	200		
Carbon disulfide	ND	ug/l	200		
2-Butanone	ND	ug/l	200		
Vinyl acetate	ND	ug/l	200		
4-Methyl-2-pentanone	ND	ug/l	200		
2-Hexanone	ND	ug/l	200		
Ethyl methacrylate	ND	ug/l	200		
Acrolein	ND	ug/l	500		
Acrylonitrile	ND	ug/l	200		
Bromochloromethane	ND	ug/l	100		
Tetrahydrofuran	ND	ug/l	400		
2,2-Dichloropropane	ND	ug/l	100		
1,2-Dibromoethane	ND	ug/l	80.		
l,3-Dichloropropane	ND	uq/l	100		
1,1,1,2-Tetrachloroethane	ND	ug/l	20.		
Bromobenzene	ND	ug/l	100		
n-Butylbenzene	34.	ug/l	20.		
sec-Butylbenzene	ND	ug/l	20.		
tert-Butylbenzene	ND	ug/l	100		
o-Chlorotoluene	ND	ug/l	100		
p-Chlorotoluene	ND	ug/l	100		
1,2-Dibromo-3-chloropropane	ND	ug/l	100		
Hexachlorobutadiene	ND	ug/l	40.		
Isopropylbenzene	ND	ug/l	20.		
o-Isopropyltoluene	25.	ug/l	20.		
Naphthalene	160	ug/l	100		
n-Propylbenzene	ND	ug/l	20.		
1,2,3-Trichlorobenzene	ND	ug/l	100		
,2,4-Trichlorobenzene	ND	ug/l	100		
,3,5-Trimethylbenzene	400	ug/l	100		
1,2,4-Trimethylbenzene	1100	ug/l	100		
rans-1,4-Dichloro-2-butene	ND	ug/l	100		
Sthyl ether	ND	ug/l	100		
Gurrogate(s)	Recovery		QC Cri	teria	
,2-Dichloroethane-d4	105.	%			
Coluene-d8	99.0	8			
-Bromofluorobenzene	93.0	્ર			
Dibromofluoromethane	103.	95			
VOC's by GC/MS 8270				1 8270C	0315 19:30 0317 15:52 HL
cenaphthene	ND	ug/l	4.9		



MW/CB-5 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP ANAL	ID
SVOC's by GC/MS 8270 continued	d .			. 1	8270C	0315 19:30 0317 15:5	2 HL
Senzidine	ND	ug/l	49.			,	
1,2,4-Trichlorobenzene	ND	ug/l	4.9				
Hexachlorobenzene	ND	ug/l	4.9				
Bis(2-chloroethyl)ether	ND	ug/l	4.9				
1-Chloronaphthalene	ND	ug/l	4.9				
2-Chloronaphthalene	ND	ug/l	5.9				
1,2-Dichlorobenzene	ND	ug/l	4.9				
1,3-Dichlorobenzene	ND	ug/l	4.9				
1,4-Dichlorobenzene	ND	ug/l	4.9				
3,3'-Dichlorobenzidine	ND	ug/1	49.				
2,4-Dinitrotoluene	ND	ug/l	5.9				
· ·	ND	ug/l	4.9				
2,6-Dinitrotoluene	ND	ug/l	4.9				
Azobenzene Fluoranthene	ND	ug/1	4.9				
4-Chlorophenyl phenyl ether	ND	ug/l	4.9				
4-Chiorophenyl phenyl ether	ND	ug/l	4.9				
Bis(2-chloroisopropyl)ether	ND	ug/l	4.9				
Bis (2-chloroethoxy) methane	ND	ug/l	4.9				
Hexachlorobutadiene	ND	ug/l	9.9				
Hexachlorocyclopentadiene	ND	ug/l	9.9				
Hexachloroethane	ND	ug/1	4.9				
Isophorone	ND	ug/l	4.9				
Naphthalene	100	ug/l	4.9				
Nitrobenzene	ND	ug/l	4.9				
NDPA/DPA	ND	ug/l	15.				
n-Nitrosodi-n-propylamine	ND	ug/l	4.9				
Bis(2-ethylhexyl)phthalate	ND	ug/1	9.9				
Butyl benzyl phthalate	ND	ug/l	4.9				
Di-n-butylphthalate	ND	ug/l	4.9				
Di-n-octylphthalate	ND	ug/l	4.9				
Diethyl phthalate	ND	ug/l	4.9	_			
Dimethyl phthalate	ND	ug/l	4.9				
Benzo(a)anthracene	ND	ug/l	4.9				
Benzo(a) pyrene	ND	ug/l	4.9				
Benzo(b) fluoranthene	ND	ug/l	4.9				
Benzo(k) fluoranthene	ND	ug/l	4.9				
Chrysene	ND	ug/l	4.9				
_	ND	ug/l	4.9				
Acenaphthylene Anthracene	ND	ug/l	4.9				
Benzo(ghi)perylene	ND	ug/l	4.9				
Fluorene	ND	ug/l	4.9				
Phenanthrene	ND	ug/l	4.9				
Dibenzo(a,h)anthracene	ND	ug/l	4.9				
Indeno(1,2,3-cd)pyrene	ND	ug/l	6.9				
	ND	ug/l	4.9				
Pyrene	ND	ug/l	4.9				
Benzo(e)pyrene	ND	ug/l	4.9				
Biphenyl	ND	ug/l	4.9				
Perylene	ND	ug/l	9.9				



Laboratory Sample Number: L0502589-03

MW/CB-5 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHO	D D.	DATE	
					PREP	ANAL	ID
SVOC's by GC/MS 8270 continue	d			2 00000			
4-Chloroaniline	ND	ug/l	4.9	1 8270C	0315 19:3	0317 15:5	2 HL
1-Methylnaphthalene	6.7	ug/l	4.9				
2-Nitroaniline	ND	ug/l	4.9				
3-Nitroaniline	ND	ug/l	4.9				
4-Nitroaniline	ND	ug/l	6.9				
Dibenzofuran	ND	ug/l	4.9				
a,a-Dimethylphenethylamine	ND	ug/l	49.				
Hexachloropropene	ND	ug/l	9.9				
Nitrosodi-n-butylamine	ND	ug/l					
2-Methylnaphthalene	ND	=	9.9				
1,2,4,5-Tetrachlorobenzene	ND	ug/1	7.9				
Pentachlorobenzene	ND	ug/1	20.				
a-Naphthylamine	ND	ug/l	20.				
b-Naphthylamine	ND	ug/l	20.				
Phenacetin	ND	ug/l	20.				
Dimethoate	ND	ug/l	9.9				
4-Aminobiphenvl	ND	ug/l	20.				
Pentachloronitrobenzene	ND	ug/l	9.9				
Isodrin	ND	ug/l	9.9				
p-Dimethylaminoazobenzene		ug/l	9.9				
Chlorobenzilate	ND	ug/l	9.9				
3-Methylcholanthrene	ND	ug/l	20.				
Ethyl Methanesulfonate	ND	ug/l	20.				
Acetophenone	ND	ug/l	15.				
Nitrosodipiperidine	55.	ug/l	20.				
7,12-Dimethylbenz(a)anthracene	ND	ug/l	20.				
n-Nitrosodimethylamine		ug/l	9.9				
2,4,6-Trichlorophenol	ND	ug/l	49.				
o-Chloro-m-cresol	ND	ug/l	4.9				
2-Chlorophenol	ND	ug/l	4.9				
2,4-Dichlorophenol	ND	ug/l	5.9				
2,4-Dimethylphenol	ND	ug/l	9.9	•			
-,4 Dimethylphenol 2-Nitrophenol	12.	ug/l	9.9				
-Nitrophenol	ND	ug/l	20.				
,4-Dinitrophenol	ND	ug/l	9.9				
	ND	ug/l	20.				
,6-Dinitro-o-cresol	ND	ug/l	20.				
entachlorophenol	ND	ug/l	20.				
henol	ND	ug/l	6.9				
-Methylphenol	ND	ug/l	5.9				
-Methylphenol/4-Methylphenol	ND	ug/l	5.9				
,4,5-Trichlorophenol	ND	ug/l	4.9				
,6-Dichlorophenol	ND	ug/l	9.9				
enzoic Acid	ND	ug/l	49.				
enzyl Alcohol	ND	ug/l	9.9				
arbazole	ND	ug/l	4.9				
yridine	ND	ug/l	49.				
-Picoline	ND	ug/l	20.				
ronamide	ND	ug/l	20.				
ethyl methanesulfonate	ND	ug/l	20.				

Laboratory Sample Number: L0502589-03

MW/CB-5 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METH	IOD	DATE PREP ANAL	ID
				1 82700		0315 19:30 0317 15:5	2 HL
SVOC's by GC/MS 8270 contin	ued		OC Cri		-		
Surrogate(s)	Recovery	8	QC CII				
2-Fluorophenol	25.0	%					
Phenol-d6	27.0	% %					
Nitrobenzene-d5	99.0						
2-Fluorobiphenyl	90.0	%					
2,4,6-Tribromophenol	62.0	o)6 o)6					
4-Terphenyl-dl4	98.0	б					
PAH by GC/MS SIM 8270M		. (1	0.20	1 8270	C-M	0315 19:30 0316 16:0	17 RL
Acenaphthene	2.0	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	1.9	ug/l	0.20				
Hexachlorobutadiene	ND	ug/l	0.49				
Naphthalene	>40	ug/l	.2				
Benzo(a)anthracene	0.43	ug/l	0.20				
Benzo(a)pyrene	0.38	ug/l	0.20				
Benzo(b) fluoranthene	0.25	ug/l	0.20				
Benzo(k)fluoranthene	0.30	ug/l	0.20				
Chrysene	0.43	ug/l	0.20				
Acenaphthylene	ND	ug/l	0.20				
Anthracene	0.79	ug/l	0.20				
Benzo(ghi)perylene	0.34	ug/l	0.20				
Fluorene	1.9	ug/l	0.20				
Phenanthrene	4.1	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	0.22	ug/l	0.20				
Pyrene	1.8	ug/l	0.20				
1-Methylnaphthalene	4.3	ug/l	0.20				
2-Methylnaphthalene	6.3	ug/l	0.20				
Pentachlorophenol	ND	ug/l	0.79				
Hexachlorobenzene	ND	ug/l	0.79	-			
Perylene	ND	ug/l	0.20				
Biphenyl	0.56	ug/l	0.20				
2,6-Dimethylnaphthalene	0.54	ug/l	0.20				
1-Methylphenanthrene	0.20	ug/l	0.20				
Benzo(e) Pyrene	0.26	ug/l	0.20				
Hexachloroethane	ND	ug/l	0.79				
Surrogate(s)	Recover	У	-	riteria			
2-Fluorophenol	28.0	왕	21-1				
Phenol-d6	31.0	%	10-1				
Nitrobenzene-d5	107.	96	23-1				
2-Fluorobiphenyl	87.0	96	43-1				
2,4,6-Tribromophenol	50.0	ે	10-1				
4-Terphenyl-d14	97.0	8	33-1	20			
				1 82	70C-M	0315 19:30 0317 13	3:12 R
PAH by GC/MS SIM 8270M	110	ug/l	0.99				
Naphthalene	TIO	49/1					





Laboratory Sample Number: L0502589-03

MW/CB-5 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
Polyable in the day of the					
Polychlorinated Biphenyls Aroclor 1221	•			1 8082	0315 22:15 0316 23:31 JE
_	ND	ug/l	0.515		4.
Aroclor 1232	ND	ug/l	0.515		
Aroclor 1242/1016	ND	ug/l	0.515		
Aroclor 1248	ND	ug/l	0.515		
Aroclor 1254	ND	ug/l	0.515		
Aroclor 1260	ND	ug/l	0.515		
Surrogate(s)	Recovery		QC Crite	aria	
2,4,5,6-Tetrachloro-m-xylene	70.0	%	30-150	or ru	
Decachlorobiphenyl	62.0	8	30-150		
Organochlorine Pesticides				1 000*	
Delta-BHC	ND	ug/l	0.020	1 8081	0315 22:20 0316 17:56 AK
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l			
Heptachlor epoxide	ND	ug/1	0.020 0.020		
Endrin	ND	ug/1 ug/l			
Endrin aldehyde	ND	-	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l	0.040		
1,4'-DDE	ND	ug/l	0.040		•
1,4'-DDD	ND	ug/l	0.040		
1,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.040		
Endosulfan II	ND	ug/l	0.020		
Indosulfan sulfate		ug/l	0.040		
Methoxychlor	ND ND	ug/l	0.040		
oxaphene		ug/l	0.200		
Chlordane	ND	ug/l	0.200	*	
is-Chlordane	ND	ug/l	0.200		
rans-Chlordane	ND	ug/l	0.020		
-and onfordane	ND	ug/l	0.020		
urrogate(s)	Recovery		QC Crite	ria	
,4,5,6-Tetrachloro-m-xylene	55.0	%	30-150		
ecachlorobiphenyl	53.0	ે	30-150		

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-04

Date Collected: 14-MAR-2005 11:05

MW/CB-11 (GROUNDWATER)

Date Received: 15-MAR-2005

Sample Matrix: WATER

Date Reported : 21-MAR-2005

Condition of Sample: Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA!	
						PREP ANAL	
Total Metals							
Aluminum, Total	97.0	mg/l	0.050	1	6020		0321 16:17 RW
Antimony, Total	ND	mg/l	0.0010	1	6020		0321 16:17 RW
Arsenic, Total	0.0212	mg/l	0.0020	1	6020		0321 16:17 RW
Barium, Total	0.9065	mg/l	0.0010	1	6020		0321 16:17 RW
Beryllium, Total	0.0074	mg/l	0.0025	1	6020		0321 16:17 RW
Cadmium, Total	ND	mg/l	0.0020	1	6020		0321 16:17 RW
Calcium, Total	159.	mg/l	1.00	1	6020		0321 16:17 RW
Chromium, Total	0.2888	mg/l	0.0010	1	6020		0321 16:17 RW
Cobalt, Total	0.0832	mg/l	0.0005	1	6020		0321 16:17 RW
Copper, Total	0.2924	mg/l	0.0025	1	6020		0321 16:17 RV
Iron, Total	172.	mg/l	0.050	1	6020		0321 16:17 RV
Lead, Total	0.2142	mg/l	0.0010	1	6020		0321 16:17 RV
Magnesium, Total	52.1	mg/l	0.050	1	6020	0316 16:00	0321 16:17 RV
Manganese, Total	3.194	mg/l	0.0010	1	6020	0316 16:00	0321 16:17 RW
Mercury, Total	0.0004	mg/l	0.0002	1	7470A		0317 13:32 D
Nickel, Total	0.1905	mg/l	0.0025	1	6020		0321 16:17 RV
Potassium, Total	27.0	mg/l	0.500	1	6020	0316 16:00	0321 16:17 R
Selenium, Total	0.011	mg/l	0.005	1	6020	0316 16:00	0321 16:17 RV
Silver, Total	0.0006	mq/1	0.0005	1,	6020	0316 16:00	0321 16:17 R
Sodium, Total	328.	mg/l	1.00	1	6020		0317 16:33 R
Thallium, Total	0.0012	mg/l	0.0005	1	6020	0316 16:00	0321 16:17 R
Vanadium, Total	0.2302	mg/l	0.0010	1	6020		0321 16:17 R
Zinc, Total	0.4720	mg/l	0.0250	1	6020	0316 16:00	0321 16:17 R
Dissolved Metals							
Aluminum, Dissolved	0.015	mg/l	0.010	1	6020		0317 14:59 R
Antimony, Dissolved	0.0019	mg/l	0.0002	1	. 6020		0317 14:59 R
Arsenic, Dissolved	0.0005	mg/l	0.0004	1	6020		0317 14:59 R
Barium, Dissolved	0.2053	mg/l	0.0002	. 1	6020		0317 14:59 R
Beryllium, Dissolved	ND	mg/l	0.0005	. 1	6020		0 0318 13:45 P
Cadmium, Dissolved	ND	mg/l	0.0004	. :	6020	0316 16:0	0317 14:59 F
Calcium, Dissolved	185.	mg/l	2.00		6020	0316 16:0	0317 17:20 F
Chromium, Dissolved	0.0002	mg/l	0.0002		1 6020	0316 16:0	0 0317 14:59 F
Cobalt, Dissolved	0.0016	mg/l	0.0001		1 6020	0316 16:0	0317 14:59 F
	0.0168	mg/l	0.0005		1 6020	0316 16:0	0 0317 14:59 F
Copper, Dissolved		_	0.010		1 6020	0316 16:0	0 0317 14:59 F
Iron, Dissolved	0.330	mg/1	0.010		1 9070	0310 10:0	0 001/ 17.00



Laboratory Sample Number: L0502589-04

MW/CB-11 (GROUNDWATER)

PARAMETER	RESULT	UNITS RDL	REF	METHOD	DATE II			
						PREP ANAL		
Dissolved Metals			<i>j</i>			,		
Lead, Dissolved	0.0012	mg/l	0.0002	1	6020	0316 16:00	0317 14.	EO DW
Magnesium, Dissolved	27.7	mg/l	0.010	1	6020	0316 16:00		
Manganese, Dissolved	1.362	mg/1	0.0002	1	6020	0316 16:00		
Mercury, Dissolved	ND	mg/1	0.0002	1	7470A	0316 16:00		
Nickel, Dissolved	0.0076	mg/l	0.0005	1	6020	0316 16:00		
Potassium, Dissolved	19.8	mg/l	0.100	1	6020	0316 16:00		
Selenium, Dissolved	0.002	mg/l	0.001	1	6020	0316 16:00		
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00		
Sodium, Dissolved	335.	mg/l	1.00	1	6020	0316 16:00		
Thallium, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00		
Vanadium, Dissolved	0.0004	mg/l	0.0002	1	6020	0316 16:00		
Zinc, Dissolved	0.0099	mg/l	0.0050	1	6020	0316 16:00		
Volatile Organics by GC/MS 8	260			1	8260B		0317 11:	AK DT
Methylene chloride	ND	ug/l	5.0	_			11;	.v. D1 .
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
l,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	1.5	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Trichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
l,1,1-Trichloroethane	ND	ug/l	0.50					
Bromodichloromethane	ND	ug/l	0.50					
crans-1,3-Dichloropropene	ND	ug/l	0.50					
cis-1,3-Dichloropropene	ND	ug/l	0.50				4	
l,1-Dichloropropene	ND	ug/l	2.5	-				
Bromoform	ND	ug/l	2.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	1.0	ug/l	0.50					
Coluene	ND	ug/l	0.75					
Ithylbenzene	3.6	ug/l	0.50					
Chloromethane	ND	ug/l	2.5					
Bromomethane	ND	ug/l	1.0					
inyl chloride	ND	ug/l	1.0					
Chloroethane	ND	ug/l	1.0					
,1-Dichloroethene	ND	ug/l	0.50					
rans-1,2-Dichloroethene	ND	ug/l	0.75					
'richloroethene	ND	ug/l	0.50					
,2-Dichlorobenzene	ND	ug/l	2.5					
,3-Dichlorobenzene	ND	ug/l	2.5					
.,4-Dichlorobenzene	ND	ug/l	2.5					
ethyl tert butyl ether	ND	ug/l	1.0					
/m-Xylene	12.	ug/l	0.50					
-Xylene	2.2	ug/l	0.50					

 $\hbox{{\tt Comments:}} \hbox{{\tt Complete list of References and Glossary of Terms found in Addendum I} \\$

Laboratory Sample Number: L0502589-04

MW/CB-11 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by GC/MS 82	60 continu	ed		1 8260B	0317 11:4	6 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50			
Dibromomethane	ND	ug/l	5.0			
1,4-Dichlorobutane	ND	ug/l	5.0			
Iodomethane	ND	ug/l	5.0			
1,2,3-Trichloropropane	ND	ug/l	5.0			
Styrene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
Acetone	ND	ug/l	5.0			
Carbon disulfide	ND	ug/l	5.0			
2-Butanone	ND	ug/l	5.0			
Vinyl acetate	ND	ug/l	5.0			
4-Methyl-2-pentanone	ND	ug/l	5.0			
2-Hexanone	ND	ug/l	5.0			
Ethyl methacrylate	ND	ug/l	5.0			
Acrolein	ND	ug/l	12.			
Acrylonitrile	ND	ug/l	5.0			
Bromochloromethane	ND	ug/l	2.5			
Tetrahydrofuran	ND	ug/l	10.			
2,2-Dichloropropane	ND	ug/l	2.5			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
Bromobenzene	ND	ug/l	2.5			
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	ug/l	0.50			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
Isopropylbenzene	4.8	ug/l	0.50	-		
p-Isopropyltoluene	0.74	ug/l	0.50			
Naphthalene	3.2	ug/l	2.5			
n-Propylbenzene	1.8	ug/l	0.50			
1,2,3-Trichlorobenzene	ND	ug/l	2.5			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			
1,3,5-Trimethylbenzene	2.6	ug/l	2.5			
1,2,4-Trimethylbenzene	7.4	ug/l	2.5			
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5			
Ethyl ether	ND	ug/l	2.5			
Surrogate(s)	Recovery	0	QC Cr	iteria		
1,2-Dichloroethane-d4	109.	ૄ				
Toluene-d8	101.	00				
4-Bromofluorobenzene	94.0	90				
Dibromofluoromethane	102.	90				
SVOC's by GC/MS 8270			4 0	1 8270C	0315 19:30 0317 16:	17 HL
Acenaphthene	ИD	ug/l	4.9			



Laboratory Sample Number: L0502589-04

MW/CB-11 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL		
SVOC's by GC/MS 8270 continue	d ·			1 8270C	0315 19:30 0317 16:17 HL		
Benzidine	ND	ug/l	49.				
1,2,4-Trichlorobenzene	ND	ug/l	4.9				
Hexachlorobenzene	ND	ug/l	4.9				
Bis(2-chloroethyl)ether	ND	ug/l	4.9				
1-Chloronaphthalene	ND	ug/l	4.9				
2-Chloronaphthalene	ND	ug/l	5.9				
1,2-Dichlorobenzene	ND	ug/l	4.9				
1,3-Dichlorobenzene	ND	ug/l	4.9				
1,4-Dichlorobenzene	ND	ug/l	4.9				
3,3'-Dichlorobenzidine	ND	ug/l	49.				
2,4-Dinitrotoluene	ND	ug/l	5.9				
2,6-Dinitrotoluene	ND	ug/l	4.9				
Azobenzene	ND	ug/l	4.9				
Fluoranthene	13.	ug/1	4.9				
4-Chlorophenyl phenyl ether	ND	ug/l	4.9				
4-Bromophenyl phenyl ether	ND	ug/l	4.9				
Bis(2-chloroisopropyl)ether	ND	ug/l	4.9				
Bis(2-chloroethoxy)methane	ND	ug/l	4.9				
Hexachlorobutadiene	ND	ug/l	9.8				
Hexachlorocyclopentadiene	ND	ug/l	9.8				
Hexachloroethane	ND	ug/l	4.9				
Isophorone	ND	ug/l	4.9				
Naphthalene	ND	ug/l	4.9				
Nitrobenzene	ND	ug/l	4.9				
NDPA/DPA	ND	ug/l	15.				
n-Nitrosodi-n-propylamine	ND	ug/l	4.9				
Bis(2-ethylhexyl)phthalate	ND	ug/l	9.8				
Butyl benzyl phthalate	ND	ug/l	4.9	•			
Di-n-butylphthalate	ND	ug/l	4.9				
Di-n-octylphthalate	ND	ug/l	4.9				
Diethyl phthalate	ND	ug/l	4.9	•			
Dimethyl phthalate	ND	ug/l	4.9				
Benzo(a)anthracene	ND	ug/l	4.9				
Benzo(a)pyrene	ND	ug/l ug/l					
Benzo(b) fluoranthene	ND		4.9				
Benzo(k) fluoranthene		ug/l	4.9				
Chrysene	ND	ug/l	4.9				
Acenaphthylene	ND	ug/l	4.9				
Anthracene	ND	ug/l	4.9				
Benzo(ghi)perylene	ND	ug/l	4.9				
Fluorene	ND	ug/l	4.9				
	ND	ug/l	4.9				
Phenanthrene	5.5	ug/l	4.9				
Dibenzo(a, h) anthracene	ND	ug/l	4.9				
ndeno(1,2,3-cd)pyrene	ND	ug/l	6.8				
yrene	28.	ug/l	4.9				
Benzo(e)pyrene	ND	ug/l	4.9				
Biphenyl	ND	ug/l	4.9				
Perylene	ND	ug/l	4.9				
aniline	ND	ug/l	9.8				

Laboratory Sample Number: L0502589-04

MW/CB-11 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II PREP ANAL		
					ENSE ANALI		
SVOC's by GC/MS 8270 continued				1 8270C	0315 19:30 0317 16:17 HL		
4-Chloroaniline	ND	ug/l	4.9				
1-Methylnaphthalene	ND	ug/l	4.9				
2-Nitroaniline	ND	ug/l	4.9				
3-Nitroaniline	ND	ug/l	4.9				
4-Nitroaniline	ND	ug/l	6.8				
Dibenzofuran	ND	ug/l	4.9				
a,a-Dimethylphenethylamine	ND	ug/l	49.				
Hexachloropropene	ND	ug/l	9.8				
Nitrosodi-n-butylamine	ND	ug/l	9.8				
2-Methylnaphthalene	ND	ug/l	7.8				
1,2,4,5-Tetrachlorobenzene	ИD	ug/l	20.				
Pentachlorobenzene	ND	ug/l	20.				
a-Naphthylamine	ND	ug/l	20.				
b-Naphthylamine	ND	ug/l	20.				
Phenacetin	ND	ug/l	9.8				
Dimethoate	ND	ug/l	20.				
4-Aminobiphenyl	ND	ug/l	9.8				
Pentachloronitrobenzene	ND	ug/l	9.8				
Isodrin	ND	ug/l	9.8				
p-Dimethylaminoazobenzene	ND	ug/l	9.8				
Chlorobenzilate	ND	ug/l	20.				
3-Methylcholanthrene	ND	ug/l	20.				
Ethyl Methanesulfonate	ND	ug/l	15.				
Acetophenone	ND	ug/l	20.				
Nitrosodipiperidine	ND	ug/l	20.				
7,12-Dimethylbenz(a)anthracene	ND	ug/l	9.8				
n-Nitrosodimethylamine	ND	ug/l	49.				
2,4,6-Trichlorophenol	ND	ug/l	4.9				
p-Chloro-m-cresol	ND	ug/l	4.9				
2-Chlorophenol	ND	ug/l	5.9				
2,4-Dichlorophenol	ND	ug/l	9.8	•			
2,4-Dimethylphenol	ND	ug/l	9.8				
2-Nitrophenol	ND	ug/l	20.				
4-Nitrophenol	ND	ug/l	9.8				
2,4-Dinitrophenol	ND	ug/l	20.				
4,6-Dinitro-o-cresol	ND	ug/l	20.				
Pentachlorophenol	ND	ug/l	20.				
Phenol	ND	ug/l	6.8				
2-Methylphenol	ND	ug/l	5.9				
3-Methylphenol/4-Methylphenol	ND	ug/l	5.9				
2,4,5-Trichlorophenol	ND	ug/l	4.9				
2,6-Dichlorophenol	ND	ug/l	9.8				
Benzoic Acid	ND	ug/l	49.				
Benzyl Alcohol	ИD	ug/l	9.8				
Carbazole	ND	ug/l	4.9				
Pyridine	ND	ug/l	49.				
2-Picoline	ИD	ug/l	20.				
Pronamide	ND	ug/l	20.				
Methyl methanesulfonate	ND	ug/l	20.				



Laboratory Sample Number: L0502589-04

MW/CB-11 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE I		
					PREP ANAL		
SVOC's by GC/MS 8270 contin	nued			1 8270€	0315 19:30 0317 16:17 HL		
Surrogate(s)	Recovery		QC Cr:	iteria			
2-Fluorophenol	47.0	용					
Phenol-d6	37.0	읭					
Nitrobenzene-d5	83.0	9					
2-Fluorobiphenyl	75.0	9					
2,4,6-Tribromophenol	87.0	8					
4-Terphenyl-d14	57.0	8					
PAH by GC/MS SIM 8270M			,	1 8270C-M	0315 19:30 0316 16:53 RL		
Acenaphthene	ND	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	15.	ug/l	0.20				
Hexachlorobutadiene	ND	ug/l	0.49				
Naphthalene	1.1	ug/l	0.20				
Benzo(a)anthracene	0.30	ug/l	0.20				
Benzo(a)pyrene	0.55	ug/l	0.20				
Benzo(b) fluoranthene	0.42	ug/l	0.20				
Benzo(k)fluoranthene	0.58	ug/l	0.20				
Chrysene	0.51	ug/l	0.20				
Acenaphthylene	0.31	ug/l	0.20				
Anthracene	0.24	ug/l	0.20				
Benzo(ghi)perylene	3.3	ug/l	0.20				
Fluorene	0.53	ug/l	0.20				
Phenanthrene	5.9	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	0.68	ug/l	0.20				
Pyrene	30.	ug/l	0.20				
- L-Methylnaphthalene	ND	ug/l	0.20				
2-Methylnaphthalene	ND	ug/l	0.20				
Pentachlorophenol	ND	ug/l	0.78				
Mexachlorobenzene	ND	ug/l	0.78				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
2,6-Dimethylnaphthalene	ND	ug/l	0.20				
-Methylphenanthrene	ND	ug/l	0.20				
Benzo(e)Pyrene	1.2	ug/l	0.20				
exachloroethane	ND	ug/l	0.78				
Surrogate(s)	Recovery		QC Cri	teria			
?-Fluorophenol	49.0	96	21-120				
henol-d6	39.0	96	10-120				
itrobenzene-d5	82.0	9	23-120				
-Fluorobiphenyl	78.0	96	43-120				
4,4,6-Tribromophenol	69.0	90	10-120				
-Terphenyl-d14	58.0	000	33-120				
olychlorinated Biphenyls				1 8082	0315 22:15 0317 00:29 JB		
roclor 1221	ND	ug/l	0.532	1 0002	0010 55.10 031/ 00:59 DB		

Laboratory Sample Number: L0502589-04

MW/CB-11 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL I	REF METHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls con	tinued			1 8082	0315 22:15 0317/00:29 JB
Aroclor 1242/1016	ND	ug/l	0.532		
Aroclor 1248	ND	ug/l	0.532		
Aroclor 1254	ND	ug/l	0.532		
Aroclor 1260	ND	ug/l	0.532		
Surrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	62.0	%	30-150		
Decachlorobiphenyl	20.0	96	30-150		
Organochlorine Pesticides				1 8081	0315 22:20 0316 18:25 AK
Delta-BHC	ND	ug/l	0.020		
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l	0.020		
Heptachlor epoxide	ND	ug/l	0.020		
Endrin	ND	ug/l	0.040		
Endrin aldehyde	ND	ug/l	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.020		
Endosulfan II	ND	ug/l	0.040		
Endosulfan sulfate	ND	ug/l	0.040		
Methoxychlor	ND	ug/l	0.200		
Toxaphene	ND	ug/l	0.200		
Chlordane	ND	ug/l	0.200		
cis-Chlordane	ND	ug/l	0.020	•	
trans-Chlordane	ND	ug/l	0.020		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	67.0	ક્ર	30-150		
Decachlorobiphenyl	18.0	엉	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-05

MW/CB-18 (GROUNDWATER)

Date Collected: 14-MAR-2005 12:10 Date Received: 15-MAR-2005

Sample Matrix:

WATER

Date Reported : 21-MAR-2005

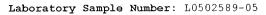
Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Total Metals						-		
Aluminum, Total	4.65	mg/l	0.010	1	6020	0316 16:00	0217 12.4	C DE
Antimony, Total	0.0004	mg/l	0.0002		6020	0316 16:00		
Arsenic, Total	0.0026	mg/l	0.0002			0316 16:00		
Barium, Total	0.1437	mg/l	0.0004		6020	0316 16:00		
Beryllium, Total	ND	mg/l	0.0005		6020	0316 16:00		
Cadmium, Total	ND	mg/l	0.0004			0316 16:00		
Calcium, Total	144.	mg/l	2.00	1	6020	0316 16:00		
Chromium, Total	0.0087	mg/l	0.0002		6020	0316 16:00		
Cobalt, Total	0.0041	mg/l	0.0001			0316 16:00		
Copper, Total	0.0200	mg/l	0.0001		6020	0316 16:00		
Iron, Total	7.16	mg/l	0.010	1	6020	0316 16:00		
Lead, Total	0.0427	mg/l	0.0002			0316 16:00		
Magnesium, Total	27.6	mg/1	0.010	1	6020	0316 16:00		
Manganese, Total	2.331	mg/l	0.0002	-	6020	0316 16:00		
Mercury, Total	ND	mg/l	0.0002		7470A	0316 16:00		
Nickel, Total	0.0085	mg/l	0.0005		6020	0316 16:00		
Potassium, Total	29.0	mg/l	0.100	1		0316 16:00		
Selenium, Total	0.001	mg/l	0.001	1		0316 16:00		
Silver, Total	ND	mg/l	0.0001	-	6020	0316 16:00		
Sodium, Total	109.	mg/l	0.100	1	6020	0316 16:00		
Thallium, Total	ND	mg/l	0.0001			0316 16:00		
Vanadium, Total	0.010	mg/l	0.0002		6020	0316 16:00		
Zinc, Total	0.0816	mg/l	0.0050			0316 16:00		
Dissolved Metals								
Aluminum, Dissolved	0.013	mg/l	0.010	1	6020	0316 16:00	0317 15:0	4 RW
Antimony, Dissolved	0.0019	mg/l	0.0002	1	6020	0316 16:00	0317 15:0	4 RW
Arsenic, Dissolved	0.0014	mg/l	0.0004	1	6020	0316 16:00	0317 15:0	4 RW
Barium, Dissolved	0.1070	mg/l	0.0002	1	6020	0316 16:00	0317 15:0	4 RW
Beryllium, Dissolved	ND	mg/l	0.0005	1	6020	0316 16:00	0318 13:5	O RW
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0316 16:00	0317 15:0	4 RW
Calcium, Dissolved	156.	mg/l	2.00	1	6020	0316 16:00	0317 17:2	6 RW
Chromium, Dissolved	0.0002	mg/l	0.0002	1	6020	0316 16:00	0317 15:0	4 RW
Cobalt, Dissolved	0.0015	mg/l	0.0001	1	6020	0316 16:00	0317 15:0	4 RW
Copper, Dissolved	0.0301	mg/l	0.0005	1	6020	0316 16:00	0317 15:0	4 RW
Iron, Dissolved	0.820	mq/l	0.010	1	6020	0316 16:00	0317 15:0	4 RW



MW/CB-18 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Dissolved Metals					
Lead, Dissolved	0.0009	mg/l	0.0002	1 6020	0316 16:00 0317 15:04 RW
Magnesium, Dissolved	30.0	mg/l	0.010	1 6020	0316 16:00 0317 15:04 RW
Manganese, Dissolved	2.620	mg/l	0.0002		0316 16:00 0317 15:04 RW
Mercury, Dissolved	ND	mg/l	0.0002		0316 16:00 0317 11:35 DM
Nickel, Dissolved	0.0075	mg/l	0.0005		0316 16:00 0317 15:04 RW
Potassium, Dissolved	31.0	mg/l	0.100	1 6020	0316 16:00 0317 15:04 RW
Selenium, Dissolved	ND	mg/l	0.001	1 6020	0316 16:00 0317 15:04 RW
Silver, Dissolved	ND	mg/l	0.0001		0316 16:00 0317 15:04 RW
Sodium, Dissolved	111.	mg/l	0.100	1 6020	0316 16:00 0317 15:04 RW
Thallium, Dissolved	ND	mg/1	0.0001		0316 16:00 0317 15:04 RW
Vanadium, Dissolved	0.0007	mg/l	0.0002		0316 16:00 0317 15:04 RW
Zinc, Dissolved	0.0267	mg/l	0.0050		0316 16:00 0317 15:04 RW
Walstile Openion by CC/MC	2260			1 8260B	0317 12:22 BT
Volatile Organics by GC/MS {	ND	ug/l	5.0	1 62606	0917 12.22 151
Methylene chloride 1,1-Dichloroethane	ND	ug/1 ug/l	0.75		
Chloroform	1.6	ug/l ug/l	0.75		
Carbon tetrachloride	ND	ug/1 ug/1	0.73		
1,2-Dichloropropane	ND	ug/1 ug/l	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.50		
Chlorobenzene	ND	ug/l	0.50		
Trichlorofluoromethane	ND	ug/l	2.5		
1,2-Dichloroethane	ND	ug/l	0.50		
1,1,1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/1	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/1	2.0	•	
1,1,2,2-Tetrachloroethane	ND	ug/1 ug/l	0.50		
Benzene	ND	ug/l	0.50		
Toluene	ND	ug/l	0.75		
Ethylbenzene	0.84	ug/1	0.73		
Chloromethane	ND	ug/l	2.5		
Bromomethane		-	1.0		
	ND ND	ug/l ug/l	1.0		
Vinyl chloride		ug/1 ug/1	1.0		
Chloroethane 1,1-Dichloroethene	ND	ug/l ug/l	0.50		
trans-1,2-Dichloroethene	ND ND	ug/l	0.75		
Trichloroethene		ug/l ug/l	0.75		
	ND	-	2.5		
1,2-Dichlorobenzene	ND	ug/l			
1,3-Dichlorobenzene	ND	ug/l	2.5		
1,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	36.	ug/l	1.0		
p/m-Xylene	3.1	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		



Laboratory Sample Number: L0502589-05

MW/CB-18 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID	
					PREP ANAL	
Volatile Organics by GC/MS 8	260 continu	ed		1 8260B	0317 12:22 BT	
cis-1,2-Dichloroethene	ND	ug/l	0.50			
Dibromomethane	ND	ug/l	5.0			
1,4-Dichlorobutane	ND	ug/l	5.0			
Iodomethane	ND	ug/l	5.0			
1,2,3-Trichloropropane	ND	ug/l	5.0			
Styrene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
Acetone	ND	ug/l	5.0			
Carbon disulfide	ND	ug/l	5.0			
2-Butanone	ND	ug/l	5.0			
Vinyl acetate	ND	ug/l	5.0			
4-Methyl-2-pentanone	ND	ug/l	5.0			
2-Hexanone	ND	ug/l	5.0			
Ethyl methacrylate	ND	ug/l	5.0			
Acrolein	ND	ug/l	12.			
Acrylonitrile	ND	ug/l	5.0			
Bromochloromethane	ND	ug/l	2.5			
Tetrahydrofuran	ND	ug/l	10.			
2,2-Dichloropropane	ND	ug/l	2.5			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
Bromobenzene	ND	ug/l	2.5			
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	ug/l	0.50			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/1 ug/1	1.0			
Isopropylbenzene	1.2	ug/l ug/l	0.50			
p-Isopropyltoluene	ND	_	0.50	•		
Naphthalene	ND	ug/l	2.5			
n-Propylbenzene	0.58	ug/l	0.50			
1,2,3-Trichlorobenzene		ug/1				
1,2,4-Trichlorobenzene	ND	ug/l	2.5			
	ND	ug/l	2.5			
1,3,5-Trimethylbenzene	ND	ug/l	2.5			
1,2,4-Trimethylbenzene	ND	ug/l	2.5			
crans-1,4-Dichloro-2-butene	ND	ug/l	2.5			
Ethyl ether	ND	ug/l	2.5			
Surrogate(s)	Recovery	_	QC Cr	iteria		
1,2-Dichloroethane-d4	105.	8				
Foluene-d8	101.	%				
4-Bromofluorobenzene	99.0	%				
Dibromofluoromethane	100.	%				
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 16:43 HL	
Acenaphthene	ND	ug/l	4.9			

Laboratory Sample Number: L0502589-05

MW/CB-18 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continue	ď			1 8270C	0315 19:30 0317 16:43 HL
Benzidine	ND	ug/l	49.	2 . 00100	
1,2,4-Trichlorobenzene	ND	ug/l	4.9		
Hexachlorobenzene	ND	ug/l	4.9		
Bis(2-chloroethyl)ether	ND	ug/l	4.9		
1-Chloronaphthalene	ND	ug/l	4.9		
2-Chloronaphthalene	ND	ug/l	5.9		
1,2-Dichlorobenzene	ND	ug/l	4.9		
1,3-Dichlorobenzene	ND	ug/l	4.9		
1,4-Dichlorobenzene	ND	ug/l	4.9		
3,3'-Dichlorobenzidine	ND	ug/l	49.		
2,4-Dinitrotoluene	ND	ug/l	5.9		
2,6-Dinitrotoluene	ND	ug/l	4.9		
Azobenzene	ND	ug/l	4.9		
Azobenzene Fluoranthene	5.6	ug/l	4.9		
	ND	ug/l	4.9		
4-Chlorophenyl phenyl ether	ND	ug/l	4.9		
4-Bromophenyl phenyl ether Bis(2-chloroisopropyl)ether	ND	ug/l	4.9		
	ND	ug/l	4.9		
Bis (2-chloroethoxy) methane	ND	ug/l	9.8		
Hexachlorobutadiene Hexachlorocyclopentadiene	ND	ug/l	9.8		
2 2	ND	ug/l	4.9		
Hexachloroethane	ND	ug/l	4.9		
Isophorone	ND	ug/l	4.9		
Naphthalene	ND ND	ug/l	4.9		
Nitrobenzene	ND	ug/l	15.		
NDPA/DPA	ND	ug/l	4.9		
n-Nitrosodi-n-propylamine Bis(2-ethylhexyl)phthalate	ND	ug/l	9.8		
	ND	ug/l	4.9		
Butyl benzyl phthalate	ND	ug/l	4.9		
Di-n-butylphthalate	ND	ug/l	4.9		
Di-n-octylphthalate	ND	ug/l	4.9		
Diethyl phthalate	ND	ug/l	4.9	*	
Dimethyl phthalate	ND	ug/l	4.9		
Benzo(a)anthracene	ND	ug/l	4.9		
Benzo(a) pyrene	ND	ug/l	4.9		
Benzo(b) fluoranthene	ND	ug/l	4.9		
Benzo(k)fluoranthene		ug/l	4.9		
Chrysene	ND	ug/1 ug/l	4.9		
Acenaphthylene	ND ND	ug/l	4.9		
Anthracene		ug/l ug/l	4.9		
Benzo(ghi)perylene	ND	ug/l ug/l	4.9		
Fluorene	ND	ug/1 ug/l	4.9		
Phenanthrene	ND	ug/l ug/l	4.9		
Dibenzo(a,h)anthracene	ND	ug/1 ug/1	6.8		
Indeno(1,2,3-cd)pyrene	ND	ug/1 ug/l	4.9		
Pyrene	10.	-	4.9		
Benzo(e)pyrene	ND	ug/l	4.9		
Biphenyl	ND	ug/l			
Perylene	ND	ug/l	4.9		
Aniline	ND	ug/l	9.8		



Laboratory Sample Number: L0502589-05

MW/CB-18 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					TIME ANAL
SVOC's by GC/MS 8270 continued				1 8270C	0315 19:30 0317 16:43 HL
4-Chloroaniline	ND	ug/l	4.9		
l-Methylnaphthalene	ND	ug/l	4.9		
2-Nitroaniline	ND	ug/l	4.9		
3-Nitroaniline	ND	ug/l	4.9		
4-Nitroaniline	ND	ug/l	6.8		
Dibenzofuran	ND	ug/l	4.9		
a,a-Dimethylphenethylamine	ND	ug/l	49.		
Hexachloropropene	ND	ug/l	9.8		
Nitrosodi-n-butylamine	ND	ug/l	9.8		
2-Methylnaphthalene	ND	ug/l	7.8		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
o-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	9.8		
Dimethoate	ND	ug/l	20.		
1-Aminobiphenyl	ND	ug/l	9.8		
Pentachloronitrobenzene	ND	ug/l	9.8		
Isodrin	ND	ug/l	9.8		
o-Dimethylaminoazobenzene	ND	ug/1	9.8		
Chlorobenzilate	ND	ug/l	20.		
B-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Vitrosodipiperidine	ND	ug/l	20.		
7,12-Dimethylbenz(a)anthracene		ug/l	9.8		
n-Nitrosodimethylamine	ND	ug/l	49.		
2,4,6-Trichlorophenol	ND	ug/l	4.9		
o-Chloro-m-cresol	ND	ug/l	4.9		
2-Chlorophenol	ND	ug/1 ug/l	5.9		
2,4-Dichlorophenol	ND	ug/l	9.8	_	
2,4-Dimethylphenol	ND	ug/l	9.8		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	-	9.8		
2,4-Dinitrophenol	ND	ug/l	20.		
1,6-Dinitro-o-cresol		ug/l			
·	ND	ug/l	20.		
Pentachlorophenol Phenol	ND	ug/l	20.		
	ND	ug/l	6.8		
2-Methylphenol	ND	ug/l	5.9		
3-Methylphenol/4-Methylphenol	ND	ug/l	5.9		
4,4,5-Trichlorophenol	ND	ug/l	4.9		
2,6-Dichlorophenol	ND	ug/l	9.8		
Senzoic Acid	ND	ug/l	49.		
Benzyl Alcohol	ND	ug/l	9.8		
Carbazole	ND	ug/l	4.9		
Pyridine	ND	ug/l	49.		
-Picoline	ND	ug/l	20.		
ronamide	ИD	ug/l	20.		
Methyl methanesulfonate	ND	ug/l	20.		

Laboratory Sample Number: L0502589-05

MW/CB-18 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	and .			1 8270C	0315 19:30 0317 16:43 HL
. 3	Recovery		oc cr	iteria	
Surrogate(s)	44.0	8	QC CI.	r ccrru	
2-Fluorophenol	34.0	8			
Phenol-d6 Nitrobenzene-d5	72.0	9			
	72.0	0 0			
2-Fluorobiphenyl		9			
2,4,6-Tribromophenol 4-Terphenyl-dl4	85.0 82.0	%			
PAH by GC/MS SIM 8270M				1 8270C~M	0315 19:30 0316 17:39 RL
Acenaphthene	ND	ug/l	0.20		
2-Chloronaphthalene	ND	ug/l	0.20		
Fluoranthene	6.6	ug/l	0.20		
Hexachlorobutadiene	ND	ug/l	0.49		
Naphthalene	ND	ug/l	0.20		
Benzo(a)anthracene	0.51	ug/l	0.20		
Benzo(a)pyrene	1.1	ug/l	0.20		
Benzo(b)fluoranthene	0.86	ug/l	0.20		
Benzo(k) fluoranthene	1.3	ug/l	0.20		
Chrysene	0.62	ug/l	0.20		
Acenaphthylene	ND	ug/l	0.20		
Anthracene	ND	ug/l	0.20		
Benzo(ghi)perylene	1.5	ug/l	0.20		
Fluorene	ND	ug/l	0.20		
Phenanthrene	1.7	ug/l	0.20		
Dibenzo(a,h)anthracene	0.21	ug/l	0.20		
Indeno(1,2,3-cd)Pyrene	0.92	ug/l	0.20		
Pyrene	12.	ug/l	0.20		
1-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	ND	ug/l	0.78		
Hexachlorobenzene	ND	ug/1	0.78	_	
Perylene	0.36	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l	0.20		
1-Methylphenanthrene	ND	ug/l	0.20		
Benzo(e) Pyrene	0.84	ug/l	0.20		
Hexachloroethane	ND	ug/l	0.78		
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	49.0	%	21-12	0	
Phenol-d6	38.0	8	10-12	0	
Nitrobenzene-d5	74.0	8	23-12		
2-Fluorobiphenyl	73.0	96	43-12	0	
2,4,6-Tribromophenol	69.0	%	10-12	0	
4-Terphenyl-d14	84.0	%	33-12	0	
Polychlorinated Biphenyls				1 8082	0315 22:15 0317 00:57 JB
Aroclor 1221	ND	ug/l	0.543	l	
Aroclor 1232	ND	ug/l	0.543	;	



Laboratory Sample Number: L0502589-05

MW/CB-18 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE I PREP ANAL	ID
					FREP ANAL	
Polychlorinated Biphenyls con	tinued			1 8082	0315 22:15 0317 00:57	jв
Aroclor 1242/1016	ND	ug/l	0.543			
Aroclor 1248	ND	ug/l	0.543			
Aroclor 1254	ND	ug/l	0.543			
Aroclor 1260	ND	ug/l	0.543			
Surrogate(s)	Recovery		QC Crit	eria		
2,4,5,6-Tetrachloro-m-xylene	72.0	8	30-150			
Decachlorobiphenyl	34.0	8	30-150			
Organochlorine Pesticides				1 8081	0315 22:20 0316 19:22 7	AK
Delta-BHC	ND	ug/l	0.020			
Lindane	ND	ug/l	0.020			
Alpha-BHC	ND	ug/l	0.020			
Beta-BHC	ND	ug/l	0.020			
leptachlor	ND	ug/l	0.020			
Aldrin	ND	ug/l	0.020			
Heptachlor epoxide	ND	ug/l	0.020			
Indrin	ND	ug/l	0.040			
Endrin aldehyde	ND	ug/l	0.040			
Indrin ketone	ND	ug/l	0.040			
Dieldrin	ND	ug/l	0.040			
,4'-DDE	ND	ug/l	0.040			
1,4'-DDD	ND	ug/l	0.040			
,4'-DDT	ND	ug/l	0.040			
Endosulfan I	ND	ug/l	0,020			
Indosulfan II	ND	ug/l	0.040			
Indosulfan sulfate	ND	ug/l	0.040			
Methoxychlor	ND	ug/l	0.200			
?oxaphene	ND	ug/l	0.200			
Chlordane	ND	ug/l	0.200			
is-Chlordane	ND	ug/l	0.020	-		
rans-Chlordane	ND	ug/l	0.020			
Gurrogate(s)	Recovery		QC Crite	eria		
2,4,5,6-Tetrachloro-m-xylene	61.0	olo	30-150			
Decachlorobiphenyl	34.0	8	30-150			

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-06

Date Collected: 14-MAR-2005 12:35

MW/CB-19 (GROUNDWATER)

Date Received: 15-MAR-2005

Sample Matrix: WATER Date Reported : 21-MAR-2005

Condition of Sample: Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA'	TE	ID
						PREP	ANAL	
Total Metals	* .			· .	1883/			
Aluminum, Total	27.6	mg/l	0.010	1	6020	0316 16:00	0317 12:5	2 RW
Antimony, Total	0.0005	mg/l	0.0002	1	6020	0316 16:00	0317 12:5	2 RW
Arsenic, Total	0.0113	mg/1	0.0004	1	6020	0316 16:00	0317 12:5	2 RW
Barium, Total	0.7092	mg/l	0.0002	1	6020	0316 16:00	0317 12:5	2 RW
Beryllium, Total	0.0020	mg/l	0.0005	1	6020	0316 16:00	0317 12:5	2 RW
Cadmium, Total	0.0019	mg/l	0.0004	1	6020	0316 16:00	0317 12:5	2 RW
Calcium, Total	264.	mg/l	2.00	1	6020	0316 16:00	0317 16:4	14 RW
Chromium, Total	0.1521	mg/l	0.0002	1	6020	0316 16:00	0317 12:5	2 RW
Cobalt, Total	0.0173	mg/l	0.0001	1	6020	0316 16:00		
Copper, Total	0.0811	mg/1	0.0005	1	6020	0316 16:00	0317 12:5	2 RW
Iron, Total	41.2	mg/l	0.010	1	6020	0316 16:00	0317 12:5	2 RW
Lead, Total	0.1412	mg/l	0.0002	1	6020	0316 16:00		
Magnesium, Total	49.1	mg/l	0.010	1	6020	0316 16:00		
Manganese, Total	3.141	mg/l	0.0002	1	6020	0316 16:00		
Mercury, Total	0.0003	mg/l	0.0002	1	7470A	0316 16:00		
Nickel, Total	0.0415	mg/l	0.0005	1	6020	0316 16:00		
Potassium, Total	23.9	mg/l	0.100	1	6020	0316 16:00		
Selenium, Total	0.004	mg/l	0.001	1	6020	0316 16:00		
Silver, Total	0.0002	mg/l	0.0001	1_	-	0316 16:00		
Sodium, Total	430.	mg/l	1.00	1		0316 16:00		
Thallium, Total	0.0003	mg/l	0.0001		6020	0316 16:00		
Vanadium, Total	0.0624	mg/l	0.0002		6020	0316 16:00		
Zinc, Total	0.2790	mg/l	0.0050	1	6020	0316 16:00	0317 12:	52 RW
Dissolved Metals								
Aluminum, Dissolved	0.012	mg/l	0.010	1	6020	0316 16:00		
Antimony, Dissolved	0.0023	mg/l	0.0002	1	6020	0316 16:00		
Arsenic, Dissolved	0.0009	mg/l	0.0004	1	6020	0316 16:00	0317 15:	10 RW
Barium, Dissolved	0.4025	mg/l	0.0002	1	6020	0316 16:00	0317 15:	10 RW
Beryllium, Dissolved	ND	mg/l	0.0005	1	6020	0316 16:00		
Cadmium, Dissolved	0.0013	mg/l	0.0004	1	6020	0316 16:00		
Calcium, Dissolved	302.	mg/1	2.00	1	6020	0316 16:00	0317 17:	31 RW
Chromium, Dissolved	0.0002	mg/l	0.0002	. 1	6020	0316 16:00	0317 15:	10 RW
Cobalt, Dissolved	0.0010	mg/l	0.0001	. 1	6020	0316 16:00		
Copper, Dissolved	0.0091	mg/1	0.0005	1	6020	0316 16:00	0317 15:	10 RW
Iron, Dissolved	0.951	mq/l	0.010	1	6020	0316 16:00	0317 15:	10 RW



Laboratory Sample Number: L0502589-06

MW/CB-19 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
issolved Metals			3.5%			***************************************		٠.
Lead, Dissolved	0.0003	mg/l	0.0002	1	6020	0316 16:00	0317 15.1	0.04
Magnesium, Dissolved	56.4	mg/l	0.010	1	6020			
Manganese, Dissolved	2.616	mg/l	0.0002	1	6020	0316 16:00		
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0316 16:00		
Jickel, Dissolved	0.0068	mg/l	0.0005	1	6020	0316 16:00		
Potassium, Dissolved	22.5	mg/l	0.100	1	6020	0316 16:00		
Selenium, Dissolved	0.001	mg/l	0.001	1	6020	0316 16:00 0316 16:00		
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00		
Sodium, Dissolved	592.	mg/1	1.00	1	6020	0316 16:00		
Challium, Dissolved	ND	mg/l	0.0001	1	6020			
Vanadium, Dissolved	0.0005	mg/l	0.0001	1	6020	0316 16:00 0316 16:00		
Zinc, Dissolved	0.0213	mg/l	0.0050	1	6020	0316 16:00		
· · · · · · · · · · · · · · · · · · ·		5 / 🌤				3320 10.00	JJI, 1J.1	○ AM
Volatile Organics by GC/MS 8		/2		1	8260B		0317 12:5	8 BT
Methylene chloride	ND	ug/l	5.0					
.,l-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
.,2-Dichloropropane Dibromochloromethane	ND	ug/l	1.8					
	ND	ug/l	0.50					
.,1,2-Trichloroethane etrachloroethene	ND	ug/l	0.75					
hlorobenzene	ND	ug/l	0.50					
richlorofluoromethane	ND	ug/l	0.50 2.5					
,2-Dichloroethane	ND	ug/l						
,1,1-Trichloroethane	ND	ug/l	0.50					
romodichloromethane	ND	ug/l	0.50					
rans-1,3-Dichloropropene	ND ND	ug/l	0.50					
is-1,3-Dichloropropene	ND ND	ug/l ug/l	0.50 0.50					
,1-Dichloropropene	ND	ug/l ug/l	2.5					
romoform	ND ND	ug/l ug/l	2.0	•				
,1,2,2-Tetrachloroethane	ND	-						
enzene	ND ND	ug/l ug/l	0.50 0.50					
oluene	ND	ug/l ug/l	0.75					
thylbenzene	2.7	ug/l ug/l	0.73					
hloromethane	ND	ug/l	2.5					
romomethane	ND	ug/l	1.0					
inyl chloride	ND	ug/1 ug/1	1.0					
hloroethane	ND	ug/l ug/l	1.0					
,1-Dichloroethene	ND	ug/l ug/l	0.50					
rans-1,2-Dichloroethene	ND	ug/l ug/l	0.75					
richloroethene	ND	ug/l	0.50					
,2-Dichlorobenzene	ND	ug/l	2.5					
,3-Dichlorobenzene	ND	ug/l	2.5					
,4-Dichlorobenzene	ND	ug/l	2.5					
ethyl tert butyl ether	11.	ug/l	1.0					
/m-Xylene	6.3	ug/l	0.50					
-Xylene	0.72	ug/l	0.50					

Laboratory Sample Number: L0502589-06

MW/CB-19 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ed .		1 8260B	0317 12:58 BT
cis-1,2-Dichloroethene	ND ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone Ethyl methacrylate	ND ND	ug/1 ug/l	5.0		
-	ND	ug/l	12.		
Acrolein	ND	ug/l	5.0		
Acrylonitrile Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
	ND	ug/l	0.50		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	9.7	ug/l	0.50		
p-Isopropyltoluene	ND	ug/l	0.50	•	
Naphthalene	2.7	ug/l	2.5		
n-Propylbenzene	4.8	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	2.5	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
	ND	ug/l	2.5		
Ethyl ether	ND	ug/ ±			
Surrogate(s)	Recovery		QC Cri	iteria	
1,2-Dichloroethane-d4	108.	8			
Toluene-d8	105.	%			
4-Bromofluorobenzene	104.	ે			
Dibromofluoromethane	103.	%			
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 17:08 HL
Acenaphthene	ND	ug/l	4.9		



Laboratory Sample Number: L0502589-06

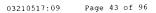
MW/CB-19 (GROUNDWATER)

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	DATE ID		
					PREP ANAL		
SVOC's by GC/MS 8270 continue	ed			1 8270C	0745 10 00 0000		
Benzidine	ND	ug/l	49.	1 02/00	0315 19:30 0317 17:08 HL		
1,2,4-Trichlorobenzene	ND	ug/l	4.9				
Hexachlorobenzene	ND	ug/l	4.9				
Bis(2-chloroethyl)ether	ND	ug/l	4.9				
1-Chloronaphthalene	ND	ug/l	4.9				
2-Chloronaphthalene	ND	ug/l	5.9				
1,2-Dichlorobenzene	ND	ug/l	4.9				
1,3-Dichlorobenzene	ND	ug/l	4.9				
1,4-Dichlorobenzene	ND	ug/l	4.9				
3,3'-Dichlorobenzidine	ND	ug/l	49.				
2,4-Dinitrotoluene	ND	ug/l	5.9				
2,6-Dinitrotoluene	ND	ug/l	4.9				
Azobenzene	ND	ug/l	4.9				
Fluoranthene	8.4	ug/l	4.9				
4-Chlorophenyl phenyl ether	ND	ug/l	4.9				
4-Bromophenyl phenyl ether	ND	ug/l	4.9				
Bis(2-chloroisopropyl)ether	ND	ug/l	4.9				
Bis(2-chloroethoxy)methane	ND	ug/l	4.9				
Hexachlorobutadiene	ND	ug/l	9.9				
Hexachlorocyclopentadiene	ND	ug/l	9.9				
Hexachloroethane	ND	ug/1	4.9				
Isophorone	ND	ug/l	4.9				
Naphthalene	ND	ug/l	4.9				
Vitrobenzene	ND	ug/l	4.9				
NDPA/DPA	ND	ug/l	15.				
n-Nitrosodi-n-propylamine	ND	ug/l	4.9				
Bis(2-ethylhexyl)phthalate	ND	ug/l	9.9				
Butyl benzyl phthalate	ND	ug/l	4.9				
Di-n-butylphthalate	ND	ug/l	4.9				
Di-n-octylphthalate	ND	ug/l	4.9				
Diethyl phthalate	ND	ug/l	4.9				
Dimethyl phthalate	ND	ug/l	4.9				
Benzo(a)anthracene	ND	ug/l	4.9				
Benzo(a)pyrene	ND	ug/l	4.9				
Benzo(b)fluoranthene	ND	ug/l	4.9				
Benzo(k)fluoranthene	ND	ug/l	4.9				
hrysene	ND	ug/l	4.9				
cenaphthylene	ND	ug/l	4.9				
nthracene	ND	ug/l	4.9				
enzo(ghi)perylene	ND	ug/l	4.9				
luorene	ND	ug/l	4.9				
henanthrene	ND	ug/l	4.9				
ibenzo(a,h)anthracene	ND	ug/l	4.9				
ndeno(1,2,3-cd)pyrene	ND	ug/l	6.9				
yrene	27.	ug/l	4.9				
enzo(e)pyrene	ND	ug/l	4.9				
iphenyl	ND	ug/l	4.9				
erylene	ND	ug/l	4.9				
niline	ND	ug/l	9.9				

Laboratory Sample Number: L0502589-06

MW/CB-19 (GROUNDWATER)

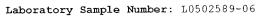
PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP ANAL	ID
SVOC's by GC/MS 8270 continued	4			1	8270C	0315 19:30 0317 17:0	8 HL
4-Chloroaniline	ND	ug/l	4.9				
1-Methylnaphthalene	ND	ug/l	4.9				
-	ND	ug/l	4.9				
2-Nitroaniline 3-Nitroaniline	ND	ug/l	4.9				
	ND	ug/l	6.9				
4-Nitroaniline	ND	ug/l	4.9				
Dibenzofuran a,a-Dimethylphenethylamine	ND	ug/l	49.				
Hexachloropropene	ND	ug/l	9.9				
	ND	ug/l	9.9				
Nitrosodi-n-butylamine	ND	ug/l	7.9				
2-Methylnaphthalene	ND	ug/l	20.				
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.				
Pentachlorobenzene	ND	ug/l	20.				
a-Naphthylamine	ND	ug/l	20.				
b-Naphthylamine	ND	ug/l	9.9				
Phenacetin	ND	ug/l	20.				
Dimethoate	ND	ug/l	9.9				
4-Aminobiphenyl	ND	ug/l	9.9				
Pentachloronitrobenzene	ND	ug/l	9.9				
Isodrin	ND	ug/l	9.9				
p-Dimethylaminoazobenzene	ND	ug/l	20.				
Chlorobenzilate	ND	ug/l	20.				
3-Methylcholanthrene Ethyl Methanesulfonate	ND	ug/l	15.				
=	ND	ug/l	20.				
Acetophenone Nitrosodipiperidine	ND	ug/l	20.				
7,12-Dimethylbenz(a)anthracer		ug/l	9.9				
n-Nitrosodimethylamine	ND	ug/l	49.				
2,4,6-Trichlorophenol	ND	ug/l	4.9				
p-Chloro-m-cresol	ND	ug/l	4.9				
-	ND	ug/l	5.9				
2-Chlorophenol	ND	ug/l	9.9				
2,4-Dichlorophenol	ND	ug/l	9.9		•		
2,4-Dimethylphenol	ND	ug/l	20.				
2-Nitrophenol	ND	ug/l	9.9				
4-Nitrophenol 2,4-Dinitrophenol	ND	ug/l	20.				
4,6-Dinitro-o-cresol	ND	ug/l	20.				
Pentachlorophenol	ND	ug/l	20.				
	ND	ug/l	6.9				
Phenol	ND	ug/l	5.9				
2-Methylphenol 3-Methylphenol/4-Methylpheno		ug/1	5.9				
2,4,5-Trichlorophenol	ND ND	ug/l	4.9				
2,4,5-Trichiorophenoi 2,6-Dichlorophenol	ND	ug/1	9.9				
· -	ND	ug/l	49.				
Benzoic Acid	ND	ug/1	9.9				
Benzyl Alcohol	ND	ug/1	4.9				
Carbazole		ug/l	49.				
Pyridine	ND	ug/l ug/l	20.				
2-Picoline	ND	-	20.				
Pronamide	ND	ug/l					



Laboratory Sample Number: L0502589-06

MW/CB-19 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 contin	ued			1 8270€	0315 19:30 0317 17:08 HL
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	48.0	8			
Phenol-d6	37.0	ક			
Nitrobenzene-d5	74.0	olo			
2-Fluorobiphenyl	72.0	ક			
2,4,6-Tribromophenol	92.0	8			
4-Terphenyl-d14	82.0	96			
PAH by GC/MS SIM 8270M				1 8270C-M	0315 19:30 0316 18:25 RL
Acenaphthene	ND	ug/l	0.20		
2-Chloronaphthalene	ND	ug/l	0.20		
Fluoranthene	10.	ug/l	0.20		
Hexachlorobutadiene	ND	ug/l	0.49		
Naphthalene	ND	ug/l	0.20		
Benzo(a)anthracene	0.21	ug/l	0.20		
Benzo(a)pyrene	0.46	ug/l	0.20		
Benzo(b)fluoranthene	0.29	ug/l	0.20		
Benzo(k)fluoranthene	0.44	ug/l	0.20		
Chrysene	0.38	ug/l	0.20		
Acenaphthylene	ND	ug/l	0.20		
Anthracene	ND	ug/l	0.20		
Benzo(ghi)perylene	2.8	ug/l	0.20		
Fluorene	ND	ug/l	0.20		
Phenanthrene	0.79	ug/l	0.20		
Dibenzo(a,h)anthracene	ND	ug/l	0.20		
Indeno(1,2,3-cd)Pyrene	0.54	ug/l	0.20		
Pyrene	29.	ug/l	0.20		
l-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	ND	ug/l	0.79		
Hexachlorobenzene	ND	ug/l	0.79		
Perylene	ND	ug/l	0.20		
Biphenyl	ND	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l	0.20		
l-Methylphenanthrene	ND	ug/l	0.20		
Benzo(e)Pyrene	0.89	ug/l	0.20		
Mexachloroethane	ND	ug/l	0.79		
Gurrogate(s)	Recovery		QC Cri	teria	
?-Fluorophenol	53.0	%	21-120		
Phenol-d6	42.0 ~	%	10-120		
litrobenzene-d5	78.0	%	23-120		
?-Fluorobiphenyl	73.0	8	43-120		
2,4,6-Tribromophenol	72.0	8	10-120		
-Terphenyl-d14	84.0	0/0	33-120		
olychlorinated Biphenyls				1 8082	0315 22:15 0317 01:26 JB
roclor 1221	ND	ug/l	0.556		, , , , , , , , , , , , , , , ,
croclor 1232	ND	ug/l	0.556		



MW/CB-19 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL REF METHOD DATE ID PREP ANAL
Polychlorinated Biphenyls con	tinued		1 8082 0315 22:15 0317 01;26 JB
Aroclor 1242/1016	ND	ug/l	0.556
Aroclor 1248	ND	ug/l	0.556
Aroclor 1254	ND	ug/l	0.556
Aroclor 1260	ND	ug/l	0.556
Surrogate(s)	Recovery		QC Criteria
2,4,5,6-Tetrachloro-m-xylene	70.0	%	30-150
Decachlorobiphenyl	44.0	9	30-150
Organochlorine Pesticides	Sec. 25.		1 8081 0317 15:00 0318 14:20 AK
Delta-BHC	ND	ug/l	0.022
Lindane	ND	ug/l	0.022
Alpha-BHC	ND	ug/l	0.022
Beta-BHC	ND	ug/l	0.022
Heptachlor	ND	ug/l	0.022
Aldrin	ND	ug/l	0.022
Heptachlor epoxide	ND	ug/l	0.022
Endrin	ND	ug/l	0.044
Endrin aldehyde	ND	ug/l	0.044
Endrin ketone	ND	ug/l	0.044
Dieldrin	ND	ug/l	0.044
4,4'-DDE	ND	ug/l	0.044
4,4'-DDD	ND	ug/l	0.044
4,4'-DDT	ND	ug/l	0.044
Endosulfan I	ND	ug/l	0.022
Endosulfan II	ND	ug/l	0.044
Endosulfan sulfate	ND	ug/l	0.044
Methoxychlor	ND	ug/l	0.217
Toxaphene	ND	ug/l	0.217
Chlordane	ND	ug/l	0.217
cis-Chlordane	ND	ug/l	0.022 .
trans-Chlordane	ND	ug/l	0.022
Surrogate(s)	Recovery		QC Criteria
2,4,5,6-Tetrachloro-m-xylene	46.0	%	30-150
Decachlorobiphenyl	43.0	96	30-150



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-07

MW/CB-1 (GROUNDWATER)

Date Received: 15-MAR-2005

Sample Matrix:

WATER

Date Reported : 21-MAR-2005

Date Collected: 14-MAR-2005 13:10

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Total Metals								:
Aluminum, Total	1.24	mg/l	0.010	1	6020	0316 16:00	0217 10 5	
Antimony, Total	ND	mg/l	0.0002	1	6020			
Arsenic, Total	0.0024	mq/l	0.0004	1	6020	0316 16:00		
Barium, Total	0.0372	mg/l	0.0002	1	6020	0316 16:00 0316 16:00		
Beryllium, Total	ND	mg/l	0.0002	1	6020	0316 16:00		
Cadmium, Total	0.0004	mg/l	0.0003	1	6020			
Calcium, Total	54.6	mg/l	0.200	1	6020	0316 16:00		
Chromium, Total	0.0029	mg/l	0.0002	1	6020	0316 16:00		
Cobalt, Total	0.0023	mg/l	0.0002	1	6020	0316 16:00		
Copper, Total	0.0073	mg/l	0.0001	1	6020	0316 16:00 0316 16:00		
Iron, Total	3.65	mg/l	0.0005	1	6020	0316 16:00		
Lead, Total	0.0037	mg/l	0.0002	1	6020	0316 16:00		
Magnesium, Total	13.4	mg/l	0.0002	1	6020			
Manganese, Total	1.538	mg/l	0.0002	1	6020	0316 16:00		
Mercury, Total	ND	mg/l	0.0002	1	7470A	0316 16:00		
Nickel, Total	0.0058	mg/l	0.0002	1	6020	0316 16:00 0316 16:00		
Potassium, Total	6.68	mg/l	0.100	1	6020	0316 16:00		
Selenium, Total	ND	mg/l	0.001	1	6020	0316 16:00		
Silver, Total	ND	mg/l	0.001		6020			
Sodium, Total	44.5	mg/l	0.100	1	6020	0316 16:00 0316 16:00		
Thallium, Total	ND	mg/l	0.0001	1	6020			
Vanadium, Total	0.0027	mg/l	0.0001	1	6020	0316 16:00		
Zinc, Total	0.0333	mg/l	0.0050	1	6020	0316 16:00 0316 16:00		
Dissolved Metals								
Aluminum, Dissolved	0.014	mg/l	0.010	1	6020	0316 16:00	0317 15:15	RW
Antimony, Dissolved	0.0015	mg/l	0.0002	1	6020	0316 16:00		
Arsenic, Dissolved	0.0016	mg/l	0.0004	1	6020	0316 16:00		
Barium, Dissolved	0.0265	mg/l	0.0002	1	6020	0316 16:00		
Beryllium, Dissolved	ND	mg/l	0.0005	1	6020	0316 16:00		
Cadmium, Dissolved	0.0007	mg/l	0.0004	1	6020	0316 16:00		
Calcium, Dissolved	52.6	mg/l	0.200	1	6020	0316 16:00		
Chromium, Dissolved	ND	mg/l	0.0002	1	6020	0316 16:00		
Cobalt, Dissolved	0.0043	mg/l	0.0001	1	6020	0316 16:00		
Copper, Dissolved	0.0124	mg/l	0.0005	1	6020	0316 16:00		
Iron, Dissolved	0.521	mg/l	0.010	1	6020	0316 16:00		• · · ·

Laboratory Sample Number: L0502589-07

MW/CB-1 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DA	
					PREP	ANAL
issolved Metals					· · · · · · · · · · · · · · · · · · ·	
JISSOIVED MECAIS		*				
Lead, Dissolved	0.0003	mg/l	0.0002	1 6020		0317 15:15 RW
Magnesium, Dissolved	12.4	mg/l	0.010	1 6020		0317 15:15 RW
Manganese, Dissolved	1.465	mg/l	0.0002	1 6020		0317 15:15 RW
Mercury, Dissolved	ND	mg/l	0.0002	1 7470A		0317 11:42 DM
Nickel, Dissolved	0.0078	mg/l	0.0005	1 6020		0317 15:15 RW
Potassium, Dissolved	6.79	mg/1	0.100	1 6020		0317 15:15 RW
Selenium, Dissolved	ND	mg/l	0.001	1 6020		0317 15:15 RW
Silver, Dissolved	ND	mg/1	0.0001	1 6020		0317 15:15 RW
Sodium, Dissolved	45.4	mg/l	0.100	1 6020		0317 15:15 RF
Thallium, Dissolved	ND	mg/1	0.0001	1 6020		0317 15:15 R
Vanadium, Dissolved	ND	mg/l	0.0002	1 6020		0317 15:15 RV
Zinc, Dissolved	0.0145	mg/l	0.0050	1 6020	0316 16:00	0317 15:15 RV
Volatile Organics by GC/MS	8260.			1 8260B		0317 13:34 B
Methylene chloride	ND	ug/l	5.0			
1,1-Dichloroethane	ND	ug/l	0.75			
Chloroform	ND	ug/l	0.75			
Carbon tetrachloride	ND	ug/l	0.50			
1,2-Dichloropropane	ND	ug/l	1.8			
Dibromochloromethane	ND	ug/l	0.50			
1,1,2-Trichloroethane	ND	ug/l	0.75			
Tetrachloroethene	ND	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
Trichlorofluoromethane	ND	ug/l	2.5			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
1,1-Dichloropropene	ND	ug/l	2.5			
Bromoform	ND	ug/l	2.0	•		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	ND	ug/l	0.50			
Toluene	ND	ug/l	0.75			
Ethylbenzene	0.59	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
Bromomethane	ND	ug/l	1.0			
Vinyl chloride	ND	ug/l	1.0			
Chloroethane	ND	ug/l	1.0			
1.1-Dichloroethene	ND	ug/l	0.50			
trans-1,2-Dichloroethene	ND	ug/1	0.75			
	ND	ug/1	0.50			
Trichloroethene	ND	ug/l	2.5			
1,2-Dichlorobenzene		ug/l	2.5			
1,3-Dichlorobenzene	ND	ug/1	2.5			
1,4-Dichlorobenzene	ND ND	ug/1 ug/l	1.0			
	1817	uy/1	1.0			
Methyl tert butyl ether p/m-Xylene	2.0	ug/l	0.50			



Laboratory Sample Number: L0502589-07

MW/CB-1 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 continu	ed		1 8260B	0317 13:34 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50	2 02002	
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	0.94	ug/l	0.50		
p-Isopropyltoluene	ND	_	0.50	•	
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	0.54	ug/l ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l ug/l	2.5		
1,2,4-Trichlorobenzene	ND	=	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND ND	ug/l ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	-	2.5		
Ethyl ether	ND ND	ug/l ug/l	2.5		
striyi ethei	ND	ug/1	2.5		
Surrogate(s)	Recovery		QC Cri	teria	
1,2-Dichloroethane-d4	103.	8			
Toluene-d8	101.	8			
4-Bromofluorobenzene	100.	%			
Dibromofluoromethane	99.0	8			
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 17:34 HL
Acenaphthene	ND	ug/l	4.8		

Laboratory Sample Number: L0502589-07

MW/CB-1 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II PREP ANAL
SVOC's by GC/MS 8270 continue	đ√-	÷		1 8270C	0315 19:30 0317 17:34 HI
Benzidine	ND	ug/l	48.		
1,2,4-Trichlorobenzene	ND	ug/l	4.8		
Hexachlorobenzene	ND	ug/l	4.8		
Bis(2-chloroethyl)ether	ND	ug/l	4.8		
1-Chloronaphthalene	ND	ug/l	4.8		
2-Chloronaphthalene	ND	ug/l	5.7		
1,2-Dichlorobenzene	ND	ug/l	4.8		
1,3-Dichlorobenzene	ND	ug/l	4.8		
1,4-Dichlorobenzene	ND	ug/l	4.8		
3,3'-Dichlorobenzidine	ND	ug/l	48.		
2,4-Dinitrotoluene	ND	ug/l	5.7		
2,6-Dinitrotoluene	ND	ug/l	4.8		
Azobenzene	ND	ug/l	4.8		
Fluoranthene	ND	ug/l	4.8		
4-Chlorophenyl phenyl ether	ND	ug/l	4.8		
4-Bromophenyl phenyl ether	ND	ug/l	4.8		
Bis(2-chloroisopropyl)ether	ND	ug/l	4.8		
Bis (2-chloroethoxy) methane	ND	ug/l	4.8		
Hexachlorobutadiene	ND	ug/l	9.6		
Hexachlorocyclopentadiene	ND	ug/l	9.6		
Hexachloroethane	ND	uq/l	4.8		
Isophorone	ND	ug/l	4.8		
Naphthalene	ND	ug/l	4.8		
Nitrobenzene	ND	ug/l	4.8		
NDPA/DPA	ND	ug/l	14.		
n-Nitrosodi-n-propylamine	ND	ug/l	4.8		
Bis(2-ethylhexyl)phthalate	ND	ug/l	9.6		
Butyl benzyl phthalate	ND	ug/l	4.8		
Di-n-butylphthalate	ND	ug/l	4.8		
Di-n-octylphthalate	ND	ug/l	4.8		
Diethyl phthalate	ND	ug/l	4.8		
Dimethyl phthalate	ND	ug/l	4.8	•	
Benzo(a)anthracene	ND	ug/l	4.8		
Benzo(a) pyrene	ND	ug/l	4.8		
Benzo(a) pyrene Benzo(b) fluoranthene	ND	ug/l	4.8		
Benzo(k) fluoranthene	ND	ug/1	4.8		
	ND	ug/l	4.8		
Chrysene	ND	ug/l	4.8		
Acenaphthylene	ND	ug/l ug/l	4.8		
Anthracene		ug/1 ug/l	4.8		
Benzo(ghi)perylene	ND ND	ug/1 ug/1	4.8		
Fluorene		ug/l ug/l	4.8		
Phenanthrene	ND		4.8		
Dibenzo(a,h)anthracene	ND	ug/1	6.7		
Indeno(1,2,3-cd)pyrene	ND	ug/l			
Pyrene	ИD	ug/l	4.8		
Benzo(e)pyrene	ND	ug/l	4.8		
Biphenyl	ND	ug/l	4.8		
Perylene	ND	ug/l	4.8		
Aniline	ND	ug/l	9.6		



Laboratory Sample Number: L0502589-07

MW/CB-1 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued				1 8270C	0315 19:30 0317 17:34 HL
1-Chloroaniline	ND	ug/l	4.8		
l-Methylnaphthalene	ND	ug/l	4.8		
2-Nitroaniline	ND	ug/l	4.8		
3-Nitroaniline	ND	ug/l	4.8		
l-Nitroaniline	ND	ug/l	6.7		
Dibenzofuran	ND	ug/l	4.8		
a,a-Dimethylphenethylamine	ND	ug/l	48.		
Hexachloropropene	ND	ug/l	9.6		
Nitrosodi-n-butylamine	ND	ug/l	9.6		
2-Methylnaphthalene	ND	ug/l	7.6		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	19.		
Pentachlorobenzene	ND	ug/l	19.		
a-Naphthylamine	ND	ug/l	19.		
o-Naphthylamine	ND	ug/l	19.		
Phenacetin	ND	ug/l	9.6		
Dimethoate	ИD	ug/l	19.		
l-Aminobiphenyl	ND	ug/l	9.6		
Pentachloronitrobenzene	ND	ug/l	9.6		
Isodrin	ND	ug/l	9.6		
o-Dimethylaminoazobenzene	ND	ug/l	9.6		
Chlorobenzilate	ND	ug/l	19.		
3-Methylcholanthrene	ND	ug/l	19.		
Ethyl Methanesulfonate	ND	ug/l	14.		
Acetophenone	ND	ug/l	19.		
Vitrosodipiperidine	ND	ug/l	19.		
7,12-Dimethylbenz(a)anthracene	ND	ug/l	9.6		
n-Nitrosodimethylamine	ND	ug/l	48.		
2,4,6-Trichlorophenol	ND	ug/l	4.8		
o-Chloro-m-cresol	ND	ug/l	4.8		
2-Chlorophenol	ND	ug/l	5.7		
2,4-Dichlorophenol	ND	ug/l	9.6		
2,4-Dimethylphenol	ND	ug/l	9.6		
2-Nitrophenol	ND	ug/l	19.		
-Nitrophenol	ND	ug/l	9.6		
2,4-Dinitrophenol	ND	ug/l	19.		
,6-Dinitro-o-cresol	ND	ug/l	19.		
Pentachlorophenol	ND	ug/l	19.		
Phenol	ND	ug/l	6.7		
-Methylphenol	ND	ug/l	5.7		
	ND	ug/l	5.7		
,4,5-Trichlorophenol	ND	ug/l	4.8		
	ND	ug/l	9.6		
	ND	ug/l	48.		
	ND	ug/l	9.6		
-	ND	ug/l	4.8		
	ND	ug/l	48.		
-	ND	ug/l	19.		
EPICOIIBE	412	u4, 1	エン・		
	ND	ug/l	19.		

Laboratory Sample Number: L0502589-07

MW/CB-1 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL F	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	ed .			1 8270C	0315 19:30 0317 17:34 HL
Surrogate(s)	Recovery		QC Crite	eria	
2-Fluorophenol	48.0	8			
Phenol-d6	36.0	8			
Nitrobenzene-d5	81.0	8			
2-Fluorobiphenyl	81.0	8			
2,4,6-Tribromophenol	96.0	%			
4-Terphenyl-d14	91.0	96			
PAH by GC/MS SIM 8270M				1 8270C-M	0315 19:30 0316 19:10 RL
Acenaphthene	ND	ug/l	0.19		
2-Chloronaphthalene	ND	ug/l	0.19		
Fluoranthene	ND	ug/l	0.19		
Hexachlorobutadiene	ND	ug/l	0.48		
Naphthalene	ND	ug/l	0.19		
Benzo(a)anthracene	ND	ug/l	0.19		
Benzo(a) pyrene	ND	ug/l	0.19		
Benzo(b) fluoranthene	ND	ug/l	0.19		
Benzo(k) fluoranthene	ND	ug/l	0.19		
Chrysene	ND	ug/l	0.19		
Acenaphthylene	ND	ug/l	0.19		
Anthracene	ND	ug/l	0.19		
Benzo(ghi)perylene	0.54	ug/l	0.19		
Fluorene	ND	ug/l	0.19		
Phenanthrene	ND	ug/l	0.19		
Dibenzo(a,h)anthracene	ND	ug/l	0.19		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.19		
Pyrene	0.30	ug/l	0.19		
1-Methylnaphthalene	ND	ug/l	0.19		
2-Methylnaphthalene	ND	ug/l	0.19		
Pentachlorophenol	ND	ug/l	0.76		
Hexachlorobenzene	ND	ug/l	0.76	_	
Perylene	ND	ug/l	0.19		
Biphenyl	ND	ug/l	0.19		
2,6-Dimethylnaphthalene	ND	ug/l	0.19		
1-Methylphenanthrene	ND	ug/l	0.19		
Benzo(e) Pyrene	0.24	ug/l	0.19		
Hexachloroethane	ND	ug/l	0.76		
Surrogate(s)	Recovery		QC Crit	eria	
2-Fluorophenol	50.0	96	21-120		
Phenol-d6	38.0	8	10-120		
Nitrobenzene-d5	79.0	%	23-120		
2-Fluorobiphenyl	78.0	%	43-120		
2,4,6-Tribromophenol	77.0	ę,	10-120		
4-Terphenyl-d14	88.0	8	33-120		
Polychlorinated Biphenyls				1 8082	0315 22:15 0317 01:54 JB
Aroclor 1221	ND	ug/l	0.556		•
Aroclor 1232	ND	ug/l	0.556		



Laboratory Sample Number: L0502589-07

MW/CB-1 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls con	tinued			1 8082	0315 22:15 0317 01:54 JB
Aroclor 1242/1016	ND	ug/l	0.556		
Aroclor 1248	ND	ug/l	0.556		
Aroclor 1254	ND	ug/l	0.556		
Aroclor 1260	ND	ug/l	0.556		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	73.0	%	30-150		
Decachlorobiphenyl	45.0	%	30-150		
Organochlorine Pesticides				1 8081	0315 22:20 0317 14:15 AK
Delta-BHC	ИD	ug/l	0.022		
Lindane	ND	ug/l	0.022		
Alpha-BHC	ND	ug/l	0.022		
Beta-BHC	ИD	ug/l	0.022		
Heptachlor	ND	ug/l	0.022		
Aldrin	ND	ug/l	0.022		
Heptachlor epoxide	ND	ug/l	0.022		
Endrin	ИD	ug/l	0.043		
Endrin aldehyde	ND	ug/l	0.043		
Endrin ketone	ND	ug/l	0.043		
Dieldrin	ND	ug/l	0.043		
4,4'-DDE	ND	ug/l	0.043		
4,4'-DDD	ND	ug/l	0.043		
4,4'-DDT	ND	ug/l	0.043		
Endosulfan I	ND	ug/l	0.022		
Endosulfan II	ND	ug/l	0.043		
Endosulfan sulfate	ND	ug/l	0.043		
Methoxychlor	ND	ug/l	0.215		
Toxaphene	ND	ug/l	0.215		
Chlordane	ND	ug/l	0.215		
cis-Chlordane	ND	ug/l	0.022	•	
trans-Chlordane	ND	ug/l	0.022		
Surrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	71.0	8	30-150		
Decachlorobiphenyl	48.0	%	30-150		

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-08

Condition of Sample: Satisfactory

Date Collected: 14-MAR-2005 13:45

MW/CB-2 (GROUNDWATER)

Date Received: 15-MAR-2005
Date Reported: 21-MAR-2005

Sample Matrix: WATER

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

RESULT	UNITS	RDL	REF	METHOD		ID
					·	şi.
0.216	mg/l	0.010	1	6020	0316 16:00 0317 13:02	RW
ND	mg/l	0.0002	1	6020	0316 16:00 0317 13:02	RW
0.0023	mg/l	0.0004		6020	0316 16:00 0317 13:02	RW
0.0521	mg/l			6020		
ND	mg/l	0.0005	1	6020	0316 16:00 0317 13:02	RW
ND	mg/l	0.0004	1	6020	0316 16:00 0317 13:02	RW
92.8	mg/l	0.200	1	6020	0316 16:00 0317 13:02	₽₩
0.0006	mg/1			6020		
0.0106	mg/l	0.0001	1	6020	0316 16:00 0317 13:02	
0.0017	mg/l	0.0005	1	6020	0316 16:00 0317 13:02	
1.14	mg/1	0.010	1	6020	0316 16:00 0317 13:02	
0.0007	mg/l	0.0002	1	6020	0316 16:00 0317 13:02	RW
19.5	mg/l	0.010	1	6020	0316 16:00 0317 13:02	
23.66	mg/1	0.0020	1	6020		
ND	mg/1	0.0002	1	7470A	0316 16:00 0317 13:39	DM
0.0056	mg/l	0.0005	1	6020	0316 16:00 0317 13:02	
8.30	mg/l	0.100	1	6020	0316 16:00 0317 13:02	RW
ИD	mg/l	0.001	1	6020	0316 16:00 0317 13:02	
ND	mg/l	0.0001	. 1	6020	0316 16:00 0317 13:02	: RW
56.3	mg/1	0.100	1	6020	0316 16:00 0317 13:02	
ND	mg/l	0.0001	. 1	6020		
0.0007	mg/l			6020	0316 16:00 0317 13:02	! RW
0.0325	mg/l	0.0050	1	6020	0316 16:00 0317 13:02	? RW
0.018	mg/l	0.010	1	6020	0316 16:00 0317 15:20) RW
0.0018	mg/l	0.0002	1	6020	0316 16:00 0317 15:20) RW
0.0013	mg/l	0.0004	1	6020	0316 16:00 0317 15:20) RW
0.0591	mg/l	0.0002	1	6020	0316 16:00 0317 15:20	WA C
ND	mg/1	0.0005	1	6020	0316 16:00 0318 14:10	D RW
0.0004	mg/l	0.0004	1	6020	0316 16:00 0317 15:20	O RW
86.2	mg/l	0.200	1	6020	0316 16:00 0317 15:20	O RW
ND	mg/l	0.0002	2 1	6020	0316 16:00 0317 15:20	O RW
0.0132	mg/l	0.0001	1	6020	0316 16:00 0317 15:20	0 R W
0.0238	mg/l	0.0005	1	6020	0316 16:00 0317 15:20	0 RW
0.394	mg/l	0.010	1	6020	0316 16:00 0317 15:20	0 RW
	0.216 ND 0.0023 0.0521 ND ND 92.8 0.0006 0.0106 0.0017 1.14 0.0007 19.5 23.66 ND 0.0056 8.30 ND ND ND 56.3 ND 0.0007 0.0325	0.216 mg/l ND mg/l 0.0023 mg/l 0.0521 mg/l ND mg/l ND mg/l 92.8 mg/l 0.0006 mg/l 0.0106 mg/l 0.0017 mg/l 1.14 mg/l 0.0007 mg/l 19.5 mg/l 23.66 mg/l ND mg/l 0.0056 mg/l ND mg/l 0.0056 mg/l 8.30 mg/l ND mg/l 0.0056 mg/l 8.30 mg/l ND mg/l 0.0056 mg/l 8.30 mg/l ND mg/l 0.0056 mg/l 8.30 mg/l ND mg/l 0.0056 mg/l 8.30 mg/l ND mg/l 0.0056 mg/l 8.30 mg/l ND mg/l 0.0056 mg/l 8.30 mg/l ND mg/l 0.00591 mg/l 0.0018 mg/l 0.0018 mg/l 0.0018 mg/l 0.0018 mg/l 0.0018 mg/l 0.0018 mg/l 0.0018 mg/l 0.0013 mg/l	0.216 mg/l 0.010 ND mg/l 0.0002 0.0023 mg/l 0.0004 0.0521 mg/l 0.0005 ND mg/l 0.0005 ND mg/l 0.0004 92.8 mg/l 0.200 0.0006 mg/l 0.0001 0.0017 mg/l 0.0005 1.14 mg/l 0.010 0.0007 mg/l 0.0002 19.5 mg/l 0.0002 ND mg/l 0.0002 ND mg/l 0.0002 ND mg/l 0.0005 ND mg/l 0.0005 ND mg/l 0.0005 ND mg/l 0.0005 ND mg/l 0.0005 ND mg/l 0.0005 0.0056 mg/l 0.0005 8.30 mg/l 0.0005 ND mg/l 0.0005 ND 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Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502589-08

MW/CB-2 (GROUNDWATER)

Pissolved Metals Dead, Dissolved Dissolved						PREP	ANAL	
ead, Dissolved								
ead, Dissolved		s en en en en en	,					. ,
		,	1.75				· · · · ·	2.5
Magnesium, Dissolved	0.0009	mg/l	0.0002	1	6020	0316 16:00	0317 15:2	0 RW
	18.9	mg/l	0.010	1	6020	0316 16:00	0317 15:2	0 RW
langanese, Dissolved	29.31	mg/1	0.0020	1	6020	0316 16:00	0317 17:3	6 RW
lercury, Dissolved	ND	mg/l	0.0002	1	7470A	0316 16:00	0317 11:4	4 DM
ickel, Dissolved	0.0122	mg/l	0.0005	1	6020	0316 16:00	0317 15:2	0 RW
otassium, Dissolved	8.40	mg/l	0.100	1	6020	0316 16:00	0317 15:2	0 RW
elenium, Dissolved	ND	mg/l	0.001	1	6020	0316 16:00	0317 15:2	0 RW
ilver, Dissolved	ND	mg/1	0.0001	1	6020	0316 16:00	0317 15:2	0 RW
odium, Dissolved	57.4	mg/l	0.100	1	6020	0316 16:00	0317 15:2	0 RW
hallium, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00	0317 15:2	D RW
anadium, Dissolved	0.0004	mg/l	0.0002	1	6020	0316 16:00	0317 15:2	O RW
inc, Dissolved	0.0207	mg/l	0.0050	1	6020	0316 16:00	0317 15:2	O RW
olatile Organics by GC/MS 8	260			1	8260B		0317 14:1) RT
ethylene chloride	ND	ug/l	5.0					
,1-Dichloroethane	ND	ug/l	0.75					
hloroform	ND	ug/l	0.75					
arbon tetrachloride	ND	ug/l	0.50					
,2-Dichloropropane	ND	ug/l	1.8					
ibromochloromethane	ND	ug/l	0.50					
,1,2-Trichloroethane	ND	ug/l	0.75					
etrachloroethene	ND	ug/l	0.50					
hlorobenzene	ND	ug/l	0.50					
richlorofluoromethane	ND	ug/l	2.5					
,2-Dichloroethane	ND	ug/l	0.50					
,1,1-Trichloroethane	ND	ug/l	0.50					
romodichloromethane	ND	ug/l	0.50					
rans-1,3-Dichloropropene	ND	ug/l	0.50					
is-1,3-Dichloropropene	ND	ug/l	0.50					
,1-Dichloropropene	ND	ug/l	2.5					
romoform	ND	ug/l	2.0					
,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
enzene	ND	ug/l	0.50					
oluene	ND	ug/l	0.75					
thylbenzene	0.54	ug/l	0.50					
hloromethane	ND	ug/l	2.5					
romomethane	ND	ug/l	1.0					
inyl chloride	ND	ug/l	1.0					
hloroethane	ND	ug/l	1.0					
,1-Dichloroethene	ND	ug/l	0.50					
rans-1,2-Dichloroethene	ND	ug/l	0.75					
richloroethene	ND	ug/l	0.50					
,2-Dichlorobenzene	ND	ug/l	2.5					
,3-Dichlorobenzene	ND	ug/l ug/l	2.5					
,4-Dichlorobenzene	ND	ug/l	2.5					
ethyl tert butyl ether	ND	ug/l ug/l	1.0					
/m-Xylene	1.9							
-Xylene	ND	ug/l ug/l	0.50 0.50					

Laboratory Sample Number: L0502589-08

MW/CB-2 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ed		1 8260B	0317 14:10 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
	ND	ug/l	0.50		
Styrene Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Jinyl acetate	ND	ug/l	5.0		
-	ND	ug/l	5.0		
4-Methyl-2-pentanone 2-Hexanone	ND	ug/l	5.0		
z-Hexanone Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrolein Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dichioropropane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	0.93	ug/l	0.50		
p-Isopropyltoluene	ND	ug/l	0.50	•	
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	0.51	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
	ND	ug/l	2.5		
Ethyl ether	IAD	ug/±			
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	102.	%			
Toluene-d8	101.	96			
4-Bromofluorobenzene	103.	8			
Dibromofluoromethane	97.0	%			
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 17:59 HL
Acenaphthene	ND	ug/l	4.8		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502589-08

MW/CB-2 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
GVOC's by GC/MS 8270 continue					
Benzidine	ND	ug/l	48.	1 8270C	0315 19:30 0317 17:59 HL
1,2,4-Trichlorobenzene	ND ND	-			
Hexachlorobenzene		ug/1	4.8		
Bis(2-chloroethy1)ether	ND ND	ug/l	4.8		
L-Chloronaphthalene		ug/l	4.8		
2-Chloronaphthalene	ND ND	ug/l	4.8		
1,2-Dichlorobenzene	ND ND	ug/l	5.7		
1,3-Dichlorobenzene		ug/1	4.8		
1,4-Dichlorobenzene	ND ND	ug/1	4.8		
3,3'-Dichlorobenzidine		ug/l	4.8		
2,4-Dinitrotoluene	ND	ug/l	48.		
2,6-Dinitrotoluene	ND	ug/l	5.7		
Azobenzene	ND	ug/l	4.8		
Richard Report of the Control of the	ND	ug/l	4.8		
4-Chlorophenyl phenyl ether	ND	ug/l	4.8		
4-Bromophenyl phenyl ether	ND	ug/1	4.8		
Bis(2-chloroisopropyl)ether	ND ND	ug/l	4.8		
Bis(2-chloroethoxy)methane	ND	ug/l	4.8		
Hexachlorobutadiene	ND	ug/l	4.8		
Hexachlorocyclopentadiene	ND	ug/l	9.6		
Mexachiorocyclopentadiene	ND ND	ug/l	9.6		
Sophorone	ND	ug/l	4.8		
Japhthalene		ug/l	4.8		
Jitrobenzene	ND ND	ug/l	4.8		
IDPA/DPA	ND	ug/l	4.8		
n-Nitrosodi-n-propylamine	ND	ug/l	14. 4.8		
Bis(2-ethylhexyl)phthalate	ND	ug/l	9.6		
Butyl benzyl phthalate	ND	ug/l ug/l	4.8		
Di-n-butylphthalate	ND	ug/l ug/l	4.8		
Di-n-octylphthalate	ND	ug/l ug/l	4.8		
Piethyl phthalate	ND		4.8	_	
eimethyl phthalate	ND	ug/l ug/l	4.8		
Senzo(a) anthracene	ND	ug/l	4.8		
Senzo(a) pyrene	ND	ug/l	4.8		
Senzo(b) fluoranthene	ND	ug/l ug/l	4.8		
senzo(k) fluoranthene	ND	-			
hrysene	ND	ug/l	4.8		
_		ug/l	4.8		
cenaphthylene .nthracene	ND	ug/l	4.8		
anthracene enzo(ghi)perylene	ND	ug/l	4.8		
luorene	ND	ug/l	4.8		
henanthrene	ND	ug/l	4.8		
ibenzo(a,h)anthracene	ND	ug/l	4.8		
	ND	ug/l	4.8		
ndeno(1,2,3-cd)pyrene yrene	ND	ug/1	6.7		
•	ND	ug/l	4.8		
enzo(e)pyrene	ND	ug/l	4.8		
iphenyl	ND	ug/l	4.8		
erylene	ND	ug/l	4.8		
niline	ND	ug/l	9.6		

Laboratory Sample Number: L0502589-08

MW/CB-2 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANA L
SVOC's by GC/MS 8270 continued				1 8270C	0315 19:30 0317 17:59 HL
4-Chloroaniline	ND	ug/l	4.8		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
1-Methylnaphthalene	ND	ug/l	4.8		
2-Nitroaniline	ND	ug/l	4.8		
3-Nitroaniline 3-Nitroaniline	ND	ug/l	4.8		
4-Nitroaniline	ND	ug/l	6.7		
Dibenzofuran	ND	ug/l	4.8		
a,a-Dimethylphenethylamine	ND	ug/l	48.		
,	ND	ug/l	9.6		
Hexachloropropene	ND	ug/1	9.6		
Nitrosodi-n-butylamine		ug/1 ug/l	7.6		
2-Methylnaphthalene	ND	-	19.		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	19.		
Pentachlorobenzene	ND	ug/1	19.		
a-Naphthylamine	ND	ug/l	19.		
b-Naphthylamine	ND	ug/l			
Phenacetin	ND	ug/l	9.6		
Dimethoate	ND	ug/l	19.		
4-Aminobiphenyl	ND	ug/l	9.6		
Pentachloronitrobenzene	ND	ug/l	9.6		
Isodrin	ND	ug/l	9.6		
p-Dimethylaminoazobenzene	ND	ug/l	9.6		
Chlorobenzilate	ND	ug/l	19.		
3-Methylcholanthrene	ND	ug/l	19.		
Ethyl Methanesulfonate	ND	ug/l	14.		
Acetophenone	ND	ug/l	19.		
Nitrosodipiperidine	ND	ug/l	19.		
7,12-Dimethylbenz(a)anthracene	ND	ug/l	9.6		
n-Nitrosodimethylamine	ИD	ug/l	48.		
2,4,6-Trichlorophenol	ND	ug/l	4.8		
p-Chloro-m-cresol	ND	ug/l	4.8		
2-Chlorophenol	ND	ug/l	5.7		
2,4-Dichlorophenol	ND	ug/l	9.6	•	
2,4-Dimethylphenol	ND	ug/l	9.6		
2-Nitrophenol	ND	ug/l	19.		
4-Nitrophenol	ND	ug/l	9.6		
2,4-Dinitrophenol	ND	ug/l	19.		
4,6-Dinitro-o-cresol	ND	ug/l	19.		
Pentachlorophenol	ND	ug/l	19.		
Phenol	ND	ug/l	6.7		
2-Methylphenol	ND	ug/l	5.7		
3-Methylphenol/4-Methylphenol	ND	ug/l	5.7		
2,4,5-Trichlorophenol	ND	ug/l	4.8		
2,6-Dichlorophenol	ND	ug/l	9.6		
Benzoic Acid	ND	ug/l	48.		
Benzyl Alcohol	ND	ug/l	9.6		
Carbazole	ND	ug/l	4.8		
Pyridine	ND	ug/l	48.		
2-Picoline	ND	ug/l	19.		
Pronamide	ND	ug/l	19.		
Methyl methanesulfonate	ND	ug/l	19.		



Laboratory Sample Number: L0502589-08

MW/CB-2 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL REF METHO	DD DATE ID PREP ANAL
SVOC's by GC/MS 8270 contin		•	1 8270C	0315 19:30 0317 17:59 HL
Surrogate(s)	Recovery		QC Criteria	
2-Fluorophenol	53.0	ક		
Phenol-d6	40.0	용		
Nitrobenzene-d5	89.0	용		
2-Fluorobiphenyl	85.0	%		
2,4,6-Tribromophenol	102.	90		
4-Terphenyl-d14	97.0	ò		
PAH by GC/MS SIM 8270M			1 8270C+	M 0315 19:30 0316 19:56 RL
Acenaphthene	ND	ug/l	0.19	
2-Chloronaphthalene	ND	ug/l	0.19	
Fluoranthene	0.42	ug/l	0.19	
Hexachlorobutadiene	ND	ug/l	0.48	
Naphthalene	ND	ug/l	0.19	
Benzo(a)anthracene	ND	ug/l	0.19	
Benzo(a)pyrene	ND	ug/l	0.19	
Benzo(b)fluoranthene	ND	ug/l	0.19	
Benzo(k)fluoranthene	ND	ug/l	0.19	
Chrysene	ND	ug/l	0.19	
Acenaphthylene	ND	ug/l	0.19	
Anthracene	ND	ug/l	0.19	
Benzo(ghi)perylene	ND	ug/l	0.19	
Fluorene	ND	ug/l	0.19	
Phenanthrene	ND	ug/l	0.19	
Dibenzo(a,h)anthracene	ND	ug/l	0.19	
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.19	
Pyrene	1.1	ug/l	0.19	
l-Methylnaphthalene	ND	ug/l	0.19	
2-Methylnaphthalene	ND	ug/l	0.19	
Pentachlorophenol	ND	ug/l	0.76	
Hexachlorobenzene	ND	ug/l	0.76	
Perylene	ND	ug/l	0.19	
Biphenyl	ND	ug/l	0.19	
2,6-Dimethylnaphthalene	ND	ug/l	0.19	
L-Methylphenanthrene	ND	ug/l	0.19	
Benzo(e) Pyrene	ND	ug/l	0.19	
Hexachloroethane	ND	ug/l	0.76	
Surrogate(s)	Recovery		QC Criteria	
2-Fluorophenol	57.0	Se Se	21-120	
Phenol-d6	43.0	96	10-120	
Nitrobenzene-d5	89.0	96	23-120	
2-Fluorobiphenyl	86.0	9	43-120	
2,4,6-Tribromophenol	81.0	8	10-120	
-Terphenyl-d14	97.0	6 %	33-120	
Polychlorinated Biphenyls			2 0000	0215 22.15 0212 00 02
Aroclor 1221	ND	ug/l	1 8082 0 538	0315 22:15 0317 02:23 JB
Aroclor 1232		-	0.538	
TOOTOL 1292	ND	ug/l	0.538	

ALPHA ANALYTICAL LABORATORIES



Laboratory Sample Number: L0502589-08

MW/CB-2 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL REF MI	ETHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls com	tinued		1 80	082	0315 22:15 0317 02:23 JB
Aroclor 1242/1016	ND	ug/l	0.538		
Aroclor 1248	ND	ug/l	0.538		
Aroclor 1254	ND	ug/1	0.538		
Aroclor 1260	ND	ug/l	0.538		
Surrogate(s)	Recovery		QC Criteria		
2,4,5,6-Tetrachloro-m-xylene	74.0	%	30-150		
Decachlorobiphenyl	59.0	%	30-150		
Organochlorine Pesticides		*	1 80	081	0315 22:20 0316 20:48 AK
Delta-BHC	ND	ug/l	0.020		
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l	0.020		
Heptachlor epoxide	ND	ug/l	0.020		
Endrin	ND	ug/l	0.040		
Endrin aldehyde	ND	ug/l	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.020		
Endosulfan II	ND .	ug/l	0.040		
Endosulfan sulfate	ND	ug/l	0.040		
Methoxychlor	ND	ug/l	0.200		
Toxaphene	ND	ug/l	0.200		
Chlordane	ND	ug/l	0.200		
cis-Chlordane	ND	ug/l	0.020 -		
trans-Chlordane	ND	ug/l	0.020		
Surrogate(s)	Recovery		QC Criteria		
2,4,5,6-Tetrachloro-m-xylene	49.0	8	30-150		
Decachlorobiphenyl	65.0	8	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-09

Date Collected: 14-MAR-2005 14:10

MW/CB-17 (GROUNDWATER)

Date Received : 15-MAR-2005

Sample Matrix:

WATER

Date Reported: 21-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Total Metals								
Aluminum, Total	7.48	mg/l	0.010	1	6020	0316 16:00	0317 13:08	R W
Antimony, Total	0.0006	mg/l	0.0002	1	6020	0316 16:00		
Arsenic, Total	0.0034	mg/l	0.0004	1	6020	0316 16:00		
Barium, Total	0.1037	mg/l	0.0002	1	6020	0316 16:00	0317 13:08	RW
Beryllium, Total	0.0005	mg/l	0.0005	1	6020	0316 16:00	0317 13:08	RW
Cadmium, Total	ND	mg/l	0.0004	1	6020	0316 16:00		
Calcium, Total	58.9	mq/l	0.200	1		0316 16:00		
Chromium, Total	0.0127	mg/l	0.0002	1	6020	0316 16:00		
Cobalt, Total	0.0038	mg/l	0.0001	1	6020	0316 16:00		
Copper, Total	0.0531	mg/l	0.0005	1		0316 16:00		
Iron, Total	10.3	mg/l	0.010	1	6020	0316 16:00		
Lead, Total	0.0142	mg/l	0.0002	1	6020	0316 16:00		
Magnesium, Total	8.46	mq/l	0.010	1		0316 16:00		
Manganese, Total	0.1094	mq/l	0.0002	1	6020	0316 16:00		
Mercury, Total	ND	mg/l	0.0002	1		0316 16:00		
Nickel, Total	0.0131	mg/l	0.0005	1		0316 16:00		
Potassium, Total	11.4	mg/l	0.100	1	6020	0316 16:00		
Selenium, Total	0.003	mg/l	0.001	1	6020	0316 16:00		
Silver, Total	ND	mg/l	0.0001		6020	0316 16:00		
Sodium, Total	64.7	mg/l	0.100	1	6020	0316 16:00		
Thallium, Total	0.0001	mg/l	0.0001	1	6020	0316 16:00		
Vanadium, Total	0.0132	mg/l	0.0002	1		0316 16:00		
Zinc, Total	0.0771	mg/l	0.0050	1	6020	0316 16:00		
Dissolved Metals								
Aluminum, Dissolved	0.011	mg/l	0.010	1	6020	0316 16:00	0317 15:26	RW
Antimony, Dissolved	0.0034	mg/l	0.0002	1	6020	0316 16:00	0317 15:26	RW
Arsenic, Dissolved	0.0005	mg/l	0.0004	1	6020	0316 16:00	0317 15:26	R₩
Barium, Dissolved	0.0464	mg/l	0.0002	1	6020	0316 16:00	0317 15:26	RW
Beryllium, Dissolved	ND	mg/l	0.0005	1	6020	0316 16:00	0318 14:15	RW
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0316 16:00	0317 15:26	RW
Calcium, Dissolved	62.5	mg/l	0.200	1	6020	0316 16:00	0317 15:26	RW
Chromium, Dissolved	0.0003	mg/l	0.0002	1	6020	0316 16:00	0317 15:26	RW
Cobalt, Dissolved	0.0004	mq/l	0.0001	1	6020	0316 16:00		
Copper, Dissolved	0.0153	mq/l	0.0005	1	6020	0316 16:00		
Iron, Dissolved	0.127	mq/l	0.010	1	6020	0316 16:00		

Laboratory Sample Number: L0502589-09

MW/CB-17 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE	ID
							ANAL
Dissolved Metals							
	0.0004	ma / 1	0.0002	,	6020	0316 16:00 03	17 15.06 DW
Lead, Dissolved	0.0004	mg/l	0.0002	1		0316 16:00 03	
Magnesium, Dissolved	7.86	mg/l	0.0002	1		0316 16:00 03	
Manganese, Dissolved	0.0556	mg/l	0.0002	1		0316 16:00 03	
Mercury, Dissolved	ND	mg/l	0.0002	1		0316 16:00 03	
Nickel, Dissolved	0.0060	mg/l	0.100	1		0316 16:00 03	
Potassium, Dissolved	11.4	mg/l				0316 16:00 03	
Selenium, Dissolved	0.003	mg/l	0.001	1		0316 16:00 03	
Silver, Dissolved	ND	mg/l	0.100			0316 16:00 03	
Sodium, Dissolved	67.4	mg/l	0.0001	1	6020	0316 16:00 03	
Thallium, Dissolved	ND	mg/l					
Vanadium, Dissolved	0.0010	mg/l	0.0002	1		0316 16:00 03	
Zinc, Dissolved	0.0128	mg/l	0.0050	1	6020	0316 16:00 03	1/ 15:26 RW
Volatile Organics by GC/MS 83	260 .			1	8260B	93	17 14:46 BT
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	1.1	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5	-			
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	2.2	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	7.3	ug/l	0.50				
o-Xylene	1.1	ug/l	0.50				



Laboratory Sample Number: L0502589-09

MW/CB-17 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organiza by CC/MC 0	260 nontinu		.,		
Volatile Organics by GC/MS 8: cis-1,2-Dichloroethene			0.50	1 8260B	0317 14:46 BT
Dibromomethane	ND ND	ug/l	5.0		
1,4-Dichlorobutane		ug/l			
Iodomethane	ND	ug/l	5.0 5.0		,
	ND	ug/l			
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene Dichlorodifluoromethane	ND	ug/l	0.50 5.0		
Acetone	ND	ug/l			
Carbon disulfide	ND	ug/l	5.0		
	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	3.3	ug/l	0.50	•	
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	1.5	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	3.6	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ИD	ug/l	2.5		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	100.	9			
Toluene-d8	102.	%			
4-Bromofluorobenzene	98.0	%			
Dibromofluoromethane	101.	%			
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 18:25 HL
Acenaphthene	ND	ug/l	5.0		

Laboratory Sample Number: L0502589-09

MW/CB-17 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continue	d .			1 8270C	0315 19:30 0317 18:25 HL
Benzidine	ND	ug/l	50.	2 027,90	77.20 27.101 2.101 2.101 1.20
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ND	ug/l	5.0		
1-Chloronaphthalene	ND	ug/l	5.0		
2-Chloronaphthalene	ND	ug/l	6.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
1,3-Dichlorobenzene	ND	ug/l	5.0		
1,4-Dichlorobenzene	ND	ug/l	5.0		
3,3'-Dichlorobenzidine	ND	ug/l	50.		
2,4-Dinitrotoluene	ND	ug/l	6.0		
	ND	ug/l	5.0		
2,6-Dinitrotoluene	ND	ug/l	5.0		
Azobenzene Fluoranthene	ND	ug/1	5.0		
4-Chlorophenyl phenyl ether	ND	ug/l	5.0		
	ND	ug/1	5.0		
4-Bromophenyl phenyl ether	ND	ug/l	5.0		
Bis(2-chloroisopropyl)ether Bis(2-chloroethoxy)methane		ug/1 ug/l	5.0		
Hexachlorobutadiene	ND ND	ug/1	10.		
	ND	ug/l	10.		
Hexachlorocyclopentadiene Hexachloroethane	ND	ug/l	5.0		
	ND	ug/l	5.0		
Isophorone Naphthalene	ND	ug/l	5.0		
Nitrobenzene	ND	ug/1	5.0		
NTCLOBENZENE NDPA/DPA	ND	ug/l	15.		
n-Nitrosodi-n-propylamine	ND	ug/l	5.0		
	21.	ug/l	10.		
Bis(2-ethylhexyl)phthalate Butyl benzyl phthalate	ND	ug/l	5.0		
Di-n-butylphthalate	ND	ug/l	5.0		
	ND	ug/l	5.0		
Di-n-octylphthalate Diethyl phthalate	ND	ug/l	5.0		
Dimethyl phthalate	ND	ug/l	5.0	•	
- ~	ND	ug/1	5.0		
Benzo(a) anthracene	ND	ug/l	5.0		
Benzo(a) pyrene Benzo(b) fluoranthene	ND	ug/l	5.0		
	ND	ug/1	5.0		
Benzo(k) fluoranthene	ND	ug/l	5.0		
Chrysene	ND	ug/1 ug/1	5.0		
Acenaphthylene	ND	ug/l	5.0		
Anthracene Benzo(qhi)perylene	ND ND	ug/l ug/l	5.0		
Fluorene	ND ND	ug/l ug/l	5.0		
	ND ND	ug/l ug/l	5.0		
Phenanthrene		-	5.0		
Dibenzo(a, h) anthracene	ND	ug/l	7.0		
Indeno(1,2,3-cd)pyrene	ND	ug/l	5.0		
Pyrene	ND	ug/l			
Benzo(e)pyrene	ND	ug/l	5.0		
Biphenyl	ND	ug/l	5.0		
Perylene	ND	ug/l	5.0		
Aniline	ND	ug/l	10.		



Laboratory Sample Number: L0502589-09

MW/CB-17 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued			· · · · · ·	1 00707	
4-Chloroaniline	ND	ug/l	5.0	1 8270C	0315 19:30 0317 18:25 HL
1-Methylnaphthalene	ND	ug/l	5.0		
2-Nitroaniline		-	5.0		
3-Nitroaniline	ND	ug/l			
4-Nitroaniline	ND	ug/l	5.0		
	ND	ug/l	7.0		
Dibenzofuran	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/l	10.		
2-Methylnaphthalene	ND	ug/l	8.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
4-Aminobiphenyl	ND	ug/l	10.		
Pentachloronitrobenzene	ND	ug/l	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	10.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	20.		
7,12-Dimethylbenz(a)anthracene	ND	ug/l	10.		
n-Nitrosodimethylamine	ND	ug/l	50.		
2,4,6-Trichlorophenol	ND	ug/l	5.0		
p-Chloro-m-cresol	ND	ug/l	5.0		
2-Chlorophenol	ND	ug/l	6.0		
2,4-Dichlorophenol	ND	ug/l	10.	•	
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	ug/l	10.		
2,4-Dinitrophenol	ND	ug/l	20.		
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	20.		
Phenol	ND	ug/l	7.0		
2-Methylphenol	ND	ug/l	6.0		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0		
2,4,5-Trichlorophenol	ND	ug/l	5.0		
2,6-Dichlorophenol	ND	ug/l	10.		
Benzoic Acid	ND	ug/l	50.		
Benzyl Alcohol	ND	ug/l	10.		
Carbazole	ND	ug/l	5.0		
Pyridine	ND	ug/1 ug/l	50.		
2-Picoline	ND	_	20.		
Pronamide		ug/l			
	ND	ug/l	20.		
Methyl methanesulfonate	ND	ug/l	20.		

Laboratory Sample Number: L0502589-09

MW/CB-17 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
cytod - h. cc/Mc 0270 continu	and .			1 8270C	0315 19:30 0317 18:25 HL
SVOC's by GC/MS 8270 continu			00 07	iteria	0313 13:30 0317 10193 111
Surrogate(s)	Recovery	8	QC CI.	rcerra	
2-Fluorophenol	52.0	9			
Phenol-d6	40.0	9			
Nitrobenzene-d5	87.0	8			
2-Fluorobiphenyl	85.0	8			
2,4,6-Tribromophenol 4-Terphenyl-d14	94.0 88.0	6 %			
PAH by GC/MS SIM 8270M			, sk	1 8270C-M	0315 19:30 0316 20:41 RL
Acenaphthene	ND	ug/l	0.20	2 02/00 11	
•	ND	ug/l	0.20		
2-Chloronaphthalene Fluoranthene	1.7	ug/l	0.20		
Fluoranthene Hexachlorobutadiene	ND	ug/l	0.50		
	0.55	ug/l	0.20		
Naphthalene	0.55 ND	ug/l ug/l	0.20		
Benzo(a)anthracene	ND	ug/l ug/l	0.20		
Benzo(a)pyrene	ND	ug/l	0.20		
Benzo(b) fluoranthene	ND	ug/1	0.20		
Benzo(k) fluoranthene	ND	ug/l	0.20		
Chrysene	ND	ug/l	0.20		
Acenaphthylene Anthracene	ND	ug/l	0.20		
	ND	ug/l	0.20		
Benzo(ghi)perylene Fluorene	ND	ug/1	0.20		
Phenanthrene	0.31	ug/l	0.20		
Dibenzo(a,h)anthracene	ND	ug/l	0.20		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20		
	3.1	ug/l	0.20		
Pyrene 1-Methylnaphthalene	ND	ug/l	0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	ND	ug/l	0.80		
Hexachlorobenzene	ND	ug/l	0.80		
Perylene	ND	ug/l	0.20	•	
Biphenyl	0.21	ug/l	0.20		
2,6-Dimethylnaphthalene	ND	ug/l	0.20		
1-Methylphenanthrene	ND	ug/l	0.20		
Benzo(e) Pyrene	ND	ug/1	0.20		
Hexachloroethane	ND	ug/l	0.80		
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	62.0	엉	21-12		
Phenol-d6	49.0	90	10-12		
Nitrobenzene-d5	99.0	06	23-12	0	
2-Fluorobiphenyl	95.0	%	43-12		
2,4,6-Tribromophenol	89.0	8	10-12		
4-Terphenyl-d14	94.0	9	33-12		
Polychlorinated Biphenyls				1 8082	0315 22:15 0317 02:51 JB
Aroclor 1221	ND	ug/l	0.610)	
Aroclor 1232	ND	ug/l	0.610		



Laboratory Sample Number: L0502589-09

MW/CB-17 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL 1	REF METHOD	DA! PREP	re ii Anal
Polychlorinated Biphenyls con	tinued			1 8082	0315 22:15	0317 02:51 J
Aroclor 1242/1016	ND	ug/l	0.610			
Aroclor 1248	ND	ug/l	0.610			
Aroclor 1254	ND	ug/l	0.610			
Aroclor 1260	ND	ug/l	0.610			
Surrogate(s)	Recovery		QC Crite	eria		
2,4,5,6-Tetrachloro-m-xylene	62.0	8	30-150			
Decachlorobiphenyl	43.0	%	30-150			
Organochlorine Pesticides				1 8081	0317 15:00	0318 14:49 A
Delta-BHC	ND	ug/l	0.031			
indane	ND	ug/l	0.031			
Alpha-BHC	ND	ug/l	0.031			
Beta-BHC	ND	ug/l	0.031			
Heptachlor	ND	ug/l	0.031			
Aldrin	ND	ug/l	0.031			
Heptachlor epoxide	ND	ug/l	0.031			
Endrin	ND	ug/l	0.062			
Endrin aldehyde	ND	ug/l	0.062			
Endrin ketone	ND	ug/l	0.062			
Dieldrin	ND	ug/l	0.062			
1,4'-DDE	ND	ug/l	0.062			
1,4'-DDD	ND	ug/l	0.062			
1,4'-DDT	ND	ug/l	0.062			
Endosulfan I	ND	ug/l	0.031			
Endosulfan II	ND	ug/l	0.062			
Endosulfan sulfate	ND	ug/l	0.062			
Methoxychlor	ND	ug/l	0.308			
Toxaphene	ND	ug/l	0.308			
Chlordane	ND	ug/l	0.308			
cis-Chlordane	ND	ug/l	0.031	•		
rans-Chlordane	ND	ug/l	0.031			
Surrogate(s)	Recovery		QC Crite	eria		
2,4,5,6-Tetrachloro-m-xylene	61.0	9	30-150			
Decachlorobiphenyl	45.0	96	30-150			

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-10 Date Collected: 10-MAR-2005 15:36

TRIP BLANK Date Received: 15-MAR-2005

Sample Matrix: WATER Date Reported: 21-MAR-2005

Condition of Sample: Satisfactory Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS	8260			1 8260B	0316 20:48 TT
Methylene chloride	ND	ug/l	5.0		
1,1-Dichloroethane	ND	ug/l	0.75		
Chloroform	ND	ug/l	0.75		
Carbon tetrachloride	ND	ug/l	0.50		
1,2-Dichloropropane	ND	ug/l	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.50		
Chlorobenzene	ND	ug/l	0.50		
Trichlorofluoromethane	ND	ug/l	2.5		
1,2-Dichloroethane	ND	ug/l	0.50		
1,1,1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/l	2.0		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.50		
Toluene	ND	ug/l	0.75		
Ethylbenzene	ND	ug/l	0.50		
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
1,1-Dichloroethene	ND	ug/l	0.50		
trans-1,2-Dichloroethene	ND	ug/l	0.75		
Trichloroethene	ND	ug/l	0.50		
1,2-Dichlorobenzene	ND	ug/l	2.5		
1,3-Dichlorobenzene	ND	ug/l	2.5		
1,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	ND	ug/l	1.0		
p/m-Xylene	ND	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		

 $\hbox{\tt Comments: Complete list of References and Glossary of Terms found in Addendum I}\\$

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Laboratory Sample Number: L0502589-10

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PARAMETER	RESULT	UNITS	RDL RE	F METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	260 continu	ed		826ÒB	0316 20:48 TT
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
1-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Petrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
l,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
dexachlorobutadiene	ND	ug/l	1.0		
[sopropylbenzene	ND	ug/l	0.50		
o-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
rans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Cthyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		QC Criteri	.a	
,2-Dichloroethane-d4	99.0	ક			
Coluene-d8	103.	ૄ			
l-Bromofluorobenzene	102.	%			
Dibromofluoromethane	99.0	8			

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502589-11

Condition of Sample: Satisfactory

Date Collected: 15-MAR-2005 12:10

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Date Received : 15-MAR-2005 Date Reported : 21-MAR-2005

Sample Matrix: WATER

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF	METHOD	DA	TE	ID
						PREP	ANAL	
N. 1. 1. 1.								13.21
Cotal Metals								· · ·
Aluminum, Total	ND	mg/l	0.010	1	6020	0316 16:00	0317 13:1	8 RW
Antimony, Total	ND	mg/l	0.0002	1	6020	0316 16:00	0317 13:1	8 RW
Arsenic, Total	ND	mg/l	0.0004	1	6020	0316 16:00	0317 13:1	8 RW
Barium, Total	ND	mg/l	0.0002	1	6020	0316 16:00	0317 13:1	8 RW
Beryllium, Total	ND	mg/l	0.0005	1	6020	0316 16:00	0317 13:1	8 RW
Cadmium, Total	ND	mg/l	0.0004	1	6020	0316 16:00	0317 13:1	8 RW
Calcium, Total	0.295	mg/l	0.200	1	6020	0316 16:00	0317 13:1	8 RW
Chromium, Total	ND	mg/l	0.0002	1	6020	0316 16:00	0317 13:1	8 RW
Cobalt, Total	ND	mg/l	0.0001	1	6020	0316 16:00	0317 13:1	8 RW
Copper, Total	ND	mg/l	0.0005	1	6020	0316 16:00	0317 13:1	8 RW
Iron, Total	0.015	mg/l	0.010	1	6020	0316 16:00	0317 13:1	.8 RW
Lead, Total	0.0004	mg/l	0.0002	1	6020	0316 16:00	0317 13:3	8 RW
Magnesium, Total	0.013	mg/l	0.010	1	6020	0316 16:00	0317 13:1	.8 RW
Manganese, Total	0.0009	mg/l	0.0002	1	6020	0316 16:00	0317 13:1	8 RW
Mercury, Total	ND	mg/l	0.0002	1	7470A	0316 16:00	0317 13:4	16 DM
Nickel, Total	ND	mg/l	0.0005	1	6020	0316 16:00	0317 13:1	8 RW
Potassium, Total	ND	mg/l	0.100	1	6020	0316 16:00	0317 13:1	L8 R₩
Selenium, Total	ND	mg/l	0.001	1	6020	0316 16:00	0317 13:1	8 RW
Silver, Total	ND	mq/l	0.0001	l	6020	0316 16:00	0317 13:3	8 RW
Sodium, Total	ND	mg/l	0.100	1	6020	0316 16:00	0317 13:3	L8 RW
Thallium, Total	ND	mg/l	0.0001	1	6020	0316 16:00	0317 13:3	L8 RW
Vanadium, Total	ND	mg/l	0.0002	1	6020	0316 16:00	0317 13:3	18 RW
Zinc, Total	ND	mg/l	0.0050	1	6020	0316 16:00	0317 13:	18 RW
Dissolved Metals								
Aluminum, Dissolved	ND	mg/l	0.010	1	6020	0316 16:00	0317 16:	17 RW
Antimony, Dissolved	ND	mg/l	0.0002	1	6020	0316 16:00	0317 16:	17 RW
Arsenic, Dissolved	ND	mg/l	0.0004	1	6020	0316 16:00	0317 16:	17 RW
Barium, Dissolved	ND	mg/l	0.0002	1	6020	0316 16:00	0317 16:	17 RW
Beryllium, Dissolved	ND	mq/l	0.0005	. 1	6020	0316 16:00	0318 14:	21 RW
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0316 16:00	0317 16:	17 RW
Calcium, Dissolved	0.370	mg/l	0.200	1	6020	0316 16:00	0317 16:	17 RW
Chromium, Dissolved	ND	mg/l	0.0002	. 1	6020	0316 16:00		
Cobalt, Dissolved	ND	mg/l	0.0001			0316 16:00		
Copper, Dissolved	ND	mg/l	0.0005			0316 16:00		
Iron, Dissolved	0.015	mg/l	0.010	1		0316 16:00		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502589-11

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PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE I	ΙD
						PREP ANAL	
issolved Metals							
Lead, Dissolved	ND	mg/l	0.0002	1	6020	0316 16:00 0317 16:17 1	RW
Magnesium, Dissolved	0.036	mg/l	0.010	1	6020	0316 16:00 0317 16:17 1	RW
Manganese, Dissolved	0.0004	mg/l	0.0002	1	6020	0316 16:00 0317 16:17 1	RW
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0316 16:00 0317 11:47 1	DM
Nickel, Dissolved	ND	mg/l	0.0005	1	6020	0316 16:00 0317 16:17 1	RW
Potassium, Dissolved	ND	mg/l	0.100	1	6020	0316 16:00 0317 16:17	RW
Selenium, Dissolved	ND	mg/l	0.001	1	6020	0316 16:00 0317 16:17 1	RW
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00 0317 16:17	RW
Sodium, Dissolved	ND	mg/l	0.100	1	6020	0316 16:00 0317 16:17 1	RW
Challium, Dissolved	ND	mg/l	0.0001	1	6020	0316 16:00 0317 16:17 1	RW
Janadium, Dissolved	ND	mg/l	0.0002	1	6020	0316 16:00 0317 16:17 1	RW
Sinc, Dissolved	ND	mg/l	0.0050	1	6020	0316 16:00 0317 16:17	R₩
Volatile Organics by GC/MS 8	260			1	8260B	0316 21:27	TT-
Methylene chloride	ИD	ug/l	5.0				
,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
arbon tetrachloride	ND	ug/l	0.50				
,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
.,1,2-Trichloroethane	ND	ug/l	0.75				
etrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
richlorofluoromethane	ND	ug/l	2.5				
,2-Dichloroethane	ND	ug/l	0.50				
,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
rans-1,3-Dichloropropene	ND	ug/l	0.50				
is-1,3-Dichloropropene	ИD	ug/l	0.50				
.,1-Dichloropropene	ND	ug/l	2.5		•		
Bromoform	ND	ug/l	2.0				
,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Coluene	ND	ug/l	0.75				
thylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
'inyl chloride	ND	ug/l	1.0				
hloroethane	ND	ug/l	1.0				
,1-Dichloroethene	ND	ug/l	0.50				
rans-1,2-Dichloroethene	ND	ug/l	0.75				
richloroethene	ND	ug/l	0.50				
,2-Dichlorobenzene	ND	ug/l	2.5				
.,3-Dichlorobenzene	ND	ug/l	2.5				
,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
/m-Xylene	ND	ug/l	0.50				
-Xylene	ND	ug/l	0.50				

Laboratory Sample Number: L0502589-11 FIELD BLANK

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 8	260 continu	.ed	· · · · · · · · · · · · · · · · · · ·	1 8260B	0316 21;27 TT
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene		ug/l ug/l	0.50		
*	ND		0.50	•	
p-Isopropyltoluene	ND	ug/l	2.5		
Naphthalene	ND	ug/l	0.50		
n-Propylbenzene	ND	ug/l			
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		QC Cr:	iteria	
1,2-Dichloroethane-d4	100.	% -			
Toluene-d8	100.	ફ			
4-Bromofluorobenzene	104.	ે			
Dibromofluoromethane	97.0	olo			
SVOC's by GC/MS 8270				1 8270C	0315 19:30 0317 18:51 HL
Acenaphthene	ND	ug/l	4.8		

Comments: Complete list of References and Glossary of Terms found in Addendum ${\tt I}$

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Laboratory Sample Number: L0502589-11

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RESULT ed ND ND ND ND ND ND	ug/l ug/l ug/l	48.		METHOD	DA1 PREP	TE ANAL	ID
ND ND ND ND	ug/l ug/l				PREP	ANAL	
ND ND ND ND	ug/l ug/l						
ND ND ND ND	ug/l ug/l		, ,				
ND ND ND	ug/l ug/l		1	8270C	0316 10 22		
ND ND	ug/l				0315 19:30 (0317 18:51	HL
ND	_	4.8					
		4.8					
ND	ug/l	4.8					
	ug/l	4.8					
ND	ug/l	5.7					
ND	ug/l	4.8					
ND	ug/l	4.8					
ND	ug/l	4.8					
ND	ug/l						
ND	_						
ND	ug/l						
ND	-						
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	-						
	-						
	-	4.8					
	-	4.8					
	ug/l	4.8	-				
		4.8					
	ug/l	4.8					
	ug/l	4.8					
	ug/l	4.8					
	ug/l	4.8					
	ug/l	4.8					
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	ug/l						
	ug/l						
	ug/l						
ND							
1D							
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ID	_						
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	-						
	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND	ND	ND	ND	ND	ND

Comments: Complete list of References and Glossary of Terms found in Addendum I

Laboratory Sample Number: L0502589-11

		thirme	RDL	REF METHOD	DATE	ID
PARAMETER	RESULT	UNITS	KDII	102	PREP ANAL	
				1 8279C	0315 19:30 0317 18:5	51 HL
SVOC's by GC/MS 8270 continue	ed	/1	4.8	1 02700		
4-Chloroaniline	ND	ug/l	4.8			
1-Methylnaphthalene	ND	ug/l	4.8			
2-Nitroaniline	ND	ug/l	4.8			
3-Nitroaniline	ND	ug/1	6.7			
4-Nitroaniline	ND	ug/l	4.8			
nihenzofuran	ND	ug/l	48.			
a,a-Dimethylphenethylamine	ND	ug/l	9.6			
Hexachloropropene	ИD	ug/l	9.6			
Nitrosodi-n-butylamine	ND	ug/1	7.6			
2-Methylnaphthalene	ND	ug/1	19.			
1,2,4,5-Tetrachlorobenzene	ND	ug/l	19.			
Pentachlorobenzene	ND	ug/l	19.			
a-Naphthylamine	ND	ug/l	19. 19.			
b-Naphthylamine	ND	ug/l	19. 9.6			
Phenacetin	ND	ug/l	9.6 19.			
Dimethoate	ND	ug/l				
4-Aminobiphenyl	ND	ug/l	9.6			
Pentachloronitrobenzene	ND	ug/l	9.6			
Isodrin	ND	ug/l	9.6			
p-Dimethylaminoazobenzene	ND	ug/l	9.6			
Chlorobenzilate	ND	ug/l	19.			
3-Methylcholanthrene	ND	ug/l	19.			
Ethyl Methanesulfonate	ND	ug/l	14.			
Acetophenone	ND	ug/l	19.			
Nitrosodipiperidine	ND	ug/l	19.			
7,12-Dimethylbenz(a)anthrac	cene ND	ug/l	9.6			
n-Nitrosodimethylamine	ND	ug/l	48.			
2,4,6-Trichlorophenol	ND	ug/l	4.8			
p-Chloro-m-cresol	ND	ug/l	4.8			
2-Chlorophenol	ND	ug/l	5.7			
2,4-Dichlorophenol	ND	ug/l	9.6	•		
2,4-Dimethylphenol	ND	ug/l	9.6			
2,4-pimethylphenol 2-Nitrophenol	ND	ug/l	19.			
4-Nitrophenol	ND	ug/l	9.6			
4-Nitrophenol 2,4-Dinitrophenol	ND	ug/l	19.			
4,6-Dinitro-o-cresol	ND	ug/l	19.			
Ptachlorophenol	ND	ug/l	19.			
Pentachlorophenol	ND	ug/l	6.7			
Phenol 2-Methylphenol	ND	ug/l	5.7			
2-Methylphenol/4-Methylphe	enol ND	ug/l	5.7			
2,4,5-Trichlorophenol	ND	ug/l	4.8			
2,4,5-Trichlorophenol 2,6-Dichlorophenol	ND	ug/l	9.6			
Z, 6-Dichiolophenor	ND	ug/l	48.			
Benzoic Acid	ND	ug/l	9.6			
Benzyl Alcohol	ND	ug/l	4.8			
Carbazole	ND	ug/l	48.			
Pyridine	ND	ug/l	19.			
2-Picoline	ND	ug/l	19.			
Pronamide Methyl methanesulfonate	ND	ug/l	19.			

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502589-11

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
				iai iainop	DATE II PREP ANAL
SVOC's by GC/MS 8270 conti	nued				
Surrogate(s)	Recovery		00 00	1. 8270C iteria	. 0315 19:30 0317 18:51 н
2-Fluorophenol	46.0	96	QC Cr.	rceria	
Phenol-d6	33.0	8			
Nitrobenzene-d5	78.0	9			
2-Fluorobiphenyl	77.0	8			
2,4,6-Tribromophenol	92.0	8			
4-Terphenyl-d14	90.0	96			
PAH by GC/MS SIM 8270M				1 00700 4	Nagara da esta esta esta esta esta esta esta est
Acenaphthene	ND	ug/l	0.19	1 8270C-M	0315 19:30 0316 21:26 RL
2-Chloronaphthalene	ND	ug/l	0.19		
Fluoranthene	ND	ug/l	0.19		
Hexachlorobutadiene	ND	ug/l ug/l	0.19		
Naphthalene	ND	ug/l ug/l	0.48		
Benzo(a)anthracene	ND	ug/l	0.19		
Benzo(a)pyrene	ND	ug/l	0.19		
Benzo(b)fluoranthene	ND	ug/l	0.19		
Benzo(k)fluoranthene	ND	ug/l	0.19		
Chrysene	ND	ug/l	0.19		
Acenaphthylene	ND	ug/l	0.19		
Anthracene	ND	ug/l	0.19		
Benzo(ghi)perylene	ND	ug/l	0.19		
Fluorene	ND	ug/l	0.19		
Phenanthrene	ND	ug/l			
Dibenzo(a,h)anthracene	ND	ug/l	0.19 0.19		
Indeno(1,2,3-cd)Pyrene	ND	ug/l			
Pyrene	ND	ug/l	0.19		
-Methylnaphthalene	ND	ug/l	0.19		
?-Methylnaphthalene	ND	ug/l	$0.19 \\ 0.19$		
entachlorophenol	ND	ug/l	0.19		
exachlorobenzene	ND	ug/l	0.76		
erylene	ND	ug/l	0.76	•	
iphenyl	ND	ug/1	0.19		
,6-Dimethylnaphthalene	ND	ug/l	0.19		
-Methylphenanthrene	ND	ug/l	0.19		
enzo(e)Pyrene	ND	ug/l			
exachloroethane	ND	ug/l	0.19 0.76		
urrogate(s)	Recovery		QC Crit	eria	
-Fluorophenol	51.0	95	21-120	-CIIa	
henol-d6	38.0	%	10-120		
itrobenzene-d5	81.0	%	23-120		
-Fluorobiphenyl	78.0	90	43-120		
,4,6-Tribromophenol	81.0	9	10-120		
-Terphenyl-d14	90.0	96	33-120		
olychlorinated Biphenyls				1 8082	0716 00 45 0777
roclor 1221	ND	ug/l	0.538	1 0002	0315 22:15 0317 03:20 JB
roclor 1232	ND	ug/l	0.538		

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502589-11

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
Polychlorinated Biphenyls con	tinued			1 8082	0315 22:15 0317 03:20 JE
Aroclor 1242/1016	ND	ug/l	0.538		
Aroclor 1242/1010 Aroclor 1248	ND	ug/l	0.538		
Aroclor 1254	ND	ug/l	0.538		
Aroclor 1254 Aroclor 1260	ND	ug/l	0.538		
AIOCIOI 1200		J.			
Surrogate(s)	Recovery		QC Cri	teria	
2,4,5,6-Tetrachloro-m-xylene	77.0	%	30-150		
Decachlorobiphenyl	50.0	ક	30-150		
Decacutotopibueni					
Organochlorine Pesticides				1 8081	0315 22:20 0316 21:45 A
Delta-BHC	ND	ug/l	0.020		
Lindane	ND	ug/l	0.020		
Alpha-BHC	ND	ug/l	0.020		
Beta-BHC	ND	ug/l	0.020		
Heptachlor	ND	ug/l	0.020		
Aldrin	ND	ug/l	0.020		
Heptachlor epoxide	ND	ug/l	0.020		
Endrin	ND	ug/l	0.040		
Endrin aldehyde	ND	ug/l	0.040		
Endrin ketone	ND	ug/l	0.040		
Dieldrin	ND	ug/l	0.040		
4,4'-DDE	ND	ug/l	0.040		
4,4'-DDD	ND	ug/l	0.040		
4,4'-DDT	ND	ug/l	0.040		
Endosulfan I	ND	ug/l	0.020		
Endosulfan II	ND	ug/l	0.040		
Endosulfan sulfate	ND	ug/l	0.040		
Methoxychlor	ND	ug/l	0.200		
Toxaphene	ND	ug/l	0.200		
Chlordane	ND	ug/l	0.200		
cis-Chlordane	ND	ug/l	0.020	-	
trans-Chlordane	ND	ug/l	0.020		
0	Recovery		QC Cri	iteria	
Surrogate(s)		0/0	30-150		
2,4,5,6-Tetrachloro-m-xylene	54.0	8	30-150		
Decachlorobiphenyl	J4.U	U	30 10.		





Laboratory Job Number: L0502589

Value 1	Value 2	Units	RPD	RPD Limits	
for sample	(s) 01-09.1	1 (L050258	9-03, WG	196507-1)	
0.261	0.290		11	20	
0.0013	0.0013	mg/l	5	20	
0.0010			2	20	
0.0526		-	1	20	
		-			
ND		-			
49.7					
		=	9		
		-	1		
0.0051		=	9	20	
6.66			3	20	
		-			
		=			
		-			
		-			
		-			
		-			
		-			
		- .			
		-			
ND	ND	mg/l	NC	20	
ls for samp	le(s) 01-09	,11 (L0502	589-01, V		
ls for samp 0.035	0.015	,11 (L0502 mg/l	83	20	
				20 20	
0.035	0.015	mg/l	83	20	
0.035 0.0012	0.015 0.0012	mg/l mg/l	83 2	20 20 20 20	
0.035 0.0012 ND	0.015 0.0012 ND 0.4699 ND	mg/l mg/l mg/l	83 2 NC - 1 NC	20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND	0.015 0.0012 ND 0.4699 ND ND	mg/l mg/l mg/l mg/l mg/l mg/l	83 2 NC - 1 NC NC	20 20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND	0.015 0.0012 ND 0.4699 ND ND ND	mg/l mg/l mg/l mg/l	83 2 NC - 1 NC NC 1	20 20 20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003	mg/l mg/l mg/l mg/l mg/l mg/l	83 2 NC - 1 NC NC 1	20 20 20 20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND ND 115.	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002	mg/l mg/l mg/l mg/l mg/l mg/l	83 2 NC - 1 NC NC 1 7	20 20 20 20 20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003	mg/l mg/l mg/l mg/l mg/l mg/l mg/l	83 2 NC - 1 NC NC 1	20 20 20 20 20 20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003 0.0002 0.0030 3.25	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	83 2 NC - 1 NC NC 1 7 0 4	20 20 20 20 20 20 20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003 0.0002 0.0030 3.25 0.0005	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48	20 20 20 20 20 20 20 20 20 20 20 20 20	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0 4.631	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4 4.688	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0 4.631 0.0095	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4 4.688 0.0095	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1 1	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0 4.631 0.0095 8.02	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4 4.688 0.0095 8.14	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1 1 0	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
0.035 0.0012 ND 0.4670 ND ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0 4.631 0.0095 8.02 ND	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4 4.688 0.0095 8.14	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1 1 0 1 NC	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
0.035 0.0012 ND 0.4670 ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0 4.631 0.0095 8.02 ND	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4 4.688 0.0095 8.14 ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1 1 0 1 NC	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
0.035 0.0012 ND 0.4670 ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0 4.631 0.0095 8.02 ND ND	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4 4.688 0.0095 8.14 ND ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1 1 0 1 NC	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
0.035 0.0012 ND 0.4670 ND 115. 0.0003 0.0002 0.0030 3.25 0.0005 43.0 4.631 0.0095 8.02 ND	0.015 0.0012 ND 0.4699 ND ND 116. 0.0003 0.0002 0.0031 3.24 0.0003 43.4 4.688 0.0095 8.14 ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	83 2 NC - 1 NC NC 1 7 0 4 0 48 1 1 0 1 NC	20 20 20 20 20 20 20 20 20 20 20 20 20 2	
	S for sample 0.261 0.0013 0.0010 0.0526 ND ND 49.7 0.0014 0.0003 0.0018 0.534 0.0051 6.66 0.0393 0.0016 13.6 0.001 ND 42.7 ND 0.0010 0.0414 S for sample	for sample(s) 01-09,1 0.261 0.290 0.0013 0.0013 0.0010 0.001 0.0526 0.0531 ND ND ND ND 49.7 51.1 0.0014 0.0016 0.0003 0.0003 0.0018 0.0018 0.534 0.539 0.0051 0.0056 6.66 6.84 0.0393 0.0399 0.0016 0.0018 13.6 13.9 0.001 0.001 ND ND 42.7 44.3 ND ND 0.0010 0.0011 0.0414 0.0456 for sample(s) 01-09,1	for sample(s) 01-09,11 (L050258 0.261 0.290 mg/l 0.0013 0.0013 mg/l 0.0010 0.001 mg/l 0.0526 0.0531 mg/l ND ND mg/l ND ND mg/l 0.0014 0.0016 mg/l 0.0003 0.0003 mg/l 0.0018 0.0018 mg/l 0.534 0.539 mg/l 0.0534 0.539 mg/l 0.0051 0.0056 mg/l 6.66 6.84 mg/l 0.0393 0.0399 mg/l 0.0016 0.0018 mg/l 13.6 13.9 mg/l 13.6 13.9 mg/l ND ND mg/l ND ND mg/l ND ND mg/l 0.001 0.001 mg/l ND ND mg/l 0.0010 0.0011 mg/l 0.0010 0.0011 mg/l 0.0010 0.0011 mg/l 0.0010 0.0011 mg/l 0.0010 0.0015 mg/l	for sample(s) 01-09,11 (L0502589-03, WG1 0.261 0.290 mg/l 11 0.0013 0.0013 mg/l 5 0.0010 0.001 mg/l 2 0.0526 0.0531 mg/l 1 NC ND ND mg/l NC ND ND mg/l NC 49.7 51.1 mg/l 3 0.0014 0.0016 mg/l 9 0.0003 0.0003 mg/l 3 0.0018 0.0018 mg/l 4 0.534 0.539 mg/l 1 0.0534 0.539 mg/l 1 0.0051 0.0056 mg/l 9 6.66 6.84 mg/l 3 0.0393 0.0399 mg/l 2 0.0016 0.0018 mg/l 8 13.6 13.9 mg/l 2 0.0016 0.0018 mg/l 8 13.6 13.9 mg/l 2 0.001 0.001 mg/l 7 ND ND mg/l NC 42.7 44.3 mg/l 4 ND ND mg/l NC 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 3 0.0010 0.0011 mg/l 9 0.0010 0.0011 mg/l 9 0.0010 0.0011 mg/l 9 0.0010 0.0011 mg/l 9	for sample(s) 01-09,11 (L0502589-03, WG196507-1) 0.261 0.290 mg/l 11 20 0.0013 0.0013 mg/l 5 20 0.0010 0.001 mg/l 2 20 0.0526 0.0531 mg/l 1 20 ND

Laboratory Job Number: L0502589

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Dissolved A	Metals for samp	le(s) 01-09	,11 (L0502	589-01,	WG196506-1)
Zinc, Dissolved		0.0050		81	20
Dissolved Mercury, Dissolved	Metals for samp	ole(s) 01-09 ND	,11 (L0502	589-02, NC	WG196500-3)



Laboratory Job Number: L0502589

Parameter	% Recovery	QC Criteria	
Total Metals LCS for s	ample(s) 01-09-11	(WG196507-4)	
Aluminum, Total	98	80-120	
Antimony, Total	97	80-120	
Arsenic, Total	98	80-120	
Barium, Total	100	80-120	
Beryllium, Total	97	80-120	
Cadmium, Total	108	80-120	
Calcium, Total	113	80-120	
Chromium, Total	103	80-120	
Cobalt, Total	104	80-120	
Copper, Total	106	80-120	
Iron, Total	105	80-120	
Lead, Total	105	80-120	
Magnesium, Total	104	80-120	
Manganese, Total	104	80-120	
Nickel, Total	105	80-120	
Potassium, Total	102	80-120	
Selenium, Total	103	80-120	
Silver, Total	104	80-120	
Sodium, Total	99	80-120	
		80-120	
•			
Thallium, Total	98		
Thallium, Total Vanadium, Total Linc, Total Total Metals LCS for s	102 101	80-120 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total	102 101 ample(s) 01-09,11 106	80-120 80-120 (WG196501-1) 70-130	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for	102 101 ample(s) 01-09,11 106 sample(s) 01-09,	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4)	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09,	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09,1	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120	Section 1997
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09,1 100 95 94	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120	ALC THE TOTAL
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09,1 100 95 94 99	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120	Section 1997
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09,1 100 95 94 99 106 109	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Chromium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Chromium, Dissolved Cobalt, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Chromium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Zinc, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Chromium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Cron, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Chromium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved Cron, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Vanadium, Total Vanadium, Total Vanadium, Total Vanadium, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Varsenic, Dissolved Varsenic, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Vanadium, Total Vanadium, Total Vanadium, Total Vanadium, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Varsenic, Dissolved Varsenic, Dissolved Varium, Dissolved Varium, Dissolved Varium, Dissolved Valuminum, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110 104 104	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Vanadium, Total Vanadium, Total Vance, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Barium, Dissolved Barium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Copper, Dissolved Cadmium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110 104 104 103	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Thallium, Total Vanadium, Total Vanadium, Total Vanadium, Total Vanadium, Total Vanadium, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Varsenic, Dissolved Varsenic, Dissolved Varsenic, Dissolved Varium, Dissolved Varium, Dissolved Valumin	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110 104 104 103	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120	
Thallium, Total Vanadium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Barium, Dissolved Cadmium, Dissolved Chromium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Copper, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110 104 104 103 104	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Cadmium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Copper, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Copper, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110 104 104 103 104 103 93	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Arsenic, Dissolved Barium, Dissolved Barium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cobalt, Dissolved Copper, Dissolved Copper, Dissolved Copper, Dissolved Cadmium, Dissolved Copper, Dissolved Coppe	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110 104 104 103 104 103 93	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120	
Thallium, Total Vanadium, Total Zinc, Total Total Metals LCS for s Mercury, Total Dissolved Metals LCS for Aluminum, Dissolved Antimony, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Cadmium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Copper, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Copper, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved Cotassium, Dissolved	102 101 ample(s) 01-09,11 106 sample(s) 01-09, 100 95 94 99 106 109 102 103 104 110 104 104 103 104 103 93	80-120 80-120 (WG196501-1) 70-130 11 (WG196506-4) 80-120	

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Parameter	% Recovery QC Criteria
Dissolved Metals LCS for samp	le(s) 01-09,11 (WG196500-1)
Mercury, Dissolved	106 70-130
Volatile Organics by GC/MS 8260 LCS	
Chlorobenzene	90
Benzene	90
Toluene	90
1,1-Dichloroethene	90 85
Trichloroethene	83
Surrogate(s)	110
1,2-Dichloroethane-d4	110
Toluene-d8	103
4-Bromofluorobenzene	98
Dibromofluoromethane	107
Volatile Organics by GC/MS 8260 LCS	
Chlorobenzene	105
Benzene	103
Toluene	104
1,1-Dichloroethene	102
Trichloroethene	96
Surrogate(s)	
1,2-Dichloroethane-d4	106
Toluene-d8	107
4-Bromofluorobenzene	109
Dibromofluoromethane	99
SVOC's by GC/MS 8270 LCS for sa	
Acenaphthene	66
1,2,4-Trichlorobenzene	69 .
2-Chloronaphthalene	72
1,2-Dichlorobenzene	61 59
1,4-Dichlorobenzene	80
2,4-Dinitrotoluene	80
2,6-Dinitrotoluene	83
Fluoranthene 4-Chlorophenyl phenyl ether	70
n-Nitrosodi-n-propylamine	58
Butyl benzyl phthalate	84
Anthracene	41
Pyrene	80
Hexachloropropene	62
P-Chloro-M-Cresol	73
	62
2-Chlorophenol	02
2-Chlorophenol 2-Nitrophenol	65
2-Chlorophenol 2-Nitrophenol 4-Nitrophenol	

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Parameter	% Recovery QC	Criteria
SVOC's by GC/MS 8270 t	CS for sample(s) 01-09,11	/WG196450-21
Pentachlorophenol	89	(11012)0430 27
Phenol	25	
inenor	23	
Surrogate(s)		
2-Fluorophenol	43	
Phenol-d6	32	
Nitrobenzene-d5	72	
2-Fluorobiphenyl	75	
2,4,6-Tribromophenol	92	
4-Terphenyl-d14	88	
PAH by GC/MS SIM 8270M	LCS for sample(s) 01-09,1	1 (WG196462-2)
Acenaphthene		6-118
2-Chloronaphthalene	70	
Fluoranthene	68	
Anthracene	49	
Pyrene		6-127
Pentachlorophenol		0-103
Surrogate(s)		
2~Fluorophenol	54 2	1-120
Phenol-d6		0-120
Nitrobenzene-d5		3-120
oltrobenzene-do 2-Fluorobiphenyl		3-120
2,4,6-Tribromophenol		0-120
4-Terphenyl-d14		3-120
Polyablarinated Dinhanyla	TCC for comple/a) 01 00	71 (MC106407 0)
Polychlorinated Biphenyls Aroclor 1242/1016		11: (WG196407~2)
Aroclor 1242/1016 Aroclor 1260		0-150 0-150
ALOCIOI 1200	90 3	-
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	85 3	0-150
Decachlorobiphenyl	59 3	0-150
Organochlorine Pesticides LC	S for sample(s) 01-05,07-	08,11 (WG196452-2)
Delta-BHC	60	
Lindane	65	
Alpha-BHC	65	
Beta-BHC	63	
Heptachlor	64	
Aldrin	59	
Heptachlor epoxide	66	
Endrin	79	
Endrin aldehyde	67	
Endrin ketone	88	
Dieldrin	67	
4,4'-DDE	. 70	

Laboratory Job Number: L0502589

Parameter	% Reco	very QC Criteria	
Organochlorine Pesticides LCS	for sample(s)	01-05.07-08.11 (WG196452-2)	
4,4'-DDD	74		
4,4'-DDT	70		
Endosulfan I	65		
Endosulfan II	73		
Endosulfan sulfate	93		
Methoxychlor	85		
cis-Chlordane	70		
trans-Chlordane	65		
Surrogate(s)			
2,4,5,6-Tetrachloro-m-xylene	57	30-150	
Decachlorobiphenyl	64	30-150	
Organochlorine Pesticide		e(s) 06,09 (WG196653-2)	4
Delta-BHC	58		
Lindane	60		
Alpha-BHC	60		
Beta-BHC	56		
Heptachlor	53		
Aldrin	49		
Heptachlor epoxide	59		
Endrin	71		
Endrin aldehyde	55		
Endrin ketone	91		
Dieldrin	61		
4,4'-DDE	60		
4,4'-DDD	65		
4,4'-DDT	68		
Endosulfan I	59		
Endosulfan II	65		
Endosulfan sulfate	93	•	
Methoxychlor	74		
cis-Chlordane	60		
trans-Chlordane	56		
Surrogate(s)		20.150	
2,4,5,6-Tetrachloro-m-xylene	49	30-150	
Decachlorobiphenyl	51	30-150	
Total Metals SPIKE for samp			
Aluminum, Total	10		
Antimony, Total	98	80-120	
Arsenic, Total	10		
Barium, Total	10		
Beryllium, Total	10		
Cadmium, Total	11		
Calcium, Total	14		
Chromium, Total	10	6 80-120	

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Total Metals SPIKE for sample Cobalt, Total Copper, Total Iron, Total Lead, Total	107 108 109 110 113 107 107	02589-03, WG196507-2) 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Cobalt, Total Copper, Total Iron, Total Lead, Total	107 108 109 110 113 107 107	80-120 80-120 80-120 80-120 80-120	
Iron, Total Lead, Total	109 110 113 107 107	80-120 80-120 80-120	
Iron, Total Lead, Total	110 113 107 107	80-120 80-120 80-120	
Lead, Total	110 113 107 107	80-120 80-120	
•	113 107 107	80-120	
Magnesium, Total	107 107		
Manganese, Total	107	00 120	
Nickel, Total		80-120	
Potassium, Total	114	80-120	
Selenium, Total	97	80-120	
Silver, Total	75	80-120	
	129		
Sodium, Total		80-120	
Thallium, Total	101	80-120	
Vanadium, Total	106	80~120	
Zinc, Total	106	80-120	
Total Metals SPIKE for sample			
Mercury, Total	116	70-130	
Dissolved Metals SPIKE for samp.	le(s) 01-09,11 (L0	502589-01, WG196506-2)	
Aluminum, Dissolved	100	80-120	
Antimony, Dissolved	98	80-120	
Arsenic, Dissolved	103	80-120	
Barium, Dissolved	101	80-120	
Beryllium, Dissolved	108	80-120	
Cadmium, Dissolved	109	80-120	
Calcium, Dissolved	180	80-120	
Chromium, Dissolved	102	80-120	
Cobalt, Dissolved	103	80-120	
Copper, Dissolved	103	80-120	
Iron, Dissolved	122	80-120	
Lead, Dissolved	106	80-120	
Magnesium, Dissolved	128	80-120	
Manganese, Dissolved	158	80-120	
Nickel, Dissolved	103	80-120	
Potassium, Dissolved	106	80-120	
Selenium, Dissolved	46	80-120	
Silver, Dissolved	100	80-120	
Sodium, Dissolved	140	80-120	
Thallium, Dissolved	98	80-120	
Vanadium, Dissolved	102	80-120	
Zinc, Dissolved	99	80-120 80-120	
	20 (0) 01 00 33 (70	.E00EDO 02 TECTOCEOO C	
Dissolved Metals SPIKE for sample			
Mercury, Dissolved	121	70-130	

Laboratory Job Number: L0502589

Parameter	MS %	MSD %	RPD	RPD Limit MS/MSD Limits
Volatile Organics by GC/MS 82	60 for sample	e(s) 10-11	(L0502499-3	34, WG196474-2)
Chlorobenzene	108	103	5	
Benzene	103	97	6	
Toluene	108	101	7	
1,1-Dichloroethene	83	72	14	
Trichloroethene	100	93	7	
Surrogate(s)				
1,2-Dichloroethane-d4	98	99	1	
Toluene-d8	100	98	2	
4-Bromofluorobenzene	97	98	1	
Dibromofluoromethane	98	93	5	
Volatile Organics by GC/MS 82	60 for sampl	e(s) 01-09	(L0502589-0	01, WG196647-2)
Chlorobenzene	105	100	5	
Benzene	103	98	5	
Toluene	98	96	2	
1,1-Dichloroethene	113	109	4	
Trichloroethene	106	100	6	
Surrogate(s)				
1,2-Dichloroethane-d4	116	111	4	
Toluene-d8	106	104	2	
4-Bromofluorobenzene	103	103	0	
Dibromofluoromethane	110	110	0	
SVOC's by GC/MS 8270 for	sample(s) 01	-09,11 (L05	02589-03, 1	WG196450-4)
Acenaphthene	83	92	10	
1,2,4-Trichlorobenzene	83	92	10	
2-Chloronaphthalene	87	97	11	
1,2-Dichlorobenzene	7 4	78	5	
1,4-Dichlorobenzene	69	74	7 .	
2,4-Dinitrotoluene	87	97	11	
2,6-Dinitrotoluene	97	110	13	
Fluoranthene	92	100	8	
4-Chlorophenyl phenyl ether	87	97	11	
n-Nitrosodi-n-propylamine	64	69	8	
Butyl benzyl phthalate	92	97	5	
Anthracene	46	51	10	
Pyrene	92	97	5	
Hexachloropropene	83	92	10	
P-Chloro-M-Cresol	92	99	7	
2-Chlorophenol	69	76	10	
2-Nitrophenol	74	83	11	
4-Nitrophenol	76	83	9	
2,4-Dinitrophenol	90	99	10	
Pentachlorophenol	109	118	9	
Phenol	48	55	14	

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Parameter	MS %	MSD	% RPD	RPD Limit	MS/MSD Limits
SVOC's by GC/MS 8270 for	sample(s)	01-09,11	(L0502589-03,	WG196450-4)	
Surrogate(s)					
2-Fluorophenol	63	70	11		
Phenol-d6	59	66	11		
Nitrobenzene-d5	79	89	12		
2-Fluorobiphenyl	93	100	7		
2,4,6-Tribromophenol	109	115	5		
4-Terphenyl-d14	97	102	5		
PAH by GC/MS SIM 8270M fo	r sample(s)	01-09,11	(L0502589-03.	WG196462-4)	1.1
Acenaphthene	86	91	6	40	46-118
2-Chloronaphthalene	92	87	6	40	
Fluoranthene	96	96	0	40	
Anthracene	50	55	10	40	
Pyrene	96	91	5	40	26-127
Pentachlorophenol	108	111	2	40	9-103
Surrogate(s)					
2-Fluorophenol	86	84	2		21-120
Phenol-d6	81	79	3		10-120
Nitrobenzene-d5	105	105	0		23-120
2-Fluorobiphenyl	94	93	1		43-120
2,4,6-Tribromophenol	83	85	2		10-120
4-Terphenyl-d14	96	97	1		33-120
Polychlorinated Biphenyls	for sample(s) 01-09 1	1 (7.0502368-0	11 WG196407-A\	Alteria
Aroclor 1242/1016	83	84	1	30	30-150
Aroclor 1260	85	87	2	30	30-150
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	81	84	4 .		30-150
Decachlorobiphenyl	56	65	15		30-150
Organochlorine Pesticides for	eamnle (e)	01-05 07-0	18 11 (1.050259	89-01 WC196452-4	
Delta-BHC	73	51	35	30 30 30 30 30 30 30 30	
Lindane	84	77	9	30	
Alpha-BHC	84	77	9	30	
Beta-BHC	77	72	7	30	
Heptachlor	87	80	8	30	
Aldrin	80	73	9	30	
Heptachlor epoxide	87	7.3 8.0	•		
neptachior epoxide Endrin	97	88	8 10	30 30	
Endrin Endrin aldehyde	11	9	16	30	
Endrin aldenyde Endrin ketone	111	101			
Dieldrin	83		9	30	
4,4'-DDE	80	76 75	9	30	
			6	30	
4,4'-DDD	87	79	10	30	

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Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Organochlorine Pesticides for	cample(s) 01-	-05 07-08 11	(1.050258	9-01. WG196452-	-4).
4,4'-DDT	80	70	13	30	-,
Endosulfan I	84	77	9	30	
Endosulfan II	85	77	10	30	
Endosulfan il Endosulfan sulfate	103	82	23	30	
Methoxychlor	93	86	8	30	
cis-Chlordane	89	81	9	30	
trans-Chlordane	87	79	10	30	
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	69	67	3		30-150
Decachlorobiphenyl	63	60	5		30-150
Organochlorine Pesticides	for sample(s)	06,09 (LOS	502658-02,	WG196653-4)	
Delta-BHC	69	71	3	30	
Lindane	69	77	11	30	
Alpha-BHC	7 4	79	7	30	
Beta-BHC	77	80	4	30	
Heptachlor	60	62	3	30	
Aldrin	63	72	13	30	
Heptachlor epoxide	73	80	9	30	
Endrin	91	92	1	30	
Endrin aldehyde	76	81	6	30	
Endrin ketone	104	106	2	30	
Dieldrin	82	86	5	30	
4,4'-DDE	78	86	10	30	
4,4'-DDD	85	86	1	30	
4,4'-DDT	88	93	6	30	
Endosulfan I	71	76	7	30	
Endosulfan II	95	95	0	30	
Endosulfan sulfate	106	114	7	30	
Methoxychlor	93	99	6.	30	
cis-Chlordane	74	79	7	30	
trans-Chlordane	77	8 4	9	30	
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	61	64	5		30-150
Decachlorobiphenyl	65	83	24		30-150

Laboratory Job Number: L0502589

mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	9,11 (WG19 0.010 0.0002 0.0004 0.0005 0.0004 0.200 0.0002 0.0001 0.0005 0.010 0.0002 0.0005 0.100 0.0005 0.100 0.0001 0.0001 0.0001 0.0001 0.0001	96500	6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.010 0.0002 0.0004 0.0005 0.0004 0.200 0.0002 0.0001 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001		6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.010 0.0002 0.0004 0.0005 0.0004 0.200 0.0002 0.0001 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001		6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0002 0.0004 0.0005 0.0004 0.200 0.0002 0.0001 0.0005 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0002 0.0004 0.0005 0.0004 0.200 0.0002 0.0001 0.0005 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0004 0.0002 0.0005 0.0004 0.200 0.0002 0.0001 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0002 0.0005 0.0004 0.200 0.0002 0.0001 0.0005 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001		6020 6020 6020 6020 6020 6020 6020 6020	.0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
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mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0004 0.200 0.0002 0.0001 0.0005 0.010 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.200 0.0002 0.0001 0.0005 0.010 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0002 0.0001 0.0005 0.010 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.0001	1 1 1 1 1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0001 0.0005 0.010 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.100 0.0001	1 1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0005 0.010 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.100 0.0001	1 1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.010 0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.100 0.0001	1 1 1 1 1 1 1	6020 6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0002 0.010 0.0002 0.0005 0.100 0.001 0.0001 0.100 0.0001	1 1 1 1 1 1	6020 6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.010 0.0002 0.0005 0.100 0.001 0.0001 0.100 0.0001	1 1 1 1 1 1	6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06 11:06
mg/l mg/l mg/l mg/l mg/l mg/l mg/l	0.0002 0.0005 0.100 0.001 0.0001 0.100 0.0001	1 1 1 1 1	6020 6020 6020 6020 6020	0316 16:0 0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317 0 0317 0 0317	11:06 11:06 11:06
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mg/l mg/l mg/l mg/l mg/l	0.100 0.001 0.0001 0.100 0.0001	1 1 1	6020 6020 6020	0316 16:0 0316 16:0 0316 16:0	0 0317 0 0317	11:06
mg/l mg/l mg/l mg/l	0.001 0.0001 0.100 0.0001	1 1 1	6020 6020	0316 16:0 0316 16:0	0 0317	
mg/l mg/l mg/l	0.0001 0.100 0.0001	1	6020	0316 16:0		11:06
mg/l mg/l	0.100 0.0001	1			0 0317	
mg/l	0.0001		6020			11:06
- .		3		0316 16:0	0 0317	11:06
mcr / 1	0 0002	1	6020	0316 16:0	0 0317	11:06
mg/1	0.0002	1	6020	0316 16:0	0 0317	11:06
mg/l	0.0050	1	6020	0316 16:0	0 0317	11:06
sample(s) 01-0	9,11 (WG19	9650	1-4)			
			•			
mg/l	0.0002	1	7470A	0316 16:0	0 0317	11:49
sample(s) 01-0	9,11 (WG19	650	6-3)			
mg/l	0.010	1	6020	0316 16:0	0 0318	13:13
mg/l	0.0002	1	6020	0316 16:0	0 0318	13:13
mg/l	0.0004	1	6020	0316 16:0	0 0318	13:13
mg/l	0.0002	1	6020	0316 16:0	0 0318	13:13
mg/l	0.0005	1	6020			
mg/l	0.0004	1	6020			
mg/l	0.200	1	6020			
mg/l	0.0002	1	6020			
mg/l	0.0001	1	6020			
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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysi	s for sampl	e(s) 01-0	9,11 (WG1	96506-3)	
Dissolved Metals	<u> </u>				
Nickel, Dissolved	ND	mg/l	0.0005	1 6020	0316 16:00 0318 13:13 RW
Potassium, Dissolved	ND	mg/l	0.100	1 6020	0316 16:00 0318 13:13 RW
Selenium, Dissolved	ND	mg/l	0.001	1 6020	0316 16:00 0318 13:13 RW
Silver, Dissolved	ND	mg/1	0.0001	1 6020	0316 16:00 0318 13:13 RW
Sodium, Dissolved	ND	mg/1	0.100	1 6020	0316 16:00 0318 13:13 RW
Thallium, Dissolved	ND	mg/l	0.0001	1 6020	0316 16:00 0318 13:13 RW
Vanadium, Dissolved	ND	mg/1	0.0002	1 6020	0316 16:00 0318 13:13 RW
Zinc, Dissolved	ND	mg/l	0.0050	1 6020	0316 16:00 0318 13:13 RW
Blank Analysi Dissolved Metals	s for sampl	Le(s) 01-0	9,11 (WG1	96500-4)	
	ND	mg/l	0.0002	1 7470A	0316 16:00 0317 11:20 DM
Mercury, Dissolved	ND	mg/ I	0.0002	1 /4/04	0310 10.00 0311 11.20 2.5
Blank Analys		ole(s) 10-	11 (WG196		
Volatile Organics by GC/MS 8	260			1 8260B	0316 15:29 TT
Methylene chloride	ND	ug/l	5.0		
1,1-Dichloroethane	ND	ug/l	0.75		
Chloroform	ND	ug/l	0.75		
Carbon tetrachloride	ND	ug/l	0.50		
1,2-Dichloropropane	ND	ug/l	1.8		
Dibromochloromethane	ND	ug/l	0.50		
1,1,2-Trichloroethane	ND	ug/l	0.75		
Tetrachloroethene	ND	ug/l	0.50		
Chlorobenzene	ND	ug/l	0.50		
Trichlorofluoromethane	ND	ug/l	2.5		
1,2-Dichloroethane	ND	ug/l	0.50		
1,1,1-Trichloroethane	ND	ug/l	0.50		
Bromodichloromethane	ND	ug/l	0.50		
trans-1,3-Dichloropropene	ND	ug/l	0.50		
cis-1,3-Dichloropropene	ND	ug/l	0.50		
1,1-Dichloropropene	ND	ug/l	2.5		
Bromoform	ND	ug/l	2.0		
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50		
Benzene	ND	ug/l	0.50		
Toluene	ND	ug/l	0.75		
Ethylbenzene	ND	ug/l	0.50		
Chloromethane	ND	ug/l	2.5		
Bromomethane	ND	ug/l	1.0		
Vinyl chloride	ND	ug/l	1.0		
Chloroethane	ND	ug/l	1.0		
1,1-Dichloroethene	ND	ug/l	0.50		
trans-1,2-Dichloroethene	ND	ug/l	0.75		
Trichloroethene	ND	ug/l	0.50		
1,2-Dichlorobenzene	ND	ug/l	2.5		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Rlank Analys	to for our	1-1-1 10 1	11 /7707.0		
Blank Analys Volatile Organics by GC/MS 8	2260 continu	ore(s) 10-1	rr (Mera		
1,3-Dichlorobenzene	ND ND		2 5	1 8260B	0316 15:29 TT
1,4-Dichlorobenzene	ND ND	ug/l	2.5		
Methyl tert butyl ether	ND ND	ug/l	2.5		
p/m-Xylene	ND ND	ug/l	1.0		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane		ug/l	0.50		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	5.0		
Dichlorodifluoromethane	ND	ug/l	0.50		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone 2-Hexanone	ND	ug/l	5.0		
	ND	ug/l	5.0		
Ethyl methacrylate Acrolein	ND	ug/l	5.0		
	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ИD	ug/l	0.50	-	
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
D-Chlorotoluene	ND	ug/l	2.5		
,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
lexachlorobutadiene	ND	ug/l	1.0		
sopropylbenzene	ND	ug/l	0.50		
-Isopropyltoluene	ND	ug/l	0.50		
Japhthalene	ND	ug/l	2.5		
-Propylbenzene	ND	ug/l	0.50		
,2,3-Trichlorobenzene	ND	ug/l	2.5		
,2,4-Trichlorobenzene	ND	ug/l	2.5		
,3,5-Trimethylbenzene	ND	ug/l	2.5		
,2,4-Trimethylbenzene	ND	ug/l	2.5		
rans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
thyl ether	ND	ug/l	2.5		



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PARAMETER	RESULT	UNITS	RDL REF METHOD	DATE ID PREP ANAL
Blank Analys	is for samp	le(s) 10-1	1 (WG196474-8)	
Volatile Organics by GC/MS 8	260 continu	ed	1 8260B	0316 15:29 TT
Surrogate(s)	Recovery		QC Criteria	
1,2-Dichloroethane-d4	100.	9		
Toluene-d8	103.	%		
4-Bromofluorobenzene	99.0	%		
Dibromofluoromethane	92.0	%		
Blank Analys	is for samp	le(s) 01-0	9 (WG196647-4)	
Volatile Organics by GC/MS 8	1260		1 8260B	0317 09:21 BT
Methylene chloride	ND	ug/l	5.0	
1,1-Dichloroethane	ND	ug/l	0.75	
Chloroform	ND	ug/l	0.75	
Carbon tetrachloride	ND	ug/l	0.50	
1,2-Dichloropropane	ND	ug/l	1.8	
Dibromochloromethane	ND	ug/l	0.50	
1,1,2-Trichloroethane	ND	ug/l	0.75	
Tetrachloroethene	ND	ug/l	0.50	
Chlorobenzene	ND	ug/l	0.50	
Trichlorofluoromethane	ND	ug/l	2.5	
1,2-Dichloroethane	ND	ug/l	0.50	
1,1,1-Trichloroethane	ND	ug/l	0.50	
Bromodichloromethane	ND	ug/l	0.50	
trans-1,3-Dichloropropene	ND	ug/l	0.50	
cis-1,3-Dichloropropene	ND	ug/l	0.50	
1,1-Dichloropropene	ND	ug/l	2.5	
Bromoform	ND	ug/l	2.0	
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	
Benzene	ND	ug/l	0.50	
Toluene	ND	ug/l	0.75	
Ethylbenzene	ND	ug/l	0.50	
Chloromethane	ND	ug/l	2.5	
Bromomethane	ND	ug/l	1.0	
Vinyl chloride	ND	uq/l	1.0	
Chloroethane	ND	ug/l	1.0	
1,1-Dichloroethene	ND	ug/l	0.50	
trans-1,2-Dichloroethene	ND	ug/l	0.75	
Trichloroethene	ИD	ug/l	0.50	
1,2-Dichlorobenzene	ND	uq/l	2.5	
1,3-Dichlorobenzene	ND	ug/l	2.5	
1,4-Dichlorobenzene	ND	ug/l	2.5	
Methyl tert butyl ether	ND	ug/l	1.0	
p/m-Xylene	ND	ug/l	0.50	
o-Xylene	ND	ug/l	0.50	
cis-1,2-Dichloroethene	ND	ug/l	0.50	
Dibromomethane	ND	ug/l	5.0	
1,4-Dichlorobutane	ND	ug/l	5.0	
· ·	ND	ug/1	5.0	
Iodomethane	MD	49/1	Ų. · ·	

Laboratory Job Number: L0502589

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analys	is for samp	le(s) 01-	09 (WG19		
Volatile Organics by GC/MS 8			2.5	1 8260B	0317 09:21 BT
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	-	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l			
Hexachlorobutadiene	ND	ug/l	2.5		
Isopropylbenzene		ug/l	1.0		
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	0.50		
-	ND	ug/l	2.5	•	
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		QC Cri	teria	
l,2-Dichloroethane-d4	113.	ક	ZO OII		
Coluene-d8	103.	%			
l-Bromofluorobenzene	104.	%			
Dibromofluoromethane	102.	90			
Blank Analysis	for comple	s(a) 01.00	11 /5/01	06450 3)	
SVOC's by GC/MS 8270	TOT Samble	=(S) OI-09	TT (MG)		
Acenaphthene	ND	/3	F ^	1 8270C	0315 19:30 0317 12:01 HL
rectapitette	ND	ug/l	5.0		



Laboratory Job Number: L0502589

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II PREP ANAL
Blank Analysis	far ampl	~ (a) 01-0	0 11 /14/2	196450-11	, , .
SVOC's by GC/MS 8270 continue	Tor sambi	E(S) .01-0	J, 11 (110	1 8270C	0315 19:30 0317 12:01 H
	ND	ug/l	50.		
Benzidine	ND	ug/l	5.0		
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene Bis(2-chloroethyl)ether	ND	ug/l	5.0		
1-Chloronaphthalene	ND	ug/l	5.0		
	ND	ug/l	6.0		
2-Chloronaphthalene	ND	ug/l	5.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
1,3-Dichlorobenzene	ND	ug/l	5.0		
1,4-Dichlorobenzene	ND	ug/1	50.		
3,3'-Dichlorobenzidine	ND	ug/l	6.0		
2,4-Dinitrotoluene 2,6-Dinitrotoluene	ND	ug/l	5.0		
•	ND	ug/l	5.0		
Azobenzene Fluoranthene	ND	ug/l	5.0		
4-Chlorophenyl phenyl ether	ND	ug/l	5.0		
4-Chiorophenyl phenyl ether 4-Bromophenyl phenyl ether	ND	ug/l	5.0		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0		
Bis(2-chloroethoxy)methane	ND	ug/l	5.0		
Hexachlorobutadiene	ND	ug/1	10.		
Hexachlorocyclopentadiene	ND	ug/l	10.		
Hexachloroethane	ND	ug/l	5.0		
Isophorone	ND	ug/l	5.0		
Naphthalene	ND	ug/l	5.0		
Nitrobenzene	ND	ug/l	5.0		
NDPA/DPA	ND	ug/l	15.		
n-Nitrosodi-n-propylamine	ND	ug/l	5.0		
Bis (2-ethylhexyl) phthalate	ND	ug/l	10.		
Butyl benzyl phthalate	ND	ug/l	5.0		
Di-n-butylphthalate	ND	ug/l	5.0		
Di-n-octylphthalate	ND	ug/l	5.0	•	
Diethyl phthalate	ND	ug/l	5.0		
Dimethyl phthalate	ND	ug/l	5.0		
Benzo(a) anthracene	ND	ug/l	5.0		
Benzo(a) pyrene	ND	ug/l	5.0		
Benzo(b) fluoranthene	ND	ug/l	5.0		
Benzo(k) fluoranthene	ND	ug/l	5.0		
Chrysene	ND	ug/l	5.0		
Acenaphthylene	ND	ug/l	5.0		
Anthracene	ND	ug/l	5.0		
Benzo(ghi)perylene	ND	ug/l	5.0		
Fluorene	ND	ug/l	5.0		
Phenanthrene	ND	ug/l	5.0		
Dibenzo(a,h)anthracene	ND	ug/l	5.0		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0		
Pyrene	ND	ug/l	5.0		
Benzo(e)pyrene	ND	ug/l	5.0		

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Analysis	for sampl	e(s) 01-0	9,11 (WG	196450-1)	
SVOC's by GC/MS 8270 continued	I talo		, , ,	1 8270C	0315 19:30 0317 12:01 HL
Biphenyl	ND	ug/l	5.0		111 21100 0017 12.01 114
Perylene	ND	ug/l	5.0		
Aniline	ND	ug/l	10.		
4-Chloroaniline	ND	ug/l	5.0		
1-Methylnaphthalene	ND	ug/l	5.0		
2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l	5.0		
4-Nitroaniline	ND	ug/l	7.0		
Dibenzofuran	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/1	10.		
2-Methylnaphthalene	ND	ug/l	8.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
4-Aminobiphenyl	ND	ug/l	10.		
Pentachloronitrobenzene	ND	ug/l	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	10.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	20.		
7,12-Dimethylbenz(a)anthracene		ug/l	10.		
n-Nitrosodimethylamine	ND	ug/l	50.	•	
2,4,6-Trichlorophenol	ND	ug/l	5.0		
p-Chloro-m-cresol	ND	ug/l	5.0		
2-Chlorophenol	ND	ug/l	6.0		
2,4-Dichlorophenol	ND				
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	10.		
1-Nitrophenol		ug/l	20.		
2,4-Dinitrophenol	ND	ug/l	10.		
	ND	ug/l	20.		
l,6-Dinitro-o-cresol Pentachlorophenol	ND	ug/l	20.		
Phenol	ND	ug/l	20.		
	ND	ug/l	7.0		
2-Methylphenol	ND	ug/l	6.0		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0		
2,4,5-Trichlorophenol	ND	ug/l	5.0		
2,6-Dichlorophenol	ND	ug/l	10.		
Benzoic Acid	ИD	ug/l	50.		



Laboratory Job Number: L0502589

Blank Analysis for sample(s) 01-09,11 (W) SVOC's by GC/MS 8270 continued Benzyl Alcohol ND ug/l 5.0		
SVOC's by GC/MS 8270 continued ND ug/l 10. Carbazole ND ug/l 5.0 Pyridine ND ug/l 50. 2-Picoline ND ug/l 20. Pronamide ND ug/l 20. Methyl methanesulfonate ND ug/l 20. Surrogate(s) Recovery QC C QC C Surrogate(s)	3196450-1)	48.
Benzyl Alcohol ND ug/l 10. Carbazole ND ug/l 5.0 Pyridine ND ug/l 50. 2-Picoline ND ug/l 20. Pronamide ND ug/l 20. Methyl methanesulfonate ND ug/l 20. Surrogate (s) Recovery QC C Surrogate (s) Res.0 % C PAH by GC/MS SIM 8270M ND ug/l 0.20 <td>1 8270C</td> <td>0315 19:30 0317 12:01 HL</td>	1 8270C	0315 19:30 0317 12:01 HL
Carbazole ND ug/1 5.0 Pyridine ND ug/1 50. 2-Picoline ND ug/1 20. Pronamide ND ug/1 20. Methyl methanesulfonate ND ug/1 20. Surrogate(s) Recovery QC C 2-Fluorophenol 55.0 % Phenol-d6 41.0 % Nitrobenzene-d5 98.0 % 2-Fluorobiphenyl 88.0 % 2-Fluorobiphenyl 104. % 4-Terphenyl-d14 96.0 % Blank Analysis for sample(s) 01-09,11 (W PAH by GC/MS SIM 8270M Acenaphthene ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Responding ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Responding ND ug/1 0.20		
Pyridine		
2-Picoline Pronamide ND ug/1 20. Methyl methanesulfonate ND ug/1 20. Methyl methanesulfonate ND ug/1 20. Surrogate(s) 2-Fluorophenol 55.0 % Phenol-d6 Nitrobenzene-d5 98.0 % 2-Fluorobiphenyl 88.0 % 2,4,6-Tribromophenol 4-Terphenyl-d14 96.0 % Blank Analysis for sample(s) 01-09,11 (W PAH by GC/MS SIM 8270M Acenaphthene ND ug/1 0.20 Pluoranthene ND ug/1		
Pronamide		
Methyl methanesulfonate ND ug/l 20. Surrogate(s) Recovery QC C 2-Fluorophenol 55.0 % Phenol-d6 41.0 % Nitrobenzene-d5 98.0 % 2-Fluorobiphenyl 88.0 % 2,4,6-Tribromophenol 104. % 4-Terphenyl-d14 96.0 % PAH by GC/MS SIM 8270M ND ug/l 0.20 Acenaphthene ND ug/l 0.20 2-Chloronaphthalene ND ug/l 0.20 Phexachlorobutadiene ND ug/l 0.20 Naphthalene ND ug/l 0.20 <t< td=""><td></td><td></td></t<>		
Surfogate (s) State (s)		
2-Fluorophenol	riteria	
Nitrobenzene-d5 98.0 % 2-Fluorobiphenyl 88.0 % 2,4,6-Tribromophenol 104. % 4-Terphenyl-d14 96.0 % Blank Analysis for sample(s) 01-09,11 (W PAH by GC/MS SIM 8270M Acenaphthene ND ug/l 0.20 2-Chloronaphthalene ND ug/l 0.20 Fluoranthene ND ug/l 0.20 Hexachlorobutadiene ND ug/l 0.20 Naphthalene ND ug/l 0.20 Benzo(a) anthracene ND ug/l 0.20 Benzo(a) pyrene ND ug/l 0.20 Benzo(b) fluoranthene ND ug/l 0.20 Chrysene ND ug/l 0.20 Acenaphthylene ND ug/l 0.20 Acenaphthylene ND ug/l 0.20 Acenaphthylene ND ug/l 0.20 Fluorene ND ug/l 0.20 Acenaphthylene ND ug/l 0.20 Ac		
2-Fluorobiphenyl 88.0 % 2,4,6-Tribromophenol 104. % 4-Terphenyl-d14 96.0 % Blank Analysis for sample(s) 01-09,11 (W PAH by GC/MS SIM 8270M Acenaphthene ND ug/l 0.20 2-Chloronaphthalene ND ug/l 0.20 Fluoranthene ND ug/l 0.20 Hexachlorobutadiene ND ug/l 0.20 Naphthalene ND ug/l 0.20 Benzo(a) anthracene ND ug/l 0.20 Benzo(a) pyrene ND ug/l 0.20 Benzo(b) fluoranthene ND ug/l 0.20 Benzo(k) fluoranthene ND ug/l 0.20 Chrysene ND ug/l 0.20 Acenaphthylene ND ug/l 0.20 Acenaphthylene ND ug/l 0.20 Fluorene ND ug/l 0.20 Benzo(ghi)perylene ND ug/l 0.20 Fluorene ND ug/l 0.20 Benzo(ghi)perylene ND ug/l 0.20 Fluorene ND ug/		
2-Fluorobiphenyl		
2,4,6-Tribromophenol		
### Blank Analysis for sample(s) 01-09,11 (WPAH by GC/MS SIM 8270M Acenaphthene ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Hexachlorobutadiene ND ug/1 0.20 Naphthalene ND ug/1		
PAH by GC/MS SIM 8270M Acenaphthene ND ug/1 0.20 2-Chloronaphthalene ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Hexachlorobutadiene ND ug/1 0.20 Naphthalene ND ug/1 0.20 Benzo(a) anthracene ND ug/1 0.20 Benzo(b) fluoranthene ND ug/1 0.20 Benzo(b) fluoranthene ND ug/1 0.20 Chrysene ND ug/1 0.20 Acenaphthylene ND ug/1 0.20 Acenaphthylene ND ug/1 0.20 Benzo(ghi)perylene ND ug/1 0.20 Fluorene ND ug/1 0.20 Phenanthrene ND ug/1 0.20 Dibenzo(a, h) anthracene ND ug/1 0.20 Indeno(1, 2, 3-cd) Pyrene ND ug/1 0.20 Pyrene ND ug/1 0.20 <		
PAH by GC/MS SIM 8270M Acenaphthene ND ug/1 0.20 2-Chloronaphthalene ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Hexachlorobutadiene ND ug/1 0.20 Naphthalene ND ug/1 0.20 Benzo(a) anthracene ND ug/1 0.20 Benzo(b) fluoranthene ND ug/1 0.20 Benzo(b) fluoranthene ND ug/1 0.20 Chrysene ND ug/1 0.20 Acenaphthylene ND ug/1 0.20 Acenaphthylene ND ug/1 0.20 Anthracene ND ug/1 0.20 Benzo(ghi)perylene ND ug/1 0.20 Fluorene ND ug/1 0.20 Phenanthrene ND ug/1 0.20 Dibenzo(a, h) anthracene ND ug/1 0.20 Indeno(1, 2, 3-cd) Pyrene ND ug/1 0.20	G196462-1)	
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2-Chloronaphthalene ND ug/1 0.20 Fluoranthene ND ug/1 0.20 Hexachlorobutadiene ND ug/1 0.20 Naphthalene ND ug/1 0.20 Benzo(a) anthracene ND ug/1 0.20 Benzo(a) pyrene ND ug/1 0.20 Benzo(b) fluoranthene ND ug/1 0.20 Benzo(k) fluoranthene ND ug/1 0.20 Chrysene ND ug/1 0.20 Acenaphthylene ND ug/1 0.20 Anthracene ND ug/1 0.20 Benzo(ghi) perylene ND ug/1 0.20 Fluorene ND ug/1 0.20 Phenanthrene ND ug/1 0.20 Dibenzo(a, h) anthracene ND ug/1 0.20 Indeno(1, 2, 3-cd) Pyrene ND ug/1 0.20 Pyrene ND ug/1 0.20 1-Methylnaphthalene ND <td></td> <td></td>		
Fluoranthene ND ug/1 0.20 Hexachlorobutadiene ND ug/1 0.50 Naphthalene ND ug/1 0.20 Benzo(a) anthracene ND ug/1 0.20 Benzo(a) pyrene ND ug/1 0.20 Benzo(b) fluoranthene ND ug/1 0.20 Benzo(k) fluoranthene ND ug/1 0.20 Chrysene ND ug/1 0.20 Acenaphthylene ND ug/1 0.20 Anthracene ND ug/1 0.20 Benzo(ghi) perylene ND ug/1 0.20 Fluorene ND ug/1 0.20 Phenanthrene ND ug/1 0.20 Dibenzo(a, h) anthracene ND ug/1 0.20 Indeno(1, 2, 3-cd) Pyrene ND ug/1 0.20 Pyrene ND ug/1 0.20 1-Methylnaphthalene ND ug/1 0.20 2-Methylnaphthalene ND <td></td> <td></td>		
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Phenanthrene ND ug/l 0.26 Dibenzo(a,h)anthracene ND ug/l 0.26 Indeno(1,2,3-cd)Pyrene ND ug/l 0.26 Pyrene ND ug/l 0.26 1-Methylnaphthalene ND ug/l 0.26 2-Methylnaphthalene ND ug/l 0.26)	
Dibenzo(a,h)anthracene ND ug/l 0.20 Indeno(1,2,3-cd)Pyrene ND ug/l 0.20 Pyrene ND ug/l 0.20 1-Methylnaphthalene ND ug/l 0.20 2-Methylnaphthalene ND ug/l 0.20)	
Indeno(1,2,3-cd)Pyrene ND ug/l 0.20 Pyrene ND ug/l 0.20 1-Methylnaphthalene ND ug/l 0.20 2-Methylnaphthalene ND ug/l 0.20)	
Pyrene ND ug/l 0.20 1-Methylnaphthalene ND ug/l 0.20 2-Methylnaphthalene ND ug/l 0.20)	
1-Methylnaphthalene ND ug/l 0.20 2-Methylnaphthalene ND ug/l 0.20)	
2-Methylnaphthalene ND ug/1 0.20)	
Z-Methythaphenatene)	
Hexachlorobenzene ND ug/l 0.8		
Perylene ND ug/1 0.2		
Biphenyl ND ug/l 0.2		
2,6-Dimethylnaphthalene ND ug/l 0.2		
Z, O-Dimethyinaphenarene		
1-Methylphenanthrene		
Benzo(e) Pyrene ND ug/1 0.2 Hexachloroethane ND ug/1 0.8		

Laboratory Job Number: L0502589

				DATE
				PREP ANAL
s for sampl	e(s) 01-0	9,11 (WG196	462-1)	
nued			1 8270C-M	0315 19:30 0316 12:47 RI
Recovery		QC Crite:	ria	
62.0	%	21-120		
49.0	%	10-120		
101.	ક	23-120		
80.0	96	43-120		
113.	જે	10-120		
82.0	9	33-120		
s for sample	e(s) 01-09	9,11 (WG1964	107-1)	
			1 8082	0315 11:30 0317 11:34 дв
ND	ug/l	0.500		
ND	ug/l	0.500		
ND	ug/l	0.500		
ND	ug/l	0.500		
ND	ug/l	0.500		
ND	ug/l	0.500		
Recovery		QC Criter	ia	
86.0	8	30-150		
81.0	%	30-150		
or sample(s)	01-05,07	-08,11 (WG1	.96452-1)	
			1 8081	0315 22:20 0317 11:23 AK
ND	ug/l	0.020		
ND	ug/l	0.020		
ND	ug/l	0.020		
ND	ug/l	0.020		
ND	ug/l	0.020		
ND	ug/l	0.020	-	
ND	ug/l	0.020		
ND	-			
ND	-			
ND	-			
ND				
	-			
	-			
	-			
	-			
	-			
ND	ug/l ug/l			
TA D	uy/1	0.200		
MD	u~ / 1	0 200		
ND ND	ug/l ug/l	0.200 0.020		
3	Recovery 62.0 49.0 101. 80.0 113. 82.0 s for sampl ND ND ND ND ND ND ND ND ND ND ND ND ND	Recovery 62.0 % 49.0 % 101. % 80.0 % 113. % 82.0 % s for sample(s) 01-09 ND ug/l	Recovery QC Criters	Recovery QC Criteria 62.0 % 21-120 49.0 % 10-120 101. % 23-120 80.0 % 43-120 113. % 10-120 82.0 % 33-120 S for sample(s) 01-09,11 (WG196407-1)



Laboratory Job Number: L0502589

PARAMETER	RESULT	UNITS	RDL REF METHOD	DATE ID
PARTETAR				PREP ANAL
Plant Analysis for	sample(s)	01-05.07-	08,11 (WG196452-1)	
Organochlorine Pesticides cont	inued	,	1 8081	0315 22:20 0317 11:23 AK
Surrogate(s)	Recovery		QC Criteria	
2,4,5,6-Tetrachloro-m-xylene	76.0	9	30-150	
Decachlorobiphenyl	76.0	%	30-150	
Blank Analysis	for sampl	e(s) 06,09	(WG196653-1)	
Organochlorine Pesticides			1 8081	0317 15:00 0318 20:37 AK
Delta-BHC	ND	ug/l	0.020	
Lindane	ND	ug/l	0.020	
Alpha-BHC	ND	ug/l	0.020	
Beta-BHC	ND	ug/l	0.020	
Heptachlor	ND	ug/l	0.020	
Aldrin	ND	ug/l	0.020	
Heptachlor epoxide	ND	ug/l	0.020	
Endrin	ND	ug/l	0.040	
Endrin aldehyde	ND	ug/l	0.040	
Endrin ketone	ND	ug/l	0.040	
Dieldrin	ND	ug/l	0.040	
4,4'-DDE	ND	ug/l	0.040	
4,4'-DDD	ND	ug/l	0.040	
4,4'-DDT	ND	ug/l	0.040	
Endosulfan I	ND	ug/l	0.020	
Endosulfan II	ND	ug/l	0.040	
Endosulfan sulfate	ND	ug/l	0.040	
Methoxychlor	ND	ug/l	0.200	
Toxaphene	ND	ug/l	0.200	
Chlordane	ND	ug/l	0.200	
cis-Chlordane	ND	ug/l	0.020	
trans-Chlordane	ND	ug/l	0.020	
Surrogate(s)	Recovery		QC Criteria	
2,4,5,6-Tetrachloro-m-xylene	68.0	8	30-150	
Decachlorobiphenyl	79.0	8	30-150	

ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found. METHOD Method number by which analysis was performed.

ID Initials of the analyst.

ND Not detected in comparison to the reported detection limit.

NI Not Ignitable.

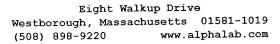
ug/cart Micrograms per Cartridge.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

ALPHA ANALYTICAL LABORATORIES



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: AKRF, Inc.

Laboratory Job Number: L0502658

Address: 440 Park Avenue South

New York, NY 10016

Date Received: 16-MAR-2005

Attn: Mr. Axel Schwendt

Date Reported: 24-MAR-2005

Project Number: 10470-0213

Delivery Method: Alpha

Site: COLUMBIA

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
1.0502658-01	MW/CB-20 (GROUNDWATER)	HARLEM, NY
L0502658-02	MW/CB-12 (GROUNDWATER)	HARLEM, NY
L0502658-03	MW/CB-9 (GROUNDWATER)	HARLEM, NY
L0502658-04	MW/CB-14 (GROUNDWATER)	HARLEM, NY
T.0502658-05	MW/CB-8 (GROUNDWATER)	HARLEM, NY
1.0502658-06	MW/CB-22 (GROUNDWATER)	HARLEM, NY
L0502658-07	MW/CB-21 (GROUNDWATER)	HARLEM, NY
1.0502658-08	MW/CB-7 (GROUNDWATER)	HARLEM, NY
1,0502658-09	MW/CB-13 (GROUNDWATER)	HARLEM, NY
1.0502658-10	MW/CB-16 (GROUNDWATER)	HARLEM, NY
L0502658-11	FIELD BLANK	HARLEM, NY
L0502658-12	TRIP BLANK	HARLEM, NY

Authorized by: Scott McLean

This document electronically signed

03240512:47 Page I of 101

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0502658

Volatile Organics

L0502658-06 has elevated limits of detection due to the 2.5x dilution required by the elevated concentrations of target compounds in the sample.

SemiVolatile Organics

The LCS and MS/MSD $\mbox{\ensuremath{\$}}$ recoveries for 4-Nitrophenol are above the acceptance criteria for the method.

The LCS % recoveries for 2,4-Dinitrotoluene and 4-Chlorophenyl phenyl ether are above the acceptance criteria for the method.

The MS/MSD % recoveries for Pentachlorophenol, and the MSD % recovery for p-Chloro-m-cresol, are above the acceptance criteria for the method.

PCB

The surrogate % recoveries are below the acceptance criteria for the method on L0502658-08.

Pesticides

The surrogate % recovery for Decachlorobiphenyl is below the acceptance criteria for the method on ${\tt L0502658-08}$.

Dissolved Metals

 ${\tt L0502658-02}$ and ${\tt -04}$ through ${\tt -07}$ required 10x dilutions for Calcium and Sodium.

 ${\tt L0502658-08}$ through -10 required 10x dilutions for Calcium.

 ${\tt L0502658-08}$ through -10 required 100x dilutions for Sodium. -

L0502658-08 required a 5x dilution for all elements (except Calcium and Sodium) due to internal standard failure.

L0502658-09 and -10 required 2x dilutions for all elements (except Calcium and Sodium) due to internal standard failure.

The RPD for the laboratory duplicate of Aluminum is above the acceptance criteria for the method.

The MS $\mbox{\ensuremath{\$}}$ recovery for Calcium is invalid because the sample concentration is greater than four times the spike amount added.

Silver is present in the method blank, however, all samples are non-detect for Silver.

Total Metals

L0502658-01 through -07 and -10 required 10x dilutions for Aluminum, Calcium, and Sodium.

 ${\tt L0502658-02}$ required a 10x dilution for Manganese.

ALPHA ANALYTICAL LABORATORIES NARRATIVE REPORT

Laboratory Job Number: L0502658

Continued

L0502658-08 and -09 required 10x dilutions for Aluminum and Calcium.

L0502658-08 and -09 required 100x dilutions for Sodium.

L0502658-08 and 09 required 5x dilutions for all elements (except Calcium and Sodium) due to internal standard failure.

The RPDs for the laboratory duplicates of Chromium and Lead are above the acceptance criteria for the method.

The MS % recoveries for Calcium and Sodium are invalid because the sample concentration is greater than four times the spike amount added.

The MS % recovery for Zinc is above the acceptance criteria for the method.

The MS % recovery for Mercury is above the acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 108%.

Silver is present in the method blank, however, all samples (except L0502658-05 and -10) are non-detect for Silver. The Silver concentrations in L0502658-05 and -10 should be considered estimates.

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-01

MW/CB-20 (GROUNDWATER)

Date Collected: 16-MAR-2005 08:15

Sample Matrix:

WATER

Date Received : 16-MAR-2005 Date Reported : 24-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA'	CE.	ID
						PREP ANAL		
Total Metals								
Total Metals								
Aluminum, Total	0.211	mg/l	0.010	1	6020	0317 12:30	0321 23:13	3 RW
Antimony, Total	ND	mg/l	0.0002	1	6020	0317 12:30		
Arsenic, Total	ND	mg/l	0.0004	1	6020	0317 12:30		
Barium, Total	0.1569	mg/l	0.0002	1	6020	0317 12:30		
Beryllium, Total	ND	mg/l	0.0005	1	6020	0317 12:30		
Cadmium, Total	ND	mg/l	0.0004	1	6020	0317 12:30		
Calcium, Total	62.1	mg/l	2.00	1	6020	0317 12:30		
Chromium, Total	0.0015	mg/l	0.0002	1	6020	0317 12:30		
Cobalt, Total	0.0006	mg/l	0.0001	1	6020	0317 12:30		
Copper, Total	0.0024	mg/l	0.0005	1	6020	0317 12:30		
Iron, Total	0.640	mg/l	0.010	1	6020	0317 12:30		
Lead, Total	0.0025	mg/l	0.0002	1	6020			
Magnesium, Total	16.2	mg/l	0.010	1	6020	0317 12:30		
Manganese, Total	0.2340	mg/1	0.0002	1	6020	0317 12:30		
Mercury, Total	ND	mg/l	0.0002			0317 12:30		
Nickel, Total	0.0019	mg/l	0.0002	1	7470A	0318 17:20 (
Potassium, Total	9.57	mg/l	0.100	1	6020	0317 12:30 (
Selenium, Total	0.002	mg/l		1	6020	0317 12:30 (
Silver, Total	ND	_	0.001	1	6020	0317 12:30 (
Sodium, Total	ND 114.	mg/l	0.0001		6020	0317 12:30 (321 23:13	RW
Thallium, Total		mg/l	1.00	1	6020	0317 12:30 (
Vanadium, Total	ND	mg/l	0.0001	1	6020	0317 12:30 (321 23:13	RW
Zinc, Total	0.0010	mg/l	0.0002	1	6020	0317 12:30 (321 23:13	RW
sine, iotai	0.0061	mg/l	0.0050	1	6020	0317 12:30 0	321 23:13	RW
Dissolved Metals								
Aluminum, Dissolved	0.013	mq/l	0.010	1	6020	0317 12:30 0	310 15,03	DSt
Antimony, Dissolved	0.0017	mg/l	0.0002	1	6020			
Arsenic, Dissolved	ND	mg/l	0.0004	1	6020	0317 12:30 0		
Barium, Dissolved	0.1364	mg/1	0.0004	1	6020	0317 12:30 0		
Beryllium, Dissolved	ND	mg/l	0.0002			0317 12:30 0		
Cadmium, Dissolved	ND	mg/l	0.0003		6020	0317 12:30 0		
Calcium, Dissolved	54.0	-		1	6020	0317 12:30 0		
Chromium, Dissolved	0.0005	mg/l	0.200	1	6020	0317 12:30 0		
Cobalt, Dissolved		mg/l	0.0002		6020	0317 12:30 0		
Copper, Dissolved	0.0004	mg/l	0.0001		6020	0317 12:30 0		
~ -	0.0242	mg/l	0.0005		6020	0317 12:30 0	318 15:02	RW
Iron, Dissolved	0.121	mg/l	0.010	1	6020	0317 12:30 0	318 15:02	RW

Laboratory Sample Number: L0502658-01

MW/CB-20 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA		ID
Alchin Int						PREP	ANAI	ı
							``	
Dissolved Metals								
Lead, Dissolved	0.0013	mg/l	0.0002	1		0317 12:30		
Magnesium, Dissolved	14.3	mg/l	0.010	1		0317 12:30		
Manganese, Dissolved	0.1488	mg/l	0.0002		6020	0317 12:30		
Mercury, Dissolved	ND	mg/l	0.0002		7470A	0317 16:00 0317 12:30		
Nickel, Dissolved	0.0062	mg/l	0.0005	1		0317 12:30		
Potassium, Dissolved	9.92	mg/l	0.100	1				
Selenium, Dissolved	0.002	mg/l	0.001	1		0317 12:30		
Silver, Dissolved	ND	mg/l	0.0001			0317 12:30		
Sodium, Dissolved	101.	mg/1	0.100	1		0317 12:30		
Thallium, Dissolved	ND	mg/l	0.0001			0317 12:30		
Vanadium, Dissolved	0.0004	mg/1	0.0002			0317 12:30		
Zinc, Dissolved	0.0164	mg/l	0.0050	1	6020	0317 12:30	0318 15	:02 R
Volatile Organics by GC/MS 8	3260			1	8260B		0318 12	:40 B1
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	7.7	ug/l	0.75					
Carbon tetrachloride	ИD	ug/l	0.50					
1,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	0.94	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Trichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Bromodichloromethane	ND	ug/l	0.50					
trans-1,3-Dichloropropene	ND	ug/l	0.50					
cis-1,3-Dichloropropene	ND	ug/l	0.50					
1,1-Dichloropropene	ND	ug/l	2.5					
Bromoform	ND	ug/l	2.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Chloromethane	ND	ug/l	2.5					
Bromomethane	ND	ug/l	1.0					
Vinyl chloride	ND	ug/l	1.0					
Chloroethane	ND	ug/l	1.0					
1,1-Dichloroethene	ND	ug/l	0.50					
trans-1,2-Dichloroethene	ND	ug/l	0.75					
Trichloroethene	ND	ug/l	0.50					
1,2-Dichlorobenzene	ND	ug/l	2.5					
1,3-Dichlorobenzene	ND	ug/l	2.5					
1,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/l	1.0					
Methal reit batal ether	MD	_						
p/m-Xylene	ND	ug/l	0.50					



Laboratory Sample Number: L0502658-01

MW/CB-20 (GROUNDWATER)

PARAMETER	RESULT	UNITS	S RDL	REF METHOD	DA	DATE ID		
					PREP	ANAL		
Volatile Organics by GC/MS	3260 continu	ned		1 8260B				
cis-1,2-Dichloroethene	ND	ug/l	0.50	1 0200D		0318 12:4	10 BT	
Dibromomethane	ND	ug/l	5.0					
1,4-Dichlorobutane	ND	ug/l	5.0					
Iodomethane	ND	ug/l	5.0					
1,2,3-Trichloropropane	ND	ug/l	5.0					
Styrene	ND	ug/l	0.50					
Dichlorodifluoromethane	ND	ug/l	5.0					
Acetone	ND	ug/l	5.0					
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	5.0					
Vinyl acetate	ND	ug/l	5.0					
4-Methyl-2-pentanone	ND	ug/l	5.0					
2-Hexanone	ND	ug/l ug/l	5.0					
Ethyl methacrylate	ND	-						
Acrolein	ND	ug/l	5.0 12.					
Acrylonitrile	ND	ug/l						
Bromochloromethane	ND	ug/l	5.0					
Tetrahydrofuran	ND	ug/l	2.5					
2,2-Dichloropropane	ND	ug/1	10.					
1,2-Dibromoethane	ND	ug/l	2.5					
1,3-Dichloropropane	ND	ug/l	2.0					
1,1,2-Tetrachloroethane		ug/l	2.5					
Bromobenzene	ND	ug/l	0.50					
n-Butylbenzene	ND	ug/l	2.5					
sec-Butylbenzene	ND	ug/l	0.50					
tert-Butylbenzene	ND	ug/l	0.50					
o-Chlorotoluene	ND	ug/l	2.5					
p-Chlorotoluene	ND	ug/l	2.5					
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5					
Hexachlorobutadiene	ND	ug/l	2.5					
Isopropylbenzene	ND	ug/l	1.0					
o-Isopropyltoluene	ND	ug/l	0.50	•				
	ND	ug/l	0.50					
Vaphthalene	ND	ug/l	2.5					
n-Propylbenzene	ND	ug/l	0.50					
1,2,3-Trichlorobenzene	ND	ug/l	2.5					
1,2,4-Trichlorobenzene	ND	ug/l	2.5					
1,3,5-Trimethylbenzene	ND	ug/l	2.5					
.,2,4-Trimethylbenzene	ND	ug/l	2.5					
rans-1,4-Dichloro-2-butene	ND	ug/l	2.5					
Ethyl ether	ND	ug/l	2.5					
Surrogate(s)	Recovery		QC Cri	teria				
,2-Dichloroethane-d4	113.	8						
Coluene-d8	101.	%						
-Bromofluorobenzene	103.	%						
Dibromofluoromethane	108.	ે						
VOC's by GC/MS 8270				1 8270C	0317 09:40 0	319 21:18	HL	
cenaphthene	ND	ug/l	5.9	-		21.10	1111	

Laboratory Sample Number: L0502658-01

MW/CB-20 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued	di ·			1 8270C	0317. 09:40 0319. 21:18 HL
Benzidine	ND	ug/l	59.		
1,2,4-Trichlorobenzene	ND	ug/l	5.9		
• •	ND	ug/l	5.9		
Hexachlorobenzene Bis(2-chloroethyl)ether	ND	ug/l	5.9		
-	ND	ug/l	5.9		
1-Chloronaphthalene 2-Chloronaphthalene	ND	ug/l	7.0		
1,2-Dichlorobenzene	ND	ug/l	5.9		
	ND	ug/l	5.9		
1,3-Dichlorobenzene	ND	ug/l	5.9		
1,4-Dichlorobenzene	ND	ug/l	59.		
3,3'-Dichlorobenzidine	ND	ug/l	7.0		
2,4-Dinitrotoluene	ND	ug/l	5.9		
2,6-Dinitrotoluene	ND ND	ug/l	5.9		
Azobenzene	ND ND	ug/l	5.9		
Fluoranthene		ug/l	5.9		
4-Chlorophenyl phenyl ether	ND	ug/l	5.9		
4-Bromophenyl phenyl ether	ND	ug/l	5.9		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.9		
Bis(2-chloroethoxy)methane	ND	ug/1 ug/l	12.		
Hexachlorobutadiene	ND	-	12.		
Hexachlorocyclopentadiene	ND	ug/l ug/l	5.9		
Hexachloroethane	ND	-	5.9		
Isophorone	ND	ug/l	5.9		
Naphthalene	ND	ug/l	5.9		
Nitrobenzene	ND	ug/l	18.		
NDPA/DPA	ND	ug/』			
n-Nitrosodi-n-propylamine	ND	ug/l	5.9		
Bis(2-ethylhexyl)phthalate	ND	ug/l	12.		
Butyl benzyl phthalate	ND	ug/1	5.9		
Di-n-butylphthalate	ND	ug/l	5.9		
Di-n-octylphthalate	ND	ug/l	5.9		
Diethyl phthalate	ND	ug/l	5.9	•	
Dimethyl phthalate	ND	ug/l	5.9		
Benzo(a)anthracene	ND	ug/l	5.9		
Benzo(a)pyrene	ND	ug/l	5.9		
Benzo(b)fluoranthene	ND	ug/l	5.9		
Benzo(k)fluoranthene	ND	ug/l	5.9		
Chrysene	ND	ug/l	5.9		
Acenaphthylene	ND	ug/l	5.9		
Anthracene	ND	ug/l	5.9		
Benzo(ghi)perylene	ND	ug/l	5.9		
Fluorene	ND	ug/l	5.9		
Phenanthrene	ND	ug/l	5.9		
Dibenzo(a,h)anthracene	ND	ug/l	5.9		
Indeno(1,2,3-cd)pyrene	ND	ug/l	8.2		
Pyrene	ND	ug/l	5.9		
Benzo(e)pyrene	ND	ug/l	5.9		
Biphenyl	ND	ug/l	5.9		
Perylene	ND	ug/l	5.9		
Aniline	ND	ug/l	12.		



Laboratory Sample Number: L0502658-01

MW/CB-20 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued	·····			1 8270C	4000
4-Chloroaniline	ND	ug/l	5.9	1 8270C	0317 09:40 0319 21:18 HL
1-Methylnaphthalene	ND	ug/l	5.9		
2-Nitroaniline	ND	ug/l	5.9		
3-Nitroaniline	ND	ug/l ug/l	5.9		
4-Nitroaniline	ND	ug/l	8.2		
Dibenzofuran	ND	ug/l	o.∠ 5.9		
a,a-Dimethylphenethylamine	ND	ug/l ug/l	59.		
Hexachloropropene	ND	ug/l ug/l	12.		
Nitrosodi-n-butylamine	ND	ug/1 ug/1	12.		
2-Methylnaphthalene	ND		9.4		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	24.		
Pentachlorobenzene	ND	ug/l			
a-Naphthylamine		ug/l	24.		
b-Naphthylamine	ND	ug/l	24.		
Phenacetin	ND	ug/l	24.		
Dimethoate	ND	ug/l	12.		
4-Aminobiphenyl	ND	ug/l	24.		
Pentachloronitrobenzene	ND	ug/l	12.		
Isodrin	ND	ug/l	12.		
	ND	ug/l	12.		
p-Dimethylaminoazobenzene Chlorobenzilate	ND	ug/l	12.		
	ND	ug/l	24.		
3-Methylcholanthrene	ND	ug/l	24.		
Ethyl Methanesulfonate	ND	ug/l	18.		
Acetophenone	ND	ug/l	24.		
Nitrosodipiperidine	ND	ug/l	24.		
7,12-Dimethylbenz(a)anthracene		ug/l	12.		
n-Nitrosodimethylamine	ND	ug/l	59.		
2,4,6-Trichlorophenol	ND	ug/l	5.9		
p-Chloro-m-cresol	ND	ug/l	5.9		
2-Chlorophenol	ND	ug/l	7.0		
2,4-Dichlorophenol	ND	ug/l	12.	•	
2,4-Dimethylphenol	ND	ug/l	12.		
2-Nitrophenol	ND	ug/l	24.		
4-Nitrophenol	ND	ug/l	12.		
2,4-Dinitrophenol	ND	ug/l	24.		
1,6-Dinitro-o-cresol	ИD	ug/l	24.		
Pentachlorophenol	ND	ug/l	24.		
Phenol	ND	ug/l	8.2		
2-Methylphenol	ND	ug/l	7.0		
3-Methylphenol/4-Methylphenol	ND	ug/l	7.0		
2,4,5-Trichlorophenol	ND	ug/l	5.9		
2,6-Dichlorophenol	ND	ug/l	12.		
Benzoic Acid	ND	ug/l	59.		
Benzyl Alcohol	ND	ug/l	12.		
Carbazole	ND	ug/l	5.9		
Pyridine	ND	ug/l	59.		
2-Picoline	ND	ug/l	24.		
Pronamide	ND	ug/l	24.		
Methyl methanesulfonate	ND	ug/l	24.		

Laboratory Sample Number: L0502658-01

MW/CB-20 (GROUNDWATER)

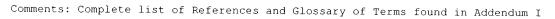
PARAMETER	RESULT	UNITS	RDL REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 contin	nued		1 8270G (09:40 0319 21:18 HL
Surrogate(s)	Recovery		QC Criteria	
2-Fluorophenol	37.0	8		
Phenol-d6	34.0	96		
Nitrobenzene-d5	85.0	%		
2-Fluorobiphenyl	79.0	00		
2,4,6-Tribromophenol	87.0	8		
4-Terphenyl-d14	94.0	%		
PAH by GC/MS SIM 8270M			1 8270C-M 031	09:40 0318 15:54 RL
Acenaphthene	ND	ug/l	0.24	
2-Chloronaphthalene	ND	ug/l	0.24	
Fluoranthene	0.56	ug/l	0.24	
Hexachlorobutadiene	ND	ug/l	0.59	
Naphthalene	ND	ug/l	0.24	
Benzo(a)anthracene	ND	ug/l	0.24	
Benzo(a)pyrene	ND	ug/l	0.24	
Benzo(b) fluoranthene	ND	ug/l	0.24	
Benzo(k) fluoranthene	ND	ug/l	0.24	
Chrysene	ND	ug/l	0.24	
Acenaphthylene	ND	ug/l	0.24	
Anthracene	ND	ug/l	0.24	
Benzo(ghi)perylene	ND	ug/l	0.24	
Fluorene	ND	ug/l	0.24	
Phenanthrene	ND	ug/l	0.24	
Dibenzo(a,h)anthracene	ND	ug/l	0.24	
Indeno(1,2,3-cd) Pyrene	ND	uq/l	0.24	
Pyrene	1.6	ug/l	0.24	
1-Methylnaphthalene	ND	ug/l	0.24	
2-Methylnaphthalene	ND	ug/l	0.24	
Pentachlorophenol	ND	ug/l	0.94	
Hexachlorobenzene	ND	ug/l	0.94	
Perylene	ND	ug/l	0.24	
Biphenyl	ND	ug/l	0.24	
2,6-Dimethylnaphthalene	ND	ug/l	0.24	
1-Methylphenanthrene	ND	ug/l	0.24	
Benzo(e) Pyrene	ND	ug/l	0.24	
Hexachloroethane	ND	ug/l	0.94	
Surrogate(s)	Recovery		QC Criteria	
2-Fluorophenol	45.0	ଚ୍ଚ	21-120	
Phenol-d6	37.0	8	10-120	
Nitrobenzene-d5	69.0	96	23-120	
2-Fluorobiphenyl	70.0	96	43-120	
2,4,6-Tribromophenol	67.0	઼	10-120	
4-Terphenyl-d14	86.0	96	33-120	
Polychlorinated Biphenyls			1 8082 031	7 13:00 0318 16:52 AK
	ND	ug/l	0.575	
Aroclor 1221	L V D	49/4	0.070	



Laboratory Sample Number: L0502658-01

MW/CB-20 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Polychlorinated Biphenyls cor	ntinued			1 8082	0317 13.00 0310 16 60 31
Aroclor 1242/1016	ND	ug/l	0.575	1 6004	0317 13:00 0318 16:52 AK
Aroclor 1248	ND	ug/l	0.575		
Aroclor 1254	ND	ug/l	0.575		
Aroclor 1260	ND	ug/l	0.575		-
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	68.0	ે	30-150		
Decachlorobiphenyl	70.0	%	30-150		
Organochlorine Pesticides				1 8081	. 0317 15:00 0318 15:53 AK
Delta-BHC	ND	ug/l	0.026		+0:00 M
Lindane	ND	ug/l	0.026		
Alpha-BHC	ND	ug/l	0.026		
Beta-BHC	ND	ug/l	0.026		
Heptachlor	ND	ug/l	0.026		
Aldrin	ND	ug/l	0.026		
Heptachlor epoxide	ND	ug/l	0.026		
Endrin	ND	ug/l	0.052		
Endrin aldehyde	ND	ug/l	0.052		
Endrin ketone	ND	ug/l	0.052		
Dieldrin	ND	ug/l	0.052		
1,4'-DDE	ND	ug/l	0.052		
4,4'-DDD	ND	ug/l	0.052		
1,4'-DDT	ND	ug/l	0.052		
Endosulfan I	ND	ug/l	0.026		
Endosulfan II	ND	ug/l	0.052		
Endosulfan sulfate	ND	ug/l	0.052		
Methoxychlor	ND	ug/l	0.260		
Coxaphene	ND	ug/l	0.260		
Chlordane	ND	ug/l	0.260		
cis-Chlordane	ND	ug/l	0.026	-	
crans-Chlordane	ND	ug/l	0.026		
Gurrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	69.0	8	30-150		
Decachlorobiphenyl	79.0	ૄ	30-150		



ALPHA ANALYTICAL LABORATORIES



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-02

Date Collected: 16-MAR-2005 09:20

MW/CB-12 (GROUNDWATER)

Date Received : 16-MAR-2005Date Reported : 24-MAR-2005

Sample Matrix: WATER

Condition of Sample:

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

Satisfactory

PARAMETER					METHOD			ID
						PREP	ANAL	
Total Metals	-							. :
Aluminum, Total	16.5	mg/l	0.100	1	6020	0317 12:30		
Antimony, Total	0.0004	mg/l	0.0002	1	6020	0317 12:30	0321 23:2	24 RW
Arsenic, Total	0.0074	mg/l	0.0004	1	6020	0317 12:30		
Barium, Total	0.5576	mg/1	0.0002	1	6020	0317 12:30	0321 23:2	24 RW
Beryllium, Total	0.0015	mg/l	0.0005	1	6020	0317 12:30	0321 23:3	24 RW
Cadmium, Total	ND	mg/l	0.0004	1	6020	0317 12:30	0321 23:	24 RW
Calcium, Total	114.	mg/l	2.00	1	6020	0317 12:30	0321 18:	13 RW
Chromium, Total	0.0492	mg/l	0.0002	1	6020	0317 12:30	0321 23:	24 RW
Cobalt, Total	0.0164	mg/l	0.0001	1	6020	0317 12:30	0321 23:	24 RW
Copper, Total	0.0848	mg/l	0.0005	1	6020	0317 12:30	0321 23:	24 RW
Iron, Total	23.7	mg/l	0.010	1	6020	0317 12:30	0321 23:	24 RW
Lead, Total	0.0779	mg/l	0.0002	1	6020	0317 12:30	0321 23:	24 RW
Magnesium, Total	32.2	mg/l	0.010	1	6020	0317 12:30	0321 23:	24 RW
Manganese, Total	8.375	mq/l	0.0020	1	6020	0317 12:30	0321 18:	13 RW
Mercury, Total	ND	mq/l	0.0002	1	7470A	0318 17:20	0321 11:	56 DM
Nickel, Total	0.0563	mq/l	0.0005	1	6020	0317 12:30	0321 23:	24 RW
Potassium, Total	11.0	mq/l	0.100	1	6020	0317 12:30	0321 23:	24 RW
Selenium, Total	0.002	mg/l	0.001	1	6020	0317 12:30	0321 23:	24 RW
Silver, Total	ND	mg/l	0.0001	1	6020	0317 12:30	0321 23:	24 RW
Sodium, Total	195.	mq/l	1.00	1	6020	0317 12:30	0321 18:	13 RW
Thallium, Total	0.0003	mq/l	0.0001	1	6020	0317 12:30	0321 23:	24 RW
Vanadium, Total	0.0435	mg/l	0.0002	1	6020	0317 12:30	0321 23:	24 RW
Zinc, Total	0.0773	mg/l	0.0050	1	6020	0317 12:30	0321 23:	24 RW
Dissolved Metals								
Aluminum, Dissolved	ND	mg/l	0.010	1	6020	0317 12:30	0318 15:	18 RW
Antimony, Dissolved	0.0038	mg/l	0.0002	1	6020	0317 12:30	0318 15:	18 RW
Arsenic, Dissolved	0.0011	mg/l	0.0004	1	6020	0317 12:30	0318 15:	18 RW
Barium, Dissolved	0.2903	mg/l	0.0002	1	6020	0317 12:30	0318 15:	18 RW
Beryllium, Dissolved	ND	mq/l	0.0005	1	6020	0317 12:30	0318 15:	18 RW
Cadmium, Dissolved	0.0007	mg/l	0.0004	1	6020	0317 12:30	0318 15:	18 RW
Calcium, Dissolved	99.4	mg/l	0.200	1	6020	0317 12:30	0318 15:	18 RW
Chromium, Dissolved	0.0002	mg/l	0.0002	1		0317 12:30	0318 15:	18 RW
Cobalt, Dissolved	0.0002	mg/l	0.0001	1		0317 12:30		
Copper, Dissolved	0.0054	mg/l	0.0005	1		0317 12:30	0318 15:	18 RW
	0.0034	mg/ I	0.000					

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502658-02

MW/CB-12 (GROUNDWATER)

PARAMETER	RESULT	UNITS RDI	\mathtt{RDL}	REF ME		DATE ID		
						PREP	ANAL	
Pissolved Metals					* .			
					,			
Lead, Dissolved	0.0075	mg/l	0.0002	1	6020	0317 12:30	0318 15:	18 RW
Magnesium, Dissolved	29.1	mg/l	0.010	1	6020	0317 12:30	0318 15:	18 RW
Manganese, Dissolved	4.193	mg/l	0.0002		6020	0317 12:30	0318 15:	18 RW
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16:00	0318 12:	37 DM
Nickel, Dissolved	0.0107	mg/l	0.0005	1	6020	0317 12:30	0318 15:	18 RW
Potassium, Dissolved	9.98	mg/l	0.100	1	6020	0317 12:30	0318 15:	18 RW
Selenium, Dissolved	ND	mg/l	0.001	1	6020	0317 12:30	0318 15:	18 RW
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30	0318 15:	18 RW
Sodium, Dissolved	175.	mg/l	1.00	1	6020	0317 12:30	0321 16:	54 RW
Challium, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30	0318 15:	18 RW
Vanadium, Dissolved	0.0006	mg/l	0.0002	1	6020	0317 12:30	0318 15:	18 RW
Zinc, Dissolved	0.0148	mg/l	0.0050	1	6020	0317 12:30	0318 15:	18 RW
Volatile Organics by GC/MS 8	3260 .			1	8260B		0318 13:	16 BT
Methylene chloride	ND	ug/l	5.0					
,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	3.8	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
,1,2-Trichloroethane	ND	ug/l	0.75					
etrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
richlorofluoromethane	ND	ug/l	2.5					
,2-Dichloroethane	ND	ug/l	0.50					
.,1,1-Trichloroethane	ND	ug/l	0.50					
3romodichloromethane	ND	ug/l	0.50					
rans-1,3-Dichloropropene	ND	ug/l	0.50					
is-1,3-Dichloropropene	ND	ug/l	0.50					
,1-Dichloropropene	ND	ug/l	2.5	-				
romoform	ND	ug/l	2.0					
,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
enzene	ND	ug/l	0.50					
oluene	ND	ug/l	0.75					
thylbenzene	ND	ug/l	0.50					
hloromethane	ND	ug/l	2.5					
romomethane	ND	ug/l	1.0					
inyl chloride	ND	ug/l	1.0					
hloroethane	ND	ug/l	1.0					
,1-Dichloroethene	ND	ug/l	0.50					
rans-1,2-Dichloroethene	ND	ug/l	0.75					
richloroethene	ND	ug/l	0.50					
,2-Dichlorobenzene	ND	ug/1	2.5					
,3-Dichlorobenzene	ND	ug/l	2.5					
,4-Dichlorobenzene	ND	ug/l	2.5					
ethyl tert butyl ether	ND	ug/l	1.0					
/m-Xylene	ND	ug/l	0.50					
-Xylene	ИD	ug/l	0.50					



Laboratory Sample Number: L0502658-02

MW/CB-12 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Volatile Organics by GC/MS 8	260 continu	ed .	. * . '	1 8260B	0318 13:16 BT
cis-1,2-Dichloroethene	1.2	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
L,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	7.2	ug/l	0.50		
sec-Butylbenzene	10.	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	5.0	ug/l	0.50		
p-Isopropyltoluene	2.0	ug/l	0.50	•	
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	12.	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
-	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND ND	ug/1 ug/l	2.5		
Ethyl ether	IND	ug/I			
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	136.	%			
Toluene-d8	114.	엉			
4-Bromofluorobenzene	156.	%			
Dibromofluoromethane	90.0	96			
SVOC's by GC/MS 8270				1 8270C	0317 09:40 0319 21:44 HL
Acenaphthene	ND	ug/l	6.2		



Laboratory Sample Number: L0502658-02

MW/CB-12 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
SVOC's by GC/MS 8270 continue	ed -			1 8270c	0317 09:40 0319 21:44 HI
Benzidine	ND	ug/l	62.	•	
1,2,4-Trichlorobenzene	ND	ug/l	6.2		
Hexachlorobenzene	ND	ug/l	6.2		
Bis(2-chloroethyl)ether	ND	ug/l	6.2		
1-Chloronaphthalene	ND	ug/l	6.2		
2-Chloronaphthalene	ND	ug/l	7.4		
1,2-Dichlorobenzene	ND	ug/l	6.2		
1,3-Dichlorobenzene	ND	ug/l	6.2		
1,4-Dichlorobenzene	ND	ug/l	6.2		
3,3'-Dichlorobenzidine	ND	ug/l	62.		
2,4-Dinitrotoluene	ND	ug/l	7.4		
2,6-Dinitrotoluene	ND	ug/l	6.2		
Azobenzene	ND	ug/l	6.2		
Fluoranthene	ND	ug/l	6.2		
4-Chlorophenyl phenyl ether	ND	ug/l	6.2		
4-Bromophenyl phenyl ether	ND	ug/l	6.2		
Bis (2-chloroisopropyl) ether	ND	ug/l	6.2		
Bis(2-chloroethoxy)methane	ND	ug/l	6.2		
Hexachlorobutadiene	ND	ug/l	12.		
Hexachlorocyclopentadiene	ND	ug/l	12.		
Hexachloroethane	ND	ug/l	6.2		
Isophorone	ND	ug/l	6.2		
Naphthalene	ND	ug/l	6.2		
Nitrobenzene	ND	ug/l	6.2		
NDPA/DPA	ND	ug/l	18.		
n-Nitrosodi-n-propylamine	ND	ug/l	6.2		
Bis(2-ethylhexyl)phthalate	ND	ug/l	12.		
Butyl benzyl phthalate	ND	ug/l	6.2		
Di-n-butylphthalate	ND	ug/l	6.2		
Di-n-octylphthalate	ND	ug/l	6.2		
Diethyl phthalate	ND	ug/l	6.2		
Dimethyl phthalate	ND	ug/l	6.2	•	
Benzo(a) anthracene	ND	ug/l	6.2		
Benzo(a) pyrene	ND	ug/l	6.2		
Benzo(b) fluoranthene	ND	ug/l	6.2		
Benzo(k) fluoranthene	ND ND	-	6.2		
Chrysene	ND	ug/l ug/l	6.2		
Acenaphthylene	ND		6.2		
Anthracene	ND	ug/l ug/l	6.2		
Benzo(ghi)perylene	ND	ug/1 ug/1	6.2		
Fluorene	ND	ug/l ug/l	6.2		
Phenanthrene	ND ND	-	6.2		
Dibenzo(a,h)anthracene		ug/l			
	ND	ug/l	6.2		
Indeno(1,2,3-cd)pyrene	ND	ug/l	8.6		
Pyrene	ND	ug/l	6.2		
Benzo(e)pyrene	ND	ug/l	6.2		
Biphenyl	ND	ug/1	6.2		
Perylene	ND	ug/l	6.2		
Aniline	ND	ug/l	12.		



Laboratory Sample Number: L0502658-02

MW/CB-12 (GROUNDWATER)

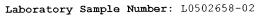
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued				1 8270C	0317 09:40 0319 21:44 HL
4-Chloroaniline	ND	ug/l	6.2		
1-Methylnaphthalene	ND	ug/l	6.2		
2-Nitroaniline	ND	ug/l	6.2		
3-Nitroaniline	ND	ug/l	6.2		
4-Nitroaniline	ND	ug/l	8.6		
Dibenzofuran	ND	ug/l	6.2		
a,a-Dimethylphenethylamine	ND	ug/l	62.		
Hexachloropropene	ND	ug/l	12.		
Nitrosodi-n-butylamine	ИD	ug/l	12.		
2-Methylnaphthalene	ND	ug/l	9.9		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	25.		
Pentachlorobenzene	ND	ug/l	25.		
a-Naphthylamine	ND	ug/l	25.		
b-Naphthylamine	ND	ug/l	25.		
Phenacetin	ND	ug/l	12.		
Dimethoate	ND	ug/l	25.		
4-Aminobiphenyl	ND	ug/l	12.		
Pentachloronitrobenzene	ND	ug/l	12.		
Isodrin	ND	ug/l	12.		
p-Dimethylaminoazobenzene	ND	ug/l	12.		
Chlorobenzilate	ND	ug/l	25.		
3-Methylcholanthrene	ND	ug/l	25.		
Ethyl Methanesulfonate	ND	ug/l	18.		
Acetophenone	ND	ug/l	25.		
Nitrosodipiperidine	ND	ug/l	25.		
7,12-Dimethylbenz(a)anthracene		ug/l	12.		
n-Nitrosodimethylamine	ND	ug/l	62.		
2,4,6-Trichlorophenol	ND	ug/l	6.2		
p-Chloro-m-cresol	ND	ug/l	6.2		
2-Chlorophenol	ND	ug/l	7.4		
2,4-Dichlorophenol	ND	ug/l	12.		
2,4-Dimethylphenol	ND	ug/l	12.	•	
2-Nitrophenol	ND	ug/l	25.		
4-Nitrophenol	ND	ug/l	12.		
2,4-Dinitrophenol	ND	ug/l	25.		
4,6-Dinitro-o-cresol	ND	ug/l	25.		
Pentachlorophenol	ND	ug/l	25.		
Phenol	ND	ug/l	8.6		
2-Methylphenol	ND	ug/l	7.4		
3-Methylphenol/4-Methylphenol	ND	ug/l	7.4		
2,4,5-Trichlorophenol	ND	ug/l	6.2		
2,6-Dichlorophenol	ND	ug/l	12.		
Benzoic Acid	ND	ug/l	62.		
	ND	ug/l	12.		
Benzyl Alcohol	ND ND	ug/l	6.2		
Carbazole		ug/l ug/l	62.		
Pyridine	ND	ug/l ug/l	25.		
2-Picoline	ND	-	25.		
Pronamide	ND	ug/l			
Methyl methanesulfonate	ND	ug/l	25.		



Laboratory Sample Number: L0502658-02

MW/CB-12 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 contir	ued			1 8270C	0317 09:40 0319 21:44 HL
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	41.0	ક	~		
Phenol-d6	36.0	8			
Nitrobenzene-d5	93.0	용			
2-Fluorobiphenyl	83.0	8			
2,4,6-Tribromophenol	108.	9			
4-Terphenyl-d14	94.0	90			
PAH by GC/MS SIM 8270M				1 8270C-M	0317 09:40 0318 16:40 RL
Acenaphthene	ND	ug/l	0.25		
2-Chloronaphthalene	ND	ug/l	0.25		
Fluoranthene	3.7	ug/l	0.25		
Hexachlorobutadiene	ND	ug/l	0.62		
Naphthalene	1.2	ug/l	0.25		
Benzo(a)anthracene	ND	ug/l	0.25		
Benzo(a)pyrene	ND	ug/l	0.25		
Benzo(b)fluoranthene	ND	ug/l	0.25		
Benzo(k)fluoranthene	ND	ug/l	0.25		
Chrysene	ND	ug/l	0.25		
Acenaphthylene	ND	ug/l	0.25		
Anthracene	ND	ug/l	0.25		
Benzo(ghi)perylene	1.3	ug/l	0.25		
Fluorene	ND	ug/l	0.25		
Phenanthrene	1.5	ug/l	0.25		
Dibenzo(a,h)anthracene	ND	ug/l	0.25		
Indeno(1,2,3-cd)Pyrene	0.26	ug/l	0.25		
Pyrene	6.7	ug/l	0.25		
l-Methylnaphthalene	1.8	ug/l	0.25		
2-Methylnaphthalene	ND	ug/l	0.25		
Pentachlorophenol	ND	ug/l	0.99		
Hexachlorobenzene	ND	ug/l	0.99		
Perylene	ND	ug/l	0.25		
Biphenyl	ND	ug/l	0.25		
2,6-Dimethylnaphthalene	ND	ug/l	0.25		
l-Methylphenanthrene	ND	ug/l	0.25		
Benzo(e) Pyrene	0.43	ug/l	0.25		
Hexachloroethane	ND	ug/l	0.99		
Gurrogate(s)	Recovery		OC Cr	iteria	
2-Fluorophenol	38.0	ojo	21-120		
Phenol-d6	31.0	96	10-120		
Vitrobenzene-d5	59.0	%	23-120		
2-Fluorobiphenyl	63.0	96	43-120		
2,4,6-Tribromophenol	63.0	%	10-120		
1-Terphenyl-d14	72.0	8	33-120		
Polychlorinated Biphenyls				1 8082	0321 17:00 0323 09:58 AK
Aroclor 1221	ND	ug/l	0.500		
Aroclor 1232	ND	ug/l	0.500		



MW/CB-12 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls con	timed			1 8082	0321 17:00 0323 09:58 AK
Aroclor 1242/1016	ND	ug/l	0.500		
Aroclor 1242/1010 Aroclor 1248	ND	ug/l	0.500		
Aroclor 1254	ND	ug/l	0.500		
Aroclor 1260	ND	ug/l	0.500		
Surrogate(s)	Recovery		QC Cri	teria	
2,4,5,6-Tetrachloro-m-xylene	77.0	ે	30-150		
Decachlorobiphenyl	57.0	%	30-150		
Organochlorine Pesticides				1 8081	0317 15:00 0318 22:02 AK
Delta-BHC	ND	ug/l	0.024		
Lindane	ND	ug/l	0.024		
Alpha-BHC	ND	ug/l	0.024		
Beta-BHC	ND	ug/l	0.024		
Heptachlor	ND	ug/l	0.024		
Aldrin	ND	ug/l	0.024		
Heptachlor epoxide	ND	ug/l	0.024		
Endrin	ND	ug/l	0.048		
Endrin aldehyde	ND	ug/l	0.048		
Endrin ketone	ND	ug/l	0.048		
Dieldrin	ND	ug/l	0.048		
4,4'-DDE	ND	ug/l	0.048		
4,4'-DDD	ND	ug/l	0.048		
4,4'-DDT	ND	ug/l	0.048		
Endosulfan I	ND	ug/l	0.024		
Endosulfan II	ND	ug/l	0.048		
Endosulfan sulfate	ND	ug/l	0.048		
Methoxychlor	ND	ug/l	0.238		
Toxaphene	ND	ug/l	0.238		
Chlordane	ND	ug/l	0.238		
cis-Chlordane	ND	ug/l	0.024	-	
trans-Chlordane	ND	ug/l	0.024		
Surrogate(s)	Recovery		QC Cri	teria	
2,4,5,6-Tetrachloro-m-xylene	65.0	જ	30-150)	
Decachlorobiphenyl	69.0	ે	30-150)	



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-03

MW/CB-9 (GROUNDWATER)

Date Collected: 16-MAR-2005 09:50
Date Received : 16-MAR-2005

Sample Matrix: WATER

Date Reported: 24-MAR-2005

Condition of Sample: Sati

Satisfactory Field Prep

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DAT	E II	D
						PREP	ANAL	
Total Metals								
Aluminum, Total	2.83	mg/l	0.100	1	6020	0317 12:30)321 18:18 RW	W
Antimony, Total	0.0005	mg/l	0.0002	1	6020	0317 12:30	321 23:29 RW	W
Arsenic, Total	0.0035	mg/l	0.0004	1	6020	0317 12:30	321 23:29 RW	W
Barium, Total	0.0950	mg/l	0.0002	1	6020	0317 12:30)321 23:29 RW	W
Beryllium, Total	ND	mg/l	0.0005	1	6020	0317 12:30	321 23:29 RW	W
Cadmium, Total	ND	mg/l	0.0004	1	6020	0317 12:30	321 23:29 RW	W
Calcium, Total	45.0	mg/l	2.00	1	6020	0317 12:30 (321 18:18 RW	W
Chromium, Total	0.0054	mg/l	0.0002	1	6020	0317 12:30)321 23:29 RW	W
Cobalt, Total	0.0036	mg/l	0.0001	1	6020	0317 12:30	321 23:29 RW	W
Copper, Total	0.0097	mg/l	0.0005	1	6020	0317 12:30 (321 23:29 RW	W
Iron, Total	2.23	mg/l	0.010	1	6020	0317 12:30 (321 23:29 RW	w
Lead, Total	0.0046	mg/l	0.0002	1	6020	0317 12:30 (321 23:29 RW	w
Magnesium, Total	13.1	mg/l	0.010	1	6020	0317 12:30 (321 23:29 RW	W.
Manganese, Total	0.5582	mg/l	0.0002	1	6020	0317 12:30 (321 23:29 RW	W
Mercury, Total	ND	mg/l	0.0002	1	7470A	0318 17:20 (321 12:00 DM	M
Nickel, Total	0.0055	mg/l	0.0005	1	6020	0317 12:30 (321 23:29 RW	W
Potassium, Total	3.72	mg/l	0.100	1	6020	0317 12:30 (321 23:29 RW	W
Selenium, Total	ND	mg/l	0.001	1	6020	0317 12:30 (321 23:29 RW	W
Silver, Total	ND	mg/l	0.0001	1 -	6020	0317 12:30 (321 23:29 RW	w
Sodium, Total	30.1	mg/l	1.00	1	6020	0317 12:30 (321 18:18 RW	w
Thallium, Total	ND	mg/l	0.0001	1	6020	0317 12:30 (321 23:29 RW	W
Vanadium, Total	0.0065	mg/l	0.0002	1	6020	0317 12:30 (321 23:29 RW	W
Zinc, Total	0.0331	mg/l	0.0050	1	6020	0317 12:30 (321 23:29 RW	W
Dissolved Metals								
Aluminum, Dissolved	0.021	mg/l	0.010	1	6020	0317 12:30 (318 15:23 RW	.W
Antimony, Dissolved	0.0022	mg/1	0.0002	1	6020	0317 12:30 (318 15:23 RW	W
Arsenic, Dissolved	0.0034	mg/l	0.0004	1	6020	0317 12:30 (318 15:23 RW	W
Barium, Dissolved	0.0743	mg/l	0.0002	1	6020	0317 12:30 (318 15:23 RW	W
Beryllium, Dissolved	ND	mg/l	0.0005	1	6020	0317 12:30 (318 15:23 RW	W
Cadmium, Dissolved	0.0008	mg/l	0.0004	1	6020	0317 12:30 0	318 15:23 RW	W
Calcium, Dissolved	47.0	mg/l	0.200	1	6020	0317 12:30 0	318 15:23 RW	W
Chromium, Dissolved	0.0004	mg/l	0.0002	1	6020	0317 12:30 0	318 15:23 RW	W
Cobalt, Dissolved	0.0018	mg/1	0.0001	1	6020	0317 12:30 0	318 15:23 RW	W
Copper, Dissolved	0.0027	mg/l	0.0005	1	6020	0317 12:30 0	318 15:23 RW	W
Iron, Dissolved	0.225	mg/l	0.010	1	6020	0317 12:30 0	1310 15.22 DW	ω

Laboratory Sample Number: L0502658-03

MW/CB-9 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Dissolved Metals	11					egy film some		
		. /2	0 0000					
Lead, Dissolved	0.0006	mg/l	0.0002		6020	0317 12:30		
Magnesium, Dissolved	13.8	mg/l	0.010	1	6020	0317 12:30		
Manganese, Dissolved	0.6268	mg/l	0.0002		6020	0317 12:30		
Mercury, Dissolved	ND	mg/l	0.0002		7470A	0317 16:00		
Nickel, Dissolved	0.0015	mg/l	0.0005	1	6020	0317 12:30		
Potassium, Dissolved	3.56	mg/l	0.100	1	6020	0317 12:30		
Selenium, Dissolved	ND	mg/l	0.001	1	6020	0317 12:30		
Silver, Dissolved	ND	mg/l	0.0001		6020	0317 12:30		
Sodium, Dissolved	23.2	mg/l	0.100	1	6020	0317 12:30		
Thallium, Dissolved	ND	mg/l	0.0001		6020	0317 12:30		
Vanadium, Dissolved	0.0019	mg/l	0.0002		6020	0317 12:30		
Zinc, Dissolved	0.0138	mg/l	0.0050	1	6020	0317 12:30	0318 15:	23 RW
Volatile Organics by GC/MS 8	1260		•	1	8260B		0318 13:	52 B1
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75			,		
Carbon tetrachloride	ND	ug/l	0.50					
1,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
1.1.2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Trichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Bromodichloromethane	ND	ug/l	0.50					
trans-1,3-Dichloropropene	ND	ug/l	0.50					
cis-1,3-Dichloropropene	ND	ug/l	0.50					
1,1-Dichloropropene	ND	ug/l	2.5					
Bromoform	ND	ug/l	2.0	•				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
	ND	ug/l	0.50					
Ethylbenzene Chloromethane	ND	ug/l	2.5					
Bromomethane	ND	ug/l	1.0					
Vinyl chloride	ND	ug/l	1.0					
Chloroethane	ND	ug/l	1.0					
1,1-Dichloroethene	ND	ug/l	0.50					
•	ND	ug/l	0.75					
trans-1,2-Dichloroethene	ND	ug/1 ug/l	0.73					
Trichloroethene		ug/1 ug/l	2.5					
1,2-Dichlorobenzene	ND	-	2.5					
1,3-Dichlorobenzene	ND	ug/l						
1,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/1	1.0					
p/m-Xylene	ND	ug/l	0.50					
o-Xylene	ND	ug/l	0.50					



Laboratory Sample Number: L0502658-03

MW/CB-9 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Colotile Commiss by CG (NG C)	260				
Volatile Organics by GC/MS 8:			0.50	1 8260B	0318 13:52 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		•
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ИD	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50	-	
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ИD	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ИD	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	102.	%			
Poluene-d8	101.	96			
4-Bromofluorobenzene	105.	%			
Dibromofluoromethane	100.	8			
SVOC's by GC/MS 8270		•		1 8270C	0317 09:40 0319 22:09 HL
Acenaphthene	ND	ug/l	5.6		



Laboratory Sample Number: L0502658-03

MW/CB-9 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
SVOC's by GC/MS 8270 continue	d			1 8270C	0317 09:40 0319 22:09 H
Benzidine	ND	ug/l	56.		
	ND	ug/l	5.6		
1,2,4-Trichlorobenzene	ND	ug/l	5.6		
Hexachlorobenzene Bis(2-chloroethyl)ether	ND	ug/l	5.6		
l-Chloronaphthalene	ND	ug/l	5.6		
2-Chloronaphthalene	ND	ug/l	6.7		
1,2-Dichlorobenzene	ND	ug/l	5.6		
1,3-Dichlorobenzene	ND	ug/l	5.6		
•	ND	ug/l	5.6		
1,4-Dichlorobenzene 3,3'-Dichlorobenzidine	ND	ug/l	56.		
•	ND	ug/l	6.7		
2,4-Dinitrotoluene		ug/l	5.6		
2,6-Dinitrotoluene	ND ND	ug/l ug/l	5.6		
Azobenzene	ND ND	ug/1	5.6		
Fluoranthene		ug/1 ug/l	5.6		
4-Chlorophenyl phenyl ether	ND ND	ug/l	5.6		
4-Bromophenyl phenyl ether		ug/1 ug/l	5.6		
Bis (2-chloroisopropyl) ether	ND	-	5.6		
Bis (2-chloroethoxy) methane	ND	ug/l ug/l	11.		
Hexachlorobutadiene	ND	-	11.		
Hexachlorocyclopentadiene	ND	ug/l	5.6		
Hexachloroethane	ND	ug/l ug/l	5.6		
Isophorone	ND	-	5.6		
Naphthalene	ND	ug/l	5.6		
Nitrobenzene	ND	ug/l	17.		
NDPA/DPA	ND	ug/l	5.6		
n-Nitrosodi-n-propylamine	ND	ug/1	11.		
Bis(2-ethylhexyl)phthalate	ND	ug/l	5.6		
Butyl benzyl phthalate	ND	ug/l	5.6		
Di-n-butylphthalate	ND	ug/l	5.6		
Di-n-octylphthalate	ND	ug/l	5.6		
Diethyl phthalate	ND	ug/1	5.6	•	
Dimethyl phthalate	ND	ug/l	5.6		
Benzo(a) anthracene	ND	ug/l	5.6		
Benzo(a) pyrene	ND	ug/l	5.6		
Benzo(b) fluoranthene	ND	ug/l			
Benzo(k) fluoranthene	ND	ug/l	5.6		
Chrysene	ND	ug/l	5.6		
Acenaphthylene	ND	ug/l	5.6		
Anthracene	ND	ug/l	5.6		
Benzo(ghi)perylene	ND	ug/l	5.6		
Fluorene	ND	ug/l	5.6		
Phenanthrene	ND	ug/l	5.6		
Dibenzo(a,h)anthracene	ND	ug/l	5.6		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.9		
Pyrene	ND	ug/l	5.6		
Benzo(e)pyrene	ND	ug/l	5.6		
Biphenyl	ND	ug/l	5.6		
Perylene	ND	ug/l	5.6		
Aniline	ND	ug/l	11.		



Laboratory Sample Number: L0502658-03

MW/CB-9 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued		* * * * * * * * * * * * * * * * * * * *	$\mathcal{L}_{\mathcal{A}} = \{ 1_{i,j} \in \mathcal{A} \mid 1_{i,j} \in \mathcal{A} \}$	1 8270C	0317 09:40 0319 22:09 HL
4-Chloroaniline	ND	ug/l	5.6		
1-Methylnaphthalene	ND	ug/l	5.6		
2-Nitroaniline	ND	ug/l	5.6		
3-Nitroaniline	ND	ug/l	5.6		
4-Nitroaniline	ND	ug/l	7.9		
Dibenzofuran	ND	ug/l	5.6		
a,a-Dimethylphenethylamine	ND	ug/l	56.		
Hexachloropropene	ND	ug/l	11.		
Nitrosodi-n-butylamine	ND	ug/l	11.		
2-Methylnaphthalene	ND	ug/l	9.0		
1,2,4,5-Tetrachlorobenzene	ИD	ug/l	22.		
Pentachlorobenzene	ND	ug/l	22.		
a-Naphthylamine	ND	ug/l	22.		
b-Naphthylamine	ND	ug/l	22.		
Phenacetin	ND	ug/l	11.		
Dimethoate	ND	ug/l	22.		
4-Aminobiphenyl	ND	ug/l	11.		
Pentachloronitrobenzene	ND	ug/l	11.		
Isodrin	ND	ug/l	11.		
p-Dimethylaminoazobenzene	ND	ug/l	11.		
Chlorobenzilate	ND	ug/l	22.		
3-Methylcholanthrene	ND	ug/l	22.		
Ethyl Methanesulfonate	ND	ug/l	17.		
Acetophenone	ND	ug/l	22.		
Nitrosodipiperidine	ND	ug/l	22.		
7,12-Dimethylbenz(a)anthracene	ND	ug/l	11.		
n-Nitrosodimethylamine	ND	ug/l	56.		
2,4,6-Trichlorophenol	ND	ug/l	5.6		
o-Chloro-m-cresol	ND	ug/l	5.6		
2-Chlorophenol	ND	ug/l	6.7		
2,4-Dichlorophenol	ND	ug/l	11.		
2,4-Dimethylphenol	ND	ug/l	11.	•	
2-Nitrophenol	ND	ug/l	22.		
4-Nitrophenol	ND	ug/l	11.		
2,4-Dinitrophenol	ND	ug/l	22.		
1,6-Dinitro-o-cresol	ND	ug/l	22.		
Pentachlorophenol	ND	-	22.		
Phenol	ND	ug/1			
2-Methylphenol	ND	ug/l	7.9 6.7		
B-Methylphenol/4-Methylphenol	ND	ug/l ug/l	6.7		
2,4,5-Trichlorophenol	ND	_			
2,6-Dichlorophenol		ug/1	5.6		
Benzoic Acid	ND	ug/l	11.		
Benzyl Alcohol	ND	ug/l	56.		
-	ND	ug/l	11.		
Carbazole	ND	ug/l	5.6		
Pyridine	ND	ug/l	56.		
?-Picoline	ND	ug/l	22.		
Pronamide	ND	ug/l	22.		
Methyl methanesulfonate	ND	ug/l	22.		

Laboratory Sample Number: L0502658-03

MW/CB-9 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	ied	-		1 9270C	0317 09:40 0319 22:09 HL
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	43.0	ક			
Phenol-d6	39.0	%			
Nitrobenzene-d5	100.	ે			
2-Fluorobiphenyl	95.0	8			
2,4,6-Tribromophenol	111.	ક			
4-Terphenyl-d14	101.	%			
PAH by GC/MS SIM 8270M				1 8270C-M	0317 09:40 0318 17:25 RL
Acenaphthene	ND	ug/l	0.22		
2-Chloronaphthalene	ND	ug/l	0.22		
Fluoranthene	9.5	ug/l	0.22		
Hexachlorobutadiene	ND	ug/l	0.56		
Naphthalene	ND	ug/l	0.22		
Benzo(a)anthracene	ND	ug/l	0.22		
Benzo(a) pyrene	ND	ug/l	0.22		
Benzo(b) fluoranthene	ND	ug/l	0.22		
Benzo(k) fluoranthene	ND	ug/l	0.22		
Chrysene	ND	ug/l	0.22		
Acenaphthylene	ND	ug/l	0.22		
Anthracene	ND	ug/l	0.22		
Benzo(ghi)perylene	1.1	ug/l	0.22		
Fluorene	ND	ug/l	0.22		
Phenanthrene	2.4	ug/l	0.22		
Dibenzo(a, h) anthracene	ND	ug/l	0.22		
Indeno(1,2,3-cd) Pyrene	0.23	ug/l	0.22		
Pyrene	19.	ug/l	0.22		
1-Methylnaphthalene	ND	ug/l	0.22		
2-Methylnaphthalene	ND	ug/l	0.22		
Pentachlorophenol	ND	ug/l	0.90		
Hexachlorobenzene	ND	ug/l	0.90		
	ND	ug/l	0.22	*	
Perylene	ND	ug/l	0.22		
Biphenyl	ND	ug/l	0.22		
2,6-Dimethylnaphthalene	ND ND	ug/l	0.22		
1-Methylphenanthrene	0.38	ug/1	0.22		
Benzo(e) Pyrene Hexachloroethane	ND	ug/l	0.90		
Currogato (c)	Recovery		0C Cr	iteria	
Surrogate(s)	48.0	%	21-12		
2-Fluorophenol Phenol-d6	40.0	8	10-12		
	78.0	8	23-12		
Nitrobenzene-d5		9	43-12		
2-Fluorobiphenyl	82.0	16 0 6	10-12		
2,4,6-Tribromophenol 4-Terphenyl-dl4	77.0 85.0	6 96	33-12		
Polychlorinated Biphenyls				1 8082	0321 17:00 0322 15:30 AK
Aroclor 1221	ND	ug/l	0.538		
	ND	ug/l	0.538		
Aroclor 1232	ND	ug/1	3.330		



Laboratory Sample Number: L0502658-03

MW/CB-9 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls cor	tinued			1 8082	0321 17:00 0322 15:30 AK
Aroclor 1242/1016	ND	ug/l	0.538		5521 17:00 0322 13:30 AR
Aroclor 1248	ND	ug/l	0.538		
Aroclor 1254	ND	ug/l	0.538		
Aroclor 1260	ND	ug/l	0.538		
Surrogate(s)	Recovery		QC Crit	teria	
2,4,5,6-Tetrachloro-m-xylene	59.0	ક	30-150	00114	
Decachlorobiphenyl	47.0	%	30-150		
Organochlorine Pesticides				1 8081	0317 15:00 0318 16:21 AK
Delta-BHC	ND	ug/l	0.022	- 0001	2021 10:00 0310 10:21 AK
Lindane	ND	ug/l	0.022		
Alpha-BHC	ND	ug/l	0.022		
Beta-BHC	ND	ug/l	0.022		
Heptachlor	ND	ug/l	0.022		
Aldrin	ND	ug/l	0.022		
Heptachlor epoxide	ND	ug/l	0.022		
Endrin	ND	ug/l	0.044		
Endrin aldehyde	ND	uq/l	0.044		
Endrin ketone	ND	ug/l	0.044		
Dieldrin	ND	ug/l	0.044		
1,4'-DDE	ND	ug/l	0.044		
1,4'-DDD	ND	uq/l	0.044		
1,4'-DDT	ND	ug/l	0.044		
Indosulfan I	ND	ug/l	0.022		
Endosulfan II	ND	ug/l	0.044		
Endosulfan sulfate	ND	ug/l	0.044		
Methoxychlor	ND	ug/l	0.222		
oxaphene	ND	ug/l	0.222		
Chlordane	ND	ug/l	0.222		
is-Chlordane	ND	ug/l	0.022	-	
rans-Chlordane	ND	ug/l	0.022		
urrogate(s)	Recovery		QC Crit	eria	
,4,5,6-Tetrachloro-m-xylene	72.0	8	30-150		
ecachlorobiphenyl	54.0	96	30-150		

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-04

Date Collected: 16-MAR-2005 10:25

MW/CB-14 (GROUNDWATER)

Date Received : 16-MAR-2005

Sample Matrix:

WATER

Date Reported : 24-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Total Metals		King Carlot			
Aluminum, Total	47.6	mg/l	0.100	1 6020	0317 12:30 0321 18:23 RW
Antimony, Total	0.0007	mg/l	0.0002	1 6020	0317 12:30 0321 23:35 RW
Arsenic, Total	0.0146	mg/l	0.0004	1 6020	0317 12:30 0321 23:35 RW
Barium, Total	0.6555	mg/l	0.0002	1 6020	0317 12:30 0321 23:35 RW
Beryllium, Total	0.0030	mg/l	0.0005	1 6020	0317 12:30 0321 23:35 RW
Cadmium, Total	0.0011	mg/l	0.0004	1 6020	0317 12:30 0321 23:35 RW
Calcium, Total	72.1	mg/l	2.00	1 6020	0317 12:30 0321 18:23 RW
Chromium, Total	0.0580	mg/l	0.0002	1 6020	0317 12:30 0321 23:35 RW
Cobalt, Total	0.0220	mg/l	0.0001	1 6020	0317 12:30 0321 23:35 RW
Copper, Total	0.0740	mg/1	0.0005	1 6020	0317 12:30 0321 23:35 RW
Iron, Total	47.3	mg/l	0.010	1 6020	0317 12:30 0321 23:35 RW
Lead, Total	0.0554	mg/l	0.0002	1 6020	0317 12:30 0321 23:35 RW
Magnesium, Total	15.6	mg/1	0.010	1 6020	0317 12:30 0321 23:35 RW
Manganese, Total	1.709	mg/l	0.0002	1 6020	0317 12:30 0321 23:35 RW
Mercury, Total	ND	mg/l	0.0002	1 7470A	0318 17:20 0321 12:10 DM
Nickel, Total	0.0532	mg/l	0.0005	1 6020	0317 12:30 0321 23:35 RW
Potassium, Total	12.9	mg/1	0.100	1 6020	0317 12:30 0321 23:35 RW
Selenium, Total	0.008	mg/l	0.001	1 6020	0317 12:30 0321 23:35 RW
Silver, Total	ND	mg/1	0.0001	1 6020	0317 12:30 0321 23:35 RW
Sodium, Total	257.	mg/l	1.00	1 6020	0317 12:30 0321 18:23 RW
Thallium, Total	0.0005	mg/l	0.0001	1 6020	0317 12:30 0321 23:35 RW
Vanadium, Total	0.0635	mg/l	0.0002	1 6020	0317 12:30 0321 23:35 RW
Zinc, Total	0.1519	mg/l	0.0050	1 6020	0317 12:30 0321 23:35 RW
Dissolved Metals					
Aluminum, Dissolved	0.032	mg/l	0.010	1 6020	0317 12:30 0321 20:19 RW
Antimony, Dissolved	0.0044	mg/l	0.0002	1 6020	0317 12:30 0321 20:19 RW
Arsenic, Dissolved	0.0017	mg/l	0.0004	1 6020	0317 12:30 0321 20:19 RW
Barium, Dissolved	0.1659	mg/l	0.0002	1 6020	0317 12:30 0321 20:19 RW
Beryllium, Dissolved	ND	mg/l	0.0005	1 6020	0317 12:30 0321 20:19 RW
Cadmium, Dissolved	0.0014	mg/l	0.0004	1 6020	0317 12:30 0321 20:19 RW
Calcium, Dissolved	65.9	mg/l	2.00	1 6020	0317 12:30 0321 16:59 RW
Chromium, Dissolved	0.0026	mg/l	0.0002	1 6020	0317 12:30 0321 20:19 RW
Cobalt, Dissolved	0.0003	mg/l	0.0001	1 6020	0317 12:30 0321 20:19 RW
Copper, Dissolved	0.0191	mg/l	0.0005	1 6020	0317 12:30 0321 20:19 RW
Iron, Dissolved	0.270	mg/l	0.010	1 6020	0317 12:30 0321 20:19 RW



Laboratory Sample Number: L0502658-04

MW/CB-14 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	II
						PREP	ANA	ΑL
ignal and Matala			-					
Dissolved Metals								
Lead, Dissolved	0.0013	mg/l	0.0002	1	6020	0317 12:30	0321 2	0:19 RW
Magnesium, Dissolved	8.38	mg/l	0.010	1	6020	0317 12:30	0321 2	0:19 RW
Manganese, Dissolved	0.1829	mg/l	0.0002	1	6020	0317 12:30	0321 2	0:19 RW
Mercury, Dissolved	ND	mg/l	0.0002	1		0317 16:00	0318 1	2:45 DM
Nickel, Dissolved	0.0071	mg/l	0.0005	1	6020	0317 12:30	0321 2	0:19 RW
Potassium, Dissolved	11.5	mg/l	0.100	1	6020	0317 12:30	0321 2	0:19 RW
Selenium, Dissolved	0.005	mg/l	0.001	1	6020	0317 12:30	0321 2	0:19 RW
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30	0321 2	0:19 RW
Sodium, Dissolved	241.	mg/l	1.00	1	6020	0317 12:30	0321 1	6:59 RW
Thallium, Dissolved	ND	mg/l	0.0001	1		0317 12:30	0321 2	0:19 RW
Vanadium, Dissolved	0.0024	mg/l	0.0002	1	6020	0317 12:30	0321 2	0:19 RW
Binc, Dissolved	0.0282	mg/l	0.0050	1	6020	0317 12:30	0321 2	0:19 RW
Volatile Organics by GC/MS 8	3260			1	8260B		0318 1	4:28 BT
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	14.	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
l,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
l,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Trichlorofluoromethane	ND	ug/l	2.5					
l,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Bromodichloromethane	0.64	ug/l	0.50					
trans-1,3-Dichloropropene	ND	ug/l	0.50					
cis-1,3-Dichloropropene	ND	ug/l	0.50					
l,1-Dichloropropene	ND	ug/l	2.5	-				
Bromoform	ND	ug/l	2.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Coluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Chloromethane	ND	ug/l	2.5					
Bromomethane	ND	ug/l	1.0					
inyl chloride	ND	ug/l	1.0					
Chloroethane	ND	ug/l	1.0					
,1-Dichloroethene	ND	ug/l	0.50					
rans-1,2-Dichloroethene	ИD	ug/l	0.75					
richloroethene	ИD	ug/l	0.50					
.,2-Dichlorobenzene	ND	ug/l	2.5					
.,3-Dichlorobenzene	ND	ug/l	2.5					
,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/l	1.0					
o/m-Xylene	ND	ug/l	0.50					
-Xylene	ND	ug/l	0.50					

Laboratory Sample Number: L0502658-04

MW/CB-14 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	.60 continu	ed		1 8260B	0318 14:28 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50		
p-Isopropyltoluene	ND	ug/l	0.50	•	
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	105.	8			
Toluene-d8	101.	%			
4-Bromofluorobenzene	105.	용			
Dibromofluoromethane	101.	8			
SVOC's by GC/MS 8270				1 8270C	0317 09:40 0319 22:34 HL
Acenaphthene	ND	ug/l	5.7		



Laboratory Sample Number: L0502658-04

MW/CB-14 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD DATE ID
				PREP ANAL
SVOC's by GC/MS 8270 continue	d .			1 8270C 0317 09:40 0319 22:34 HL
Benzidine	ND	ug/l	57.	
1,2,4-Trichlorobenzene	ND	ug/l	5.7	
Hexachlorobenzene	ND	ug/l	5.7	
Bis(2-chloroethyl)ether	ND	ug/l	5.7	
1-Chloronaphthalene	ND	ug/l	5.7	
2-Chloronaphthalene	ND	ug/l	6.9	
1,2-Dichlorobenzene	ND	ug/l	5.7	
1,3-Dichlorobenzene	ND	ug/l	5.7	
1,4-Dichlorobenzene	ND	ug/l	5.7	
3,3'-Dichlorobenzidine	ND	ug/l	57.	
2,4-Dinitrotoluene	ND	ug/l	6.9	
2,6-Dinitrotoluene	ND	ug/l	5.7	
Azobenzene	ND	ug/l	5.7	
Fluoranthene	ND	ug/l	5.7	
4-Chlorophenyl phenyl ether	ND	ug/l	5.7	
4-Bromophenyl phenyl ether	ND	ug/l	5.7	
Bis(2-chloroisopropyl)ether	ND	ug/l	5.7	
Bis(2-chloroethoxy)methane	ND	ug/l	5.7	
Hexachlorobutadiene	ND	ug/l	11.	
Hexachlorocyclopentadiene	ND	ug/l	11.	
Hexachloroethane	ND	ug/l	5.7	
Isophorone	ND	ug/l	5.7	
Naphthalene	ND	ug/l	5.7	
Nitrobenzene	ND	ug/l	5.7	
NDPA/DPA	ND	ug/l	17.	
n-Nitrosodi-n-propylamine	ND	ug/l	5.7	
Bis(2-ethylhexyl)phthalate	ND	ug/l	11.	
Butyl benzyl phthalate	ND	ug/l	5.7	
Di-n-butylphthalate	ND	-		
Di-n-octylphthalate	ND ND	ug/l	5.7	
Diethyl phthalate		ug/l	5.7	
Dimethyl phthalate	ND	ug/l	5.7	•
Benzo(a)anthracene	ND	ug/l	5.7	
	ND	ug/l	5.7	
Benzo(a)pyrene	ND	ug/1	5.7	
Benzo(b) fluoranthene	ND	ug/l	5.7	
Benzo(k) fluoranthene	ND	ug/l	5.7	
Chrysene	ND	ug/l	5.7	
Acenaphthylene	ND	ug/l	5.7	
Anthracene	ND	ug/l	5.7	
Benzo(ghi)perylene	ND	ug/l	5.7	
Fluorene	ND	ug/l	5.7	
Phenanthrene	ND	ug/l	5.7	
Dibenzo(a,h)anthracene	ND	ug/l	5.7	
Indeno(1,2,3-cd)pyrene	ND	ug/l	8.0	
Pyrene	ND	ug/l	5.7	
Benzo(e)pyrene	ND	ug/l	5.7	
Biphenyl	ND	ug/l	5.7	
erylene	ND	ug/l	5.7	
miline	ND	ug/l	11.	



Laboratory Sample Number: L0502658-04

MW/CB-14 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued				1 8270C	0317 09:40 0319 22:34 HL
	ND	ug/l	5.7	2 02/00	
4-Chloroaniline	ND	ug/l	5.7		
1-Methylnaphthalene	ND	ug/l	5.7		
2-Nitroaniline	ND	ug/1	5.7		
3-Nitroaniline		-	8.0		
4-Nitroaniline	ND	ug/l	5.7		
Dibenzofuran	ND	ug/l	57.		
a,a-Dimethylphenethylamine	ND	ug/1	11.		
Hexachloropropene	ND	ug/l			
Nitrosodi-n-butylamine	ND	ug/l	11.		
2-Methylnaphthalene	ND	ug/l	9.2		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	23.		
Pentachlorobenzene	ND	ug/l	23.		
a-Naphthylamine	ND	ug/l	23.		
b-Naphthylamine	ND	ug/l	23.		
Phenacetin	ND	ug/l	11.		
Dimethoate	ND	ug/l	23.		
4-Aminobiphenyl	ND	ug/l	11.		
Pentachloronitrobenzene	ND	ug/l	11.		
Isodrin	ND	ug/l	11.		
p-Dimethylaminoazobenzene	ND	ug/l	11.		
Chlorobenzilate	ND	ug/l	23.		
3-Methylcholanthrene	ND	ug/l	23.		
Ethyl Methanesulfonate	ND	ug/l	17.		
Acetophenone	ND	ug/l	23.		
Nitrosodipiperidine	ND	ug/l	23.		
7,12-Dimethylbenz(a)anthracene	ND	ug/l	11.		
n-Nitrosodimethylamine	ND	ug/l	57.		
2,4,6-Trichlorophenol	ND	ug/l	5.7		
p-Chloro-m-cresol	ND	ug/l	5.7		
2-Chlorophenol	ND	ug/l	6.9		
2,4-Dichlorophenol	ND	ug/l	11.	-	
2,4-Dimethylphenol	ND	ug/l	11.		
2-Nitrophenol	ND	ug/l	23.		
4-Nitrophenol	ND	ug/l	11.		
2,4-Dinitrophenol	ND	ug/l	23.		
4,6-Dinitro-o-cresol	ND	ug/l	23.		
Pentachlorophenol	ND	ug/l	23.		
Phenol	ND	ug/l	8.0		
2-Methylphenol	ND	ug/l	6.9		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.9		
2,4,5-Trichlorophenol	ND	ug/l	5.7		
2,6-Dichlorophenol	ND	ug/l	11.		
Benzoic Acid	ND	ug/l	57.		
Benzyl Alcohol	ND	ug/l	11.		
Carbazole	ND	ug/l	5.7		
Pyridine	ND	ug/l	57.		
2-Picoline	ND	ug/l	23.		
Pronamide	ND	ug/l	23.		
Methyl methanesulfonate	ND	ug/l	23.		



Laboratory Sample Number: L0502658-04

MW/CB-14 (GROUNDWATER)

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 contin	ued	4		1 8270C	0317 09:40 0319 22:34 HL
Surrogate(s)	Recovery		OC Cr	iteria	101, 01,10 0012 22,04 HB
2-Fluorophenol	38.0	9	~	-	
Phenol-d6	35.0	8			
Nitrobenzene-d5	95.0	8			
2-Fluorobiphenyl	86.0	g.			
2,4,6-Tribromophenol	104.	96			
4-Terphenyl-d14	93.0	96			
PAH by GC/MS SIM 8270M				1 8270C-M	0317 09:40 0318 18:11 RL
Acenaphthene	ND	ug/l	0.23		001. 00,40 b310 10.11 M
2-Chloronaphthalene	ND	ug/l	0.23		
Fluoranthene	ND	ug/l	0.23		
Hexachlorobutadiene	ND	ug/l	0.57		
Naphthalene	ND	ug/l	0.23		
Benzo(a)anthracene	ND	ug/l	0.23		
Benzo(a)pyrene	ND	ug/l	0.23		
Benzo(b) fluoranthene	ND	ug/l	0.23		
Benzo(k) fluoranthene	ND	ug/l	0.23		
Chrysene	ND	ug/l	0.23		
Acenaphthylene	ND	ug/l	0.23		
Anthracene	ND	ug/l	0.23		
Benzo(ghi)perylene	ND	ug/l	0.23		
Fluorene	ND	ug/l	0.23		
Phenanthrene	ND	ug/l	0.23		
Dibenzo(a,h)anthracene	ND	ug/l	0.23		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.23		
Pyrene	1.2	ug/l	0.23		
1-Methylnaphthalene	ND	ug/l	0.23		
2-Methylnaphthalene	ND	ug/l	0.23		
Pentachlorophenol	ND	ug/l	0.92		
Hexachlorobenzene	ND	ug/l	0.92		
Perylene	ND	ug/l	0.23		
Biphenyl	ND	ug/l	0.23		
2,6-Dimethylnaphthalene	ND	ug/l	0.23		
l-Methylphenanthrene	ND	ug/l	0.23		
Benzo(e) Pyrene	ND	ug/l	0.23		
Hexachloroethane	ND	ug/l	0.92		
Surrogate(s)	Recovery		od dr	iteria	
2-Fluorophenol	46.0	8	21-120		
Phenol-d6	39.0	90	10-12		
Jitrobenzene-d5	78.0	%	23-12		
2-Fluorobiphenyl	76.0	96	43-120		
2,4,6-Tribromophenol	74.0	ુક	10-120		
1-Terphenyl-d14	77.0	%	33-120		
Polychlorinated Biphenyls				1 8082	0317 13:00 0318 18:18 AK
Aroclor 1221	ND	ug/l	0.549	_ 0002	1. 20.00 0010 10.10 M
Aroclor 1232	ND	ug/l	0.549		



Laboratory Sample Number: L0502658-04

MW/CB-14 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL R	EF METHOD	DATE II PREP ANAL
Polychlorinated Biphenyls con	tinued			1 8082	0317 13:00 0318 18:18 AR
Aroclor 1242/1016	ND	ug/l	0.549		
Aroclor 1248	ND	ug/l	0.549		
Aroclor 1254	ND	ug/l	0.549		
Aroclor 1260	ND	ug/l	0.549		
Surrogate(s)	Recovery		QC Crite	ria	
2,4,5,6-Tetrachloro-m-xylene	58.0	ે	30-150		
Decachlorobiphenyl	32.0	8	30-150		
Organochlorine Pesticides				1 8081	0317 15:00 0318 16:50 AF
Delta-BHC	ND	ug/l	0.023		
Lindane	ND	ug/l	0.023		
Alpha-BHC	ND	ug/l	0.023		
Beta-BHC	ND	ug/l	0.023		
Heptachlor	ND	ug/l	0.023		
Aldrin	ND	ug/l	0.023		
Heptachlor epoxide	ND	ug/l	0.023		
Endrin	ND	ug/l	0.045		
Endrin aldehyde	ND	ug/l	0.045		
Endrin ketone	ND	ug/l	0.045		
Dieldrin	ND	ug/l	0.045		
4,4'-DDE	ND	ug/l	0.045		
4,4'-DDD	ND	ug/l	0.045		
4,4'-DDT	ND	ug/l	0.045		
Endosulfan I	ND	ug/l	0.023		
Endosulfan II	ND	ug/l	0.045		
Endosulfan sulfate	ND	ug/l	0.045		
Methoxychlor	ND	ug/l	0.225		
Toxaphene	ND	ug/l	0.225		
Chlordane	ND	ug/l	0.225		
cis-Chlordane	ND	ug/l	0.023		
trans-Chlordane	ND	ug/l	0.023	•	
Surrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	64.0	૪	30-150		
Decachlorobiphenyl	50.0	%	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-05

MW/CB-8 (GROUNDWATER)

Sample Matrix: WATER

Date Collected: 16-MAR-2005 11:00 Date Received : 16-MAR-2005

Date Reported: 24-MAR-2005

Condition of Sample: Satisfactory Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Total Metals								
Aluminum, Total	22.9	mg/l	0.100	1	6020	0317 12:30	0321 18:	29 RW
Antimony, Total	0.0004	mg/l	0.0002	1	6020	0317 12:30	0321 23:	40 RW
Arsenic, Total	0.0064	mg/l	0.0004	1	6020	0317 12:30	0321 23:	40 RW
Barium, Total	0.2038	mg/l	0.0002	1	6020	0317 12:30	0321 23:	40 RW
Beryllium, Total	0.0012	mg/l	0.0005	1	6020	0317 12:30	0321 23:	40 RW
Cadmium, Total	ND	mg/l	0.0004	1	6020	0317 12:30	0321 23:	40 RW
Calcium, Total	120.	mg/l	2.00	1	6020	0317 12:30	0321 18:	29 RW
Chromium, Total	0.0379	mg/l	0.0002	1	6020	0317 12:30	0321 23:	40 RW
Cobalt, Total	0.0111	mg/l	0.0001	1	6020	0317 12:30	0321 23:	40 RW
Copper, Total	0.0401	mg/l	0.0005	1	6020	0317 12:30	0321 23:	40 RW
Iron, Total	21.1	mg/l	0.010	1	6020	0317 12:30	0321 23:	40 RW
Lead, Total	0.0276	mg/l	0.0002	1	6020	0317 12:30	0321 23:	10 RW
Magnesium, Total	26.3	mg/l	0.010	1	6020	0317 12:30	0321 23:	10 RW
Manganese, Total	1.784	mq/l	0.0002	1	6020	0317 12:30	0321 23:	10 RW
Mercury, Total	ND	mg/l	0.0002	1	7470A	0318 17:20	0321 12:	12 DM
Nickel, Total	0.0267	mq/l	0.0005	1	6020	0317 12:30		
Potassium, Total	18.8	mq/l	0.100	1	6020	0317 12:30	0321 23:	10 RW
Selenium, Total	0.004	mg/l	0.001	1		0317 12:30		
Silver, Total	0.0003	mg/l	0.0001	1 -	6020	0317 12:30		
Sodium, Total	226.	mg/l	1.00	1	6020	0317 12:30		
Thallium, Total	0.0002	mg/l	0.0001	1	6020	0317 12:30		
Vanadium, Total	0.0301	mg/l	0.0002	1	6020	0317 12:30		
Zinc, Total	0.0822	mg/l	0.0050	1	6020	0317 12:30		
Dissolved Metals								
Aluminum, Dissolved	0.017	mg/l	0.010	1	6020	0317 12:30	0321 20::	24 RW
Antimony, Dissolved	0.0069	mg/l	0.0002	1	6020	0317 12:30	0321 20:	24 R₩
Arsenic, Dissolved	0.0009	mg/l	0.0004	1	6020	0317 12:30	0321 20:	24 RW
Barium, Dissolved	0.0891	mg/l	0.0002	1	6020	0317 12:30	0321 20:3	24 RW
Beryllium, Dissolved	ND	mq/l	0.0005	1	6020	0317 12:30	0321 20:3	24 RW
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0317 12:30		
Calcium, Dissolved	99.5	mq/l	2.00	1	6020	0317 12:30		
Chromium, Dissolved	0.0003	mq/l	0.0002	1		0317 12:30		
Cobalt, Dissolved	0.0008	mq/l	0.0001	1	6020	0317 12:30		
Copper, Dissolved	0.0086	mg/l	0.0005	1	6020	0317 12:30		
Iron, Dissolved	0.352	mg/l	0.010	1		0317 12:30		



Laboratory Sample Number: L0502658-05

MW/CB-8 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE DATE			ID
						PREP	ANA	T	
Dissolved Metals									
Lead, Dissolved	0.0004	mg/l	0.0002	1	6020	0317 12:30			
Magnesium, Dissolved	22.3	mg/l	0.010	1	6020	0317 12:30			
Manganese, Dissolved	1.388	mg/l	0.0002	1	6020	0317 12:30			
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16:00			
Nickel, Dissolved	0.0047	mg/l	0.0005	1	6020	0317 12:30			
Potassium, Dissolved	20.2	mg/l	0.100	1	6020	0317 12:30			
Selenium, Dissolved	0.002	mg/l	0.001	1	6020	0317 12:30			
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30			
Sodium, Dissolved	231.	mg/l	1.00	1	6020	0317 12:30			
Thallium, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30			
Vanadium, Dissolved	0.0011	mg/l	0.0002		6020	0317 12:30			
Zinc, Dissolved	0.0149	mg/l	0.0050	1	6020	0317 12:30	0321 2	20:24	R
Volatile Organics by GC/MS 8	260	·4		1	8260B		0318	15:04	В
Methylene chloride	ND	ug/l	5.0						
1,1-Dichloroethane	ND	ug/l	0.75						
Chloroform	ND	ug/l	0.75						
Carbon tetrachloride	ND	ug/l	0.50						
1,2-Dichloropropane	ND	ug/l	1.8						
Dibromochloromethane	ND	ug/l	0.50						
1,1,2-Trichloroethane	ND	ug/l	0.75						
Tetrachloroethene	8.4	ug/l	0.50						
Chlorobenzene	ND	ug/l	0.50						
Trichlorofluoromethane	ND	ug/l	2.5						
1,2-Dichloroethane	ND	ug/l	0.50						
1,1,1-Trichloroethane	ND	ug/l	0.50						
Bromodichloromethane	ND	ug/l	0.50						
trans-1,3-Dichloropropene	ND	ug/l	0.50						
cis-1,3-Dichloropropene	ND	ug/l	0.50						
1,1-Dichloropropene	ND	ug/l	2.5						
Bromoform	ND	ug/l	2.0						
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50						
Benzene	ND	ug/l	0.50						
Toluene	ND	ug/l	0.75						
Ethylbenzene	ND	ug/l	0.50						
Chloromethane	ND	ug/l	2.5						
Bromomethane	ND	ug/l	1.0						
Vinyl chloride	ND	ug/l	1.0						
Chloroethane	ND	ug/l	1.0						
1,1-Dichloroethene	ND	ug/l	0.50						
trans-1,2-Dichloroethene	ND	ug/l	0.75						
Trichloroethene	0.69	ug/l	0.50						
1,2-Dichlorobenzene	ND	ug/l	2.5						
1,3-Dichlorobenzene	ND	ug/l	2.5						
1,4-Dichlorobenzene	ND	ug/l	2.5						
Methyl tert butyl ether	ND	ug/l	1.0						
p/m-Xylene	ND	ug/l	0.50						



Laboratory Sample Number: L0502658-05

MW/CB-8 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE		
						PREP	ANAL	
Volatile Organics by GC/MS 8	260 continu	ıed	, ,	. 1	9260B		0318 15:04	1 p.m
cis-1,2-Dichloroethene	ND	ug/l	0.50	-			0010 10.0	
Dibromomethane	ND	ug/l	5.0					
1,4-Dichlorobutane	ND	ug/l	5.0					
Iodomethane	ND	ug/l	5.0					
1,2,3-Trichloropropane	ND	ug/l	5.0					
Styrene	ND	ug/l	0.50					
Dichlorodifluoromethane	ND	ug/l	5.0					
Acetone	ND	ug/l	5.0					
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	5.0					
Vinyl acetate	ND	ug/l	5.0					
4-Methyl-2-pentanone	ND	ug/l	5.0					
2-Hexanone	ND	ug/l	5.0					
Ethyl methacrylate	ND	ug/l	5.0					
Acrolein	ND	ug/l	12.					
Acrylonitrile	ND	ug/l	5.0					
Bromochloromethane	ND	ug/l	2.5					
Tetrahydrofuran	ND	ug/l	10.					
2,2-Dichloropropane	ND	ug/l	2.5					
1,2-Dibromoethane	ND	ug/l	2.0					
1,3-Dichloropropane	ND	ug/l	2.5					
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50					
Bromobenzene	ND	ug/l	2.5					
n-Butylbenzene	ND	ug/l	0.50					
sec-Butylbenzene	ND	ug/l	0.50					
tert-Butylbenzene	ND	ug/l	2.5					
o-Chlorotoluene	ND	ug/l	2.5					
p-Chlorotoluene	ND	ug/l	2.5					
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5					
Hexachlorobutadiene	ND	ug/l	1.0					
Isopropylbenzene	ND	ug/l	0.50					
p-Isopropyltoluene	ND	ug/l	0.50					
Naphthalene	ND	ug/l	2.5					
n-Propylbenzene	ND	ug/l	0.50					
1,2,3-Trichlorobenzene	ND	ug/l	2.5					
1,2,4-Trichlorobenzene	ND	ug/l	2.5					
1,3,5-Trimethylbenzene	ND	ug/l	2.5					
1,2,4-Trimethylbenzene	ND	ug/l	2.5					
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5					
Ethyl ether	ND	ug/l	2.5					
Surrogate(s)	Recovery		QC Cri	teria	L			
1,2-Dichloroethane-d4	107.	8						
Poluene-d8	101.	Ş						
4-Bromofluorobenzene	106.	%						
Dibromofluoromethane	105.	8						
SVOC's by GC/MS 8270				1	8270C	0317 09:40	0319 22:59	НĽ
Acenaphthene	ND	ug/l	5.6					



Laboratory Sample Number: L0502658-05

MW/CB-8 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
CVOCLa by CC/MC 9270 continuo	d.			1 00750	0317 09:40 0319 22:59 HL
SVOC's by GC/MS 8270 continue Benzidine	d , , ND	ug/l	56.	1 8270C	0317 09:40 0319 22:59 HL
	ND	ug/l ug/l	5.6		
1,2,4-Trichlorobenzene		-	5.6		
Hexachlorobenzene	ND	ug/l	5.6		
Bis (2-chloroethyl) ether	ND	ug/l	5.6		
1-Chloronaphthalene	ND	ug/l	6.7		
2-Chloronaphthalene	ND	ug/1	5.6		
1,2-Dichlorobenzene	ND	ug/l	5.6		
1,3-Dichlorobenzene	ND	ug/l	5.6		
1,4-Dichlorobenzene	ND	ug/l	56.		
3,3'-Dichlorobenzidine	ND	ug/l	6.7		
2,4-Dinitrotoluene	ND	ug/l	5.6		
2,6-Dinitrotoluene	ND	ug/l			
Azobenzene	ND	ug/l	5.6		
Fluoranthene	ND	ug/1	5.6		
4-Chlorophenyl phenyl ether	ND	ug/l	5.6		
4-Bromophenyl phenyl ether	ND	ug/l	5.6		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.6		
Bis(2-chloroethoxy)methane	ND	ug/l	5.6		
Hexachlorobutadiene	ND	ug/l	11.		
Hexachlorocyclopentadiene	ND	ug/l	11.		
Hexachloroethane	ND	ug/l	5.6		
Isophorone	ND	ug/l	5.6		
Naphthalene	ND	ug/l	5.6		
Nitrobenzene	ND	ug/l	5.6		
NDPA/DPA	ND	ug/l	17.		
n-Nitrosodi-n-propylamine	ND	ug/l	5.6		
Bis(2-ethylhexyl)phthalate	ND	ug/l	11.		
Butyl benzyl phthalate	ND	ug/l	5.6		
Di-n-butylphthalate	ND	ug/l	5.6		
Di-n-octylphthalate	ND	ug/l	5.6		
Diethyl phthalate	ND	ug/l	5.6		
Dimethyl phthalate	ND	ug/l	5.6		
Benzo(a)anthracene	ND	ug/l	5.6		
Benzo(a)pyrene	ND	ug/l	5.6		
Benzo(b)fluoranthene	ND	ug/l	5.6		
Benzo(k)fluoranthene	ND	ug/l	5.6		
Chrysene	ND	ug/l	5.6		
Acenaphthylene	ND	ug/l	5.6		
Anthracene	ND	ug/l	5.6		
Benzo(ghi)perylene	ND	ug/l	5.6		
Fluorene	ND	ug/l	5.6		
Phenanthrene	ND	ug/l	5.6		
Dibenzo(a,h)anthracene	ND	ug/l	5.6		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.8		
Pyrene	8.8	ug/l	5.6		
Benzo(e)pyrene	ND	ug/l	5.6		
Biphenyl	ND	ug/l	5.6		
Perylene	ND	ug/l	5.6		
Aniline	ND	ug/l	11.		



Laboratory Sample Number: L0502658-05

MW/CB-8 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continued				1 8270¢	0317 09:40 0319 22:59 HL
4-Chloroaniline	ND	ug/l	5.6		
l-Methylnaphthalene	ND	ug/l	5.6		
2-Nitroaniline	ND	ug/l	5.6		
3-Nitroaniline	ND	ug/l	5.6		
4-Nitroaniline	ND	ug/l	7.8		
Dibenzofuran	ND	ug/l	5.6		
a,a-Dimethylphenethylamine	ND	ug/l	56.		
Hexachloropropene	ND	ug/l	11.		
Nitrosodi-n-butylamine	ND	ug/l	11.		
2-Methylnaphthalene	ND	ug/l	8.9		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	22.		
Pentachlorobenzene	ND	ug/l	22.		
a-Naphthylamine	ND	ug/l	22.		
o-Naphthylamine	ND	ug/l	22.		
Phenacetin	ND	ug/l	11.		
Dimethoate	ND	ug/l	22.		
4-Aminobiphenyl	ND	ug/l	11.		
Pentachloronitrobenzene	ND	ug/l	11.		
Isodrin	ND	ug/l	11.		
o-Dimethylaminoazobenzene	ND	ug/l	11.		
Chlorobenzilate	ND	ug/l	22.		
3-Methylcholanthrene	ND	ug/l	22.		
Ethyl Methanesulfonate	ND	ug/l	17.		
Acetophenone	ND	ug/l	22.		
Nitrosodipiperidine	ND	ug/l	22.		
7,12-Dimethylbenz(a)anthracene		ug/l	11.		
n-Nitrosodimethylamine	ND	ug/l	56.		
2,4,6-Trichlorophenol	ND	ug/l	5.6		
o-Chloro-m-cresol	ND	ug/l	5.6		
2-Chlorophenol	ND	ug/l	6.7		
2,4-Dichlorophenol	ND	ug/l	11.		
2,4-Dimethylphenol	ND	ug/l	11.		
2-Nitrophenol	ND	ug/l	22.		
1-Nitrophenol	ND	ug/l	11.		
2,4-Dinitrophenol	ND	ug/l	22.		
,6-Dinitro-o-cresol	ND	ug/l	22.		
Pentachlorophenol	ND	ug/l	22.		
Phenol	ND	ug/l	7.8		
2-Methylphenol	ND	ug/l	6.7		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.7		
2,4,5-Trichlorophenol	ND	ug/l	5.6		
2,6-Dichlorophenol	ND	ug/l	11.		
Benzoic Acid	ND	ug/l	56.		
Benzyl Alcohol	ND	ug/l	11.		
Carbazole	ND	ug/l	5.6		
Pyridine	ND	ug/l ug/l	56.		
P-Picoline	ND	ug/l ug/l	22.		
. L T C C T T H C	14 T)	-			
ronamide	ND	ug/l	22.		

Laboratory Sample Number: L0502658-05

MW/CB-8 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL REF METH	OD DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	ed ·		1 8270C	0317 09:40 0319 22:59 HL
Surrogate(s)	Recovery		QC Criteria	
2-Fluorophenol	32.0	%		
Phenol-d6	29.0	%		
Nitrobenzene-d5	78.0	8		
2-Fluorobiphenyl	71.0	%		
2,4,6-Tribromophenol	102.	96		
4-Terphenyl-d14	84.0	%		
PAH by GC/MS SIM 8270M			1 8270C-	-M 0317 09:40 0318 18:56 RL
Acenaphthene	ND	ug/l	0.22	
2-Chloronaphthalene	ND	ug/l	0.22	
Fluoranthene	5.4	ug/l	0.22	
Hexachlorobutadiene	ND	ug/l	0.56	
Naphthalene	ND	ug/l	0.22	
Benzo(a)anthracene	ND	ug/l	0.22	
Benzo(a) pyrene	0.38	ug/l	0.22	
Benzo(b) fluoranthene	0.33	ug/l	0.22	
Benzo(k) fluoranthene	0.28	ug/l	0.22	
Chrysene	0.28	ug/l	0.22	
Acenaphthylene	ND	ug/l	0.22	
Anthracene	ND	ug/l	0.22	
Benzo(ghi)perylene	2.6	ug/l	0.22	
Fluorene	ND	ug/l	0.22	
Phenanthrene	0.96	ug/l	0.22	
Dibenzo(a,h)anthracene	ND	ug/l	0.22	
Indeno(1,2,3-cd)Pyrene	0.50	ug/l	0.22	
Pyrene	11.	ug/l	0.22	
1-Methylnaphthalene	ND	ug/l	0.22	
2-Methylnaphthalene	ND	ug/l	0.22	
Pentachlorophenol	ND	ug/l	0.89	
Hexachlorobenzene	ND	ug/l	0.89	
Perylene	0.23	ug/l	0.22	
Biphenyl	ND	ug/l	0.22	
2,6-Dimethylnaphthalene	ND	ug/l	0.22	
1-Methylphenanthrene	ND	ug/l	0.22	
Benzo(e) Pyrene	0.76	ug/l	0.22	
Hexachloroethane	ND	ug/l	0.89	
Surrogate(s)	Recovery		QC Criteria	
2-Fluorophenol	38.0	8	21-120	
Phenol-d6	31.0	%	10-120	
Nitrobenzene-d5	64.0	8	23-120	
2-Fluorobiphenyl	63.0	%	43-120	
2,4,6-Tribromophenol	72.0	8	10-120	
4-Terphenyl-d14	74.0	96	33-120	
Polychlorinated Biphenyls			1 8082	0321 17:00 0322 14:33 AF
Aroclor 1221	ND	ug/l	0.549	
Aroclor 1232	ND	ug/l	0.549	



Laboratory Sample Number: L0502658-05

MW/CB-8 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL REF METHOD	DATE ID PREP ANAL
				PREP ANAL
Polychlorinated Biphenyls con	tinued		1 8082	0321 17:00 0322 14:33 AK
Aroclor 1242/1016	ND	ug/l	0.549	
Aroclor 1248	ND	ug/l	0.549	
Aroclor 1254	ND	ug/l	0.549	
Aroclor 1260	ND	ug/l	0.549	
Surrogate(s)	Recovery		QC Criteria	
2,4,5,6-Tetrachloro-m-xylene	53.0	8	30-150	
Decachlorobiphenyl	68.0	8	30-150	
Organochlorine Pesticides			1 8081	0317 15:00 0318 17:18 AK
Delta-BHC	ND	ug/l	0.022	
Lindane	ND	ug/l	0.022	
Alpha-BHC	ND	ug/l	0.022	
Beta-BHC	ND	ug/l	0.022	
Heptachlor	ND	ug/l	0.022	
Aldrin	ND	ug/l	0.022	
Heptachlor epoxide	ND	ug/l	0.022	
Endrin	ND	ug/l	0.044	
Endrin aldehyde	ND	ug/l	0.044	
Endrin ketone	ND	ug/l	0.044	
Dieldrin	ND	ug/l	0.044	
4,4'-DDE	ND	ug/l	0.044	
4,4'-DDD	ND	ug/l	0.044	
4,4'-DDT	ND	ug/l	0.044	
Endosulfan I	ND	ug/l	0.022	
Endosulfan II	ND	ug/l	0.044	
Endosulfan sulfate	ND	ug/l	0.044	
Methoxychlor	ND	ug/l	0.220	
Toxaphene	ND	ug/l	0.220	
Chlordane	ND	ug/l	0.220	
cis-Chlordane	ND	ug/l	0.022	
trans-Chlordane	ND	ug/l	0.022	
Surrogate(s)	Recovery		QC Criteria	
2,4,5,6-Tetrachloro-m-xylene	62.0	ક	30-150	
Decachlorobiphenyl	38.0	90	30-150	



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-06

MW/CB-22 (GROUNDWATER)

WATER

Date Received : 16-MAR-2005 Date Reported : 24-MAR-2005

Date Collected: 16-MAR-2005 11:30

Sample Matrix:

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

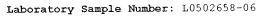
PARAMETER	RESULT	UNITS	UNITS RDL		METHOD	DATE			
						PREP	ANAL		
Total Metals	,								
Aluminum, Total	2.85	mg/l	0.100	1	6020	0317 12:30 (321 18:5	0 RW	
Antimony, Total	0.0003	mg/l	0.0002	1	6020	0317 12:30	321 23:4	6 RW	
Arsenic, Total	0.0162	mg/l	0.0004	1	6020	0317 12:30	321 23:4	6 RW	
Barium, Total	0.2156	mg/l	0.0002	1	6020	0317 12:30	321 23:4	6 RW	
Beryllium, Total	ND	mg/l	0.0005	1	6020	0317 12:30	321 23:4	6 RW	
Cadmium, Total	ND	mg/l	0.0004	1	6020	0317 12:30	321 23:4	6 R W	
Calcium, Total	252.	mg/1	2.00	1	6020	0317 12:30	0321 18:5	0 RW	
Chromium, Total	0.0070	mg/l	0.0002	1	6020	0317 12:30	0321 23:4	6 RW	
Cobalt, Total	0.002	mg/l	0.0001	1	6020	0317 12:30	0321 23:4	6 RW	
Copper, Total	0.0090	mg/l	0.0005	1	6020	0317 12:30	0321 23:4	6 RW	
Iron, Total	11.8	mg/l	0.010	1	6020	0317 12:30	0321 23:4	6 R₩	
Lead, Total	0.050	mg/l	0.0002	1	6020	0317 12:30	0321 23:4	6 RW	
Magnesium, Total	39.6	mg/l	0.010	1	6020	0317 12:30	0321 23:4	6 RW	
Manganese, Total	4.210	mg/l	0.0002	1	6020	0317 12:30	0321 23:4	6 RW	
Mercury, Total	0.0002	mg/l	0.0002	1	7470A	0318 17:20	0321 12:1	4 DM	
Nickel, Total	0.0050	mg/l	0.0005	1	6020	0317 12:30	0321 23:4	6 RW	
Potassium, Total	22.0	mg/l	0.100	1	6020	0317 12:30	0321 23:4	6 RW	
Selenium, Total	0.001	mg/l	0.001	1	6020	0317 12:30	0321 23:4	6 RW	
Silver, Total	ND	mg/l	0.0001	1	6020	0317 12:30	0321 23:4	6 RW	
Sodium, Total	162.	mg/1	1.00	1	6020	0317 12:30	0321 18:5	0 RW	
Thallium, Total	ND	mg/l	0.0001	1	6020	0317 12:30	0321 23:4	6 RW	
Vanadium, Total	0.0044	mg/l	0.0002	1	6020	0317 12:30			
Zinc, Total	0.0322	mg/l	0.0050	1	6020	0317 12:30	0321 23:4	6 RW	
Dissolved Metals									
Aluminum, Dissolved	ND	mg/l	0.010	1	6020	0317 12:30			
Antimony, Dissolved	0.002	mg/l	0.0002		6020	0317 12:30			
Arsenic, Dissolved	0.0124	mg/l	0.0004	1	6020	0317 12:30			
Barium, Dissolved	0.1352	mg/l	0.0002	1	6020	0317 12:30			
Beryllium, Dissolved	ND	mg/l	0.0005	1	6020	0317 12:30			
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0317 12:30			
Calcium, Dissolved	191.	mg/1	2.00	1	6020	0317 12:30	0321 17:1	0 RW	
Chromium, Dissolved	0.0002	mg/l	0.0002	. 1	6020	0317 12:30			
Cobalt, Dissolved	0.0012	mg/l	0.0001	. 1	6020	0317 12:30	0321 20:3	30 RW	
Copper, Dissolved	0.0056	mg/l	0.0005	1	6020	0317 12:30			
Iron, Dissolved	4.79	mq/l	0.010	1	6020	0317 12:30	0321 20:3	30 RW	



Laboratory Sample Number: L0502658-06

MW/CB-22 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD		DATE	:	ID
						PRI		ANAL	10
Dissolved Metals						1 -			
Iood Diagolyad	0 0000	/ 7							
Lead, Dissolved	0.0003	mg/l	0.0002	1	6020	0317 12	30 03	21 20:3	0 RW
Magnesium, Dissolved	28.5	mg/l	0.010	1	6020	0317 12	30 03	21 20:3	0 RW
Manganese, Dissolved	3.514	mg/l	0.0002	1	6020	0317 12	30 03	21 20:3	0 RW
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16	00 03	18 12:5	5 DM
Nickel, Dissolved	0.0046	mg/l	0.0005	1	6020	0317 12	30 03	21 20:3	D RW
Potassium, Dissolved	20.1	mg/l	0.100	1	6020	0317 12	30 03	21 20:30) RW
Selenium, Dissolved	0.001	mg/l	0.001	1	6020	0317 12	30 03	21 20:30) RW
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0317 12	30 03	21 20:30) RW
Sodium, Dissolved	90.0	mg/l	1.00	1	6020	0317 12	30 03	21 17:10	RW
Thallium, Dissolved	ND	mg/l	0.0001	1	6020	0317 12	30 03	21 20:30	RW
Vanadium, Dissolved	0.0003	mg/l	0.0002	1	6020	0317 12	30 03	21 20:30	RW
Zinc, Dissolved	0.0155	mg/l	0.0050	1	6020	0317 12			
Volatile Organics by GC/MS 8	3260			1	8260B		0.3	18 15:41	BT
Methylene chloride	ND	ug/l	12.				257		
l,1-Dichloroethane	ND	ug/l	1.9						
Chloroform	ND	ug/l	1.9						
Carbon tetrachloride	ND	ug/l	1.2						
l,2-Dichloropropane	ND	ug/l	4.4						
Dibromochloromethane	ND	ug/l	1.2						
1,1,2-Trichloroethane	ND	ug/l	1.9						
Tetrachloroethene	ND	ug/l	1.2						
Chlorobenzene	ND	ug/l	1.2						
Frichlorofluoromethane	ND	ug/l	6.2						
1,2-Dichloroethane	ND	-							
1,1,1-Trichloroethane	ND	ug/l	1.2						
Bromodichloromethane		ug/l	1.2						
crans-1,3-Dichloropropene	ND	ug/l	1.2						
	ND	ug/l	1.2						
cis-1,3-Dichloropropene	ND	ug/l	1.2						
1,1-Dichloropropene	ND	ug/l	6.2	-					
Bromoform	ND	ug/l	5.0						
.,1,2,2-Tetrachloroethane	ND	ug/l	1.2						
Benzene	ND	ug/l	1.2						
Coluene	7.8	ug/l	1.9						
Cthylbenzene	ND	ug/l	1.2						
Chloromethane	ND	ug/l	6.2						
Bromomethane	ND	ug/l	2.5						
'inyl chloride	ND	ug/l	2.5						
hloroethane	ND	ug/l	2.5						
,1-Dichloroethene	ND	ug/l	1.2						
rans-1,2-Dichloroethene	ND	ug/l	1.9						
richloroethene	ND	ug/l	1.2						
,2-Dichlorobenzene	ND	ug/l	6.2						
,3-Dichlorobenzene	ND	ug/l	6.2						
,4-Dichlorobenzene	ND	ug/l	6.2						
ethyl tert butyl ether	ND	ug/l	2.5						
/m-Xylene	250	ug/l	1.2						
-Xylene	4.7	ug/l ug/l	1.2						



MW/CB-22 (GROUNDWATER)

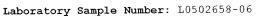
PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP ANAL	ID
Volatile Organics by GC/MS 82	60 continu	ed	(94)	. 1	8260B	0318 15;4	1 BT
cis-1,2-Dichloroethene	ND	ug/l	1.2				
Dibromomethane	ND	ug/l	12.				
1,4-Dichlorobutane	ND	ug/l	12.				
Iodomethane	ND	ug/l	12.				
1,2,3-Trichloropropane	ИД	ug/l	12.				
Styrene	ND	ug/l	1.2				
Dichlorodifluoromethane	ND	ug/l	12.				
Acetone	ND	ug/l	12.				
Carbon disulfide	ND	ug/l	12.				
2-Butanone	ND	ug/l	12.				
	ND	ug/l	12.				
Vinyl acetate	ND	ug/l	12.				
4-Methyl-2-pentanone	ND	ug/l	12.				
2-Hexanone	ND	ug/l	12.				
Ethyl methacrylate	ND	ug/l	31.				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	6.2				
Bromochloromethane	ND	ug/l	25.				
Tetrahydrofuran		ug/1	6.2				
2,2-Dichloropropane	ND	-	5.0				
1,2-Dibromoethane	ND	ug/l	6.2				
1,3-Dichloropropane	ND	ug/l	1.2				
1,1,1,2-Tetrachloroethane	ND	ug/1	6.2				
Bromobenzene	ND	ug/l					
n-Butylbenzene	ND	ug/l	1.2				
sec-Butylbenzene	3.9	ug/1	1.2				
tert-Butylbenzene	ND	ug/l	6.2				
o-Chlorotoluene	ND	ug/l	6.2				
p-Chlorotoluene	ND	ug/l	6.2				
1,2-Dibromo-3-chloropropane	ND	ug/l	6.2				
Hexachlorobutadiene	ND	ug/l	2.5				
Isopropylbenzene	31.	ug/l	1.2				
p-Isopropyltoluene	1.3	ug/l	1.2				
Naphthalene	22.	ug/l	6.2				
n-Propylbenzene	25.	ug/l	1.2				
1,2,3-Trichlorobenzene	ND	ug/l	6.2				
1,2,4-Trichlorobenzene	ND	ug/l	6.2				
1,3,5-Trimethylbenzene	28.	ug/l	6.2				
1,2,4-Trimethylbenzene	35.	ug/l	6.2				
trans-1,4-Dichloro-2-butene	ND	ug/l	6.2				
Ethyl ether	ND	ug/l	6.2				
Surrogate(s)	Recovery	_	QC C	riteri	.a		
1,2-Dichloroethane-d4	92.0	8					
Toluene-d8	101.	%					
4-Bromofluorobenzene	105.	%					
Dibromofluoromethane	91.0	8					
SVOC's by GC/MS 8270			_	1	8270C	0317 09:40 0319 23:	24 HL
Acenaphthene	ND	ug/l	5.4				



Laboratory Sample Number: L0502658-06

MW/CB-22 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		
		_			PREP	ANAL	
SVOC's by GC/MS 8270 continue	ed .			1 8270C	0317 09:40	6319 23.2	ו טיי
Benzidine	ND	ug/l	54.	2 02,00	0517 09.40	0317 43;24	ын
1,2,4-Trichlorobenzene	ND	ug/l	5.4				
Hexachlorobenzene	ND	ug/l	5.4				
Bis(2-chloroethyl)ether	ND	ug/l	5.4				
1-Chloronaphthalene	ND	ug/l	5.4				
2-Chloronaphthalene	ND	ug/l	6.4				
1,2-Dichlorobenzene	ND	ug/l	5.4				
1,3-Dichlorobenzene	ND	ug/l	5.4				
1,4-Dichlorobenzene	ND	ug/l	5.4				
3,3'-Dichlorobenzidine	ND	ug/l	54.				
2,4-Dinitrotoluene	ND	ug/l	6.4				
2,6-Dinitrotoluene	ND	ug/l	5.4				
Azobenzene	ND	ug/l	5.4				
Fluoranthene	9.1	ug/l	5.4				
4-Chlorophenyl phenyl ether	ND	ug/l	5.4				
4-Bromophenyl phenyl ether	ND	ug/l	5.4				
Bis(2-chloroisopropyl)ether	ND	ug/l	5.4				
Bis(2-chloroethoxy)methane	ND	ug/l	5.4				
Hexachlorobutadiene	ND	ug/l	11.				
Hexachlorocyclopentadiene	ND	ug/l	11.				
Hexachloroethane	ND	ug/l	5.4				
Isophorone	ND	ug/l	5.4				
Naphthalene	ND	ug/l	5.4				
Nitrobenzene	ND	ug/l	5.4				
NDPA/DPA	ND	ug/l	16.				
n-Nitrosodi-n-propylamine	ND	ug/l	5.4				
Bis(2-ethylhexyl)phthalate	ND	ug/l	11.				
Butyl benzyl phthalate	ND	ug/l	5.4				
Di-n-butylphthalate	ND	ug/l	5.4				
Di-n-octylphthalate	ND	ug/l	5.4				
Diethyl phthalate	ND	ug/l	5.4				
Dimethyl phthalate	ND	ug/l	5.4				
Benzo(a)anthracene	ND	ug/l	5.4				
Benzo(a)pyrene	ND	ug/l	5.4				
Benzo(b)fluoranthene	ND	ug/l	5.4				
Benzo(k)fluoranthene	ND	ug/l	5.4				
Chrysene	ND	ug/l	5.4				
Acenaphthylene	ND	ug/l	5.4				
Anthracene	ND	ug/l	5.4				
Benzo(ghi)perylene	ND	ug/l	5.4				
Fluorene	ND	ug/l	5.4				
Phenanthrene	ND	ug/l	5.4				
Dibenzo(a,h)anthracene	ND	ug/l	5.4				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.5				
Pyrene	19.	ug/l	5.4				
Benzo(e)pyrene	ND	ug/l	5.4				
Biphenyl	ND	ug/l	5.4				
Perylene	ND	ug/l	5.4				
miline	ND	ug/l	11.				



MW/CB-22 (GROUNDWATER)

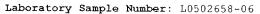
PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
grade by GG/MC 9270 continued				1 8270C	0317 09:40 0319 23:24 HL
SVOC's by GC/MS 8270 continued		ug/l	5.4	* 02.70	
4-Chloroaniline	ND ND	ug/l	5.4		
1-Methylnaphthalene		ug/1 ug/l	5.4		
2-Nitroaniline	ND	-	5.4		
3-Nitroaniline	ND	ug/l	7.5		
4-Nitroaniline	ND	ug/l	5.4		
Dibenzofuran	ND	ug/l	54.		
a,a-Dimethylphenethylamine	ND	ug/l	11.		
Hexachloropropene	ND	ug/l			
Nitrosodi-n-butylamine	ND	ug/l	11.		
2-Methylnaphthalene	ND	ug/l	8.6		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	22.		
Pentachlorobenzene	ND	ug/l	22.		
a-Naphthylamine	ND	ug/l	22.		
b-Naphthylamine	ND	ug/l	22.		
Phenacetin	ND	ug/l	11.		
Dimethoate	ND	ug/l	22.		
4-Aminobiphenyl	ND	ug/l	11.		
Pentachloronitrobenzene	ND	ug/l	11.		
Isodrin	ИD	ug/l	11.		
p-Dimethylaminoazobenzene	ND	ug/l	11.		
Chlorobenzilate	ND	ug/l	22.		
3-Methylcholanthrene	ИD	ug/l	22.		
Ethyl Methanesulfonate	ND	ug/l	16.		
Acetophenone	ND	ug/l	22.		
Nitrosodipiperidine	ND	ug/l	22.		
7,12-Dimethylbenz(a)anthracene	ND	ug/l	11.		
n-Nitrosodimethylamine	ND	ug/l	54.		
2,4,6-Trichlorophenol	ND	ug/l	5.4		
p-Chloro-m-cresol	ND	ug/l	5.4		
2-Chlorophenol	ND	ug/l	6.4		
2,4-Dichlorophenol	ND	ug/l	11.		
2,4-Dimethylphenol	ND	ug/l	11.		
2-Nitrophenol	ND	ug/l	22.		
4-Nitrophenol	ND	ug/l	11.		
2,4-Dinitrophenol	ND	ug/l	22.		
4,6-Dinitro-o-cresol	ND	ug/l	22.		
Pentachlorophenol	ND	ug/l	22.		
Phenol	ND	ug/l	7.5		
2-Methylphenol	ND	ug/l	6.4		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.4		
2,4,5-Trichlorophenol	ND	ug/l	5.4		
2,6-Dichlorophenol	ND	ug/l	11.		
Benzoic Acid	ND	ug/l	54.		
Benzyl Alcohol	ND	ug/l	11.		
Carbazole	ND	ug/l	5.4		
Pyridine	ND	ug/l	54.		
2-Picoline	ND	ug/l	22.		
Pronamide	ND	ug/l	22.		
Methyl methanesulfonate	ND	ug/l	22.		



Laboratory Sample Number: L0502658-06

MW/CB-22 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	ed			1 8270C	0317 09:40 0319 23:24 HE
Surrogate(s)	Recovery		QC Cr:	iteria	
2-Fluorophenol	36.0	96			
Phenol-d6	30.0	8			
Nitrobenzene-d5	83.0	06			
2-Fluorobiphenyl	74.0	8			
2,4,6-Tribromophenol	114.	8			
4-Terphenyl-d14	101.	96			
PAH by GC/MS SIM 8270M		a		1 8270C-M	0317 09:40 0318 19:42 RL
Acenaphthene	ND	ug/l	0.22		
2-Chloronaphthalene	ND	ug/l	0.22		
Fluoranthene	12.	ug/l	0.22		
Hexachlorobutadiene	ND	ug/l	0.54		
Naphthalene	5.4	ug/l	0.22		
Benzo(a) anthracene	ND	ug/l	0.22		
Benzo(a) pyrene	0.23	ug/l	0.22		
Benzo(b) fluoranthene	ND	ug/l	0.22		
Benzo(k) fluoranthene	ND	ug/l	0.22		
Chrysene	0.23	ug/l	0.22		
Acenaphthylene	ND	ug/l	0.22		
Anthracene	ND	ug/l	0.22		
Benzo(ghi)perylene	1.2	ug/l	0.22		
Fluorene	ND	ug/l	0.22		
Phenanthrene	1.7	ug/l	0.22		
Dibenzo(a,h)anthracene	ND	ug/l	0.22		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.22		
Pyrene	23.	ug/l	0.22		
1-Methylnaphthalene	0.45	ug/l	0.22		
2-Methylnaphthalene	ND	ug/l	0.22		
Pentachlorophenol	ND	ug/l	0.86		
Hexachlorobenzene	ND	ug/l	0.86		
Perylene	ND	ug/l	0.22		
Bipheny1	ND	ug/l	0.22		
2,6-Dimethylnaphthalene	ND	ug/l	0.22		
1-Methylphenanthrene	ND	ug/l	0.22		
Benzo(e) Pyrene	0.46	ug/l	0.22		
Hexachloroethane	ND	ug/l	0.86		
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	41.0	90	21-12		
Phenol-d6	32.0	9	10-12		
Nitrobenzene-d5	66.0	%	23-12		
2-Fluorobiphenyl	66.0	ş	43-12		
2,4,6-Tribromophenol	73.0	8	10-12		
4-Terphenyl-d14	83.0	8	33-12		
Polychlorinated Biphenyls				1 8082	0317 13:00 0318 19:44 AK
Aroclor 1221	ND	ug/l	0.549		
Aroclor 1232	ND	ug/l	0.549		



MW/CB-22 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
					PREP ANAL
Polychlorinated Biphenyls con	tinued			1 8082	0317 13:00 0318 19:44 AK
Aroclor 1242/1016	ND	ug/l	0.549		151, 15.00 0320 15.44 W
Aroclor 1248	ND	ug/1	0.549		
Aroclor 1254	ND	ug/l	0.549		
Aroclor 1260	ND	ug/l	0.549		
Surrogate(s)	Recovery		QC Cri	teria	
2,4,5,6-Tetrachloro-m-xylene	61.0	%	30-150		
Decachlorobiphenyl	41.0	g _g	30-150		
Organochlorine Pesticides	* .	Sec.	* **,	1. 8081	0317 15:00 0318 17:46 AK
Delta-BHC	ND	ug/l	0.021		1110 141
Lindane	ND	ug/l	0.021		
Alpha-BHC	ND	ug/l	0.021		
Beta-BHC	ND	ug/l	0.021		
Heptachlor	ND	ug/l	0.021		
Aldrin	ND	ug/l	0.021		
Heptachlor epoxide	ND	ug/l	0.021		
Endrin	ND	ug/l	0.043		
Endrin aldehyde	ND	ug/l	0.043		
Endrin ketone	ND	ug/l	0.043		
Dieldrin	ND	ug/l	0.043		
4,4'-DDE	ND	ug/l	0.043		
4,4'-DDD	ND	ug/l	0.043		
4,4'-DDT	ND	ug/l	0.043		
Endosulfan I	ND	ug/l	0.021		
Endosulfan II	ND	ug/l	0.043		
Endosulfan sulfate	ND	ug/l	0.043		
Methoxychlor	ND	ug/l	0.213		
Toxaphene	ND	ug/l	0.213		
Chlordane	ND	ug/l	0.213		
cis-Chlordane	ND	ug/l	0.021		
trans-Chlordane	ND	ug/l	0.021	-	
Surrogate(s)	Recovery		QC Crit	teria	
2,4,5,6-Tetrachloro-m-xylene	59.0	%	30-150		
Decachlorobiphenyl	49.0	98	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-07

Date Collected: 16-MAR-2005 12:00

MW/CB-21 (GROUNDWATER)
Sample Matrix: WATER

Date Received: 16-MAR-2005
Date Reported: 24-MAR-2005

Condition of Sample: Satisfactory

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Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Total Metals		÷, .		-	,	21		
Aluminum, Total	18.0	mg/l	0.100	1	6020	0317 12:30	0321 18:5	5 R W
Antimony, Total	0.0004	mg/l	0.0002	1	6020	0317 12:30	0322 00:5	1 RW
Arsenic, Total	0.0063	mg/l	0.0004	1	6020	0317 12:30	0322 00:5	1 RW
Barium, Total	0.8211	mg/l	0.0002	1	6020	0317 12:30	0322 00:5	1 RW
Beryllium, Total	0.0011	mg/l	0.0005	1	6020	0317 12:30	0322 00:5	1 RW
Cadmium, Total	0.0006	mg/l	0.0004	1	6020	0317 12:30	0322 00:5	1 RW
Calcium, Total	584.	mg/l	2.00	1	6020	0317 12:30	0321 18:5	5 RW
Chromium, Total	0.0240	mg/l	0.0002	1	6020	0317 12:30	0322 00:5	1 RW
Cobalt, Total	0.0109	mg/l	0.0001	1	6020	0317 12:30	0322 00:5	1 RW
Copper, Total	0.0219	mg/l	0.0005	1	6020	0317 12:30	0322 00:5	1 RW
Iron, Total	23.8	mg/l	0.010	1	6020	0317 12:30	0322 00:5	1 RW
Lead, Total	0.0236	mg/l	0.0002	1	6020	0317 12:30	0322 00:5	1 RW
Magnesium, Total	56.0	mg/l	0.010	1	6020	0317 12:30	0322 00:5	1 RW
Manganese, Total	1.155	mg/l	0.0002	1	6020	0317 12:30	0322 00:5	1 RW
Mercury, Total	ND	mg/l	0.0002	1	7470A	0318 17:20	0321 12:1	6 DM
Nickel, Total	0.0250	mg/l	0.0005	1	6020	0317 12:30	0322 00:5	1 RW
Potassium, Total	37.6	mg/l	0.100	1	6020	0317 12:30	0322 00:5	1 R W
Selenium, Total	0.008	mg/l	0.001	1	6020	0317 12:30	0322 00:5	1 RW
Silver, Total	ND	mg/l	0.0001	1	- 6020	0317 12:30	0322 00:5	1 RW
Sodium, Total	418.	mg/l	1.00	1	6020	0317 12:30	0321 18:5	5 RW
Thallium, Total	0.0002	mg/l	0.0001	1	6020	0317 12:30	0322 00:5	1 RW
Vanadium, Total	0.0268	mg/l	0.0002	1	6020	0317 12:30	0322 00:5	1 RW
Zinc, Total	0.0798	mg/l	0.0050	1	6020	0317 12:30	0322 00:5	1 RW
Dissolved Metals								
Aluminum, Dissolved	ND	mg/l	0.010	Ī	6020	0317 12:30	0321 20:3	5 RW
Antimony, Dissolved	0.0022	mg/l	0.0002	1	6020	0317 12:30	0321 20:3	5 RW
Arsenic, Dissolved	0.0010	mg/1	0.0004	1	6020	0317 12:30	0321 20:3	5 RW
Barium, Dissolved	0.6809	mg/l	0.0002	1	6020	0317 12:30	0321 20:3	5 RW
Beryllium, Dissolved	ND	mg/1	0.0005	1	6020	0317 12:30	0321 20:3	5 RW
Cadmium, Dissolved	0.0007	mg/l	0.0004	1	6020	0317 12:30	0321 20:3	5 RW
Calcium, Dissolved	582.	mg/l	2.00	1	6020	0317 12:30	0321 17:1	5 RW
Chromium, Dissolved	0.0002	mg/l	0.0002	1	6020	0317 12:30	0321 20:3	5 RW
Cobalt, Dissolved	0.0017	mg/l	0.0001	1	6020	0317 12:30	0321 20:3	5 RW
Copper, Dissolved	0.0020	mg/l	0.0005	1	6020	0317 12:30	0321 20:3	5 RW
Iron, Dissolved	1.84	mq/l	0.010	1	6020	0317 12:30	0321 20:3	5 RW

 $\hbox{\tt Comments: Complete list of References and Glossary of Terms found in Addendum I}\\$

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MW/CB-21 (GROUNDWATER)

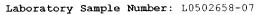
PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF	METHOD	DA	TE	-	ID
						PREP	AN	AL	
Dissolved Metals									
		(2							
Lead, Dissolved	ND	mg/l	0.0002	1		0317 12:30			
Magnesium, Dissolved	55.3	mg/l	0.010	1	6020	0317 12:30	0321	20:35	RW
Manganese, Dissolved	0.9874	mg/l	0.0002		6020	0317 12:30			
Mercury, Dissolved	ND	mg/l	0.0002		7470A	0317 16:00			
Nickel, Dissolved	0.0062	mg/l	0.0005	1	6020	0317 12:30			
Potassium, Dissolved	40.0	mg/l	0.100	1		0317 12:30			
Selenium, Dissolved	0.005	mg/l	0.001	1	6020	0317 12:30	0321	20:35	RW
Silver, Dissolved	ND	mg/l	0.0001	1		0317 12:30	0321	20:35	F.W
Sodium, Dissolved	405.	mg/l	1.00	1	6020	0317 12:30	0321	17:15	RW
Thallium, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30	0321	20:35	RW
Vanadium, Dissolved	0.0004	mg/l	0.0002	1	6020	0317 12:30	0321	20:35	RW
Zinc, Dissolved	0.0139	mg/l	0.0050	1	6020	0317 12:30	0321	20:35	RW
Volatile Organics by GC/MS 8	260			1	8260B		0318	16:17	вт
Methylene chloride	ND	ug/l	5.0						
l,1-Dichloroethane	ND	ug/l	0.75						
Chloroform	ND	ug/l	0.75						
Carbon tetrachloride	ND	ug/l	0.50						
1,2-Dichloropropane	ND	ug/l	1.8						
Dibromochloromethane	ND	ug/l	0.50						
1,1,2-Trichloroethane	ND	ug/l	0.75						
letrachloroethene	3.3	ug/l	0.50						
Chlorobenzene	ND	ug/l	0.50						
Trichlorofluoromethane	ND	ug/l	2.5						
l,2-Dichloroethane	ND	ug/l	0.50						
l,1,1-Trichloroethane	ND	ug/l	0.50						
Bromodichloromethane	ND	ug/l	0.50						
trans-1,3-Dichloropropene	ND	ug/l	0.50						
cis-1,3-Dichloropropene	ND	ug/l	0.50						
l,1-Dichloropropene	ND	ug/l	2.5						
Bromoform	ND	ug/l	2.0	•					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50						
Benzene	ND	ug/l	0.50						
Toluene	ND	ug/l	0.75						
Ethylbenzene	ND	ug/l	0.50						
Chloromethane	ND	ug/l	2.5						
Bromomethane	ND	ug/l	1.0						
Vinyl chloride	ND	ug/l	1.0						
Chloroethane	ND	ug/l	1.0						
l,1-Dichloroethene	ND	ug/l	0.50						
trans-1,2-Dichloroethene	ND	ug/l	0.75						
Trichloroethene	ND	ug/l	0.50						
1,2-Dichlorobenzene	ND	ug/l	2.5						
1,3-Dichlorobenzene	ND	ug/l	2.5						
l,4-Dichlorobenzene	ND	ug/l ug/l	2.5						
	ND	ug/l ug/l	1.0						
Mathul tart butul atbar									
Methyl tert butyl ether o/m-Xylene	ND	ug/l	0.50						



Laboratory Sample Number: L0502658-07

MW/CB-21 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	D. PREP	ate ana	ID L
							*	
Volatile Organics by GC/MS 8			1,1,1	. 1	8260B	· · · · ·	0318 16	:17 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50					
Dibromomethane	ND	ug/1	5.0					
1,4-Dichlorobutane	ND	ug/l	5.0					
Iodomethane	ND	ug/1	5.0					
1,2,3-Trichloropropane	ND	ug/l	5.0					
Styrene	ND	ug/l	0.50					
Dichlorodifluoromethane	ND	ug/l	5.0					
Acetone	ND	ug/l	5.0					
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	5.0					
Vinyl acetate	ND	ug/l	5.0					
4-Methyl-2-pentanone	ND	ug/l	5.0					
2-Hexanone	ND	ug/l	5.0					
Ethyl methacrylate	ND	ug/1	5.0					
Acrolein	ND	ug/l	12.					
Acrylonitrile	ND	ug/l	5.0					
Bromochloromethane	ND	ug/l	2.5					
Tetrahydrofuran	ND	ug/l	10.					
2,2-Dichloropropane	ND	ug/l	2.5					
l,2-Dibromoethane	ND	ug/l	2.0					
l,3-Dichloropropane	ND	ug/l	2.5					
l,1,1,2-Tetrachloroethane	ND	ug/l	0.50					
Bromobenzene	ND	ug/l	2.5					
n-Butylbenzene	ND	ug/l	0.50					
sec-Butylbenzene	ND	ug/l	0.50					
tert-Butylbenzene	ND	ug/l	2.5					
o-Chlorotoluene	ND	ug/l	2.5					
p-Chlorotoluene	ND	ug/l	2.5					
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5					
Hexachlorobutadiene	ND	ug/l	1.0					
Isopropylbenzene	ND	ug/l	0.50					
p-Isopropyltoluene	ND	ug/l	0.50					
Naphthalene	ND	ug/l	2.5					
n-Propylbenzene	ND	ug/l	0.50					
1,2,3-Trichlorobenzene	ND	ug/l	2.5					
l,2,4-Trichlorobenzene	ND	ug/l	2.5					
l,3,5-Trimethylbenzene	ND	ug/l	2.5					
l,2,4-Trimethylbenzene	ND	ug/1	2.5					
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5					
Ethyl ether	ND	ug/l	2.5					
Surrogate(s)	Recovery		QC Cri	iteria	ì			
1,2-Dichloroethane-d4	105.	%						
Coluene-d8	99.0	%						
1-Bromofluorobenzene	104.	8						
Dibromofluoromethane	101.	୍ଦ୍ର						
SVOC's by GC/MS 8270				1	8270C	0317 09:40	0319 23	:49 HL
Acenaphthene	ND	ug/l	5.4					



MW/CB-21 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
augusti ku aa hassaana t	La S			, ,,,,,,,,,,	2017 00.00 0712 00.00
SVOC's by GC/MS 8270 continue			54.	1 8270C	0317 09:40 0319 23:49 HL
Benzidine	ND	ug/l			
1,2,4-Trichlorobenzene	ND	ug/l	5.4		
Hexachlorobenzene	ND	ug/l	5.4		
Bis(2-chloroethyl)ether	ND	ug/l	5.4		
1-Chloronaphthalene	ND	ug/l	5.4		
2-Chloronaphthalene	ND	ug/l	6.4		
1,2-Dichlorobenzene	ND	ug/l	5.4		
1,3-Dichlorobenzene	ND	ug/l	5.4		
1,4-Dichlorobenzene	ND	ug/l	5.4		
3,3'-Dichlorobenzidine	ND	ug/l	54.		
2,4-Dinitrotoluene	ND	ug/l	6.4		
2,6-Dinitrotoluene	ND	ug/l	5.4		
Azobenzene	ND	ug/l	5.4		
Fluoranthene	ND	ug/l	5.4		
4-Chlorophenyl phenyl ether	ND	ug/l	5.4		
4-Bromophenyl phenyl ether	ND	ug/l	5.4		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.4		
Bis(2-chloroethoxy)methane	ND	ug/l	5.4		
Hexachlorobutadiene	ND	ug/l	11.		
Hexachlorocyclopentadiene	ND	ug/l	11.		
Hexachloroethane	ND	ug/l	5.4		
Isophorone	ND	ug/l	5.4		
Naphthalene	ND	ug/l	5.4		
Nitrobenzene	ND	ug/l	5.4		
NDPA/DPA	ND	ug/l	16.		
n-Nitrosodi-n-propylamine	ND	ug/l	5.4		
Bis(2-ethylhexyl)phthalate	ND	ug/l	11.		
Butyl benzyl phthalate	ND	ug/l	5.4		
Di-n-butylphthalate	ND	ug/l	5.4		
Di-n-octylphthalate	ND	ug/l	5.4		
Diethyl phthalate	ND	ug/l	5.4	•	
Dimethyl phthalate	ND	ug/l	5.4		
Benzo(a) anthracene	ND	ug/l	5.4		
Benzo(a)pyrene	ND	ug/l	5.4		
Benzo(b)fluoranthene	ND	ug/l	5.4		
Benzo(k)fluoranthene	ND	ug/l	5.4		
Chrysene	ND	ug/l	5.4		
Acenaphthylene	ND	ug/l	5.4		
Anthracene	ND	ug/l	5.4		
Benzo(ghi)perylene	ND	ug/l	5.4		
Fluorene	ND	ug/l	5.4		
Phenanthrene	ND	ug/l	5.4		
Dibenzo(a,h)anthracene	ND	ug/l	5.4		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.5		
Pyrene	ND	ug/l	5.4		
Benzo(e)pyrene	ND	ug/l	5.4		
Biphenyl	ND	ug/l	5.4		
Perylene	ND	ug/l	5.4		
Aniline	ND	ug/l	11.		



Laboratory Sample Number: L0502658-07

MW/CB-21 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
			<u></u>		
SVOC's by GC/MS 8270 continued				1 82700	0317 09:40 0319 23:49 Hb.
4-Chloroaniline	ND	ug/l	5.4		
1-Methylnaphthalene	ND	ug/l	5.4		
2-Nitroaniline	ND	ug/l	5.4		
3-Nitroaniline	ND	ug/l	5.4		
4-Nitroaniline	ND	ug/l	7.5		
Dibenzofuran	ND	ug/l	5.4		
a,a-Dimethylphenethylamine	ND	ug/l	54.		
Hexachloropropene	ND	ug/l	11.		
Nitrosodi-n-butylamine	ND	ug/l	11.		
2-Methylnaphthalene	ND	ug/l	8.6		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	22.		
Pentachlorobenzene	ND	ug/l	22.		
a-Naphthylamine	ND	ug/l	22.		
b-Naphthylamine	ND	ug/l	22.		
Phenacetin	ND	ug/l	11.		
Dimethoate	ND	ug/l	22.		
4-Aminobiphenyl	ND	ug/l	11.		
Pentachloronitrobenzene	ND	ug/l	11.		
Isodrin	ND	ug/l	11.		
p-Dimethylaminoazobenzene	ND	ug/l	11.		
Chlorobenzilate	ND	ug/l	22.		
3-Methylcholanthrene	ND	ug/l	22.		
Ethyl Methanesulfonate	ND	ug/l	16.		
Acetophenone	ND	ug/l	22.		
Nitrosodipiperidine	ND	ug/l	22.		
7,12-Dimethylbenz(a)anthracene	ND	ug/l	11.		
n-Nitrosodimethylamine	ND	ug/l	54.		
2,4,6-Trichlorophenol	ND	ug/l	5.4		
p-Chloro-m-cresol	ND	ug/l	5.4		
2-Chlorophenol	ND	ug/l	6.4		
2,4-Dichlorophenol	ND	ug/l	11.		
2,4-Dimethylphenol	ND	ug/l	11.		
2-Nitrophenol	ND	ug/l	22.		
4-Nitrophenol	ND	ug/l	11.		
2,4-Dinitrophenol	ND	ug/l	22.		
4,6-Dinitro-o-cresol	ND	ug/l	22.		
Pentachlorophenol	ND	ug/l	22.		
Phenol	ND	ug/l	7.5		
2-Methylphenol	ND	ug/l	6.4		
3-Methylphenol/4-Methylphenol	ND	ug/l	6.4		
2,4,5-Trichlorophenol	ND	ug/l	5.4		
2,4,5-Trichiorophenoi 2,6-Dichlorophenol	ND	ug/1 ug/1	11.		
· ·		ug/l	54.		
Benzoic Acid	ND	ug/l	11.		
Benzyl Alcohol	ND	ug/1 ug/l	5.4		
Carbazole	ND ND	_	54.		
Pyridine	ND	ug/l	22.		
2-Picoline	ND	ug/1			
Pronamide	ND	ug/l	22.		
Methyl methanesulfonate	ND	ug/l	22.		

Laboratory Sample Number: L0502658-07

MW/CB-21 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continu	ıed			1 8270C	0317 09:40 0319 23:49 HL
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	37.0	용			
Phenol-d6	32.0	*			
Nitrobenzene-d5	87.0	ક			
2-Fluorobiphenyl	86.0	કુ			
2,4,6-Tribromophenol	111.	ક્ષ			
4-Terphenyl-d14	92.0	8			
PAH by GC/MS SIM 8270M	, * v		u gold	. 1 8270C-M	0317 09:40 0318 20:27 RL
Acenaphthene	ND	ug/l	0.22		
2-Chloronaphthalene	ND	ug/l	0.22		
Fluoranthene	ND	ug/l	0.22		
Hexachlorobutadiene	ND	ug/l	0.54		
Naphthalene	ND	ug/l	0.22		
Benzo(a)anthracene	ND	ug/l	0.22		
Benzo(a)pyrene	ND	ug/l	0.22		
Benzo(b)fluoranthene	ND	ug/l	0.22		
Benzo(k)fluoranthene	ND	ug/l	0.22		
Chrysene	ND	ug/l	0.22		
Acenaphthylene	ND	ug/l	0.22		
Anthracene	ND	ug/l	0.22		
Benzo(ghi)perylene	ND	ug/l	0.22		
Fluorene	ND	ug/l	0.22		
Phenanthrene	ND	ug/l	0.22		
Dibenzo(a,h)anthracene	ND	ug/l	0.22		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.22		
Pyrene	0.65	ug/l	0.22		
l-Methylnaphthalene	ND	ug/l	0.22		
2-Methylnaphthalene	ND	ug/1	0.22		
Pentachlorophenol	ND	ug/l	0.86		
lexachlorobenzene	ND	ug/l	0.86		
Perylene	ND	ug/l	0.22	•	
Biphenyl	ND	ug/l	0.22		
2,6-Dimethylnaphthalene	ND	ug/l	0.22		
-Methylphenanthrene	ND	ug/l	0.22		
Benzo(e)Pyrene	ND	ug/l	0.22		
lexachloroethane	ND	ug/l	0.86		
Surrogate(s)	Recovery		QC Cri	iteria	
2-Fluorophenol	42.0	8	21-120		
Phenol-d6	34.0	00	10-120		
litrobenzene-d5	73.0	96	23-120		
-Fluorobiphenyl	76.0	96	43-120		
,4,6-Tribromophenol	81.0	8	10-120		
-Terphenyl-d14	83.0	8	33-120		
Polychlorinated Biphenyls				1 8082	0317 13:00 0318 20:13 AK
croclor 1221	ND	ug/l	0.556		
aroclor 1232	ND	ug/l	0.556		



Laboratory Sample Number: L0502658-07

MW/CB-21 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL REF METHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls con	timed		1 8082	0317 13:00 0318 20:13 AK
Polychtorinated biphenyis con	ND	uq/l	0.556	
Aroclor 1242/1016	ND	ug/l	0.556	
Aroclor 1248	ND	ug/l	0.556	
Aroclor 1254	ND ND	ug/l	0.556	
Aroclor 1260	ND	ug/1	0.000	
Surrogate(s)	Recovery		QC Critería	
2,4,5,6-Tetrachloro-m-xylene	68.0	8	30-150	
Decachlorobiphenyl	50.0	8	30-150	
Decaculotopiphenyi	0000			**
Organochlorine Pesticides			1 8081	0317 15:00 0318 13:52 AK
Delta-BHC	ND	ug/l	0.021	
Lindane	ND	ug/l	0.021	
Alpha-BHC	ND	ug/l	0.021	
Beta-BHC	ND	ug/l	0.021	
Heptachlor	ND	ug/l	0.021	
Aldrin	ND	ug/l	0.021	
Heptachlor epoxide	ND	ug/l	0.021	
Endrin	ND	ug/l	0.042	
Endrin aldehyde	ND	ug/l	0.042	
Endrin ketone	ND	ug/l	0.042	
Dieldrin	ND	ug/l	0.042	
4,4'-DDE	ND	ug/l	0.042	
4,4'-DDD	ND	ug/l	0.042	
4,4'-DDT	ND	ug/l	0.042	
Endosulfan I	ND	ug/l	0.021	
Endosulfan II	ND	ug/l	0.042	
Endosulfan sulfate	ND	ug/l	0.042	
Methoxychlor	ND	ug/l	0.210	
Toxaphene	ND	ug/l	0.210	
Chlordane	ND	ug/l	0.210	
cis-Chlordane	ND	ug/l	0.021 -	
trans-Chlordane	ND	ug/l	0.021	
Clairs Chiordane	*	٥.		
Surrogate(s)	Recovery		QC Criteria	
2,4,5,6-Tetrachloro-m-xylene	_	9	30-150	
Decachlorobiphenyl	51.0	ક	30-150	

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-08

MW/CB-7 (GROUNDWATER)

Date Collected: 16-MAR-2005 12:30

Sample Matrix:

WATER

Date Received : 16-MAR-2005 Date Reported : 24-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA'	re	ID
						PREP	ANAL	
Total Metals					3.5	-		
Aluminum, Total	16.2	/ l	0.100				, 17,	
Antimony, Total	ND	mg/l	0.100	1	6020	0317 12:30	0321 19:0) RW
Arsenic, Total		mg/l	0.0010	1	6020	0317 12:30	0322 01:2	l RW
Barium, Total	0.0023	mg/l	0.0020	1	6020	0317 12:30	0322 01:2	RW.
Beryllium, Total	1.462	mg/l	0.0010	1	6020	0317 12:30	0322 01:2	l RW
Cadmium, Total	ND	mg/l	0.0025	1	6020	0317 12:30	0322 01:23	L RW
Calcium, Total	ND	mg/l	0.0020	1	6020	0317 12:30	0322 01:23	R W
Chromium, Total	889.	mg/l	2.00	1	6020	0317 12:30	0321 19:00	RW
•	0.0357	mg/l	0.0010	1	6020	0317 12:30	0322 01:23	. RW
Cobalt, Total	0.0163	mg/l	0.0005	1	6020	0317 12:30	0322 01:21	. RW
Copper, Total	0.0396	mg/1	0.0025	1	6020	0317 12:30	0322 01:21	. RW
Iron, Total	27.9	mg/l	0.050	1	6020	0317 12:30	0322 01:21	RW
Lead, Total	0.0082	mg/l	0.0010	1	6020	0317 12:30		
Magnesium, Total	28.0	mg/l	0.050	1	6020	0317 12:30 (
Manganese, Total	0.2738	mg/l	0.0010	1	6020	0317 12:30 (
Mercury, Total	ND	mg/l	0.0002	1	7470A	0318 17:20 (
Nickel, Total	0.0353	mg/l	0.0025	1	6020	0317 12:30 (
Potassium, Total	76.3	mg/l	0.500	1	6020	0317 12:30 (
Selenium, Total	0.005	mg/l	0.005	1	6020	0317 12:30 (
Silver, Total	ND	mg/l	0.0005	1	6020	0317 12:30 (
Sodium, Total	7720	mq/l	10.0	1	6020	0317 12:30 (
Thallium, Total	ND	mg/l	0.0005	1	6020	0317 12:30 (
Vanadium, Total	0.0573	mg/l	0.0010	1	6020	0317 12:30 0		
Zinc, Total	0.1396	mg/l	0.0250	1	6020	0317 12:30 0		
Dissolved Metals								
Aluminum, Dissolved	ND	mg/l	0.050	1	6020	0317 13.30 0	221 22 25	
Antimony, Dissolved	0.0018	mg/l	0.0010	1	6020	0317 12:30 0		
Arsenic, Dissolved	0.0032	mg/l	0.0020		6020	0317 12:30 0		
Barium, Dissolved	1.372	mg/l	0.0020			0317 12:30 0		
Beryllium, Dissolved	ND	mg/l	0.0010		6020	0317 12:30 0		
Cadmium, Dissolved	ND	mg/l			6020	0317 12:30 0		
Calcium, Dissolved	932.		0.0020		6020	0317 12:30 0		
Chromium, Dissolved	0.0018	mg/l	2.00		6020	0317 12:30 0		
Cobalt, Dissolved	0.0018	mg/l	0.0010		6020	0317 12:30 0	321 22:26	R W
Copper, Dissolved		mg/l	0.0005		6020	0317 12:30 0	321 22:26	RW
[ron, Dissolved	0.0223	mg/l	0.0025	1	6020	0317 12:30 0	321 22:26	R₩
LIOII, DISSUIVEU	3.69	mg/l	0.050	1	6020	0317 12:30 0	321 22:26	RW

Comments: Complete list of References and Glossary of Terms found in Addendum I

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Laboratory Sample Number: L0502658-08

MW/CB-7 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE ID PREP ANAL
Dissolved Metals						
Lead, Dissolved	ND	mg/l	0.0010	1	6020	0317 12:30 0321 22:26 RW
Magnesium, Dissolved	16.9	mg/l	0.050	1	6020	0317 12:30 0321 22:26 RW
Manganese, Dissolved	0.0069	mg/l	0.0010	1	6020	0317 12:30 0321 22:26 RW
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16:00 0318 12:59 DM
Nickel, Dissolved	0.0124	mg/l	0.0025	1	6020	0317 12:30 0321 22:26 RW
Potassium, Dissolved	71.1	mg/l	0.500	1	6020	0317 12:30 0321 22:26 RW
Selenium, Dissolved	ND	mg/l	0.005	1	6020	0317 12:30 0321 22:26 RW
Silver, Dissolved	ND	mg/l	0.0005	1	6020	0317 12:30 0321 22:26 RW
Sodium, Dissolved	8440	mg/l	10.0	1	6020	0317 12:30 0321 19:32 RW
Thallium, Dissolved	ND	mg/l	0.0005	1	6020	0317 12:30 0321 22:26 RW
Vanadium, Dissolved	0.0240	mg/l	0.0010	1	6020	0317 12:30 0321 22:26 RW
Zinc, Dissolved	ND	mg/l	0.0250	1	6020	0317 12:30 0321 22:26 RW
Volatile Organics by GC/MS 8	3260			1	8260B	0318 16:53 BT
Methylene chloride	ND	ug/l	5.0			
1,1-Dichloroethane	ND	ug/l	0.75			
Chloroform	ND	ug/l	0.75			
Carbon tetrachloride	ND	ug/l	0.50			
1,2-Dichloropropane	ND	ug/l	1.8			
Dibromochloromethane	ND	ug/l	0.50			
1,1,2-Trichloroethane	ND	ug/l	0.75			
Tetrachloroethene	ND	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
Trichlorofluoromethane	ND	ug/l	2.5			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
1,1-Dichloropropene	ND	ug/l	2.5		•	
Bromoform	ND	ug/l	2.0			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	0.55	ug/l	0.50			
Toluene	ND	ug/l	0.75			
Ethylbenzene	ND	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
Bromomethane	ND	ug/l	1.0			
Vinyl chloride	ND	ug/l	1.0			
Chloroethane	ND	ug/l	1.0			
1,1-Dichloroethene	ND	ug/l	0.50			
trans-1,2-Dichloroethene	ND	ug/l	0.75			
Trichloroethene	ND	ug/l	0.50			
1.2-Dichlorobenzene	ND	ug/l	2.5			
1,3-Dichlorobenzene	ND	ug/l	2.5			
1.4-Dichlorobenzene	ND	ug/l	2.5			
Methyl tert butyl ether	ND	ug/l	1.0			
	0.80	ug/l	0.50			
p/m-Xylene	0.00	uq/l	0.50			

Laboratory Sample Number: L0502658-08

MW/CB-7 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	ID
					PREP ANAL	
Volatile Organics by GC/MS 8	260 continu	ıed		1 8260B	A. J. J. 1885	3.4
cis-l,2-Dichloroethene	ND	ug/l	0.50	. 1. 07.000	0318 16:53	BT
Dibromomethane	ND	ug/l	5.0			
l,4-Dichlorobutane	ND	ug/l	5.0			
Iodomethane	ND	ug/l	5.0			
1,2,3-Trichloropropane	ND	ug/l	5.0			
Styrene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
Acetone	7.5	ug/l	5.0			
Carbon disulfide	ND	ug/l	5.0			
2-Butanone	ND	ug/l	5.0			
Vinyl acetate	ND	ug/l	5.0			
4-Methyl-2-pentanone	ND	ug/l	5.0			
2-Hexanone	ND	ug/l	5.0			
Ethyl methacrylate	ND	ug/l	5.0			
Acrolein	ND	ug/l	12.			
Acrylonitrile	ND	ug/l	5.0			
Bromochloromethane	ND	ug/l	2.5			
Tetrahydrofuran	ND	ug/l	10.			
2,2-Dichloropropane	ND	ug/l	2.5			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
Bromobenzene	ND	ug/l	2.5			
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	ug/l	0.50			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
Isopropylbenzene	ND	ug/l	0.50			
p-Isopropyltoluene	ND	ug/l		-		
Naphthalene	ND		0.50			
n-Propylbenzene	ND	ug/l ug/l	2.5			
1,2,3-Trichlorobenzene	ND		0.50			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			
1,3,5-Trimethylbenzene	ND	ug/l	2.5			
1,2,4-Trimethylbenzene	ND	ug/l	2.5			
crans-1,4-Dichloro-2-butene		ug/l	2.5			
Ethyl ether	ND ND	ug/l	2.5			
_	ND	ug/l	2.5			
Surrogate(s)	Recovery	2	QC Cri	teria		
l,2-Dichloroethane-d4	107.	9				
Coluene-d8	100.	8				
-Bromofluorobenzene	99.0	96				
Dibromofluoromethane	103.	%				
SVOC's by GC/MS 8270				1 8270C	0317 09:40 0320 00:14 H	L
Acenaphthene	ND	ug/l	6.8			



Laboratory Sample Number: L0502658-08

MW/CB-7 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
and it gains and continue	<u>ــــــــــــــــــــــــــــــــــــ</u>			1 8270C	0317 09:40 0320 00:14 HL
SVOC's by GC/MS 8270 continue	u ND	ug/l	68.	1 02/00	
Benzidine 1.2.4-Trichlorobenzene	ND	ug/l	6.8		
, ,	ND	ug/l	6.8		
Hexachlorobenzene	ND	ug/l	6.8		
Bis(2-chloroethyl)ether	ND	ug/l	6.8		
1-Chloronaphthalene	ND ND	ug/l	8.2		
2-Chloronaphthalene	ND ND	ug/l	6.8		
1,2-Dichlorobenzene	ND	ug/l	6.8		
1,3-Dichlorobenzene	ND	ug/l	6.8		
1,4-Dichlorobenzene		ug/l	68.		
3,3'-Dichlorobenzidine	ND ND	ug/l	8.2		
2,4-Dinitrotoluene		ug/l	6.8		
2,6-Dinitrotoluene	ND	ug/l	6.8		
Azobenzene	ND		6.8		
Fluoranthene	ND	ug/l ug/l	6.8		
4-Chlorophenyl phenyl ether	ND	-	6.8		
4-Bromophenyl phenyl ether	ND	ug/l ug/l	6.8		
Bis(2-chloroisopropyl)ether	ND	ug/l	6.8		
Bis (2-chloroethoxy) methane	ND	-	14.		
Hexachlorobutadiene	ND	ug/l ug/l	14.		
Hexachlorocyclopentadiene	ND	ug/l	6.8		
Hexachloroethane	ND	ug/l	6.8		
Isophorone	ND	ug/l	6.8		
Naphthalene	ND	-	6.8		
Nitrobenzene	ND	ug/l	20.		
NDPA/DPA	ND	ug/l	6.8		
n-Nitrosodi-n-propylamine	ND	ug/l	14.		
Bis(2-ethylhexyl)phthalate	ND	ug/l	6.8		
Butyl benzyl phthalate	ND	ug/l	6.8		
Di-n-butylphthalate	ND	ug/l	6.8		
Di-n-octylphthalate	ND	ug/l	6.8		
Diethyl phthalate	ND	ug/l	6.8	•	
Dimethyl phthalate	ND	ug/l			
Benzo(a)anthracene	ND	ug/l	6.8		
Benzo(a) pyrene	ND	ug/l	6.8 6.8		
Benzo(b) fluoranthene	ND	ug/l			
Benzo(k)fluoranthene	ND	ug/l	6.8		
Chrysene	ND	ug/l	6.8		
Acenaphthylene	ND	ug/l	6.8		
Anthracene	ND	ug/l	6.8		
Benzo(ghi)perylene	ND	ug/l	6.8		
Fluorene	ND	ug/l	6.8		
Phenanthrene	ND	ug/l	6.8		
Dibenzo(a,h)anthracene	ND	ug/l	6.8		
Indeno(1,2,3-cd)pyrene	ND	ug/l	9.6		
Pyrene	12.	ug/l	6.8		
Benzo(e)pyrene	ND	ug/l	6.8		
Biphenyl	ND	ug/l	6.8		
Perylene	ND	ug/l	6.8		
Aniline .	ND	ug/l	14.		

Laboratory Sample Number: L0502658-08

MW/CB-7 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
	· · · · · · · · · · · · · · · · · · ·				PREP ANAL
SVOC's by GC/MS 8270 continued	i .			1 8270C	0317 09:40 0320 00:14 HL
4-Chloroaniline	ND	ug/l	6.8	2 02700	0317 03:40 0320; 00:14 HL
1-Methylnaphthalene	ND	ug/l	6.8		
2-Nitroaniline	ND	ug/l	6.8		
3-Nitroaniline	ND	ug/l	6.8		
4-Nitroaniline	ND	ug/l	9.6		
Dibenzofuran	ND	ug/l	6.8		
a,a-Dimethylphenethylamine	ND	ug/l	68.		
Hexachloropropene	ND	ug/l	14.		
Nitrosodi-n-butylamine	ND	ug/l	14.		
2-Methylnaphthalene	ND	-	11.		
1,2,4,5-Tetrachlorobenzene	ND	ug/l ug/l	27.		
Pentachlorobenzene	ND	-	27.		
a-Naphthylamine	ND	ug/l			
b-Naphthylamine	ND	ug/l	27.		
Phenacetin	ND	ug/l	27.		
Dimethoate		ug/l	14.		
4-Aminobiphenyl	ND	ug/l	27.		
Pentachloronitrobenzene	ND	ug/l	14.		
Isodrin	ND	ug/l	14.		
p-Dimethylaminoazobenzene	ND	ug/l	14.		
Chlorobenzilate	ND	ug/l	14.		
3-Methylcholanthrene	ND	ug/l	27.		
Ethyl Methanesulfonate	ND	ug/l	27.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	27.		
	ND	ug/l	27.		
7,12-Dimethylbenz(a)anthracene		ug/l	14.		
n-Nitrosodimethylamine	ND	ug/l	68.		
2,4,6-Trichlorophenol	ND	ug/l	6.8		
o-Chloro-m-cresol	ND	ug/l	6.8		
2-Chlorophenol	ND	ug/l	8.2		
2,4-Dichlorophenol	ND	ug/l	14.		
2,4-Dimethylphenol	ND	ug/l	14.		
2-Nitrophenol	ND	ug/l	27.		
-Nitrophenol	ND	ug/l	14.		
2,4-Dinitrophenol	ND	ug/l	27.		
,6-Dinitro-o-cresol	ND	ug/l	27.		
Pentachlorophenol	ND	ug/l	27.		
Phenol	ND	ug/l	9.6		
-Methylphenol	ND	ug/l	8.2		
-Methylphenol/4-Methylphenol	ND	ug/l	8.2		
,4,5-Trichlorophenol	ND	ug/l	6.8		
,6-Dichlorophenol	ND	ug/l	14.		
enzoic Acid	ND	ug/l	68.		
enzyl Alcohol	ND	ug/l	14.		
arbazole	ND	ug/l	6.8		
yridine	ND	ug/l	68.		
-Picoline	ND	ug/l	27.		
ronamide	ND	ug/l	27.		
ethyl methanesulfonate	ND	ug/l	27.		



Laboratory Sample Number: L0502658-08

MW/CB-7 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	ed	·		1 8270C	.0317 09:40 0320 00:14 HL
Surrogate(s)	Recovery		QC Cri	teria	
2-Fluorophenol	43.0	ક			
Phenol-d6	40.0	용			
Nitrobenzene-d5	80.0	8			
2-Fluorobiphenyl	76.0	8			
2,4,6-Tribromophenol	100.	%			
4-Terphenyl-d14	91.0	06			
PAH by GC/MS SIM 8270M	,			1 8270¢-M	0317 09:40 0318 21:13 RL
Acenaphthene	ND	ug/l	0.27		
2-Chloronaphthalene	ND	ug/l	0.27		
Fluoranthene	7.7	ug/l	0.27		
Hexachlorobutadiene	ND	ug/l	0.68		
Naphthalene	ND	ug/l	0.27		
Benzo(a) anthracene	ND	ug/l	0.27		
Benzo(a) pyrene	ND	ug/l	0.27		
Benzo(b) fluoranthene	ND	ug/l	0.27		
Benzo(k) fluoranthene	ND	ug/l	0.27		
Chrysene	ND	ug/l	0.27		
Acenaphthylene	ND	ug/l	0.27		
Anthracene	ND	ug/l	0.27		
Benzo(ghi)perylene	ND	ug/l	0.27		
Fluorene	ND	ug/l	0.27		
Phenanthrene	1.4	ug/l	0.27		
Dibenzo(a,h)anthracene	ND	ug/l	0.27		
Indeno(1,2,3-cd) Pyrene	ND	ug/l	0.27		
Pyrene	14.	ug/l	0.27		
l-Methylnaphthalene	ND	ug/l	0.27		
2-Methylnaphthalene	ND	ug/l	0.27		
Pentachlorophenol	ND	ug/l	1.1		
Hexachlorobenzene	ND	ug/l	1.1	-	
Perylene	ND	ug/l	0.27		
Biphenyl	ND	ug/l	0.27		
2,6-Dimethylnaphthalene	ND	ug/l	0.27		
1-Methylphenanthrene	ND	ug/l	0.27		
Benzo(e) Pyrene	ND	ug/l	0.27		
Hexachloroethane	ND	ug/l	1.1		
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	46.0	96	21-12	0	
Phenol-d6	41.0	8	10-12	0	
Nitrobenzene-d5	66.0	8	23-12	0	
2-Fluorobiphenyl	65.0	%	43-12	0	
2,4,6-Tribromophenol	73.0	8	10-12	0	
4-Terphenyl-d14	76.0	95	33-12		
Polychlorinated Biphenyls				1 8082	0317 13:00 0318 20:41 A
Aroclor 1221	ND	ug/l	0.685		
Aroclor 1232	ND	ug/l	0.685		



Laboratory Sample Number: L0502658-08

MW/CB-7 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II
					PREP ANAL
Polychlorinated Biphenyls cor	inned	,		1 8082	
Aroclor 1242/1016	ND	ug/l	0.685	1 8082	0317 13:00 0318 20:41 A
Aroclor 1248	ND	ug/l	0.685		
Aroclor 1254	ND	ug/l	0.685		
Aroclor 1260	ND	ug/l	0.685		
Surrogate(s)	Recovery		OC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	26.0	8	30-150	0114	
Decachlorobiphenyl	28.0	96	30-150		
Organochlorine Pesticides			٠.	1 8081	0317 15:00 0318 18:15 AK
Delta-BHC	ND	ug/l	0.030	, - +++ +	*4.80 GSTO TOLIS WE
Lindane	ND	ug/l	0.030		
Alpha-BHC	ND	ug/l	0.030		
Beta-BHC	ND	ug/l	0.030		
Heptachlor	ND	ug/l	0.030		
Aldrin	ND	ug/l	0.030		
Heptachlor epoxide	ND	ug/l	0.030		
Endrin	ND	ug/l	0.061		
Endrin aldehyde	ND	ug/l	0.061		
Endrin ketone	ND	ug/l	0.061		
Dieldrin	ND	ug/l	0.061		
4,4'-DDE	ND	ug/l	0.061		
1,4'-DDD	ND	ug/l	0.061		
1,4'-DDT	ND	ug/l	0.061		
Endosulfan I	ND	ug/l	0.030		
Endosulfan II	ND	ug/l	0.061		
Indosulfan sulfate	ND	ug/l	0.061		
Methoxychlor	ND	ug/l	0.303		
Coxaphene	ND	ug/l	0.303		
Chlordane	ND	ug/l	0.303		
cis-Chlordane	ND	ug/l	0.030		
rans-Chlordane	ND	ug/l	0.030	•	
Surrogate(s)	Recovery		QC Crite	ria	
,4,5,6-Tetrachloro-m-xylene	34.0	8	30-150		
Decachlorobiphenyl	21.0	8	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-09

MW/CB-13 (GROUNDWATER)

Date Collected: 16-MAR-2005 13:25 Date Received: 16-MAR-2005

Sample Matrix:

WATER

Date Reported: 24-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL R	EF METHOD	DATE ID PREP ANAL
Total Metals					
Aluminum, Total	10.0	mg/l	0.100	1 6020	0317 12:30 0321 19:11 RW
Antimony, Total	ND	mg/l	0.0010	1 6020	0317 12:30 0322 02:40 RW
Arsenic, Total	0.0046	mg/l	0.0020	1 6020	0317 12:30 0322 02:40 RW
Barium, Total	0.5750	mg/l	0.0010	1 6020	0317 12:30 0322 02:40 RW
Beryllium, Total	ND	mg/l	0.0025	1 6020	0317 12:30 0322 02:40 RW
Cadmium, Total	ND	mg/l	0.0020	1 6020	0317 12:30 0322 02:40 RW
Calcium, Total	326.	mg/l	2.00	1 6020	0317 12:30 0321 19:11 RW
Chromium, Total	0.0165	mg/l	0.0010	1 6020	0317 12:30 0322 02:40 RW
Cobalt, Total	0.0085	mg/l	0.0005	1 6020	0317 12:30 0322 02:40 RW
Copper, Total	0.0305	mg/l	0.0025	1 6020	0317 12:30 0322 02:40 RW
Iron, Total	14.7	mg/l	0.050	1 6020	0317 12:30 0322 02:40 RW
Lead, Total	0.0194	mq/l	0.0010	1 6020	0317 12:30 0322 02:40 RW
Magnesium, Total	35.5	mg/l	0.050	1 6020	0317 12:30 0322 02:40 RW
Manganese, Total	1.631	mg/l	0.0010	1 6020	0317 12:30 0322 02:40 RW
Mercury, Total	ND	mq/l	0.0002	1 7470A	0318 17:20 0321 12:19 DM
Nickel, Total	0.0242	mg/l	0.0025	1 6020	0317 12:30 0322 02:40 RW
Potassium, Total	53.2	mg/l	0.500	1 6020	0317 12:30 0322 02:40 RW
Selenium, Total	ND	mg/l	0.005	1 6020	0317 12:30 0322 02:40 RW
Silver, Total	ND	mg/l	0.0005	1 - 6020	0317 12:30 0322 02:40 RW
Sodium, Total	3140	mg/l	10.0	1 6020	0317 12:30 0321 20:08 RW
Thallium, Total	ND	mg/l	0.0005	1 6020	0317 12:30 0322 02:40 RW
Vanadium, Total	0.0214	mg/l	0.0010	1 6020	0317 12:30 0322 02:40 RW
Zinc, Total	0.0809	mg/l	0.0250	1 6020	0317 12:30 0322 02:40 RW
Dissolved Metals					
Aluminum, Dissolved	ND	mg/l	0.020	1 6020	0317 12:30 0321 22:05 RW
Antimony, Dissolved	0.0018	mg/l	0.0004	1 6020	0317 12:30 0321 22:05 RW
Arsenic, Dissolved	ND	mg/l	0.0008	1 6020	0317 12:30 0321 22:05 RW
Barium, Dissolved	0.8512	mg/l	0.0004	1 6020	0317 12:30 0321 22:05 RW
Beryllium, Dissolved	ND	mg/l	0.0010	1 6020	0317 12:30 0321 22:05 RW
Cadmium, Dissolved	0.0016	mg/l	0.0008	1 6020	0317 12:30 0321 22:05 RW
Calcium, Dissolved	643.	mg/l	2.00	1 6020	0317 12:30 0321 17:26 RW
Chromium, Dissolved	0.0004	mg/l	0.0004	1 6020	0317 12:30 0321 22:05 RW
Cobalt, Dissolved	0.0026	mg/l	0.0002	1 6020	0317 12:30 0321 22:05 RW
Copper, Dissolved	0.0060	mg/l	0.0010	1 6020	0317 12:30 0321 22:05 RW
Iron, Dissolved	3.43	mg/l	0.020	1 6020	0317 12:30 0321 22:05 RW

Laboratory Sample Number: L0502658-09

MW/CB-13 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE]	ID
						PREP	ANZ	AL	
Dissolved Metals				*					to the same of the
Lead, Dissolved	ND	mg/l	0.0004	1	6020	0317 12:30	0321 2	22.05 1	RW
Magnesium, Dissolved	48.6	mg/l	0.020	1	6020	0317 12:30			
Manganese, Dissolved	1.758	mg/l	0.0004	1	6020	0317 12:30			
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16:00			
Nickel, Dissolved	0.0100	mg/l	0.0010	1	6020	0317 12:30			
Potassium, Dissolved	82.8	mg/l	0.200	1	6020	0317 12:30			
Selenium, Dissolved	0.006	mg/l	0.002	1	6020	0317 12:30			
Silver, Dissolved	ND	mg/l	0.0002	1	6020	0317 12:30			
Sodium, Dissolved	6500	mg/l	10.0	1	6020	0317 12:30			
Thallium, Dissolved	ND	mg/l	0.0002	1	6020	0317 12:30			
Vanadium, Dissolved	0.0007	mg/l	0.0004	1	6020	0317 12:30			
Zinc, Dissolved	0.0157	mg/l	0.0100	1	6020	0317 12:30			
Volatile Organics by GC/MS 8	260			. 1	8260B		0318 1	7.94 E	a ar
Methylene chloride	ND	ug/l	5.0				9910 1	1.23 E	, 4
1,l-Dichloroethane	ND	ug/l	0.75						
Chloroform	ND	ug/l	0.75						
Carbon tetrachloride	ND	ug/l	0.50						
1,2-Dichloropropane	ND	ug/l	1.8						
Dibromochloromethane	ND	ug/l	0.50						
1,1,2-Trichloroethane	ND	ug/l	0.75						
Tetrachloroethene	ND	ug/l	0.50						
Chlorobenzene	ND	ug/l	0.50						
Trichlorofluoromethane	ND	ug/l	2.5						
1,2-Dichloroethane	0.74	ug/l	0.50						
l,1,1-Trichloroethane	ND	ug/l	0.50						
Bromodichloromethane	ND	ug/l	0.50						
trans-1,3-Dichloropropene	ND	ug/l	0.50						
cis-1,3-Dichloropropene	ND	ug/l	0.50						
l,l-Dichloropropene	ND	ug/l	2.5						
Bromoform	ND	ug/l	2.0	٠					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50						
Benzene	ND	ug/l	0.50						
Coluene	ND	ug/l	0.75						
Ethylbenzene	ND	ug/l	0.50						
Chloromethane	ND	ug/l	2.5						
Bromomethane	ND	ug/l	1.0						
Vinyl chloride	ND	ug/l	1.0						
Chloroethane	ND	ug/l	1.0						
,l-Dichloroethene	ND	ug/l	0.50						
rans-1,2-Dichloroethene	ND	ug/l	0.75						
richloroethene	ND	ug/l	0.50						
.,2-Dichlorobenzene	ND	ug/l	2.5						
.,3-Dichlorobenzene	ND	ug/l	2.5						
,4-Dichlorobenzene	ND	ug/l	2.5						
Methyl tert butyl ether	4.0	ug/l ug/l	1.0						
o/m-Xylene	ND	ug/l ug/l	0.50						
-Xylene	ND ND	ug/l ug/l	0.50						



Laboratory Sample Number: L0502658-09

MW/CB-13 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Volatile Organics by GC/MS 82	60 continu	ed		1 8260B	0318 17:29 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane 1,2,3-Trichloropropane	ND	ug/l	5.0		
	ND	ug/l	0.50		
Styrene Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Z-Butanone Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
	ND	ug/l	5.0		
2-Hexanone Ethyl methacrylate	ND	ug/l	5.0		
-	ND	ug/l	12.		
Acrolein	ND	ug/l	5.0		
Acrylonitrile Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50	•	
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
• •	ND	ug/l	2.5		
1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
	ND	ug/l	2.5		
Ethyl ether	ta⊓	49/1			
Surrogate(s)	Recovery		QC Cr	iteria	
1,2-Dichloroethane-d4	107.	96			
Toluene-d8	98.0	%			
4-Bromofluorobenzene	102.	%			
Dibromofluoromethane	106.	o'o			
SVOC's by GC/MS 8270				1 8270C	0317 09:40 0320 00:40 HI
Acenaphthene	ND	ug/l	5.6		

Laboratory Sample Number: L0502658-09

MW/CB-13 (GROUNDWATER)

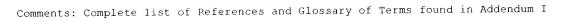
PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF METHOD	DA	TE	ID
					PREP	ANAL	
SVOC's by GC/MS 8270 continue	e d			1 82706	05.00.500	2222 22 22	
Benzidine	ND	ug/l	56.	1 02/00	0317 09:40	0320 00:46) HI.
1,2,4-Trichlorobenzene .	ND	ug/l	5.6				
Hexachlorobenzene	ND	ug/l	5.6				
Bis(2-chloroethyl)ether	ND	ug/l	5.6				
1-Chloronaphthalene	ND	ug/l	5.6				
2-Chloronaphthalene	ND	ug/l	6.7				
1,2-Dichlorobenzene	ND	ug/l	5.6				
1,3-Dichlorobenzene	ND	ug/l	5.6				
1,4-Dichlorobenzene	ND	ug/l	5.6				
3,3'-Dichlorobenzidine	ND	ug/l	56.				
2,4-Dinitrotoluene	ND	ug/l	6.7				
2,6-Dinitrotoluene	ND	ug/l	5.6				
Azobenzene	ND	ug/l	5.6				
Fluoranthene	ND	ug/l	5.6				
4-Chlorophenyl phenyl ether	ND	ug/l	5.6				
4-Bromophenyl phenyl ether	ND	ug/l	5.6				
Bis(2-chloroisopropyl)ether	ND	ug/l	5.6				
Bis(2-chloroethoxy)methane	ND	ug/l	5.6				
Hexachlorobutadiene	ND	ug/l	11.				
Hexachlorocyclopentadiene	ND	ug/l	11.				
Hexachloroethane	ND	ug/l	5.6				
Isophorone	ND	ug/l	5.6				
Naphthalene	ND	ug/l	5.6				
	ND	ug/l	5.6				
IDPA/DPA	ND	ug/l	17.				
n-Nitrosodi-n-propylamine	ND	ug/l	5.6				
Bis(2-ethylhexyl)phthalate	ND	ug/l	11.				
Butyl benzyl phthalate	ND	ug/l	5.6				
Di-n-butylphthalate	ND	ug/l	5.6				
)i-n-octylphthalate	ND	ug/l	5.6				
Diethyl phthalate	ND	ug/l	5.6				
Dimethyl phthalate	ND	ug/l ug/l	5.6	*			
Benzo(a) anthracene	ND	ug/l ug/l	5.6				
Benzo(a)pyrene	ND	ug/l	5.6				
Benzo(b) fluoranthene	ND	ug/l	5.6				
Senzo(k) fluoranthene	ND	-					
Thrysene	ND	ug/l	5.6				
cenaphthylene	ND	ug/l	5.6				
anthracene	ND	ug/l	5.6				
enzo(ghi)perylene	ND	ug/l	5.6				
luorene	ND	ug/l ug/l	5.6				
henanthrene		-	5.6				
ibenzo(a,h)anthracene	ND	ug/l	5.6				
ndeno(1,2,3-cd)pyrene	ND ND	ug/l	5.6				
yrene	ND	ug/l	7.9				
enzo(e)pyrene	6.2	ug/l	5.6				
iphenyl	ND	ug/l	5.6				
erylene	ND	ug/l	5.6				
-	ND	ug/l	5.6				
niline	ND	ug/l	11.				



Laboratory Sample Number: L0502658-09

MW/CB-13 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued	i	1.84.33		1 `8270C	0317 09:40 0320 00:40 HL
4-Chloroaniline	ND	ug/l	5.6		
1-Methylnaphthalene	ND	ug/l	5.6		
2-Nitroaniline	ND	ug/l	5.6		
3-Nitroaniline	ND	ug/l	5.6		
4-Nitroaniline	ND	ug/l	7.9		
Dibenzofuran	ND	ug/l	5.6		
a,a-Dimethylphenethylamine	ND	ug/l	56.		
Hexachloropropene	ND	ug/l	11.		
Nitrosodi-n-butylamine	ND	ug/l	11.		
2-Methylnaphthalene	ND	ug/l	9.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	22.		
Pentachlorobenzene	ND	ug/l	22.		
a-Naphthylamine	ND	ug/l	22.		
b-Naphthylamine	ND	ug/l	22.		
Phenacetin	ND	ug/1	11.		
	ND	ug/l	22.		
Dimethoate	ND	ug/l	11.		
4-Aminobiphenyl	ND	ug/l	11.		
Pentachloronitrobenzene	ND	ug/1	11.		
Isodrin	ND	ug/l	11.		
p-Dimethylaminoazobenzene	ND	ug/1	22.		
Chlorobenzilate		ug/l	22.		
3-Methylcholanthrene	ND		17.		
Ethyl Methanesulfonate	ND	ug/l	22.		
Acetophenone	ND	ug/l ug/l	22.		
Nitrosodipiperidine	ND	-	11.		
7,12-Dimethylbenz(a)anthracen		ug/l	56.		
n-Nitrosodimethylamine	ND	ug/l	5.6		
2,4,6-Trichlorophenol	ND	ug/l	5.6		
p-Chloro-m-cresol	ND	ug/l	6.7		
2-Chlorophenol	ND	ug/1			
2,4-Dichlorophenol	ND	ug/l	11.	•	
2,4-Dimethylphenol	ND	ug/l	11.		
2-Nitrophenol	ND	ug/1	22.		
4-Nitrophenol	ND	ug/l	11.		
2,4-Dinitrophenol	ND	ug/l	22.		
4,6-Dinitro-o-cresol	ND	ug/l	22.		
Pentachlorophenol	ND	ug/l	22.		
Phenol	ND	ug/l	7.9		
2-Methylphenol	ND	ug/l	6.7		
3-Methylphenol/4-Methylphenol	. ND	ug/l	6.7		
2,4,5-Trichlorophenol	ND	ug/1	5.6		
2,6-Dichlorophenol	ND	ug/l	11.		
Benzoic Acid	ND	ug/l	56.		
Benzyl Alcohol	ND	ug/l	11.		
Carbazole	ND	ug/l	5.6		
Pyridine	ND	ug/l	56.		
2-Picoline	ND	ug/l	22.		
Pronamide	ND	ug/l	22.		
Methyl methanesulfonate	ND	ug/l	22.		



Laboratory Sample Number: L0502658-09

MW/CB-13 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
	······				PREP ANAL
SVOC's by GC/MS 8270 contin	ued		100	1 927oc	
Surrogate(s)	Recovery			iteria	,
2-Fluorophenol	43.0	9			
Phenol-d6	34.0	o's			
Nitrobenzene-d5	87.0	8			
2-Fluorobiphenyl	83.0	0			
2,4,6-Tribromophenol	114.	વૃ			
4-Terphenyl-d14	90.0	%			
PAH by GC/MS SIM 8270M			Marie 1	1 8270C-M	0317 09:40 0318 21:58 RL
Acenaphthene	ND	ug/l	0.22		
2-Chloronaphthalene	ND	ug/l	0.22		
Fluoranthene	4.1	ug/l	0.22		
Hexachlorobutadiene	ND	ug/l	0.56		
Naphthalene	ND	ug/l	0.22		
Benzo(a) anthracene	ND	ug/l	0.22		
Benzo(a)pyrene	ND	ug/l	0.22		
Benzo(b)fluoranthene	ND	ug/l	0.22		
Benzo(k)fluoranthene	ND	ug/l	0.22		
Chrysene	ND	ug/l	0.22		
Acenaphthylene	ND	ug/l	0.22		
Anthracene	ND	ug/l	0.22		
Benzo(ghi)perylene	ND	ug/l	0.22		
Fluorene	ND	ug/l	0.22		
Phenanthrene	0.67	ug/l	0.22		
Dibenzo(a,h)anthracene	ND	ug/l	0.22		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.22		
Pyrene	8.1	ug/l	0.22		
l-Methylnaphthalene	ND	ug/l	0.22		
2-Methylnaphthalene	ND	ug/l	0.22		
Pentachlorophenol	ND	ug/l	0.90		
Hexachlorobenzene	ND	ug/l	0.90		
Perylene	ND	ug/l	0.22	-	
Biphenyl	ND	ug/l	0.22		
2,6-Dimethylnaphthalene	ND	ug/l	0.22		
l-Methylphenanthrene	ND	ug/l	0.22		
Benzo(e) Pyrene	ND	ug/l	0.22		
lexachloroethane	ND	ug/l	0.90		
Surrogate(s)	Recovery		QC Cri	iteria	
2-Fluorophenol	45.0	8	21-120		
Phenol-d6	36.0	96	10-120		
litrobenzene-d5	72.0	8	23-120		
-Fluorobiphenyl	71.0	0/0	43-120		
4,4,6-Tribromophenol	82.0	8	10-120		
-Terphenyl-d14	81.0	90	33-120		
Polychlorinated Biphenyls				1 8082	0201 17.00 0222 15.50 20
aroclor 1221	ND	ug/l	0.556	1 0007	0321 17:00 0322 15:59 AK
croclor 1232	ND	ug/l	0.556		
-	110	49/1	0.556		



Laboratory Sample Number: L0502658-09

MW/CB-13 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL F	REF METHOD	DATE ID PREP ANAL
Polychlorinated Biphenyls con	tinued	-		1 8082	0321 17:00 0322 15:59 AK
Aroclor 1242/1016	ND	ug/l	0.556		
Aroclor 1248	ND	ug/l	0.556		
Aroclor 1254	ND	ug/l	0.556		
Aroclor 1260	ND	ug/l	0.556		
Surrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	68.0	왕	30-150		
Decachlorobiphenyl	38.0	ે	30-150		
Organochlorine Pesticides		· .		1 8081	0317 15:00 0318 18:43 AK
Delta-BHC	ND	ug/l	0.025		
Lindane	ND	ug/l	0.025		
Alpha-BHC	ND	ug/l	0.025		
Beta-BHC	ND	ug/1	0.025		
Heptachlor	ND	ug/l	0.025		
Aldrin	ND	ug/l	0.025		
Heptachlor epoxide	ND	ug/l	0.025		
Endrin	ND	ug/l	0.049		
Endrin aldehyde	ND	ug/l	0.049		
Endrin ketone	ND	ug/l	0.049		
Dieldrin	ND	ug/l	0.049		
4,4'-DDE	ND	ug/l	0.049		
4,4'-DDD	ND	ug/l	0.049		
4,4'-DDT	ND	ug/l	0.049		
Endosulfan I	ND	ug/l	0.025		
Endosulfan II	ND	ug/l	0.049		
Endosulfan sulfate	ND	ug/l	0.049		
Methoxychlor	ND	ug/l	0.247		
Toxaphene	ND	ug/l	0.247		
Chlordane	ND	ug/l	0.247		
cis-Chlordane	ND	ug/l	0.025	•	
trans-Chlordane	ND	ug/l	0.025		
Surrogate(s)	Recovery		QC Crite	eria	
2,4,5,6-Tetrachloro-m-xylene	70.0	8	30-150		
Decachlorobiphenyl	34.0	8	30-150		



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-10 Date Collected: 16-MAR-2005 13:45

MW/CB-16 (GROUNDWATER) Date Received: 16-MAR-2005

Sample Matrix: WATER Date Reported: 24-MAR-2005

Condition of Sample: Satisfactory Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE ID
						PREP ANAL
			······································			
Total Metals						
Aluminum, Total	18.9	mg/l	0.100	1	6020	0317 12:30 0321 19:21 RW
Antimony, Total	0.0003	mg/l	0.0002	1	6020	0317 12:30 0322 02:51 RW
Arsenic, Total	0.0049	mg/l	0.0004	1	6020	0317 12:30 0322 02:51 RW
Barium, Total	0.3400	mg/l	0.0002	1	6020	0317 12:30 0322 02:51 RW
Beryllium, Total	0.0015	mg/l	0.0005	1	6020	0317 12:30 0322 02:51 RW
Cadmium, Total	ND	mg/l	0.0004	1	6020	0317 12:30 0322 02:51 RW
Calcium, Total	156.	mg/l	2.00	1	6020	0317 12:30 0321 19:21 RW
Chromium, Total	0.0236	mg/l	0.0002	1	6020	0317 12:30 0322 02:51 RW
Cobalt, Total	0.0146	mg/l	0.0001	1	6020	0317 12:30 0322 02:51 RW
Copper, Total	0.0341	mg/l	0.0005	1	6020	0317 12:30 0322 02:51 RW
Iron, Total	23.2	mg/l	0.010	1	6020	0317 12:30 0322 02:51 RW
Lead, Total	0.0192	mg/l	0.0002	1	6020	0317 12:30 0322 02:51 RW
Magnesium, Total	38.7	mg/l	0.010	1	6020	0317 12:30 0322 02:51 RW
Manganese, Total	1.988	mg/l	0.0002	1	6020	0317 12:30 0322 02:51 RW
Mercury, Total	ND	mg/l	0.0002	1	7470A	0318 17:20 0321 12:21 DM
Nickel, Total	0.0357	mg/l	0.0005	1	6020	0317 12:30 0322 02:51 RW
Potassium, Total	15.0	mq/l	0.100	1	6020	0317 12:30 0322 02:51 RW
Selenium, Total	0.009	mg/l	0.001	1	6020	0317 12:30 0322 02:51 RW
Silver, Total	0.0003	mg/l	0.0001	1	6020	0317 12:30 0322 02:51 RW
Sodium, Total	19.5	mq/l	1.00	1	6020	0317 12:30 0321 19:21 RW
Thallium, Total	0.0004	mg/l	0.0001	1	6020	0317 12:30 0322 02:51 RW
Vanadium, Total	0.0308	mg/l	0.0002	1	6020	0317 12:30 0322 02:51 RW
Zinc, Total	0.0917	mg/l	0.0050	1	6020	0317 12:30 0322 02:51 RW
Dissolved Metals						
Aluminum, Dissolved	0.041	mg/l	0.020	1	6020	0317 12:30 0321 23:08 RW
Antimony, Dissolved	0.0024	mg/l	0.0004	1	6020	0317 12:30 0321 23:08 RW
Arsenic, Dissolved	0.0010	mg/l	0.0008	1	6020	0317 12:30 0321 23:08 RW
Barium, Dissolved	0.6130	mg/l	0.0004	1	6020	0317 12:30 0321 23:08 RW
Beryllium, Dissolved	ND	mg/l	0.0010	1	6020	0317 12:30 0321 23:08 RW
Cadmium, Dissolved	0.0017	mg/l	0.0008	1	6020	0317 12:30 0321 23:08 RW
Calcium, Dissolved	400.	mg/l	2.00	1	6020	0317 12:30 0321 17:46 RW
Chromium, Dissolved	0.0004	mg/l	0.0004	1		0317 12:30 0321 23:08 RW
Cobalt, Dissolved	0.0020	mg/l	0.0002	1		0317 12:30 0321 23:08 RW
Copper, Dissolved	0.0028	mg/l	0.0010	1	6020	0317 12:30 0321 23:08 RW
Iron, Dissolved	1.72	mg/l	0.020	1		0317 12:30 0321 23:08 RW
III, DISSOLVED	1.,2	1119/1	0.020	1	5320	331. IZ.30 000X 63.00 IV



Laboratory Sample Number: L0502658-10

MW/CB-16 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	RDL REF METHOD			DATE		
						PREP	ANAL		
Dissolved Metals			. 7 5						
Lead, Dissolved	0.0005	mg/l	0.0004	1	6020	0317 12:30	0321 23:08	B RW	
Magnesium, Dissolved	36.8	mg/l	0.020	1	6020	0317 12:30	0321 23:08	3 RW	
Manganese, Dissolved	1.501	mg/l	0.0004	1	6020	0317 12:30	0321 23:08	3 RW	
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16:00	0318 13:03	3 DM	
Nickel, Dissolved	0.0072	mg/l	0.0010	1	6020	0317 12:30	0321 23:08	3 RW	
Potassium, Dissolved	55.0	mg/l	0.200	1	6020	0317 12:30	0321 23:08	B RW	
Selenium, Dissolved	0.004	mg/l	0.002	1	6020	0317 12:30	0321 23:08	B RW	
Silver, Dissolved	ND	mg/l	0.0002	1	6020	0317 12:30	0321 23:08	3 RW	
Sodium, Dissolved	3640	mg/l	10.0	1	6020	0317 12:30	0321 19:58	B RW	
Thallium, Dissolved	ND	mg/l	0.0002	1	6020	0317 12:30	0321 23:08	3 RW	
Vanadium, Dissolved	0.0040	mg/l	0.0004	1	6020	0317 12:30	0321 23:0	B RW	
Zinc, Dissolved	0.0169	mg/l	0.0100	1	6020	0317 12:30	0321 23:0	3 RW	
Volatile Organics by GC/MS 8	3260			1	8260B		0318 18:0	5 BT	
Methylene chloride	ND	ug/l	5.0						
1,1-Dichloroethane	ND	ug/l	0.75						
Chloroform	ND	ug/l	0.75						
Carbon tetrachloride	ND	ug/l	0.50						
1,2-Dichloropropane	ND	ug/l	1.8						
Dibromochloromethane	ND	ug/l	0.50						
1,1,2-Trichloroethane	ND	ug/1	0.75						
Tetrachloroethene	ND	ug/l	0.50						
Chlorobenzene	ND	ug/l	0.50						
Trichlorofluoromethane	ND	ug/l	2.5						
1,2-Dichloroethane	ND	ug/l	0.50						
1,1,1-Trichloroethane	ND	ug/l	0.50						
Bromodichloromethane	ND	ug/l	0.50						
trans-1,3-Dichloropropene	ND	ug/1	0.50						
cis-1,3-Dichloropropene	ND	ug/l	0.50						
1,1-Dichloropropene	ND	ug/l	2.5						
Bromoform	ND	ug/l	2.0						
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50						
Benzene	ND	ug/l	0.50						
Toluene	ND	ug/l	0.75						
Ethylbenzene	ND	ug/l	0.50						
Chloromethane	ND	ug/l	2.5						
Bromomethane	ND	ug/l	1.0						
Vinyl chloride	ND	ug/l	1.0						
Chloroethane	ND	ug/l	1.0						
1,1-Dichloroethene	ND	ug/l	0.50						
trans-1,2-Dichloroethene	ND	ug/l	0.75						
Trichloroethene	ND	ug/l	0.50						
1,2-Dichlorobenzene	ND	ug/l	2.5						
1,3-Dichlorobenzene	ND	ug/l	2.5						
1,4-Dichlorobenzene	ND	ug/l	2.5						
Methyl tert butyl ether	7.7	ug/l	1.0						
p/m-Xylene	1.2	ug/l	0.50						
o-Xylene	1.4	ug/l	0.50						

Laboratory Sample Number: L0502658-10

MW/CB-16 (GROUNDWATER)

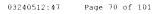
PARAMETER	RESULT	UNITS	RDL	REF	METHOD	D. PREP	ATE Anai	ID,
Volatile Organics by GC/MS 8	260 continu	ed		1	8260B	1 11 1	0318 18	:05 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50					
Dibromomethane	ND	ug/l	5.0					
1,4-Dichlorobutane	ND	ug/l	5.0					
Iodomethane	ND	ug/l	5.0					
1,2,3-Trichloropropane	ND	ug/l	5.0					
Styrene	ND	ug/l	0.50					
Dichlorodifluoromethane	ND	ug/l	5.0					
Acetone	ND	ug/l	5.0					
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	5.0					
Vinyl acetate	ND	ug/l	5.0					
4-Methyl-2-pentanone	ND	ug/l	5.0					
2-Hexanone	ND	ug/l	5.0					
Ethyl methacrylate	ND	ug/l	5.0					
Acrolein	ND	ug/l	12.					
Acrylonitrile	ND	ug/l	5.0					
Bromochloromethane	ND	ug/l	2.5					
Tetrahydrofuran	ND	ug/l	10.					
2,2-Dichloropropane	ND	ug/l	2.5					
1,2-Dibromoethane	ND	ug/l	2.0					
1,3-Dichloropropane	ND	ug/l	2.5					
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50					
Bromobenzene	ND	ug/l	2.5					
n-Butylbenzene	ND	ug/l	0.50					
sec-Butylbenzene	1.0	ug/l	0.50					
tert-Butylbenzene	ND	ug/l	2.5					
o-Chlorotoluene	ND	ug/l	2.5					
p-Chlorotoluene	ND	ug/l	2.5					
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5					
Hexachlorobutadiene	ND	ug/l	1.0					
Isopropylbenzene	ND	ug/l	0.50	-				
p-Isopropyltoluene	ND	ug/l	0.50					
Naphthalene	2.7	ug/l	2.5					
n-Propylbenzene	ND	ug/l	0.50					
1,2,3-Trichlorobenzene	ND	ug/l	2.5					
1,2,4-Trichlorobenzene	ND	ug/l	2.5					
1,3,5-Trimethylbenzene	ND	ug/l	2.5					
1,2,4-Trimethylbenzene	ND	ug/l	2.5					
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5					
Ethyl ether	ND	ug/l	2.5					
Surrogate(s)	Recovery	_	QC Cr	iteria	а			
1,2-Dichloroethane-d4	104.	ojo						
Toluene-d8	100.	9						
4-Bromofluorobenzene	103.	g _g						
Dibromofluoromethane	102.	glo						
SVOC's by GC/MS 8270				1	8270C	0317 09:40	0320 01	:05 HL
Acenaphthene	ND	ug/l	6.0					



Laboratory Sample Number: L0502658-10

MW/CB-16 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continue	d)			1 8270C	0317 09:40 0320 01:05 HL
Benzidine	ND	ug/l	60.		
1,2,4-Trichlorobenzene	ND	ug/l	6.0		
Hexachlorobenzene	ND	ug/l	6.0		
Bis(2-chloroethyl)ether	ND	ug/l	6.0		
1-Chloronaphthalene	ND	ug/l	6.0		
2-Chloronaphthalene	ND	ug/l	7.1		
1,2-Dichlorobenzene	ND	ug/l	6.0		
1,3-Dichlorobenzene	ND	ug/l	6.0		
1,4-Dichlorobenzene	ND	ug/l	6.0		
3,3'-Dichlorobenzidine	ND	ug/l	60.		
2,4-Dinitrotoluene	ND	ug/l	7.1		
2,6-Dinitrotoluene	ND	ug/l	6.0		
Azobenzene	ND	ug/l	6.0		
Fluoranthene	10.	ug/1	6.0		
4-Chlorophenyl phenyl ether	ND	ug/l	6.0		
4-Bromophenyl phenyl ether	ND	ug/l	6.0		
Bis(2-chloroisopropyl)ether	ND	ug/l	6.0		
Bis(2-chloroethoxy)methane	ND	ug/l	6.0		
Hexachlorobutadiene	ND	ug/l	12.		
Hexachlorocyclopentadiene	ND	ug/l	12.		
Hexachloroethane	ND	ug/l	6.0		
Isophorone	ND	ug/l	6.0		
Naphthalene	ND	ug/1	6.0		
Nitrobenzene	ND	ug/1	6.0		
NDPA/DPA	ND	ug/l	18.		
n-Nitrosodi-n-propylamine	ND	ug/l	6.0		
Bis(2-ethylhexyl)phthalate	ND	ug/l	12.		
Butyl benzyl phthalate	ND	ug/l	6.0		
Di-n-butylphthalate	ND	ug/l	6.0		
Di-n-octylphthalate	ND	ug/l	6.0		
Diethyl phthalate	ND	ug/l	6.0		
Dimethyl phthalate	ND	ug/l	6.0		
Benzo(a) anthracene	ND	ug/l	6.0		
Benzo(a) pyrene	ND	ug/l	6.0		
Benzo(a) pyrene Benzo(b) fluoranthene	ND	ug/l	6.0		
Benzo(k) fluoranthene	ND	ug/l	6.0		
Chrysene	ND	ug/l	6.0		
Acenaphthylene	ND	ug/l	6.0		
Anthracene	ND	ug/l ug/l	6.0		
Benzo(ghi)perylene	ND	ug/l ug/l	6.0		
Fluorene	ND	ug/l ug/l	6.0		
Phenanthrene	6.2	ug/l ug/l	6.0		
	ND	ug/l ug/l	6.0		
Dibenzo(a,h)anthracene	ND ND	ug/l ug/l	8.3		
Indeno(1,2,3-cd)pyrene		-	6.0		
Pyrene	24.	ug/l	6.0		
Benzo(e)pyrene	ИD	ug/l			
Biphenyl	ND	ug/l	6.0		
Perylene	ND	ug/l	6.0		
Aniline	ND	ug/l	12.		



Laboratory Sample Number: L0502658-10

MW/CB-16 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continued		;**		1 8270c	0317 09:40 0320 01:05 HL
4-Chloroaniline	ND	ug/l	6.0		
1-Methylnaphthalene	ND	ug/l	6.0		
2-Nitroaniline	ND	ug/l	6.0		
3-Nitroaniline	ND	ug/l	6.0		
4-Nitroaniline	ND	ug/l	8.3		
Dibenzofuran	ND	ug/l	6.0		
a,a-Dimethylphenethylamine	ND	ug/l	60.		
Hexachloropropene	ND	ug/l	12.		
Nitrosodi-n-butylamine	ND	ug/l	12.		
2-Methylnaphthalene	ND	ug/l	9.5		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	24.		
Pentachlorobenzene	ND	ug/l	24.		
a-Naphthylamine	ND	ug/l	24.		
b-Naphthylamine	ND	ug/l	24.		
Phenacetin	ND	ug/l	12.		
Dimethoate	ND	ug/l	24.		
4-Aminobiphenyl	ND	ug/l	12.		
Pentachloronitrobenzene	ND	ug/l	12.		
Isodrin	ND	ug/l	12.		
p-Dimethylaminoazobenzene	ND	ug/l	12.		
Chlorobenzilate	ND	ug/l	24.		
3-Methylcholanthrene	ND	ug/l	24.		
Ethyl Methanesulfonate	ND	ug/l	18.		
Acetophenone	ND	ug/l	24.		
Nitrosodipiperidine	ND	ug/l	24.		
7,12-Dimethylbenz(a)anthracene		ug/l	12.		
n-Nitrosodimethylamine	ND	ug/l	60.		
2,4,6-Trichlorophenol	ND	ug/l	6.0		
p-Chloro-m-creso1	ND	ug/l	6.0		
2-Chlorophenol	ND	ug/l	7.1		
2,4-Dichlorophenol	ND	ug/l	12.		
2,4-Dimethylphenol	ND	ug/l	12.	•	
2-Nitrophenol	ND	ug/l	24.		
4-Nitrophenol	ND	ug/l	12.		
2,4-Dinitrophenol	ND	ug/l	24.		
4,6-Dinitro-o-cresol	ND	ug/l	24.		
Pentachlorophenol	ND	ug/l	24.		
Phenol	ND	ug/l	8.3		
2-Methylphenol	ND	ug/l	7.1		
3-Methylphenol/4-Methylphenol	ND	ug/l	7.1		
2,4,5-Trichlorophenol	ND	ug/l	6.0		
2,6-Dichlorophenol	ND	ug/l ug/l	12.		
Benzoic Acid	ND	ug/l	60.		
Benzyl Alcohol	ND	ug/l	12.		
Carbazole	ND	ug/l	6.0		
Pyridine	ND	ug/l ug/l	60.		
2-Picoline	ND	ug/l ug/l	24.		
Pronamide	ND ND	ug/l ug/l	24.		



Laboratory Sample Number: L0502658-10

MW/CB-16 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
SVOC's by GC/MS 8270 continu	ed			1 82700	0317 09:40 0320 01:05 HL
Surrogate(s)	Recovery			iteria	
2-Fluorophenol	41.0	8	~		
Phenol-d6	35.0	96			
Nitrobenzene-d5	92.0	96			
2-Fluorobiphenyl	88.0	8			
2,4,6-Tribromophenol	110.	96			
4-Terphenyl-d14	83.0	8			
PAH by GC/MS SIM 8270M				1 8270C-M	0317 09:40 0318 22:42 RL
Acenaphthene	ND	ug/l	0.24		
2-Chloronaphthalene	ND	ug/l	0.24		
Fluoranthene	13.	ug/l	0.24		
Hexachlorobutadiene	ND	ug/l	0.60		
Naphthalene	0.41	ug/l	0.24		
Benzo(a)anthracene	ND	ug/l	0.24		
Benzo(a)pyrene	ND	ug/1	0.24		
Benzo(b) fluoranthene	ND	ug/l	0.24		
Benzo(k) fluoranthene	ND	ug/l	0.24		
Chrysene	ND	ug/l	0.24		
Acenaphthylene	ND	ug/l	0.24		
Anthracene	ND	ug/1	0.24		
Benzo(ghi)perylene	ND	ug/l	0.24		
Fluorene	0.49	ug/l	0.24		
Phenanthrene	7.1	ug/l	0.24		
Dibenzo(a,h)anthracene	ND	ug/l	0.24		
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.24		
Pyrene	28.	ug/l	0.24		
1-Methylnaphthalene	0.27	ug/l	0.24		
2-Methylnaphthalene	ND	ug/l	0.24		
Pentachlorophenol	ND	ug/l	0.95		
Hexachlorobenzene	ND	ug/l	0.95	•	
Perylene	ND	ug/l	0.24		
Biphenyl	ND	ug/l	0.24		
2,6-Dimethylnaphthalene	ND	ug/l	0.24		
1-Methylphenanthrene	ND	ug/l	0.24		
Benzo(e) Pyrene	ND	ug/l	0.24		
Hexachloroethane	ND	ug/l	0.95		
Surrogate(s)	Recovery		OC Cr	riteria	
2-Fluorophenol	43.0	8	21-12		
Phenol-d6	36.0	000	10-12		
Nitrobenzene-d5	75.0	9	23-12		
2-Fluorobiphenyl	71.0	98	43-12		
2,4,6-Tribromophenol	78.0	96	10-12		
4-Terphenyl-dl4	75.0	%	33-12		
Polychlorinated Biphenyls				1 8082	0321 17:00 0322 16:27 AK
	MD	/ 1	0.588		
Aroclor 1221	ND	ug/l	U.588	3	

Laboratory Sample Number: L0502658-10

MW/CB-16 (GROUNDWATER)

PARAMETER	RESULT	UNITS	RDL	REF METHO	D DA	TE	ID
					PREP	ANAL	
Polychlorinated Biphenyls con	itinued			1. 8082	0321 17:00	0322 16:2	7 AK
Aroclor 1242/1016	ND	ug/l	0.588				
Aroclor 1248	ND	ug/l	0.588				
Aroclor 1254	ND	ug/l	0.588				
Aroclor 1260	ND	ug/l	0.588				
Surrogate(s)	Recovery		QC Crit	teria			
2,4,5,6-Tetrachloro-m-xylene	71.0	90	30-150				
Decachlorobiphenyl	45.0	8	30-150				
Organochlorine Pesticides				1 8081	0317 15:00	0318 19:1	2 AK
Delta-BHC	ND	ug/l	0.024				
Lindane	ND	ug/l	0.024				
Alpha-BHC	ND	ug/l	0.024				
Beta-BHC	ND	ug/l	0.024				
Heptachlor	ND	ug/l	0.024				
Aldrin	ND	ug/l	0.024				
Heptachlor epoxide	ND	ug/l	0.024				
Endrin	ND	ug/l	0.048				
Endrin aldehyde	ND	ug/l	0.048				
Endrin ketone	ND	ug/l	0.048				
Dieldrin	ND	ug/l	0.048				
4,4'-DDE	ND	ug/l	0.048				
4,4'-DDD	ND	ug/l	0.048				
4,4'-DDT	ND	ug/1	0.048				
Endosulfan I	ND	ug/l	0.024				
Endosulfan II	ND	ug/l	0.048				
Endosulfan sulfate	ND	ug/l	0.048				
Methoxychlor	ND	ug/l	0.241				
Toxaphene	ND	ug/l	0.241				
Chlordane	ND	ug/l	0.241				
cis-Chlordane	ND	ug/l	0.024				
trans-Chlordane	ND	ug/1	0.024				
Surrogate(s)	Recovery		QC Crit	eria			
2,4,5,6-Tetrachloro-m-xylene	54.0	8	30-150				
Decachlorobiphenyl	40.0	96	30-150				



MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-11

FIELD BLANK

Date Collected: 16-MAR-2005 14:15
Date Received: 16-MAR-2005

WATER

Date Reported : 24-MAR-2005

Condition of Sample:

Sample Matrix:

Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 6-Amber, 2-Plastic, 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	ID
						PREP	ANAL	
Total Metals		٠.	`					
Aluminum, Total	0.017	mg/l	0.010	1	6020	0317 12:30	0321 1	6:49 RW
Antimony, Total	ND	mg/l	0.0002	1	6020	0317 12:30	0321 1	6:49 RW
Arsenic, Total	ND	mg/l	0.0004	1	6020	0317 12:30	0321 1	6:49 RW
Barium, Total	0.0003	mg/l	0.0002	1	6020	0317 12:30	0321 1	6:49 RW
Beryllium, Total	ND	mg/l	0.0005	1	6020	0317 12:30	0321 1	6:49 RW
Cadmium, Total	ND	mg/l	0.0004	1	6020	0317 12:30	0321 1	6:49 RW
Calcium, Total	ND	mg/l	0.200	1	6020	0317 12:30	0321 1	6:49 RW
Chromium, Total	ND	mg/l	0.0002	1	6020	0317 12:30	0321 1	6:49 RW
Cobalt, Total	ND	mg/l	0.0001	1	6020	0317 12:30	0321 1	6:49 RW
Copper, Total	0.0045	mg/l	0.0005	1	6020	0317 12:30	0321 1	6:49 RW
Iron, Total	0.027	mg/l	0.010	1	6020	0317 12:30	0321 1	6:49 RW
Lead, Total	0.0003	mg/l	0.0002	1	6020	0317 12:30	0321 1	6:49 RW
Magnesium, Total	0.011	mg/l	0.010	1	6020	0317 12:30	0321 1	6:49 RW
Manganese, Total	0.0006	mg/l	0.0002	1	6020	0317 12:30	0321 1	6:49 RW
Mercury, Total	ND	mg/l	0.0002	1	7470A	0318 17:20	0321 1	.2:23 DM
Nickel, Total	ND	mg/l	0.0005	1	6020	0317 12:30	0321 1	6:49 RW
Potassium, Total	ND	mg/l	0.100	1	6020	0317 12:30	0321 1	16:49 RW
Selenium, Total	ND	mg/l	0.001	1	6020	0317 12:30	0321 1	16:49 RW
Silver, Total	ND	mg/l	0.0001	1	6020	0317 12:30	0321 1	16:49 RW
Sodium, Total	ND	mg/l	0.100	1	6020	0317 12:30	0321	16:49 RW
Thallium, Total	ND	mg/l	0.0001	1	6020	0317 12:30	0321	16:49 RW
Vanadium, Total	ND	mg/l	0.0002	1	6020	0317 12:30	0321 1	16:49 RW
Zinc, Total	0.0127	mg/l	0.0050	1	6020	0317 12:30	0321 1	L6:49 RW
Dissolved Metals								
Aluminum, Dissolved	0.018	mg/l	0.010	1	6020	0317 12:30	0321	14:59 RW
Antimony, Dissolved	ND	mg/l	0.0002		6020	0317 12:30		
Arsenic, Dissolved	ND	mg/l	0.0004	1	6020	0317 12:30	0321	14:59 RW
Barium, Dissolved	ND	mg/l	0.0002		6020	0317 12:30	0321	14:59 RW
Beryllium, Dissolved	ND	mg/l	0.0005		6020	0317 12:30	0321	14:59 RW
Cadmium, Dissolved	ND	mg/l	0.0004	1	6020	0317 12:30	0321	14:59 RW
Calcium, Dissolved	ND	mg/l	0.200	1	6020	0317 12:30	0321	14:59 RW
Chromium, Dissolved	0.0003	mg/l	0.0002	1	6020	0317 12:30	0321	14:59 RW
Cobalt, Dissolved	ND	${\sf mg/l}$	0.0001	. 1	6020	0317 12:30	0321	14:59 RW
Copper, Dissolved	0.0109	mg/l	0.0005	1	6020	0317 12:30	0321	14:59 RW
Iron, Dissolved	0.040	mg/l	0.010	1	6020	0317 12:30	0321	14:59 RW

Laboratory Sample Number: L0502658-11

FIELD BLANK

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA	TE	II
						PREP	ANAL	
Dissolved Metals							1.03.41	
Lead, Dissolved	0.0006	mg/l	0.0002	1	6020	0317 12:30	0321 14:5	9 R
Magnesium, Dissolved	ND	mg/l	0.010	1	6020	0317 12:30		
Manganese, Dissolved	0.0006	mg/l	0.0002	1	6020	0317 12:30		
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16:00		
Nickel, Dissolved	ND	mg/l	0.0005	1	6020	0317 12:30		
Potassium, Dissolved	ND	mg/l	0.100	1	6020	0317 12:30		
Selenium, Dissolved	ND	mg/l	0.001	1	6020	0317 12:30		
Silver, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30		
Sodium, Dissolved	ND	mg/l	0.100	1	6020	0317 12:30		
Thallium, Dissolved	ND	mg/l	0.0001	1	6020	0317 12:30		
Vanadium, Dissolved	ND	mg/l	0.0002	1	6020	0317 12:30		
Zinc, Dissolved	0.0282	mg/l	0.0050	1	6020	0317 12:30		
	0.0202	97 =	0.0000		0020	0317 12.30	0321 14,3:	9 KI
Volatile Organics by GC/MS 8				1	8260B	V	0318 18:4	1 B
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Trichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Bromodichloromethane	ND	ug/l	0.50					
trans-1,3-Dichloropropene	ND	ug/l	0.50					
cis-1,3-Dichloropropene	ND	ug/l	0.50					
1,1-Dichloropropene	ND	ug/l	2.5	-				
Bromoform	ND	ug/l	2.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Chloromethane	ND	ug/l	2.5					
Bromomethane	ND	ug/l	1.0					
Vinyl chloride	ND	ug/l	1.0					
Chloroethane	ND	ug/l	1.0					
l,l-Dichloroethene	ND	ug/l	0.50					
trans-1,2-Dichloroethene	ND	ug/l	0.75					
Trichloroethene	ND	ug/l	0.50					
1,2-Dichlorobenzene	ND	ug/l	2.5					
l,3-Dichlorobenzene	ND	ug/l	2.5					
l,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/l	1.0					
o/m-Xylene	ND	ug/l	0.50					
o-Xylene	ND	ug/l	0.50					



Laboratory Sample Number: L0502658-11

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
				and the second s	
Volatile Organics by GC/MS 82	260 continu	ied .	1 . Pa -	1 8260B	0318 18:41 BT
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	32.	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50		
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50	•	
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	2.5		
n-Propylbenzene	ND	ug/l	0.50		
1,2,3-Trichlorobenzene	ND	ug/l	2.5		
1,2,4-Trichlorobenzene	ND	ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
Surrogate(s)	Recover	у	QC C	riteria	
1,2-Dichloroethane-d4	105.	8			
Toluene-d8	99.0	ક			
4-Bromofluorobenzene	104.	%			
Dibromofluoromethane	107.	8			
SVOC's by GC/MS 8270				1 8270C	0317 09:40 0320 01:30 F
Acenaphthene	ND	ug/l	5.0		

Laboratory Sample Number: L0502658-11

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 continu	ed ·	1,24	1 1	1 8270C	0317 09:40 0320 01:30 HL
Benzidine	ND	ug/l	50.	. 1 02/00	0313 09:40 0320 01:30 HI
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ND	ug/l	5.0		
l-Chloronaphthalene	ND	ug/l	5.0		
2-Chloronaphthalene	ND	ug/l	6.0		
l,2-Dichlorobenzene	ND	ug/l	5.0		
l,3-Dichlorobenzene	ND	ug/l	5.0		
l,4-Dichlorobenzene	ND	ug/l	5.0		
3,3'-Dichlorobenzidine	ND	ug/l	50.		
2,4-Dinitrotoluene	ND	ug/l	6.0		
2,6-Dinitrotoluene	ND	ug/l	5.0		
Azobenzene	ND	ug/l	5.0		
Fluoranthene	ND	ug/l	5.0		
-Chlorophenyl phenyl ether	ND	ug/l	5.0		
-Bromophenyl phenyl ether	ND	ug/l	5.0		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0		
Bis(2-chloroethoxy)methane	ND	ug/l	5.0		
lexachlorobutadiene	ND	ug/l	10.		
Mexachlorocyclopentadiene	ND	ug/l	10.		
lexachloroethane	ND	ug/l	5.0		
sophorone	ND	ug/l	5.0		
Taphthalene	ND	ug/l	5.0		
itrobenzene	ND	ug/l	5.0		
DPA/DPA	ND	ug/l	15.		
-Nitrosodi-n-propylamine	ND	ug/l	5.0		
is(2-ethylhexyl)phthalate	ND	ug/l	10.		
utyl benzyl phthalate	ND	ug/l	5.0		
i-n-butylphthalate	ND	ug/l	5.0		
i-n-octylphthalate	ND	ug/l	5.0		
iethyl phthalate	ND	ug/l	5.0		
imethyl phthalate	ND	ug/l	5.0	•	
enzo(a)anthracene	ND	ug/l	5.0		
enzo(a)pyrene	ND	ug/l	5.0		
enzo(b)fluoranthene	ND	ug/l	5.0		
enzo(k)fluoranthene	ND	ug/l	5.0		
hrysene	ND	ug/l	5.0		
cenaphthylene	ND	ug/l	5.0		
nthracene	ND	ug/l	5.0		
enzo(ghi)perylene	ND	ug/l	5.0		
luorene	ND	ug/l	5.0		
henanthrene	ND	ug/l	5.0		
ibenzo(a,h)anthracene	ND	ug/l ug/l	5.0		
ndeno(1,2,3-cd)pyrene	ND	ug/l	7.0		
yrene	ND	ug/l ug/l	5.0		
enzo(e)pyrene	ND	ug/l ug/l			
iphenyl	ND	ug/l ug/l	5.0		
· 4 =	ME	uy/I	5.0		
erylene	ND	ug/l	5.0		



Laboratory Sample Number: L0502658-11

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE I PREP ANAL
			-	1 8270C	0317 09:40 0320 01:30 F
SVOC's by GC/MS 8270 continue	a ND	ug/l	5.0		
4-Chloroaniline	ND ND	ug/l	5.0		
1-Methylnaphthalene		ug/l	5.0		
2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l	7.0		
4-Nitroaniline	ND	ug/l	5.0		
Dibenzofuran	ND	ug/1	50.		
a,a-Dimethylphenethylamine	ND	ug/l	10.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/1	8.0		
2-Methylnaphthalene	ND	ug/1	20.		
1,2,4,5-Tetrachlorobenzene	ND ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND ND	ug/l	20.		
b-Naphthylamine		ug/l	10.		
Phenacetin	ND	ug/1 ug/l	20.		
Dimethoate	ND	ug/l	10.		
4-Aminobiphenyl	ND	ug/1 ug/1	10.		
Pentachloronitrobenzene	ND	ug/1	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/1	20.		
Chlorobenzilate	ND	-	20.		
3-Methylcholanthrene	ND	ug/l	15.		
Ethyl Methanesulfonate	ND	ug/l	20.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	10.		
7,12-Dimethylbenz(a)anthrace	ne ND	ug/l	50.		
n-Nitrosodimethylamine	ND	ug/l	5.0		
2,4,6-Trichlorophenol	ND	ug/1	5.0		
p-Chloro-m-cresol	ND	ug/l	6.0		
2-Chlorophenol	ND	ug/l	10.		
2,4-Dichlorophenol	ND	ug/l	10.		
2,4-Dimethylphenol	ND	ug/l	20.		
2-Nitrophenol	ND	ug/l	10.		
4-Nitrophenol	ND	ug/l	20.		
2,4-Dinitrophenol	ND	ug/l	20.		
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l			
Phenol	ND	ug/l	7.0		
2-Methylphenol	ND	ug/l	6.0		
3-Methylphenol/4-Methylpheno	ol ND	ug/1	6.0		
2,4,5-Trichlorophenol	ND	ug/l	5.0		
2,6-Dichlorophenol	ND	ug/l	10.		
Benzoic Acid	ND	ug/l	50.		
Benzyl Alcohol	ND	ug/l	10.		
Carbazole	ND	ug/l	5.0		
Pyridine	ND	ug/l	50.		
2-Picoline	ND	ug/l	20.		
Pronamide	ND	ug/l	20.		
Methyl methanesulfonate	ND	ug/l	20.		

Laboratory Sample Number: L0502658-11

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
SVOC's by GC/MS 8270 contin	nued		and Perjancing	1 8270C	0317 09:40 0320 01:30 HL
Surrogate(s)	Recovery		QC Cri		4911 02:40 9320 01:30 HE
2-Fluorophenol	36.0	8			
Phenol-d6	26.0	8			
Nitrobenzene-d5	77.0	of			
2-Fluorobiphenyl	73.0	ે			
2,4,6-Tribromophenol	86.0	ક			
4-Terphenyl-d14	97.0	8			
PAH by GC/MS SIM 8270M		× ×		1 8270C-M	**************************************
Acenaphthene	ND	ug/l	0.20	1 0210C-M	0317 09:40 0318 23:27 RL
2-Chloronaphthalene	ND	ug/l	0.20		
Fluoranthene	ND	ug/l	0.20		
Hexachlorobutadiene	ND	ug/l	0.50		
Naphthalene	ND	ug/l	0.20		
Benzo(a)anthracene	ND	ug/l	0.20		
Benzo(a)pyrene	ND	ug/l	0.20		
Benzo(b)fluoranthene	ND	ug/l	0.20		
Benzo(k)fluoranthene	ND	ug/l	0.20		
Chrysene	ND	ug/l	0.20		
Acenaphthylene	ND	ug/l	0.20		
Anthracene	ND	ug/l	0.20		
Benzo(ghi)perylene	ND	ug/l	0.20		
Fluorene	ND	ug/l	0.20		
Phenanthrene	ND	ug/l	0.20		
Dibenzo(a,h)anthracene	ND	ug/l	0.20		
Indeno(1,2,3-cd)Pyrene	ND	ug/l			
Yrene	ND	ug/l	0.20		
- L-Methylnaphthalene	ND		0.20		
2-Methylnaphthalene	ND	ug/l	0.20		
Pentachlorophenol	ND	ug/l	0.20		
[exachlorobenzene	ND	ug/l	0.80		
erylene	ND	ug/l	0.80	-	
Siphenyl	ND	ug/l	0.20		
,6-Dimethylnaphthalene	ND	ug/l	0.20		
-Methylphenanthrene	ND	ug/l	0.20		
enzo(e) Pyrene		ug/l	0.20		
exachloroethane	ND ND	ug/l ug/l	0.20 0.80		
urrogate(s)	Done	-			
-Fluorophenol	Recovery	9	QC Crit	eria	
henol-d6	38.0	8	21-120		
itrobenzene-d5	28.0	8	10-120		
-Fluorobiphenyl	64.0	8	23-120		
-ridorobiphenyi ,4,6-Tribromophenol	63.0	8	43-120		
-Terphenyl-dl4	68.0	%	10-120		
тетриенут-ат4	87.0	୍ଷ	33-120		
olychlorinated Biphenyls				1 8082	0317 13:00 0318 16:24 AK
roclor 1221	ND	ug/l	0.575	_	10:00 0010 10:54 WV
roclor 1232	ND	ug/l	0.575		



Laboratory Sample Number: L0502658-11

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PARAMETER	RESULT	UNITS	RDL I	REF METHOD	DATE ID PREP ANAL
				1 8082	0317 13:00 0318 16:24 AK
Polychlorinated Biphenyls cont		ug/l	0.575	1 0000	
Aroclor 1242/1016	ND	ug/l	0.575		
Aroclor 1248	ND	-	0.575		
Aroclor 1254	ND	ug/1	0.575		
Aroclor 1260	ND	ug/l	0.575		
Surrogate(s)	Recovery		QC Crit	eria	
2,4,5,6-Tetrachloro-m-xylene	75.0	96	30-150		
Decachlorobiphenyl	66.0	8	30-150		
				1 8081	0317 15:00 0318 19:40 AK
Organochlorine Pesticides		ug/l	0.023		
Delta-BHC	ND	ug/1	0.023		
Lindane	ND	ug/1	0.023		
Alpha-BHC	ND	ug/l	0.023		
Beta-BHC	ND	ug/l ug/l	0.023		
Heptachlor	ND	-	0.023		
Aldrin	ND	ug/l ug/l	0.023		
Heptachlor epoxide	ND	ug/l ug/l	0.046		
Endrin	ND	ug/l ug/l	0.046		
Endrin aldehyde	ND	_	0.046		
Endrin ketone	ND	ug/l	0.046		
Dieldrin	ND	ug/l	0.046		
4,4'-DDE	ND	ug/l	0.046		
4,4'-DDD	ND	ug/l	0.046		
4,4'-DDT	ND	ug/l	0.023		
Endosulfan I	ND	ug/l	0.023		
Endosulfan II	ND	ug/l	0.046		
Endosulfan sulfate	ND	ug/l	0.230		
Methoxychlor	ND	ug/l			
Toxaphene	ND	ug/l	0.230		
Chlordane	ND	ug/l	0.230	-	
cis-Chlordane	ND	ug/l	0.023		
trans-Chlordane	ND	ug/l	0.023		
Surrogate(s)	Recovery		QC Cri		
2,4,5,6-Tetrachloro-m-xylene	64.0	%	30-150)	
Decachlorobiphenyl	72.0	%	30-150)	

ALPHA ANALYTICAL LABORATORIES CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0502658-12

Date Collected: 11-MAR-2005 15:30

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Date Received : 16-MAR-2005

Sample Matrix:

WATER

Date Reported : 24-MAR-2005

Condition of Sample:

Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE II	
					PREP AI	NAL
Volatile Organics by GC/MS	8260	ANDER O		1 8260B	0.04.0	a pina bilandar
Methylene chloride	ND	uq/l	5.0	1 02000	0318	19:17 BT
1,1-Dichloroethane	ND	ug/l	0.75			
Chloroform	ND	ug/l	0.75			
Carbon tetrachloride	ND	ug/l	0.50			
1,2-Dichloropropane	ND	ug/l	1.8			
Dibromochloromethane	ND	ug/l	0.50			
1,1,2-Trichloroethane	ND	ug/l	0.75			
Tetrachloroethene	ND	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
Trichlorofluoromethane	ND	ug/l	2.5			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
1,1-Dichloropropene	ND	ug/l				
Bromoform	ND	ug/l ug/l	2.5			
1,1,2,2-Tetrachloroethane	ND	-	2.0			
Benzene	ND	ug/l	0.50			
Toluene	ND	ug/l	0.50			
Ethylbenzene	ND	ug/l	0.75	•		
Chloromethane	ND	ug/l	0.50			
Bromomethane		ug/l	2.5			
Vinyl chloride	ND ND	ug/l	1.0			
Chloroethane	_	ug/l	1.0			
l,1-Dichloroethene	ND	ug/l	1.0			
trans-1,2-Dichloroethene	ND	ug/l	0.50			
Frichloroethene	ND	ug/l	0.75			
l,2-Dichlorobenzene	ND	ug/l	0.50			
1,3-Dichlorobenzene	ND	ug/l	2.5			
	ND	ug/l	2.5			
1,4-Dichlorobenzene	ND	ug/l	2.5			
Methyl tert butyl ether	ND	ug/l	1.0			
o/m-Xylene	ND	ug/l	0.50			
o-Xylene	ND	ug/l	0.50			
cis-1,2-Dichloroethene	ND	ug/l	0.50			
Dibromomethane	ND	ug/l	5.0			
.,4-Dichlorobutane	ND	ug/l	5.0			
Codomethane	ND	ug/l	5.0			

Comments: Complete list of References and Glossary of Terms found in Addendum I

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ALPHA ANALYTICAL LABORATORIES CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0502658-12

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DAT PREP	E ID
	60 mant Page	. a3	- 1	1 8260B		0318 19:17 BT
Volatile Organics by GC/MS 82		eu /1	5.0	1 02000		
1,2,3-Trichloropropane	ND	ug/l	0.50			
Styrene	ND	ug/l	5.0			
Dichlorodifluoromethane	ND	ug/l				
Acetone	ND	ug/l	5.0			
Carbon disulfide	ND	ug/l	5.0			
2-Butanone	ND	ug/l	5.0			
Vinyl acetate	ND	ug/l	5.0			
4-Methyl-2-pentanone	ND	ug/l	5.0			
2-Hexanone	ND	ug/l	5.0			
Ethyl methacrylate	ND	ug/l	5.0			
Acrolein	ND	ug/l	12.			
Acrylonitrile	ND	ug/l	5.0			
Bromochloromethane	ND	ug/l	2.5			
Tetrahydrofuran	ND	ug/l	10.			
2,2-Dichloropropane	ND	ug/l	2.5			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
Bromobenzene	ND	ug/l	2.5			
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	ug/l	0.50			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
Isopropylbenzene	ND	ug/l	0.50			
p-Isopropyltoluene	ND	ug/l	0.50			
Naphthalene	ND	ug/l	2.5			
n-Propylbenzene	ND	ug/l	0.50			
1,2,3-Trichlorobenzene	ND	ug/l	2.5	•		
1,2,4-Trichlorobenzene	ND	ug/l	2.5			
1,3,5-Trimethylbenzene	ND	ug/l	2.5			
1,2,4-Trimethylbenzene	ND	ug/l	2.5			
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5			
Ethyl ether	ND	ug/l	2.5			
Surrogate(s)	Recovery		QC Cr	iteria		
1,2-Dichloroethane-d4	109.	%				
Toluene-d8	103.	8				
4-Bromofluorobenzene	108.	8				
Dibromofluoromethane	104.	F	*			

Laboratory Job Number: L0502658

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Total	Metals for samp	ole(s):.01-1	/ /T:0502658	i_ni tani	06610.11
Aluminum, Total	0.211	0.220	mg/l	0	20
Antimony, Total	ND	ND	mg/l	NC	20
Arsenic, Total	ND	ND	mg/l	NC	
Barium, Total	0.1569	0.1597	mg/l	2	20 20
Beryllium, Total	ND	ND	mg/l	NC	20
Cadmium, Total	ND	ND	mg/l	NC	20
Calcium, Total	62.1	63.0	mg/l	1	20
Chromium, Total	0.0015	0.0012	mg/l	22	20
Cobalt, Total	0.0006	0.0006	mg/1	2	
Copper, Total	0.0024	0.0022	mg/l	5	20
Iron, Total	0.640	0.620	mg/l	3	20
Lead, Total	0.0025	0.0019	=		20
Magnesium, Total	16.2	16.4	mg/l	25	20
Manganese, Total	0.2340	0.2390	mg/l	1	20
Nickel, Total	0.0019		mg/l	2	20
Potassium, Total	9.57	0.0019	mg/l	1	20
Selenium, Total	0.002	9.77	mg/l	2	20
Silver, Total		0.002	mg/l	4	20
Sodium, Total	ND	ND	mg/l	NC	20
Thallium, Total	114.	116.	mg/l	2	20
Janadium, Total	ND	ND	mg/l	NC	20
Zinc, Total	0.0010 0.0061	0.0010 ND	mg/l mg/l	3 NC	20 20
Total 1 fercury, Total	Metals for samp	le(s) 01-11	11.0502658	0.2 taca c	Secon my
icrodry, rocar	ND	ND	mg/l	NC	20
		ND	mg/l	NC	20
Dissolve	d Metals for sa	ND mple(s) 01-	mg/l 11 (L05026	NC 58-01, WG	20 3196664-1)
Dissolved	d Metals for sa 0.013	ND mple(s) 01- 0.023	mg/l 11 (L05026 mg/l	NC 58-01, WG 52	20 3196664-1) 20
Dissolved Aluminum, Dissolved Antimony, Dissolved	d Metals for sa 0.013 0.0017	ND mple(s) 01- 0.023 0.0017	mg/l 11 (L05026 mg/l mg/l	NC 58-01, WG 52 2	20 3196664-1) 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved	d Metals for sa 0.013 0.0017 ND	ND mple(s) 01- 0.023 0.0017 ND	mg/l 11 (L05026. mg/l mg/l mg/l	NC 58-01, WG 52 2 NC	20 \$196664-1) 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364	ND mple(s) 01- 0.023 0.0017 ND 0.1373	mg/l 11 (L05026) mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1	20 \$196664-1) 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND	mg/l 11 (L05026 mg/l mg/l mg/l mg/l mg/l mg/l mg/l .	NC 58-01, WG 52 2 NC 1 NC	20 \$196664-1) 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Badmium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND	mg/l 11 (L05026 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1 NC NC	20 \$196664-1) 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Badmium, Dissolved Balcium, Dissolved Balcium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND ND 54.0	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND ND 54.3	mg/l 11 (L05026 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1 NC NC	20 \$196664-1) 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Badmium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005	mg/l 11 (L05026. mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Badmium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004	mg/l 11 (L05026. mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Baryllium, Dissolved Badmium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved Balcium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243	mg/l 11 (L05026. mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved aluminum, Dissolved antimony, Dissolved arsenic, Dissolved arium, Dissolved admium, Dissolved alcium, Dissolved alcium, Dissolved alcium, Dissolved alcium, Dissolved abalt, Dissolved opper, Dissolved ron, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144	mg/l 11 (L05026. mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved aluminum, Dissolved antimony, Dissolved arsenic, Dissolved arium, Dissolved admium, Dissolved alcium, Dissolved alcium, Dissolved alcium, Dissolved alcium, Dissolved antonium, Dissolved apper, Dissolved apper, Dissolved acd, Dissolved acd, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015	mg/l 11 (L05026. mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved antimony, Dissolved arsenic, Dissolved arium, Dissolved arium, Dissolved admium, Dissolved alcium, Dissolved alcium, Dissolved alcium, Dissolved alcium, Dissolved aronium, Dissolved apper, Dissolved apper, Dissolved add, Dissolved agnesium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC 1 0 0 17 16 1	20 \$196564-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Baryllium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved Bardmium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3 0.1488	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5 0.1491	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0 17 16 1 0	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Barium, Dissolved Bardium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3 0.1488 0.0062	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5 0.1491 0.0063	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0 17 16 1 0 1	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Barium, Dissolved Bardium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3 0.1488 0.0062 9.92	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5 0.1491 0.0063 9.93	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0 17 16 1 0 1	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Bardium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3 0.1488 0.0062 9.92 0.002	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5 0.1491 0.0063 9.93 0.002	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0 17 16 1 0 1	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3 0.1488 0.0062 9.92 0.002 ND	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5 0.1491 0.0063 9.93 0.002 ND	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0 17 16 1 0 1	20 3196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Beryllium, Dissolved Beryllium, Dissolved Beryllium, Dissolved Berdium, Disso	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3 0.1488 0.0062 9.92 0.002 ND 101.	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5 0.1491 0.0063 9.93 0.002 ND 102.	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC NC 1 10 0 0 17 16 1 0 1	20 \$196664-1) 20 20 20 20 20 20 20 20 20 20
Dissolved Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Baryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Copper, Dissolved Laguesium, Dissolved	d Metals for sa 0.013 0.0017 ND 0.1364 ND ND 54.0 0.0005 0.0004 0.0242 0.121 0.0013 14.3 0.1488 0.0062 9.92 0.002 ND	ND mple(s) 01- 0.023 0.0017 ND 0.1373 ND ND 54.3 0.0005 0.0004 0.0243 0.144 0.0015 14.5 0.1491 0.0063 9.93 0.002 ND	mg/l 11 (L05026. mg/l	NC 58-01, WG 52 2 NC 1 NC 1 0 0 17 16 1 0 1 NC	20 3196664-1) 20 20 20 20 20 20 20 20 20 20

Laboratory Job Number: L0502658

Parameter		Value 1	. Value	2 Ur	nits	RPD	RPD Limits	
Zinc, Dissolved	Dissolved Me		sample(s) 0.0175				3196664-1) 20	ı
Mercury, Dissolv	Dissolved Me	tals for	sample(s) ND				G196603-3) 20	

Laboratory Job Number: L0502658

Parameter	% Recovery	QC Criteria	
Total Metals LCS fo	or sample(s) 01-11 (WG196610-4)	
Aluminum, Total	96	80-120	
Antimony, Total	97	80-120	
Arsenic, Total	96	80-120	
Barium, Total	99	80~120	
Beryllium, Total	92	80-120	
Cadmium, Total	107	80-120	
Calcium, Total	102	80-120	
Chromium, Total	101	80-120	
Cobalt, Total	102	80-120	
Copper, Total	104		
Iron, Total	104	80-120	
Lead, Total	104	80-120	
Magnesium, Total	102	80-120	
Manganese, Total	102	80-120	
Nickel, Total		80-120	
Potassium, Total	104	80-120	
Selenium, Total	102	80-120	
Silver, Total	96	80-120	
Sodium, Total	103	80-120	
Thallium, Total	94	80-120	
Vanadium, Total	98	80-120	
vanadiam, 10cai	101	80-120	
Zinc, Total	101	80-120	
Total Metals LCS fo	101 r sample(s) 01-11 (80-120	
	101	80-120	
Total Metals LCS fo Mercury, Total Dissolved Metals LCS	101 r sample(s) 01-11 (1	80-120 % G196690-1) 70-130	
Total Metals LCS fo Mercury, Total Dissolved Metals LCS	101 r sample(s) 01-11 (1	80-120 % G196690-1) 70-130	
Total Metals LCS fo Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved	101 r sample(s) 01-11 (V 108 for sample(s) 01-11	80-120 NG196690+1) 70-130 (WG196664-4)	
Total Metals LCS fo Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved	101 r sample(s) 01-11 (V 108 for sample(s) 01-11	80-120 WG196690-1) 70-130 (WG196664-4) 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Cadmium, Dissolved	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 93 95	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Cadmium, Dissolved Calcium, Dissolved Calcium, Dissolved Calcium, Dissolved	101 r sample(s) 01-11 (1 108 for sample(s) 01-11 94 94 93 95 90	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Calcium, Dissolved Chromium, Dissolved Chromium, Dissolved	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 93 95 90 105	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved	101 r sample(s) 01-11 (v 108 for sample(s) 01-11 94 94 94 93 95 90 105 96	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 95 90 105 96 99	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Barium, Dissolved Baryllium, Dissolved Bardium, D	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 95 90 105 96 99 100 100	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved Barium, Dissolved	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100 100 100	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100 100 101 98	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100 100 101 98 100	80-120 WG196690-1) 70-130 (WG196664-4) 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100 100 101 98 100 101	80-120 WG196690-1) 70-130 (WG196664-4) 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100 100 100 101 98 100 101 98	80-120 WG196690-1) 70-130 (WG196664-4) 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100 100 101 98 100 101 98 95	80-120 WG196690-1) 70-130 (WG196664-4) 80-120	
Total Metals LCS for Mercury, Total Dissolved Metals LCS Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Bar	101 r sample(s) 01-11 (108 for sample(s) 01-11 94 94 94 93 95 90 105 96 99 100 100 100 100 101 98 100 101 98 95 101	80-120 WG196690-1) 70-130 (WG196664-4) 80-120	

Laboratory Job Number: L0502658

sample(s) 01-11 (WG196664-4)
98 80-120
sample(s) 01-11 (WG196603-1)
101 70-130
LCS for sample(s) 01-12 (WG196730-3)
85
81
8 4
86
82
120
104
100
111
for sample(s) 01-11 (WG196578-2)
118
55
68
50
49
148
91
92
141
46
92
45
86
5 4
85
58
62
95
127
99
24
35
30
71
72
114
101

Laboratory Job Number: L0502658

Parameter	% Recover	y QC Crite	ria	
PAH by GC/MS SIM 8270M LCS	for sample(s)	01-11 (WG19	6576~2)	
Acenaphthene	55	46-118	,	**
2-Chloronaphthalene	57			
Fluoranthene	76			
Anthracene	4 4			
Pyrene	63	26-127		
Pentachlorophenol	85	9-103		
Surrogate(s)				
2-Fluorophenol	45	21-120		
Phenol-d6	38	10-120		
Nitrobenzene-d5	65	23-120		
2-Fluorobiphenyl	57	43-120		
2,4,6-Tribromophenol	87	10-120		
4-Terphenyl-d14	71	33-120		
Polychlorinated Biphenyls LCS for	sample(s) 01.0	04,06-08.11	(WG196594-2)	
Aroclor 1242/1016	84	30-150	(40130334 2)	
Aroclor 1260	97	30-150		
Surrogate(s)				
2,4,5,6-Tetrachloro-m-xylene	81	30-150		
Decachlorobiphenyl	80	30-150		
Polychlorinated Biphenyls LCS for	sample(s) 02-0	3 05 00-10	(WC106066 3)	
Aroclor 1242/1016	59	30-150	(#9130303-2)	
Aroclor 1260	76	30-150		
Surrogate(s)				
2,4,5,6-Tetrachloro-m-xylene	50	30-150		
Decachlorobiphenyl	74	30-150		
Organochlorine Pesticides LC	S for sample(s)	01-11 (WC1	9665321	
Delta-BHC	58	01 11 (1101	30033 27	
Lindane	60			
Alpha-BHC	60			
Beta-BHC	56			
Heptachlor	53			
Aldrin	49			
Heptachlor epoxide	59			
Endrin	71			
Endrin aldehyde	55			
Endrin ketone	91			
Dieldrin	61			
4,4'-DDE	60			
1,4'-DDD	65			
1,4'-DDT	68			
Endosulfan I	59			
Endosulfan II	65			

Laboratory Job Number: L0502658

Parameter	% Recovery	QC Criteria	
Organochlorine Pesticides LCS	for sample(s)	01-11 (WG196653-2)	the state of the state of
Endosulfan sulfate	93		
Methoxychlor	7 4		
ris-Chlordane	60		
trans-Chlordane	56		
Surrogate(s)		20. 150	
2,4,5,6-Tetrachloro-m-xylene	49	30-150	
Decachlorobiphenyl	51	30-150	
Total Metals SPIKE for sample(s) 01-11 (L050	2658-01, WG196610-2)	
Aluminum, Total	108	80-120	
Antimony, Total	103	80-120	
Arsenic, Total	107	80-120	
Barium, Total	106	80-120	
Beryllium, Total	110	80-120	
Cadmium, Total	114	80-120	
Calcium, Total	127	80-120	
Chromium, Total	104	80-120	
Cobalt, Total	106	80-120	
Copper, Total	108	80-120	
Iron, Total	118	80-120	
Lead, Total	110	80-120	
Magnesium, Total	118	80-120	
Manganese, Total	113	80-120	
Nickel, Total	108	80-120	
Potassium, Total	119	80~120	
Selenium, Total	100	80-120	
Silver, Total	107	80-120	
Sodium, Total	160	80-120	
Thallium, Total	102	80-120	
Vanadium, Total	105	80-120	
Zinc, Total	122	80-120	
Total Metals SPIKE for sample	(s) 01-11 (L05	02658- 0 3, W G196690-2)	
Mercury, Total	132	70-130	
Dissolved Metals SPIKE for samp	le(s) 01-11 (L	0502658-01, WG196664-2)
Aluminum, Dissolved	99	80-120	
Antimony, Dissolved	97	80-120	
Arsenic, Dissolved	103	80-120	
Barium, Dissolved	101	80-120	
Beryllium, Dissolved	105	80-120	
Cadmium, Dissolved .	107	80-120	
Calcium, Dissolved	130	80-120	
Chromium, Dissolved	99	80-120	
Cobalt, Dissolved	102	80-120	
	103	80-120	
Copper, Dissolved	100	80-120	

Laboratory Job Number: L0502658

Parameter	% Recovery QC Criteria
Dissolved Metals	SPIKE for sample(s) 01-11 (L0502658-01, WG196664-2)
Lead, Dissolved	104 80-120
Magnesium, Dissolved	110 80-120
Manganese, Dissolved	102 80-120
Nickel, Dissolved	102 80-120
Potassium, Dissolved	107 80-120
Selenium, Dissolved	101 80-120
Silver, Dissolved	98 80-120
Sodium, Dissolved	110 80-120
Thallium, Dissolved	98 80-120
Vanadium, Dissolved	100 80-120
Zinc, Dissolved	102 80-120
Dissolved Metals	SPIKE for sample(s) 01-11 (L0502658-03, WG196603-2)
Mercury, Dissolved	116 70-130

Laboratory Job Number: L0502658

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limi
Volatile Organics by GC/MS 826	50 for sample	e(s) 01-12	(L0502658-01	, wg196730-2)	,
Chlorobenzene	103	97	6		
Benzene .	104	97	7		
Toluene .	103	100	3		
1,1-Dichloroethene	104	100	4		
Trichloroethene	107	98	9		
Surrogate(s)					
1,2-Dichloroethane-d4	116	114	2		
Foluene-d8	103	105	2		
4-Bromofluorobenzene	97	97	0		
Dibromofluoromethane	115	111	4		
SVOC's by GC/MS 8270 for			02658-01, WG1	96578-4)	
Acenaphthene	79	84	6		
1,2,4-Trichlorobenzene	70	75	7		
2-Chloronaphthalene	79	8 4	6		
1,2-Dichlorobenzene	62	62	0		
1,4-Dichlorobenzene	62	62	0		
2,4-Dinitrotoluene	97	92	5		
2,6-Dinitrotoluene	97	92	5		
Fluoranthene	100	97	3		
4-Chlorophenyl phenyl ether	97	92	5		
n-Nitrosodi-n-propylamine	53	53	0		
Butyl benzyl phthalate	100	92	8		
Anthracene	44	44	0		
Pyrene	97	92	5		
Hexachloropropene	79	79	0		
P-Chloro-M-Cresol	97	99	2		
2-Ch1orophenol	66	68	3		
2-Nitrophenol	70	73	4		
4-Nitrophenol	95	94	0 -		
2,4-Dinitrophenol	86	84	2		
Pentachlorophenol	112	106	0		
Phenol	46	48	4		
Surrogate(s)					
2-Fluorophenol	48	50	4		
Phenol-d6	59	61	3		
Nitrobenzene-d5	78	82	5		
2-Fluorobiphenyl	88	91	3		
2,4,6-Tribromophenol	117	110	6		
4-Terphenyl-d14	110	104	6		
PAH by GC/MS SIM 8270M f	or sample(s)	01-11 (LC)502658-01, W(G196576-4)	
Acenaphthene	62	66	6	40	46-118
2-Chloronaphthalene	70	75	7	40	
Fluoranthene	88	88	0	40	
Anthracene	44	48	9	40	

Laboratory Job Number: L0502658

PAIR by GC/MS SIM 8270M for sample(s) 01-11 (L0502658-01, WG196576-4) According 124 (a) 26-127 (b) Permachable phenol 70 (b) 70 (c) 40 (c) 26-127 (c) Permachable phenol 70 (c) 70 (c) 40 (c) 26-127 (c) Permachable phenol 80 (c) 3 (c) 21-120 (c) Permachable phenol 67 (c) 69 (c) 3 (c) 10-120 (c) Permachable phenol 77 (c) 73 (c) 4 (c) 10-120 (c) Permachable phenol 77 (c) 73 (c) 10-120 (c) Permachable phenol 77 (c) 76 (c) 10 (c) 20-120 (c) 20-	Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Pyrene	PAH by GC/MS SIM 8270M	for sample(s) 01-11 (T.050	12658_01	WC10GE76 W	
Pentachlorophenol 99	Pyrene					
2-Fluorophenol Phenol-d6 70 70 73 4 1 10-120 Ntrobenzene-d5 82 83 1 23-120 2-Fluorophiphenyl 73 74 1 34 10-120 2-Fluorophiphenyl 73 74 1 34 10-120 4-Terphenyl-d14 77 76 1 33-120 4-Terphenyl-d14 77 76 1 33-120 4-Terphenyl-d14 77 76 1 30 30 30-150 Arcolor 1242/1016 77 77 0 30 30 30-150 Arcolor 1242/1016 77 77 0 30 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 79 75 5 3 30-150 Becachlorobiphenyl 78 76 3 30-150 Folychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Arcolor 1242/1016 67 71 6 30 30-150 Folychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Arcolor 1242/1016 67 71 6 30 30-150 Folychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Arcolor 1242/1016 67 71 6 30 30-150 Folychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Arcolor 1242/1016 79 80 1 30 30-150 Folychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196659-4) Arcolor 1242/1016 79 80 1 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30 30-150 Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-02, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-02, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-02, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-02, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-02, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-02, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-05, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-05, WG196653-4) Folychlorinated Biphenyls for sample(s) 01-11 (L0502658-05, WG196653-4) Folychlorinated Biphenyls for sample(s) 02-05,09-10 (L0502658-05, WG196659-10 Folychlorinated Biphenyls for sample(s) 02-05,09-10 (L0502658-05, WG196659-10 Folychlorinated Biphenyls for sample(s) 02-05,09-10 (L0502658-05, WG19669-10 Folychlorinated Biphenyls for sample(s) 02-05,09-10 (L0502658-05, WG19669-10 Foly	Pentachlorophenol					
2-Flurophenol Phenol-d6 70 77 73 4 1 10-120 Nitrobenzene-d5 82 83 1 23-120 2-Fluorobiphenyl 73 74 1 3 4 31-120 2-Fluorobiphenyl 73 74 1 3 4 10-120 A-Terphenyl-d14 77 76 1 3 30 30-120 4-Terphenyl-d14 77 76 1 3 30 30-150 Arcolor 1242/1016 77 77 0 30 30 30-150 Arcolor 1242/1016 77 77 0 30 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 79 75 5 5 3 30-150 Pecachlorobiphenyl 78 76 3 3 30-150 Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Arcolor 1242/1016 79 80 1 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 79 75 5 5 3 30-150 Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Arcolor 1242/1016 67 71 6 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 84 66 16 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 85 66 62 16 83 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 86 86 16 83 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 86 86 16 83 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 86 86 16 86 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 86 86 16 86 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 86 86 10 30 30-150 Beta-BHC 74 79 70 30 4 30 4 30 4 4 30	Surrogate(s)					
Phenol-d6	2-Fluorophenol	67	69	3		21 120
Nitrobenzene-d5	-					
2-Fluorobiphenyl 73 74 1 43-120 2.4,6-Tribromophenol 97 91 6 10-120 4-Terphenyl-d14 77 76 1 33-120 Polychlorinated Biphenyls for sample(s) 01,04,06-08,11 (L0502658-11, WG196594-4) Aroclor 1242/1016 77 77 0 30 30-150 Aroclor 1242/1016 77 77 0 30 30-150 Surrogate(s) 2.4,5,6-Tetrachloro-m-xylene 79 75 5 Decachlorobiphenyl 78 76 3 30-150 Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Aroclor 1242/1016 67 71 6 30 30-150 Aroclor 1242/1016 67 71 6 30 30-150 Surrogate(s) 2.4,5,6-Tetrachloro-m-xylene 56 66 16 30 30-150 Surrogate(s) 2.4,5,6-Tetrachloro-m-xylene 56 66 16 30 30-150 Decachlorobiphenyl 74 71 4 30-150 Decachlorobiphenyl 74 71 3 30-150 Organochlorine Pesticides for sample(s) 01-11 (L0502658-02, WG196653-4) Delta-BHC 69 77 11 3 30-150 Beta-BHC 74 79 7 30-150 Beta-BHC 77 80 4 30-150 Beta-BHC 77 80 4 30-150 Beta-BHC 77 80 4 30-150 Beta-BHC 77 80 9 30-150 Beta-BHC 77 80 9 30-150 Beta-BHC 77 80 9 30-150 Beta-BHC 77 80 9 30-150 Beta-BHC 78 86 10-30 Beta-BHC 79 80 9 30-150 Beta-BHC 79 80 9 30-150 Beta-BHC 79 80 9 30-150 Beta-BHC 79 80 9 30-150 Beta-BHC 79 30 30-150 Beta-BHC 79 80 9 30-150 Beta-BHC 79 30-150	Nitrobenzene-d5					
2.4,6-Tribromophenol 97 91 6 10-120 4-Terphenyl-d14 77 76 1 33-120 Polychlorinated Biphenyls for sample(s) 01,04,06-08,11 (L0502658-11, WG196594-4) Aroclor 1242/1016 77 77 70 30 30 30-150 Aroclor 1260 93 92 1 30 30-150 Surrogate(s) 2.4,5,6-Tetrachloro-m-xylene 79 75 5 5 30-150 Decachlorobiphenyl 78 76 3 30-150 Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Aroclor 1242/1016 67 71 6 30 30-150 Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Aroclor 1242/1016 79 80 1 30 30-150 Surrogate(s) 2.4,5,6-Tetrachloro-m-xylene 56 66 16 30 30-150 Decachlorobiphenyl 74 71 4 30-150 Deta-BHC 69 77 11 3 30 Alpha-BHC 97 7 11 30 Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 70 30 Beta-BHC 77 7	2-Fluorobiphenvl			-		
### A-Terphenyl-d14				_		
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Aroclor 1260 93 92 1 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl 78 76 3 30-150 Pollychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Aroclor 1242/1016 67 79 80 1 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30-150 Organochlorine Pesticides for sample(s) 01-11 (L0502658-02, WG196653-4) Delta-BHC Lindane 69 71 3 30 Lindane 69 77 11 30 Alpha-BHC 77 80 44 30 Beta-BHC 77 80 44 30 Beta-BHC 77 80 44 30 Beta-BHC 69 77 80 40 40 40 40 40 40 40 40 40	Aroclor 1242/1016	77				
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 79 75 5 30-150 Decachlorobiphenyl 78 76 3 30-150 Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Aroclor 1242/1016 67 71 6 30 30-150 Aroclor 1260 79 80 1 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30-150 Decachlorobiphenyl 74 71 4 30-150 Organochlorine Pesticides for sample(s) 01-11 (L0502658-02, WG196653-4) Delta-BHC 69 71 3 30 Lindane 69 71 3 30 Lindane 69 77 11 30 A0 Beta-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Aldrin 91 92 1 30 Bondrin aldehyde 76 81 6 30 Bondrin ladehyde 76 81 6 30 Bondrin ladehyde 76 81 6 30 Bondrin 82 86 5 30 Bondrin 82 86 5 30 Bondrin 84 86 10 30 Bondrin 84 88 93 6 30 Bondrin 1 71 76 7 30 Bondroulfan I 71 76 7 30 Bondosulfan I 71 76 7 30 Bondosulfan I 71 76 7 30 Bondosulfan I 71 76 7 30 Bondosulfan I 71 76 7 30 Bondosulfan I 71 76 7 30 Bothoosulfan I 71 76 7 30 Bondosulfan I 71 76 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 114 7 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoosulfan Sulfate 106 30 Bothoo	Aroclor 1260					
2,4,5,6-Tetrachloro-m-xylene 79 75 5 3 30-150 Decachlorobiphenyl 78 76 3 3 30-150 Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Aroclor 1242/1016 67 71 6 30 30-150 Aroclor 1260 79 80 1 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30-150 Decachlorobiphenyl 74 71 4 30-150 Decachlorobiphenyl 74 71 3 30-150 Organochlorine Pesticides for sample(s) 01-11 (L0502658-02, WG196653-4) Delta-BHC 69 77 11 30 Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Heptachlor 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 1 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 41dehyde 76 81 6 30 Endrin ketone 104 106 2 30 Decachlorin 82 86 5 30 Al4,4'-DDE 78 86 10 30 Al4,4'-DDD 85 86 10 30 Al4,4'-DDD 85 86 10 30 Al4,4'-DDD 85 86 10 30 Al4,4'-DDD 85 86 10 30 Al4,4'-DDD 88 93 6 30 Alactic Albertal 1 71 76 77 30 Alactic Albertal 1 71 76 77 30 Alactic Albertal 1 71 76 77 30 Alactic Albertal 1 71 76 77 30 Alactic Albertal 1 71 76 77 30 Alactic Albertal 1 71 76 77 30 Alactic Albertal 1 71 76 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 77 30 Alactic Albertal 1 75 30 Alactic Alb	Surrogate(e)					
Decachlorobiphenyl 78		7.0	3.5	_		
Polychlorinated Biphenyls for sample(s) 02-03,05,09-10 (L0502658-05, WG196969-4) Aroclor 1242/1016 67 71 6 30 30-150 Aroclor 1260 79 80 1 30 30-150 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30-150 Decachlorobiphenyl 74 71 4 30 Delta-BHC 69 71 3 30 Lindane 69 77 11 30 Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Heptachlor 60 62 3 30 Heptachlor epoxide 73 80 9 30 Endrin 1 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 2 1 30 Endrin 2 1 30 Endrin 3 1 6 30 Endrin 4 1 6 30 Endrin 4 1 6 30 Endrin 8 2 86 5 30 4,4'-DDE 78 86 10 30 Endosulfan I 71 76 7 30 Endosulfan II 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan II 95 95 0 30 Endosulfan II 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan II 95 95 0 30 Endosulfan II 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan Sulfate 106 114 7 30 Endosulfan Sul	Decachlorobinhonul					30-150
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Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene 56 66 16 30-150 Decachlorobiphenyl 74 71 4 30-150 Organochlorine Pesticides for sample(s) 01-11 (L0502658-02, WG196653-4) Delta-BHC 69 71 3 30 Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDE 78 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 95 0 30 Endosulfan sulfate 106 114 7 30 Endosulfan sulfate 106 114 7 30 Endentosulfan sulfate 106 114 7 30 Endosulfan	67	71	6	30	30-150	
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl 74 71 4 71 4 30-150 Decachlorobiphenyl 74 71 4 71 4 30-150 Decachlorobiphenyl 74 71 4 71 4 30-150 Organochlorine Pesticides for sample(s) 01-11 (L0502658-02, WG196653-4)	Aroclor 1260	79	80	1	30	30-150
Decachlorobiphenyl 74 71 4 30-150 Organochlorine Pesticides for sample(s) 01-11 (L0502658-02, WG196653-4) 30-150 Delta-BHC 69 71 3 30 Lindane 69 77 11 30 Alpha-BHC 74 79 7 - 30 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 1 30 4,4'-DDD 85 86 1 30 4,4'-DDD 88 93 6 30	Surrogate(s)					
Decachlorobiphenyl 74 71 4 30-150 Organochlorine Pesticides for Sample(s) 01-11 (L0502658-02, WG196653-4) 30-150 Delta-BHC 69 71 3 30 Lindane 69 77 11 30 Alpha-BHC 74 79 7 - 30 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 1 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30	2,4,5,6-Tetrachloro-m-xylene	56	66	16		30-150
Delta-BHC Lindane Lindane 69 77 11 30 Alpha-BHC Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 4,4'-DDT 88 93 6 30 Endosulfan I Endosulfan II 95 95 95 0 30 Methoxychlor 93 99 6 30 Methoxychlor 93 99 6 30 Methoxychlor		74				
Delta-BHC Lindane Lindane 69 77 11 30 Alpha-BHC Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 4,4'-DDT 88 93 6 30 Endosulfan I Endosulfan II 95 95 95 0 30 Methoxychlor 93 99 6 30 Methoxychlor 93 99 6 30 Methoxychlor	Organochlorine Pesticides	for sample(s) 01-11 (1.05	02658±02.	WC196653_4\	nagetyjt jeden i te
Lindane 69 77 11 30 Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Heptachlor 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 85 86 10 30 4,4'-DDD 85 86 1 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 95 0 30 Methoxychlor 93 99 6 30 Methoxychlor 79 30 Methoxych	Delta-BHC					
Alpha-BHC 74 79 7 30 Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	Lindane					
Beta-BHC 77 80 4 30 Heptachlor 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	Alpha-BHC					
Heptachlor Aldrin 60 62 3 30 Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan II 95 95 95 0 30 Endosulfan sulfate 106 114 7 30 Endosychlor 93 99 6 30 30 30 30 30 30 30 30 30 30 30 30 30	Beta-BHC					
Aldrin 63 72 13 30 Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Methoxychlor 93 99 6 30	Heptachlor					
Heptachlor epoxide 73 80 9 30 Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	Aldrin					
Endrin 91 92 1 30 Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	Heptachlor epoxide					
Endrin aldehyde 76 81 6 30 Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	- ·					
Endrin ketone 104 106 2 30 Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan Sulfate 106 114 7 30 Methoxychlor 93 99 6 30	Endrin aldehyde					
Dieldrin 82 86 5 30 4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	-					
4,4'-DDE 78 86 10 30 4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	Dieldrin					
4,4'-DDD 85 86 1 30 4,4'-DDT 88 93 6 30 Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30	4,4'~DDE					
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Endosulfan I 71 76 7 30 Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30						
Endosulfan II 95 95 0 30 Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30						
Endosulfan sulfate 106 114 7 30 Methoxychlor 93 99 6 30						
Methoxychlor 93 99 6 30						
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74 /9 7 30						
	or outordane	/ 4	19	T	30	

Laboratory Job Number: L0502658

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Organochlorine Pesticides fo	or sample(s)	01-11 (LC	9	wG196653-4) 30	
Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	61 65	64 83	5 24		30-150 30-150

Laboratory Job Number: L0502658

	RESULT	UNITS	RDL	REF METHOD	DATE ID
					PREP ANAL
Blank Ana	lysis for sam	vie(s) 01-	11. (BC106)	610-3)	
Total Metals		20(0) 01	- (norso	0#0-3)	
Aluminum, Total	ND	mg/l	0.010	1 6020	0317 12:30 0321 15:46 RW
Antimony, Total	ND	mq/l	0.0002	1 6020	0317 12:30 0321 15:46 RW
Arsenic, Total	ND	mg/l	0.0004	1 6020	0317 12:30 0321 15:46 RW
Barium, Total	ND	mg/l	0.0002	1 6020	0317 12:30 0321 15:46 RW
Beryllium, Total	ND	mg/l	0.0005	1 6020	
Cadmium, Total	ND	mg/1	0.0004	1 6020	0317 12:30 0321 15:46 RW
Calcium, Total	ND	mg/l	0.200		0317 12:30 0321 15:46 RW
Chromium, Total	ND	mg/l	0.0002		0317 12:30 0321 15:46 RW
Cobalt, Total	ND	mg/l	0.0002		0317 12:30 0321 15:46 RW
Copper, Total	ND	mg/l		1 6020	0317 12:30 0321 15:46 RW
Iron, Total	ND	-	0.0005	1 6020	0317 12:30 0321 15:46 RW
Lead, Total		mg/l	0.010	1 6020	0317 12:30 0321 15:46 RW
Magnesium, Total	ND	mg/l	0.0002	1 6020	0317 12:30 0321 15:46 RW
Manganese, Total	ND	mg/l	0.010	1 6020	0317 12:30 0321 15:46 RW
Nickel, Total	ND	mg/l	0.0002	1 6020	0317 12:30 0321 15:46 RW
Potassium, Total	ND	mg/l	0.0005	1 6020	0317 12:30 0321 15:46 RW
	ND	mg/l	0.100	1 6020	0317 12:30 0321 15:46 RW
Selenium, Total	ND	mg/l	0.001	1 6020	0317 12:30 0321 15:46 RW
Silver, Total	0.0001	mg/l	0.0001	1 6020	0317 12:30 0321 15:46 RW
Sodium, Total	ND	mg/l	0.100	1 6020	0317 12:30 0321 15:46 RW
Thallium, Total	ND	mg/l	0.0001	1 6020	0317 12:30 0321 15:46 RW
Vanadium, Total	ND	mg/l	0.0002	1 6020	0317 12:30 0321 15:46 RW
Zinc, Total	ND	mg/l	0.0050	1 6020	0317 12:30 0321 15:46 RW
Blank Ana. Total Metals	lysis for samp	le(s) 01-	11 (WG1966	590-4)	
Mercury, Total	ND	mg/l	0.0002	1 7470A	0318 17:20 0321 11: 36 DM
Blank Ana	lysis for samp	le(a) N1-1	11 (WC1066		
	-lore rer pamb	TC (3) OT 3			
Dissolved Metals				,	
Dissolved Metals	ND	mg/l			0317 12:30 0321 15:40 pm
Dissolved Metals Aluminum, Dissolved			0.010	1 6020	0317 12:30 0321 15:40 RW
Dissolved Metals Aluminum, Dissolved Antimony, Dissolved	ND	mg/1	0.010	1 6020 1 6020	0317 12:30 0321 15:40 RW
Dissolved Metals Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved	ND ND	mg/l	0.010 0.0002 0.0004	1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Dissolved Metals Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved	ND ND ND	mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002	1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Dissolved Metals Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved	ND ND ND	mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005	1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved	ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved	ND ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004 0.200	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Chromium, Dissolved	ND ND ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004 0.200 0.0002	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Chromium, Dissolved Cobalt, Dissolved	ND ND ND ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004 0.200 0.0002 0.0001	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved	ND ND ND ND ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004 0.200 0.0002 0.0001 0.0005	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Iron, Dissolved	ND ND ND ND ND ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004 0.200 0.0002 0.0001 0.0005 0.010	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Iron, Dissolved Lead, Dissolved	ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004 0.200 0.0002 0.0001 0.0005	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW
Aluminum, Dissolved Antimony, Dissolved Arsenic, Dissolved Barium, Dissolved Beryllium, Dissolved Cadmium, Dissolved Calcium, Dissolved Chromium, Dissolved Cobalt, Dissolved Copper, Dissolved Iron, Dissolved	ND ND ND ND ND ND ND ND ND	mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1 mg/1	0.010 0.0002 0.0004 0.0002 0.0005 0.0004 0.200 0.0002 0.0001 0.0005 0.010	1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020 1 6020	0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW 0317 12:30 0321 15:40 RW

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Laboratory Job Number: L0502658

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA' PREP	re i anal	D
			'mat'oc		3 1			
Blank Analysi	s for samp	ole(s) 01-11	(MCT 20	004-)		•	
Dissolved Metals								
Nickel, Dissolved	ND	mg/l	0.0005	1	6020	0317 12:30	0321 15:40 I	RW
Potassium, Dissolved	ND	mg/l	0.100	1	6020	0317 12:30	0321 15:40 1	RW
Selenium, Dissolved	ND	mg/l	0.001	1	6020	0317 12:30	0321 15:40 1	RW
Silver, Dissolved	0.0001	mg/l	0.0001	1	6020	0317 12:30	0321 15:40 1	RW
Sodium, Dissolved	ND	mg/l	0.100	1	6020	0317 12:30	0321 15:40	RW
•	ND	mg/l	0.0001			0317 12:30	0321 15:40	RW
Thallium, Dissolved	ND	mg/l	0.0002			0317 12:30	0321 15:40	RW
Vanadium, Dissolved	ND	mg/l	0.0050				0321 15:40	
Zinc, Dissolved	ND	mg/ i	0.0000	•				
Blank Analysi	s for sam	ple(s) 01-11	(WG196	603-	4)			
Dissolved Metals		= :						
Mercury, Dissolved	ND	mg/l	0.0002	1	7470A	0317 16:00	0318 12:32	DM
Blank Analys:	is for sam	ple(s) 01-12	(WG196	730-	4)			
Volatile Organics by GC/MS 82		P10(0) 01 11	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		8260B		0318 10:52	BT
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
	ND	ug/l	1.8					
1,2-Dichloropropane	ND	ug/l	0.50					
Dibromochloromethane	ND	ug/l	0.75					
1,1,2-Trichloroethane	ND	ug/l	0.50					
Tetrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	2.5					
Trichlorofluoromethane	ND	ug/l	0.50					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND ND	ug/l	0.50					
Bromodichloromethane		ug/1 ug/l	0.50					
trans-1,3-Dichloropropene	ND	ug/l ug/l	0.50					
cis-1,3-Dichloropropene	ИD	ug/1 ug/l	2.5					
1,1-Dichloropropene	ND ND	=	2.0					
Bromoform	ND ND	ug/l	0.50					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.30					
Toluene	ND	ug/l						
Ethylbenzene	ND	ug/l	0.50					
Chloromethane	ND	ug/1	2.5					
Bromomethane	ND	ug/l	1.0					
Vinyl chloride	ND	ug/l	1.0					
Chloroethane	ND	ug/l	1.0					
1,1-Dichloroethene	ND	ug/l	0.50					
trans-1,2-Dichloroethene	ND	ug/l	0.75					
Trichloroethene	ND	ug/l	0.50					
1,2-Dichlorobenzene	ND	ug/l	2.5					

Laboratory Job Number: L0502658.

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID
		33722	102	idi idinop	DATE ID PREP ANAL
		madamadana manana manana da manana da manana da manana da manana da manana da manana da manana da manana da ma			
Blank Analys	is for samp	ole(s) 01-12	(WG19	6730-4):	
Volatile Organics by GC/MS 8 1,3-Dichlorobenzene			- 2.2	1 8260B	0318 10:52 BT
	ND	ug/l	2.5		
1,4-Dichlorobenzene	ND	ug/l	2.5		
Methyl tert butyl ether	ND	ug/l	1.0		
p/m-Xylene	ND	ug/l	0.50		
o-Xylene	ND	ug/l	0.50		
cis-1,2-Dichloroethene	ND	ug/l	0.50		
Dibromomethane	ND	ug/l	5.0		
1,4-Dichlorobutane	ND	ug/l	5.0		
Iodomethane	ND	ug/l	5.0		
1,2,3-Trichloropropane	ND	ug/l	5.0		
Styrene	ND	ug/l	0.50		
Dichlorodifluoromethane	ND	ug/l	5.0		
Acetone	ND	ug/l	5.0		
Carbon disulfide	ND	ug/l	5.0		
2-Butanone	ND	ug/l	5.0		
Vinyl acetate	ND	ug/l	5.0		
4-Methyl-2-pentanone	ND	ug/l	5.0		
2-Hexanone	ND	ug/l	5.0		
Ethyl methacrylate	ND	ug/l	5.0		
Acrolein	ND	ug/l	12.		
Acrylonitrile	ND	ug/l	5.0		
Bromochloromethane	ND	ug/l	2.5		
Tetrahydrofuran	ND	ug/l	10.		
2,2-Dichloropropane	ND	ug/l	2.5		
1,2-Dibromoethane	ND	ug/l	2.0		
1,3-Dichloropropane	ND	ug/l	2.5		
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50		
Bromobenzene	ND	ug/l	2.5		
n-Butylbenzene	ND	ug/l	0.50		
sec-Butylbenzene	ND	ug/l	0.50	•	
tert-Butylbenzene	ND	ug/l	2.5		
o-Chlorotoluene	ND	ug/l	2.5		
p-Chlorotoluene	ND	ug/l	2.5		
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5		
Hexachlorobutadiene	ND	ug/l	1.0		
Isopropylbenzene	ND	ug/l	0.50		
p-Isopropyltoluene	ND	ug/l	0.50		
Naphthalene	ND				
n-Propylbenzene	ND	ug/l	2.5		
1,2,3-Trichlorobenzene	ND	ug/l	0.50		
1,2,4-Trichlorobenzene		ug/l	2.5		
1,3,5-Trimethylbenzene	ND	ug/l	2.5		
1,2,4-Trimethylbenzene	ND	ug/l	2.5		
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5		
Ethyl ether	ND	ug/l	2.5		
nemyr echler	ND	ug/l	2.5		

Laboratory Job Number: L0502658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analysis	s for samr	ole(s) 01-12	(WG19	6730-4)	4 - 14 - 14 - 15 - 16 - 16 - 16 - 16 - 16 - 16 - 16
Volatile Organics by GC/MS 82	60 continu	ied	•	1 8260B	0318 10:52 BT
	Recovery		oc Cr	iteria	
Surrogate(s) 1,2-Dichloroethane-d4	120.	8	~		
Toluene-d8	101.	96			
4-Bromofluorobenzene	105.	9			
Dibromofluoromethane	106.	90			
Blank Analysi	s for sam	ole(s) 01-13	(WG19	(6578-1)	
SVOC's by GC/MS 8270		**		1 8270C	0317 09:40 0319 19:38 HL
Acenaphthene	ND	ug/l	5.0		
Benzidine	ND	ug/l	50.		
1,2,4-Trichlorobenzene	ND	ug/l	5.0		
Hexachlorobenzene	ND	ug/l	5.0		
Bis(2-chloroethyl)ether	ND	ug/l	5.0		
1-Chloronaphthalene	ND	ug/l	5.0		
2-Chloronaphthalene	ND	ug/l	6.0		
1,2-Dichlorobenzene	ND	ug/l	5.0		
1,3-Dichlorobenzene	ND	ug/l	5.0		
1,4-Dichlorobenzene	ND	ug/l	5.0		
3,3'-Dichlorobenzidine	ND	ug/l	50.		
2,4-Dinitrotoluene	ND	ug/l	6.0		
2,6-Dinitrotoluene	ND	ug/l	5.0		
Azobenzene	ND	ug/l	5.0		
Fluoranthene	ND	ug/l	5.0		
4-Chlorophenyl phenyl ether	ND	ug/l	5.0		
4-Bromophenyl phenyl ether	ND	ug/l	5.0		
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0		
Bis(2-chloroethoxy)methane	ND	ug/l	5.0		
Hexachlorobutadiene	ND	ug/l	10.	_	
Hexachlorocyclopentadiene	ND	ug/l	10.		
Hexachloroethane	ND	ug/l	5.0		
Isophorone	ND	ug/l	5.0		
Naphthalene	ND	ug/l	5.0		
Nitrobenzene	ND	ug/l	5.0		
NDPA/DPA	ND	ug/l	15.		
n-Nitrosodi-n-propylamine	ND	ug/l	5.0		
Bis(2-ethylhexyl)phthalate	ND	ug/1	10.		
Butyl benzyl phthalate	ND	ug/l	5.0		
Di-n-butylphthalate	ND	ug/1	5.0		
Di-n-octylphthalate	ND	ug/1	5.0		
Diethyl phthalate	ND	ug/l	5.0		
Dimethyl phthalate	ND	ug/1	5.0		
Benzo(a)anthracene	ND	ug/1	5.0		
Benzo(a)pyrene	ND	ug/l	5.0		
Benzo(b) fluoranthene	ND	ug/l	5.0		
Benzo(k)fluoranthene	ND	ug/l	5.0		
Chrysene	ND	ug/l	5.0		

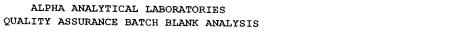


Laboratory Job Number: L0502658

PARAMETER	RESULT	UNITS	RDL	DEE MONION	
	100001	ONIIS	KDII	REF METHOD	DATE ID PREP ANAL
Blank Analysis	for samp	le(s) 01-	11 (WG19	6578-1)	
SVOC's by GC/MS 8270 continued	ı Sanı	The same			0317 09:40 0319 19:38 HL
Acenaphthylene	ND	ug/l	5.0		224 A2:46 A258/52:36 UT
Anthracene	ND	ug/l	5.0		
Benzo(ghi)perylene	ND	ug/l	5.0		
Fluorene	ND	ug/l	5.0		
Phenanthrene	ND	ug/l	5.0		
Dibenzo(a,h)anthracene	ND	ug/l	5.0		
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0		
Pyrene	ND	ug/l	5.0		
Benzo(e)pyrene	ND	ug/l	5.0		
Biphenyl	ND	-			
Perylene	ND	ug/l	5.0		
Aniline	ND	ug/l	5.0		
4-Chloroaniline		ug/l	10.		
1-Methylnaphthalene	ND	ug/l	5.0		
2-Nitroaniline	ND	ug/l	5.0		
3-Nitroaniline	ND	ug/l	5.0		
4-Nitroaniline	ИD	ug/l	5.0		
	ND	ug/l	7.0		
Dibenzofuran	ND	ug/l	5.0		
a,a-Dimethylphenethylamine	ND	ug/l	50.		
Hexachloropropene	ND	ug/l	10.		
Nitrosodi-n-butylamine	ND	ug/l	10.		
2-Methylnaphthalene	ND	ug/l	8.0		
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.		
Pentachlorobenzene	ND	ug/l	20.		
a-Naphthylamine	ND	ug/l	20.		
b-Naphthylamine	ND	ug/l	20.		
Phenacetin	ND	ug/l	10.		
Dimethoate	ND	ug/l	20.		
4-Aminobiphenyl	ND	ug/l	10.	_	
Pentachloronitrobenzene	ND	ug/l	10.		
Isodrin	ND	ug/l	10.		
p-Dimethylaminoazobenzene	ND	ug/l	10.		
Chlorobenzilate	ND	ug/l	20.		
3-Methylcholanthrene	ND	ug/l	20.		
Ethyl Methanesulfonate	ND	ug/l	15.		
Acetophenone	ND	ug/l	20.		
Nitrosodipiperidine	ND	ug/l	20.		
7,12-Dimethylbenz(a)anthracene		ug/l	10.		
n-Nitrosodimethylamine	ND	-			
2,4,6-Trichlorophenol	ND	ug/l ug/l	50.		
p-Chloro-m-cresol	ND	-	5.0		
2-Chlorophenol		ug/l	5.0		
2,4-Dichlorophenol	ND	ug/l	6.0		
	ND	ug/l	10.		
2,4-Dimethylphenol	ND	ug/l	10.		
2-Nitrophenol	ND	ug/l	20.		
4-Nitrophenol	ND	ug/l	10.		

Laboratory Job Number: L0502658

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE ID PREP ANAL
Blank Analys	ie for com	nlė(s) :01–11	(WG196	578-1)	Nys (1 lun - Lent) - Lette
Blank Analys	is in same	TE (2) OT TT	(1 8270C	0317 09:40 0319 19:38 HL
SVOC's by GC/MS 8270 continu	ND	ug/l	20.		
2,4-Dinitrophenol	ND	ug/l	20.		
4,6-Dinitro-o-cresol	ND	ug/l	20.		
Pentachlorophenol	ND	ug/l	7.0		
Phenol	ND ND	ug/l	6.0		
2-Methylphenol		ug/l	6.0		
3-Methylphenol/4-Methylpheno	ND	ug/l	5.0		
2,4,5-Trichlorophenol		ug/l	10.		
2,6-Dichlorophenol	ND ND	ug/l	50.		
Benzoic Acid	ND	ug/l	10.		
Benzyl Alcohol	ND		5.0		
Carbazole	ND	ug/l ug/l	50.		
Pyridine	ND	-	20.		
2-Picoline	ND	ug/l	20.		
Pronamide	ND	ug/l	20.		
Methyl methanesulfonate	ND	ug/l	20.		
Surrogate(s)	Recovery		QC Cr	iteria	
2-Fluorophenol	42.0	do			
Phenol-d6	35.0	ે			
Nitrobenzene-d5	90.0	ે			
2-Fluorobiphenyl	86.0	S			
2,4,6-Tribromophenol	113.	8			
4-Terphenyl-d14	106.	ફ			
	sis for sam	mple(s) 01-1	l (WG19	6578-1)	44.0 AD 10 0376 10.30 H
SVOC's by GC/MS 8270		mple(s) 01-1	1 (WG19	6578-1) 1 8270c	0317 09:40 0319 19:38 HI
SVOC's by GC/MS 8270 No Tentatively Identified C	ompounds			1 8270C	0317 09:40 0319 19:38 HI
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy	ompounds	aple(s) 01-1		1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M	ompounds	mplė(s) 01-1	1 (WG19	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene	ompounds sis for sam	mple(s) 01-1 ug/l	1 (WG19	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene	ompounds sis for sam ND ND	mple(s) 01-1 ug/l ug/l	0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene	ompounds sis for sam ND ND ND	ug/l ug/l ug/l ug/l	0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene	ompounds sis for sam ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene	ompounds sis for sam ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.20 0.50 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(a) pyrene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(k) fluoranthene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	0317 09:40 0319 19:36 HI 0317 09:40 0318 13:54 R
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene Anthracene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	
SVOC's by GC/MS 8270 No Tentatively Identified C Blank Analy PAH by GC/MS SIM 8270M Acenaphthene 2-Chloronaphthalene Fluoranthene Hexachlorobutadiene Naphthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(b) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene	ompounds sis for sam ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.20 0.20 0.20 0.50 0.20 0.20 0.20 0.20	1 8270C	



Laboratory Job Number: L0502658

	RESULT	UNITS	RDL	REF METHOD	DATE	ID
					PREP ANAL	
Blank Analysi	s for samp	le(s) 01-	L) (WG196	576-11		ð.i.
PAH by GC/MS SIM 8270M contin	nued			1 8270C-M	0317 09:40 0318 13:5	1,210
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20	1 02700-11	0317 09:40 0318 13:5	9 RL
Pyrene	ND	ug/l	0.20			
1-Methylnaphthalene	ND	ug/l	0.20			
2-Methylnaphthalene	ND	ug/l	0.20			
Pentachlorophenol	ND	ug/l	0.80			
Hexachlorobenzene	ND	ug/l	0.80			
Perylene	ND	ug/l	0.20			
Biphenyl	ND	ug/l	0.20			
2,6-Dimethylnaphthalene	ND	ug/l	0.20			
1-Methylphenanthrene	ND	ug/l	0.20			
Benzo(e) Pyrene	ND	ug/l	0.20			
Hexachloroethane	ND	-				
- Total of Chanc	ND	ug/l	0.80			
Surrogate(s)	Recovery		QC Cri	teria		
2-Fluorophenol	47.0	%	21-120			
Phenol-d6	39.0	8	10-120			
Nitrobenzene-d5	68.0	%	23-120			
2-Fluorobiphenyl	62.0	8	43-120			
2,4,6-Tribromophenol	84.0	8	10-120			
4-Terphenyl-d14	76.0	8	33-120			
Rlank Analysis fo	r campilala	1. 01 DA AC	AB 11 /1	70100504 41		
Blank Analysis fo Polychlorinated Biphenyls	r sample(s)	01,04,06	-08,11 (
Polychlorinated Biphenyls			``	NG196594-1) 1 8082	0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221	ND	ug/l	0.500		0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232	ND ND	ug/l ug/l	0.500 0.500		0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016	ND ND ND	ug/l ug/l ug/l	0.500 0.500 0.500		0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248	ND ND ND N D	ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500		0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254	ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500		0317 13:00 0318 14:2:	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248	ND ND ND N D	ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500		0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s)	ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500	1 8082	0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene	ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500	1 8082	0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s)	ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500	1 8082	0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	ND ND ND ND ND ND Recovery 67.0 63.0	ug/l ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150	1 8082	0317 13:00 0318 14:2	9 AK
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for	ND ND ND ND ND ND Recovery 67.0 63.0	ug/l ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150	1 8082 		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	ND ND ND ND ND Recovery 67.0 63.0 r sample(s)	ug/l ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150	1 8082	0317 13:00 0318 14:2:	
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls	ND ND ND ND ND Recovery 67.0 63.0 r sample(s)	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150 ,09-10 (W	1 8082 		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232	ND ND ND ND ND ND Recovery 67.0 63.0 r sample(s)	ug/l ug/l ug/l ug/l ug/l ug/l % % 02-03,05 ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150 ,09-10 (W	1 8082 		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls Aroclor 1221	ND ND ND ND ND Recovery 67.0 63.0 r sample(s) ND ND	ug/l ug/l ug/l ug/l ug/l ug/l % % 02-03,05 ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150 ,09-10 (W	1 8082 		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248	ND ND ND ND ND ND Recovery 67.0 63.0 r sample(s) ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l % 02-03,05 ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150 ,09-10 (W	1 8082 		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016	ND ND ND ND ND Recovery 67.0 63.0 r sample(s) ND ND	ug/l ug/l ug/l ug/l ug/l ug/l % % 02-03,05 ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 QC Crit 30-150 30-150 ,09-10 (W	1 8082 		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1254 Aroclor 1250	ND ND ND ND ND Recovery 67.0 63.0 r sample(s) ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l % 02-03,05 ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.0500 0.500 0.500 0.500 0.500 0.500 0.500 0.500	1 8082		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1256 Burrogate(s) Surrogate(s)	ND ND ND ND ND Recovery 67.0 63.0 r sample(s) ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500	1 8082		
Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate(s) 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl Blank Analysis for Polychlorinated Biphenyls Aroclor 1221 Aroclor 1232 Aroclor 1242/1016 Aroclor 1248 Aroclor 1254 Aroclor 1254 Aroclor 1250	ND ND ND ND ND Recovery 67.0 63.0 r sample(s) ND ND ND ND ND ND ND ND ND	ug/l ug/l ug/l ug/l ug/l ug/l % 02-03,05 ug/l ug/l ug/l ug/l ug/l	0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.0500 0.500 0.500 0.500 0.500 0.500 0.500 0.500	1 8082		

Laboratory Job Number: L0502658

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA PREP	TE ANAI	, ID
Blank Analysis	for samp.	le(s) 01-11	(MGT 96	1653-1	_}	0222 15:00	2210 20	. 27 38
Organochlorine Pesticides				. 1	8081	0317 15:00	0318 20	; 3 / AR
Delta-BHC	ND	ug/l	0.020					
Lindane	ИD	ug/l	0.020					
Alpha-BHC	ND	ug/l	0.020					
Beta-BHC	ND	ug/l	0.020					
Heptachlor	ND	ug/l	0.020					
Aldrin	ND	ug/l	0.020					
Heptachlor epoxide	ND	ug/l	0.020					
Endrin	ND	ug/l	0.040					
Endrin aldehyde	ND	ug/l	0.040					
Endrin ketone	ND	ug/l	0.040					
Dieldrin	ND	ug/l	0.040					
4,4'-DDE	ND	ug/l	0.040					
4,4'-DDD	ND	ug/l	0.040					
4,4'-DDT	ND	ug/l	0.040					
Endosulfan I	ND	ug/l	0.020					
Endosulfan II	ND	ug/l	0.040					
Endosulfan sulfate	ND	ug/l	0.040					
Methoxychlor	ND	ug/l	0.200					
Toxaphene	ND	ug/l	0.200					
Chlordane	ND	ug/l	0.200					
cis-Chlordane	ND	ug/l	0.020					
trans-Chlordane	ND	ug/l	0.020					
Surrogate(s)	Recovery		QC Cr		a			
2,4,5,6-Tetrachloro-m-xylene	68.0	8	30-15	0				
Decachlorobiphenyl	79.0	8	30-15	0				

ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

ND Not detected in comparison to the reported detection limit.

NI Not Ignitable.

ug/cart Micrograms per Cartridge.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

APPENDIX D INVESTIGATION DERIVED WASTE MANIFEST

Brookside Environmental, Inc.

757 Foxhurst Rd., Baldwin, New York 11510 (516) 377-6300 Fax (516) 377-6846

Transporter Permit #1A-644 EPA ID #NYR000081661

T	NON-HAZARDOUS MANIFEST 1. Customer's US EPA ID NO. NOT Regid Document No. 3. Customer's Name and Mailing Address Columbia University 3233 Broadway 4. Phone P.I. Z. 280-1754 New York 5. Transporter 1 Company Name 6. US EPA ID Number	2. Page 1	
1	3. Customer's Name and Malling Address Columbia University	A. Document Number	
1	3233 Broadway	B. State ID	
1	APPROPRIZ 750-1754 New York New York		
t	5 Transporter 1 Company Name 6. US EPA ID Number	C. State Transporter's ID	The second secon
L	Maumer express 1/03D 100 GOTSOO	D. Transporter's Phone ZZ	2 424.8441
١	7. Transporter 2 Company Name B. US EPA ID Number	F. Transporter's Phone	
t	9. Designated Facility Name and Site Address 10. US EPA ID Number	G. State Facility's ID	
П	MXI Enveronmenta Services	H. Facility's Phone	
۱	9. Designated Facility Name and Site Address MX Environmental Services Z63 9 0 d Tra Road Ab. 1 2 don, Va 2 42 0 UAR 000 503920 11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) 12. Containe	276 628	-1156
I	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) 12. Containe	rs 13. 14 Total Un	L.
	No. 1	Type Quantity Wt/\	
	· Weste Retideum Mixture, Solid		
	NON-RIRA / NON-DOT Harardons XXIII "Waste Petioleum Mixture, 1/2 mid NON-RIRA / NON-DOT Hazandons XXX8 I	m 004,000 P	5
	b. Laste Patioleum Mixture 1'4 mid	7	
	MAN DOUB / MAN ST / LAN	m 00 440 G	
	NOVO-1001 / 10010-1001 HAZ-OUTERS NO	1100110	
	d.		1
		K. Handling Codes for Wastes Liste	nd About
	J. Additional Descriptions for Materials Listed Above	K. Handling Codes for Wastes List	ad Abbve
	At Consist Vending Instructions and Ariditional Information 1		
	15. Special Handling Instructions and Additional Information A) Dr. II Cuttings - So. I, PPE		
١	b) Perge water / Decon water		
	AS CURTOMED CERTIFICATION: I have buried an extension of this consistence are fully and accurately described above by pri	oper shipping name and are classi	fied, packed, marked, and
l	labeled, and are in all respects in groper condition for transport by highway according to applicable international and highway	AS BEEN FUELIA	L. Month Day Yes
¥	X STEW GIMS ALRE WASHY KIGH VIG	to my by land of he	204010
H	17. Transporter 1 Acknowledgement of Receipt of Materials Priored / Type Name Signature	1-6	DATE Month Day Yes
ANSP	Printed / Type Name	and -	04010
PORT	18. Transporter 2 Acknowledgement of Receipt of Materials		DATE
T E R	Printed / Type Namo Signature *		Month Day Yea
ri			and the second second second second
F			
AC			
1	20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.		
T			Month Day Ye
Υ	Printed / Typed Name		Month Day Yes

APPENDIX G COASTAL ASSESSMENT FORM

Internal Use Only: Date Received:	WRP no.
Date Received:	DOS no.

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP, or other local, state or federal discretionary review procedures, and that are within New York City's designated coastal zone, must be reviewed and assessed for their consistency with the New York City Waterfront Revitalization Program (WRP). The WRP was adopted as a 197-a Plan by the Council of the City of New York on October 13, 1999, and approved by the New York State Department of State with the concurrence of the United States Department of Commerce pursuant to applicable state and federal law, including the Waterfront Revitalization of Coastal Areas and Inland Waterways Act. As a result of these approvals, state and federal discretionary actions within the city's coastal zone must be consistent to the maximum extent practicable with the WRP policies and the city must be given the opportunity to comment on all state and federal projects within its coastal zone.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, other state agencies or the New York City Department of City Planning in their review of the applicant's certification of consistency.

A. APPLICANT

1. Name: Columbia University/Richard G. Leland, Esq.

2. Address: Richard G. Leland, Esq.

Fried, Frank, Harris, Shriver & Jacobson LLP

One New York Plaza

New York, New York 10004

3. Telephone: (212) 859-8978 Fax: (212) 859-4000 E-mail: richard.leland@friedfrank.com

4. Project Site Owner: Columbia University

B. PROPOSED ACTIVITY

1. Brief description of activity:

Columbia University proposes the Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development project (the "Proposed Actions"/"Proposed Project") in an approximately 35-acre area (the "Project Area") of Manhattanville in West Harlem, Borough of Manhattan. The portion of the Project Area within the designated coastal zone is located west of Broadway between West 135th Street and St. Clair Place/West 125th Street (see Figure G-1). The rezoning would amend the zoning map in the Project Area, create the Special Manhattanville Mixed-Use Zoning District, and allow Columbia to develop an Academic Mixed-Use plan (the "Academic Mixed-Use Development") on approximately 17 acres (the "Academic Mixed-Use Area") within the Project Area (see Figure G-2) to meet its needs for long-term growth and modernization. The Proposed Actions would enable Columbia to build an estimated 6.8 million gross square feet (gsf) of new space in the Academic Mixed-Use Area. The remaining 18 acres within the Project Area that would be subject to rezoning consist of 11 acres of land, located primarily west of Twelfth Avenue and east of Broadway (which is estimated to yield another 329,500 gsf of commercial and residential development) and 7 acres under water (which would support no development).

To encourage appropriate redevelopment along the Manhattanville waterfront, while enhancing pedestrian access to it, the Special Manhattanville Mixed-Use Zoning District would have urban design requirements for mandatory widened sidewalks in Subdistrict A (except on Broadway, West 125th Street, and the block between West 131st and West 132nd Streets); maximum building heights and mandatory streetwalls throughout the zoning district; designation of Twelfth Avenue, West 125th Street, and Broadway within Subdistricts A and B for special ground-floor uses to provide neighborhood amenities (e.g., retail, institutional, and community service uses) and lively streetscapes; transparency

requirements on Twelfth Avenue, West 125th Street, and Broadway within Subdistricts A and B; and open area design controls in Subdistrict A. These features would result in greater and livelier street-level activity, greenery, and enhanced westward views to the Hudson River, making the Project Area more welcoming to pedestrians. Further, these new streetscape features would contribute to an improved pedestrian corridor along West 125th Street to the West Harlem Waterfront park. Two new significant publicly accessible open spaces with north-south midblock connections would also be created west of Broadway by the Proposed Actions.

- Columbia University proposes the establishment of a new Special Manhattanville Mixed-Use Purpose of activity: Zoning District in the Project Area to achieve two goals:
 - To allow Columbia to fulfill its role as a leading academic institution that makes a significant contribution to the economic, cultural, and intellectual vitality of New York City by enabling it to expand and modernize its facilities within a 17-acre Academic Mixed-Use Area within the proposed 35-acre Special District.
 - To facilitate the revitalization, improvement, and redevelopment of a portion of the Manhattanville section of West Harlem by allowing greater density and a wider variety of land uses.
- Manhattanville section of Manhattan. Location of activity (street address/borough or site description):
- If a federal or state permit or license was issued or is required for the proposed activity, identify the permit type(s), the authorizing agency and provide the application or permit number(s), if known:
 - New York State Department of Environmental Conservation (DEC) permit approval for construction and operation of the proposed fuel-fired central energy plants and smaller package boiler systems at various locations to provide heating and cooling to the new buildings in the Academic Mixed-Use Area, and fossil fuel-fired HVAC systems.
 - DEC State Pollution Discharge Elimination System (SPDES) for stormwater discharge during construction (General Permit GP-02-01).
 - New SPDES permit from DEC to construct an outfall at the western terminus of 125th Street within the West Harlem Waterfront park. This new outfall would discharge stormwater from the separate stormwater system proposed for the blocks between West 130th Street and West 133rd Street between Broadway and Twelfth Avenue as part of the Proposed Actions, and would require additional authorization from DEC (i.e., Protection of Waters or Tidal Wetlands) and the U.S. Army Corps of Engineers (USACE [i.e., Section 404 of the Clean Water Act]).
- Is federal or state funding being used to finance the project? If so, please identify the funding source(s). No federal or state funding has been used to finance the project as of this date.
- Will the proposed project result in any large physical change to a site within the coastal area that will require the preparation of an environmental impact statement?

If yes, identify Lead Agency: No Yes X

The New York City Department of City Planning (DCP) is preparing the Environmental Impact Statement (EIS) on behalf of the City Planning Commission (CPC), the Lead Agency.

Identify city discretionary actions, such as a zoning amendment or adoption of an urban renewal plan, required for the proposed project.

The Proposed Project would require the following land use actions to permit the range of proposed uses, as follows:

- Zoning Text amendment to establish a Special Manhattanville Mixed-Use Zoning District coterminous with the Project Area.
- Changes to zoning sectional maps 5c and 6a (1) to map a Special Manhattanville Mixed-Use Zoning District coterminous with the Project Area; and (2) change underlying zoning districts, which are subject to the City's Uniform Land Use Review Procedure (ULURP).
- New York City Department of Environmental Protection (DEP) approval for an Amended Drainage Plan, a Private Drainage Proposal, and construction and operation of the central energy plants.



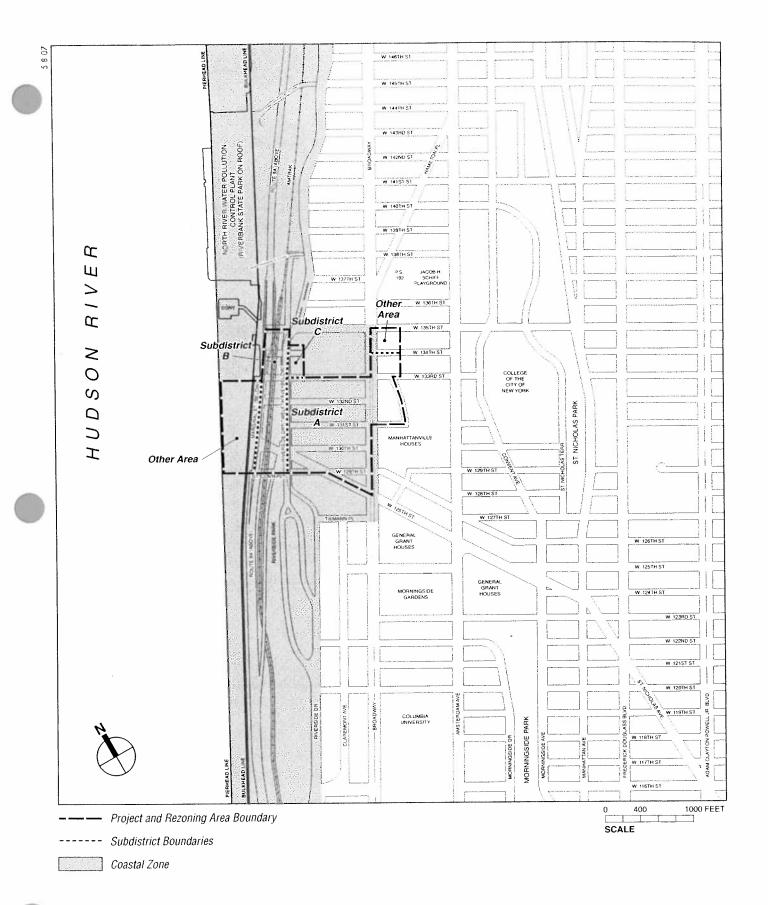
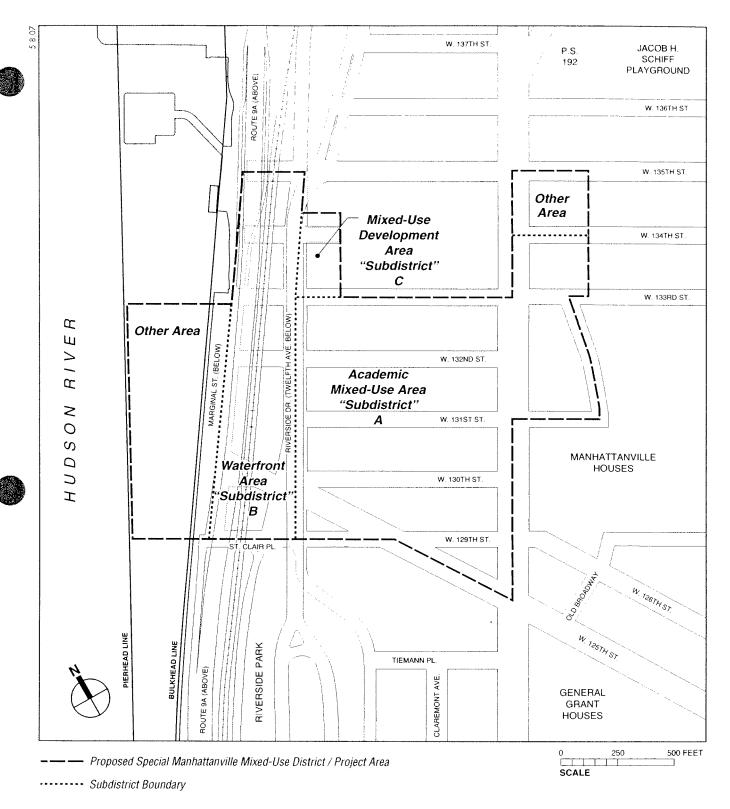


Figure G-1
Waterfront Revitalization Program:
Coastal Zone Boundary



Note: The subdistrict boundaries correspond to the proposed zoning subdistricts

New York City Department of Transportation (NYCDOT) approval for the proposed transportation improvement plan. NYCDOT, Bureau of Bridges approval to rebuild West 130th, West 131st, and West 132nd Streets above the Academic Mixed-Use Development below-grade support facility.

- NYCDOT, Division of Franchises, Concessions, and Consents possible approval for revocable consents.
- The Proposed Actions are within the boundaries of the coastal zone, and will require a determination of consistency with New York City's Local Waterfront Revitalization Program from CPC. C. COASTAL ASSESSMENT

Location Questions:	Yes	No
1. Is the project site on the waterfront or at the water's edge?	X	110
2. Does the proposed project require a waterfront use?		x
3. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land underwater, or coastal waters?		X
Policy Questions	V	
The following questions represent, in a broad sense, the policies of the WRP. Numbers in parentheses after each policy or policies addressed by the question. The new Waterfront Revitalization Program offers detailed explana including criteria for consistency determinations. Check either "Yes" or "No" for each of the following questions. For all "yes" responses, provide an attachment a of the proposed activity on the relevant policies or standards. For the control of the proposed activity on the relevant policies or standards.	tions of the po	olicies,
of the proposed activity on the relevant policies or standards. Explain how the action would be consistent with the policies and standards.	e goals of tho	se
Will the proposed project result in revitalization or redevelopment of a deteriorated or under-used rfront site? (1)		
The Proposed Actions would replace the existing automotive uses storage facilities and industrial and	<u>X</u>	
manufacturing uses with new community facility and commercial development that would enliven and attract residents and visitors to the waterfront and the new West Harlem Waterfront park. 5. Is the project site appropriate for residential or commercial development? (1.1)	X	
The Project Area is located in close proximity to residential and commercial uses and, as identified in the West Harlem Master Plan, has the potential for strengthening upland residential and commercial areas and for opening up the waterfront to the public. The Proposed Actions would facilitate commercial and residential development in an appropriate area for reuse.		
6. Will the action result in a change in scale or character of a neighborhood? (1.2) The Proposed Actions would facilitate provide the character of a neighborhood?	X	
The Proposed Actions would facilitate new community facility and commercial development that would enliven and attract users to the waterfront.		
7. Will the proposed activity require provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (1.3)		X
8. Is the action located in one of the designated Significant Marine and Industrial Areas (SMIA): South Bronx, Newtown Creek, Brooklyn Navy Yard, Red Hook, Sunset Park, or Staten Island? (2)	······································	X
9. Are there any waterfront structures, such as piers, docks, bulkheads or wharves, located on the project sites? (2)		
Although the Proposed Actions would not directly result in construction or operation of facilities along the waterfront, the Proposed Actions would facilitate access to and use of the West Harlem Waterfront park being developed within the Project Area independent of this project. 10. Would the action involve the siting or construction of a facility essential to the generation or transmission of energy, or a natural gas facility, or would it develop new energy resources? (2.1)	<u>X</u>	
The fuel-fired central energy plants and smaller package boiler systems proposed to provide heating and ang to the new buildings within the Academic Mixed-Use Area would be located outside the coastal	X	

zone.

Policy Questions cont'd	Yes	No
11. Does the action involve the siting of a working waterfront use outside of a SMIA? (2.2)		
12. Does the proposed project involve infrastructure improvement, such as construction or repair of piers, docks, or bulkheads? (2.3, 3.2)		<u> </u>
13. Would the action involve mining, dredging, or dredge disposal, or placement of dredged or fill materials in coastal waters? (2.3, 3.1, 4, 5.3, 6.3)		<u>X</u>
14. Would the action be located in a commercial or recreational boating center, such as City Island, Sheepshead Bay or Great Kills or an area devoted to water-dependent transportation? (3)		<u>X</u>
15. Would the proposed project have an adverse effect upon the land or water uses within a commercial or recreation boating center or water-dependent transportation center? (3.1)	•••	<u>X</u>
16. Would the proposed project create any conflicts between commercial and recreational boating? (3.2)	···	<u>X</u>
17. Does the proposed project involve any boating activity that would have an impact on the aquatic environment or surrounding land and water uses? (3.3)		<u>X</u>
18. Is the action located in one of the designated Special Natural Waterfront Areas (SNWA): Long Island Sound-East River, Jamaica Bay, or Northwest Staten Island? (4 and 9.2)		X
19. Is the project site in or adjacent to a Significant Coastal Fish and Wildlife Habitat? (4.1) The Project Area is located within the Lower Hudson Reach Significant Coastal Fish and Wildlife Habitat. The Proposed Actions would include minimal in-water construction activities to construct a new outfall at the western terminus of 125th Street within the West Harlem Waterfront park. This outfall would discharge stormwater from the separate stormwater system proposed for the blocks between West 130th Street and West 133rd Street between Broadway and Twelfth Avenue. Use of this outfall for the discharge of stormwater would require a new SPDES permit from DEC.	X	
Discharge of stormwater through the outfall at West 125th Street would not be expected to result in significant adverse impacts to water quality or aquatic biota within the Lower Hudson Reach Significant Coastal Fish and Wildlife Habitat. The new storm sewers would be expected to include measures to contain floatables (e.g., catchbasins with sumps and hoods), and to trap sediment and oil (e.g., catchbasins with hydrodynamic separators). 20. Is the site located within or adjacent to a Recognized Ecological Complex: South Shore of Staten Island or Riverdale Natural Area District? (4.1 and 9.2)		X
21. Would the action involve any activity in or near a tidal or freshwater wetland? (4.2) The only portion of the Project Area with the potential to contain DEC tidal wetlands is the Other Area west of Marginal Street along the Hudson River. This portion of the Project Area is being developed for the West Harlem Waterfront park independent of the Proposed Actions, and also contains the area in which a new outfall would be constructed as part of the Proposed Actions for the discharge of stormwater from the separate storm sewer system proposed for the Academic Mixed-Use Area. The minimal in-water construction activities required for the new outfall and the discharge of stormwater would not affect any DEC tidal wetlands within the Project Area. 22. Does the project site contain a rare ecological community or would the proposed project affect a vulnerable plant, fish, or wildlife species? (4.3)	<u>X</u>	
23. Would the action have any effects on commercial or recreational use of fish resources? (4.4)		
Policy Questions cont'd	Yes	N ₂
24. Would the proposed project in any way effect the water quality classification of nearby waters or be unable		

to be consistent with that classification? (5)		X
Would the action result in any direct or indirect discharges, including toxins, hazardous substances, or other pollutants, effluent, or waste, into any waterbody? (5.1)	Х	
The discharge of stormwater collected by the new storm sewers within West 130th, West 131st, and West 132nd Streets to the Hudson River through a new outfall would not be expected to result in significant adverse impacts to water quality. The new storm sewers would be expected to include measures to contain floatables (e.g., catchbasins with sumps and hoods), and to trap sediment and oil (e.g., catchbasins with hydrodynamic separators).		
26. Would the action result in the draining of stormwater runoff or sewer overflows into coastal waters? (5.1) The discharge of stormwater collected by the new storm sewers within West 130th, West 131st, and West132nd Streets to the Hudson River through a new outfall would not be expected to result in significant adverse impacts to water quality. The new storm sewers would be expected to include measures to contain floatables (e.g., catchbasins with sumps and hoods), and to trap sediment and oil (e.g., catchbasins with hydrodynamic separators).	X	-
27. Will any activity associated with the project generate nonpoint source pollution? (5.2)		X
28. Would the action cause violations of the National or State air quality standards? (5.2)		X
29. Would the action result in significant amounts of acid rain precursors (nitrates and sulfates)? (5.2C)		X
30. Will the project involve the excavation or placing of fill in or near navigable waters, marshes, estuaries, tidal marshes or other wetlands?		X
31. Would the proposed action have any effects on surface or ground water supplies? (5.4)		X
32. Would the action result in any activities within a Federally designated flood hazard area or State designated ion hazards area? (6) district B and the Other Area west of Marginal Street containing the West Harlem Waterfront park are	X	
the only portions of the Project Area located in the 100-year floodplain.		
33. Would the action result in any construction activities that would lead to erosion? (6)		<u> </u>
34. Would the action involve construction or reconstruction of flood or erosion control structure? (6.1)		X
35. Would the action involve any new or increased activity on or near any beach, dune, barrier island, or bluff? (6.1)		_ X
36. Does the proposed project involve use of public funds for flood prevention or erosion control? (6.2)		X
37. Would the proposed project affect a non-renewable source of sand? (6.3)		X
38. Would the action result in shipping, handling, or storing of solid wastes; hazardous materials, or other pollutants? (7)	X	
Solid waste generated by the Proposed Actions would be collected by New York City Department of Sanitation trucks and private carters and disposed at out-of-City locations, as is the current practice for managing solid waste generated within the Project Area. Any toxic or hazardous waste encountered during construction activities associated with the Proposed Actions would be handled in accordance with City, State, and federal requirements.		
39. Would the action affect any sites that have been used as landfills? (7.1)		X
40. Would the action result in development of a site that may contain contamination or has history of underground fuel tanks, oil spills, or other form of petroleum use or storage? (7.2)	X	
Petroleum products encountered during construction activities associated with the Proposed Actions would be nanaged and mitigated according to pertinent City, State, and federal requirements. Licy Questions cont'd	Vos	No
Will the proposed activity result in any transport, storage, treatment, or disposal of solid wastes or	Yes	No_

hazardous materials, or the siting of a solid or hazardous waste facility? (7.3)	X	
See response to Policy Question 38. 42. Would the action result in a reduction of existing or required access to or along coastal waters, public access areas, or public parks or open spaces? (8)		X
43. Will the proposed project affect or be located in, on, or adjacent to any federal, state, or city park or other land in public ownership protected for open space preservation? (8) The West Harlem Waterfront park being developed by the New York City Economic Development Corporation as a separate action is within the Project Area. The Proposed Actions would improve pedestrian	X	***************************************
access to the park and result in improved views of the waterfront. 44. Would the action result in the provision of open space without the provision for its maintenance? (8.1)		<u>X</u>
45. Would the action result in any development along the shoreline but NOT include new water-enhanced or water-dependent recreational space? (8.2)		X
46. Will the proposed project impede visual access to coastal lands, waters and open space? (8.3)		<u>X</u>
47. Does the proposed project involve publicly owned or acquired land that could accommodate waterfront open space or recreation? (8.4)		X
48. Does the project site involve lands or waters held in public trust by the state or city? (8.5)	X	
See response to Policy Question 43. 49. Would the action affect natural or built resources that contribute to the scenic quality of a coastal area? (9)	••••	<u> X</u>
50. Does the site currently include elements that degrade the area's scenic quality or block views to the water? (9.1)	X	
The visual character of the Hudson River waterfront consists of an urban landscape with manufacturing industrial buildings, and paved surfaces. The Proposed Actions would enhance the streetscapes leading to the waterfront as well as along the waterfront. 51. Would the proposed action have a significant adverse impact on historic, archaeological, or cultural resources? (10)		X
52. Will the proposed activity affect or be located in, on, or adjacent to an historic resource listed on the National or State Register of Historic Places, or designated as a landmark by the City of New York? (10)	<u>X</u>	
The Project Area contains 10 architectural resources dating from the late 19th century and early to mid-20th century. Eight of these are located within the coastal zone. Of the eight, three are on the S/NR: the Manhattan Valley IRT viaduct, the IRT 125th Street Station, and the former Sheffield Farms Stable; and five are determined eligible for S/NR listing: the Riverside Drive viaduct, the Studebaker Building, the West Market Diner, the former New York Central Railroad Substation No. 11, and the former Lee Brothers Storage Building. The architectural resources in the Project Area would be retained, except for two resources: the former Sheffield Farms Stable (currently a moving and storage building), located at 3229 Broadway between West 129th and West 130th Streets, and the West Market Diner (now vacant), at 659 West 131st Street. Development of an academic research building on the site of the former stables, which requires uniform, large floor plates, would require the demolition of the former stable, which has a small footprint and cannot accommodate the requirements for laboratory and academic research space needs. Because demolition of the former Sheffield Farms Stable would constitute a significant adverse impact on architectural resources, a feasibility study is being undertaken to determine: (1) if the physical characteristics of the building allow for conversion to academic research use; (2) if alterations to convert the building would impact its historic character; and (3) whether retaining the building would allow Columbia University to meet its academic research space needs. This feasibility study will be submitted to the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). If the feasibility study determines that it is not feasible to adaptively reuse the former Sheffield Farms Stable as part of the Proposed Project, measures to partially mitigate these adverse impacts would be explored with OPRHP. The West Market Diner would be relocated to a new site in the Project Area t		

D. CERTIFICATION

relate to the historical use and development of the waterfront.



The applicant or agent must certify that the proposed activity is consistent with New York City's Waterfront Revitalization Program, unt to the New York State Coastal Management Program. If this certification cannot be made, the proposed activity shall not be indertaken. If the certification can be made, complete this section.

"The proposed activity complies with New York State's Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent Name:	Richard G. Leland, Esq.		
Address:	Fried, Frank, Harris, Shriver & Jacobson LLP		
	One New York Plaza		
	New York, NY 10004		
		Telephone	(212) 859-8978
Applicant/Agent Signature:		Date	

APPENDIX H TRAFFIC AND PARKING









A. COLUMBIA UNIVERSITY ON-LINE TRAVEL SURVEY

INTRODUCTION

An on-line travel survey of Columbia University faculty, administrators, staff, and students was conducted to determine current travel characteristics to various University facilities. The results of this survey are intended to be the basis for developing travel demand estimates for the University's planned development of the Manhattanville university area.

The on-line survey was administered over a three-week period in the spring of 2004. It was designed for all Columbia University personnel and students based at the Morningside Heights and Medical Center campuses, and at the Lamont-Doherty Earth Observatory and Nevis Laboratories. The survey questions and the relevant survey results are summarized below.

SURVEY DESIGN

The survey questionnaires were grouped into an algorithm that directs participants to different "blocks" of the survey, depending on how certain questions were answered. The layout of this algorithm and the associated blocks of questionnaires are summarized below and illustrated in Figure 1.

BACKGROUND INFORMATION

The first few questions were used to identify a participant by primary status at the University, and by the campus where he/she works or studies. These questions were followed by the survey participants' housing information during the school year. If a person resided in University housing, questions with regard to car ownership and minor children were also asked. The survey participants' housing situations were used to correlate travel patterns to and from the campus.

TRAVEL CHARACTERISTICS

A series of questions were asked regarding a survey participant's typical trip, including travel mode, origin of travel, home and non-home-based travel, and frequency of travel. The answers to these questions were used to develop trip distribution parameters by mode. For those who traveled via auto and taxi, additional questions were asked to determine vehicle occupancy and current parking behaviors.

SURVEY RESULTS

The detailed survey statistics were organized and summarized in numerous spreadsheet tables and databases. The key interpretation of these statistics and illustration of the results are described below.

BACKGROUND INFORMATION

Survey participation was requested from 15,845 University employees and 22,983 students. The specific breakdowns of this target population are summarized in Table H-1.

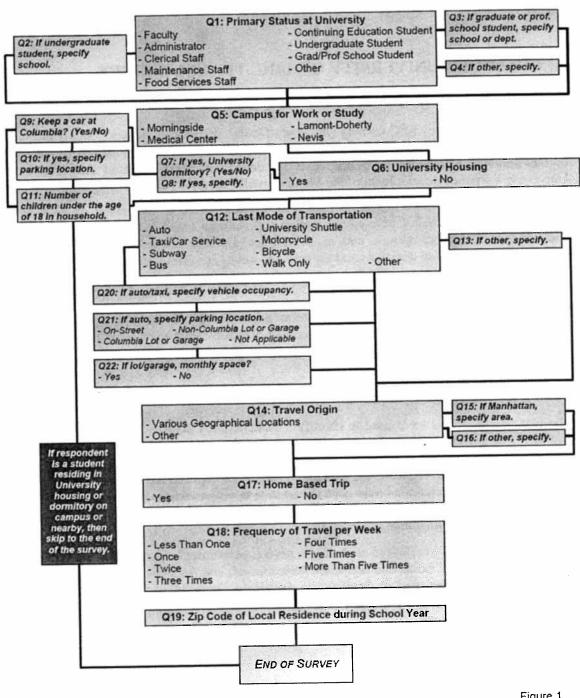


Figure 1 Survey Algorithm

MANHATTANVILLE IN WEST HARLEM REZONING

Table H-1
On-Line Survey Target Populations

	E	mployees			
Title Group Name	Morningside Heights	Health Science	Lamont- Doherty Earth Observatory	Nevis Laboratories	Total
Officers of Administration	2,183	1,638	78	5	3,904
Officers of Instruction	2,069	2,937	31	1	5,038
Officers of Research	495	2,239	232	33	2,999
Officers of the Libraries	122	10			132
Support Staff	2,125	1,515	113	19	3,772
Total	6,994	8,339	454	58	15,845
		Students			12,010
Schools	Undergrad	Graduate	Professional	Others	Total
Morningside Campus	7,759	6,321	5,701	752	20,533
Health Sciences	163	557	1,712	18	2,450
Total	7,922	6,878	7,413	770	22,983

In total, 9,186 survey responses were recorded, representing 23.7 percent of the target population. The corresponding response rates for University employees and students are 24.7 (3,908 out of 15,845) and 23.0 (5,278 out of 22,983) percent, respectively. While each Columbia affiliated personnel is classified by a specific status (e.g., officer of administration at the School of Business, or full-time undergraduate student at the School of General Studies), an individual may take on multiple roles at the University. For example, an officer of instruction may also be undertaking post-doctorate studies and research, while a graduate student could be working at a laboratory as a research assistant. Since the survey design provides the participants the opportunity to indicate their University status, rather than strictly responding to a list of choices, it was possible to further differentiate the surveyed University personnel through a series of post processing of the recorded survey data. Table H-2 presents a summary of the primary status of the surveyed University personnel by campus.

Of the 3,908 surveyed employees, 603 (15.4 percent) currently live in University housing. The car ownership of these employees is 36.8 percent (222 out of 603), and nearly 75 percent (163 out of 222) of these vehicles are kept in off-street lots or garages. As for the 5,278 surveyed students, 2,689 (50.9 percent) currently live in University housing or dormitories. The car ownership of these students is 4.6 percent (123 out of 2689), and just over 10 percent (14 out of 123) of these vehicle are kept off-street.

In addition to the vehicle ownership questions, those residing in University housing were also asked to indicate the numbers of minor children (under the age of 18) who currently live with them. For the 603 surveyed employees residing in University housing, 118 (19.6 percent) answered one child, 71 (11.8 percent) answered two children, and 8 (1.3 percent) answered three or more children currently live with them. As for the 2,689 surveyed students residing in University housing or dormitories, 32 (1.2 percent) answered one child, 5 (0.2 percent) answered two children, and 4 (0.1 percent) answered three or more children currently live with them.

Table H-2
Primary Status of University Personnel by Campus

			Campus		
Status	Morningside Heights	Health Science	Lamont- Doherty Earth Observatory	Nevis Laboratories	Total
		Employees			
Faculty	599	708	26	5	1,338
Administrator	1,105	505	20	1	1,631
Clerical Staff	309	139	7	0	455
Maintenance Staff	34	12	0	11	47
Food Services Staff	10	1	0	1	12
Researcher	98	288	36	3	425
Total	2,155	1,653	89	11	3,908
		Students			
Graduate/Professional	2,710	602	26	5	3,343
Undergraduate	1,733	42	0	0	1,775
Non-Degree, Cont Ed, Others	157	2	1	0	160
Total	4,600	646	27	5	5,278

TRAVEL CHARACTERISTICS

Travel modes were divided into eight categories: auto, taxi/car service, subway, bus, University shuttle, motorcycle, bicycle, and walk only. Since travel between employees and students, and between those who live in University housing and those who live in private housing is expected to vary considerably, the survey results were summarized separately for the various University affiliations and geographic locations of residence, as presented in Tables H-3 and H-4.

Overall, approximately 25 percent of all employees and 5 percent of all students travel via auto. Transit shares, which include subway and bus trips, make up nearly 50 and 35 percent of the total employee and student populations, respectively. With over half of all students residing in University housing or dormitories, travel on foot to and from University facilities is their primary mode of travel (56 percent), while only 18 percent of the employees travel via walk only.

Information on travel origins was also obtained from the on-line survey. Geographically, specific locations were categorized into five Manhattan sections, the outer New York City boroughs, Long Island, Westchester, Upstate New York, Connecticut, and New Jersey. A summary of the recorded travel origins for both employees and students are presented in Table H-5. It should be noted that while most commuting trips to Columbia University facilities originate from home (home-based trips), some are made from places of employment or elsewhere (non-home-based trips). For the latter, a traveler's trip origin would be different from his/her location of residence. This pattern is evident in the statistics presented in Table 5, as some employees and students who live in University housing had indicated travel origin locations where Columbia University housing or dormitories do not exist.

Table H-3
Travel Mode of University Employees

	1		T =		Т.		T				I IVA	oue (יט זיי	HIVE.	isity	Ŀm	pioy	ees
Status		uto		axi		way	E	lus	Sh	uttle	Moto	rcycle	Blo	ycle	Wall	Only	To	otal
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
			т —		Em	ployee	s Res	iding i	n Univ	ersity i	Housir	ng						
Faculty	24	6.8	6	1.7	49	14.0	9	2.6	9	2.6	0	0.0	3	0.9	251	71.5	351	100
Administrator	6	4.7	3	2.3	7	5.4	4	3.1	4	3.1	0	0.0	1	0.8	104	80.6	129	100
Staff	0	0.0	0	0.0	0	0.0	1	3.0	1	3.0	0	0.0	0	0.0	31	93.9	33	100
Subtotal	30	5.8	9	1.8	56	10.9	14	2.7	14	2.7	0	0.0	4	0.8	386	75.2	513	100
Researchers	7	7.8	1	1.1	22	24.4	2	2.2	9	10.0	0	0.0	0	0.0	49	54.4	90	100
Total	37	6.1	10	1.7	78	12.9	16	2.7	23	3.8	0	0.0	4	0.7	435	72.1	603	100
					Er	volan	es Re	sldina	In Pri	vate Ho	uelna		· · · · · ·	· · ·	1 400	72.1	003	100
Faculty	444	45.1	39	4.0	368	37.4	49	5.0	15	1.5	0	0.0	11	1.4	I 50			
Administrator	359	24.1	20	1.3	762	51.1	162	10.9	25	1.7	1	0.0	20	1.1 1.3	59	6.0	985	100
Staff	68	14.3	8	1.7	282	59.4	58	12.2	15	3.2	0	0.0	0	0.0	141	9.5	1,490	100
Subtotal	871	29.5	67	2.3	1,412	47.9	269	9.1	55	1.9	1	0.0	31		44	9.3	475	100
Researchers	59	17.8	2	0.6	184	55.4	24	7.2	16	4.8				1.1	244	8.3	2,950	100
Total	930	28.3	69	2.1	1,596	48.6	293	8.9	71			0.3	6	1.8	40	12.0	332	100
					1,000	40.0				2.2	2	0.1	37	1.1	284	8.7	3,282	100
Faculty	468	25.0	45		T			ployee		ıl ,								
Administrator	365	35.0 22.5	45	3.4	417	31.2	58	4.3	24	1.8	0	0.0	14	1.0	310	23.2	1,336	100
Staff	68	13.4	23	1.4	769	47.5	166	10.3	29	1.8	1	0.1	21	1.3	245	15.1	1,619	100
Subtotal			8	1.6	282	55.5	59	11.6	16	3.1	0	0.0	0	0.0	75	14.8	508	100
	901	26.0	76	2.2	1,468	42.4	283	8.2	69	2.0	1	0.0	35	1.0	630	18.2	3,463	100
Researchers	66	15.6	3	0.7	206	58.8	26	6.2	25	5.9	1	0.2	6	1.4	89	21.1	422	100
Total	967	24.9	79	2.0	1,674	43.1	309	8.0	94	2.4	2	0.1	41	1.1	719	18.5	3.885	100

Note: The travel modes of a small percentage of the survey population could not be identified, and therefore, were not included in the above summary.

Source: Columbia University On-Line Travel Survey, April/May 2004

Table H-4
Travel Mode of University Students

	T .		T				T		,	LIA	VEI 1	Vlode	. 01	Uni	versi	ty S	tude	nts
Status		uto		axi	Sub	way	В	us	Sh	uttle	Moto	rcycle	Bio	ycle	Walk	Only	То	tal
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
					Stı	udents	Resid	ling in	Unive	rsitv H	ousin	0					<u> </u>	
Graduate/Prof	8	0.6	2	0.2	46	3.5	8	0.6	20	1.5	0	0.0	2	0.2	1,239	93.5	1.325	400
Undergraduate	11	8.0	5	0.4	55	4.0	1	0.1	0	0.0	1	0.1	3	0.2	1,285		1 .,	100
Other	1	33.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.2	2	66.7	1	100
Total	20	0.7	7	0.3	101	3.8	9	0.3	20	0.7	1	0.0	5	0.2			3	100
					S	tuden	ls Res					0.0		0.2	2,526	93,9	2,689	100
Graduate/Prof	185	9.6	72	3.7	1,263		107	5.5	10						· · · · · ·			
Undergraduate	39	10.3	9	2.4	239	63.4	19	5.0	1	0.5	7	0.4	21	1.1	271	14.0	1,936	100
Other	24	15.5	9	5.8	100	64.5	9		1	0.3	2	0.4	9	2.4	59	15.6	377	100
Total	248	10.0	90	3.6	1,602			5.8	1	0.6	0	0.0	1	0.6	11	7.1	155	100
		10.0	30	3.0	1,002	04.9	135	5.5	12	0.5	9	0.4	31	1.3	341	13.8	2,468	100
Card at ID (St	udents	Total									
Graduate/Prof	193	5.9	74	2.3	1,309	40.1	115	3.5	30	0.9	7	0.2	23	0.7	1,510	46.3	3,261	100
Undergraduate	50	2.9	14	0.8	294	16.9	20	1.2	1	0.1	3	0.2	12	0.7	1,344	77.3	1,738	100
Other	25	15.8	9	5.7	100	63.3	9	5.7	1	0.6	0	0.0	1	0.6	13	8.2	158	100
Total	268	5.2	97	1.9	1,703	33.0	144	2.8	32	0.6	10	0.2	36	0.7	2,867		5,157	100
Note:	The tra	avel m	odes	of a s	mall pe	ercent	age of	f the s	urvev	nonul	ation	could r			find o		3,13/	100
١	vere r	ot incl	luded	in the	above	sumi	nary.	0	<u></u>	Popul	GUOIT	could 1	iot De	iueni	med, a	nu th	ererore	·,
					-Line T			v An	di/Ada	. 2004								

Table H-5
Origin of Travel

	Employees Students											
Location	Unive	ersity	Priv Hous	ate	То	tal	Unive Hous		Priv Hou		Tot	al
	#	%	#	%	#	%	#	%	#	%	#	%
Manhattan	-		***************************************									
Below 59th Street	0	0.0	278	8.5	278	7.2	30	1.1	479	19.4	509	9.9
Upper East Side (59th to 110th Streets)	2	0.3	184	5.6	186	4.8	4	0.1	176	7.1	180	3.5
Upper West Side (59th to 110th Streets)	38	6.3	459	14.0	497	12.8	29	1.1	574	23.3	603	11.7
Between 110th and 125th Streets	508	84.2	210	6.4	718	18.5	2,318	86.7	232	9.4	2,550	49.6
Above 125th Street	45	7.5	366	11.2	411	10.6	239	8.9	208	8. 4	447	8.7
Subtotal	593	98.3	1,497	45.7	2,090	53.8	2,620	97.9	1,6 69	67.7	4,289	83.4
Brooklyn	0	0.0	248	7.6	248	6.4	4	0.1	206	8.4	210	4.1
Queens	1	0.2	188	5.7	189	4.9	7	0.3	118	4.8	125	2.4
Staten Island	0	0.0	13	0.4	13	0.3	3	0.1	2	0.1	5	0.1
The Bronx	1	0.2	243	7.4	244	6.3	3	0.1	72	2.9	75	1.5
New York City Subtotal	595	98.7	2,189	66.8	2,784	71.7	2,637	98. 6	2,067	83.9	4,704	91.5
Westchester	1	0.2	329	10.0	330	8.5	4	0.1	74	3.0	78	1.5
Nassau	0	0.0	77	2.3	77	2.0	3	0.1	34	1.4	37	0.7
Suffolk	1	0.2	19	0.6	20	0.5	1	0.0	17	0.7	18	0.4
Connecticut	2	0.3	43	1.3	45	1.2	3	0.1	43	1.7	46	0.9
Upstate NY (incl. Rockland, Orange & Put.)	2	0.3	147	4 .5	149	3.8	18	0.7	26	1.1	44	0.9
New Jersey	0	0.0	451	13.8	451	11.6	7	0.3	188	7.6	195	3.8
Other	2	0.3	24	0.7	26	0.7	2	0.1	16	0.6	18	0.4
Total	603	100	3,279	100	3,882	100	2,675	100	2,465	100	5,140	100

Note:

The origins of a small percentage of the survey population could not be identified, and therefore, were not included in the above summary. Also, since non-home based trips are also included in the above summary, travel origins do not necessary correlate with places of residence.

Source: Columbia University On-Line Travel Survey, April/May 2004

The survey results on travel origin indicate that nearly 85 percent of Columbia students and fewer than 55 percent of Columbia employees travel to Columbia University from areas in Manhattan. This pattern is attributed to the substantially higher proportion of students (over half) than employees (15 percent) residing in University housing or dormitories near the Morningside Heights and Medical campuses, and the fact that most trips originate from home. Similar to the statistics presented for travel mode, patterns on travel origins are largely dependent on locations of residence or on the numbers of employees and students residing in University housing.

For those traveling to Columbia facilities via auto or taxi, additional information was obtained with regard to vehicle occupancy and parking locations. For employees, the auto and taxi occupancies are 1.25 and 1.17, respectively, and for students, they are 1.17 and 1.35, respectively. Parking locations vary considerably among employees and students. Nearly 65 percent of the employees traveling by car are accommodated at University parking lots or garages, while only 9 percent of the students traveling by car make use of University-owned or affiliated parking facilities. On the other hand, approximately 65 percent of the students who travel via auto park on-street, while less than 20 percent of University employees make use of on-street parking. These statistics are summarized in Table H-6.

Table H-6
Parking Statistics of Columbia Employees and Students

Parking Location	Emple	oyees	Stud	ents
3 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -	Number	Percent	Number	Percent
On-Street	189	19.5	181	65.1
Columbia University Parking Lot/Garage	625	64.5	25	9.0
Non-Columbia University Parking Lot/Garage	123	12.7	63	22.7
Not Applicable–Dropped Off	32	3.3	9	3.2
Total	969	100	278	100
Off-Street Parking	Emplo	oyees	Stud	ents
on order arking	Number	Percent	Number	Percent
Monthly Parking	604	80.7	25	28.4
Transient Parking	144	19.3	63	71.6
Total	748	100	88	100

The employees and students who live in private housing were also sampled for two additional travel-related questions. The number of employees from whom responses to these questions were obtained is nearly 85 percent of the total employees surveyed, while the number of students sampled is fewer than 50 percent of the total students surveyed. The results of the survey responses indicate that approximately 93 percent of employee trips and 89 percent of student trips are home-based trips (trips originating from the place of residence). For the question regarding trip frequency, over 80 percent of the surveyed employees travel regularly (5 or more times per week) to campus, while just over 40 percent of the surveyed students exhibit similar patterns. These statistics are summarized in Table H-7.

Table H-7
Travel Frequencies for Employees and Students

Status	_ <	1		1		2		3		4		5	>	5	То	tal
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
			E	mploye	ees Re	siding	in Priv	ate Ho	ousing		***************************************		·			
Faculty	44	4.5	55	5.6	76	7.7	90	9.1	90	9.1	385	39.1	244	24.8	984	100
Administrator	52	3.5	16	1.1	23	1.5	30	2.0	38	2.5	1.046	70.1	287	19.2		100
Staff	22	4.6	6	1.3	7	1.5	13	2.7	7	1.5	348	73.3	72	15.2	1 .,	100
Subtotal	118	4.0	77	2.6	106	3.6	133	4.5	135	4.6	1,779	60.3	603		2,951	100
Researchers	19	5.7	4	1.2	11	3.3	9	2.7	15	4.5	155	46.5	120	36.0	333	100
Total	137	4.2	81	2.5	117	3.6	142	4.3	150	4.6	1,934	58.9	723		3,284	100
			s	tuden	ts Res	iding i	n Priva	te Hou	using		L-i				,	
Graduate/Prof	74	3.8	199	10.3	282	14.6	229	11.8	324	16.7	401	20.7	426	22.0	1.935	100
Undergraduate	2	0.5	2	0.5	22	5.9	48	12.8	100	26.7	92	24.5	109	29.1	375	100
Other	0	0.0	25	16.1	52	33.5	27	17.4	28	18.1	19	12.3	4	2.6	155	100
Total	76	3.1	226	9.2	356	14.4	304	12.3	452	18.3	512	20.8	539		2,465	100
Note: The res	ponses ore, were	of a s not in	mall ¡	erce d in t	ntage he at	of th	e sur	vey p ary.	opula							

Columbia University On-Line Travel Survey, April/May 2004

Source:

CONCLUSIONS

For a large survey sample size, such as the one targeted for the Columbia on-line travel survey, a response rate of 10 to 12 percent typically would be considered statistically significant. As detailed in the initial discussions of the survey results, this travel survey achieved an overall response rate of over 23 percent. This level of response rate lends credibility to subsequent conclusions made from the information obtained. These conclusions or statistics would provide a comprehensive and accurate depiction of travel behavior and characteristics of the entire Columbia University employee and student populations. Specific components of these statistics would be used to derive estimates on projecting future travel to the Manhattanville university area.

B. OFF-STREET PARKING UTILIZATION

Table H-8 2006 Existing Conditions Off-Street Parking Utilization

_		2000	Existing	z Conai	tion	is O	11-5	treet	Par	King	Uti	liza	tion
	Company Name	Address	License Number	Capacity	(zation Percei	nt)	Utili	zed Sp			vaila Space	s
-	MTP 3300 Broadway	627 West 129th			АМ	MD	РМ	AM	MD	PM	АМ	MD	PM
1	Corp.	Street	0974364	200	100	100	100	200	200	200	0	0	0
2	West 129th Street LLC	605 West 129th Street	0959388	134	100	100	100	134	134	134	0	0	0
3	Uni Facility Corp.	631-635 West 131st Street	1117939	100	75	75	75	75	75	75	25	25	25
4	Y & H Enterprises Inc.	526-534 West 134th Street	735702	175	75	75	75	131	131	131	44	44	44
5	Columbia Waterfront LLC	69 St. Clair Pt.	1115799	70	100	100	100	70	70	70	0	0	0
6	Morningside Heights Housing Corp.	3100 Broadway	0469448	291	100	100	75	291	291	218	0	0	73
7	Edison Riverside Corp.	3333 Broadway	761734	360	75	50	100	270	180	360	90	180	0
8	Marvel Parking Corp.	673 St. Nicholas Avenue	1099665	180	100	100	100	180	180	180	0	0	0
9	Uptown Parking Corp.	1721-1735 Amsterdam Avenue	1148653	53	100	100	75	53	53	40	0	0	13
10	Nicholson & Nichols Park	503 West 151st Street	469138	20	75	50	75	15	10	15	5	10	5
11	LAZ Parking Limited	457 West 150th Street	1181103	125	75	50	75	94	63	94	31	62	31
12	Giselle Garage Corp.	310 West 144th Street	0926991	100	75	100	50	75	100	50	25	0	50
13	Stanns Parking	234-40 West 148th Street	1148672	110	50	50	50	55	55	55	55	55	55
14	Giselle Garage Corp.	161 West 132nd Street	427219	130	100	100	100	130	130	130	0	0	0
15	EZ Going Park	2201 Seventh Avenue	1157099	48	75	75	50	36	36	24	12	12	24
16	Stable Car Parking Inc	616 West 153rd Street	1097397	135	50	50	75	68	68	101	67	67	34
17	impark HSW LLC	2130-38 Seventh Avenue		71	75	100	25	53	71	18	18	0	53
18	impark HSW LLC	215 West 125th Street	1102349	60	75	25	25	45	15	15	15	45	45
19	EZ Going Park	270 West 126th Street	1157098	159	90	50	0	143	80	0	16	79	159
1	Uptown Parking Corp.	160 West 124th Street	427520	175	100	100	25	175	175	44	0	0	131
Note	e: Data collected in Septe	mber 2006			L			·······		L			

Table H-8 (cont'd) 2006 Existing Conditions Off-Street Parking Utilization

	Company Name	Address	License Number	Capacity		ation ercer		Utiliz	ed Sp	aces	Available Spaces		
			.va		AM	MD	РМ	AM	MD	РМ	AM	MD	РМ
21	Easy Cross Parking Corp.	225 St. Nicholas Avenue	955730	160	75	75	25	120	120	40	40	40	120
22	SoLo Parking	316 West 118th Street	886059	130	100	100	25	130	130	33	0	0	97
23	Park GMC Garage Management Corp.	532 West 122nd Street	921479	180	100	100	50	180	180	90	0	0	90
24	Rapid Park Industries	480 Claremont Avenue	906438	200	75	100	75	150	200	150	50	0	50
25	ProPark America	1090 Amsterdam Avenue	1171647	135	75	100	75	101	135	101	34	0	34
26	GGMC Garage Corp.	516-20 West 112th Street	859390	75	75	100	25	56	75	19	19	0	56
		Total		3576	0.85	0.83	0.67	3030	2957	2387	546	619	1189
No	te: Data collected in Sep	tember 2006			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								





Table H-9 2015 Build Condition Peak Hour Signal Timing Improvements

Intersection	Existing 2006 AM	Build 2015 AM	Existing 2006 PM	Build 2015 PM
Marginal Street & 133rd	Unsignalized	WB = 28	Unsignalized	WB = 25
Street	Unsignalized	SB = 62	Unsignalized	SB = 65
Marginal Street & 132nd	Unaissalizad	Peds = 35	Unsignalized	Peds = 35
Street	Unsignalized	SB = 55	Urisignalized	SB = 55
Marginal Street & St.	Unsignalized	Peds = 35	Unsignalized	Peds = 35
Clair Place	Onsignalized	SB = 55	Onsignalized	SB = 55
12th Avenue & 131st	Unsignalized	EW = 36	Unsignalized	EW = 36
Street		NS = 54	Orisignanzea	NS = 54
12th Avenue & 130th	Analyzed Together	Peds = 38	Analyzed Together	Peds = 32
Street	with	NS = 23	with	NS = 28
Gucci	125th Street	NS = 29	125th Street	NS = 30
12th Avenue & 125th	Analyzed Together	WB = 38	Analyzed Together	WB = 32
Street	with	SB = 23	with	SB = 28
0001	130th Street	NS = 29	130th Street	NS = 30
	EW = 40	WB = 23	EW= 40	WB = 27
Broadway NB & 133rd	NB = 50	NB = 31		NB = 33
Street		NB (Thru & Right) =		NB (Thru & Right)
		36	NB = 50	= 30
Broadway SB & 133rd	EW = 40	WB = 54	EW = 40	WB = 60
Street	SB = 50	SB = 36	SB = 50	SB = 30
	EW = 36	EW = 33	EW = 36	EW = 32.5
Broadway & 125th Street	SB = 27	NS Left = 21	SB = 27	NS Left = 21
•	110 07	NO. T	ND 07	NS Thru & RT =
	NB = 27	NS Thru & RT = 36	NB = 27	36.5
125th Street & 129th	Unsignalized	EW = 32	Unsignalized	EW = 31 Peds = 21
Street/St. Clair Place		Peds = 21	4	
<u> </u>		Thru = 37	I be a law a lima of	Thru = 38
Riverside Drive & St. Clair Place	Unsignalized	EB = 70	Unsignalized	EB = 70 SB = 20
Clair Place	11	SB = 20 EB = 35	l to all or all or all	EB = 35
12th Avenue & St. Clair	Unsignalized		Unsignalized	
Place		NB = 35	-	NB = 35
	A	SB = 20	A 1 C 1 -	SB = 20
Broadway NB & W 131st	Analyzed as Single Intersection	EW = 36	Analyzed as Single Intersection	EW = 36
Street	intersection	NS = 54	Intersection	NS = 54
	Analyzed as Single	140 - 04	Analyzed as Single	140 - 04
Broadway SB & W 131st	Intersection	EW = 36	Intersection	EW = 36
Street	IIIGISCOIOII	NS = 54	-	NS = 54
Broadway NB & 132nd	EW = 40	EW = 43	 	10 0,
Street	SB = 50	NS = 47	╡	
Broadway SB & 132nd	EW = 40	EW = 43		
Street	SB = 50	NS = 47	╡	
00000	1 20 - 20	1110 41	_L	<u> </u>





2015 Build Condition Primary Study Area Intersection Geometry Improvements

Intersection	111141	y Stau	Existing 2		GCOII	Build 20	orovements
intersection	Į.	Group	# Lanes	Lane Width	Group	# Lanes	Lane Width
Marginal & 133rd St.*	SB	Т	# Lanes	19.7	Т	1	15.8
marginar a 1551a GC	WB	Ĺ	1	15.1	Ė	1	15.1
Marginal & 132nd St.*	WB	Ī	1	14.1			13.1
	SB	LT	2	17.6	LT	2	12.0
Marginal & 125th St.*	WB	L	2	16.0	L	2	12.0
g g	SB	L	1	10.3			12.0
		LT	2	12.1	Т	2	12.0
Marginal & St. Clair*	SB	L	1	16.2	L	1	13.0
	ļ	Т	1	16.2	LT	2	12.0
12th Ave & W 133rd St.	WB	LTR	1	10.8	L	1	10.0
					TR	2	10.0
	NB	L	1	10.1	L	1	10.1
		LTR	11	16.0	LT	1	16.0
	SB	LTR	2	11.2	TR	2	11.2
12th Ave & W 132nd St.	EB	LTR	1	14.0	LTR	2	15.0
	WB	LTR	1	16.0	-	-	-
	NB	LTR	2	11.5	TR	2	11.5
	SB	LTR	2	11.4	LT	2	11.4
12th Ave & W 131st St.	EB	LTR	11	15.0	LR	1	15.0
	WB	LTR	1	16.0	<u>L</u>	11	10.0
					TR	1	10.0
	-				R	11	10.0
	NB	LT TR	1	9.7	LT	2	9.7
	SB	LT	1	9.7 11.9	TR	2	44.0
	SB	TR	1	11.9	i r	2	11.9
12th Ave & 130th St.	NB	- '''	<u> </u>	11.3	TR	2	10.5
izarAve a room ot.	SB	Nev	analysis in	Build 2030	L	1	10.0
	ا	1.0.	· analyoro iir	2000	T	2	10.0
12th Ave & W 125th St.	EB	LTR	2	13.2	-		10.0
	WB	L	1	10.0	LT	2	10.0
		T	1	10.5		_	70.0
		R	1	11.5	R	1	11.0
	NB	LTR	1	16.0	LTR	2	10.5
	SB	LT	1	12.1	Γ.	1	10.0
					TR	2	10.0
12th Ave & 125th St. SB Right	EB	Т	2	13.2			
	WB	T	2	15.6	Not A	ınalyzed in Βι	ild Scenario
	SB	R	1	16.0			
Broadway NB & 133rd	EB	LT	1	16.0	-	-	-
	WB	TR	1	14.7	TR	2	11.1
	NB	LT	2	10.1	L	1	14.5
B		R	1	10.1	TR	2	10.0
Broadway SB & 133rd	EB	TR	11	16.0	-	-	- 44
	WB	LT	1	14.7	L	1	11.5
	SB	LTR		0.0	TD	2	11.5
Broadway NB & 132nd	EB	LIK	3	9.8 11.8	TR	3	10.0
Divadinay ND & 132110	WB	_ L -		- 11.8	LT TR	1	16.0
	NB	LT	2	15.1	TR	<u>1</u> 3	16.0 10.0
Broadway SB & 132nd	EB	TR	1	11.8	TR	2	10.0
Diodunay OD & TOZIIU	D	117	'	11.0	R	1	10.0
	WB	LT	1	12.0	L	1	14.0
	SB	LTR	2	15.7	LT	2	12.4
		LIIV		13.7			12.4



Table H-10 (cont'd) 2015 Build Condition

Primary Study Area Intersection Geometry Improvements Intersection Existing 2006 **Build 2015** Group Lane Width # Lanes Group # Lanes | Lane Width Broadway & 131st EΒ **LTR** 16.0 Analyzed as H intersection in Build WB LT 1 9.0 2015: 9.0 See Broadway NB & 131st and NB LTR 3 13.1 Broadway SB & 131st SB LTR 3 10.3 Broadway NB & 131st EB 10.0 WB Analyzed as H intersection in Build TR 2 9.0 NB 20. LTR 10.0 Broadway SB & 131st WB See Broadway & 131st LT 2 10.0 SB LTR 2 12.4 Broadway & 130th EΒ LR 14.0 L 2 10.0 R 10.0 NB LT 3 12.7 Ŧ 3 10.0 SB LT 3 10.8 LT 12.4 Broadway & 129/126 St. WB LT 1 16.0 LT 1 16.0 12.0 R 12.0 NB DefL 0 9.7 LT 3 9.9 10.3 SB TR 3 10.6 TR 12.4 Broadway & 125th St. ΕB L 1 10.5 L 10.0 TR 2 10.8 Т 2 10.0 R 11.0 WB L 10.0 L 1 10.5 TR 2 11.0 T 2 10.0 R 9.4 NB L 12.4 1 L 2 10.0 LT 2 Т 110 2 10.0 R 1 11.8 R 1 10.0 SB L 1 16.0 L 2 10.0 **LTR** 2 12.6 T 2 10.0 R 10.8 125th St. & 129th/St. Clair EB L 1 16.0 R 2 12.0 R 16.0 WB L 1 16.0 R 2 12.0 R 16.0 NB T 2 12.0 T 2 11.5 SB T 12.0 T 2 11.5 Riverside Dr. & St. Clair EΒ LTR 16.0 L 1 15.3 TR 15.2 SB LT 2 9.6 LT 2 10.5 12th Ave & St. Clair Pl EΒ Т 1 2 15.0 NB R 1 R 2 10.0 SB 16.0

Note: *. The intersection along Marginal Street has been revised to reflect improvements based on construction of West Harlem Waterfront Park in No Build analysis.



Table H-11 2030 Build Condition Peak Hour Signal Timing Improvements

Intersection	Existing 2006 AM	Build 2030 AM	Existing 2006 PM	Build 2030 PM
Marginal Street &	Unaionalizad	WB = 28	Unsignalized	WB = 25
133rd Street	Unsignalized	SB = 62	Unsignalized	SB = 65
Marginal Street &	l l - si - s - li - s - d	Peds = 35	Unsignalized	Peds = 35
132nd Street	Unsignalized	SB = 55	Unsignalized	SB = 55
Marginal Street & St.	11	Peds = 35	Unsignalized	Peds = 35
Clair Place	Unsignalized	SB = 55	Unsignalized	SB = 55
12th Avenue & 131st	Unairmolizad	EW = 36	Unsignalized	EW = 36
Street	Unsignalized	Thru = 54	Offsignalized	NS = 54
404 A 0 4204b	Analyzed Together	NS = 29	Analyzed Together	NS = 33
12th Avenue & 130th	with	NS = 33	with	NS = 29
Street	125th Street	NS = 28	125th Street	NS = 28
400 4 070	Analyzed Together	WB = 29	Analyzed Together	WB = 33
12th Avenue & 125th	with	SB = 33	with	SB = 29
Street	130th Street	NS = 28	130th Street	NS = 28
	EW = 40	WB = 23	EW = 40	WB = 25
Broadway NB & 133rd	NB = 50	NB = 31	NB = 50	NB = 33
Street		NB (Thru & Right)		NB (Thru & Right)
		= 36		= 32
Broadway SB & 133rd	EW = 40	WB = 54	EW = 40	WB = 58
Street	SB = 50	SB = 36	SB = 50	SB = 32
	EW = 36	EW = 35	EW = 36	EW = 32.5
Broadway & 125th	SB = 27	NS Left = 21	SB = 27	NS Left = 21
Street		NS Thru & RT =		NS Thru & RT =
	NB = 27	34	NB = 27	36.5
4254h Street 8 4204h	Unsignalized	EW = 32	Unsignalized	EW = 29
125th Street & 129th Street/St. Clair Place		Peds = 21	4	Peds = 21
Street/St. Clair Flace		Thru = 37		NS = 40
Riverside Drive & St.	Unsignalized	EB = 70	Unsignalized	EB = 70
Clair Place		SB = 20		SB = 20
0.0	11	EB = 31	Unsignalized	EB = 35
12th Avenue & St.	Unsignalized	NB = 39	Unsignalized	NB = 35
Clair Place			4	
		SB = 20		SB = 20
	Analyzed as Single	EW = 36	Analyzed as Single	EW = 36
Broadway NB & W 131st Street	Intersection		Intersection	
131st Street		NS = 54		NS = 54
	Analyzed as Single	EW = 36	Analyzed as Single	EW = 36
Broadway SB & W	Intersection		Intersection	
131st Street		NO 54		NC 54
		NS = 54	EB = 32	NS = 54 EB = 35
Broadway & W 130th				NS = 55
Street			NS = 58	WB Only = 42
Broadway and 129th				NS = 48
Street/ 126 Street	<u> </u>	<u> </u>		NO = 40



Table H-12 2030 Build Condition imary Study Area Intersection Geometry Improvements

	Prima	ry Stud	y Area	Intersecti	on Geo	metry Im	provement
Intersection			Existing 2	2006		Build 20)30
		Group	# Lanes	Lane Width	Group	# Lanes	Lane Width
Marginal & 133rd St.*	SB	T	11	19.7	Т	1	15.8
M	WB	L	1	15.1	L	1	15.1
Marginal & 132nd St.*	WB	L	11	14.1	-	-	-
	SB	LT	2	17.6	LT	2	12.0
Marginal & 125th St.*	WB	<u> </u>	2	16.0	L	2	12.0
	SB	L	1	10.3			
Marginal & St. Clair*	 	LT	2	12.1	T	2	12.0
marginal & St. Clair	SB	L	1	16.2	L	1	13.0
12th Ave. & W 133rd St.	14/5	T	1	16.2	LT	2	12.0
1201 AVE. & VV 133rd St.	WB	LTR	1	10.8	L	1	10.0
	NB			10.1	TR	2	10.0
	NB	L	1	10.1	L	1	10.3
	SB	LTR LTR	2	16.0	LT	11	10.5
12th Ave. & W 132nd St.	EB			11.2	TR	2	11.2
1211 Ave. & W 152114 St.	WB	LTR LTR	1	14.0	LTR	2	15.0
	NB	LTR	2	16.0			
	SB	LTR	2	11.5	TR	2	10.5
		LIIX	-	11.4	L	1	10.0
12th Ave. & W 131st St.	EB	LTR	1	15.0	LT	1	11.0
		LIIX	,	15.0	L	1	15.0
	WB	LTR	1	16.0	R L	1	15.0
	'''		,	10.0	LR	1	10.0
	1			ı	R	1	10.0
	NB	LT	1	9.7	T	2	10.0 10.5
	1 1	TR	1	9.7	· ·	2	10.5
	SB	LT	1	11.9	T	2	10.5
		TR	1	11.9	·	-	10.5
12th Ave & 130th St.	NB				T	1	10.5
		Nowar	nalysis in E	Duild 2020	R	1	10.5
	SB	INCW al	iaiyoio iii c	Sulia 2030	L	1	10.0
					Т	2	10.0
12th Ave & W 125th St.	EB	LTR	2	13.2	- 1	-	-
	WB	L	1	10.0	LT	2	10.0
		Ţ	1	10.5	J	į	
	H	R	1	11.5	R	1	11.0
	NB	LTR	1	16.0	LTR	2	10.5
	SB	LT	1	12.1	L	1	10.0
12th Ave & 125th St. SB Right	┞╒ ╤┼				TR	2	10.0
TAM AVE & 12301 St. SB RIGHT	EB WB	<u> </u>	2	13.2			
	SB		2	15.6	Not Ar	nalyzed in Bui	ld Scenario
Broadway NB & 133rd St.		R	_1	16.0			
210aumay 145 & 1331U St.	EB WB	LT	1 1	16.0			-
	NB	TR LT	1	14.7	TR	2	11.1
	IVD		2	10.1	L	1	14.5
Broadway SB & 133rd	EB	R	1	10.1	TR	2	10.0
	WB	TR LT	1	16.0			-
	***	-'	' 	14.7	L	1	11.5
	SB	LTR	3		TD	2	11.5
Iota: * The interesting 1	00	LIN I	3	9.8	TR	3	10.0

Note: *. The intersection along Marginal Street has been revised to reflect improvements based on construction of West Harlem Waterfront Park in No Build analysis.

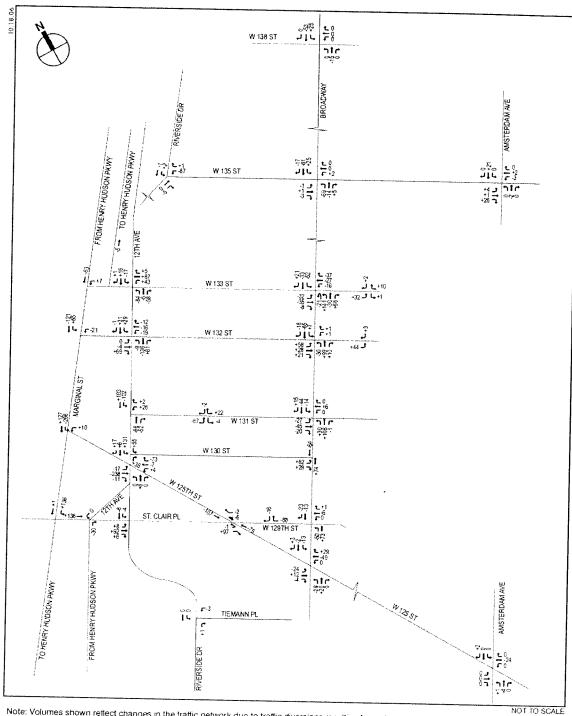
Table H-12 (cont'd) 2030 Build Condition

Primary Study Area Intersection Geometry Improvement

Pı	imar	y Study	/ Area]	<u> Intersectio</u>	n Geor	netry Imp	rovements
Broadway NB & 132nd	EB	L	1	11.8	L	2	15.0
	NB	LT	2	15.1	T	3	10.0
Broadway SB & 132nd St.	EB	TR	1	11.8	TR	2	10.0
	1				R	1	10.0
	WB	LT	1	12.0	-	-	+
	SB	LTR	2	15.7	LT	2	12.4
Broadway & 131st	EB	LTR	1	16.0	Analyze	d as H interse	ection in Build
	WB	LT	1	9.0	/ dialy20	2030:	,00.,
		R	11	9.0	See B	roadway NB	& 131st and
	NB	LTR	3	13.1		roadway SB	
	SB	LTR	3	10.3			
Broadway NB & 131st	EB				T	11	10.0
-	WB	Analyze		ersection in	TR	2	9.0
	NB		Build 203		LTR	3	10.0
Broadway SB & 131st	WB	See	Broadway	& 131st	LT	2	10.0
	SB				LTR	2	12.4
Broadway & 130th St.	EB	LR	1	14.0	L	2	10.0
					R	1	10.0
	NB	LT	3	12.7	Т	3	10.0
	SB	LT	3	10.8	LT	2	12.4
Broadway & 129/126 St.	WB	LT	1	16.0	LT	1	16.0
		R	11	12.0	R	11	12.0
	NB	DefL	0	9.7	LT	3	9.9
		T	3	10.3			40.4
	SB	TR	3	10.5	TR	2	12.4
Broadway & 125th St.	EB	L	1	10.5	L	1	10.0
		TR	2	10.8	T	2	10.0
				10.0	R	11	11.0 10.5
	WB	L	1	10.0	L	1 2	10.5
		TR	2	11.0	I	1	9.4
				12.4	R	2	10.0
	NB	L	1	11.0	Ť	2	10.0
		LT	2	11.8	Ŕ	1	10.0
	SB	R L	1 1	16.0	 	2	10.0
	00	LTR	2	12.6	Ī	2	10.0
		LIK		12.0	R	1 1	10.8
125th St. & 129th St./ St. Clair Pl.	EB	L	1	16.0	R	2	12.0
125th St. & 129th St./ St. Clair Fi.		R	1	16.0	''	_	
	WB	L	1	16.0	R	2	12.0
	l '''	R	1	16.0			
	NB	T	2	12.0	Т	2	11.5
	SB	Ť	2	12.0	T	2	11.5
Riverside Dr. & St. Clair	EB	LTR	1	16.0	L	1	15.3
Aiverside Dr. & St. Clair		-''`	<u> </u>	1	TR	1	15.2
	SB	LT	2	9.6	LT	2	10.5
12th Ave & St. Clair Pl	EB	T	1 1		T	2	15.0
IZUI AVE G GL. Clair i i	NB	R	1	-	R	2	10.0
	SB		1	_		1	16.0
Mid-Block Crosswalk @ 130th	EB		<u> </u>		T	2	10.0
Mid-Block Crosswalk @ 130th	WB	Analy	zed in Buil	d 2030 only	T	2	10.0
Mid-Block Crosswalk @ 131st	EB	1		•	T	2	10.0
MING-BIOCK CLOSSWAIK (W 132HU		<u> </u>			_L		



D. TRAVEL DIVERSION AND PROJECT INCREMENTS



Note: Volumes shown reflect changes in the traffic network due to traffic diversions resulting from changes in street direction and parking patterns, and status of several No Build projects within the study area under the Build condition.

Figure 1

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Primary Study Area
Traffic Diversions 2015 Morning Peak Hour

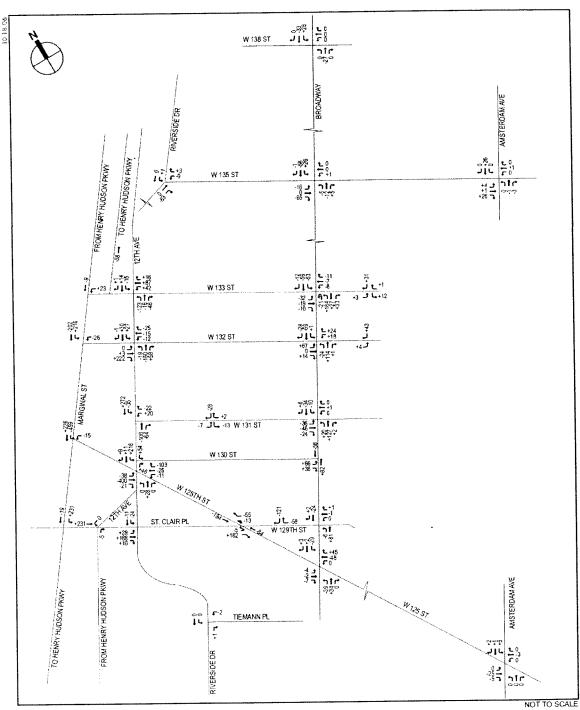


Figure 2

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Primary Study Area Traffic Diversions 2015 Evening Peak Hour



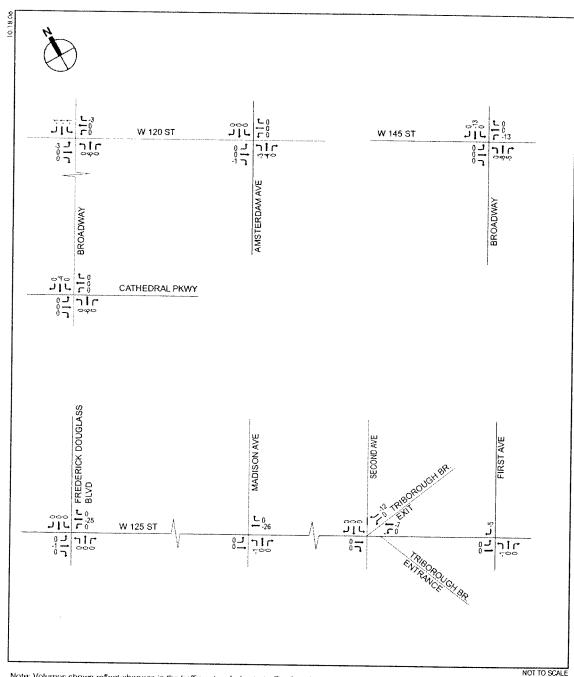


Figure 3

Secondary Study Area MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT Traffic Diversions 2015 Morning Peak Hour

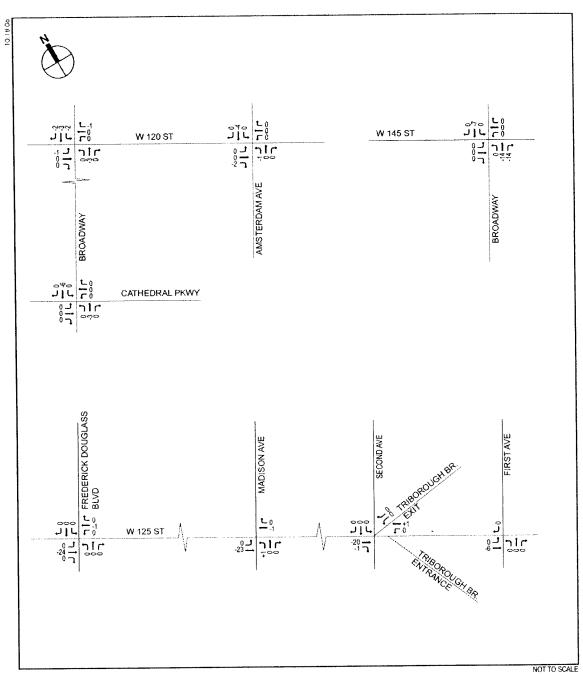


Figure 4
Secondary Study Area
Traffic Diversions 2015 Evening Peak Hour

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

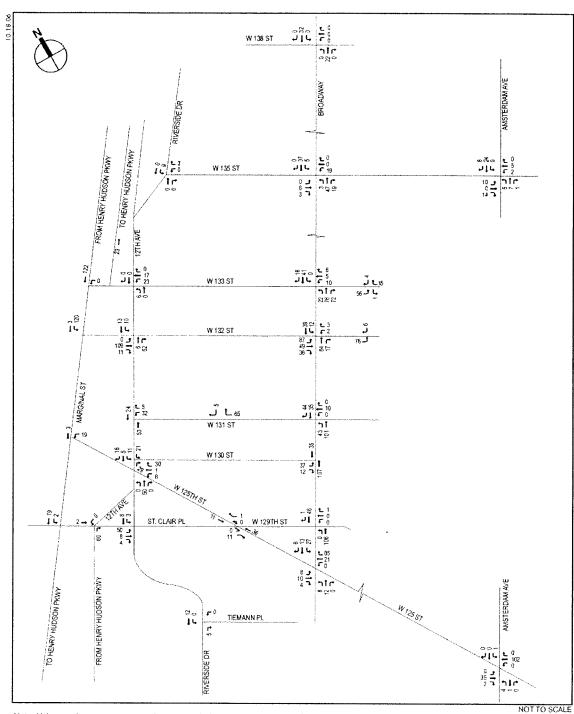


Figure 5

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Primary Study Area Project-Generated 2015 Morning Peak Hour

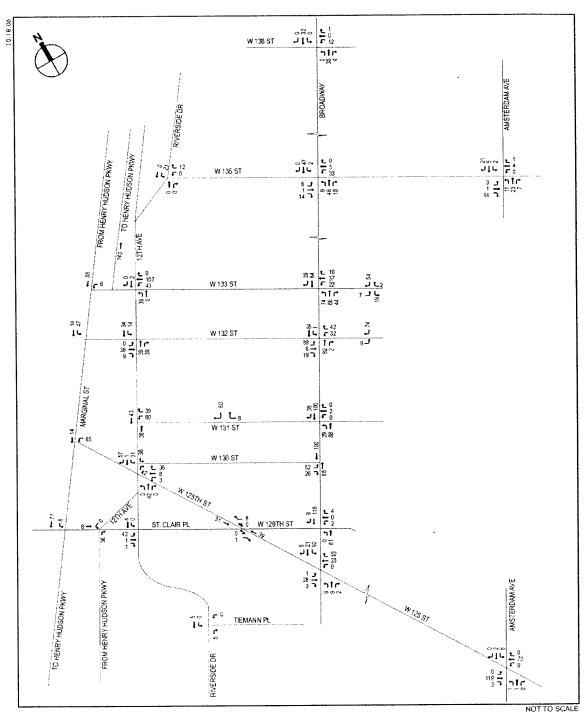
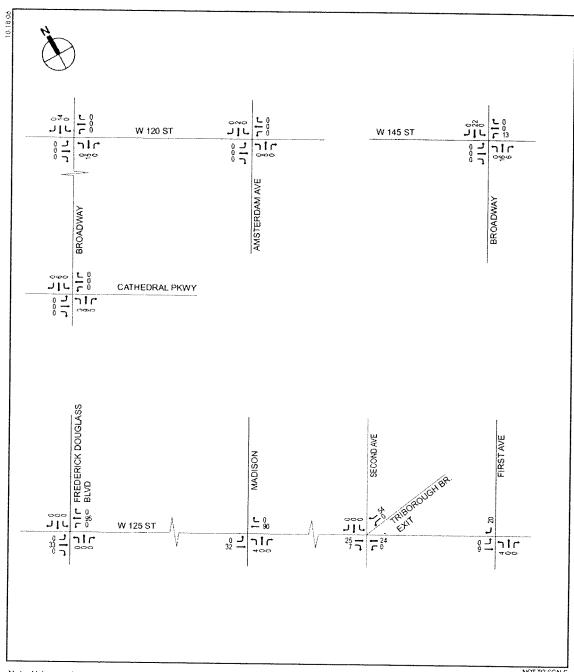


Figure 6
Primary Study Area
Project-Generated 2015 Evening Peak Hour

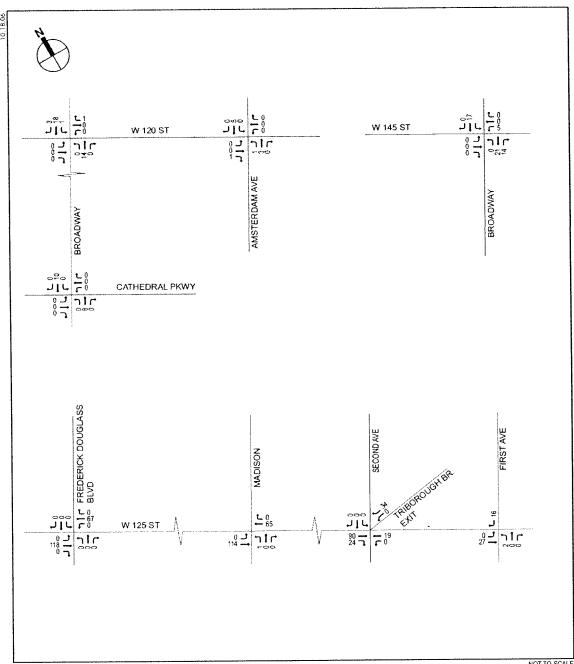
MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT



NOT TO SCALE

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 7 Secondary Study Area Project Generated 2015 Morning Peak Hour



NOT TO SCALE

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Figure 8 Secondary Study Area Project Generated 2015 Evening Peak Hour



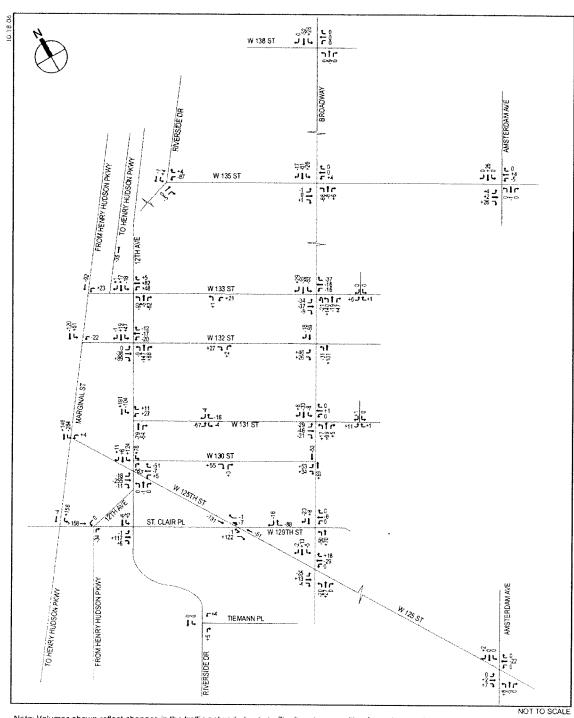


Figure 9

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Primary Study Area
Traffic Diversions 2030 Morning Peak Hour

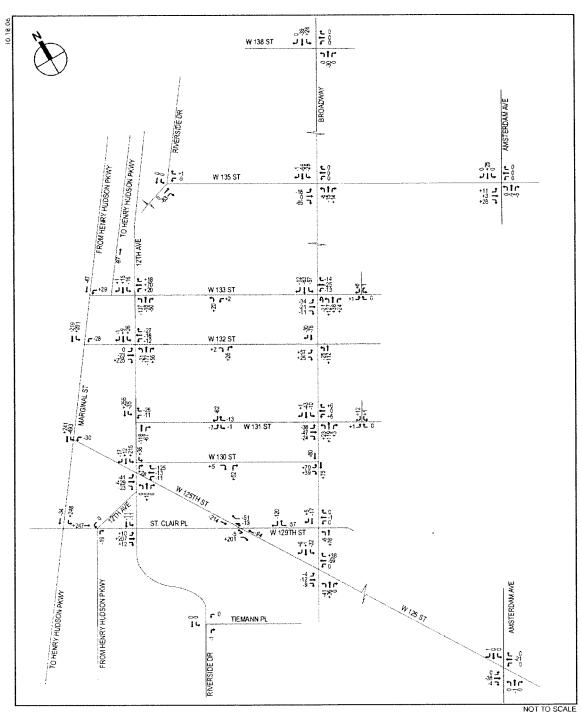


Figure 10

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Primary Study Area
Traffic Diversions 2030 Evening Peak Hour



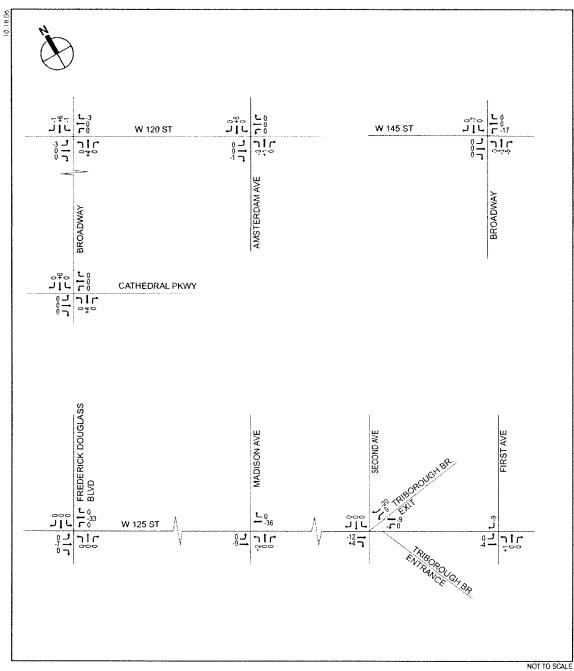
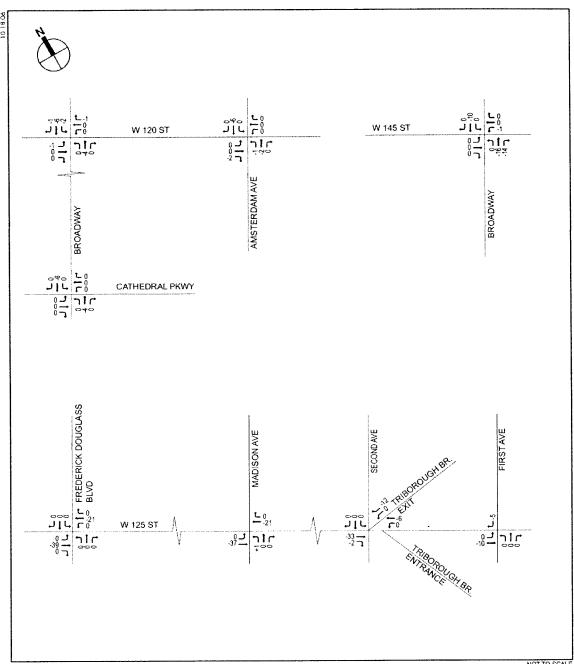


Figure 11

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT Secondary Study Area Traffic Diversions 2030 Morning Peak Hour



NOT TO SCALE

Figure 12

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Secondary Study Area Traffic Diversions 2030 Evening Peak Hour



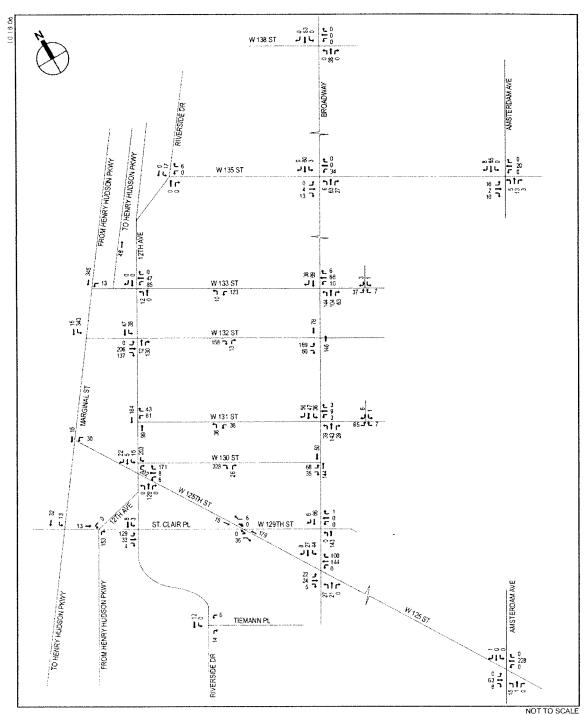


Figure 13

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Primary Study Area Project-Generated 2030 Morning Peak Hour

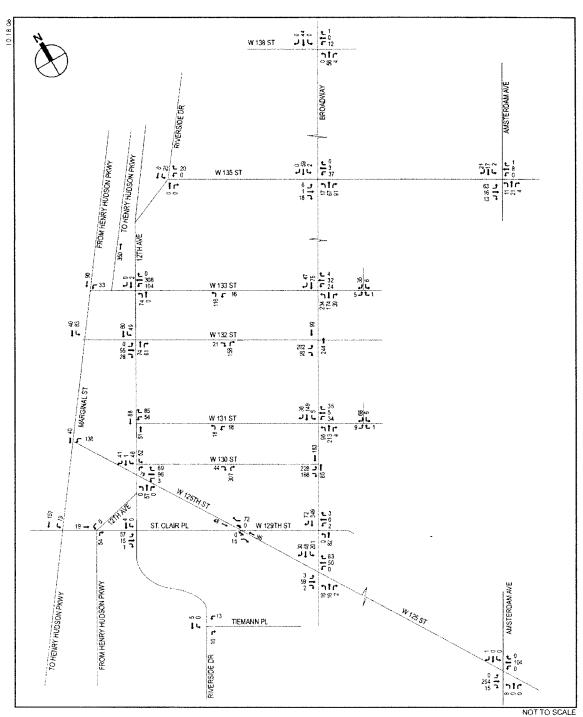
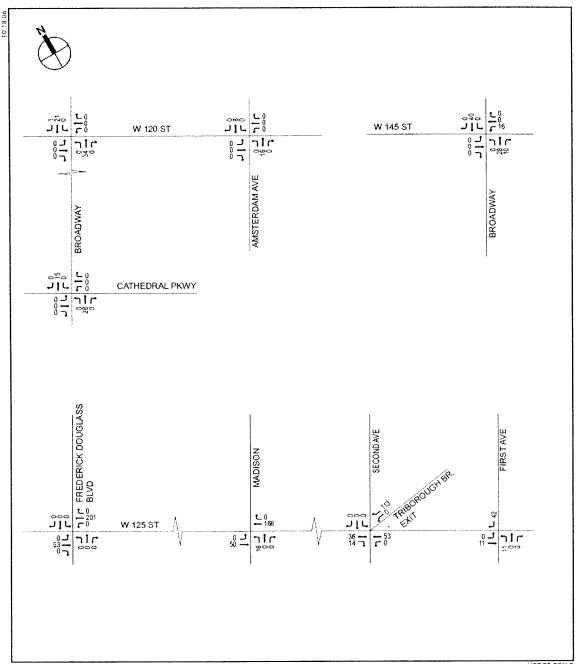


Figure 14
Primary Study Area
Project-Generated 2030 Evening Peak Hour

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT



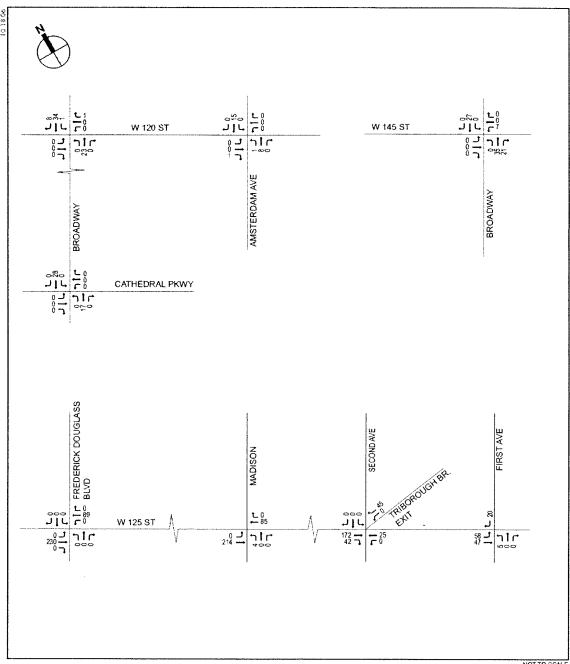


NOT TO SCALE

Figure 15

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

Secondary Study Area Project Generated 2030 Morning Peak Hour



NOT TO SCALE

Figure 16 Secondary Study Area Project Generated 2030 Evening Peak Hour

MANHATTANVILLE IN WEST HARLEM REZONING AND ACADEMIC MIXED-USE DEVELOPMENT

E. NO BUILD PARKING ASSUMPTIONS

Table H-13 No Build Projects Trip Generation

1 Proj. Wes 2 EAS 3 Striv 4 Citre 5 Mini 6 W.1 7 Mar 8 & 9 Unit 11 Vinc 12 Upt 13 Har 14 Eas 15, 16 & CU	iver's Garden rella (Taystee) nk Building 127th St Cornerstone irt 125 riem Dowling &	Waterfront Open Space Site Building Ferry Pier Retail Component Residential Component Office Component Office Component Retail Component Retail Component Residential Component Residential Component Retail Component Retail Component Retail Component	120387 9000 1 46000 170 50000 30000 120000 40000 40000	26.6 350 47.42 8.075 18 47.42 18 47.42 8.075 47.42	1000 1000 1000 1000	gsf slip Sf DU Sf Sf Sf Sf Sf	15.0% 30.0% 1.0% 2.0% 19.5% 23.0% 23.0% 23.0% 2.0% 25.0%	1.65 1.50 1.60 1.20 1.20 1.60 1.20	21 44 2 27 223 173 18 414 24 175 6
2 EAS 3 Striv 4 Citre 5 Mini 6 W.1 7 Mar 8 & 9 Unit 10 Hart 11 Vinc 12 Upt 13 Hart 14 Eas 15, 16 & CU	iver's Garden rella (Taystee) nk Building 127th St Cornerstone rt 125 riem Dowling &	Site Building Ferry Pier Retail Component Residential Component Office Component Office Component Office Component Retail Component Retail Component Residential Component Retail Component Retail Component Retail Component Retail Component Office Component	9000 1 46000 170 50000 30000 120000 40000 40000 40000	26.6 350 47.42 8.075 18 47.42 18 47.42 8.075 47.42	1000 1 1000 1 1000 1000 1000 1000 1000	gsf slip Sf DU Sf Sf Sf Sf Sf	30.0% 1.0% 2.0% 19.5% 23.0% 23.0% 2.0% 13.0%	1.65 1.50 1.60 1.20 1.20 1.60 1.20	27 223 173 18 414 24 175
4 Citre 5 Mini 6 W.1 7 Mar 8 & 9 Unit 10 Har 11 Vinc 12 Upt 13 Har 14 Eas 15, 16 & 17 Sha	rella (Taystee) nk Building 127th St Cornerstone rt 125 rlem Dowling &	Residential Component Office Component Retail Component Office Component Retail Component Residential Component Residential Component Retail Component Retail Component Office Component	170 50000 30000 120000 40000 200 10000 40000	8.075 18 47.42 18 47.42 8.075 47.42	1000 1000 1000 1000 1000	DU Sf Sf Sf DU Sf	19.5% 23.0% 2.0% 23.0% 2.0% 13.0% 2.0%	1.20 1.20 1.60 1.20 1.20 1.60 1.20	223 173 18 414 24 175
5 Mint 6 W.1 7 Mar 8 & 9 Unit 10 Har 11 Vinc 12 Upt 13 Har 14 Eas 15, 16 & 17 Sha	nk Building 127th St Cornerstone rt 125 rlem Dowling &	Retail Component Office Component Retail Component Residential Component Retail Component Office Component Retail Component	30000 120000 40000 200 10000 40000	47.42 18 47.42 8.075 47.42 18	1000 1000 1000 1	Sf Sf DU Sf	2.0% 23.0% 2.0% 13.0% 2.0%	1.60 1.20 1.60 1.20 1.60	18 414 24 175
6 W.1 7 Mar 8 & 9 Unit 10 Hari 11 Vinc 12 Upt 13 Har 14 Eas 15, 16 & 17 Sha	127th St Cornerstone rt 125 rlem Dowling &	Office Component Retail Component Residential Component Retail Component Office Component Retail Component	40000 200 10000 40000	47.42 8.075 47.42 18	1000 1000 1	Sf DU Sf	2.0% 13.0% 2.0%	1.60 1.20 1.60	24 175
7 Mar 8 & 9 Unit 10 Hart 11 Vinc 12 Upt 13 Hart 14 Eas 15, 16 & 17 Sha	rt 125	Residential Component Retail Component Office Component Retail Component	10000 40000	8.075 47.42 18	1000	DU Sf	13.0%	1.20	175
10 Hart 11 Vinc 12 Upt 13 Hart 14 Eas 15, 16 & 17 Sha	rlem Dowling &	Office Component Retail Component	40000	18					
10 Hart 11 Vinc 12 Upt 13 Hart 14 Eas 15, 16 & 17 Sha			4000	10000000					
11 Vinc 12 Upt 13 Har 14 Eas 15, 16 & 17 Sha		Office Component Residential Component	65200	18	1000 1000	100	2.0% 25.0% 16.0%	1.20	
11 Vinc 12 Upt 13 Har 14 Eas 15, 16 & 17 Sha	rlem Park Hotel	residential component		utside of 1				All New York Bridge	PER CONTRACT
12 Upti 13 Har 14 Eas 15, 16 & 17 Sha	ncent Cyrus Plaza			utside of 1			B (89.49)	NO SHADOWAY	HEREIG
13 Har 14 Eas 15, 16 & 17 Sha	town NY	FOR THE BUILDING STORY	C	utside of 1	Mile s	study area	Non-State		
15, 16 & 17 Sha	rlem Auto Mall	A THE STREET HE SHOULD	0	utside of 1	Mile	study area	Profesion .	图 图 图 图 5 图 图	SECTION.
17 Sha	st River Plaza	SECTION OF THE PARTY OF	C	utside of 1	Mile s	study area			NEW LONG
	abazz & Kalahari		C	utside of 1	Mile :	study area			
	New Acad-Bdg cDonald Site)		Colu	mbia Opera	ated n	o build pro	ject		
	J New Acad-Res Bdg	Donnersh	405000	105	1000	Cr.	14.5%	1.20	436
19 (120	JNY Dorm	Research Residential Component	185000			Resident			
	J Admin Bdg	residential Component	000	4.73	2000	Incolucia	2.0%	1,50	S. Contract
	tudebaker Bdg)		Colu	mbia Opera	ated n	o build pro	ject		
	ience High School		Colu	nbia Opera	ated n	o build pro	ject		(1) ((1) (1)
	J Office Bdg (Nash)	TOTAL SELECTION OF THE PARTY.	Colu	mbia Open	ated n	o build pro	ject	STATE OF STATE OF	
24 CU	J Office Bdg (U-Haul) JNY Science Bdgs &		Colu	mbia Open	ated n	o build pro	ject		
25 Oth	INY Science Boos &	Lance of the second of the sec	350000	1	1000	Cr	14.5%	1.20	825

Notes:

^{*.} No build trip generation data is based on data provided by AKRF.

Table H-14 No Build Projects Parking Requirement

Elimanted from No lisus Projects Proje	Build	Project Name	Description	Size of the Project	Zoning	Parking Requirement	per	unit(s)	Total Requirement	Total Requirement	Sources/ Notes:
Vise Harbern Waterfront Waterfront Open Space 120387 1900 1 1 1 1 1 1 1 1 1	1										
Ferry Pier	2	West Harlem Waterfront	Waterfront Open Space								
Striver's Garden Retail Component 46000 C4-6 none required 0 0 0 0 0 0 0 0 0				1							
Residential Component 170 (C4-6 40% 170 68 68	3	Striver's Garden	Retail Component	46000	C4-6	none required			0	0	Zor Resolutio 36 Zor
4 Citarella (Taystee) Office Component 50000 PRC 81) 1 300 st 167 150 Retail Component 30000 MH-1 1 200 st 150 150 Retail Component 30000 MH-1 1 200 st 150 150 Retail Component 120000 PRC 81) 1 300 st 400 150 Retail Component 120000 PRC 81) 1 300 st 400 150 Retail Component 120000 PRC 81) 1 300 st 400 150 Retail Component 120000 PRC 81) 1 1000 st 40 Retail Component 120000 PRC 81) 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 10 To 10 Retail Component 10000 Ct-4 1 1000 st 10 To 10 Retail Component 10000 Ct-4 1 1000 st 10 To 10 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 4 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 st 40 Retail Component 10000 Ct-4 1 1000 St 40 Retail Component 10000 Ct-4 1 1000 St 40 Retail Component 10000 Ct-4 1 1000 St 40 Retail Component 10000 Ct-4 1 1000 St 40 Retail Component 10000 Ct-4 1 1000 St 40 Retail Component 10000 Ct-4 1 1000 St 40 Retail Component 10000 Ct-4 1 1000 St 40 Retail Component 10000 Ct-4 1 10000 St 40 Retail Component 10000 Ct-4 1 10000 St 40 Retail Component 10000 Ct-4 1 10000 St 40 Retail Component 10000 Ct-4 1 10000 St 40 Retail Component 10000 Ct-4 1 10000 St 40 Retail Component 10000 Ct-4			Residential Component	170	CAB	40%		170		60	Resolution
A Citarella (Taystee) Office Component 50000 PRC B1) 1 300 st 167 150 R Retail Component 30000 M1-1 1 200 st 150 150 R Set Mink Building Office Component 120000 PRC B1) 1 300 st 400 150 R SW. 127th St Comerstone Retail Component 40000 C1-4 1 1000 st 40 40 40 R Residential Component 200 R7-2 40% 200 80 80 80 R Residential Component 40000 C4-4 1 1000 st 40 40 40 40 A000 C4-4 1 1000 st 40 40 A000 C4-4 1 1000 st 40 A000 C4-4 1 1000			Tresidential Component			40%	-	170	- 00	00	36-
Relatic Component 30000 M1-1 1 200 st 150	4	Otarella (Taystee)	Office Component	50000	group 6,	1	300	sf	167	150	Zor Resolutio 44
Retail Component 30000 M1-1 1 200 sl 150 150 150 150 150 150 150 150 150 150											Zon Resolutio
S Mink Building Office Component 120000 PRC B1) 1 300 st 400 150 EW 1.27th St Cornerstone Retail Component 40000 C1-4 1 1000 st 40 40 40 Residential Component 200 R7-2 40% 200 80 80 Residential Component 10000 C4-4 1 1000 st 10 10 10 Residential Component 40000 C4-4 1 1000 st 40 40 Office Component 40000 C4-4 1 1000 st 40 40 Retail Component 40000 C4-4 1 1000 st 40 40 Retail Component 40000 C4-4 1 1000 st 40 40 Retail Component 40000 C1-4 1 1000 st 40 40 Retail Component 65200 C1-4 1 1000 st 66 Retail Component 6520 C1-4 1 1000 st 66 Retail Component 6520 C1-4 1 1000 st 66 Retail Component 6520 C1-4			Retail Component	30000	M1-1	1	200	sf	150	150	Zon
Residential Component 40000 C1-4 1 1000 sf 40 40 40 40 40 40 40 40 40 40 40 40 40					group 6,		-				Resolutio
Residential Component 200 R7-2 40% 200 80 80 80 80 80 80 8	. 5	Mink Building	Office Component	120000	PRC B1)	1	300	sf	400	150	Zon
Residential Component 200 R7-2 40% 200 80 80 80 80 80 80 8	6	W.127th St Cornerstone	Retail Component	40000	C1-4	1	1000	sf	40	40	Resolutio 36
Retail Component 10000 C4-4 1 1000 sr 10 10 10 10 10 10 10 1			Residential Component	200	R7-2	40%		200	80	80	Zor Resolutio 36-
A serial Component serial seri	7	Mart 125	Retail Component	10000	C4-4	1	1000	sf	10	10	Zor Resolutio
Hartem Dowling & Retail Component 4000 C1-4 1 1000 sf 4 16 Office Component 65200 C1-4 1 1000 sf 66 66 Residential Component 40 C1-4 50% 40 20 20 10 Hartem Park Hotel Outside of 1 Mile study area Outside of 1 Mile st											Zon Resolutio
8 & 9 United Retail Component 4000 C1-4 1 1000 st 4 16 Office Component 65200 C1-4 1 1000 st 66 66 86 Residential Component 40 C1-4 50% 40 20 20 20 10 Hartern Park Hotel Outside of 1 Mile study area Outside of 1 Mile			Office Component	40000	C4-4	1	1000	st	40	40	Zon
Office Component 65200 C1-4 1 1 1000 st 66 66 66 Residential Component 40 C1-4 50% 40 20 20 20 20 20 20 20 20 20 20 20 20 20	8 & 9		Retail Component	4000	C1-4	1	1000	sf	4	16	Resolutio 36 Zor
Residential Component 40 C1-4 50% 40 20 20 20 20 20 20 20 20 20 20 20 20 20			Office Component	65200	C1-4	1	1000	st	66	66	Resolutio 36 Zon
10 Hartem Park Hottel 11 Vincent Cyrus Plaza 12 Uptown NY 13 Hartem Auto Mail 14 East River Plaza 15, 16 & 17 Shabazz & Kalahari CU New Acad-Bdg 16 (McDonaid Site) CU New Acad-Res Bdg 19 (120) Research 185,000 R8 none required CU Admin Bdg 21 (Studebaker Bdg) 21 (Studebaker Bdg) 22 (CU Office Bdg (Nash) Columbia Operated no build project COlumbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMY Dorm COLUMD Dorm COLUMD Dorested no build project COLUMD Dorested no build project COLUMD Dorested no build project COlumbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project		1	Residential Component	40	C1-4	50%		40	- 20	20	Resolutio 36-3
12 Uptown NY 13 Hartem Auto Mail 14 East River Plaza 15, 18 & 17 Shabazz & Kalahari CU New Acad-Bdg 18 (McDonald Site) CU New Acad-Res Bdg 19 (120) Research 185000 R8 none required CU Admin Bdg 21 (Studebaker Bdg) 22 (Studebaker Bdg) 21 (Studebaker Bdg) 22 (Cuny Derm CU Admin Bdg 21 (Studebaker Bdg) 22 (Cuny Bdg Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project				OF COMPA	OTICE COL						
13 Flartem Auto Mall 14 East River Plaza Outside of 1 Mile study area 15, 18 & 17 Shabazz & Kalahari CU New Acad-Bdg 18 (McDonaid Site) CU New Acad-Res Bdg 19 (120) Research 185000 R8 none required CU Admin Bdg 21 (Studebaker Bdg) Columbia Operated no build project CU Admin Bdg 21 (Studebaker Bdg) Columbia Operated no build project COlumbia Operated no build project COlumbia Operated no build project COlumbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project	12	Uptown NY	of the second second			Outside of	1 Mile	study area			
15, 16 & 17 Shabazz & Kalahari Cul New Acad-Bdg (McDonald Site) Columbia Operated no build project CU New Acad-Res Bdg (McDonald Site) Columbia Operated no build project CU New Acad-Res Bdg Research 185000 R8 none required 0 20 CUNY Dorm Residential Component 600 R7-2 none required 0 CU Admin Bdg Cul Admin Bdg Cul Admin Bdg Columbia Operated no build project Columbia Operated no build Droject C						Outside of	1 Mile	study area			
CU New Acad-Res Bdg 18 (McDonald Site) CU New Acad-Res Bdg 19 (120) Research 185000 R8 none required 0 Residential Component 600 R7-2 none required CU Admin Bdg 21 (Studebaker Bdg) Columbia Operated no build project 22 Science High School Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project	5, 16 &		CONTRACTOR OF THE PARTY OF THE	100000						TREE ROOM PAR	0.00
20 CUNY Dorm Residential Component 600 R7-2 none required 0 CU Admin Bdg Cu Admin Bdg Columbia Operated no build project Columbia Operated no build Dolect Columbia Operated no build Dolect Columbia Operated no build Dolect Columbia Operated no build Dolect Columbia Operated no build Dolect Columbia Operated no build Dolect Columbia Operated no Dolect Columbia Operated no Dolect Columbia Operated no Dolect Columbia Operated no Dolect Columbia Operated no Dolect Columbia Operated no Dolect Columbia Operated no Dolect Columbia Operated no Dolect Columbia Operated no Dolec	COMMON	CU New Acad-Bdg						ST #337			
20 CUNY Dorm Residential Component 600 R7-2 none required 0 CU Admin Bdg 21 (Studebaker Bdg) Columbia Operated no build project 22 Science High School Columbia Operated no build project 23 CU Office Bdg (Nash) Columbia Operated no build project 24 CU Office Bdg (U-Haul) Columbia Operated no build project			Research	185000	Ra	none required				0	Zon Resolution 25
21 (Studebaker Bdg) Columbia Operated no build project 22 Science High School Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project			Residential Component	600	R7-2	none required				0	Zon Resolution 25
22 Science High School Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project Columbia Operated no build project	21	(Studebaker Bdg)		MAN STATE		Columbia One	erated r	no build pro	vect		
24 CU Office Bdg (U-Haul) Columbia Operated no build project	22	Science High School	220222	E. C. C.	RESIDENCE.	Columbia Ope	erated r	no build pro	ject	Charles As 7	
	485.5	Secretary and Secretary				Columbia Ope	erated r	to build pro	ject	Service Services	
CUNY Science Brins &	24	CU Office Bdg (U-Haul)	SE SICILIZADO DE SELECTOR		FEW.	Columbia Ope	rated n	no build pro	ject		700
2 Others Research 350000 R7-2 none required 0		CUNY Science Bdgs &			. 8						Zon Resolution

Notes;
*. Based on Zoning Handbook, NYCDCP, 2006 and Zoning Resolution, The City of New York.

Table H-15 No Build Projects Parking Accumulation

	-	Offic mpoi			Resea ompor	1.5010	Co	Reta			esider mpon	TOTAL STATE OF THE	Acc	Total umula	
Time Period	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
	At s	tart	0	At	start	0	At:	start	0	At:	start	168			
Before 7 AM	0	0	0	0	8	0	0	0	0	10	10	168	10	18	168
7-8 AM	7	0	7	33	0	33	0	0	0	3	16	155	43	16	195
8-9 AM	98	6	99	177	9	201	4	4	1	7	37	125	286	56	425
9- 10 AM	85	92	92	146	25	322	0	4	0	7	25	107	238	146	521
10 -11 AM	65	65	92	91	31	381	4	0	4	10	14	103	170	110	580
11- 12 PM	92	85	99	20	16	386	4	4	5	11	11	103	128	115	593
12- 1 PM	59	59	99	28	28	386	13	11	7	11	11	103	111	109	595
1 - 2 PM	32	26	105	22	28	380	8	11	4	11	11	103	73	76	592
2 - 3 PM	13	20	98	8	13	375	8	4	9	10	10	103	39	46	585
3 - 4 PM	13	13	98	8	23	359	4	7	6	13	13	103	38	57	567
4 - 5 PM	13	13	98	19	169	209	4	7	3	21	14	110	57	203	421
5 - 6 PM	13	92	19	16	131	94	8	7	5	36	15	131	73	246	248
6 - 7 PM	0	13	6	22	84	31	8	7	6	32	14	149	62	119	192
7-8 PM	0	7	0	11	30	12	4	7	3	26	14	161	41	58	176
8 -9 PM	0	0	0	17	16	14	0	0	3	12	6	167	29	22	184
9- 10 PM	0	0	0	8	8	14	0	0	3	3	10	160	11	18	177
	490	491		626	619		72	72		223	231		1410	1413	

Notes:

- 1. Parking accumulation based on Columbia University PDEIS.
- 2. Parking accumulation based on Hudson Yards FEIS.
- 3. Total ins and outs may not equal due to rounding.



F. COLUMBIA NO BUILD & BUILD PARKING ACCUMULATION

Table H-16 Columbia No Build Projects Parking Accumulation

No Bui	ld P	rolect			nbia University		ineeri	e, Math and ng Secondary chool	Adr	ninistr	Columbia ative Building debaker)			Office Building n Nash Service building			Office Building
Time			ln l	Out		ln.	Out	Accumulation	In	Out	Accumulation	In	Out	Accumulation	In	Out	Accumulation
Before			0	0	0		-	0			0	0	0	0	0	0	0
7:00 AM		8:00 AM	11	0	11	0	0	0	8	1	7	3	0	3	2	0	2
4074	20		200		COLUMN TO SERVICE STATE OF THE	213	1000	OVERVIEW BUILDING	39.5	870		1777		SAME TO A SEC.	74C		SECTION OF THE SECTIO
		10:00 AM	41	7	82	0	0	13	70	7	149	28	31	74	15	17	46
10:00 AM		11:00 AM	37	8	111	0	0	13	18	14	153	20	20	74	10	10	46
11:00 AM		12:00 PM	13	7	118	0	0	13	4	9	148	31	28	77	18	16	48
1200 FM		atata.		9.4	1.15 87 1 118 (1.16)	r de	W00	037 (131 ° 5)	#16:	16	329 14896	10.0	動物學	Section 10 terms	使用		
1:00 PM		2:00 PM	11	13	116	0	0	13	17	9	156	9	6	73	8	7	46
2:00 PM		3:00 PM	5	8	113	0	0	13	10	5	161	5	6	72	3	5	44
3:00 PM		4:00 PM	5	15	103	٥	0	13	3	4	160	5	6	71	3	3	44
THE REAL PROPERTY.			4	×36/	AND RESERVED.		100					28.0	建长	10 10 10 10 10 10 10 10 10 10 10 10 10 10	EV. 198	1133	
5:00 PM		6:00 PM	7	39	36	0	0	0	11	84	16	5	30	0	3	24	0
6:00 PM		7:00 PM	7	29	13	0	0	0	4	18	2	0	4	0	0	3	0
7:00 PM		8:00 PM	7	16	4	0	0	0	1	3	0	0	3	0	0	2	0
8:00 PM		9:00 PM	8	8	4	0	0	0	1	0	1	0	0	0	0	0	0
9:00 PM		10:00PM	5	3	5	0	0	0	0	0	1	0	0	0	0	0	0
			208	203		13	13		274	273		200	215		120	135	

- 1. Total ins and total outs may not equal due to rounding.
- 2. Parking accumulation for Studabaker Building, Science, Math and Engineering School, New Columbia University Academic Building based on data provided by AKRF...

Table H-17 Columbia Subdistrict B and "Other Area" Parking Accumulation

Non-Columbia Projects		Resider Other A			Ommer		Ret	all (Dis	trict B)	Reta	all (Othe	r Area)		Commu Other A			otal wi Avera	
Hour	ln	Out	Accum	In	Out	Accum	ln	Out	Accum	In	Out	Accum	ln	Out	Accum	In	Out	Accum
Accumulation at start			52			0			0			0			0			52
Before 7:00AM	2	8	46	0	0	0	70	8	62	1	0	1	9	1	- 8	82	17	117
7:00 AM - 8:00 AM	0	12	34	1	0	1	15	19	58	0	0	11	2	2	8	18	33	102
8:00 AM - 9:00 AM	3	16	21	26	2	25	20	20	58	0	0	1	39	0	47	88	38	152
9:00 AM - 10:00 AM	2	11	12	17	9	33	21	16	63	0	0	1	3	4	46	43	40	155
10:00 AM - 11:00 AM	4	2	14	8	- 8	33	32	32	63	0	0	1	4	4	46	48	46	157
11:00 AM - 12:00 PM	3	1	16	4	11	26	60	30	93	1	0	2	5	3	48	73	45	185
12:00 PM - 1:00 PM	5	5	16	6	11	21	46	46	93	1	1	2	5	5	48	63	68	180
1:00 PM - 2:00 PM	2	2	16	6	5	22	64	27	130	0	0	2	6	2	52	78	36	222
2:00 PM - 3:00 PM	8	4	20	3	4	21	47	70	107	0	11	1	6	9	49	64	88	198
3:00 PM - 4:00 PM	9	5	24	3	3	21	49	58	98	0	0	1	7	7	49	68	73	193
4:00 PM - 5:00 PM	13	6	31	3	3	21	45	45	98	0	0	1	6	6	49	67	60	200
5:00 PM - 6:00 PM	15	7	39	2	21	2	63	63	98	1	1	1	0	39	10	81	131	150
6:00 PM - 7:00 PM	11	8	42	0	1	1	0	65	33	0	1	0	0	8	2	11	83	78
7:00 PM - 8:00 PM	8	7	43	0	0	1	0	37	0	0	0	0	0.	1	1	8	45	45
8:00 PM - 9:00 PM	7	6	44	0	0	1	6	6	0	0	0	0	1	11	1	14	13	46
9:00 PM - 10:00PM	6	4	46	0	0	1	0	0	0	0	0	0	0	0	1	6	4	48
Daily Total	98	104		79	78		538	542		4	4		93	92		812	820	

- 1. Based on Pushkarev & Zupan, Urban Space for Pedestrians (1975); starting accumulation based on Census auto ownership rate for 88 Leonard Census tract
- Based on East 76th Street Rezoning DEIS
 Based on 2003 survey of existing parking facility
- 4. Peak hour parking accumulation represents the average of the time period.
- 5. Total ins and outs may not equal due to rounding.

Table H-18 2015 Columbia University Parking Accumulation

Jime -						webia N												Cab		tell fr	die sed	Trees	-	Warm C	ate								
ومكست		matic)				Beg**					Sebter			Research	1		Aradon	ie	Unde	o sty H	es sing	Admir	im atim	Office	Reta	4.4	by ar t		Suborni		C	reed To	ot al
	-in-	Oer	Accem	la.	Out	Acres	Sec.	Cut	Acres	4	Our	Arcum	lie .	Out	Accum	L	Out	Acres	Ъ	Out	Arrem	Į.	Out	Acres	fu	Out	Acres	ъ	Out	Acrem	L	Des	Acc
dought	9	L.:	1 2	1 0	1 2	1.2	. 6	6	0	- 5	1.	1 4	0		1 1	1	7		0	6	6	9		0	0	0			3	10		13	-
MA 00	. 1	L.E.	11	0	2	l v		U	B	9		1	0	: 1	P	v	8	0	0	0	0	9	0	2	0	0	7	- 2	2			12	+
CAN	ø	0	1	0	9	3	. 0	0		0	6	1	0	. 0	0	0	0	0	ò	0	0	8	6	0	0	- 2	1	6	В	1 1	· ·	12	+-
MA 06	. 0	9	1.1	0	0	0		- 13	0	- 9	0	1	9	. 0	0	0		1 0	6	9	5	0	. 0	6	В	ă.	1		Ď.			1	+
OAM	9	Ü	1	0		0	. 0	G	0	θ	0	1	0	6	1 0	ō	0	10	0	0	0	0	0	0	0	0	1	- (1	~~~	- 0	╆
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APPENDIX I AIR QUALITY



Appendix I: Air Quality

A. PROCEDURES AND ASSUMPTIONS FOR THE STATIONARY SOURCE ANALYSIS

INTRODUCTION

As described in Chapter 19, "Air Quality," a detailed stationary source analysis was conducted using the U.S. Environmental Protection Agency (EPA) AERMOD dispersion model. The analysis was conducted to assess potential air quality impacts due to the Proposed Actions from heating, ventilation, and air-conditioning (HVAC) systems within the Academic Mixed-Use Area on receptor locations, as well as potential cumulative impacts from the Proposed Actions and nearby HVAC emission sources. Presented below is a description of the procedures used in the modeling and the assumptions and data used. A more general description of the stationary source analyses performed and the results obtained are presented in this Draft Environmental Impact Statement (DEIS).

MODELING APPROACH

As described in this DEIS, modeling was performed with the AERMOD model using five years of meteorology. For determining annual average impacts, the AERMOD model was run for each of the five years; however, for the short-term impacts, a combined five-year set of meteorology was used and the highest overall impacts were extracted. As per the *City Environmental Quality Review (CEQR) Technical Manual*, modeling was performed both with and without building downwash to determine impacts under worst-case conditions. Buildings that could potentially cause wake effects due to building downwash were surveyed using Geographic Information Systems (GIS) and Sanborn Maps, as well as information on proposed developments in the project study area. EPA's Building Profile Input Program (BPIP) program, which is described in the *User's Guide to the Building Profile Input Program* (EPA, Research Triangle Park, North Carolina), was used to determine the projected building dimensions for the AERMOD modeling with the building downwash algorithm enabled. For both the with and without downwash cases, the Proposed Actions' emission sources were modeled at 25 percent, 50 percent, 75 percent, and 100 percent operating capacity to simulate a full range of potential operations.

A comprehensive receptor network (i.e., off-site locations with continuous public access) was developed for the modeling analyses. The receptor network included regularly spaced ground-level receptors and numerous discrete receptors on nearby sensitive uses and tall buildings. Receptors were placed on nearby existing and proposed buildings that could potentially be affected by the Proposed Actions, as well as the project itself.

To examine impacts at ground level, the receptor network included a polar grid centered on Site 2, extending out to 5 kilometers (km), at 10 degree radials in all directions. The receptors were placed initially at 50 meters, and at 100-meter intervals out to 2 km and 500-meter intervals from 2 km to 5 km. Additional receptors were placed at sidewalk locations around the Academic

Mixed-Use Area in order to predict pollutant concentrations at locations where the contribution from project-generated traffic to air quality would be greatest, to predict potential cumulative impacts from mobile and stationary sources of air emissions. Ground level locations were modeled as flagpole receptors set at pedestrian height, consistent with guidance criteria in the CEQR Technical Manual. A total of 1,657 ground-level receptors were modeled.

Source and receptor elevations were determined using surveys conducted for the Proposed Actions and 7-Minute Digital elevation model (DEM) files. A terrain pre-processor program was used to process the DEMs and determine the representative elevations for each receptor.

Receptors were also placed at sensitive sites, such as residences, schools, and recreational facilities. These included the Manhattanville Houses and the Riverside Park Community apartment complex, I.S. 195, and locations in the Academic Mixed-Use Area that would be developed as University housing under the reasonable worst-case development scenario for the air quality analysis. Receptors were modeled at various elevations to represent operable windows, ventilation intakes, etc. A total of 42 off-site buildings were modeled out to a distance of up to 600 meters from the Academic Mixed-Use Area (with a total of 2,347 sensitive elevated receptors). In addition, a total of 372 receptors were placed at sensitive elevated locations on the Proposed Actions' buildings, with additional receptors placed on other projected development sites. Receptors were placed at various building elevations on all façades to ensure that potential worst-case project-on-project impacts would be identified.

Since the receptors used in the modeling included locations with emission sources (e.g., at proposed University housing sites), additional modeling and post-processing of the model output was necessary to exclude certain receptors when determining maximum pollutant concentrations on the Proposed Actions. This is because the AERMOD model assumes the stack plume travels directly toward the elevated receptor, which is unrealistic when the source and receptors are located on the same building because the stack plume would be greatly influenced by the project building's own roof structure. Therefore, to analyze pollutant concentrations at elevated receptors on project buildings, source groups were created consisting of all of the Proposed Actions' sources except within each source group, one building's source(s) was excluded. For example, to examine impacts from the Proposed Actions on Site 14, a source group was created which contained all of the Proposed Actions' stationary sources except the boiler source for Site 14. Next, the model output file created with each source group was reviewed. Receptors at the building for which the source was excluded were reviewed to determine the maximum overall concentration, and receptors at other locations were ignored. For example, the output file for the source group containing all sources except Site 14 examined the receptors at Site 14, and ignored all other receptors. This process was performed for each of the project buildings that are proposed to have an HVAC system. For buildings on the project site that would not have an HVAC system, but rather would be served by a central energy plant (e.g., Site 7), the maximum pollutant concentrations were determined by modeling all of the Proposed Actions' sources, as with off-site receptors.

The maximum predicted concentrations were obtained from the plot files and were added to the background concentrations to estimate the ambient air quality at potential elevated receptor locations near the project site. The results of this analysis are presented in Chapter 19.

B. EFFECTS OF TRAFFIC MITIGATION MEASURES ON AIR QUALITY

Chapter 19 showed the maximum predicted carbon monoxide (CO) and particulate matter (PM₁₀ and PM_{2.5}) concentrations for the Proposed Actions, and concluded that the Proposed Actions would not result in any significant adverse air quality impacts. Therefore, no air quality mitigation is required. This section considers the effects on air quality of the Proposed Actions with implementation of the traffic mitigation measures discussed in Chapter 23, "Mitigation."

The tables presented below illustrate the effect that proposed traffic mitigation measures, developed as part of the traffic analysis for the Proposed Actions (see Chapter 17, "Traffic and Parking"), would have on maximum predicted pollutant concentrations with the Proposed Actions. Tables I-1 and I-2 summarize the maximum CO build and build with mitigation concentrations for the 2015 and 2030 analysis years, respectively. Neither of the intersections analyzed for PM₁₀ and PM_{2.5} impacts are affected by the proposed mitigation measures.

The values shown are the highest predicted concentrations for the analyzed receptor locations. The results shows that with the proposed traffic mitigation measures, future concentrations of pollutants with the Proposed Actions would be below the National Ambient Air Quality Standards (NAAQS) and would not result in any significant adverse air quality impacts using the *de minimis* criteria for CO impacts.

Table I-1
Future (2015) Maximum Predicted 8-Hour Average Carbon Monoxide
Build and Build with Mitigation Concentrations (parts per million)

Receptor		Time	8-Hour Concentration (ppm) (1)				
Site	Location	Period	Build	Build with Mitigation			
3	Broadway and West 125th Street	РМ	4.3	4.3			
4	Amsterdam Avenue and West 125th Street	PM	4.1	4.0			
5	Second Avenue and East 125th Street	PM	4.9	4.9			
7	Madison Avenue and East 125th Street	PM	3.9	3.8			
Note: 18-	hour standard is 9 ppm.						

Table I-2
Future (2030) Maximum Predicted 8-Hour Average Carbon Monoxide
Build and Build with Mitigation Concentrations (parts per million)

Receptor		Time	8-Hour C	oncentration (ppm) ⁽¹⁾
Site	Location	Period	Build	Build with Mitigation
3	Broadway and West 125th Street	PM	4.5	4.5
4	Amsterdam Avenue and West 125th Street	PM	4.1	4.0
5	Second Avenue and East 125th Street	PM	4.7	4.6
7	Madison Avenue and East 125th Street	PM	3.8	3.8
Note: 8-	hour standard is 9 ppm.			

APPENDIX J NOISE

Noise

Measured Existing Noise Levels (in dBA)

	T	17.	teasure		ing N	oise Le	veis (in	dBA
Receptor	Location		Time	L _{eq(1)}	L ₁	L ₁₀	L ₅₀	L ₉₀
1	Broadway between West 133rd and		AM	72.4	79.5		70.0	63.0
	West 135th Streets	Weekday	MD	73.9	80.0	76.5	72.5	69.5
		Weekday	PM	72.4	80.5	76.0	69.0	64.0
<u> </u>		Weekday	LN	67.5	77.0	70.0	64.0	58.5
2	West 133rd Street between Twelfth	Weekday	AM	71.5	77.5	73.5	70.0	69.0
	Avenue and Broadway	Weekday	MD	68.6	79.0	70.5	64.5	62.5
		Weekday	PM	70.0	77.4	71.4	66.0	64.2
		Weekday	LN	66.4	76.0	69.0	63.5	62.5
3	West 133rd Street between	Weekday	AM	71.9	81.0	76.5	69.0	65.0
	Broadway and Old Broadway	Weekday	MD	69.6	80.0	75.0	67.0	64.5
Ì		Weekday	PM	70.3	79.5	75.0	68.0	64.5
		Weekday	LN	67.5	79.0	72.5	65.0	60.5
4	West 132nd Street between Twelfth	Weekday	AM	72.9	78.0	73.5	72.0	71.5
	Avenue and Broadway	Weekday	MD	70.6	80.0	71.5	69.0	68.5
		Weekday	PM	69.3	78.0	73.0	65.4	62.0
		Weekday	LN	67.2	78.5	72.0	69.5	68.5
5	Old Broadway between West 131st	Weekday	AM	64.9	72.8	68.2	62.4	58.0
	and West 133rd Streets	Weekday	MD	61.5	70.0	63.8	59.2	57.2
		Weekday	PM	63.7	72.0	67.0	60.6	58.0
		Weekday	LN	60.3	69.8	64.6	56.2	54.6
6	Twelfth Avenue between West	Weekday	AM	74.3	80.5	76.5	73.0	71.0
	131st and West 132nd Streets	Weekday	MD	71.9	81.5	73.5	70.5	68.5
		Weekday	РМ	67.4	79.0	73.0	68.0	66.0
		Weekday	LN	67.1	80.5	71.5	67.5	65.5
7	West 131st Street between Twelfth	Weekday	AM	67.3	74.5	69.0	65.5	63.0
ļ	Avenue and Broadway	Weekday	MD	66.6	75.5	69.0	63.5	62.0
- 1		Weekday	PM	64.6	74.0	68.5	60.0	58.0
		Weekday	LN	60.0	74.5	64.5	57.0	55.5
8	West 130th Street between Twelfth	Weekday	AM	62.0	77.5	67.0	62.5	60.5
1	Avenue and Broadway	Weekday	MD	64.8	76.5	66.0	61.0	58.5
		Weekday	РМ	60.6	74.5	68.0	62.0	58.5
		Weekday	LN	61.0	70.4	63.4	58.4	57.2
9	Broadway between West 130th and	Weekday	AM	79.1	90.0	84.5	70.5	64.5
	West 131st Streets	Weekday	MD	76.9	88.0	81.5	68.5	63.5
		Weekday	PM	77.3	88.0	82.5	68.0	62.5
		Weekday	LN	77.1	90.0	78.0	65.0	58.0
10	West 125th Street between Twelfth	Weekday	AM	70.3	81.5	73.5	69.5	66.0
	Avenue and St. Clair Place	Weekday	MD	70.9	79.0	73.4	69.2	65.0
		Weekday	PM	71.1	78.0	73.2	69.8	
I		Weekday	LN	72.3	80.6	75.0		65.8
11	Broadway between West 129th and	Weekday	AM	79.8	92.0	82.5	69.6	64.2
,		Weekday	MD	79.3	92.0		71.0	65.5
	<u> </u>	Weekday	PM	79.2		81.0	67.0	62.0
ļ		Weekday	LN	78.2	93.0	81.5	67.5	60.0
12		Weekday	AM		93.0	77.5	64.5	58.5
.		Weekday	MD	69.9	81.5	75.0	66.5	61.5
		Weekday	PM	67.1	78.5	72.0	64.0	60.0
				68.3	81.5	72.5	62.0	59.5
		Weekday	LN	66.2	79.0	71.5	60.0	56.0

Measured Existing Noise Levels (in dBA)

Location		Time	L _{eq(1)}	L ₁	L ₁₀	L ₅₀	L ₉₀
Broadway between Tiemann Place	Weekday	AM	76.6	86.5	81.5	71.5	66.5
	Weekday	MD	71.9	81.5	76.0	69.5	66.5
and West /25th Street		РМ	75.7	85.0	81.0	69.5	65.0
	Weekday	LN	73.1	84.5	77.0	66.0	61.5
Broadway between West 120th and	Weekday	AM	72.8	82.5	77.0	70.0	62.5
	Weekday	MD	67.8	79.0	73.0	65.5	60.5
, , , , , , , , , , , , , , , , , , ,	Weekday	РМ	66.3	78.0	72.0	67.0	62.5
	Weekday	LN	65.5	78.5	70.5	64.0	57.0
West 135th Street between	Weekday	AM	73.7	82.2	77.0	70.4	66.2
Broadway and Amsterdam Avenue	Weekday	PM	74.6	84.2	78.4	70.6	66.7
	Broadway between Tiemann Place and West 125th Street Broadway between West 120th and West 121st Streets West 135th Street between	Broadway between Tiemann Place and West 125th Street Weekday Weekday Weekday Weekday West 121st Streets Weekday Weekday Weekday Weekday Weekday Weekday Weekday Weekday Weekday	Broadway between Tiemann Place and West 125th Street	Broadway between Tiemann Place and West 125th Street	Broadway between Tiemann Place and West 125th Street Weekday MD 71.9 81.5	Broadway between Tiemann Place and West 125th Street Weekday MD 71.9 81.5 76.0	Broadway between Tiemann Place and West 125th Street Weekday MD 71.9 81.5 76.0 69.5

and October 12, 2004; and August 15, 2006, and September 23, 2006.

Existing Noise Levels (in dBA)

	Existing Profes Devels (in abit)								
Site	Day	Time Period	Measured Existing	TNM Existing	FTA Manual, Subway	FTA Manual, Bus Garage	Total TNM Existing	Adjustment Factor	
JILE	Day	AM	72.4	70.6	71.4	N/A	74.0	1.6	
1	Weekday	PM	72.4	68.1	70.5	N/A	72.5	0.1	
		AM	71.5	60.8	62.8	70.4	71.5	0.0	
2	Weekday	PM	70.0	58.5	62.0	68.9	70.0	0.0	
		AM	71.9	66.6	68.0	N/A	70.4	-1.5	
3	Weekday	PM	70.3	66.1	67.1	N/A	69.7	-0.6	
		AM	72.9	66.5	62.8	71.2	72.9	0.0	
4	Weekday	PM	69.3	61.2	62.0	67.5	69.3	0.0	
		AM	64.9	62.5	62.8	N/A	65.6	0.7	
5	Weekday	PM	63.7	59.6	61.9	N/A	63.9	0.2	
		AM	74.3	67.3	58.8	N/A	67.9	-6.4	
6	Weekday	PM	67.4	65.0	57.9	N/A	65.8	-1.6	
		AM	67.3	59.4	60.8	N/A	63.1	-4.2	
7	Weekday	PM	64.6	59.0	59.9	N/A	62.5	-2.1	
		AM	62.0	59.8	60.9	N/A	63.4	1.4	
8	Weekday	PM	60.6	60.1	60.0	N/A -	63.1	2.5	
		AM	79.1	71.7	69.0	N/A	73.6	-5.5	
9	Weekday	PM	77.3	71.4	68.2	N/A	73.1	-4.2	
		AM	70.3	69.0	60.2	N/A	69.5	-0.8	
10	Weekday	PM	71.1	68.5	59.3	N/A	69.0	-2.1	
		AM	79.8	74.5	69.3	N/A	75.6	-4.2	
11	Weekday	PM	79.2	70.0	68.4	N/A	72.3	-6.9	
		AM	69.9	68.0	64.4	N/A	69.6	-0.3	
12	Weekday	PM	68.3	67.3	63.6	N/A	68.8	0.5	
		AM	76.6	72.8	67.5	N/A	73.9	-2.7	
13	Weekday	PM	75.7	71.1	66.7	N/A	72.4	-3.3	
		AM	73.7	70.8	68.7	N/A	72.9	-0.8	
15	Weekday	PM	74.6	69.4	67.8	N/A	71.7	-2.9	

Site	Day	Time Period	Measured Existing	TNM Existing	Adjustment Factor
	T	AM	72.8	72.2	0.6
14	Weekday	PM	66.3	68.9	-2.6



2015 Noise Levels (in dBA)

	,		,					,		2015 N	(in dBA)		
Site	Day	Time Period	Measured Existing	TNM Existing	FTA Manual, Subway	FTA Manual, Bus Garage	Adjustment Factor	TNM NB 2015	Actual NB 2015	Actual NB 2015 Increase	TNM Build 2015	Actual Build 2015	Actual Build 2015 Increase
	10/	AM	72.4	70.6	71.4	N/A	1.6	70.7	72.4	0.0	70.9	72.5	0.1
1	Weekday	PM	72.4	68.1	70.5	N/A	0.1	68.8	72.7	0.3	68.4	72.5	-0.2
	18/2 2 2 2	AM	71.5	60.8	62.8	70.4	0.0	63.1	71.8	0.3	62.8	71.7	-0.1
2	Weekday	PM	70.0	58.5	62.0	68.9	0.0	60.6	70.2	0.2	61.9	70.3	0.1
*********	Mookdov	AM	71.9	66.6	68.0	N/A	-1.5	68.3	72.7	0.8	69.3	73.2	0.5
3	Weekday	PM	70.3	66.1	67.1	N/A	-0.6	67.2	70.8	0.5	67.7	71.1	0.3
	Weekday	AM	72.9	66.5	62.8	71.2	0.0	70.6	74.2	1.3	71.0	74.4	0.2
4	weekuay	РМ	69.3	61.2	62.0	67.5	0.0	62.6	69.5	0.2	63.3	69.7	0.2
	Weekday	AM	64.9	62.5	62.8	N/A	0.7	63.2	65.3	0.4	60.3	64.0	-1.3
5	vveekuay	РM	63.7	59.6	61.9	N/A	0.2	59.9	63.8	0.1	56.7	62.8	-1.0
	Weekday	AM	74.3	67.7	58.8	N/A	-6.4	68.5	75.4	1.1	69.5	76.3	0.9
6	Weekday	PM	67.4	64.9	57.9	N/A	-1.6	66.3	68.5	1.1	67.2	69.3	0.8
	Weekday	AM	67.3	59.4	60.8	N/A	-4.2	61.2	68.2	0.9	59.5	67.3	-0.9
7	vvcckday	PM	64.6	59.0	59.9	N/A	-2.1	61.3	65.8	1.2	56.9	63.8	-2.0
	Weekday	AM	62.0	59.6	60.9	N/A	1.4	60.7	62.4	0.4	62.6	63.5	1.1
8	Weekday	РМ	60.6	59.8	60.0	N/A	2.5	60.5	60.8	0.2	63.2	62.4	1.6
	Weekday	AM	79.1	71.7	69.0	N/A	-5.5	72.6	79.7	0.6	73.5	80.3	0.6
9	Weekday	PM	77.3	71.4	68.2	N/A	-4.2	72.0	77.7	0.4	72.8	78.3	0.6
	Weekday	AM	70.3	69.0	60.2	N/A	-0.8	69.1	70.4	0.1	72.6	73.6	3.2
10	Woonday	PM	71.1	68.5	59.3	N/A	-2.1	67.0	69.8	-1.3	72.4	74.7	4.9
	Weekday	AM	79.8	74.5	69.3	N/A	-4.2	75.1	80.3	0.5	75.2	80.3	0.0
11	Wookaay	PM	79.2	70.0	68.4	N/A	-6.9	70.6	79.6	0.4	71.2	79.9	0.3
	Weekday	AM	69.9	68.0	64.4	N/A	-0.3	68.3	70.1	0.2	68.0	69.9	-0.2
12		PM	68.3	67.3	63.6	N/A	0.5	68.2	69.0	0.7	68.1	68.9	-0.1
	Weekday	AM	76.6	72.8	67.5	N/A	-2.7	73.4	77.1	0.5	72.7	76.5	-0.6
13	····	PM	75.7	71.1	66.7	N/A	-3.3	71.6	76.1	0.4	71.1	75.7	-0.4
	Weekday	AM	73.7	70.8	68.7	N/A	-0.8	71.6	74.2	0.5	72.9	75.1	0.9
15		PM	74.6	69.4	67.8	N/A	-2.9	69.8	74.8	0.2	71.3	75.8	1.0

Site	Day	Time Period	Measured Existing		Adjustment Factor	TNM NB 2015	Actual NB 2015	Actual NB 2015 Increase	TNM Build 2015	Actual Build 2015	Actual Build 2015 Increase
	Weekday	AM	72.8	72.2	0.6	72.8	73.4	· 0.6	72.8	73.4	0.0
14	vvcekuay	РМ	66.3	68.9	-2.6	69.4	66.8	0.5	70.0	67.4	0.6

2015 Noise Levels Without Traffic Improvements (in dBA)

Site	Day	Time Period	Measured Existing	TNM Existing	FTA Manual, Subway	FTA Manual, Bus Garage	Adjustment Factor	TNM NB 2015	Actual NB 2015	Actual NB 2015 Increase	TNM Build 2015	Actual Build 2015	Actual Build 2015 Increase
	Weekday	AM	74.3	67.7	58.8	N/A	-6.4	68.5	75.4	1.1	69.0	75.8	0.4
6	Weekday	PM	67.4	64.9	57.9	N/A	-1.6	66.3	68.5	1.1	66.5	68.7	0.2
	Weekday	AM	70.3	69.0	60.2	N/A	-0.8	69.1	70.4	0.1	68.0	69.4	-1.0
10	vveekuay	PM	71.1	68.5	59.3	N/A	-2.1	67.0	69.8	-1.3	66.5	69.4	-0.4
	Weekday	AM	76.6	72.8	67.5	N/A	-2.7	73.4	77.1	0.5	74.3	77.8	0.7
13	vveekuay	PM	75.7	71.1	66.7	N/A	-3.3	71.6	76.1	0.4	71.8	76.2	0.1

Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development

2030 Noise Levels (in dBA)

Site	Day	Time Period	Measured Existing	TNM Existing	FTA Manual, Subway	FTA Manual, Bus Garage	Adjustment Factor	TNM NB 2030	Actual NB 2030	Actual NB 2030 Increase	TNM Build 2030	Actual Build 2030	Actual Build 2030 Increase
		AM	72.4	70.6	71.4	N/A	1.6	71.0	72.6	0.2	71.7	72.9	0.3
1	Weekday	PM	72.4	68.1	70.5	N/A	0.1	69.2	72.8	0.4	69.5	73.0	0.2
		AM	71.5	60.8	62.8	0.0	0.0	63.4	71.8	0.3	64.3	66.7	-5.1
2	Weekday	PM	70.0	58.5	62.0	0.0	0.0	61.0	70.2	0.2	64.5	66.4	-3.8
		AM	71.9	66.6	68.0	N/A	-1.5	68.6	72.9	1.0	67.0	72.1	-0.8
3	Weekday	PM	70.3	66.1	67.1	N/A	-0.6	67.6	71.0	0.7	66.6	70.5	-0.5
		AM	72.9	66.5	62.8	0.0	0.0	70.7	74.3	1.4	72.9	73.3	-1.0
4	Weekday	PM	69.3	61.2	62.0	0.0	0.0	62.7	69.6	0.3	69.1	69.9	0.3
		AM	64.9	62.5	62.8	N/A	0.7	63.6	65.5	0.6	62.6	64.9	-0.6
5	Weekday	PM	63.7	59.6	61.9	N/A	0.2	60.0	63.9	0.2	59.0	63.5	-0.4
		AM	74.3	67.7	58.8	N/A	-6.4	68.9	75.7	1.4	70.5	77.2	1.5
6	Weekday	РМ	67.4	64.9	57.9	N/A	-1.6	65.8	68.1	0.7	67.4	69.5	1.4
		AM	67.3	59.4	60.8	N/A	-4.2	61.4	68.3	1.0	64.6	70.3	2.0
7	Weekday	PM	64.6	59.0	59.9	N/A	-2.1	61.6	66.0	1.4	65.5	68.7	2.7
		AM	62.0	59.6	60.9	N/A	1.4	61.0	62.6	0.6	63.3	63.9	1.3
8	Weekday	PM	60.6	59.8	60.0	N/A	2.5	61.2	61.2	0.6	62.5	62.0	0.8
		AM	79.1	71.7	69.0	N/A	-5.5	72.9	79.9	0.8	73.8	80.6	0.7
9	Weekday	PM	77.3	71.4	68.2	N/A	-4.2	72.3	77.9	0.6	73.6	78.9	1.0
		AM	70.3	69.0	60.2	N/A	-0.8	68.4	69.8	-0.5	72.5	73.5	3.7
10	Weekday	PM	71.1	68.5	59.3	N/A	-2.1	67.0	69.8	-1.3	72.3	74.6	4.8
		AM	79.8	74.5	69.3	N/A	-4.2	75.4	80.5	0.7	75.8	80.8	0.3
11	Weekday	РМ	79.2	70.0	68.4	N/A	-6.9	70.8	79.7	0.5	72.1	80.6	0.9
	1	AM	69.9	68.0	64.4	N/A	-0.3	68.6	70.3	0.4	68.5	70.3	0.0
12	Weekday	PM	68.3	67.3	63.6	N/A	0.5	68.5	69.2	0.9	68.9	69.5	0.3
····	1	AM	76.6	72.8	67.5	N/A	-2.7	73.6	77.2	0.6	73.3	77.0	-0.2
13	Weekday	PM	75.7	71.1	66.7	N/A	-3.3	71.8	76.2	0.5	72.2	76.5	0.3
	1	AM	73.7	70.8	68.7	N/A	-0.8	71.9	74.4	0.7	73.2	75.3	0.9
15	Weekday	РМ	74.6	69.4	67.8	N/A	-2.9	70.2	75.1	0.5	72.5	76.7	1.6

Site	Dav	Time Period	Measured Existing	TNM Existing	Adjustment Factor	TNM NB 2030	Actual NB 2030	Actual NB 2030 Increase	TNM Build 2030	Actual Build 2030	Actual Build 2030 Increase
		AM	72.8	72.2	0.6	73.0	73.6	0.8	73.4	74.0	0.4
14	Weekday	PM	66.3	68.9	-2.6	69.6	67.0	0.7	70.6	68.0	1.0



2030 Noise Levels Without Traffic Improvements (in dBA)

											(111 (12)		
Site	Day	Time Period	Measured Existing	TNM Existing	FTA Manual, Subway	FTA Manual, Bus Garage	Adjustment Factor	1	Actual NB 2030	Actual NB 2030 Increase	TNM Build 2030	Actual Build 2030	Actual Build 2030 Increase
	Weekday	AM	74.3	67.7	58.8	N/A	-6.4	68.9	75.7	1.4	70.5	77.2	1.5
6	Weekday	РМ	67.4	64.9	57.9	N/A	-1.6	65.8	68.1	0.7	67.3	69.4	1.3
	Weekdav	AM	70.3	69.0	60.2	N/A	-0.8	68.4	69.8	-0.5	67.7	69.2	-0.6
10	Weekuay	PM	71.1	68.5	59.3	N/A	-2.1	67.0	69.8	-1.3	66.5	69.4	-0.4
	Weekday	AM	76.6	72.8	67.5	N/A	-2.7	73.6	77.2	0.6	74.2	77.7	0.5
13	Weekuay	РМ	75.7	71.1	66.7	N/A	-3.3	71.8	76.2	0.5	72.7	76.9	0.7

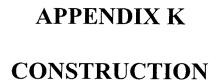
2030 Noise Levels 197a (in dBA)

Site	Day	Time Period	Measured Existing	TNM Existing	FTA Manual, Subway	FTA Manual, Bus Garage	Adjustment Factor	TNM NB 2030	Actual NB 2030	Actual NB 2030 Increase	TNM Build 2030	Actual Build 2030	Actual Build 2030 Increase
	Weekday	AM	74.3	67.7	58.8	N/A	-6.4	68.9	75.7	1.4	69.0	75.8	0.1
6	Weekuay	PM	67.4	64.9	57.9	N/A	-1.6	65.8	68.1	0.7	66.9	69.0	0.9
	Weekday	AM	70.3	69.0	60.2	N/A	-0.8	68.4	69.8	-0.5	67.8	69.3	-0.5
10	Weekuay	PM	71.1	68.5	59.3	N/A	-2.1	67.0	69.8	-1.3	66.9	69.7	-0.1
	Weekday	AM	76.6	72.8	67.5	N/A	-2.7	73.6	77.2	0.6	74.0	77.6	0.4
13	weekuay	PM	75.7	71.1	66.7	N/A	-3.3	71.8	76.2	0.5	72.7	76.9	0.7





















Detailed Engine Profile

Note: Since no real schedule exists for re-zoned private sites, dates for private rezoned sites are displayed as +# where # is the month in which activity starts or ends for each engine relative to the start of activity for the entire site.

Columbia University Master Plan			T	T	Τ'	T		T	Γ		Υ
Equipment & Manpower usage								 	 	 	
Jpdated July 30, 2006			<u> </u>								
Re-zoned Construction			+	 	 	 		 	ļ		
Site / Task / Engine	engine type	horse	duration	equipment	bri	uck	off-	road	days per		
Site 19	chigate type	power	OGTAGOT	per day	equip.	peak day	equip.	peak day	month	Start Month	End Mor
SITE DEMOLITION			40			ļ					
20 yd dump trucks	diesel	400	100%	10	10	10		ļ	2		
excavator	diesel	200	75%	1		10	1	1	20		+2
PVA NA PANA PANA				·	1		<u>'</u>	<u>'</u>	20	+1	+2
EXCAVATION & FOUNDATIONS			80						4		
20 yd dump trucks backhoe	diesel	400		10		10			20	+3	+6
compressors	diesel diesel	200 250	75% 90%		-	ļ	1	1	20		+6
	dieser	230	90%	1 1			1	1	20	+3	+6
CONSTRUCT SUPERSTRUCTURE		-	80	 							
concrete truck	diesel	450		4	4	20			20	+6	+9
concrete pump trailers of steet	diesel	400	90%	1			0.2	1			+9
rebar bender	diesel	500		1 1	1	2.5			20		+9
arc welder	diesel electric	200	50% 50%	1 1			1	1	20		+9
troweling machine	gas	11	50%	1			1	1	20		+9
I P P				<u> </u>				<u>_</u>	20	+6	+9
MEP			60						3		
olumbing deliveries Sprinkler deliveries	diesel	500	ļ	0.01	0.01	2			20		+14
HVAC - deliveries	diesel diesel	500 500	 	0.01	0.01	2			20		+14
electric - deliveries	diesel	500	 	0.01 0.01	0.01 0.01	2			20		+14
scissor lift	electric	20	50%	1.00	0.01		1	1	20 20		+14
NG forklift	gas	250	50%	1.00			1	1	20	+12	+14
BUILDING ENCLOSURE & ROOFING											. 17
railers	diasal		40				-		2		
	diesel	500		0.5	0.5	1			20	+10	+11
TERIORS / FIT-OUT			80					~			
vall trailers	diesel	500	- 00	0.01	0.01	1			20	+12	115
ditional interiors - box trailer	diesel	500		0.01	0.01	1			20	+12	+15 +15
F&E	diesel	500		0.01	0.01	1			20	+12	+15
IG forklift	electric	20	50%	1			1	1	20	+12	+15
	gas	250	50%	0.01			0.01	1	20	+12	+15
rash hauling	diesel	400		0.5	0.5	1			20		
uel trucks - 1 every 2 weeks on average	gas	400		0.1	0.1	1			20	+1	+15
ubber tire crane lual hoist	diesel	300	25%	1			1	1	20	+6	+12
uai nost	electric	100 amp	90%				0	0	20		
niscellaneous equipment											
chain saw	gas	3	20%	1			1				
compressor	ĞAS	5	40%	1			1	1	20 20	+1	+2
generator	gas	10	40%	1			1	1	20	+1	+6
impact wrench jack hammer	air air		20%	2			2	2	20	+6	+10
table saw	air		20%	1			1	1	20	+1	+3
portable water pump	electric electric	5 15	20% 5%	1			1	1	20	+12	+15
circular saw	electric	1.5	25%				1	1	20	+1	+15
							2	2	20	+3	+15
ite 18											···
NO TO	engine type	horse power	duration	equipment	truc		off-ro		days per		
ITE DEMOLITION		power	40	per day	equip.	peak day	equip.	peak day	month		
0 yd dump trucks	diesel	400	100%	10	10	10			2		
xcavator	diesel	200	75%	1			1	1	20 20	+1	+2
VCAVATION & FOUNDATIONS								'	- 20		
XCAVATION & FOUNDATIONS D yd dump trucks			80						4		
ackhoe	diesel	400	750	10	10	10			20	+3	+6
ompressors	diesel diesel	200 250	75% 90%	1			1	1	20	+3	+6
	G10361	230	JU 76	1			1	1	20	+3	+6
ONSTRUCT SUPERSTRUCTURE			80								
ncrete truck	diesel	450		4	4	20			20	+6	+9
ncrete pump	diesel	400	90%	1			0.2	1	20	+6	+9
rebar bender	diesel	500		1	1	2.5			20	+6	+9
arc welder	diesel	200	50%	1			1	1	20	+6	+9
oweling machine	electric gas	20	50% 50%	1 1			1	. 1	20	+6	+9
	943	11	30%	1			1	1	20	+6	+9
P		 	60								
imbing deliveries									3		

Site / Task / Engine	engine type	horse power	duration	equipment per day	equip.	peak day	equip.	peak day	month	Start Month	End Month
	-P1	500		0.01	0.01	2	*****		20		+14
nkler deliveries	diesel diesel	500		0.01	0.01	2			20		+14
AC - deliveries	diesel	500		0.01	0.01	2			20	+12	+14
ctric - deliveries	electric	20	50%	1.00			1	1	20	+12	+14
ssor lift	gas	250	50%	1.00			1	1	20	+12	+14
forklift	943										
ILDING ENCLOSURE & ROOFING		1	40						2		
	diesel	500		0.5	0.5	1			20	0 +10	+11
lers										ļ	ļ
PRIORE LET OUT		t	80							4	
TERIORS / FIT-OUT	diesel	500		0.01	0.01	1			20		+15
wall trailers ditional interiors - box trailer	diesel	500		0.01	0.01	1			20		+15
	diesel	500		0.1	0.1	1			20		+15
&E	electric	20	50%	1			1	1	1 20		+15
ssor lift 6 forklift	gas	250	50%	0.01			0.01	1	1 2	0 +12	+15
TOTRING	3										
ah hardaa	diesel	400		0.5	0.5	1			2		+15
sh hauling al trucks - 1 every 2 weeks on average	gas	400		0.1	0.1	1				0 +1	+12
	diesel	300	25%	1			1			0 +6	+12
ber tire crane	electric	100 amp) (0 2	:0	
al hoist	Cicouro										
attendary and more		1	<u> </u>	1							
scellaneous equipment	gas	3	20%	1						20 +1	+2
chain saw	gas	5	40%	1						20 +1	+8
compressor	gas	10	40%	1						20 +1	+5
generator	air	†	20%	2						20 +6	+8
impact wrench	air	—	20%	1						20 +1	+2
jack hammer	electric	5	20%	1				`		20 +12	+15
table saw	electric	15	5%	1						20 +1	+15
portable water pump	electric	1.5	25%	2				2	2 2	20 +3	+15
circular saw	3,000,00	1-:	1 1	1							
	 	+	 				L				1
			1	1	1						
	 	horse	T	equipment	tr	uck	of	f-road	days per	r	
ite 20	engine type	power	duration	per day	equip.	peak day	equip.	peak day	month		
TE DEMOLITION		1	40	1	1	1				2	
ITE DEMOLITION	diesel	400	100%	10) 10	10				20 +1	+2
) yd dump trucks	diesel	200	75%	1				1	1 3	20 +1	+2
cavator	3.000.		1	1		T					
XCAVATION & FOUNDATIONS			80							4	
	diesel	400		10) 1	0 10				20 +3	+6
0 yd dump trucks	diesel	200	75%					1		20 +3	+6
ackhoe	diesel	250	90%		1			1	1	20 +3	+6
ompressors	12.000	1									
ONSTRUCT SUPERSTRUCTURE			80							4	
	diesel	450			4	4 20				20 +6	+9
oncrete truck	diesel	400	90%		1		0	.2		20 +6	+9
oncrete pump	diesel	500			1	1 2.5	5			20 +6	+9
ailers of steel	diesel	200	50%		1			1		20 +6	+9
rebar bender	electric	20	50%		1			1		20 +6	+9
arc welder	gas	11	50%		1			1	1	20 +6	+9
troweling machine	19										
			60	5						3	
AEP	diesel	500		0.01	0.0	11 3	2			20 +12	+14
lumbing deliveries	diesel	500		0.01	0.0)1 2	2			20 +12	+14
prinkler deliveries	diesel	500		0.01)1	2			20 +12	+14
IVAC - deliveries	diesel	500	+	0.01			2			20 +12	+14
electric - deliveries	electric	20	50%					1		20 +12	+14
cissor lift	gas	250						1	1	20 +12	+14
NG forklift	900		1								
THE DING ENGLOSINE & DOCEING			40	0						2	
BUILDING ENCLOSURE & ROOFING	diesel	500		0	5 0	.5	1			20 +10	+11
railers	15.550			1	1						
NTERIORS / SIT OUT			8	ō l						4	
NTERIORS / FIT-OUT	diesel	500		0.0	0.0	01	1			20 +12	+15
Irywall trailers	diesel	500		0.0			1			20 +12	+15
additional interiors - box trailer	diesel	500		0.0			1			20 +12	+15
F&E	electric	20	50%		1			1	1	20 +12	+15
scissor lift	gas	250					0.	01 0.	.01	20 +12	+15
NG forklift	7		1			L					
hack harding	diesel	400		0	.5 0	1.5	1			20 +1	+15
trash hauling	gas	400					1			20 +1	+12
fuel trucks - 1 every 2 weeks on average	diesel	300			1			1	1	20 +6	+12
rubber tire crane	electric	100 ar			1			0	0	20	
dual hoist	erecure	100 ai	30 /			1					
		-			+						
miscellaneous equipment	nae	3	20%	. +	1			1	1	20 +1	+2
chain saw	gas	5	40%		1			1	1	20 +1	+9
compressor	gas	10			1	-	+	1	1	20 +1	+5
generator	gas	10	20%		2		-	2	2	20 +6	+9
Source and consequents	air	+			1		+	1	1	20 +1	+2
impact wrench	air		20%		1	+			1	20 +12	+1:
jack hammer				a f	11	1	1	* 1	• 5		
	electric	5	20%					1	1	20 +1	+15
jack hammer	electric	15	5%		1			1 2	1 2	20 +1	+1:
jack hammer table saw			5%					1 2	2		

CIL DI	engine type	horse	duration	equipment		ruck	off-	-road	days per		
Site 21		power		per day	equip.	peak day	equip.	peak day	month	Start Month	End M
	engine type	horse	duration	equipment	tr	ruck	off-	road	days per	- Clare month	Elia M
E DEMOLITION		power	Gurason	perday	equip.	peak day	equip.	peak day	month	<u> </u>	
d dump trucks			40					Promot	2	5	
	diesel	400	100%	10	10	10		 			
Cavator	diesel	200	75%	1		10			20		+2
	-		+	 		 	1	1 1	20	+1	+2
EXCAVATION & FOUNDATIONS			80		 				L		
20 yd dump trucks	diesel	400	- 00			 			4		
backhoe		400		10	10	10			20	+3	+6
compressors	diesel	200	75%	1			1	1	20		+6
combigazora	diesel	250	90%	1			1	1			
201072107						1		 	20	7 73	+6
CONSTRUCT SUPERSTRUCTURE			80	†				-			
concrete truck	diesel	450							4		
concrete pump	diesel		+	4	4	20			20	+6	+5
railers of steel		400	90%	1			0.2	1	20	+6	+9
rebar bender	diesel	500		1	1	2.5			20		***************************************
	diesel	200	50%	1			1	1			+6
arc welder	electric	20	50%	1		 	1		20		+5
troweling machine	gas	11	50%	1		 			20		+9
			30 /6				1	1	20	+6	+9
MEP			<u> </u>			I					
lumbing deliveries			60						3		
	diesel	500		0.01	0.01	2			20	+	
prinkler deliveries	diesel	500	1	0.01	0.01						+14
IVAC - deliveries	diesel	500	1	0.01	0.01	-			20		+14
lectric - deliveries	diesel	500	+			2			20		+14
cissor lift	electric			0.01	0.01	2	l		20	+12	+14
IG forklift		20	50%	1.00		T	1	1	20		+14
	gas	250	50%	1.00			1	1	20		
IIII DING ENGLOSUPE A BOSENIA			L							, 12	+14
UILDING ENCLOSURE & ROOFING			40			 					
ailers	diesel	500	 _	0.5		 			2		
		- 300	 	0.5	0.5	1			20	+10	+11
NTERIORS / FIT-OUT						l					
rywall trailers			80						4		
dditional interiors - box trailer	diesel	500		0.01	0.01	1			20	+12	
	diesel	500		0.01	0.01	1					+15
F&E	diesel	500	1	0.01	0.01	1			20	+12	+15
cissor lift	electric	20	50%	1	0.01				20	+12	+15
G forklift	gas						1	1	20	+12	+15
	yas	250	50%	0.01			0.01	1	20	+12	+15
ash hauling											
rel trucks - 1 every 2 weeks on average	diesel	400	1	0.5	0.5	1			20	+1	
thindes - 1 every 2 weeks on average	gas	400		0.1	0.1	1					+15
ibber tire crane	diesel	300	25%	1					20	+1	+12
ual hoist	electric	100 amp					1	1	20	+6	+12
		Too arra	30 /				0	0	20		
scellaneous equipment			 		1						
hain saw					T						
compressor	gas	3	20%	1			1	1	20	+1	
	gas	5	40%	1			1				+2
generator	gas	10	40%	1			1		20	+1	+10
impact wrench	air		20%	2				1	20	+1	+5
jack hammer	air	-					2	2	20	+6	+10
table saw			20%	1			1	1	20	+1	+2
portable water pump	electric	5	20%	1		1	1	1	20	+12	+15
circular saw	electric	15	5%	1			1	1		+1	
Circulal Saw	electric	1.5	25%	2						T 1	+15
	Olootilo						2	2	20		
	CICCLIC		2370				2	2	20	+3	+15
	Ciccure		2370				2	2		+3	+15
	Cicare		2370				2	2		+3	+15
te 22	Cream		2376				2	2		+3	+15
te 22		horse		equipment	truc	k			20	+3	+15
	engine type	horse					off-roa	ed	20 days per	+3	+15
TE DEMOLITION			duration	equipment		k peak day	off-roa		days per month	+3	+15
TE DEMOLITION yd dump trucks	engine type	power	duration 40	equipment per day	equip.	peak day	off-roa	ed	days per month		
TE DEMOLITION yd dump trucks	engine type diesel	power 400	duration 40 100%	equipment per day			off-roa equip.	ed	days per month	+3	+15
TE DEMOLITION yd dump trucks	engine type	power	duration 40	equipment per day	equip.	peak day	off-roa	ed	days per month		+2
TE DEMOLITION yd dump trucks cavator	engine type diesel	power 400	duration 40 100% 75%	equipment per day	equip.	peak day	off-roa equip.	ad peak day	days per month 2 20	+1	
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS	engine type diesel diesel	400 200	duration 40 100%	equipment per day	equip.	peak day	off-roa equip.	ad peak day	days per month 2 2 20 20	+1	+2
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks	engine type diesel diesel diesel	power 400	duration 40 100% 75%	equipment per day	equip.	peak day	off-roa equip.	ad peak day	days per month 2 20 20 4	+1 +1	+2 +2
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe	engine type diesel diesel	400 200	duration 40 100% 75% 80	equipment per day	equip.	peak day	off-ros	peak day	days per month 2 2 20 20 4 20	+1 +1 +1 +1	+2 +2 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe	engine type diesel diesel diesel diesel diesel	400 200 400 200 200	duration 40 100% 75% 80	equipment per day 10 1 10 10	equip.	peak day	off-ro; equip.	peak day	20 days per month 2 20 20 4 20 20	+1 +1 +1 +3 +3	+2 +2 +2 +6 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors	engine type diesel diesel diesel	400 200 400	duration 40 100% 75% 80	equipment per day	equip.	peak day	off-ros	peak day	days per month 2 2 20 20 4 20	+1 +1 +1 +1	+2 +2 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors	engine type diesel diesel diesel diesel diesel	400 200 400 200 200	duration 40 100% 75% 80 75% 90%	equipment per day 10 1 10 10	equip.	peak day	off-ro; equip.	peak day	20 days per month 2 20 20 4 20 20	+1 +1 +1 +3 +3	+2 +2 +2 +6 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe mpressors DNSTRUCT SUPERSTRUCTURE	diesel diesel diesel diesel diesel	400 200 400 200 200 250	duration 40 100% 75% 80	equipment per day 10 1 10 1 10 1	equip.	peak day	off-ro; equip.	peak day	20 days per month 2 20 20 4 20 20	+1 +1 +1 +3 +3	+2 +2 +2 +6 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe repressors PNSTRUCT SUPERSTRUCTURE corete truck	diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 400 200 400 200 250 450	duration 40 100% 75% 80 75% 90%	equipment per day 10 1 10 10	equip.	peak day	off-ro; equip.	peak day	20 days per month 2 2 20 20 20 20 20 20 4 4 4 4	+1 +1 +1 +3 +3 +3 +3	+2 +2 +6 +6 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe rpressors PNSTRUCT SUPERSTRUCTURE carete truck icrete pump	engine type diesel diesel diesel diesel diesel diesel diesel	400 200 400 200 200 250	duration 40 100% 75% 80 75% 90%	equipment per day 10 1 10 1 10 1	10 10	10 10	off-ros equip.	peak day	20 days per month 2 2 20 20 20 20 4 4 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3	+2 +2 +2 +6 +6 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors INSTRUCT SUPERSTRUCTURE crete truck cicrete truck cicrete pump lers of steel	diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 400 200 200 250 450 450	duration 40 100% 75% 80 75% 90%	equipment per day	10 10 4	10 10 20	off-ro; equip.	peak day	20 days per month 2 2 20 20 20 20 4 20 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6	+2 +2 +6 +6 +6 +6
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors NSTRUCT SUPERSTRUCTURE crete truck crete pump lers of steel ebar bender	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 400 200 250 450 450 400 500	duration 40 100% 75% 80 75% 90% 80	equipment per day 10 11 10 11 11 11 11 11 11 11 11	10 10	10 10	off-ro: equip. 1 1 1 1 1 1	peak day	20 days per month 2 20 20 20 20 4 20 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +6 +6 +6	+2 +2 +6 +6 +6 +6 +9 +9
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors NSTRUCT SUPERSTRUCTURE carete truck icrete pump leiss of steel ebar bender	engine type diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 400 200 250 450 450 400 500 200	duration 40 100% 75% 80 75% 80 90% 80	equipment per day 10 11 10 11 10 11 11 11 11 11 11	10 10 4	10 10 20	0ff-ro; equip. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day	20 days per month 2 2 20 20 20 20 4 20 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6	+2 +2 +2 +6 +6 +6 +9 +9
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors NSTRUCT SUPERSTRUCTURE ccrete truck ccrete pump leiers of steel ebar bender irc welder	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric	400 200 400 200 250 450 450 400 500 200 20	duration 40 100% 75% 80 75% 90% 80 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 11 11 11	10 10 4	10 10 20	off-ro: equip. 1 1 1 1 1 1	peak day	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6	+2 +2 +6 +6 +6 +6 +9 +9 +9
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors NSTRUCT SUPERSTRUCTURE ccrete truck ccrete pump leiers of steel ebar bender irc welder	engine type diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 400 200 250 450 450 400 500 200	duration 40 100% 75% 80 75% 80 90% 80	equipment per day 10 11 10 11 10 11 11 11 11 11 11	10 10 4	10 10 20	0ff-ro; equip. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +4 +6 +6 +6 +6 +6	+2 +2 +6 +6 +6 +6 +9 +9 +9 +9
TE DEMOLITION yd dump trucks aavator CAVATION & FOUNDATIONS yd dump trucks khoe rpressors NSTRUCT SUPERSTRUCTURE crete truck crete truck crete pump lers of steel ebar bender rc welder rcweling machine	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric	400 200 400 200 250 450 450 400 500 200 20	duration 40 100% 75% 80 75% 90% 80 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 11 11 11	10 10 4	10 10 20	off-ro: equip. 1 1 1 0.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6	+2 +2 +6 +6 +6 +6 +9 +9 +9
TE DEMOLITION yd dump trucks aavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors NSTRUCT SUPERSTRUCTURE crete truck crete truck crete pump lers of steel ebar bender ric welder roweling machine	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric	400 200 400 200 250 450 450 400 500 200 20	duration 40 100% 75% 80 80 90% 80 90% 50% 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 11 11 11	10 10 4	10 10 20	off-ro: equip. 1 1 1 0.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +4 +6 +6 +6 +6 +6	+2 +2 +6 +6 +6 +6 +9 +9 +9 +9
TE DEMOLITION yd dump trucks avator CAVATION & FOUNDATIONS yd dump trucks khoe npressors NSTRUCT SUPERSTRUCTURE crete truck crete pump lers of steel ebar bender rc welder roweling machine P mbing deliveries	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel giesel diesel giesel	400 200 400 200 250 250 450 450 200 200 20 11	duration 40 100% 75% 80 75% 90% 80 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 11 11	10 10 4 1 1	10 10 20 2.5	off-ro: equip. 1 1 1 0.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6	+2 +2 +6 +6 +6 +6 +9 +9 +9 +9
TE DEMOLITION yd dump trucks avator CAVATION & FOUNDATIONS yd dump trucks khoe npressors NSTRUCT SUPERSTRUCTURE crete truck crete pump lers of steel ebar bender ric welder roweling machine p mbing deliveries nkler deliveries	diesel diesel	400 200 200 250 250 450 400 500 20 20 21 11	duration 40 100% 75% 80 80 90% 80 90% 50% 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 11 11 11	10 10 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 10 20 2.5 2	off-ro: equip. 1 1 1 0.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +4 +6 +6 +6 +6 +6	+2 +2 +6 +6 +6 +6 +9 +9 +9 +9
TE DEMOLITION yd dump trucks avator CAVATION & FOUNDATIONS yd dump trucks khoe npressors NSTRUCT SUPERSTRUCTURE crete truck crete pump lers of steel ebar bender ric welder roweling machine p mbing deliveries nkler deliveries	diesel diesel	400 200 200 250 450 450 400 500 200 21 11	duration 40 100% 75% 80 80 90% 80 90% 50% 50% 50%	equipment per day 10 11 11 11 11 11 11 11 11 11 11 11 11	10 10 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 2.5	off-ro: equip. 1 1 1 0.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9
TE DEMOLITION yd dump trucks avator CAVATION & FOUNDATIONS yd dump trucks khoe npressors NSTRUCT SUPERSTRUCTURE icrete truck icrete truck icrete pump lers of steel ebar bender irc welder roweling machine P inbing deliveries nkler deliveries AC - deliveries	diesel diesel	400 200 200 250 250 250 450 200 200 211 11	duration 40 100% 75% 80 80 90% 80 90% 50% 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 11 11 11	10 10 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 10 20 2.5 2	off-ro: equip. 1 1 1 0.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +9
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors INSTRUCT SUPERSTRUCTURE forcete truck forcete truck forcete pump flers of steel ebar bender for welder for welder forweling machine P mbing deliveries fAC - deliveries ctric - deliveries ctric - deliveries	diesel diesel	400 200 200 250 450 450 400 500 200 21 11	duration 40 100% 75% 80 80 90% 80 90% 50% 50% 50%	equipment per day 10 11 11 11 11 11 11 11 11 11 11 11 11	10 10 4 4 1 1 0.01 0.01 0.01 0.01	20 2.5 2 2 2 2	off-ro: equip. 1 1 1 0.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +9 +9
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe npressors INSTRUCT SUPERSTRUCTURE crete truck crete pump lers of steel ebar bender arc welder roweling machine P mbing deliveries nkler deliveries nkler deliveries sor lift tric - deliveries sor lift	diesel diesel	400 200 200 250 250 250 200 200 200 20 111 500 500 500 500	duration 40 100% 75% 80 75% 90% 80 90% 60	equipment per day 10 10 11 10 11 11 11 11 11 1	10 10 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 2.5	off-ro: equip. 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +14 +14 +14 +14
TE DEMOLITION yd dump trucks avator CAVATION & FOUNDATIONS yd dump trucks khoe npressors NSTRUCT SUPERSTRUCTURE crete truck crete pump ters of steel ebar bender rr welder roweling machine P mbing deliveries nkler deliveries nkler deliveries acc - deliveries sor lift	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel	400 200 200 250 450 450 400 500 20 20 111 500 500 500 500 20 20	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 10 0.01 0.01 0.01 1.00	10 10 4 4 1 1 0.01 0.01 0.01 0.01	20 2.5 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +9 +9 +9
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe chroe chroes PNSTRUCT SUPERSTRUCTURE carete truck carete truck carete pump lers of steel ebar bender carc welder croweling machine P mibing deliveries inkler deliveries ctric - deliveries sor lift forklift	diesel diesel	400 200 200 250 250 250 200 200 200 20 111 500 500 500 500	duration 40 100% 75% 80 75% 90% 80 90% 60	equipment per day 10 10 11 10 11 11 11 11 11 1	10 10 4 4 1 1 0.01 0.01 0.01 0.01	20 2.5 2 2 2 2	off-ro: equip. 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +14 +14 +14 +14
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe chroe chroes PNSTRUCT SUPERSTRUCTURE carete truck carete truck carete pump lers of steel ebar bender carc welder croweling machine P mibing deliveries inkler deliveries ctric - deliveries sor lift forklift	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel	400 200 200 250 450 450 400 500 20 20 111 500 500 500 500 20 20	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 10 0.01 0.01 0.01 1.00	10 10 4 4 1 1 0.01 0.01 0.01 0.01	20 2.5 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +9 +14 +14 +14 +14
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe repressors INSTRUCT SUPERSTRUCTURE recrete truck recrete truck recrete pump lers of steel ebar bender ric welder ric welder roweling machine P mbing deliveries rikler deliveries sor lift forklift LDING ENCLOSURE & ROOFING	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 200 250 250 250 200 200 20 20 11 500 500 500 500 20 20 20 20 20 20	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 10 0.01 0.01 0.01 1.00	10 10 4 4 1 1 0.01 0.01 0.01 0.01	20 2.5 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +9 +14 +14 +14 +14
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks ckhoe repressors INSTRUCT SUPERSTRUCTURE recrete truck recrete truck recrete pump lers of steel ebar bender ric welder ric welder roweling machine P mbing deliveries rikler deliveries sor lift forklift LDING ENCLOSURE & ROOFING	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel	400 200 200 250 450 450 400 500 20 20 111 500 500 500 500 20 20	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 10 0.01 0.01 0.01 0.01 1.00 1.00	10 10 10 4 1 1 0.01 0.01 0.01	20 2.5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +14 +14 +14 +14 +14
TE DEMOLITION yd dump trucks avator CAVATION & FOUNDATIONS yd dump trucks khoe rpressors NSTRUCT SUPERSTRUCTURE crete truck crete pump lers of steel ebar bender rowelider roweling machine P mbing deliveries nkler deliveries ktric - deliveries stric - deliveries stric - deliveries stric - deliveries stric - deliveries stric - feliveries stric	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 200 250 250 250 200 200 20 20 11 500 500 500 500 20 20 20 20 20 20	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50% 50%	equipment per day 10 11 10 11 11 11 11 11 11 11 10 0.01 0.01 0.01 1.00	10 10 4 4 1 1 0.01 0.01 0.01 0.01	20 2.5 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +9 +14 +14 +14 +14
TE DEMOLITION yd dump trucks cavator CAVATION & FOUNDATIONS yd dump trucks yd du	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 200 250 250 250 200 200 20 20 11 500 500 500 500 20 20 20 20 20 20	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50% 50% 40	equipment per day 10 11 10 11 11 11 11 11 11 11 10 0.01 0.01 0.01 0.01 1.00 1.00	10 10 10 4 1 1 0.01 0.01 0.01	20 2.5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +14 +14 +14 +14 +14
TE DEMOLITION yd dump trucks avator CAVATION & FOUNDATIONS yd dump trucks khoe npressors NSTRUCT SUPERSTRUCTURE crete truck crete pump lers of steel ebar bender ricr welder roweling machine pmbing deliveries nkler deliveries AC - deliveries sor lift forklift LDING ENCLOSURE & ROOFING ers ERIORS / FIT-OUT	engine type diesel	400 200 200 250 250 450 400 500 200 20 11 500 500 500 500 500 250	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50% 50%	equipment per day 10 11 11 11 11 11 11 11 11 11 11 11 11	10 10 10 10 10 10 10 10 10 10 10 10 10 1	20 2.5 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 2 20 20 20 20 20 20 20 20 20 20 20 20	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12 +12 +12 +12	+2 +2 +6 +6 +6 +9 +9 +9 +9 +9 +14 +14 +14 +14 +14
te 22 TE DEMOLITION Jyd dump trucks cavator KCAVATION & FOUNDATIONS Jyd dump trucks ckhoe mpressors DNSTRUCT SUPERSTRUCTURE morete truck morete pump lillers of steel rebar bender arc welder trowelling machine IP mbing deliveries inkler deliveries AC - deliveries soor lift forklift ILDING ENCLOSURE & ROOFING lers ERIORS / FIT-OUT wall trailers littonal interiors - box trailer	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 200 200 250 250 250 200 200 20 20 11 500 500 500 500 20 20 20 20 20 20	duration 40 100% 75% 80 75% 90% 80 90% 60 50% 50% 50% 40	equipment per day 10 11 10 11 11 11 11 11 11 11 10 0.01 0.01 0.01 0.01 1.00 1.00	10 10 10 4 1 1 0.01 0.01 0.01	20 2.5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0ff-ro: equip. 1 1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	ad peak day 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 days per month 2 20 20 20 20 20 20 20 20 20 20 20 20 2	+1 +1 +1 +3 +3 +3 +3 +3 +6 +6 +6 +6 +6 +6 +12 +12 +12 +12 +12 +12 +12 +12 +12	+22 +2 +6 +6 +6 +9 +9 +9 +9 +14 +14 +14 +14 +14

	engine type	horse	duration	equipmen		truck	ak day	off-road equip. pe	ak day	days per month	Start Month	End Month
Site / Task / Engine		power		per dary 0.0		0.01	1	-4-4- PC		20	+12	+15
E	diesel	500 20	50%	0.0	1	0.01		1	1	20	+12	+15
sor lift	electric	250	50%	0.0	1			0.01	1	20	+12	+15
forklift	gas	250										115
	diesel	400		0	.5	0.5	1			20 20		+15
h hauling	gas	400		0	.1	0.1	1			20		+12
trucks - 1 every 2 weeks on average	diesel	300	25%		1			1	1 0			+
ber tire crane	electric	100 amp	90%					0	- 0			
ıl hoist					-							-
cellaneous equipment					1 -			1	1	20	+1	+2
chain saw	gas	3	20%		1 -				1			+10
compressor	gas	5	40%		1				1	20	+1	+5
generator	gas	10	40%		2			2	2		+6	+10
mpact wrench	air		20%	-	1			1	1	20	+1	+2
ack hammer	air		20%		1			1	1	20	+12	+15
table saw	electric	5 15	5%		1			1	1			+15
portable water pump	electric	1.5	25%		2			2	2	20	+3	+15
circular saw	electric	1.5	20,0									
			-	<u> </u>								
			+									
		horse	12	equipm		truck		off-roa		days per		
te 23	engine type	power	duration	per da		equip.	peak day	equip.	eak day	month	2	
TE DEMOLITION			40							2	2 0 +1	+2
TE DEMOLITION	diesel	400	100%		10	10	10		1			+2
yd dump trucks	diesel	200	75%		1			1		+		
cavator										1	4	
KCAVATION & FOUNDATIONS			80	<u>, </u>	10	10	10			2		+5
yd dump trucks	diesel	400	750		10	10		1				+5
ackhoe	diesel	200	75% 90%					1			0 +3	+5
ompressors	diesel	250	90%	+								
			8	0	-						4	
ONSTRUCT SUPERSTRUCTURE	dianal	450	1 0	-	4	4	20				20 +6	+9
oncrete truck	diesel	400	90%	+	1			0.2			20 +6	+9
oncrete pump	diesel diesel	500	30 /6	-	1	1	2.5				20 +6	+9
ailers of steel	diesel	200	50%	.	1			1			20 +6	+9
rebar bender	electric	20	50%		1			1			20 +6	+9
arc welder	gas	11	50%		1			1		1 3	20 +6	
troweling machine	gao										3	
			6	0							20 +12	+13
MEP	diesel	500			.01	0.01	2				20 +12	+13
lumbing deliveries prinkler deliveries	diesel	500			0.01	0.01	2				20 +12	+13
prinkler deliveries IVAC - deliveries	diesel	500			0.01	0.01	2				20 +12	+13
IVAC - deliveries	diesel	500			0.01	0.01	2	1			20 +12	+13
cissor lift	electric	20	50%		.00			1			20 +12	+13
VG forklift	gas	250	50%	6	1.00			<u> </u>				
				40				 			2	
BUILDING ENCLOSURE & ROOFING				40	0.5	0.5	1				20 +10	+11
railers	diesel	500	'		0.3	0.5		tt				
				80							4	
NTERIORS / FIT-OUT	1	500			0.01	0.01	1				20 +12	+13
drywall trailers	diesel	500			0.01	0.01	1				20 +12	+13
additional interiors - box trailer	diesel	500			0.01	0.01	1				20 +12	+13
FF&E	diesel electric	20		%	1			1			20 +12	+13
scissor lift	gas	250			0.01		<u> </u>	0.01		_1	20 +12	+13
NG forklift	yas		_					ļ			20 14	+13
	diesel	400)		0.5	0.5				_	20 +1	+13
trash hauling	gas	400			0.1	0.1					20 +1	+12
fuel trucks - 1 every 2 weeks on average	diesel	300	0 25		1			1		0	20 70	
rubber tire crane dual hoist	electric	100 a	mp 90	%			 	0				
uudi nidist							 					
miscellaneous equipment							 	1		1	20 +1	+2
chain saw	gas	3			1		+	1		1	20 +1	+10
compressor	gas	5			1		+	1	<u> </u>		20 +1	+5
generator	gas	10			2		 	2		2	20 +6	+10
impact wrench	air		20		1		+	1		1	20 +1	+2
jack hammer	air	5			1		T	1		1	20 +12	
table saw	electric	15			1		+	1		1	20 +1	+13
portable water pump	electric	1.			2			2		2	20 +3	+13
circular saw	electric		× + 29									
							1					
		hor	- H	BOIL	ipment	t	ruck	off	road	days		
Site 24	engine type	e pov			r day	equip.	peak da	equip.	peak d	tay mon		
		-+-		40							2	
SITE DEMOLITION	discal	40	00 10	0%	10	1	0	10			20 +1	
20 yd dump trucks	diesel			5%	1					1	20 +1	+2
excavator	diesel	21	·	- / -		<u> </u>						
				80							4	
EXCAVATION & FOUNDATIONS	٠١٠	41	00	-55	10	1	0	10			20 +3	
20 yd dump trucks	diesel			5%	1		1		ı	1	20 +3	
backhoe	diesel			0%	1				1	1	20 +3	+6
compressors										1	1	1

Site / Task / Engine Concrete truck	engine typ	e hors		n equipmen per day	equip.	uck peak day		road	days per		
concrete truck concrete pump	diesel	450			едию. 4 4		equip.	peak day		Start Month	End Mo
lers of steel	diesel	400			1	20	0.0	 	20		+9
bar bender	diesel	500)		1 1	2.5	0.2		1 20		+9
arc welder	diesel	200	50%		1	1.3	1	l	20		+9
troweling machine	electric	20	50%		1		1				+9
	gas	11	50%		1		1		20		+9
MEP									1		+9
plumbing deliveries	diesel	500	60		ļ				3		
sprinkler deliveries	diesel	500 500		0.01					20		+14
HVAC - deliveries	diesel	500		0.01	0.01				20		+14
electric - deliveries	diesel	500		0.01	0.01		· · · · · · · · · · · · · · · · · · ·		20		+14
scissor lift	electric	20	50%	1.00	0.01	2			20	+12	+14
NG forklift	gas	250		1.00		ļ	1		20	+12	+14
PLUI DING THOLOGO			3078	1.00	-		1	1	20	+12	+14
BUILDING ENCLOSURE & ROOFING trailers			40	<u> </u>	 						
uoneis	diesel	500		0.5	0.5	1			2		
NTERIORS / FIT-OUT				1	0.5				20	+10	+11
drywall trailers			80						ļJ		
additional interiors - box trailer	diesel	500		0.01	0.01	1			4		
F&E	diesel	500		0.01	0.01	1			20	+12	+15
scissor lift	diesel	500		0.01	0.01	1			20	+12	+15
NG forklift	electric	20	50%	1			1	1	20 20	+12	+15
	gas	250	50%	0.01			0.01	1	20	+12	+15
rash hauling	٠							'	20	+12	+15
uel trucks - 1 every 2 weeks on average	diesel	400		0.5	0.5	1			20	+1	
ubber tire crane	gas	400	-	0.1	0.1	1			20	+1	+15
lual hoist	diesel	300	25%	1			1	1	20	+6	+12
	electric	100 am	p 90%				0	0	20		712
niscellaneous equipment			+	ļ							
chain saw	gas	3	2007								
compressor	gas	5	20% 40%	1			1	1	20	+1	+2
generator	gas	10	40%	1 1			1	1	20	+1	+10
impact wrench	air	10	20%	2			1	1	20	+1	+5
jack hammer	air		20%	1			2	2	20	+6	+10
table saw	electric	5	20%	1			1	1	20	+1	+2
portable water pump circular saw	electric	15	5%	1			1	1	20	+12	+15
Circulai Sdw	electric	1.5	25%	2			1 2	1	20	+1	+15
								2	20	+3	+15
ee 25											
	engine type	horse	duration	equipment	truck	,	off-roa	vd -	da -		
TE DEMOLITION		power		per day	equip.	peak day		peak day	days per month		
yd dump trucks	dianel		40						2		
cavator	diesel diesel	400	100%	10	10	10			20	+1	+2
	niesei	200	75%	1			1	1	20	+1	+2
CAVATION & FOUNDATIONS			L								
yd dump trucks	diesel	400	80	40					4		
ckhoe	diesel	200	75%	10	10	10			20	+3	+6
mpressors	diesel	250	90%				1	1	20	+3	+6
21072		200	30 /6	1			1	1	20	+3	+6
DNSTRUCT SUPERSTRUCTURE			80								
ncrete truck	diesel	450	- 00	4					4		
ncrete pump ilers of steel	diesel	400	90%	1	4	20			20	+7	+11
rebar bender	diesel	500		1	1	2.5	0.2	1	20	+7	+11
arc welder	diesel	200	50%	1		2.5			20	+7	+11
troweling machine	electric	20	50%	1			1 1	1	20	+7	+11
a owe and machine	gas	11	50%	1			1	1	20	+7	+11
P		Ţ						1	20	+7	+11
mbing deliveries			60						3		
inkler deliveries	diesel	500		0.01	0.01	2			20	+14	
AC - deliveries	diesel	500		0.01	0.01	2			20	+14	+19
ctric - deliveries	diesel	500		0.01	0.01	2			20	+14	+19
ssor lift	diesel	500		0.01	0.01	2			20	+14	+19
forklift	electric	20	50%	1.00			1	1	20	+14	+19
	gas	250	50%	1.00			1	1	20	+14	+19
ILDING ENCLOSURE & ROOFING		+									•19
ers	diesel	500	40						2		
	3.0301	300		0.5	0.5	1			20	+11	+13
ERIORS / FIT-OUT		+	80								
wall trailers	diesel	500	80						4		
itional interiors - box trailer	diesel	500		0.01	0.01	1			20	+14	+20
E	diesel	500		0.01	0.01	1			20	+14	+20
sor lift	electric	20	50%	0.01	0.01	1			20	+14	+20
forklift	gas	250	50%	0.01			1	1	20	+14	+20
			50 /0	0.01			0.01	1	20	+14	+20
h hauling	diesel	400		0.5	0.5						
	gas	400		0.5	0.5				20	+1	+20
trucks - 1 every 2 weeks on average					0.1	1			20	+1	+14
trucks - 1 every 2 weeks on average er tire crane	diesel	300	25%								
trucks - 1 every 2 weeks on average		300 100 amp	25% 90%				1	1	20	+7	+14
trucks - 1 every 2 weeks on average er tire crane hoist	diesel		90%	1			0	0	20 20	+7	+14
trucks - 1 every 2 weeks on average er tire crane hoist rellaneous equipment	diesel			1						+7	+14
trucks - 1 every 2 weeks on average er tire crane hoist	diesel	100 amp		1						+7	+14

Av. (* 1 Fraise	engine type	horse	duration	equipm per da		truck quip. pea	ak day equ	jip.	peak day	month			End Month
Site / Task / Engine	Cingate type	power		perda	ay ec	torb bes		1	1	20		+1	+6
enerator	gas	10	40%	 	2			2	2	20)	+8	+20
pact wrench	air		20%		1			1	1	20)	+1	+2
ck hammer	air		20%		1			1	1	20)	+14	+20
ble saw	electric	5	20%	+				1	1	20)	+1	+20
ortable water pump	electric	15	5%	 	2			2	2	20) C	+3	+20
rcular saw	electric	1.5	25%	+									
											-		
					-+-								
kage A st 130th Street Sewer relocation	unging type	horse	duration	equipr		truck	ali dov. M	off-ro juip.	peak day	days per month	-		
t 130th Street Sewer relocation	engine type	power	120	perd	aay e	equip. pe	eak day ex	luip.	pean out		6		lun 2014
E DEMOLITION	diesel	400	100%	1	4	4	10					Jan-2014	Jun-2014 Jun-2014
d dump trucks	diesel	200	75%		1			1	1	2	.0	Jan-2014	Jun-2014
avator	diesei	1 200									0		
MOVAL/RELOCATION OF SEWER			200	Ц			32					Mar-2014	Dec-2014
yd dump trucks - removal of fill	diesel	400	100%		32	32	32	1				Mar-2014	Dec-2014
avator - removal of fill	diesel	200	50%			1	2					Mar-2014	Dec-2014
lers - delivery of pipe	diesel	500	100%		1 -			1		1 2	20	Mar-2014	Dec-2014
avator - setting of pipe	diesel	200	50%	_				<u>-</u>				Mar-2014	Dec-2014
avator - setting or pipe	diesel	25	75%		32	32	32		1			Mar-2014	Dec-2014
yd dump trucks - supply of gravel & fill	diesel	400	100%		32	- 52					8		
E IMPROVEMENTS/STREETSCAPE			16									May-2014	Dec-2014
	diesel	500	1009		0.5	0.5	3					May-2014	Dec-2014
lers - delivery of material	diesel	450	1009	6	!	1	- 3	1	 			May-2014	Dec-2014
ncrete truck	diesel	200	50%		1							May-2014	Dec-2014
par bender	gas	200	50%									May-2014	Dec-2014
rtable cement mixer	electric	20	50%		1	10	10		+			May-2014	Dec-2014
it paver cutter yd dump trucks - delivery of asphalt	diesel	400	25%		10	10			1			May-2014	Dec-2014
phalt paving equipment	diesel	300	25%								20	May-2014	Dec-2014
<u> </u>	diesel	25	75%		1				il			May-2014	Dec-2014
mper	diesel	350	25%						+				
ller			1	,		0.5			+		20	Jan-2014	Dec-2014
ash hauling	diesel	400	100		0.5	0.025			 		20	Jan-2014	Dec-2014
el trucks - 1 every 2 weeks on average	gas	400	100		0.025	0.023			1	1	20	Jan-2014	Dec-2014
bber tire crane	diesel	300	259	6	'}-								
											20	Jan-2014	Jun-2014
iscellaneous equipment	gas	3	209	%	4				4	4	20	Jan-2014	Dec-2014
chain saw	gas	5	40	%	4				4		20	Jan-2014	Dec-202
compressor	gas	10	40'		4				0	0	20	3011-2017	
generator	air		20	%					4	4	20	Jan-2014	Dec-20
impact wrench	air		20	%	4				0	0	20	Jan 2011	
jack hammer	electric	5	20	%						2	20	Jan-2014	Dec-2014
table saw	electric	15	59	6	2				2	4	20	Jan-2014	Dec-2014
portable water pump circular saw	electric	1.5	25	%	4				4				
Circulai Saw													
									-		=		
Package B	5 levels				puipment	tru	ick	-	off-road	days	per	Jan-2008	Dec-2011
Below grade space	engine type	e hors			per day	equip.	peak day	equip.	peak d	ay mon	ith	Jan-2011	Feb-2011
ska Phase I Factory										_	9		
SITE DEMOLITION				180	10	10	10				20		Sep-200
20 yd dump trucks	diesel	40		5%	10	10			1	1	20	Jan-2008	Sep-200
excavator	diesel		<u> </u>	7/0		1					- 40		
WOTALL TO CLUDDY WALL & DEDIMETED				240					_		12 20		May-200
NSTALL 70' SLURRY WALL @ PERIMETER	diesel	40		5%	4.1	4.1			-		20		May-200
20 yd dump trucks	diesel	45		5%	6					-+	20		May-200
concrete truck trailers of steel - rebar	diesel	50		0%	2.3		4.6		2	2	20		May-200
	diesel			0%	2		 		2	2	20		May-200
rebar bender arc welder	electric			0%	2				2	2	20		
arc weider skylift forklift	gas			0%	2				2	2	20		May-200
	diesel			0%	2		-		1	1	20		
375 HP air compresser 40 ton hydraulic crane (handling rebar cages)	diesel			0%	1		+				20		May-200
bull dozer	diesel			5%	1				1	1	20		May-200
clumy cunnly system	diesel			5%			+		1	1	20		May-200
crawler crane (handling slurry /clamshell machine)	diesel	- + 4	50 7	5%							10	1	
EXCAVATE WITHIN SLURRY WALL				200		100	3 103			-	20		
	diesel			5%	103	3 10:	3 103		2	2	20		
20 vd dumo trucks	diesel		-	75%		-	+	-	0	2	20		
20 yd dump trucks				75% 90%		2			2	2	20	0 Mar-2009	Dec-20
excavator drilling rig (not really needed - no rock)	diesel	, ,										8 Feb-201) Jun-20
excavator	diesel diesel						1	1	1				
excavator drilling rig (not really needed - no rock) compressors				160									
excavator drilling rig (not really needed - no rock)	diesel					2	2 110				2	0 Nov-200	
excavator drifting rig (not really needed - no rock) compressors CONSTRUCT BELOW GRADE SUPERSTRUCTURE structure				90%			22 110		0.4	2			
excavator drilling rig (not really needed - no rock) compressors CONSTRUCT BELOW GRADE SUPERSTRUCTURE structure concrete truck	diesel	4	100	90%		2			0.4	2	2	0 Nov-200	9 Jun-20
excavator drilling rig (not really needed - no rock) compressors CONSTRUCT BELOW GRADE SUPERSTRUCTURE structure concrete truck concrete pump	diesel	4	100	90% 90% 50%		2 3	22 110 3 7.5		0.4		2	0 Nov-200 0 Nov-200	9 Jun-20 9 Jun-2
excavator drilling rig (not really needed - no rock) compressors CONSTRUCT BELOW GRADE SUPERSTRUCTURE structure concrete truck concrete pump trailers of steel	diesel diesel diesel	4	100 500 150	90% 90% 50% 90%		2 3 1			1	1	2 2	0 Nov-200 0 Nov-200 0 Nov-200	9 Jun-20 9 Jun-20 9 Jun-20 9 Jun-20
excavator drilling rig (not really needed - no rock) compressors CONSTRUCT BELOW GRADE SUPERSTRUCTURE structure concrete truck concrete pump	diesel diesel diesel diesel		100 500 150 200	90% 90% 50%		2 3			0.4		2 2 2 2	0 Nov-200 0 Nov-200	9 Jun-20 9 Jun-20 9 Jun-20 9 Jun-20

Ch. 17. (17.)		horse	T	equipment	l br	uck		road	г. —		
Site / Task / Engine	engine type	power	duration	per day	equip.	peak day	equip.	peak day	days per month	Start Month	End Month
troweling machine	gas	11	50%	2		<u> </u>	2				Jun-2010
piles:											
concrete pump	diesel	450	90%	3.7	3.7	18.5			20	Nov-2009	Jun-2010
Strailers of steel	diesel diesel	400	77%	1			0.2	1	20		Jun-2010
rebar bender	diesel	200	100% 50%	2.9	2.9	7.25			20		Jun-2010
arc welder	electric	200	50%	2 2		 	2				Jun-2010
pile driving rig	diesel	450	90%	2			2				Jun-2010
									20	1404-2009	Jun-2010
MEP			200						10		
plumbing deliveries	diesel	500	100%	0.13	0.13				20	Feb-2010	Feb-2011
sprinkler deliveries HVAC - deliveries	diesel	500	100%	0.09	0.09				20	Feb-2010	Feb-2011
electric - deliveries	diesel diesel	500	100%	0.38	0.38				20		Feb-2011
scissor lift	electric	500 20	100% 50%	0.25	0.25	2			20		Feb-2011
NG forklift	gas	250	50%	1			4	4	20		Feb-2011
	19		- 00 /0	<u> </u>	***	-	<u>'</u>	1	20	Feb-2010	Feb-2011
BELOW GRADE INTERIORS / FIT-OUT			260						13		
drywali trailers	diesel	500	100%	0.02	0.02	1			20		Feb-2011
additional interiors - box trailer	diesel	500	100%	0.1	0.1	1			20		Feb-2011
NG forklift	electric	20	50%	4			4	4	20		Feb-2011
FF&E deliveries	gas	250	50%	1.00			1	1	20		Feb-2011
	diesel	500	100%	0.03	0.03	1			20	Feb-2010	Feb-2011
trash hauling - 3 loads per day	diesel	400	100%	1	1	1				1 05	
fuel trucks - 1 every 2 weeks on average	gas	400	100%	0.5	0.5				20 20		Feb-2011
lower crane	electric	200 amp	90%	0,5	0.5	 	0	0	20	Jan-2008	Aug-2010
rubber tire crane	diesel	350	50%	1			1	1	20	Jun-2008	Jul-2010
dual hoist	electric	100 amp	90%	1			1	1	20		Feb-2011
miscellaneous equipment		+	ļ								
miscellaneous equipment chain saw	026	+	0000								
compressor	gas gas	5	20% 40%	4			4	4	20	Jan-2008	Jun-2008
generator	gas	10	40%	6 4			6	6	20	Jan-2008	May-2010
impact wrench	air	 	20%	8			4 8	4 8	20 20	Jan-2008	Apr-2009
jack hammer	air		20%	4			4	4	20	Nov-2009 Jan-2008	May-2010 May-2010
table saw	electric	5	20%	8			8	8	20	Nov-2009	Feb-2011
portable water pump	electric	15	5%	4			4	4	20	Jan-2008	May-2010
circular saw	electric	1.5	25%	15			15	15	20	Nov-2009	Feb-2011
		+									
ckage C	10 levels	·						1		1	1
Marie Programme Commence Comme		1260° biai	_								
Science building		260' higi horse		equipment	tru	ck	off-n	pad	days per	lan_2011	Ech 2014
	engine type		duration	equipment per day	tru equip.	ck peak day	off-n equip.	peak day	days per month	Jan-2011 May-2013	Feb-2014
Science building A Mind Brain Behavior Center		horse	duration							Jan-2011 May-2013	Feb-2014 Jun-2013
Science building a Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE	engine type	horse power		per day	equip.	peak day			month 7		
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck	engine type	horse power 450	duration 140	per day			equip.	peak day	7 20	May-2013 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011
Science building a Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE	engine type diesel diesel	horse power 450 400	duration	per day 4	equip.	peak day			7 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender	engine type	450 400 500	140 90%	4 1 3	equip.	peak day	equip.	peak day	7 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder	engine type diesel diesel diesel	horse power 450 400	duration 140	4 1 3 1	equip.	peak day	equip. 0.2	peak day	7 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender	diesel diesel diesel diesel diesel	horse power 450 400 500 200	140 90%	4 1 3	equip.	peak day	equip.	peak day	7 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine	diesel diesel diesel diesel diesel electric	450 400 500 200	140 90% 50% 50%	4 1 3 1 2	equip.	peak day	0.2 1 2	peak day	7 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP	engine type diesel diesel diesel diesel diesel electric gas	450 400 500 200 211	90% 50%	4 1 3 1 2 2 2	4 3	20 7.5	0.2 1 2	peak day	7 20 20 20 20 20 20 20 20 25	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries	engine type diesel diesel diesel diesel electric gas diesel	450 400 500 200 211 500	140 90% 50% 50%	9 per day 4 1 3 3 1 2 2 2 0.08	equip. 4 3	20 7.5	0.2 1 2	peak day	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP	diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel	450 400 500 200 20 111 500 500	140 90% 50% 50%	9er day 4 4 1 3 3 1 2 2 2 2 0.08 0.06	90.08 0.08	20 7.5 2 2 2 2 2 2	0.2 1 2	peak day	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries	engine type diesel diesel diesel diesel electric gas diesel	horse power 450 400 500 200 11 500 500 500 500 500	140 90% 50% 50%	9er day 4 1 3 1 2 2 0.08 0.06 0.23	0.08 0.06 0.23	20 7.5 2 2 2 2 2	0.2 1 2	peak day	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift	engine type diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	450 400 500 200 20 111 500 500	140 90% 50% 50%	9er day 4 4 1 3 3 1 2 2 2 2 0.08 0.06	90.08 0.08	20 7.5 2 2 2 2 2 2	0.2 1 2 2	1 1 2 2 2	77 200 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel	450 400 500 200 21 11 500 500 500 500	140 90% 50% 50% 50%	9 per day 4 1 3 3 1 1 2 2 2 2 2 0 0.08 0.06 0.23 0.11	0.08 0.06 0.23	20 7.5 2 2 2 2 2	0.2 1 2	peak day	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building Ta Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric	450 400 500 200 211 500 500 500 500 500 500	140 90% 50% 50% 500 500 500 50%	per day 4 1 3 1 2 2 0.08 0.06 0.23 0.11 4	0.08 0.06 0.23	20 7.5 2 2 2 2 2	0.2 1 2 2	1 1 2 2 2 4 4	77 200 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric gas	horse power 450 400 500 200 21 11 500 500 500 500 20 250	140 90% 50% 50% 500	9 per day 4 4 1 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00	equip. 4 3 0.08 0.08 0.23 0.11	20 7.5 2 2 2 2 2	0.2 1 2 2	1 1 2 2 2 4 4	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building Ta Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric	450 400 500 200 211 500 500 500 500 500 500	140 90% 50% 50% 500 500 500 50%	per day 4 1 3 1 2 2 0.08 0.06 0.23 0.11 4	0.08 0.06 0.23	20 7.5 2 2 2 2 2	0.2 1 2 2	1 1 2 2 2 4 4	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric gas	horse power 450 400 500 200 21 11 500 500 500 500 20 250	140 90% 50% 50% 500 500 500 220	9 per day 4 4 1 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00	equip. 4 3 0.08 0.08 0.23 0.11	20 7.5 2 2 2 2 2	0.2 1 2 2	1 1 2 2 2 4 4	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	horse power 450 400 500 200 111 500 500 500 500 20 250 500 500 500	140 90% 50% 50% 500 500 500 50%	9er day 4 1 3 3 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5	0.08 0.08 0.023 0.11	20 7.5 2 2 2 2 2 2 2 2 2	0.2 1 2 2	1 1 2 2 2 4 4	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries ROG forklift BUILDING ENCLOSURE & ROOFING trailers	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel electric gas	horse power 450 400 500 200 21 11 500 500 500 500 500 500 500 500 500	140 90% 50% 50% 500 500 500 220	9 per day 4 4 1 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5	equip. 4 3 0.08 0.08 0.23 0.11 0.5	20 7.5 2 2 2 2 2 2 2 1	0.2 1 2 2	1 1 2 2 2 4 4	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	horse power 450 400 500 200 111 500 500 500 500 20 250 500 500 500	140 90% 50% 50% 500 500 500 220	Per day 4 1 1 3 3 1 1 1 2 2 2 2 2 2 2 2 2 1 1 1 1	0.08 0.06 0.23 0.11	20 7.5 2 2 2 2 2 2 2 2 2	0.2 1 2 2	1 1 2 2 2 4 4	month 7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers iNTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel electric gas	horse power 450 400 500 200 20 11 500 500 500 20 250 500 500 500 500 50	140 90% 50% 50% 500 500 500 220	9 per day 4 4 1 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5	equip. 4 3 0.08 0.08 0.23 0.11 0.5	20 7.5 2 2 2 2 2 2 2 1	0.2 1 2 2	1 1 2 2 2 4 4	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Jun-2013 Jun-2013 Jun-2013 Jun-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers additional interiors - box trailer FF&E scissor lift NG forklift	engine type diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 500 500 500 500 500 500 500	140 90% 50% 50% 500 500 50% 50% 50%	9er day 4 1 3 3 1 1 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.01 0.05 0.03	0.08 0.06 0.23 0.11	20 7.5 2 2 2 2 2 2 2 2 2	equip. 0.2 1 2 2 4 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 May-2011 May-2011 May-2011 May-2011 May-2011 May-2011 May-2011 May-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day	engine type diesel diesel diesel diesel desel diesel	500 500 500 500 500 500 500 500 500 500	140 90% 50% 50% 500 500 50% 50% 50%	9er day 4 4 1 1 3 3 1 1 1 1 2 2 2 2 2 2 2 1 1 1 1 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 2	equip. 0.2 1 2 2 1 1 1 1 4 1 1 4	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Jun-2013 Jun-2013 Jun-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift Tash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	engine type diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 200 200 200 200 200 200 200 200	50% 50% 50% 50% 50% 50%	9er day 4 1 3 3 1 1 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5	0.08 0.08 0.06 0.23 0.11 0.5 0.01 0.05	20 7.5 2 2 2 2 2 2 2 2 2	equip. 0.2 1 2 2 1 1 1 1 4 1 1 4	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011 May-2011 May-2011 May-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Dec-2012
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift NG forklift NG forklift Gorklift NG forklift engine type diesel electric gas	500 500 500 200 20 11 500 500 500 500 500 20 250 500 500 20 250 500 50	50% 50% 50% 50% 50% 50% 50% 50%	Per day 4 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	equip. 0.2 1 2 2 2 4 1 1 1	1 1 2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013	
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift Tash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	engine type diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 200 200 200 200 200 200 200 200	50% 50% 50% 50% 50% 50%	9er day 4 1 3 3 1 1 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	equip. 0.2 1 2 2 1 1 1 1 4 1 1 4	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011 May-2011 May-2011 May-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Dec-2012
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift NG forklift NG forklift Gorklift NG forklift engine type diesel electric gas	500 500 500 200 20 11 500 500 500 500 500 20 250 500 500 20 250 500 50	50% 50% 50% 50% 50% 50% 50% 50%	Per day 4 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	equip. 0.2 1 2 2 2 4 1 1 1	1 1 2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013	
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift NG forklift NG forklift Trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw	engine type diesel electric gas	500 500 500 200 20 11 500 500 500 500 500 20 250 500 500 20 250 500 50	50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	9er day 4 1 3 3 1 1 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5 1 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	equip. 0.2 1 2 2 4 1 1 1 1 1 1	1 1 2 2 2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average dual hoist miscellaneous equipment chain saw compressor	engine type diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 500 500 500 500 500 500 20 250 500 50	50% 50% 50% 50% 50% 50% 50% 50%	Per day 4 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	equip. 0.2 1 2 2 2 4 1 1 1 1 1 2 2	1 1 2 2 2 4 1 1 1 1 1 1 1 2 2 2	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator	engine type diesel die	500 500 500 200 20 11 500 500 500 500 500 20 250 500 500 20 250 500 50	50% 50% 50% 50% 50% 50% 50% 50% 50% 220 50% 50% 50% 50%	9er day 4 1 3 3 1 1 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.03 4 1.00 3 0.5 1 1 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	equip. 0.2 1 2 2 4 1 1 1 1 1 1	1 1 2 2 4 1 1 1 1 1 1 2 2 2 2 2 2 2	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Jan-2011 May-2011 May-2011 May-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Apr-2012 Apr-2012 Apr-2012 Apr-2012 Aug-2012
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench	engine type diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel gas diesel gas electric	500 500 500 500 500 500 500 500 500 500	50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	9er day 4 11 3 3 11 2 2 2 2 0.08 0.06 0.23 0.11 4 1.00 0.5 0.5 0.03 4 1.00 3 0.5 1 1 1 2 2 2 2	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	equip. 0.2 1 2 2 4 1 1 1 1 2 2 2	1 1 2 2 2 4 1 1 1 1 1 1 1 2 2 2	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011 May-2011 May-2011 May-2011 May-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift NG forklift NG forklift NG forklift Interiors - lexit reader interiors - lexit read	engine type diesel as diesel as diesel diesel as diesel as diesel as diesel as diesel air air	500 500 500 200 20 11 500 500 500 500 20 250 500 500 500 20 250 500 50	50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	4 1 1 1 1 2 2 2 2 2 2 2 2	1 1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Jan-2011 May-2011 May-2011 May-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Apr-2013
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer	engine type diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric gas diesel die	500 500 500 500 500 500 500 500 500 500	50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	0.08 0.06 0.23 0.11 4 1.00 0.5 0.5 0.03 4 1.00 3 0.5 1 1 1 2 2 2 6 6	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	4 1 1 1 1 1 2 2 2 6 6 2 2 2	1 1 2 2 2 1 1 1 1 1 1 1 1 1 2 2 2 2 2 6 6	Toolth	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Aug-2011 Jun-2011 Jun-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer able saw Bortable water pump	engine type diesel die	500 500 500 500 500 500 500 500 500 500	50% 50% 50% 50% 50% 50% 50% 50% 220 520 50% 50% 40% 40% 40% 20% 50% 50%	9 per day 4 4 11 3 3 11 12 2 2 2 1 0.08 0.06 0.23 0.11 4 1.00 0.5 0.03 4 1.00 3 0.5 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	4 1 1 1 1 1 2 2 2 2 2 2 2 1 1	1 1 2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2013 Dec-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer	engine type diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric gas diesel die	500 500 500 500 500 500 500 500 500 500	50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	0.08 0.06 0.23 0.11 4 1.00 0.5 0.05 0.03 4 1.00 3 0.5 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	4 1 1 1 1 1 2 2 2 6 6 2 2 2	1 1 2 2 4 1 1 1 1 1 1 1 1 1 2 2 2 2 6 6 2 2 2 2	Toolth	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Aug-2011 Jun-2011 Jun-2011
Science building A Mind Brain Behavior Center CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer able saw Bortable water pump	engine type diesel die	500 500 500 500 500 500 500 500 500 500	50% 50% 50% 50% 50% 50% 50% 50% 220 520 50% 50% 40% 40% 40% 20% 50% 50%	9 per day 4 4 11 3 3 11 12 2 2 2 1 0.08 0.06 0.23 0.11 4 1.00 0.5 0.03 4 1.00 3 0.5 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1	0.08 0.06 0.23 0.11 0.5 0.05 0.03	20 7.5 2 2 2 2 2 2 2 2 1 1 1	4 1 1 1 1 1 2 2 2 2 2 2 2 1 1	1 1 2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1	7 7 20 20 20 20 20 20 20 20 20 20 20 20 20	May-2013 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Jan-2011	Jun-2013 Jun-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Jul-2011 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Apr-2013 Jun-2013 Jun-2011

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Site / Task / Engine	engine type	horse power	duration	per day	equip.	peak dary	off-r equip.	peak day	days per month	Start Month	End Month
- D	8 levels	180' high									
ackage D 3 Academic building		horse	duration	equipment	tru	ck	off-	bsor	days per	Jan-2012	Jun-2013
ka Lantern Building	engine type	power	duration	per day	equip.	peak day	equip.	peak day	month	May-2013	Jun-20
								ļ	5	Jan-2012	Apr-2012
ONSTRUCT SUPERSTRUCTURE		450	100	1		5			20		May-2012
oncrete truck	diesel diesel	450 400	21%	1		· · · · · ·	0.2	1	20		May-2012
oncrete pump	diesel	200	50%	1			1	1	20	Jan-2012	May-2012
rebar bender	electric	20	50%	2			2				May-2012
arc welder troweling machine	diesel	200	50%	2			2	2			May-2012
ailers of steel	diesel	500		1	1	2.5		ļ	20	Jan-2012	May-2012
gileta di Sidor								ļ			
EP			300					<u> </u>	15		14- 0040
umbing deliveries	diesel	500		0.09	0.09				20		May-2013 May-2013
prinkler deliveries	diesel	500		0.09	0.09			 	20		May-2013 May-2013
VAC - deliveries	diesel	500		0.21	0.21	2		ļ	20		May-2013
lectric - deliveries	diesel	500		0.24	0.24	-	4	1 4			May-2013
cissor lift	electric	20	50%	1.00			-				May-2013
G forklift	gas	250	50%	1.00				<u>'</u>		1.00.20.2	
			120			 			•	\$	1
UILDING ENCLOSURE & ROOFING	discol	500	120	0.5	0.5	2		 	20	Mar-2012	Aug-2012
ailers	diesel	300		0.0				1	T		1
TEDIODS (FIT OUT		 	300	 		1		T	15	5	
NTERIORS / FIT-OUT	diesel	500		0.01	0.01	1			20		Jun-2013
rywall trailers dditional interiors - box trailer	diesel	500		0.02	0.02	2 1			20		Jun-2013
F&E	diesel	500		0.04	0.04	1 1			20		Jun-2013
cissor lift	electric	20	50%				1	4 4			Jun-2013
IG forklift	gas	250	50%	1.00		<u> </u>		1 1	1 20	0 Apr-2012	Jun-2013
			ļ	ļ				1	21	0 100 2012	Jun-2013
ash hauling - 3 loads per day	diesel	400	Ļ	3	3			+	20		Mar-2013
uel trucks - 1 every 2 weeks on average	gas	400	_	0.5	0.5	51		1 .			Oct-2012
ower crane	electric	200amp	90%	+				-	1 2		Feb-2013
lual hoist	electric	100amp	90%	1		 		' 	· 	0011-2012	1
			 	 						+	—
niscellaneous equipment		3	20%	2		 		2	2 2	o	
chain saw	gas	5	40%	1 2		 			2 2		
compressor	gas	10	40%	1 2						0 Jan-2012	May-201
generator	gas air		20%	6					6 2	0 Jan-2012	May-201
impact wrench	air		20%	2				2	2 2	0 Jan-2012	May-201
jack hammer	electric	5	20%	2				2		0 Apr-2012	Jun-201
table saw	electric	15	5%	1						0 Jan-2012	Sep-20
portable water pump circular saw	electric	1.5	25%	(3			6	6 2	0 Jan-2012	Jun-20
Ground Com											
Package E	13 levels	240' hiç	gh					ff-road		Jan-2011	Dec-201:
#4 Academic building (business school)	engine type	horse	duration	equipment per day	equip.	peak day		peak day	days per month	May-2013	Jun-2013
aka Business School Building		power		perday	equip.	peak day	equip.	peakoay	-	11.27 2010	1
			140		+					7 Jan-2011	Jun-201
CONSTRUCT SUPERSTRUCTURE			170	79	+				1 2	20 Jan-2011	Jun-201
mandays	diesel	450				4 2	0		- 4	20 Jan-2011	Jun-201
concrete truck	diesel	400	90	%	1		0	.2	1 2	20 Jan-2011	Jun-201
concrete pump rebar bender	diesel	200	50		1	Ι.				20 Jan-2011	Jun-201
arc welder	electric	20	50	%	2					20 Jan-2011	Jun-201
troweling machine	gas	11	50		2			2		20 Jan-2011	Jun-201
trailers of steel	diesel	500			3	3 7	5			20 Jan-2011	Jun-201
			1						 -	25	
MEP			500							25 May 2011	May-20
plumbing deliveries	diesel	500		0.08			2			20 May-2011 20 May-2011	May-20
sprinkler deliveries	diesel	500		0.06			2			20 May-2011 20 May-2011	May-20
HVAC - deliveries	diesel	500		0.23			2			20 May-2011 20 May-2011	
	diesel	500		0.11		11	4	4		20 May-2011 20 May-2011	
electric - deliveries			50		4			4		20 May-2011	
scissor lift	electric	20						*1			
		250	50	1.00	<u> </u>						1
scissor lift NG forklift	electric									8	
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING	electric gas	250	16	0		1.5	2			8 20 Apr-2011	Nov-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING	electric					0.5	2				Nov-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers	electric gas	250	16	0 0).5	2			20 Apr-2011 25	
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT	electric gas diesel	500		0 0	5 0		2			20 Apr-2011 25 20 Jun-2011	Jun-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers	electric gas diesel	500 500	50	0 0.0	5 0	01				20 Apr-2011 25	Jun-20 Jun-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer	electric gas diesel diesel diesel	500 500 500	50	0 0.0	5 0	01	1			20 Apr-2011 25 20 Jun-2011	Jun-20 Jun-20 Jun-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E	electric gas diesel diesel diesel diesel diesel	500 500 500 500 500	50	0 0.0 0 0.0 0.0	5 0	01	1 1	4	4	20 Apr-2011 25 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011	Jun-20 Jun-20 Jun-20 Jun-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift	electric gas diesel diesel diesel diesel electric	500 500 500 500 500 20	50	0 0.0 0 0.0 0.0 0.0 0.0	5 0 11 0.0 16 0.0 4 0.0	01	1 1	4	4	20 Apr-2011 25 20 Jun-2011 20 Jun-2011 20 Jun-2011	Jun-20 Jun-20 Jun-20 Jun-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift	electric gas diesel diesel diesel diesel diesel	500 500 500 500 500	50	0 0.0 0 0.0 0.0	5 0 11 0.0 16 0.0 4 0.0	01	1 1		4	20 Apr-2011 25 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011	Jun-20 Jun-20 Jun-20 Jun-20 Jun-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift	diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 500 500 20 250	50 50 50	0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.00	5 0 11 0.0 16 0.0 4 0.0	01	1 1		4 1	20 Apr-2011 25 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011	Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 500 500 500 500 20	50	0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0 11 0.0 16 0.0 14 0.0 3	01 06 04	1 1 1 1		4 1	20 Apr-2011 25 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jan-2011 20 Jan-2011	Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Dec-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel	500 500 500 500 500 20 250 400	50 50 50	0 0.0 0 0.0 0.0 0.0 0.0 0.0 1.00	5 0 0.0 10 0.0 16 0.0 16 0.0 17 0.0 18 0.0	01 06 04 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		4 1 1 1	20 Apr-2011 25 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011	Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Dec-20 Jan-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	electric gas diesel diesel diesel diesel electric gas diesel	500 500 500 500 20 250 400 400 200arr	50 50 50	0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0 0.11 0.1 16 0.9 14 0.9 4 0.9 3 .5 0	01 06 04 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	4 1 1 1	20 Apr-2011 25 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jan-2011 20 Jan-2011	Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Dec-20 Jan-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel	500 500 500 500 500 20 250 400	50 50 50	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 0 01 0.0 16 0.0 14 0.0 4 0.0 3 1 0	01 06 04 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	4 1 1 1	20 Apr-2011 25 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011	Jun-20 Jun-20 Jun-20 Jun-20 Dec-20 Jan-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist	electric gas diesel diesel diesel diesel electric gas diesel	500 500 500 500 20 250 400 400 200arr	50 50 50	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 0 01 0.0 16 0.0 14 0.0 4 0.0 3 1 0	01 06 04 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1	1 1 1	20 Apr-2011 25 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011	Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Dec-20 Jan-20
scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	electric gas diesel diesel diesel diesel electric gas diesel	500 500 500 500 20 250 400 400 200arr	50 50 50	0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0 01 0.0 16 0.0 14 0.0 4 0.0 3 1 0	01 06 04 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	4 1 1 1 1 1 2 2	20 Apr-2011 25 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jun-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011 20 Jan-2011	Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Dec-20 Jan-20 May-20

Site / Task / Engine	engine type	horse	duration	equipment per day		uck	+	road	days per		T
generator	gas	10	40%		equip.	peak day	equip.	peak day	month	Start Month	
impact wrench	air		20%	6			2				Jul-2011
ack hammer	air		20%	2		 	6				Jun-2011
ble saw	electric	5	20%	2		 	2				1
Portable water pump	electric	15	5%	1		1	† -				Jun-2013 Jun-2013
circular saw	electric	1.5	25%	6			6	L			Jun-2013
											341-2013
			ļ	ļ							
Package F	7 levels	+		ļ		ļ					
Below grade space		horse	+	001100000				L			
aka Phase II Factory	engine type	power	duration	equipment per day	equip.	peak day		road	days per	Jan-2015	Dec-2018
			 	, , , ,	ецир.	peak day	equip.	peak day	month	Oct-2018	Nov-2018
SITE DEMOLITION			200	T					10		ļ
20 yd dump trucks	diesel	400		10	10	10			20		
excavator	diesel	200	75%	1		1	1	1		Jan-2015 Jan-2015	Oct-2015
REMOVAL/RELOCATION OF EXISTING UTILITIES									- 20	3811-2013	Oct-2015
20 yd dump trucks	41		180						9		
excavator	diesel	400	ļ	65	65	65			20	Feb-2015	Oct-2015
trailers - delivery of pipe	diesel diesel	200 500	75%	1			1	1	20	Feb-2015	Oct-2015
excavator - setting of pipe	diesel	200	50%	1	1	2			20	Feb-2015	Oct-2015
amper	diesel	25	50% 75%	1			1	1	20	Feb-2015	Oct-2015
20 yd dump trucks - supply of gravel & fill	diesel	400	/5%	32	32	32	1	1	20	Feb-2015	Oct-2015
site utilities trucks	diesel	400		0.24	0.24	32			20		
electric trucks	diesel	400	İ	0.12	0.12	1			20	Feb-2015	Oct-2015
MICTALL 701 CLUDDY					0,12				20	Feb-2015	Oct-2015
INSTALL 70' SLURRY WALL @ PERIMETER			315						15.75		
20 yd dump trucks concrete truck	diesel	400		2	2	20			20	Mar-2015	Jun-2016
trailers of steel - rebar	diesel	450	100%	6	6	6			20		Juli-2010
rebar bender	diesel	500		1	1	5			20	Mar-2015	Jun-2016
arc welder	diesel	200	50%	1			1	1	20	Mar-2015	Jun-2016
skylift forklift	electric gas	200	50%	2			2	2	20	Mar-2015	Jun-2016
375 HP air compresser	diesel	375	40% 50%	2			2	2	20	Mar-2015	Jun-2016
40 ton hydraulic crane (handling rebar cages)	diesel	450	50%	2			2	2	20	Mar-2015	Jun-2016
buli dozer	diesel	400	25%	1			1 1	1	20	Mar-2015	Jun-2016
slurry supply system	diesel	400	50%	1			1	1	20	Mar-2015	Jun-2016
crawler crane	diesel	450	90%	1			1	1	20	Mar-2015	Jun-2016
EXCAVATE WITHIN SLURRY WALL								- '		Mar-2015	Jun-2016
20 yd dump trucks			235						11.75		
avator	diesel	400		140	140	140			20	Mar-2016	Feb-2017
ng rig (no rock)	diesel diesel	200	75%	2			2	2	20	Mar-2016	Feb-2017
mpressors	diesel	250 250	75%				0	0	20		
	diasei	250	90%	2			2	2	20	Mar-2016	Feb-2017
CONSTRUCT BELOW GRADE SUPERSTRUCTURE		++	260								
structure		1	200						13	Jul-2017	Dec-2017
concrete truck	diesel	450	100%	23.6	23.6	118			20	D 2010	
concrete pump	diesel	400	90%	1			0.2	1	20	Dec-2016 Dec-2016	Dec-2017 Dec-2017
trailers of steel crawler crane	diesel	500	100%	4.2	4.2	10.5			20	Dec-2016	Dec-2017 Dec-2017
rebar bender	diesel	450	90%	1			1	1	20	Dec-2016	Dec-2017 Dec-2017
arc welder	diesel	200	50%	1			1	1	20	Dec-2016	Dec-2017
troweling machine	electric	20	50%	2			2	2	20	Dec-2016	Dec-2017
iles:	diesel	200	50%	2			2	2	20	Dec-2016	Dec-2017
concrete truck	diesel	450	4000/								
concrete pump	diesel	400	100% 35%	1.7	1.7	8.5			20	Dec-2016	Dec-2017
trailers of steel	diesel	500	100%	1.5	1.5	2.75	0.2	1	20	Dec-2016	Dec-2017
rebar bender	diesel	200	50%	1	1.5	3.75			20	Dec-2016	Dec-2017
arc welder	electric	20	50%	2			2	1 2	20	Dec-2016	Dec-2017
pile driving rig	diesel	450	90%	2			2	2	20	Dec-2016	Dec-2017
SECTORE EVICTIVO LETITION							- 4		20	Dec-2016	Dec-2017
RESTORE EXISTING UTILITIES 0 yd dump trucks			180						9		
xcavator	diesel	400	100%	65	65	65				Nov-2017	Jul-2018
allers - delivery of pipe	diesel	200	75%	1			1	1		Nov-2017	Jul-2018
xcavator - setting of pipe	diesel	500	50%	1	1	2				Nov-2017	Jul-2018
amper	diesel	200	50%	1			1	1		Nov-2017	Jul-2018
0 yd dump trucks - supply of gravel & fill	diesel diesel	25	75%	1			1	1		Nov-2017	Jul-2018
ite utilities trucks	diesel	400	100%	32	32	32				Nov-2017	Jul-2018
lectric trucks	diesel	400 400	100%	0.30	0.3	1				Nov-2017	Jul-2018
	dicaei	400	100%	0.21	0.21	1			20	Nov-2017	Jul-2018
ITE IMPROVEMENTS/STREETSCAPE			180								
ailers - delivery of material	diesel	500	100%	0.5	0.5	1			9		
ncrete truck	diesel	450	100%	1	1	3				Jan-2018	Sep-2018
bar bender	diesel	200	50%	1			1			Jan-2018	Sep-2018
ement mixer	gas	200	50%	1			1	1		Jan-2018	Sep-2018
nit paver cutter	electric	20	50%	1				1		Jan-2018	Sep-2018
yd dump trucks - delivery of asphalt	diesel	400	100%	10	10	10				Jan-2018 Jan-2018	Sep-2018
phalt laying equipment	diesel	300	25%	1			1	1			Sep-2018 Sep-2018
pper	diesel	25	75%	1			1	1			Sep-2018 Sep-2018
	diesel	350	25%	1			1	1			Sep-2018 Sep-2018
EP											- 50 2010
umbing deliveries	diesel	F60	390						19.5		
rinkler deliveries	diesel	500	100%	0.10	0.1	2			20 ,	Apr-2017	Nov-2018
	UICSCI	500	100%	0.10	0.1	2					Nov-2018

Site / Task / Engine	engine type	horse power	duration	equipment per day	equip.	peak day	off-ro	peak day	days per month	Start Month	End Month
Site / Task / Engine					0.2	2	equip.	peon suj	20	Apr-2017	Nov-2018
AC - deliveries	diesel	500	100%	0.20	0.2	2			20		Nov-2018
ctric - deliveries	diesel	500	100%	4	0.2		4	4	20		Nov-2018
ssor lift	electric	20	50% 50%	1.00			1	1	20	Apr-2017	Nov-20
3 forklift	gas	250	5076	1.00							
			390						19.5		
LOW GRADE INTERIORS / FIT-OUT	diesel	500	100%	0.02	0.02	1			20		Nov-2018
ywali trailers	diesel	250	100%	0.09	0.09	1			20		Nov-2018
compressors	diesel	500	100%	0.09	0.09	1			20		Nov-2018
ditional interiors - box trailer	diesel	500	100%	0.03	0.03	1			20		Nov-2018
F&E	electric	20	50%	4			4	4	20		Nov-2018
issor lift	gas	250	50%	1.00			1	1	20	Apr-2017	Nov-2018
G forklift	905	1									
	diesel	400	100%	4	4	1			20		Nov-2018
ash hauling - 3 loads per day	gas	400	100%	0.5	0.5	1			20		Nov-2018
el trucks - 1 every 2 weeks on average	electric	200 amp	90%				0	0			
wer crane	diesel	350	50%	2			2	2			Nov-2010
bber tire crane	electric	100 amp		1			1	1	20	Dec-2016	Nov-201
ual hoist	CIOCUIO	100 0p									L
The second second								ļ	ļ	1 0045	May 201
iscellaneous equipment	gas	3	20%	4			4				May-201
chain saw	gas	5	40%	6			6				Dec-201
compressor	gas	10	40%	4			4				Aug-201
generator	air	 	20%	8			8				Dec-201
impact wrench	air	1	20%	4			4				Oct-201
jack hammer	electric	5	20%	8			8				Nov-201
table saw	electric	15	5%	4			4		1 20		Nov-201
portable water pump	electric	1.5	25%	15			15	15	5 20	0 Jan-2015	Nov-201
circular saw	electric	1.5	1 2070	† 						1	ļ
		+	†								
		1						ļ		 	
ackage G	13 levels	316' hig	h			L			1	Jan-2018	Dec-202
6 & 6B Science/Academic building	engine type	horse	duration	equipment		uck .		road peak day	days per month	Aug-2020	Sep-202
	engine type	power		per day	equip.	peak day	equip.	peak day	+	9 Feb-2018	Aug-201
CONSTRUCT SUPERSTRUCTURE			180			20			2		Sep-201
concrete truck	diesel	450		4	4	20	0.:			0 Jan-2018	Sep-201
concrete pump	diesel	400				ļ	U.,			0 Jan-2018	Sep-201
	diesel	200	509								Sep-201
rebar bender	electric	20	509			 				0 Jan-2018	Sep-201
arc welder	gas	11	50%			ļ		2		0 Jan-2018	Sep-201
troweling machine	diesel	500	L	3	3	7.5			2	0 Jan-2018	3ep-20
trailers of steel										29	
MEP			580			ļ	ļ			0 May-2018	Sep-2
plumbing deliveries	diesel	500		0.05						20 May-2018	Sep-20
	diesel	500	T	0.05							Sep-20
sprinkler deliveries	diesel	500		0.11	0.1					20 May-2018	
HVAC - deliveries	diesel	500		0.12	0.13	2 2				20 May-2018	Sep-20:
electric - deliveries	electric	20	50	%				4		20 May-2018	Sep-202
scissor lift	gas	250	50					1	1 3	20 May-2018	Sep-202
NG forklift	900		 							40	
BUILDING ENCLOSURE & ROOFING			260				ļ			13 20 Apr-2018	Apr-20
trailers	diesel	500		0.	5 0.	5 2	2			20 Apr-2016	
((3))))							 			28	
INTERIORS / FIT-OUT			560				.			20 Jun-2018	Sep-20
drywall trailers	diesel	500		0.0						20 Jun-2018	
additional interiors - box trailer	diesel	500		0.0						20 Jun-2018	
FF&E	diesel	500		0.0		3	-	4		20 Jun-2018	
scissor lift	electric	20	50	7.0	4			4		20 Jun-2018 20 Jun-2018	
NG forklift	gas	250	50	% 1.00)		-	1		20 Juli-2018	- Jop-20
140 IOI MILL							.			20 Jan-2018	Sep-20
trash hauling - 3 loads per day	diesel	400				3	-			20 Jan-2018	
fuel trucks - 1 every 2 weeks on average	gas	400		0		. D	1	1		20 Jan-2018	
tower crane	electric	200am			1					20 Jan-2018	
dual hoist	electric	100am	np 90)%	1		+	1	1	20 3011-2016	
uudi 11013t							+				
miscellaneous equipment							+	-2	2	20	
chain saw	gas	3	20%		2		1	2		20 Jan-2018	Sep-20
compressor	gas	5	40%		2			2	2	20 Jan-2018	
	gas	10			2			2		20 Jan-2018	
generator impact wrench	air		20%		6			6	6		- John
impact wrench jack hammer	air		20%		2		<u> </u>	2	2	20 Jun-2018	Sep-2
	electric	5	20%		2			2	2		
table saw	electric	15	5%		1		-	1	- 1		
portable water pump	electric	1.5			6			6	6	20 Jan-2018	, Sep-2
circular saw	0.000										
											-
						_	+		days p	er Jan-2018	B Nov-2
Package H		hors		on equipme					mont		
Package H		powe	er """	perda	<u> </u>				- Inchi	3	1,01,7
Package H The Square	engine type			1	1	1	1	1			
The Square	engine type			60						20 20 2041	
The Square CONSTRUCT SUPERSTRUCTURE	engine type	450		50	1	1	5			20 Jan-2018	
The Square CONSTRUCT SUPERSTRUCTURE concrete truck	diesel)	1%	1			0.2	1	20 Jan-2018	8 Mar-2
The Square CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump	diesel diesel	450	0 2						1	20 Jan-2018 20 Jan-2018	8 Mar-2 8 Mar-2
The Square CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel	diesel diesel diesel	450 400 500	0 2 0 2		1			1	1 1	20 Jan-2018 20 Jan-2018 20 Jan-2018	8 Mar-2 8 Mar-2 8 Mar-2
The Square CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump	diesel diesel	450	0 2 0 2 0 9	1%	1				1 2 2	20 Jan-2018 20 Jan-2018	8 Mar-2 8 Mar-2 8 Mar-2 8 Mar-2

i	Site / Task / Engine	engine type	horse	duration	equipment	tn	ick	off-	road	days per		
	One County English	engine type	power	Gurauen	per day	equip.	peak day	equip.	peak day	month	Start Month	End Month
MEP												
plumbing deliver	ioc	diacal	F00	80	ļ <u>.</u>					4		
nkler deliveri		diesel diesel	500 500	 	0.10	0.1				20		Jun-2018
AC - deliverie		diesel	500	-		0				20		
electric - deliveri		diesel	500		0.38	0.38			ļ <u>.</u>	20		
NG forklift		gas	250	50%		0.30		1		20		Jun-2018
		T		†	1.00	l			 	20	Mar-2018	Jun-2018
	MENTS/STREETSCAPE			160					 	8		
trailers - delivery	of material	diesel	500		0.5	0.5	1		<u> </u>	20		Nov-2018
concrete truck		diesel	450		1	1	3			20		Nov-2018
rebar bender		diesel	200	50%	+			1	1	20		Nov-2018
cement mixer		gas	200	50%	4			1	1	20		Nov-2018
unit paver cutter	to delivery of people t	electric	20	50%	1			1	1	20		Nov-2018
asphalt laying eq	ks - delivery of asphalt	diesel	400		10	10	10			20		Nov-2018
tamper	Julyment	diesel diesel	300 25	25%	1			1	1	20		Nov-2018
roller		diesel	350	75% 25%	1			1	1	20		Nov-2018
		Cicsei	330	2576	 			1		20	Apr-2018	Nov-2018
trash hauling - 3	loads per day	diesel	400	 	3	3	1					
	ery 2 weeks on average	gas	400	·	0.025	0.025	1			20 20		Nov-2018
rubber tire crane		diesel	350	25%	1	3.023	'	1	1	20		Nov-2018
backhoe		diesel	200	50%	1		***************************************	1		20	Jan-2018 Jan-2018	Nov-2018 Nov-2018
								<u></u> -	·	- 20	Juli-2010	1404-2018
miscellaneous ed	quipment											
chain saw		gas	3	20%	2			2	2	20		
compressor		gas	5	40%	1			1	1	20	Jan-2018	Nov-2018
generator		gas	10	40%	1			1	1	20	Jan-2018	Apr-2018
impact wrench jack hammer	1	air		20%				0	0	20		
table saw		air		20%	2			2	2	20	Jan-2018	Nov-2018
portable water	pump	electric electric	5 15	20% 5%	1			0	0	20		
circular saw		electric	1.5	25%	6			1	1 6	20	Jan-2018	Nov-2018
		Ciocuic	1.5	2376	- 0			ь	6	20	Jan-2018	Nov-2018
				-								
Package I		14 levels	250' hig	h								
#7 Residential b	ouilding	engine type	horse	duration	equipment	tru	ck	off-r	oad	days per	Mar-2010	Sep-2013
OUTE DELIGITIES		engine type	power		per day	equip.	peak day	equip.	peak day	month		Cop Zo io
SITE DEMOLITION				100						5		
20 yd dump truck excavator	(S	diesel	400		10	10	10			20	Mar-2010	Jul-2010
excavator		diesel	200	75%	1			1	1	20	Mar-2010	Jul-2010
CAVATION &	FOUNDATIONS	 		120								
yd dump truck		diesel	400	120	18	18	18			6	1.1.001	
excavator		diesel	200	75%	18	18	18	1	ار	20	Jul-2010	Dec-2010
drilling rig		diesel	250	75%	1				1	20 20	Jul-2010 Jul-2010	Dec-2010
compressors		diesel	250	90%	1			1		20	Jul-2010 Jul-2010	Dec-2010 Dec-2010
pile driving rig		diesel	450	90%	1			- il	1	20	Jul-2010	Dec-2010
												Dec-2010
CONSTRUCT SU							ſ	l				
	PERSTRUCTURE			120						6		Jun-2011
concrete truck	JERSTRUCTURE	diesel	450		2	2	10				Jan-2011 Jan-2011	Jun-2011 Jun-2011
concrete pump	PERSTRUCTURE	diesel	400	120 42%	1	2		0.2	1	6	Jan-2011	
concrete pump trailers of steel	PERSTRUCTURE	diesel diesel	400 500	42%	1 2	2 2	10	0.2	1	6 20	Jan-2011 Jan-2011	Jun-2011
concrete pump trailers of steel rebar bender	PERSTRUCTURE	diesel diesel diesel	400 500 200	42% 50%	1 2 1			1	1	6 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2011 Jun-2011
concrete pump trailers of steel rebar bender arc welder		diesel diesel diesel electric	400 500 200 20	42% 50% 50%	1 2 1 2		5	1 2	2	6 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011
concrete pump trailers of steel rebar bender		diesel diesel diesel	400 500 200	42% 50%	1 2 1			1		6 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011
concrete pump trailers of steel rebar bender arc welder		diesel diesel diesel electric	400 500 200 20	42% 50% 50% 50%	1 2 1 2		5	1 2	2	6 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011
concrete pump trailers of steel rebar bender arc welder troweling mach	nine	diesel diesel diesel electric gas	400 500 200 20 11	42% 50% 50%	1 2 1 2 2 2	2	5	1 2	2	6 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011
concrete pump trailers of steel rebar bender arc welder troweling mach	nine	diesel diesel diesei electric gas diesel	400 500 200 20 11	42% 50% 50% 50%	1 2 1 2 2 2 0.06	0.06	5	1 2	2	6 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie	nine es es	diesel diesel diesel electric gas	400 500 200 20 11 500 500	42% 50% 50% 50%	1 2 1 2 2 2 2 0.06 0.06	0.06 0.06	2 2 2	1 2	2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliverie electric - deliverie	nine es ss	diesel diesel diesel electric gas diesel diesel diesel	400 500 200 20 11	42% 50% 50% 50%	1 2 1 2 2 2 2 0.06 0.06 0.15	0.06 0.06 0.15	2 2 2 2	1 2	2	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliverie scissor lift	nine es ss	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel	400 500 200 20 11 500 500 500	42% 50% 50% 50%	1 2 1 2 2 2 2 0.06 0.06	0.06 0.06	2 2 2	1 2 2 2	2 2	20 20 20 20 20 20 20 20 20 22 20 20 20 2	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliverie electric - deliverie	nine es ss	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel	400 500 200 20 11 500 500 500 500	42% 50% 50% 50% 440	0.06 0.06 0.15 0.16	0.06 0.06 0.15	2 2 2 2	1 2	2	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift	es s s s s s s s s s s s s s s s s s s	diesel diesel diesel electric gas diesel diesel diesel diesel diesel electric	400 500 200 20 11 500 500 500 500 20	42% 50% 50% 50% 440	1 2 1 2 2 2 0.06 0.06 0.15 0.16	0.06 0.06 0.15	2 2 2 2	1 2 2 2	2 2	20 20 20 20 20 20 20 20 20 22 20 20 20 2	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie electric - deliverie scissor lift NG forklift BUILDING ENCLO	nine es ss	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel gas	500 200 211 11 500 500 500 500 20 250	42% 50% 50% 50% 440	1 2 1 2 2 2 0.06 0.06 0.15 0.16	0.06 0.06 0.15	2 2 2 2	1 2 2 2	2 2	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift	es s s s s s s s s s s s s s s s s s s	diesel diesel diesel electric gas diesel diesel diesel diesel diesel electric	400 500 200 20 11 500 500 500 500 20	42% 50% 50% 50% 440 50%	1 2 1 2 2 2 0.06 0.06 0.15 0.16	0.06 0.06 0.15	2 2 2 2	1 2 2 2	2 2	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCLO	es sis sis sis sis sis sis sis sis sis s	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel gas	500 200 211 11 500 500 500 500 20 250	42% 50% 50% 50% 440 50% 50%	1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.06 0.06 0.15 0.16	2 2 2 2 2 2	1 2 2 2	2 2	6 200 200 200 200 200 200 200 200 200 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL Interiors / FIT.	es sis sis sis sis sis sis sis sis sis s	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 200 200 111 500 500 500 500 20 250	42% 50% 50% 50% 440 50%	1 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.06 0.06 0.15 0.16	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 2 2 2	2 2	6 200 200 200 200 200 200 200 200 200 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Feb-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie electric - deliverie scissor lift NG forklift BUILDING ENCLO trailers INTERIORS / FIT. drywall trailers	es es es es es es es es es es es es es e	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 200 200 111 500 500 500 500 20 250 500	42% 50% 50% 50% 440 50% 50%	0.06 0.06 0.05 0.15 0.16 4 1	0.06 0.06 0.15 0.16	2 2 2 2 2 2 2 1	1 2 2 2	2 2	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers additional interiors	es es es es es es es es es es es es es e	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 500 200 111 500 500 500 500 20 250 500 500	42% 50% 50% 50% 440 50% 50%	0.06 0.06 0.06 0.15 0.15 0.16 4 1	0.06 0.06 0.15 0.16 0.5 0.5	2 2 2 2 2 2 2	1 2 2 2	2 2	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCLO trailers INTERIORS / FIT. drywall trailers additional interiors FF&E	es es es es es es es es es es es es es e	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 500 200 211 11 500 500 500 500 500 500 500 500 50	42% 50% 50% 50% 440 50% 50% 160	0.06 0.06 0.06 0.15 0.15 0.15 0.15 0.01 0.05	0.06 0.06 0.15 0.16	2 2 2 2 2 2 2 1	1 2 2 2	2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 200 200 200 200 200 200 200 200 200 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder trowelling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers FF&E scissor lift	es es es es es es es es es es es es es e	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 500 200 211 500 500 500 500 500 500 500 500 500 5	42% 50% 50% 50% 440 50% 160 420	0.06 0.06 0.06 0.15 0.16 4 1 0.5	0.06 0.06 0.15 0.16 0.5 0.5	2 2 2 2 2 2 2	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 1 1	6 200 200 200 200 200 200 200 200 200 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder trowelling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers FF&E scissor lift	es es es es es es es es es es es es es e	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 500 200 211 11 500 500 500 500 500 500 500 500 50	42% 50% 50% 50% 440 50% 50% 160	0.06 0.06 0.06 0.15 0.15 0.15 0.15 0.01 0.05	0.06 0.06 0.15 0.16 0.5 0.5	2 2 2 2 2 2 2	1 2 2 2	2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 200 200 200 200 200 200 200 200 200 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCLO trailers INTERIORS / FIT drywall trailers additional interiors FF&E scissor lift NG forklift	es sis sis sis sis sis sis sis sis sis s	diesel diesel diesel electric gas diesel gas	500 500 200 111 500 500 500 500 20 250 500 500 20 250	42% 50% 50% 50% 440 50% 160 420	0.06 0.06 0.06 0.15 0.15 0.16 4 1 1	0.06 0.06 0.15 0.16 0.5 0.5 0.01 0.03	2 2 2 2 2 1 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 1 1	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCLO trailers INTERIORS / FIT. drywall trailers additional interiors FF&E scissor lift NG forklift trash hauling - 3 lo	ess ess es es es es es es es es es es es	diesel diesel diesel electric gas diesel	500 500 200 111 500 500 500 500 500 20 250 500 500 500	42% 50% 50% 50% 440 50% 160 420	0.06 0.06 0.06 0.15 0.15 0.15 0.15 0.10 0.03 0.05 4 1.00	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 1 1	6 200 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder trowelling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers additional interiors FF&E scissor lift NG forklift trash hauling - 3 lc fuel trucks - 1 evel	ess ess ess ess ess ess ess ess ess ess	diesel diesel diesel electric gas diesel gas	500 500 500 200 111 500 500 500 500 20 250 500 500 500 500	42% 50% 50% 50% 440 440 420 50% 50%	0.06 0.06 0.06 0.15 0.16 4 1 0.5 0.01 0.03 0.05 4 1.00	0.06 0.06 0.15 0.16 0.5 0.5 0.01 0.03	2 2 2 2 2 1 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 1 1	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder trowelling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers additional interiors FF&E scissor lift NG forklift trash hauling - 3 lc fuel trucks - 1 evel	es sis sis sis sis sis sis sis sis sis s	diesel diesel diesel diesel electric gas diesel gas	500 500 200 111 500 500 500 500 500 20 250 500 500 500	42% 50% 50% 50% 440 50% 160 420	0.06 0.06 0.06 0.15 0.15 0.15 0.15 0.10 0.03 0.05 4 1.00	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 1 1	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2010 Mar-2010 Mar-2010	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCLO trailers iNTERIORS / FIT additional interiors FF&E scissor lift NG forklift trash hauling - 3 lo fuel trucks - 1 ever tower crane dual hoist	es es es es es es es es es es es es es e	diesel electric gas	500 500 500 200 111 500 500 500 20 250 500 500 500 500 500	42% 50% 50% 50% 440 50% 50% 50% 50% 90%	0.06 0.06 0.06 0.15 0.16 4 1 0.5 0.01 0.03 0.03 0.05 4 1.00	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 1 2 2 2 2 4 4 1 1 1 1 1	2 2 2 4 1 1	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT. drywall trailers additional interiors FF&E scissor lift NG forklift trash hauling - 3 le fuel trucks - 1 eve tower crane dual hoist	es es es es es es es es es es es es es e	diesel diesel diesel diesel electric gas diesel electric gas	500 500 500 200 111 500 500 500 20 250 500 500 500 500 500	42% 50% 50% 50% 440 50% 50% 50% 50% 90%	0.06 0.06 0.06 0.15 0.16 4 1 0.5 0.01 0.03 0.03 0.05 4 1.00	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 1 2 2 2 2 4 4 1 1 1 1 1	2 2 2 4 1 1	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2010 Mar-2010 Mar-2010	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012
concrete pump trailers of steel rebar bender arc welder trowelling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers additional interiors FF&E scissor lift NG forklift trash hauling - 3 le fuel trucks - 1 ever tower crane dual hoist miscellaneous equ	es sis sis sis sis sis sis sis sis sis s	diesel diesel diesel diesel electric gas diesel electric gas	500 500 500 200 111 500 500 500 20 250 500 500 500 500 500	42% 50% 50% 50% 440 50% 50% 50% 50% 90%	0.06 0.06 0.06 0.15 0.16 4 1 0.5 0.01 0.03 0.03 0.05 4 1.00	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 2 2 2 4 1 1 1	4 1 1 1 1 1 1	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2010 Mar-2010 Mar-2010 Mar-2010 Mar-2010	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers additional interiors FF&E scissor lift NG forklift trash hauling - 3 k fuel trucks - 1 ever tower crane dual hoist miscellaneous equ hain saw compressor	es sis sis sis sis sis sis sis sis sis s	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 500 500 500 500 20 250 500 50	42% 50% 50% 50% 50% 440 420 420 50% 50% 50% 440 420	0.06 0.06 0.06 0.15 0.15 0.16 4 1 0.5 0.01 0.03 0.05 4 1.00	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 1 2 2 2 2 4 4 1 1 1 1 1	2 2 2 4 1 1	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2010 Mar-2010 Mar-2010 Mar-2010 Mar-2010	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Jun-2012 Dec-2012 Dec-2012 Jun-2012 Nov-2011 Mar-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie electric - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLO trailers INTERIORS / FIT Additional interiors FF&E scissor lift NG forklift trash hauling - 3 lo fuel trucks - 1 ever tower crane dual hoist miscellaneous equ hain saw ompressor generator	es sis sis sis sis sis sis sis sis sis s	diesel diesel diesel diesel electric gas diesel gas	500 500 500 500 500 500 500 500 20 250 500 50	42% 50% 50% 50% 50% 50% 50% 160 420 420 50% 50% 90% 90% 40% 40%	0.06 0.06 0.06 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 2 2 2 4 1 1 1 1	2 2 2 4 1 1 1 1 1	6 200 200 200 200 200 200 200 200 200 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2010 Mar-2010 Mar-2010 Mar-2010 Mar-2010	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012
concrete pump trailers of steel rebar bender arc welder troweling mach MEP plumbing deliverie sprinkler deliverie HVAC - deliveries electric - deliverie scissor lift NG forklift BUILDING ENCL trailers INTERIORS / FIT drywall trailers additional interiors FF&E scissor lift NG forklift trash hauling - 3 k fuel trucks - 1 ever tower crane dual hoist miscellaneous equ hain saw compressor	ess sis sis OSURE & ROOFING -OUT s - box trailer pads per day ry 2 weeks on average	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 500 500 500 500 20 250 500 50	42% 50% 50% 50% 50% 440 420 420 50% 50% 50% 440 420	0.06 0.06 0.06 0.15 0.15 0.15 0.10 0.01 0.03 0.05 4 1.00 3 0.5	0.06 0.06 0.15 0.16 0.5 0.01 0.03 0.03	2 2 2 2 2 2 2 1 1 1	1 2 2 4 4 1 1 1 1 1 2 2 2	2 2 2 1 1 1 1 1 1 2 2 2	6 20 20 20 20 20 20 20 20 20 20 20 20 20	Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Jan-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Mar-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2011 Apr-2010 Mar-2010 Mar-2010 Mar-2010 Mar-2010 Mar-2010 Mar-2010 Mar-2010	Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Jun-2011 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Jun-2012 Dec-2012 Dec-2012 Dec-2012 Dec-2012 Jun-2012 Jun-2012 Jun-2012 Jun-2011 Mar-2011 Jul-2010 Apr-2011

Site / Task / Engine	engine type	horse power	duration	equipment per day	equip.	ck peak day	off-roa	d oeak day	days per month	Start Month	End Month
	electric	5	20%	2	equip.	peak day	2	2	20	Jan-2011	Dec-2012
table saw	electric	15	5%	1			1	1	20	Mar-2010	Sep-2011
portable water pump circular saw	electric	1.5	25%	8			8	8	20	Jan-2011	Dec-2012
Ground Co.											
		 									
Package J	7 levels	horse		equipment	tru	ick	off-roa	id	days per	Jan-2020	Mar-2023
Below grade space	engine type	power	duration	per day	equip.	peak day	equip.	peak day	month	Feb-2023	Mar-2023
ka Phase III Factory											
SITE DEMOLITION			180						9.0		
20 yd dump trucks	diesel	400		10	10	10			20		Sep-2020
excavator	diesel	200	75%	1			1	1	20	Jan-2020	Sep-2020
			100	ļ					9		
REMOVAL/RELOCATION OF EXISTING UTILITIES		400	180	65	65	65			20		Oct-2020
20 yd dump trucks	diesel	400 200	75%	1		0.5	1	1			Oct-2020
excavator	diesel diesel	500	50%	1	1	2			20		Oct-2020
railers - delivery of pipe	diesel	200	50%	1			1	1	20	Feb-2020	Oct-2020
excavator - setting of pipe tamper	diesel	25	75%	1			1	1	, m 4		Oct-2020
20 yd dump trucks - supply of gravel & fill	diesel	400		32					20		<u> </u>
site utilities trucks	diesel	400		0.24	0.24				20		Oct-2020
electric trucks	diesel	400		0.12	0.12	0.12	 		20	Feb-2020	Oct-2020
			1	ļ	<u> </u>	ļ	 		17.0	1	-
INSTALL 70' SLURRY WALL @ PERIMETER	31 ·	+	340	+	1.6	5 16	<u> </u>		20		Nov-2021
20 yd dump trucks	diesel	400 450	-	1.6					20		Nov-2021
concrete truck	diesel diesel	500	-	0.9	<u> </u>				20		Nov-2021
trailers of steel - rebar	diesel	200	50%	1		1	1	1	20		Nov-2021
rebar bender	electric	20	50%	2		<u> </u>	2	2			Nov-2021
arc welder skylift forklift	gas	200	40%	7			2				Nov-2021
375 HP air compresser	diesel	375	50%	2	2		2	2			Nov-2021
40 ton hydraulic crane (handling rebar cages)	diesel	450	50%	1			1				Nov-2021 Nov-2021
bull dozer	diesel	400	25%				1		1 20		Nov-2021
slurry supply system	diesel	400	50%	1			1		1 20		Nov-2021
crawler crane	diesel	450	90%		4		 ' 			00.2020	THE PARTY
			220	+	 	 			11.	D	1
EXCAVATE WITHIN SLURRY WALL	diesel	400	1 220	203	3 203	3 203	3		2	May-2021	Mar-2022
20 yd dump trucks	diesel	200	75%		2		2		2 2		Mar-2022
excavator drilling rig - some rock below grade	diesel	250	75%		2		2		2 2		Mar-2022
compressors	diesel	250	90%	:	2		2		2 2	0 May-2021	Mar-2022
											-
CONSTRUCT BELOW GRADE SUPERSTRUCTURE			130	<u> </u>			 		6.	3	-
structure		450		27.:	2 27.3	2 13			2	0 Nov-2021	May-2022
concrete truck	diesei	450 400	90%	41	1	- 10	0.2		1 2		May-2022
concrete pump	diesel diesel	500	3070	4.3	3 4.3	3 10.7			2		May-2022
trailers of steel crawler crane	diesel	450	90%	 	1		1		1 2		May-2022
rebar bender	diesel	200	50%		1		1		1 2		May-2022
arc welder	electric	20	50%		2		2			0 Nov-2021	May-2022
troweling machine	gas	11	50%		2		2		2 2	0 Nov-2021	May-2022
piles:										0 Nov-2021	May-2022
concrete truck	diesel	450	FOW	2.	4 2. 1	4 1	0.2			0 Nov-2021	May-2022
concrete pump	diesel	400	50%			2	5			0 Nov-2021	May-2022
trailers of steel	diesel diesel	200	50%		1	-	1			0 Nov-2021	May-2022
rebar bender arc welder	electric	20	50%		2		2			0 Nov-2021	May-2022
pile rig	diesel	450	90%		1		1		1 2	0 Nov-2021	May-2022
pile ng											
RESTORE EXISTING UTILITIES			180							9 1404 2022	lon 2022
20 yd dump trucks	diesel	400	<u> </u>	~-+		55 6	5			0 May-2022 0 May-2022	
excavator	diesel	200	75%		1	1	2 1			0 May-2022 0 May-2022	
trailers - delivery of pipe	diesel	500	50%		1		4	ļ		0 May-2022	
excavator - setting of pipe	diesel	200 25	50% 75%		1		+			0 May-2022	
tamper	diesel diesel	400	15%			32 3	12			0 May-2022	
20 yd dump trucks - supply of gravel & fill site utilities trucks	diesel	400		0.30				 		20 May-2022	Jan-2023
electric trucks	diesel	400		0.2						20 May-2022	
CICOTO RACES	1 1 1 1 1 1	-									
SITE IMPROVEMENTS/STREETSCAPE			18							9	11
trailers - delivery of material	diesel	500	100%		5 0	.5	1	<u> </u>		20 Jul-2022	Mar-2023 Mar-2023
concrete truck	diesel	450			1	1	3			20 Jul-2022 20 Jul-2022	Mar-2023 Mar-2023
rebar bender	diesel	200			1		1 1			20 Jul-2022 20 Jul-2022	Mar-2023
cement mixer	gas	200			1		1			20 Jul-2022	Mar-2023
unit paver cutter	electric	400	50% 100%			10	10	1		20 Jul-2022	Mar-2023
20 yd dump trucks - delivery of asphalt	diesel diesel	300			1		1	t		20 Jul-2022	Mar-2023
asphalt laying equipment	diesel	25	75%		1		- i			20 Jul-2022	Mar-2023
tamper	diesel	350			1		1			20 Jul-2022	Mar-2023
roller	0/0001	- 550	1-20/0	+	1						
MEP			28	0						0.0	
plumbing deliveries	diesel	500		0.1).1	2			20 Feb-2022	
sprinkler deliveries	diesel	500		0.2).2	2	ļ		20 Feb-2022	
HVAC - deliveries	diesel	500		0.2		0.2	2	ļ		20 Feb-2022	
electric - deliveries	diesel	500		0.2		0.2	2			20 Feb-2022 20 Feb-2022	
scissor lift	electric	20	50%	·	4	J	4	·1	4	20 Feb-2022	IVId1-2023

No Indease	Charles Charles	T	horse	Ι	equipment	tri	uck	Off-	road	days per	· · · · · · · · · · · · · · · · · · ·	F
March Property P	Site / Task / Engine	engine type		duration			,				Start Month	End Month
Section Sect	NG forklift	gas	250	50%	1.00		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	1			
Second process Seco							1					Will LUES
Manual Control Manu				280			1		T	14.0		
Section Sect			500		0.02	0.02	1			20	Feb-2022	Mar-2023
Section Sect		- 			0.09	0.09	1			20		Mar-2023
Package Pack					0.03	0.03	1			20		Mar-2023
Package Pack		electric		50%	4			4	4	20		Mar-2023
Sept Sept	NG forklift	gas	250	50%	1.00			1	1			Mar-2023
Control Cont												
Secretary Secr					4	4	1			20	Jan-2020	Mar-2023
Exercise Section Company Com			400		0.5	0.5	1			20		Mar-2023
Search Secret S			200 amp	90%				C	0			
South Professional process or equipment		diesel	350	50%	2			2	2	20	Jan-2020	Mar-2023
Section Sect	dual hoist	electric	100 amp	90%	1			1	1	20		Jan-2023
Construction Con												
Secretary Secr												
Somewhat Somewhat	the state of the s	gas	3	20%	4			4	4	20	Jan-2020	Sep-2020
pack harmorn pack 10 40 40 4 4 20 30 20 20 20 30 20 20					6			6	6	20		
March Marc			10	40%	4			4	4	20		
Both Name Part Common		air		20%	8			8	8	20		
Debte and pump Deb				20%	4			4	4			
Deficiency south pump electric 15 5% 4 4 4 3 34 34 34 34		electric	5	20%	8			8	8			
## Package K - for schedule see next table 13 levels 13 levels 15 colored to the control of the colored to		electric	15	5%	4			4				
Package K - for schedule see neet bib 13 levels 30f high 10 level 30f high 10 level 30f high 10 level 30f high 10 level 30f high 10 level 30f high 10 level 30f high 10 level 30f high 10 level 30f high	circular saw	electric	1.5	25%	15			15	15			
## Science building Property											0411 2020	Md1-2023
## Schene building Professor Professo]					<u> </u>			
## Schene building Professor Professo								·	-			
## Schene building ## Schen		13 levels	330' hig	h					<u> </u>	 		
CONSTRUCT SUPERSTRUCTURE diseal 400 60 30 1 16 20 1,000 202 1,000 1,000 202 1,000 1,000 203 1,	#8 Science building			T	equipment	tru	ck	off-	road	days ner		
CONSTRUCT SUPERSTRUCTURE Glesal 450 3 3 16 2 20 1 20 1,007-2023 Aug-2022 A		engine type		guration								
Concrete brack				160	<u> </u>	,			,		Jan-2023	Aug-2022
Concrete purp diesel 400 6334 1 0.2 1 20 20 20 20 20 20 20	concrete truck	diesel	450		3	3	15					
Failbrish of skeel diesel 200 90 1 1 10 20 20 20 20 20	concrete pump	diesel		63%					1			
rebar bender diesel 200 59n 1 1 1 20 Jan-2023 Aug-9202 are welder electric 20 59n 2 2 2 2 20 Aug-9202 Aug-9202 Irowelling machine gas 11 59n 2 2 2 2 20 Jan-2023 Aug-9202 Aug-9202 Irowelling machine gas 11 59n 2 2 2 2 2 2 2 3 Jan-2023 Aug-9202 Aug-	trailers of steel	diesel			2	2	5		<u> </u>			
accepted electric 20 59% 2 2 2 2 2 3 38-5023 Aug-2022	rebar bender			50%					1			
Marching machine Sas	arc welder	electric										
MERIONS FIT-OUT Clearly Company Comp	troweling machine	gas										
Dumbhing Glesel 550 0.08 0.08 2 20 May 2013 Jun-2025 Jun-		1	 		-						Jan-2023	Aug-2023
Dumbhing Glesel 500 0.08 2 20 May-2023 Jun-2022	MEP			520	· · · · · · · · · · · · · · · · · · ·					26		
Sprinkler	plumbing	diesel	500		0.08	0.08	2				May 2022	
EVAC diesel 500 0.22 2 2 20 May-2023 Jun-2022 Sortifit diesel 500 0.11 0.11 2 4 4 4 20 May-2023 Jun-2022 Sortifit diesel 500 0.5 0.5 1 2 2 May-2023 Jun-2022 Sortifit	sprinkler											
Second S	HVAC											
Sort	Rectric											
BULDING ENCLOSURE & ROOFING BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSURE & BULDING ENCLOSE & BULD	sor lift			500		0.11						
BUILDING ENCLOSURE & ROOFING								4	4			
Pailers diesel 500 0.5 0.5 1 20 Mar-2023 Jan-2023 Jan-2024 Mar-2025 Jan-2025		gas	2.30	3076	1.00					20	May-2023	Jun-2025
Pailers diesel 500 0.5 0.5 1 20 Mar-2023 Jan-2023 Jan-2024 Mar-2025 Jan-2025	BUILDING ENCLOSURE & ROOFING			220								
INTERIORS / FIT-OUT		diesel	500	220	0.5	0.5					N	
Daywall trailers		GIOSOF	300		0.5	0,5				20	Mar-2023	Jan-2024
dywal trailers diesel 500 0.01 0.01 1 20 May-2023 Jun-2025												
additional interiors - box trailer diesel 500 0.05 1 20 May-2023 Jun-2025	INTERIORS / FIT-OUT	 		520			1			20		
FFAE		diesel	500	520	0.01	0.01						
Seisson If Seisson	drywall trailers			520						20		Jun-2025
NG forklift	drywall trailers additional interiors - box trailer	diesel	500	520	0.05	0.05	1			20 20	May-2023	Jun-2025
Tash hauling - 3 loads per day diesel 400 3 3 1 20 Jan-2023 Jun-2025	drywall trailers additional interiors - box trailer FF&E	diesel diesel	500 500		0.05 0.04	0.05	1			20 20 20	May-2023 May-2023	Jun-2025 Jun-2025
fiel trucks - 1 every 2 weeks on average electric 200 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 20 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 20 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 20 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 20 90% 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	drywall trailers additional interiors - box trailer FF&E scissor lift	diesel diesel electric	500 500 20	50%	0.05 0.04 4	0.05	1	4	4	20 20 20 20	May-2023 May-2023 May-2023	Jun-2025 Jun-2025 Jun-2025
fiel trucks - 1 every 2 weeks on average electric 200 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Mex-2024 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 100 amp 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 20 90% 1 1 1 1 1 20 Jan-2023 Jun-2023 dual hoist electric 20 90% 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	drywall trailers additional interiors - box trailer FF&E scissor lift	diesel diesel electric	500 500 20	50%	0.05 0.04 4	0.05	1	4 1	4	20 20 20 20	May-2023 May-2023 May-2023	Jun-2025 Jun-2025
Decretate Decr	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift	diesel diesel electric gas	500 500 20 250	50%	0.05 0.04 4 1.00	0.05 0.04	1	4	4 1	20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025
Dual hoist Dua	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day	diesel diesel electric gas diesel	500 500 20 250 400	50%	0.05 0.04 4 1.00	0.05 0.04	1 1	4 1	4 1	20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025
Second Second	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	diesel diesel electric gas diesel gas	500 500 20 250 400 400	50% 50%	0.05 0.04 4 1.00 3 0.5	0.05 0.04	1 1	1	1	20 20 20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024
Chain saw	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	diesel diesel electric gas diesel gas electric	500 500 20 250 400 400 200 amp	50% 50% 90%	0.05 0.04 4 1.00 3 0.5	0.05 0.04	1 1	1	1	20 20 20 20 20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024
Chain saw	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	diesel diesel electric gas diesel gas electric	500 500 20 250 400 400 200 amp	50% 50% 90%	0.05 0.04 4 1.00 3 0.5	0.05 0.04	1 1	1	1	20 20 20 20 20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024
Compressor Gas 5 40% 2 2 2 2 2 2 2 3 3 4 2 2 2 2 2 2 3 3 4 2 2 2 2 2 3 3 4 2 2 2 2 3 3 3 1 3 3 3 1 3 3	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist	diesel diesel electric gas diesel gas electric	500 500 20 250 400 400 200 amp	50% 50% 90%	0.05 0.04 4 1.00 3 0.5	0.05 0.04	1 1	1	1	20 20 20 20 20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024
generator gas 10 40% 2 2 20 Jan-2023 May-2022 Impact wench air 20% 6 6 6 6 6 20 Jan-2023 May-2022 Jan-2023 May-2022 Jan-2023 May-2022 Jan-2023 May-2022 Jan-2023 May-2022 Jan-2023 May-2022 Jan-2023 May-2022 Jan-2023 Jan	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment	diesel diesel electric gas diesel gas electric electric electric	500 500 20 250 400 400 200 amp	50% 50% 90%	0.05 0.04 4 1.00 3 0.5 1	0.05 0.04	1 1	1 1 1	1 1	20 20 20 20 20 20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024
Impact wrench 3ir 20% 6 6 6 6 2 2 2 2 2 3 2 2 2 2	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw	diesel diesel electric gas diesel gas electric electric electric	500 500 20 250 400 400 200 amp 100 amp	50% 50% 90% 90%	0.05 0.04 4 1.00 3 0.5 1	0.05 0.04	1 1	1 1 1 2	1 1 1 2 2	20 20 20 20 20 20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024
Section Sect	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor	diesel diesel electric gas diesel gas electric electric electric gas	500 500 20 250 400 400 200 amp 100 amp	50% 50% 90% 90% 20% 40%	0.05 0.04 4 1.00 3 0.5 1 1	0.05 0.04	1 1	1 1 1 2 2 2 2	1 1 1 2 2 2 2	20 20 20 20 20 20 20 20 20 20 20	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024
September Sept	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator	diesel diesel electric gas diesel gas electric electric electric gas gas gas gas	500 500 20 250 400 400 200 amp 100 amp	50% 50% 90% 90% 40% 40%	0.05 0.04 4 1.00 3 0.5 1 1 1	0.05 0.04	1 1	1 1 1 2 2 2 2 2 2	1 1 1 2 2 2 2 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023
Portable water pump electric 15 5% 1 1 1 20 Jan-2023 Feb-2025 Feb-2025	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench	diesel diesel electric gas diesel gas electric electric gas as gas gas gas air	500 500 20 250 400 400 200 amp 100 amp	50% 50% 90% 90% 40% 40% 40%	0.05 0.04 4 1.00 3 0.5 1 1 2 2 2 2 6	0.05 0.04	1 1	1 1 1 2 2 2 2 6	1 1 1 2 2 2 2 2 6	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024
CONSTRUCT SUPERSTRUCTURE 120 1	drywall trailers additional interiors - box trailer FF&E Scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer	diesel diesel electric gas diesel gas electric electric electric gas as as gas gas gas air air	500 500 20 250 400 400 200 amp 100 amp 3 5	50% 50% 90% 90% 20% 40% 40% 20%	0.05 0.04 4 1.00 3 0.5 1 1 2 2 2 2 6 6	0.05 0.04	1 1	1 1 1 2 2 2 2 6	1 1 1 2 2 2 2 2 6	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023
Package L - for schedule see next tab 10 levels 245' high	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw	diesel diesel electric gas diesel gas electric electric electric gas air air electric	500 500 20 250 400 400 200 amp 100 amp 3 5 10	50% 50% 90% 90% 20% 40% 40% 20% 20%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6	0.05 0.04	1 1	1 1 1 2 2 2 2 6 6 2 2	1 1 1 1 2 2 2 2 2 6 6 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023
#9 Recreational building engine type borse power borse power power borse power	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump	diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 amp	50% 50% 90% 90% 90% 20% 40% 40% 20% 20% 5%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 6 6 2 1	0.05 0.04	1 1	1 1 1 2 2 2 2 2 6 6 2 2	1 1 1 1 2 2 2 2 6 6 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023
#9 Recreational building engine type borse power borse power power borse power	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump	diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 amp	50% 50% 90% 90% 90% 20% 40% 40% 20% 20% 5%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 6 6 2 1	0.05 0.04	1 1	1 1 1 2 2 2 2 2 6 6 2 2	1 1 1 1 2 2 2 2 6 6 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023
#9 Recreational building engine type borse power borse power power borse power	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump	diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 amp	50% 50% 90% 90% 90% 20% 40% 40% 20% 20% 5%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 6 6 2 1	0.05 0.04	1 1	1 1 1 2 2 2 2 2 6 6 2 2	1 1 1 1 2 2 2 2 6 6 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023 Feb-2024
#9 Recreational building engine type borse power borse power power borse power	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump	diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 amp	50% 50% 90% 90% 90% 20% 40% 40% 20% 20% 5%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 6 6 2 1	0.05 0.04	1 1	1 1 1 2 2 2 2 2 6 6 2 2	1 1 1 1 2 2 2 2 6 6 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023 Feb-2024
CONSTRUCT SUPERSTRUCTURE 120 1	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw	diesel diesel electric gas diesel gas electric electric electric gas gas gas air electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 amp 5 10	50% 50% 90% 90% 90% 40% 40% 20% 20% 5% 25%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 6 6 2 1	0.05 0.04	1 1	1 1 1 2 2 2 2 2 6 6 2 2	1 1 1 1 2 2 2 2 6 6 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023 Feb-2024
CONSTRUCT SUPERSTRUCTURE	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab	diesel diesel electric gas diesel gas electric electric electric gas gas gas air electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 amp 5 10 15 15	50% 50% 90% 90% 90% 40% 40% 20% 20% 5% 25%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 6 6 2 1	0.05 0.04	- 1 1	1 1 1 1 2 2 2 2 6 6 2 2 2 1 1 8	1 1 1 1 2 2 2 2 6 2 2 2 2 1 1 1 1	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023 Feb-2024
120	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab	diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 3 5 10 5 15 15 15 horse	50% 50% 90% 90% 40% 40% 20% 50% 25%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8	0.05 0.04	- 1 1	1 1 1 1 2 2 2 2 6 6 2 2 2 1 1 8	1 1 1 1 2 2 2 2 6 2 2 2 2 1 1 1 1	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023 Feb-2024
Concrete truck diesel 450 3 3 15 20 Jan-2023 Jun-2023	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building	diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 3 5 10 5 15 15 15 horse	50% 50% 90% 90% 40% 40% 20% 20% 5% 25%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8	0.05 0.04	1 1 1 1 1	1 1 1 1 1 2 2 2 2 2 2 2 2 2 1 1 8 8 0 off-ra	1 1 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1 1 8 8	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 May-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025
concrete pump diesel 400 63% 1 0.2 1 20 Jan-2023 Jun-2023 trailers of steel diesel 500 2 2 5 20 Jan-2023 Jun-2023 rebar bender diesel 200 50% 1 1 1 20 Jan-2023 Jun-2023 arc welder electric 20 50% 2 2 2 2 20 Jan-2023 Jun-2023 welling machine gas 11 50% 2 2 2 2 2 20 Jan-2023 Jun-2023 well gas 11 50% 2 2 2 2 2 2 3 Jun-2023 Jun-2023 well gas 11 50% 2 2 2 2 2 3 Jun-2023 Jun-2023 well gas 300 0 15 15 2 2 Apr-2023 Jun-2023	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE	diesel diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 101 5 15 1.5 245' high	50% 50% 90% 90% 40% 40% 20% 20% 5% 25%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8	0.05 0.04	1 1 1 1 1	1 1 1 1 1 2 2 2 2 2 2 2 2 2 1 1 8 8 0 off-ra	1 1 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1 1 8 8	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Apr-2023 Apr-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024
trailers of steel diesel 500 2 2 5 20 Jan-2023 Jun-2023 rebar bender diesel 200 50% 1 1 1 20 Jan-2023 Jun-2023 rewelder electric 20 50% 2 2 2 20 Jan-2023 Jun-2023 reweling machine gas 11 50% 2 2 2 2 20 Jan-2023 Jun-2023 RP 300 300 15 15 15 15 15 15 15 15 10 10 10 11 2 2 20 Apr-2023 Jun-2023 Jun-2023 Jun-2023 3 10 2 2 2 2 2 2 2 3 3 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck	diesel diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric diesel	500 500 20 250 400 400 200 amp 100 amp 101 5 15 1.5 245' high	50% 50% 90% 90% 40% 40% 20% 20% 5% 25%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8	0.05 0.04 3 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 2 2 2 2 2 2 2 2 2 1 1 8 8 0 off-ra	1 1 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1 1 8 8	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2023 May-2023 May-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024 Jun-2023
rebar bender diesel 200 50% 1 1 1 20 Jan-2023 Jun-2023 arc welder electric 20 50% 2 2 2 2 20 Jan-2023 Jun-2023 cweling machine gas 11 50% 2 2 2 2 20 Jan-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2024 Jun-2024 Jun-2024 Jun-2023 Jun-2023 Jun-2023 Jun-2024 Jun-2024 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump	diesel diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric diesel	500 500 20 250 400 400 200 amp 100 amp 100 100 5 15 15 1.5 245' high	50% 50% 90% 90% 20% 40% 20% 20% 20% 25% duration 120	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 1 8 8	0.05 0.04 3 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 2 2 2 2 6 6 2 2 2 1 1 8 8 0 0 ff-re equip.	1 1 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1 1 8 8	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024 Jun-2023 Jun-2023 Jun-2023
arc welder electric 20 50% 2 2 2 2 20 Jan-2023 Jun-2023 goweling machine gas 11 50% 2 2 2 2 20 Jan-2023 Jun-2023 #EP 300 <td>drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel</td> <td>diesel diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric diesel diesel diesel</td> <td>500 500 20 250 400 400 200 amp 100 amp 3 5 10 5 15 15 15 450 400 400</td> <td>50% 50% 90% 90% 20% 40% 20% 20% 20% 25% duration 120</td> <td>0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8 equipment per day</td> <td>0.05 0.04 3 0.5 0.5</td> <td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>1 1 1 2 2 2 2 6 6 2 2 2 1 1 8 8 0 0 ff-re equip.</td> <td>1 1 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1 1 8 8</td> <td>20 20 20 20 20 20 20 20 20 20 20 20 20 2</td> <td>May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2024 Feb-2023 Jan-2023</td> <td>Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024 Jun-2023 Jun-2023 Jun-2023</td>	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel	diesel diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric diesel diesel diesel	500 500 20 250 400 400 200 amp 100 amp 3 5 10 5 15 15 15 450 400 400	50% 50% 90% 90% 20% 40% 20% 20% 20% 25% duration 120	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8 equipment per day	0.05 0.04 3 0.5 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 2 2 2 2 6 6 2 2 2 1 1 8 8 0 0 ff-re equip.	1 1 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1 1 8 8	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2024 Feb-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024 Jun-2023 Jun-2023 Jun-2023
gas 11 50% 2 2 2 2 20 Jan-2023 Jun-2023 &FP 300 15	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender	diesel diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric diesel diesel diesel	500 500 20 250 400 400 200 amp 100 amp 3 5 10 5 15 1.5 245' high horse power 450 400 500	50% 50% 90% 90% 90% 40% 40% 20% 50% 25% duration 120 63%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 6 6 2 2 1 8 equipment per day	0.05 0.04 3 0.5 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 2 2 2 2 2 2 1 1 8 8 off-requip.	1 1 1 2 2 2 2 2 6 6 2 2 2 1 1 8 8 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 9 2 2 2 1 1 1 9 2 2 2 1 1 1 9 2 2 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2023 May-2023 Jan-2023 May-2023 Jan-2023 May-2024 Feb-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023
### Description 300 15 15 15 15 15 16 16 16	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder	diesel diesel diesel electric gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric diesel diesel diesel	500 500 20 250 400 400 200 amp 100 amp 100 amp 5 15 1.5 245' high horse power 450 400 200 200	50% 50% 90% 90% 20% 40% 20% 20% 55% 25% duration 120 63% 50%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 2 2 1 8 8 equipment per day	0.05 0.04 3 0.5 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 2 2 2 2 2 2 2 2 2 2 1 1 8 8 0ff-re equip.	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 1 1 8 8 2 2 2 1 1 8 2 2 2 1 1 8 2 2 2 1 1 1 8 2 2 2 2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 Jan-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023
plumbing diesel 500 0.11 0.11 2 20 Apr-2023 Jun-2024	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder	diesel diesel diesel electric gas diesel gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 smp	50% 50% 50% 90% 90% 40% 40% 20% 20% 25% duration 120 63% 50% 50%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8 equipment per day 3 1 1 2 1 2	0.05 0.04 3 0.5 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023
plumbing diesel 500 0.11 0.11 2 20 Apr-2023 Jun-2024	drywall trailers additional interiors - box trailer FF&E Scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder coweling machine	diesel diesel diesel electric gas diesel gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 smp	50% 50% 50% 90% 90% 40% 40% 20% 20% 25% duration 120 63% 50% 50%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8 equipment per day 3 1 1 2 1 2	0.05 0.04 3 0.5 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2024 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023
complex	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete truck concrete pump trailers of steel rebar bender arc welder coweling machine	diesel diesel diesel electric gas diesel gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric	500 500 20 250 400 400 200 amp 100 amp 100 smp	50% 50% 90% 90% 90% 40% 40% 20% 50% 55% 25% duration 120 63% 50% 50%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 1 8 8 equipment per day 3 1 1 2 1 2	0.05 0.04 3 0.5 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 May-2023 May-2023 May-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023
	drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump circular saw Package L - for schedule see next tab #9 Recreational building CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder coweling machine	diesel diesel diesel electric gas diesel gas diesel gas electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric electric gas engine type diesel diesel diesel electric gas	500 500 20 250 400 400 200 amp 100 amp 100 amp 5 15 15 15 15 15 15 15 15 15 15 15 15	50% 50% 90% 90% 90% 40% 40% 20% 50% 55% 25% duration 120 63% 50% 50%	0.05 0.04 4 1.00 3 0.5 1 1 1 2 2 2 2 6 6 2 2 2 1 8 8 equipment per day 3 1 1 2 1 2 2 2 2	0.05 0.04	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3	20 20 20 20 20 20 20 20 20 20 20 20 20 2	May-2023 May-2023 May-2023 May-2023 Jan-2023	Jun-2025 Jun-2025 Jun-2025 Jun-2025 Jun-2025 Dec-2024 Mar-2024 Jul-2024 Apr-2023 Aug-2023 Sep-2023 Feb-2024 Jun-2025 Dec-2026 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023 Jun-2023

					tru	ct.	off-r	pad	days per		
Site / Task / Engine	engine type	horse power	duration	equipment per day	equip.	peak day	equip.	peak day	month	Start Month	End Month
3/40	tiesel	500		0.21	0.21	2			20	Apr-2023	Jun-2024
100	diesel	500		0.24	0.24	2			20	Apr-2023	Jun-2024
iocaio .	electric	20	50%	4			4	4	20	Apr-2023	Jun-2024
Closer inc	gas	250	50%	1.00			1	1	20	Apr-2023	Jun-20:
IG forklift											
BUILDING ENCLOSURE & ROOFING			160						8		
	diesel	500		0.5	0.5	1			20	Mar-2023	Oct-2023
railers											
NTERIORS / FIT-OUT			280						14		
	diesel	500		0.02	0.02	1			20	May-2023	Jun-2024
nywan dancis	diesei	500		0.07	0.07	1			20	May-2023	Jun-2024
Sudatorial incension box solus.	diesel	500		0.06					20		Jun-2024
1.45	electric	20	50%	4			4	4	20		Jun-2024
JOSSOF III.	gas	250	50%	1.00			1	1	20		Jun-2024
NG forklift	yas .	230	3076	1.00						· · · · · · · · · · · · · · · · · · ·	
		400		3	3	1	-	h	20	Jan-2023	Jun-2024
addit rading to today por do,	diesel	400		0.5					20		Mar-2024
7	gas	200 amp	000	1	0.0	<u> </u>	1	1			Dec-2023
ore, orang	electric	4	90% 90%	1		 	1	1			Feb-2024
dual hoist	electric	100 amp	90%			 		<u> </u>	1	- John Loco	
				ļ	ļ	 			 		
miscellaneous equipment				ļ		 	2	2	20	 	
chain saw	gas	3	20%	2		 					Apr-2023
compressor	gas	5	40%	2		ļ <u>-</u>	2				
generator	gas	10	40%	2			2				Apr-2023
impact wrench	air		20%	6			6				Jun-2024
jack hammer	air	T	20%	2			2				
table saw	electric	5	20%	2			2	2			Jun-2024
	electric	15	5%	1		T	1	1			Jun-2024
portable water pump	electric	1.5	25%	8			8	8			Jun-2024
circular saw	CICCUIC	+	1-5/0	 	1	 	1	1			
		 		+		-	 		†		
			<u> </u>		-	+	-	 	+	Jan-2023	Jun-2024
check row - ignore		 								Jan-2023	Jun-2024
check row - ignore		<u> </u>		ļ	 	 		 	 	3411-2020	1 0011 2024
					<u> </u>	 	 			+	
Package M - for schedule see next tab	13 levels	260' hig	<u>h</u>				1		 	100 2022	Dec-2026
#10 Academic Building	engine type	horse	duration	equipment		ruck		road	days per	Jan-2023	
	engine type	power	J	perday	equip.	peak day	equip.	peak day	month	Jul-2024	Aug-2024
CONSTRUCT SUPERSTRUCTURE			120							6 Jan-2023	Jun-2023
concrete truck	diesel	450			3	3 1	5		20		Jun-2023
	diesel	400	63%	6	1		0.2	2	1 20	0 Jan-2023	Jun-2023
concrete pump	diesel	500			2	2	5		20	0 Jan-2023	Jun-2023
trailers of steel	diesel	200	509		1		1	1	1 20	0 Jan-2023	Jun-2023
rebar bender		200	50%		2			2	2 20		Jun-202
arc welder	electric				2		 		2 21		Jun-20
troweling machine	gas	11	50%	×	٠			·		0011 2020	
								+	1		-
MEP			340								Aug-2024
plumbing	diesel	500		0.08			2	 	21		Aug-2024
sprinkler	diesel	500		0.08		T	2		20		
HVAC	diesei	500		0.09	0.0		2		2		Aug-2024
electric	diesel	500		0.09	0.0	9	2		2		Aug-2024
scissor lift	electric	20	509	%	4			4		0 Apr-2023	Aug-2024
NG forklift	gas	250	509	% 1.00)			1	1 2	0 Apr-2023	Aug-2024
ING TOTAL	goo		1								
THE PARTY OF THE PROPERTY OF THE PARTY OF TH	 	+	180	1						9	
BUILDING ENCLOSURE & ROOFING	diesel	500	100	0.	5 0.	5	1		2	0 Mar-2023	Nov-2023
trailers	ulesei	300_	+	· ·		Ť	-	- 			
			320	:	+	 	+	1	1	6	1
INTERIORS / FIT-OUT	4:		320	0.0	2 0.0	12	1	+		0 May-2023	Aug-2024
drywall trailers	diesel	500					1			0 May-2023	Aug-2024
additional interiors - box trailer	diesel	500		0.0			'	+		0 May-2023	
FF&E	diesel	500	.	0.0		10	1			0 May-2023	
scissor lift	electric	20	50*		4						
NG forklift	gas	250	504	% 1.00) <u> </u>			1	1 2	0 May-2023	Aug-2024
											1
trash hauling - 3 loads per day	diesel	400				3	1			0 Jan-2023	Aug-2024
fuel trucks - 1 every 2 weeks on average	gas	400		0.	5 0.	.5	1			20 Jan-2023	May-2024
tower crane	electric	200 am	p 90	%	1			1		20 Jan-2023	Jan-2024
	electric	100 am			1		1	1	1 2	20 Jan-2023	Mar-2024
dual hoist	13,000,10	1.00 0.11		+							
	 		+		-	 		_	1	1	1
miscellaneous equipment			20%		2			2	2 2	20	
chain saw	gas	3			2		+			20 Jan-2023	Apr-2023
compressor	gas	5	40%		2					20 Jan-2023 20 Jan-2023	Apr-2023
generator	gas	10	40%		2			2			
impact wrench	air		20%		6					20 Jan-2023	Aug-2024
jack hammer	air		20%		2			2		20	A = 0001
table saw	electric	5	20%	T	2			2		20 May-2023	
	electric	15	5%		1			1		20 Jan-2023	
portable water pump	electric	1.5	25%		8	1	1	8	8 2	20 May-2023	Aug-2024
circular saw	CHOCOLO.	1,5	23/6	+	-	+					1
	-								-		
							-			Jan-2023	Aug-2024
check row - igno	е										Aug-2024
check row - igno	e									Jan-2023	Aug-2024
Package N - for schedule see next tab	7 levels		1								
Below grade space @ West 132nd Street		horse	1	equipme	nt	truck	-	ff-road	days pe	r Jan-2025	
Delow grade Space @ West 13zild Street	engine type	power	duratio	n per day		peak da	y equip.	peak da	_		Dec-202
OTT SELOUTION			6			7.230	-1-7-7-	1		3.0	
SITE DEMOLITION	1:				10	10	10			20 Jan-2025	Mar-2025
20 yd dump trucks	diesei	400			10	10	, 0			23 0011-2020	

Site / Task / Engine	engine type	horse	duration	equipment	tru			road	days per		
excavator	diesel	power 200	75%	per day	equip.	peak dary	equip.	peak day	month	Start Month	End Mon
oncavatori de la constanta de	Ulesei	200	73%					1	20	Jan-2025	Mar-202
EMOVAL/RELOCATION OF EXISTING UTILITIES		†	80						4		
d dump trucks	diesel	400		65	65	65		1	20	Feb-2025	May-202
avator	diesel	200	75%	1			1	1	20		May-202
failers - delivery of pipe excavator - setting of pipe	diesel	500	50%	1	1	2	· · · · · · · · · · · · · · · · · · ·		20		May-202
tamper	diesel diesel	200 25	50% 75%	1			1	1	20		May-202
20 yd dump trucks - supply of gravel & fill	diesel	400	1378	32	32	32		 	20 20		May-202 May-202
site utilities trucks	diesel	400		0.24	0.24	0.24			20		May-202
electric trucks	diesel	400		0.12	0.12	0.12			20		May-202
INSTALL 70' SLURRY WALL @ PERIMETER			220						11.0		
20 yd dump trucks concrete truck	diesel diesel	400 450	-	1.6	1.6 6				20		Dec-202
trailers of steel - rebar	diesel	500		0.9	0.9	6 4,5			20 20		Dec-202
rebar bender	diesel	200	50%	1	0.5	4.5	1	1	20		Dec-202 Dec-202
arc welder	electric	20	50%	2			2	2	20		Dec-20:
skylift forklift	gas	200	40%	2			2	2	20		Dec-20
375 HP air compresser	diesel	375	50%	2			2	2	20		Dec-20
40 ton hydraulic crane (handling rebar cages)	diesel	450	50%	1			1	1	20		Dec-20:
ouil dozer	diesel	400	25%	1			1	1	20	******	Dec-20
slurry supply system crawler crane	diesel diesel	400 450	50%	1			1	1	20		Dec-20
Junio, (J.81)5	uidSEI	450	90%	1			1	1	20	Feb-2025	Dec-20
EXCAVATE WITHIN SLURRY WALL		 	100						5.0		
20 yd dump trucks	diesel	400		27.5	27.5	27.5			20	Jan-2026	May-20
excavator	diesel	200	75%	1		2.73	1	1	20		May-20
trilling rig	diesel	250	75%	1			1	1	20		May-20
compressors	diesei	250	90%	1			1	1	20		May-20
CONCTRUCT BELOW CRAPT OUR PROTECTION				J							
CONSTRUCT BELOW GRADE SUPERSTRUCTURE structure			120						6.0		
concrete truck	diesel	450	 	7.9	7.9	39.5				Mar 2000	A ~~
concrete pump	diesel	400	90%	1.9	7.9	39.5	0.2	1	20 20	Mar-2026 Mar-2026	Aug-20
trailers of steel	diesel	500	3078	0.9	0.9	2.25	0.2	·	20	Mar-2026 Mar-2026	Aug-20 Aug-20
crawler crane	diesel	450	90%	1		2.20	1	1	20	Mar-2026	Aug-20 Aug-20
rebar bender	diesel	200	50%	1			1	1	20		Aug-20
arc welder	electric	20	50%	2			2	2	20	Mar-2026	Aug-20
troweling machine	gas	11	50%	2			2	2	20	Mar-2026	Aug-20:
piles:	2:	150									
concrete truck	diesel diesel	450 400	25%	1.2	1.2	6			20	Mar-2026	Aug-20
sailers of steel	diesel	500	2376	0.4	0.4	1	0.2	1	20 20	Mar-2026	Aug-20
ebar bender	diesel	200	50%	1	0,4		1	1	20	Mar-2026 Mar-2026	Aug-20 Aug-20
arc welder	electric	20	50%	2				2	20	Mar-2026	Aug-20
pile driving rig	diesel	450	90%	1			1	1	20		Aug-20:
RESTORE EXISTING UTILITIES			180						9		
20 yd dump trucks excavator	diesel	400	750/	65	65	65			20		May-20
railers - delivery of pipe	diesel diesel	200 500	75% 50%	1	1	2	1	1	20	Sep-2026	May-20
excavator - setting of pipe	diesel	200	50%	1		2	1	- 1	20 20		May-20 May-20
amper	diesel	25	75%	- i	-		1		20		May-20
20 yd dump trucks - supply of gravel & fill	diesel	400		32	32	32	<u>-</u>	·	20		May-20
ite utilities trucks	diesel	400		0.30	0.3	0.3			20		May-20
electric trucks	diesel	400		0.21	0.21	0.21			20	Sep-2026	May-20
CITE IMPROVEMENTO/CTREETOCARE			100								
SITE IMPROVEMENTS/STREETSCAPE railers - delivery of material	dianal	500	180	- 05					9		
concrete truck	diesel diesel	500 450	 	0.5	0.5	1			20	Nov-2026	Jul-202
ebar bender	diesel	200	50%		- 1	3	4		20 20		Jul-202 Jul-202
ement mixer	gas	200	50%	1			<u>!</u> 1	1	20	Nov-2026 Nov-2026	Jul-202
nit paver cutter	electric	20	50%	1			1	1	20	Nov-2026	Jul-202
0 yd dump trucks - delivery of asphalt	diesel	400		10	10	10	·····		20	Nov-2026	Jul-202
sphalt laying equipment	diesel	300	25%	1			1	1	20		Jul-202
imper	diesel	25	75%	1			1	1	20	Nov-2026	Jul-202
er	diesel	350	25%	1]	I	1	1	20	Nov-2026	Jul-202
MEP											
lumbing deliveries	diesel	500	260	0.08	2.05				13.0		
orinkler deliveries	diesel	500		0.08	80.0 80.0	2 2			20	May-2026	May-20
VAC - deliveries	diesel	500		0.08	0.08	2			20 20	May-2026 May-2026	May-20 May-20
ectric - deliveries	diesel	500	-	0.09	0.09	2			20	May-2026	May-20
cissor lift	electric	20	50%	4	3.03		4	4	20	May-2026	May-20
G forklift	gas	250	50%	1.00			1	1	20		May-20
										1	
ELOW GRADE INTERIORS / FIT-OUT			240						12.0		
ywall trailers	diesel	500		0.02	0.02	1			20	Jun-2026	May-20
Iditional interiors - box trailer	diesel	500		0.09	0.09	1			20	Jun-2026	May-20
F&E	diesel	500		0.03	0.03	1			20	Jun-2026	May-20
sissor lift forklift	electric	20	50%	4 00			4	4	20	Jun-2026	May-20
76 POT NICK	gas	250	50%	1.00			1	1	20	Jun-2026	May-20
ash hauling - 3 loads per day	diesel	400								Inn 2007	May 20
	gas	400		0.5	0.5	1			20 20	Jan-2025 Jan-2025	May-20 May-20
iel trucks - 1 every 2 weeks on average											

Site / Task / Engine	engine type	horse	duration	equipment per day	tru	peak day	off-r equip.	oad peak day	days per month	Start Month	End Month
	diesel	350	50%	per day	equip.	peak day	equip.	peak day		Jan-2025	May-2027
ubber tire crane	electric	100 amp	+	1			1	1	20	Mar-2026	May-2027
lual hoist	Ciccuic	100 amp	3070								
niscellaneous equipment											
chain saw	gas	3	20%	4			4	4	20	Jan-2025	Mar-20
compressor	gas	5	40%	6			6 4	6 4	20 20	Jan-2025	May-2026
generator	gas	10	40%	8			8	8		Jan-2025 Mar-2026	May-2026 Aug-2026
impact wrench	air	 -	20%	4			4	4		Jan-2025	Mar-2025
jack hammer	air electric	5	20%	8	 		8	8		May-2026	May-2027
table saw	electric	15	5%	4		·	4	4	20	Jan-2025	May-2027
portable water pump circular saw	electric	1.5	25%	15			15	15	20	Jan-2025	May-2027
Circulai Saw											
			 						-		
Package O - for schedule see next tab	5 levels					uck	offe	road	days per	Jan-2025	Dec-2028
Below grade space	engine type	horse power	duration	equipment per day	equip.	peak day	equip.	peak day	month	Dec-2026	Jan-2027
aka Phase IV Factory		power.	 		- SQUIP.	pear say					
SITE DEMOLITION		_	120				l		6.0		
20 yd dump trucks	diesel	400	 	10	10	10			20	Jan-2025	Jun-2025
excavator	diesel	200	75%	1			1	1	20	Jan-2025	Jun-2025
SACAYAIO											
REMOVAL/RELOCATION OF EXISTING UTILITIES			120					ļ	6.0		1
20 yd dump trucks	diesel	400		65		65		ļ	20		Jul-2025
excavator	diesel	200	75%	1		 	1	1			Jul-2025
trailers - delivery of pipe	diesel	500	50%	1		2		1	20		Jul-2025 Jul-2025
excavator - setting of pipe	diesel	200	50%	1 1			1		20		Jul-2025 Jul-2025
tamper	diesel	25	75%	32		2 32		l	20		Jul-2025
20 yd dump trucks - supply of gravel & fill	diesel	400		0.24				 	20		Jul-2025
site utilities trucks	diesel	400	+	0.24				—	20		Jul-2025
electric trucks	niesei	+00	+	3.12	0.12	- V. 72		1	1		T
INSTALL 70' SLURRY WALL @ PERIMETER	 		230	 	1				11.5		
20 yd dump trucks	diesel	400		1.9	9 1.9	9 19			20		Apr-2026
concrete truck	diesel	450	1	(6 6	6			20		Apr-2026
trailers of steel - rebar	diesel	500			1	1 5	i		20		Apr-2026
rebar bender	diesel	200	50%		<u> </u>		11				Apr-2026
arc welder	electric	20	50%		2	ļ					Apr-2026
skylift forklift	gas	200	40%		2			2 2			Apr-2026 Apr-2026
375 HP air compresser	diesel	375	50%		2						Apr-2026
40 ton hydraulic crane (handling rebar cages)	diesel	450	50%	-	1				1 20		Apr-2026
bull dozer	diesel	400	25% 50%	 	4		 	`			Apr-20
slurry supply system	diesel	450	90%		1		+		1 20		Apr-20
crawler crane	diesel	450	30 /6		+	+	 	+		, , , , , , , , , ,	
EXCAVATE WITHIN SLURRY WALL			210	1	+			1	10.5	5	
20 yd dump trucks	diesel	400	-	64.	5 64.	5 64.5	5		20	Sep-2025	Dec-2026
excavator	diesel	200	75%		2				2 20		Dec-2026
drilling rig	diesel	250	75%		2		1		2 20		Dec-2026
compressors	diesel	250	90%		2		1	2	2 20	Sep-2025	Dec-2026
					ļ		ļ		1		
CONSTRUCT BELOW GRADE SUPERSTRUCTURE			120		4		 		6.0	<u> </u>	
structure				40	9 18.	9 94.			20	Apr-2026	Feb-2027
concrete truck	diesel	450	009/	18.	9 10.	9 94.	0.	2	1 20		Feb-2027
concrete pump	diesel diesel	400 500	90%	1.	6 1.	6 - 4		-	20		Feb-2027
trailers of steel	diesel	450	90%	·	1	-	`	1	1 2		Feb-2027
crawler crane	diesel	200	50%	+	1			1	1 2		Feb-2027
rebar bender arc welder	electric	20	50%		2				2 2	Apr-2026	Feb-2027
troweling machine	gas	11	50%		2			2	2 2	Apr-2026	Feb-2027
piles:											<u> </u>
concrete truck	diesel	450		2.		.1 10.		_	2		Feb-2027
concrete pump	diesel	400	44%		1		0.	2		O Apr-2026	Feb-2027
trailers of steel	diesel	500		1.		.2	3	_	2		Feb-2027 Feb-2027
rebar bender	diesel	200	50%		1				1 2 2		Feb-2027
arc welder	electric	20	50%		2					0 Apr-2026	Feb-2027
pile driving rig	diesel	450	90%		1		+	+	<u>'</u>	741-2020	1,00 2021
AND AND AND AND AND AND AND AND AND AND			180	,	+	+	+	+		9	
RESTORE EXISTING UTILITIES	diesel	400			55 6	35 6	5	+		0 Feb-2027	Oct-2027
20 yd dump trucks excavator	diesel	200		1	1	<u> </u>		1		0 Feb-2027	Oct-2027
IEALAYAIUI	diesel	500		 		1	2		2	0 Feb-2027	Oct-2027
	diesel	200		1	1			1		0 Feb-2027	Oct-2027
trailers - delivery of pipe		25	75%		1			1		0 Feb-2027	Oct-2027
trailers - delivery of pipe excavator - setting of pipe	diesel			1	32 3	32 3	2		2	0 Feb-2027	Oct-2027
trailers - delivery of pipe excavator - setting of pipe tamper		400	100%								
trailers - delivery of pipe excavator - setting of pipe	diesel	400 400		0.3	0 0	.3 0				0 Feb-2027	Oct-2027
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill	diesel diesel	400			0 0					0 Feb-2027 0 Feb-2027	Oct-2027 Oct-2027
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks	diesel diesel diesel	400 400		0.3	0 0				2	0 Feb-2027	
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks	diesel diesel diesel diesel	400 400 400	180	0.3	0 0 1 0.2	21 0.2	1		2	9 Feb-2027	Oct-2027
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks electric trucks	diesel diesel diesel diesel diesel	400 400 400 500	180	0.30	0 0 0 1 0.2	.5	1		2	9 Apr-2027	Oct-2027 Dec-2027
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks electric trucks SITE IMPROVEMENTS/STREETSCAPE trailers - delivery of material concrete truck	diesel diesel diesel diesel diesel diesel diesel	400 400 400 500 450	180 100% 100%	0.30	0 0 0 1 0.2	.5	1 1 3		2 2 2	9 Apr-2027 0 Apr-2027	Oct-2027 Dec-2027 Dec-2027
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks electric trucks SITE IMPROVEMENTS/STREETSCAPE trailers - delivery of material concrete truck rebar bender	diesel diesel diesel diesel diesel diesel diesel diesel diesel	400 400 400 500 450 200	180 100% 100% 50%	0.30	0 0 0.2	.5	1 3 3	1	2 2 2 1 2	9 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027	Dec-2027 Dec-2027 Dec-2027
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks electric trucks SITE IMPROVEMENTS/STREETSCAPE trailers - delivery of material concrete truck rebar bender cement mixer	diesel diesel diesel diesel diesel diesel diesel diesel diesel gas	400 400 400 500 450 200	180 100% 100% 50%	0.30	0 0 0 1 0.2 .5 0 1 1 1	.5	1 1 3 3	1	2 2 2 1 2 1 2	9 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-202
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks electric trucks SITE IMPROVEMENTS/STREETSCAPE trailers - delivery of material concrete truck rebar bender cement mixer unit paver cutter	diesel diesel diesel diesel diesel diesel diesel diesel diesel gas electric	500 450 200 200	180 100% 100% 50% 50%	0.3	0 0 0.2	.5	1 1 3 3	1	2 2 2 1 2 1 2 1 2	9 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027	Dec-2027 Dec-2027 Dec-2027 Dec-202 Dec-20 Dec-20
trailers - delivery of pipe excavator - setting of pipe tamper 20 yd dump trucks - supply of gravel & fill site utilities trucks electric trucks SITE IMPROVEMENTS/STREETSCAPE trailers - delivery of material concrete truck rebar bender cement mixer	diesel diesel diesel diesel diesel diesel diesel diesel diesel gas	400 400 400 500 450 200	180 100% 100% 50% 50% 50%	0.3	0 0 0.2	.5	1 1 3 3 0 0	1	2 2 2 1 2 1 2 1 2 2 2	9 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027 0 Apr-2027	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-202

1	engine type	horse	duration	equipment		ick		mad	days per		
tamper	diesel	power 25	75%	per day	equip.	peak day	equip.	peak day	month	Start Month	End Month
roller	diesel	350	25%	1			1	1	20 20		Dec-2027
		1	20,0			<u> </u>	·	<u> </u>		Apr-2027	Dec-2027
			270						13.5		
hbing deliveries	diesel	500		0.08	0.08				20		Jan-2028
sprinkler deliveries HVAC - deliveries	diesel diesel	500		0.08	0.08				20		Jan-2028
electric - deliveries	diesel	500 500		0.60	0.6	2 2			20		Jan-2028
scissor lift	electric	20	50%	4	0.1		4	4	20 20		Jan-2028
NG forklift	gas	250	50%	1.00			1	1	20		Jan-2028 Jan-2028
										Aug-2020	Jain-2020
BELOW GRADE INTERIORS / FIT-OUT			250						12.5		
drywall trailers air compressors	diesei	500		0.02	0.02	1			20		Jan-2028
additional interiors - box trailer	diesel diesel	250 500		0.09	0.09				20		Jan-2028
FF&E	diesel	500	ļ	0.09	0.09				20		Jan-2028
scissor lift	electric	20	50%	4	0.03	<u>'</u>	4	4	20 20		Jan-2028 Jan-2028
NG forklift	gas	250	50%	1.00			1	1	20		Jan-2028
TO PRODUCE THE PRODUCE OF THE PRODUC											0011 2020
trash hauling - 3 loads per day	diesel	400		4	4	1			20	Jan-2025	Jan-2028
fuel trucks - 1 every 2 weeks on average tower crane	gas	400	000/	0.5	0.5	1	-		20	Jan-2025	Jan-2028
rubber tire crane	electric diesel	200 amp					0		20		
dual hoist	electric	100 amp	50% 90%	2			2	2	20	Jan-2025	Jan-2027
	<u> </u>	1.53 4.119	-5/0				1		20	Apr-2026	May-2027
miscellaneous equipment											
chain saw	gas	3	20%	4			4		20	Jan-2025	Jun-2025
compressor	gas	5	40%	6			6	6	20	Jan-2025	Jul-2026
generator impact wrench	gas	10	40%	4			4	4	20		May-2026
jack hammer	air air		20% 20%	8			8	8	20		Aug-2026
table saw	electric	5	20%	8			4		20	Jan-2025	Mar-2025
portable water pump	electric	15	5%	4			8 4	8 4	20 20		May-2027
circular saw	electric	1.5	25%	15			15	15	20		May-2027 May-2027
										Jan-2023	Way-2027
Package P - for schedule see next tab	16 levels	2021 hi-1									
#11 Science building w/cellars	16 levels	363' higi horse	3	equipment	tru	ck	off-r	nod .			
	engine type	power	duration	per day	equip.	peak day	equip.	peak day	days per month	Mar-2027	Dec-2028
SITE DEMOLITION			60			,	-1	your day	3		
20 yd dump trucks	diesel	400		10	10	10			20		
avator	diesel	200	75%	1			1	1	20		
CAVATION & FOUNDATIONS		-	460								
20 yd dump trucks	diesel	400	160	31	31	31			8		
excavator	diesel	200	75%	1	311		1		20 20		
drilling rig	diesel	250	75%	1			1	1	20		
compressors	diesel	250	90%	1			1	1	20		
pile driver	diesel	450	90%				0	0			
	•								20		
CONSTRUCT SUPERSTRUCTURE			400								
CONSTRUCT SUPERSTRUCTURE	diesel	450	160			20			8	Mar-2027	Oct-2027
concrete truck	diesel diesel	450		4	4	20	0.2		8 20	Mar-2027	Oct-2027
concrete truck concrete pump	diesel	400	160	1			0.2	1	8 20 20	Mar-2027 Mar-2027	Oct-2027 Oct-2027
concrete truck concrete pump trailers of steel rebar bender					3	7.5		1	8 20 20 20	Mar-2027 Mar-2027 Mar-2027	Oct-2027 Oct-2027 Oct-2027
concrete truck concrete pump trailers of steel rebar bender arc welder	diesel diesel diesel electric	400 500 200 20	90% 50% 50%	1 3 1 2			1 2		8 20 20	Mar-2027 Mar-2027	Oct-2027 Oct-2027
concrete truck concrete pump trailers of steel rebar bender	diesel diesel diesel	400 500 200	90%	1 3 1			1	1	8 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine	diesel diesel diesel electric	400 500 200 20	90% 50% 50% 50%	1 3 1 2			1 2	1 1 2	8 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027
concrete truck concrete pump trailers of steel rebar bender arc welder	diesel diesel diesel electric gas	400 500 200 20 11	90% 50% 50%	1 3 1 2 2	3	7.5	1 2	1 1 2	8 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries	diesel diesel diesel electric	400 500 200 20	90% 50% 50% 50%	1 3 1 2 2 2	0.08	7.5	1 2	1 1 2	8 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries	diesel diesel diesel electric gas diesel	400 500 200 20 11	90% 50% 50% 50%	1 3 1 2 2	3	7.5	1 2	1 1 2	8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel	400 500 200 21 11 500 500 500 500	90% 50% 50% 50%	1 3 1 2 2 2 0.08 0.08	0.08 0.08	7.5	1 2	1 1 2	8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel electric	400 500 200 20 11 500 500 500 500 20	90% 50% 50% 50%	1 3 1 2 2 2 0.08 0.08 0.09 0.09	0.08 0.08 0.09	7.5	1 2	1 1 2	8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel	400 500 200 21 11 500 500 500 500	90% 50% 50% 50% 560	1 3 1 2 2 2 2 0.08 0.08 0.09 0.09	0.08 0.08 0.09	7.5	1 2 2	1 1 2 2 2	8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel electric	400 500 200 20 11 500 500 500 500 20	90% 50% 50% 50% 50% 560	1 3 1 2 2 2 0.08 0.08 0.09 0.09	0.08 0.08 0.09	7.5	1 2 2 2	1 1 2 2 2	8 8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel gas	500 200 211 500 500 500 500 500 20 250	90% 50% 50% 50% 560	1 3 1 2 2 2 0.08 0.08 0.09 0.09 4 1.00	0.08 0.08 0.09 0.09	7.5	1 2 2 2	1 1 2 2 2	8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel electric	400 500 200 20 11 500 500 500 500 20	90% 50% 50% 50% 50% 560	1 3 1 2 2 2 0.08 0.08 0.09 0.09	0.08 0.08 0.09	7.5	1 2 2 2	1 1 2 2 2	8 8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel gas	500 200 211 500 500 500 500 500 20 250	90% 50% 50% 50% 50% 560	1 3 1 2 2 2 0.08 0.08 0.09 0.09 4 1.00	0.08 0.08 0.09 0.09	7.5	1 2 2 2	1 1 2 2 2	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 200 20 11 500 500 500 500 20 250 500	90% 50% 50% 50% 560 50% 50% 220	1 3 1 2 2 2 2 0.08 0.09 0.09 4 1.00	0.08 0.08 0.09 0.09	7.5	1 2 2 2	1 1 2 2 2	8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer	diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 200 21 11 500 500 500 500 500 500 500 500 500	90% 50% 50% 50% 560 50% 50% 220	1 3 1 1 2 2 2 2 0.08 0.09 0.09 4 1.00 0.5	0.08 0.08 0.09 0.09	7.5 	1 2 2 2	1 1 2 2 2	8 8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029
concrete truck Concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E	diesel diesel	500 500 200 21 111 500 500 500 500 500 500 500 500 50	90% 50% 50% 50% 50% 560 50% 50% 220	1 3 1 2 2 2 2 2 0.08 0.09 0.09 4 1.00 0.5	0.08 0.08 0.09 0.09	7.5 - - 2 2 2 2 2 2 2 2	1 2 2 2	1 1 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift	diesel diesel diesel electric gas diesel	500 500 200 20 111 500 500 500 500 500 500 50	90% 50% 50% 50% 50% 50% 50% 50%	1 3 1 1 2 2 2 2 2 0.08 0.09 0.09 4 1.00 0.5	0.08 0.08 0.09 0.09	7.5 	1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift	diesel diesel	500 500 200 21 111 500 500 500 500 500 500 500 500 50	90% 50% 50% 50% 50% 560 50% 50% 220	1 3 1 2 2 2 2 2 0.08 0.09 0.09 4 1.00 0.5	0.08 0.08 0.09 0.09	7.5 	1 2 2 2	1 1 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day	diesel diesel diesel electric gas diesel	500 500 200 20 111 500 500 500 500 20 250 500 500 500 20 250	90% 50% 50% 50% 50% 50% 50% 50%	1 3 1 2 2 2 2 2 0.08 0.09 0.09 4 1.00 0.5	0.08 0.08 0.09 0.09 0.09	7.5 	1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	diesel diesel diesel electric gas diesel gas	500 500 200 20 111 500 500 500 500 500 500 50	90% 50% 50% 50% 50% 50% 50% 50%	1 3 3 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.08 0.08 0.09 0.09 0.05 0.07 0.05	7.5 	1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HYAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average lower crane	diesel diesel diesel electric gas diesel	500 500 200 21 111 500 500 500 500 20 250 500 500 500 500	90% 50% 50% 50% 50% 50% 50% 50%	1 3 1 2 2 2 2 2 0.08 0.09 0.09 4 1.00 0.5	0.08 0.08 0.09 0.09 0.09	7.5 	1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift Trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	diesel diesel diesel diesel electric gas diesel gas	500 500 200 20 111 500 500 500 500 20 250 500 500 500 20 250 500 50	90% 50% 50% 50% 50% 50% 50% 50% 50%	1 3 3 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.08 0.08 0.09 0.09 0.05 0.07 0.05	7.5 	1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist	diesel diesel diesel diesel electric gas diesel	\$600 \$600 \$600 \$600 \$600 \$600 \$600 \$600	90% 50% 50% 50% 560 560 50% 50% 50% 50% 50%	1 3 1 1 2 2 2 2 0.08 0.09 0.09 4 1.00 0.5 0.5 0.02 0.07 0.4 1.00	0.08 0.08 0.09 0.09 0.05 0.07 0.05	7.5 	1 2 2 2 4 4 1 1	1 1 2 2 2 2 2 2 4 4 1 1 1 1 1 1 1 1	8 8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist	diesel diesel	500 500 500 20 111 500 500 500 500 20 250 500 500 500 20 250 500 50	90% 50% 50% 50% 50% 50% 50% 50% 50% 50% 5	1 3 3 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.08 0.08 0.09 0.09 0.05 0.07 0.05	7.5 	1 2 2 2 4 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist cellaneous equipment hain saw	diesel diesel diesel diesel electric gas diesel	500 500 200 111 500 500 500 20 250 500 500 20 250 500 50	90% 50% 50% 50% 560 560 50% 50% 50% 50% 50% 50%	1 3 3 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.08 0.08 0.09 0.09 0.05 0.07 0.05	7.5 	1 2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 2 2 2 2 2 2 3 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 20 20 20 20 20 20 20 20 20 20 20 20 20	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029
concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries HYAC - deliveries electric - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist	diesel diesel	500 500 500 20 111 500 500 500 500 20 250 500 500 500 20 250 500 50	90% 50% 50% 50% 50% 50% 50% 50% 50% 50% 5	1 3 3 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.08 0.08 0.09 0.09 0.05 0.07 0.05	7.5 	1 2 2 2 4 1 1 1 1	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 200 200 200 200 200 200 200 200 200	Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Mar-2027 Jun-2027	Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Oct-2027 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Aug-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029 Sep-2029

Site / Task / Engine	engine type	horse power	duration	equipment per day	equip.	peak day	off-ro	peak day	days per month	Start Month	End Month
	air	+	20%	2	Squip.	, July	2	2	20		
jack hammer table saw	electric	5	20%	2			2	2	20	Mar-2027	Sep-2029
portable water pump	electric	15	5%	1			1	1	20	Mar-2027	Oct-2027
circular saw	electric	1.5	25%	8			8	8	20	Mar-2027	Sep-20
GROOM COTT											
										14 0007	C 0000
check row - igno	ne									Mar-2027	Sep-2029
check row - igno	re								-	Oct-2028	Sep-2029
		<u> </u>									<u></u>
Package Q - for schedule see next tab	10 levels	265' high			tru	ck	off-ro	ad	days per	Mar-2027	May-2029
112 Science building w/cellars	engine type	horse	duration	equipment per day	equip.	peak day	equip.	peak day	month		may Lozo
		power	60	po. 00.)	equip.	pear ony	oquip:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3		
SITE DEMOLITION	diesel	400		10	10	10			20		
20 yd dump trucks	diesel	200	75%				1	1	20		
excavator											
EXCAVATION & FOUNDATIONS			140						7		
20 yd dump trucks	diesel	400		29	29	29			20		
excavator	diesel	200	75%	1			1	1			
drilling rig	diesel	250	75%	1			1	1			
compressors	diesel	250	90%	1			1	1			
pile driving rig	diesel	450	90%				0	0	20		
		-			ļ				8	Mar-2027	Oct-2027
CONSTRUCT SUPERSTRUCTURE	 		160		ļ <u>-</u>	4-	 		20		Oct-2027
concrete truck	diesel	450	630	3		15	0.2	1	4		Oct-2027
concrete pump	diesel	400 500	63%	1 2		5			20		Oct-2027
trailers of steel	diesel	200	50%	1			1	1			Oct-2027
rebar bender	electric	200	50%	2			2	2			Oct-2027
arc welder	gas	11	50%	2		<u> </u>	2	2			Oct-2027
troweling machine	3	- -	75.70								
MEP	_		440						22		
plumbing deliveries	diesel	500		0.09	0.09				20		Mar-2029
sprinkler deliveries	diesel	500		0.06	0.06				20		Mar-2029
HVAC - deliveries	diesel	500		0.26	0.26				20		Mar-2029
electric - deliveries	diesel	500		0.13	0.13	2			20		Mar-2029 Mar-2029
scissor lift	electric	20	50%	4	<u> </u>	 	4	4			Mar-2029
NG forklift	gas	250	50%	1.00		ļ	1			3011-2021	14181-2023
			180	 					9	,	
BUILDING ENCLOSURE & ROOFING	diesel	500	100	0.5	0.5				20		Feb-2028
trailers	diesei	300			1	 					
INTERIORS / FIT-OUT			440		1		†		22	:	1
drywall trailers	diesel	500		0.0	1 0.01	1			20		Mar-20
additional interiors - box trailer	diesel	500		0.0	0.05	1			20		Mar-20
FF&E	diesel	500	T	0.0	0.05	5 1	l]		20		Mar-2029
scissor lift	electric	20	50%	,	4		4				Mar-2029
NG forklift	gas	250	50%	1.00			1		1 20	Jun-2027	Mar-2029
								ļ	20		+
trash hauling - 3 loads per day	diesel	400	ļ		3 3			ļ	20		+
fuel trucks - 1 every 2 weeks on average	gas	400	000	0.)	1	ļ	1 20		Apr-2028
tower crane	electric	200 am			1	+	1		1 20		Aug-2028
dual hoist	electric	100 am	90%)	+	+	·		·	1	
			 	+	1	 	 				
miscellaneous equipment	gas	3	20%		2		2		2 20)	
chain saw	gas	5	40%		2		2		2 20	0 Mar-2027	Oct-2027
compressor generator	gas	10	40%		2		2		2 20		Aug-2027
impact wrench	air		20%		6		6		6 20		Oct-2027
iack hammer	air		20%		2		2		2 20		1
table saw	electric	5	20%		2		2		2 20		Mar-2029
portable water pump	electric	15	5%		1		1	1	1 20		Oct-2027
circular saw	electric	1.5	25%	1	8		8		8 20	0 Mar-2027	Mar-2029
					<u> </u>	+		 	+	 	
								-		Mar-2027	Mar-2029
check row - ig				-		+	-	 	+	Apr-2028	Mar-2029
check row - ig	nore							 	-	7,012020	
	12 levels	275' his	ıb.	+	+	+	-	1	1	1	1
Package R - for schedule see next tab	12 levels	horse		equipmer	, t	ruck	off	road	days per	Jan-2027	Mar-2030
#13 Academic building w/cellars (also Factory)	engine type	power	duration	per day	equip.	peak day		peak day		May-2029	Jun-2029
EXCAVATION & FOUNDATIONS		1	120		T	1 7		T		6	
20 yd dump trucks	diesel	400	1		30 3	0 3	0		2		Jun-2027
excavator	diesel	200	759		1		1		1 2		Jun-2027
drilling rig	diesel	250	759		1		1		1 2		Jun-2027
compressors	diesel	250	909	%	1					0 Jan-2027	Jun-2027
pile driving rig	diesel	450	909	%			(2	0 2	.0	
										11000	Dag 2007
1			140)						7 Jul-2027	Dec-2027
CONSTRUCT SUPERSTRUCTURE		450				3 1	5			0 Jun-2027	Dec-2027
CONSTRUCT SUPERSTRUCTURE concrete truck	diesel			12 L	1	1	0.2	۷1	1 2	0 Jun-2027	Dec-202
	diesel	400	639	/0							Dac 2021
concrete truck	diesel diesel	400 500			2	2	5		2	20 Jun-2027	
concrete truck concrete pump	diesel diesel diesel	400 500 200	504	%	2	2	5	1	1 2	20 Jun-2027 20 Jun-2027	Dec-20
concrete truck concrete pump trailers of steel rebar bender arc welder	diesel diesel diesel electric	400 500 200 20	50°	%	2 1 2	2	5		1 2 2 2	20 Jun-2027 20 Jun-2027 20 Jun-2027	Dec-2
concrete truck concrete pump trailers of steel rebar bender	diesel diesel diesel	400 500 200	504	%	2	2	5	1	1 2 2 2	20 Jun-2027 20 Jun-2027	Dec-20

	T	horse	Ι	equipment	tru	ırk	off-r	nad	down nex		
Site / Task / Engine	engine type	power	duration	per day	equip.	peak day	equip.	peak day	days per month	Start Month	End Month
plumbing deliveries	diesel	500		0.07	0.07	2		poem day	20		Jun-2029
sprinkler deliveries	diesel	500		0.07	0.07	2			20		
AC - deliveries	diesel	500		0.15	0.15				20		Jun-2029
ric - deliveries	diesel	500		0.17	0.17	2			20		Jun-2029
ssor lift	electric	20	50%	4	0.11		4	4	20		Jun-2029
NG forklift	gas	250	50%	1.00	ļ		1	1	20		Jun-2029
	903	230	30 %	1.00					20	Oct-2027	Jun-2029
BUILDING ENCLOSURE & ROOFING	 	+	140	··					7		
trailers	diesel	500	140	0.5	0.5	1					
uareto	uiesei	300		0.3	0.5	·			20	Sep-2027	Mar-2028
INTERIORS / FIT-OUT			400								
drywall trailers	diesel	500	400	0.04		1			20		
additional interiors - box trailer		· · · · · · · · · · · · · · · · · · ·		0.01	0.01				20		Jun-2029
	diesel	500	ļ	0.05					20		Jun-2029
FF&E	diesel	500		0.09	0.09	1			20		Jun-2029
scissor lift	electric	20	50%	4			4	4	20		Jun-2029
NG forklift	gas	250	50%	1.00			1	1	20	Nov-2027	Jun-2029
		<u> </u>									
trash hauling - 3 loads per day	diesel	400		3	3	1			20	Jan-2027	Jun-2029
fuel trucks - 1 every 2 weeks on average	gas	400		0.5	0.5	1			20	Jan-2027	Dec-2028
tower crane	electric	200 amp	90%	1			1	1	20	Jun-2027	May-2028
dual hoist	electric	100 amp	90%	1			. 1	1	20		Sep-2028
miscellaneous equipment									20		
chain saw	gas	3	20%	2			2	2	20	Jan-2027	May-2027
compressor	gas	5	40%	2			2	2	20	Jan-2027	Nov-2027
generator	gas	10	40%	2					20	Jan-2027	Sep-2027
impact wrench	air	† · · ·	20%	6			6	6	20	Jun-2027	Dec-2027
jack hammer	air	+	20%	2			2	2	20	JUIT-2UZ/	Dec-2027
table saw	electric	5	20%	2			2			- Luc 0000	1 22
portable water pump	electric	15			ļi			2	20		Jun-2029
circular saw	<u> </u>		5%				1	1	20	Jan-2027	Dec-2027
urcular saw	electric	1.5	25%	8			8	8	20	Jun-2027	Jun-2029

check row - ignore										Jan-2027	Jun-2029
check row - ignore										Jan-2027	Jun-2029
Package S - for schedule see next tab	20 levels	312' higi	3								
#14 Residential building w/cellars (and Factory)		horse		equipment	tru	ck	off-r	oad	days per	Jan-2027	Mar-2030
	engine type	power	duration	per day	equip.	peak day	equip.	peak day	month	Sep-2029	Oct-2029
EXCAVATION & FOUNDATIONS			140			peam do,		pean day	7	Зер-2023	- Ou-2029
20 yd dump trucks	diesel	400		30	30	30			20	Jan-2027	Lut 2027
excavator	diesel	200	75%	1			1				Jul-2027
ing rig	diesel	250	75%	1			1		20	Jan-2027	Jul-2027
pressors	diesel	250	90%	1			1		20	Jan-2027	Jul-2027
pile driving rig	diesel	450						1	20	Jan-2027	Jul-2027
pile driving ng	ulesei	450	90%				0	0	20		
CONSTRUCT SUPERSTRUCTURE			400								
	-r' \		160						8	Jul-2027	Feb-2028
concrete truck	diesel	450		3	3	15			20	Jul-2027	Feb-2028
concrete pump	diesel	400	63%	1			0.2	1	20	Jul-2027	Feb-2028
trailers of steel	diesel	500		2.3	2.3	5.75		-	20	Jul-2027	Feb-2028
rebar bender	diesel	200	50%	1			1	1	20	Jul-2027	Feb-2028
arc welder	electric	20	50%	2			2	2	20	Jul-2027	Feb-2028
troweling machine	gas	11	50%	2			2	2	20	Jul-2027	Feb-2028
MEP			460				//////////////////////////////////////		23		
plumbing deliveries	diesel	500		0.06	0.06	2			20	Dec-2027	Oct-2029
sprinkler deliveries	diesel	500		0.06	0.06	. 2			20	Dec-2027	Oct-2029
HVAC - deliveries	diesel	500		0.07	0.07	2			20	Dec-2027	Oct-2029
electric - deliveries	diesel	500		0.07	0.07	2			20	Dec-2027	Oct-2029
scissor lift	electric	20	50%	4	3.51		4	4	20	Dec-2027	Oct-2029
NG forklift	gas	250	50%	1.00					20	Dec-2027	Oct-2029
			20.70				7.		∠∪		O01-2029
				1.00						DOO LOL!	
			190	1.00			1			000 2027	
BUILDING ENCLOSURE & ROOFING	diasal		180		^=		1		9		1.10222
	diesel	500	180	0.5	0.5	1	1	1		Nov-2027	Jul-2028
BUILDING ENCLOSURE & ROOFING trailers	diesel				0.5	1	1	1	9 20		Jul-2028
BUILDING ENCLOSURE & ROOFING trailers		500	180	0.5					9 20 23	Nov-2027	
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers	diesel	500		0.5	0.01	1			9 20 23 20	Nov-2027 Dec-2027	Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer	diesel diesel	500 500 500		0.5 0.01 0.06	0.01 0.06	1 1			9 20 23	Nov-2027	
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E	diesel diesel diesel	500 500 500 500	460	0.5	0.01	1		1	9 20 23 20	Nov-2027 Dec-2027	Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift	diesel diesel diesel electric	500 500 500 500 500	460	0.01 0.06 0.07 4	0.01 0.06	1 1	4	4	9 20 23 20 20	Nov-2027 Dec-2027 Dec-2027	Oct-2029 Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E	diesel diesel diesel	500 500 500 500	460	0.5 0.01 0.06 0.07	0.01 0.06	1 1	4 1		9 20 23 20 20 20	Nov-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift	diesel diesel diesel electric	500 500 500 500 500	460	0.01 0.06 0.07 4	0.01 0.06	1 1			9 20 23 20 20 20 20	Nov-2027 Dec-2027 Dec-2027 Dec-2027	Oct-2029 Oct-2029 Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E soissor lift	diesel diesel diesel electric	500 500 500 500 500	460	0.01 0.06 0.07 4	0.01 0.06	1 1			9 20 23 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scisor lift NG forklift	diesel diesel diesel electric gas diesel	500 500 500 500 20 250 400	460	0.5 0.01 0.06 0.07 4 1.00	0.01 0.06 0.07	1 1 1 1 1 1 1			9 20 23 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day	diesel diesel diesel electric gas diesel gas	500 500 500 500 20 250 400 400	460 50% 50%	0.5 0.01 0.06 0.07 4 1.00 3 0.5	0.01 0.06 0.07	1 1 1 1	1	4 1	9 20 23 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jan-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	diesel diesel diesel electric gas diesel gas electric	500 500 500 500 20 250 400 400 200 amp	460 50% 50% 90%	0.5 0.01 0.06 0.07 4 1.00 3 0.5	0.01 0.06 0.07	1 1 1 1 1 1	1	4 1	9 20 23 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jan-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	diesel diesel diesel electric gas diesel gas	500 500 500 500 20 250 400 400	460 50% 50%	0.5 0.01 0.06 0.07 4 1.00 3 0.5	0.01 0.06 0.07	1 1 1 1 1 1	1	4 1	9 20 23 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jan-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist	diesel diesel diesel electric gas diesel gas electric	500 500 500 500 20 250 400 400 200 amp	460 50% 50% 90%	0.5 0.01 0.06 0.07 4 1.00 3 0.5	0.01 0.06 0.07	1 1 1 1 1 1	1	4 1	9 20 23 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jan-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E Scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment	diesel diesel diesel electric gas diesel gas electric electric	500 500 500 20 250 400 400 200 amp	460 50% 50% 90%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1	0.01 0.06 0.07	1 1 1 1 1 1	1 1 1	1 1 1	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jan-2027 Jul-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw	diesel diesel diesel electric gas diesel gas electric electric	500 500 500 20 250 400 200 amp 100 amp	460 50% 50% 90% 90%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1	0.01 0.06 0.07	1 1 1 1 1 1	1 1 1 2	1 1 2 2	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Nov-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jul-2027 Jul-2027 Jan-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029 Jun-2027
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor	diesel diesel diesel electric gas diesel gas electric electric gas	500 500 500 500 20 250 400 200 amp 100 amp	460 50% 50% 90% 90% 20% 40%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1	0.01 0.06 0.07	1 1 1 1 1 1	1 1 1 2 2 2 2	1 1 1 2 2 2 2 2	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jan-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029 Jun-2027 Feb-2028
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator	diesel diesel diesel electric gas diesel gas electric electric gas gas gas	500 500 500 20 250 400 200 amp 100 amp	460 50% 50% 90% 90% 20% 40% 40%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1	0.01 0.06 0.07	1 1 1 1 1 1	1 1 1 2	1 1 2 2	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Nov-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jul-2027 Jul-2027 Jan-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029 Jun-2027
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench	diesel diesel diesel electric gas diesel gas electric electric gas	500 500 500 500 20 250 400 200 amp 100 amp	460 50% 50% 90% 90% 20% 40%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1	0.01 0.06 0.07	1 1 1 1 1 1	1 1 1 2 2 2 2	1 1 1 2 2 2 2 2	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Nov-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jan-2027 Jan-2027 Jan-2027 Jan-2027 Jan-2027 Jan-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Apr-2029 Jan-2029 Jan-2029 Dec-2027
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench ack hammer	diesel diesel diesel electric gas diesel gas electric electric gas gas gas	500 500 500 500 20 250 400 200 amp 100 amp	460 50% 50% 90% 90% 20% 40% 40%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1	0.01 0.06 0.07	1 1 1 1 1 1	1 1 1 2 2 2 2 2 2	1 1 1 2 2 2 2 2 2	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jan-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029 Jun-2027 Feb-2028
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench ack hammer	diesel diesel diesel electric gas diesel gas electric electric gas air	500 500 500 500 20 250 400 200 amp 100 amp	460 50% 50% 90% 90% 20% 40% 40% 20%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1 2 2 2 2 2 6	0.01 0.06 0.07	1 1 1 1 1 1	1 1 1 2 2 2 2 2 6	4 1 1 1 1 2 2 2 2 2 6 6	9 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jul-2027 Jul-2027 Jan-2027 Jan-2027 Jan-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029 Jun-2027 Feb-2028 Dec-2027 Feb-2028
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench ack hammer able saw	diesel diesel diesel electric gas diesel gas electric electric gas air air	500 500 500 20 250 400 200 amp 100 amp 3 5 10	460 50% 50% 90% 90% 20% 40% 40% 20% 20% 20%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1 2 2 2 2 6 6 2 2	0.01 0.06 0.07	1 1 1 1 1 1 1	1 1 1 1 2 2 2 2 2 6 6 2 2	1 1 1 2 2 2 2 6 6 2 2	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029 Jun-2027 Feb-2028 Dec-2027 Feb-2028 Oct-2029
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench ack hammer able saw portable water pump	diesel diesel diesel electric gas diesel gas electric electric gas gas gas gas air air electric electric	500 500 500 500 20 250 400 400 200 amp 100 amp 3 5 10	460 50% 50% 90% 90% 20% 40% 20% 20% 5%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1 2 2 2 2 6 6 2 1	0.01 0.06 0.07	1 1 1 1 1 1 1	1 1 1 1 2 2 2 2 2 6 6 2 2 1	4 1 1 1 1 1 1 2 2 2 2 2 6 6 2 2 2 1 1	9 20 20 20 20 20 20 20 20 20 20 20 20 20	Nov-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Apr-2029 Apr-2029 Jun-2027 Feb-2028 Dec-2027 Feb-2028 Oct-2029 Jul-2028
BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench ack hammer able saw portable water pump	diesel diesel diesel electric gas diesel gas electric electric gas air air electric	500 500 500 20 250 400 200 amp 100 amp 3 5 10	460 50% 50% 90% 90% 20% 40% 40% 20% 20% 20%	0.5 0.01 0.06 0.07 4 1.00 3 0.5 1 1 2 2 2 2 6 6 2 2	0.01 0.06 0.07	1 1 1 1 1 1 1	1 1 1 1 2 2 2 2 2 6 6 2 2	1 1 1 2 2 2 2 6 6 2 2	9 20 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Jan-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027 Jul-2027	Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Oct-2029 Apr-2029 Sep-2028 Jan-2029 Jun-2027 Feb-2028 Dec-2027 Feb-2028 Oct-2029

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BUILDING ENCLOSURE & ROOFING Trailers BUILDING ENCLOSURE & ROOFING INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E cissor lift NG forklift gas trash hauling - 3 loads per day tucks - 1 every 2 weeks on average gas tower crane dual hoist miscellaneous equipment chain saw compressor gas compressor gas generator impact wrench jack hammer table saw portable water pump circular saw elect Package U #5 Retail	le le le le le le le le le le le le le l	500 500 500 500 20 250 400 400 200 amp	50% 160 300 50%	0.5 0.01 0.04 0.06 4	0.01 0.04 0.06	1 1			8 20 15 20 20	Jan-2012 Jan-2012 Jan-2012 Jan-2012	Mar-2013 Aug-2012 Mar-2013
BUILDING ENCLOSURE & ROOFING trailers diese INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift elect NG forklift gas trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average gas tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench jack hammer table saw portable water pump elect circular saw elect Package U #5 Retail	el el el	500 500 500 500 20 250 400 400 200 amp	300	0.5 0.01 0.04 0.06 4	0.01 0.04 0.06	1 1			8 20 15 20 20	Jan-2012 Jan-2012 Jan-2012	Aug-2012 Mar-2013
trailers diess INTERIORS / FIT-OUT drywall trailers diess additional interiors - box trailer diess FF&E diess scissor lift elect NG forklift gas trash hauling - 3 loads per day dies tower crane delact dual hoist elect dual hoist elect miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw elect portable water pump elect circular saw elect Package U #5 Retail	el el el	500 500 500 20 250 400 400 200 amp	300	0.01 0.04 0.06 4	0.01 0.04 0.06	1 1			15 20 20 20	Jan-2012 Jan-2012 Jan-2012	Mar-2013
trailers diess INTERIORS / FIT-OUT drywall trailers diess additional interiors - box trailer diess FF&E diess scissor lift elect NG forkift gas trash hauling - 3 loads per day dies trash hauling - 3 loads per day dies tower crane elec dual hoist elect miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw portable water pump elect circular saw elect Package U #5 Retail	el el el	500 500 500 20 250 400 400 200 amp	300	0.01 0.04 0.06 4	0.01 0.04 0.06	1 1			15 20 20	Jan-2012 Jan-2012	Mar-2013
INTERIORS / FIT-OUT drywall trailers diess additional interiors - box trailer FF&E cissor lift NG forklift gas trash hauling - 3 loads per day dies fuel trucks - 1 every 2 weeks on average dual hoist elec miscellaneous equipment chain saw compressor gas generator impact wrench jack hammer table saw portable water pump elec circular saw elec Package U #5 Retail	el el el	500 500 500 20 250 400 400 200 amp	50%	0.01 0.04 0.06 4	0.01 0.04 0.06	1 1			20 20	Jan-2012 Jan-2012	
drywall trailers diess additional interiors - box trailer diess is additional interiors - box trailer diess cissor lift elect Scissor lift elect NG forklift gas trash hauling - 3 loads per day dies fuel trucks - 1 every 2 weeks on average gas tower crane elect dual hoist elect miscellaneous equipment chain saw gas compressor gas compressor gas generator impact wrench air jack hammer table saw elect portable water pump elect circular saw elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas gas elect gas gas gas gas gas gas gas gas gas gas	el ric al	500 500 20 250 400 400 200 amp	50%	0.04 0.06 4	0.04 0.06	1			20 20	Jan-2012 Jan-2012	
drywall trailers diess additional interiors - box trailer diess is additional interiors - box trailer diess cissor lift elect Scissor lift elect NG forklift gas trash hauling - 3 loads per day dies fuel trucks - 1 every 2 weeks on average gas tower crane elect dual hoist elect miscellaneous equipment chain saw gas compressor gas compressor gas generator impact wrench air jack hammer table saw elect portable water pump elect circular saw elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas elect gas gas gas elect gas gas gas gas gas gas gas gas gas gas	el ric al	500 500 20 250 400 400 200 amp		0.04 0.06 4	0.04 0.06	1			20	Jan-2012	
additional interiors - box trailer dies FF&E dies Scissor lift elect NG forklift gas trash hauling - 3 loads per day dies trash hauling - 3 loads per day dies tower crane elec dual hoist elect miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw elec portable water pump elect circular saw elect Package U 3 le #5 Retail	el ric el	500 20 250 400 400 200 amp		0.06	0.06						Mar-2011
FF&E scissor lift scissor lift lefect NG forklift gas trash hauling - 3 loads per day dies fuel trucks - 1 every 2 weeks on average dual hoist elec dual hoist descillaneous equipment chain saw gas compressor generator impact wrench jack hammer table saw portable water pump elec circular saw elec descillaneous equipment chain saw gas compressor generator gas impact wrench jack hammer elec circular saw elec elec elec	ric pl	20 250 400 400 200 amp		4		: 4			20		
NG forklift gas trash hauling - 3 loads per day dies fuel trucks - 1 every 2 weeks on average gas tower crane elec dual hoist elec miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail	el ric	400 400 200 amp		<u> </u>		1		4 4	4 20		Mar-2013 Mar-201
trash hauling - 3 loads per day dies fuel trucks - 1 every 2 weeks on average gas elect dwar crane elect dual hoist elect dual hoist elect miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw elect circular saw elect circular saw elect dies when the saw elect circular saw elect dies when the saw elect circular saw elect dies when the saw elect dies when	ric	400 400 200 amp	50%	1.00	·	ļ		4 4			Mar-20
fuel trucks - 1 every 2 weeks on average gas tower crane elec dual hoist elec miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer table saw elec portable water pump elec circular saw elec dec	ric	400 200 amp			 			1	20	3811-2012	III III
fuel trucks - 1 every 2 weeks on average gas tower crane elec dual hoist elec miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer table saw elec portable water pump elec circular saw elec dec	ric	400 200 amp		3	3	1			20	Jan-2011	Jan-2013
tower crane elec dual hoist elec dual hoist elec miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail		200 amp		0.5					20		Oct-2012
dual hoist elec miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air lable saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail			90%				1	1	1 20		May-2012
miscellaneous equipment chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail	mc			, 1				1	1 20	Aug-2011	Sep-2012
chain saw gas compressor gas generator gas impact wrench air jack hammer air table saw elec portable water pump elecc circular saw elec Package U 3 le #5 Retail											ļ
compressor gas generator gas impact wrench air jack hammer air table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail						ļ	ļ		2 20	lon 2011	May-2011
generator gas impact wrench air jack hammer air table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail		3	20%	2		ļ			2 20		Jan-2012
impact wrench air jack hammer air table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail		5 10	40%	2	2	 			2 20		Jan-2012
jack hammer air table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail		10	20%	6		 			6 20		Aug-2012
table saw elec portable water pump elec circular saw elec Package U 3 le #5 Retail		+	20%	-	2		†	2	2 20	Jan-2011	May-2011
portable water pump electic circular saw electic circular saw electic saw and saw electic electic saw electic electic saw electic electic saw electic electic electic electic electic electic electic electic electic electic electic electic electic electic electic electic	tric	5	20%	1 2	2	· · ·		2	2 20		Mar-2013
Package U 3 le		15	5%		1				1 20		Mar-2013
Package U 3 le #5 Retail		1.5	25%	8	В			8	8 20	Jan-2011	Mar-2013
#5 Retail											ļ
#5 Retail		-	 	-	 					+	
#5 Retail		001 -		 	-	 		+		+	
	vels	90' high	4	equipment		ruck	1 0	ff-road	days per	Jan-2020	Apr-2021
aka Cotton Club	engine type	horse power	duration	per day	equip.	peak day	equip.	peak day		Mar-2021	Apr-2021
			 	<u> </u>	1 11 1		1				
SITE DEMOLITION			60	1	†	1				3	
20 yd dump trucks dies	el	400	1	10	0 1	0 1	0		20		Mar-2020
excavator dies		200	759		1			1	1 20	0 Jan-2020	Mar-2020
							ļ	_	1		
EXCAVATION & FOUNDATIONS			80							Mar-2020	Jun-2020
20 yd dump trucks dies		400	-			9	9	+		0 Mar-2020 0 Mar-2020	Jun-2020 Jun-2020
excavator die:		200	759		1			1	1 20		Jun-2020
drilling rig dies		250	759		1	-		1		0 Mar-2020	Jun-2020
compressors dies		250 450	909		' 	 	+	0	0 2		
pile driving rig dies) C)	450	90	70:		+	-	1	1	1	
CONSTRUCT SUPERSTRUCTURE		-+	60	5	 	-		1		3 Jun-2020	Aug-2020
CONSTRUCT SUPERSTRUCTURE concrete truck die:		450	1 30		1	1	5		2	0 Jun-2020	Aug-2020
concrete truck die:	sel	400	1		1			.2		0 Jun-2020	Aug-2020
trailers of steel die:		1 400	219			1		-	2		Aug-2020
rebar bender die	sel	500	219		1	1 2					Aug-2020
	sel sel		219	%	1	1 2.		1		0 Jun-2020	
troweling machine gas	sel sel	500	50°	% %	1 2	1 2		2	2 2	0 Jun-2020	Aug-20
	sel sel ctric	500 200	504	% %	1	1 2			2 2		
MEP	sel sel ctric	500 200 20	50° 50°	% % %	1 2	1 2.		2	2 2	0 Jun-2020	Aug-20
plumbing deliveries die	sel sel sel ctric	500 200 20	50°	% % %	1 2 2 2			2	2 2 2	0 Jun-2020	Aug-20

Site / Task / Engine	engine type	horse	duration	equipment	tru		off-		days per		
sprinkler deliveries		power		per day	equip.	peak dary	equip.	peak day	month	Start Month	End Month
HVAC - deliveries	diesel diesel	500		0.16 0.16	0.16 0.16	2			20 20		Apr-2021
electric - deliveries	diesel	500		0.16	0.16	2			20		Apr-2021 Apr-2021
sor lift	electric	20	50%	4	0.10		4	4	20		Apr-2021
orklift	gas	250	50%	1.00			1	1	20		Apr-2021
		<u> </u>									
BUILDING ENCLOSURE & ROOFING			80						4		
trailers	diesel	500		0.5	0.5	2			20	Aug-2020	Nov-2020
WITERIORO (SIT OLIT											
INTERIORS / FIT-OUT			160						8		
drywall trailers additional interiors - box trailer	diesel diesel	500 500		0.01	0.01	1			20		Apr-2021
FF&E	diesel	500		0.01	0.01 0.04	1			20 20		Apr-2021
scissor lift	electric	20	50%	4	0.04		4	4	20		Apr-2021 Apr-2021
NG forklift	gas	250	50%	1.00			1	1	20		Apr-2021
		<u> </u>									7(p) - LOZ 1
trash hauling - 3 loads per day	diesel	400		3	3	1			20	Jan-2020	Apr-2021
fuel trucks - 1 every 2 weeks on average	gas	400		0.5	0.5	1			20	Jan-2020	Jan-2021
tower crane	electric	200 amp		1			1	1	20		Dec-2020
dual hoist	electric	100 amp	90%	1					20	Aug-2020	Feb-2021
miscellaneous equipment	<u> </u>										
miscellaneous equipment chain saw	gas	3	20%	-					30	lan 2000	14-000
compressor	gas	5	40%	2 2			2 2	2	20 20	Jan-2020 Jan-2020	Mar-2020
generator	gas	10	40%	2			2	2	20		Aug-2020 Aug-2020
impact wrench	air	T	20%	6			6	6	20		Sep-2020
jack hammer	air	1	20%	2			2	2	20		Mar-2020
table saw	electric	5	20%	2			2	2	20		Apr-2021
portable water pump	electric	15	5%	1			1	1	20	Jan-2020	Apr-2021
circular saw	electric	1.5	25%	8			8	8	20	Jan-2020	Apr-2021
		-									
	<u> </u>	+									
Package V - for schedule see next tab	13 levels	315' higi	1								
#15 Science building w/cellars		horse		equipment	tru	ck	off-r	oad	days per	Oct-2026	Mar-2030
	engine type	power	duration	per day	equip.	peak day	equip.	peak day	month	Nov-2029	Dec-2029
SITE DEMOLITION			100						5		
20 yd dump trucks	diesel	400		10	10	10			20	Oct-2026	Feb-2027
excavator	diesel	200	75%	1			1	1	20	Oct-2026	Feb-2027
EVENUATION & FOUNDATIONS											
EXCAVATION & FOUNDATIONS 20 yd dump trucks	dianal	400	140	40		40			7		
acavator	diesel	200	75%	49	49	49	1		20	Feb-2027	Aug-2027
ng rig	diesel	250	75%	1			1		20 20	Feb-2027 Feb-2027	Aug-2027 Aug-2027
mpressors	diesel	250	90%	1			1	1	20	Feb-2027	Aug-2027
pile driving rig	diesel	450	90%				0	0	20		, ag Loz,
CONSTRUCT SUPERSTRUCTURE			160						8	Sep-2027	Mar-2028
concrete truck	diesel	450		4	4	20			20	Aug-2027	Mar-2028
concrete pump trailers of steel	diesel	400	90%	1			0.2	1	20	Aug-2027	Mar-2028
rebar bender	diesel diesel	500 200	50%	3	3	7.5	1		20	Aug-2027	Mar-2028
arc welder	electric	200	50%	2			2	2	20 20	Aug-2027	Mar-2028 Mar-2028
troweling machine	gas	11	50%	2			2	2			Wai-ZUZU
					I					Aug-2027	Mar-2028
		ļ ¹							20	Aug-2027 Aug-2027	Mar-2028
MEP		F 1	500								Mar-2028
plumbing deliveries	diesel	500	500	0.08	0.08	- 2	2		20 25 20	Aug-2027 Dec-2027	Mar-2028 Dec-2029
plumbing deliveries sprinkler deliveries	diesel diesel	500 500	500	0.06	0.06	2	2		20 25 20 20	Aug-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries	diesel diesel diesel	500 500 500	500	0.06 0.23	0.06 0.23	2 2	2		20 25 20 20 20	Aug-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries	diesel diesel diesel diesel	500 500 500 500		0.06 0.23 0.11	0.06	2			20 25 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift	diesel diesel diesel diesel electric	500 500 500 500 500 20	50%	0.06 0.23 0.11 4	0.06 0.23	2 2	4	4	20 25 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries	diesel diesel diesel diesel	500 500 500 500		0.06 0.23 0.11	0.06 0.23	2 2			20 25 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift	diesel diesel diesel diesel electric	500 500 500 500 500 20	50%	0.06 0.23 0.11 4	0.06 0.23	2 2	4	4	20 25 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift	diesel diesel diesel diesel electric gas	500 500 500 500 20 250		0.06 0.23 0.11 4 1.00	0.06 0.23 0.11	2 2 2	4	4	20 25 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING	diesel diesel diesel diesel electric	500 500 500 500 500 20	50%	0.06 0.23 0.11 4	0.06 0.23	2 2	4	4	20 25 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING	diesel diesel diesel diesel electric gas	500 500 500 500 20 250	50%	0.06 0.23 0.11 4 1.00	0.06 0.23 0.11	2 2 2	4	4	20 25 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers	diesel diesel diesel diesel electric gas	500 500 500 500 20 250	50%	0.06 0.23 0.11 4 1.00	0.06 0.23 0.11	2 2 2	4	4	20 25 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer	diesel diesel diesel diesel electric gas diesel diesel	500 500 500 500 20 250 500 500	50%	0.06 0.23 0.11 4 1.00	0.06 0.23 0.11	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4	4	20 25 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Nov-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer	diesel diesel diesel diesel electric gas diesel diesel diesel	500 500 500 500 20 250 500 500 500 500	50% 200 500	0.06 0.23 0.11 4 1.00 0.5 0.02 0.02 0.08 0.05	0.06 0.23 0.11 0.5	2 2 2 2 1	4	4	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers FR&E scissor lift	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel electric	500 500 500 500 20 250 500 500 500 500 5	50%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.02 0.08 0.05	0.06 0.23 0.11 0.5 0.02	2 2 2 2 2 2 2 2 2 1 1 1 1	4 1	4	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer	diesel diesel diesel diesel electric gas diesel diesel diesel	500 500 500 500 20 250 500 500 500 500	50% 200 500	0.06 0.23 0.11 4 1.00 0.5 0.02 0.02 0.08 0.05	0.06 0.23 0.11 0.5 0.02	2 2 2 2 2 2 2 2 2 1 1 1 1	4 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Aug-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 20 250 500 500 500 500 500 20 250	50% 200 500	0.06 0.23 0.11 4 1.00 0.5 0.02 0.02 0.08 0.05	0.06 0.23 0.11 0.5 0.02 0.08 0.05	2 2 2 1 1 1 1 1 1	4 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	500 500 500 500 20 250 500 500 500 500 5	50% 200 500	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 500 20 250 500 500 500 500 20 250	50% 200 500 50%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00	0.06 0.23 0.11 0.5 0.02 0.08 0.05	2 2 2 1 1 1 1 1 1	4 1 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 20 250 500 500 500 500 20 250 400 400 200 amp	50% 200 500 50%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 4 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 500 20 250 500 500 500 500 20 250	50% 200 500 50%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 1 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 20 250 500 500 500 500 20 250 400 400 200 amp	50% 200 500 50%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 4 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel electric gas	500 500 500 20 250 500 500 500 500 20 250 400 400 200 amp	50% 200 500 50%	0.06 0.23 0.11 4 1.00 0.5 0.05 0.02 0.08 1.00 3 0.5 1	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 4 1	4 1 1	20 25 20 20 20 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Feb-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel gas electric electric	500 500 500 500 20 250 500 500 500 20 250 400 400 200 amp 100 amp	50% 200 500 50% 90% 90% 20% 40%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 1 1 1 1 1 1	4 1 1 1 1 1 1	20 25 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator	diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel electric gas electric electric gas gas electric gas gas gas	500 500 500 20 250 500 500 500 500 20 250 400 400 200 amp	50% 200 500 50% 90% 90% 20% 40% 40%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00 3 0.5 1 1	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 4 1 1 1 1 1 1 1 2 2 2 2 2 2	4 4 1 1 1 1 1 1 2 2	20 25 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Jun-2029 Oct-2028 Feb-2029 Jan-2027
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator rppact wrench	diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel gas electric electric gas gas gas gas	500 500 500 20 250 500 500 500 500 500 20 250 400 200 amp 100 amp	50% 200 500 50% 90% 90% 40% 40% 20%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00 3 0.5 1 1	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 4 1 1 1 1 1 1 1 2 2 2 2 2 6 6	4 1 1 1 1 1 1 1 2 2 2 2 6 6	20 25 20 20 20 20 20 20 20 20 20 20	Dec-2027 Oct-2026 Aug-2027 Oct-2026 Oct-2026 Oct-2026 Oct-2026	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Jun-2029 Jun-2029 Jun-2029 Jun-2028 Feb-2029 Jan-2028 Mar-2028 Mar-2028 Mar-2028
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench ack hammer	diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel gas electric gas gas electric electric agas gas gas gas gas gas air	500 500 500 20 250 500 500 500 500 20 250 400 400 200 amp 100 amp	50% 200 500 50% 90% 90% 40% 40% 20% 20%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00 3 0.5 1 1 1	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 1 1 1 1 1 1 1 1 2 2 2 2 2 2 6 6 2	4 1 1 1 1 1 1 1 2 2 2 2 6 6	20 25 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2026 Oct-2026 Aug-2027 Oct-2026 Oct-2026 Aug-2027 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Jun-2029 Dec-2029 Jun-2029 Jun-2028 Feb-2029 Jan-2028 Jan-2028 Jan-2028 Jan-2028 Jan-2028 Dec-2026
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator mack harmmer table saw	diesel diesel diesel diesel diesel electric gas diesel die	500 500 500 20 250 500 500 500 500 20 250 400 400 200 amp 100 amp	50% 200 500 50% 90% 90% 40% 40% 40% 20% 20% 20%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00 3 0.55 1 1 1	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2	4 4 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2	20 25 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Dec-2027 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Aug-2027 Oct-2026 Aug-2027 Oct-2026 Aug-2027	Dec-2029 Dec-2029
plumbing deliveries sprinkler deliveries HVAC - deliveries electric - deliveries scissor lift NG forklift BUILDING ENCLOSURE & ROOFING trailers INTERIORS / FIT-OUT drywall trailers additional interiors - box trailer FF&E scissor lift NG forklift trash hauling - 3 loads per day fuel trucks - 1 every 2 weeks on average tower crane dual hoist miscellaneous equipment chain saw compressor generator impact wrench ack hammer	diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel gas electric gas gas electric electric agas gas gas gas gas gas air	500 500 500 20 250 500 500 500 500 20 250 400 400 200 amp 100 amp	50% 200 500 50% 90% 90% 40% 40% 20% 20%	0.06 0.23 0.11 4 1.00 0.5 0.02 0.08 0.05 4 1.00 3 0.5 1 1 1	0.06 0.23 0.11 0.5 0.05 0.02	2 2 2 2 1 1 1 1 1 1 1 1	4 1 1 1 1 1 1 1 1 2 2 2 2 2 2 6 6 2	4 1 1 1 1 1 1 1 2 2 2 2 6 6	20 25 20 20 20 20 20 20 20 20 20 20	Dec-2027 Dec-2026 Oct-2026 Aug-2027 Oct-2026 Oct-2026 Aug-2027 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026 Oct-2026	Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Dec-2029 Jun-2029 Dec-2029 Jun-2029 Jun-2028 Feb-2029 Jan-2028 Jan-2028 Jan-2028 Jan-2028 Jan-2028 Dec-2026

Site / Task / Engine	engine type	horse	duration	equipment per day	truc		off-n		days per month	Chapt Manual	End Mac
Site / Lask / Elignic	S. Againe 1990	power		per day	equip.	peak day	equip.	peak day	DESIRO	Start Month	End Monti
check row -	2000								t	Oct-2026	Dec-2028
check row - i										Oct-2026	Dec-2
Check for	9										
ackage W	7 levels	120' high	1								
16 Nash Building renovation	engine type	horse	duration	equipment	truc		off-r		days per	Jan-2014	Jun-2016
	engine type	power		per day	equip.	peak day	equip.	peak day	month	May-2016	Jun-2016
ELECTIVE DEMO & ABATE			200			40			10 20	lon 2014	Oat 2014
0 yd dump trucks	diesel	400 200	700/	10	10	10	1	1	20	Jan-2014 Jan-2014	Oct-2014 Oct-2014
xcavator	diesel	200	75%					···········		0011 2014	00(2014
UILDING MODIFICATIONS		+	120						6		
oncrete truck	diesel	450		2	2	10			20	Jul-2014	Dec-2014
oncrete pump	diesel	400	42%	1			0.2	1	20		Dec-2014
ailers of steel	diesel	500		2	2	2			20		Dec-201-
rebar bender	diesel	200	50%	0.5			0.5	0.5	20		Dec-201
arc welder	electric	20	50%	1			1	1	20	Jul-2014	Dec-201
		 	200						18		
IEP		500	360	0.08	0.08	2			20		Jun-201
lumbing deliveries	diesel	500		0.08	0.08	2			20		Jun-201
prinkler deliveries IVAC - deliveries	diesel diesel	500		0.06	0.16	2			20		Jun-201
lectric - deliveries	diesel	500	 	0.19	0.19	2			20	Jan-2015	Jun-201
cissor lift	electric	20	50%	4			4	4	20		Jun-201
G forklift	gas	250	50%	1			1	1	20	Jan-2015	Jun-201
									ļ		ļ
UILDING ENCLOSURE & ROOFING			120	ļ					6		D 00-
ailers	diesel	500	<u> </u>	0.5	0.5	1		 	20	Sep-2014	Dec-201
			360	 				 	18		
NTERIORS / FIT-OUT	diesel	500	300	0.01	0.01	1		-	20		Jun-201
rywall trailers dditional interiors - box trailer	diesel	500	 	0.04	0.01	1			20		Jun-201
F&E	diesel	500	<u> </u>	0.03		1			20	Jan-2015	Jun-201
cissor lift	electric	20	50%	+			4	4	20		Jun-201
G forklift	gas	250	50%	. 1			1	1	20	Jan-2015	Jun-201
ash hauling - 3 loads per day	diesel	400	ļ	3				ļ	20		Jun-201
uel trucks - 1 every 2 weeks on average	gas	400			0	1					
ower crane	electric	200 amp				 	1	+			Jun-201
tual hoist	electric	100 amp	907		 		·		 		
miscellaneous equipment		1	 				†				
chain saw	gas	3	20%	T				0			
compressor	gas	5	40%	1			1				Jun-20
generator	gas	10	40%	1	ļ		1		20		Jun-201
impact wrench	air		20%			ļ					
jack hammer	air		20%	 			2	4			Jun-201
table saw	electric	5 15	20% 5%					0			Juli-20
portable water pump	electric electric	1.5	25%			 	1				Jun-201
circular saw	electric	1.5	1070	 `		 					
					1						
Package X	15 levels	366' híg	jh			l	ļ		ļ		1 000
117 Science building w/cellars	engine type	horse	duration	equipment		uck		-road	days per month	Jan-2020	Apr-202
	5g., 1, pe	power		per day	equip.	peak day	equip.	peak day	INDIEN	Feb-2023	Mar-20
SITE DEMOLITION					1	1	1			5 1	
	4:		100		1		ļ — —		20] an-2020	May-20
20 yd dump trucks	diesel	400		10) 10		11	1 20		
20 yd dump trucks	diesel diesel	400	759	10		10		1	20		
20 yd dump trucks excavator			759	10) 10				Jan-2020	
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS	diesel			10				1	1 20	Jan-2020 7 May-2020	May-20 Nov-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks		200	759	3			•	1	1 20 20 1 20	Jan-2020 7 0 May-2020 0 May-2020	May-20 Nov-20 Nov-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator	diesel	400 200 250	759	10 % 3. %	1 34 1 1		•	1	1 20 20 1 20 1 20	7	Nov-20 Nov-20 Nov-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig	diesel diesel diesel diesel diesel	400 200 250 250	759 140 759 759	11 3. 3. %	1 34		•	1 - 1	1 20 20 1 20 1 20 1 20	7 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020	Nov-20 Nov-20 Nov-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator trilling rig	diesel diesel diesel diesel	400 200 250	759 140 759 759	11 3. 3. %	1 34 1 1		•	1 - 1	1 20 20 1 20 1 20	7 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020	Nov-20 Nov-20 Nov-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig	diesel diesel diesel diesel diesel	400 200 250 250	759 140 759 759 909	3- 3- 5- 5- 5- 5- 5- 5- 5- 5- 5- 5- 5- 5- 5-	1 34 1 1		•	1 - 1	1 20 1 20 1 20 1 20 1 20 1 20	Jan-2020 7 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020	Nov-20 Nov-20 Nov-20 Nov-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE	diesel diesel diesel diesel diesel diesel diesel	200 400 200 250 250 450	759 140 759 759	3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3	4 34	34	\$	1 - 1	1 20 20 1 20 1 20 1 20 0 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020	Nov-20 Nov-20 Nov-20 Nov-20 Jun-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck	diesel diesel diesel diesel diesel diesel diesel	200 400 200 250 250 450	759 140 759 759 909 909	3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-	1 34 1 1	34	\$	1 1 1 0 0 0	1 20 1 20 1 20 1 20 1 20 1 20	Jan-2020 7 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020	Nov-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator filling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump	diesel diesel diesel diesel diesel diesel diesel diesel	200 400 200 250 250 450 450 400	759 140 759 759 909	3. 3. % % % %	4 34	1 34	0.	1 1 1 0 0 0	1 20 20 11 20 11 20 11 20 0 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator frilling rig compressors pile drving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	200 400 200 250 250 450 450 400 500	759 140 759 759 909 909	3. 3. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	4 34	1 34	0. 5	11	1 20 2(1 20 1 20 1 20 20 20 20	Jan-2020 7 May-2020 May-2020 May-2020 May-2020 May-2020 Mov-2020 Nov-2020 Nov-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20
EXCAVATION & FOUNDATIONS EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION &	diesel diesel diesel diesel diesel diesel diesel diesel	200 400 200 250 250 450 450 400 500 200	759 140 759 759 909 909 160	3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3- 3	4 34 1 1 1 4 4 4 1 1 3 3 3 3 3	1 34	0.55	22	1 20 1 20 1 20 1 20 1 20 0 20 1 20 1 20 1 20 1 20 2 20 1 20 2 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator strilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump railers of steel rebar bender arc welder	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel	200 400 200 250 250 450 450 400 500	75% 140 75% 75% 90% 90% 16C	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	4 34	1 34	0.55	22	1 20 1 20 1 20 1 20 0 20 1 20 1 20 1 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric	400 200 250 250 450 450 460 500 200 20	75% 140 150 150 160 160 160 160 160	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	4 34 4 4 1 1 1 1 2 2	1 34	0.55	22	1 20 1 21 1 20 1 20 1 20 0 20 1 20 1 20 1 20 1 20 1 20 2 20	Jan-2020 7 7 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric	400 200 250 250 450 450 460 500 200 20	75% 140 150 150 160 160 160 160 160	3. % % % % % % % % % % % % % % % % % % %	4 34 4 4 1 1 33 3 2 2 2 2	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	0.55	22	1 20 1 21 1 22 1 20 1 20 0 20 1 20 1 20 1 20 1 20 1 20 1 20 2 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20
EXCAVATION & FOUNDATIONS EXCAVATION & FOUNDATION & FOUNDATION & FOUNDATION EXCAVATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & FOUNDATION & F	diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric	400 200 250 250 250 450 450 500 200 211	759 140 759 759 900 160 900 500 500	11	4 3.4 4 4 4 4 4 4 1 1 2 2 2 2 2 0 0.00	3.4 3.4 20 3.3 7.9	0 0.55	22	1 20 2 21 1 22 1 20 1 20 0 20 1 2 2 2 2 2 2 2 2 2	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator diffiling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries	diesel diesel	400 200 250 250 450 450 450 200 200 201 11	759 140 759 759 900 160 900 500 500	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	4 4 4 4 4 4 4 1 3 3 3 3 3 1 1 2 2 2 2 2 1 1 0 0 0 0 0 0 0 0 0 0 0	3 20 3 7.9 8 8 6	0.55	22	1 20 1 21 1 20 1 20 1 20 2 20 1 22 1 22 2 22 2 22 2 22 2 22	Jan-2020 7 7 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20 Mar-20 Mar-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator filling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump railers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries	diesel diesel	400 200 250 250 250 450 450 500 200 20 111 500 500 500	759 140 759 759 900 160 900 500 500	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	4 4 4 4 4 1 1 33 3 3 1 1 2 2 2 2 2 2 2 0 0.001	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	0 0.5	22	1 20 1 20 1 20 1 20 1 20 0 20 1 20 1 20 1 20 1 20 2 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20 Mar-20 Mar-20 Mar-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete pump trailers of steel rebar bender arc welder troweling machine MEP IMPERITATION MEP IMPERITATION MEP IMPERITATION	diesel diesel	400 200 250 250 450 450 450 200 200 211 500 500 500 500	759 140 759 759 900 160 900 500 500	3. 3. 3. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	4 34 4 4 4 1 1 2 2 2 2 2 0 0.00 0 0.22 0 0.1	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22	1 20 1 21 1 20 1 20 1 20 0 20 1 20 1 20 1 20 1 20 2 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator diffiling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries electric - deliveries electric - deliveries scissor lift	diesel electric	400 200 250 250 450 450 450 200 200 211 500 500 500 200 20	759 140 759 759 900 160 900 500 500 500	11	4 34 4 4 4 4 4 4 3 3 3 3 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22	1 20 1 21 1 20 1 20 1 20 1 20 2 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 May-2020 Mor-2020 Mor-2020 Mar-2021 Mar-2021 Mar-2021 Mar-2021 Mar-2021 Mar-2021	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder	diesel diesel	400 200 250 250 450 450 450 200 200 211 500 500 500 500	759 140 759 759 900 160 900 500 500	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	4 34 4 4 4 4 4 4 3 3 3 3 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22	1 20 1 21 1 20 1 20 1 20 1 20 2 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator drilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump trailers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries sprinkler deliveries electric - deliveries scissor lift NG forkliff	diesel electric	400 200 250 250 450 450 450 200 200 211 500 500 500 200 20	759 140 759 900 900 160 500 500 500 500 500 500 500	11	4 34 4 4 4 4 4 4 3 3 3 3 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22	1 20 1 20 1 20 1 20 0 20 1 20 1 20 1 20 1 20 2 20	D Jan-2020 7	May-20 May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20
20 yd dump trucks excavator EXCAVATION & FOUNDATIONS 20 yd dump trucks excavator strilling rig compressors pile driving rig CONSTRUCT SUPERSTRUCTURE concrete truck concrete pump railers of steel rebar bender arc welder troweling machine MEP plumbing deliveries sprinkler deliveries electric - deliveries	diesel electric	400 200 250 250 450 450 450 200 200 211 500 500 500 200 20	759 140 759 759 900 160 900 500 500 500	11	4 34 4 4 4 1 1 2 2 2 2 2 0 0.00 0 0.22 0 0.1	3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22	1 20 1 21 1 20 1 20 1 20 0 21 1 20 1 20 1 20 1 20 2 20	Jan-2020 May-2020 May-2020 May-2020 May-2020 May-2020 May-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 Nov-2020 May-2020 Mor-2020 Mor-2020 Mar-2021 Mar-2021 Mar-2021 Mar-2021 Mar-2021 Mar-2021	May-20 Nov-20 Nov-20 Nov-20 Nov-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Jun-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20 Mar-20

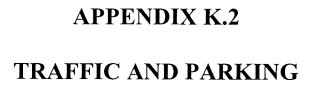
Site / Task / Engine	engine type	horse	duration	equipment	tro	uck	off-	road	days per		T
	erigine type	power	ouration	per day	equip.	peak day	equip.	peak day	month	Start Month	End Monti
INTERIORS / FIT-OUT			500					<u> </u>	25		Life Wort
drywall trailers	diesel	500		0.02	0.02	1			20		Mar-2023
ditional interiors - box trailer	diesel	500		0.08	0.08	1		1	20		Mar-2023
	diesel	500		0.05	0.05	1			20		Mar-2023
isor lift	electric	20	50%	4			4	4	20		Mar-2023
NG forklift	gas	250	50%	1.00			1	1	20		Mar-2023
											1001-202
trash hauling - 3 loads per day	diesel	400		3	3	1			20	Jan-2020	Mar-2023
fuel trucks - 1 every 2 weeks on average	gas	400		0.5	0.5	1		1	20		Sep-2022
tower crane	electric	200 amp	90%	1			1	1			Nov-2021
dual hoist	electric	100 amp	90%	1			1	•			Mar-2022
								ļ			101-2022
miscellaneous equipment								 			·
chain saw	gas	3	20%	2			2	2	20	Jan-2020	May-2020
compressor	gas	5	40%	2			2	<u> </u>	20		Apr-2021
generator	gas	10	40%	2	· · · · · · · · · · · · · · · · · · ·		2	-	20		Feb-2021
impact wrench	air	T	20%	6		f	6		20		Sep-2021
jack hammer	air		20%	2			2		20		Mar-2023
table saw	electric	5	20%	2			2		20		
portable water pump	electric	15	5%	1			1	1	20		Mar-2023
circular saw	electric	1.5	25%	8			8		20		Mar-2023
		1							20	Jan-2020	Mar-2023
		+									
		+									
Package Y	4 levels	+						 		ļl	
Below grade space @ West 131st Street		horse		anuine	tru	ıck		L			
	engine type	power	duration	equipment per day				road	days per	ļ	
SITE DEMOLITION		ponti	60	pc. uay	equip.	peak day	equip.	peak day	month		
20 yd dump trucks	diesol	400	60	L				ļl	3.0	T	
excavator	diesel	400		10	10	10			20		Mar-2020
	diesel	200	75%	1			1	1	20	Jan-2020	Mar-2020
REMOVAL/RELOCATION OF EXISTING UTILITIES		ļ									
20 yd dump trucks		 	80			T			4		
	diesel	400		65	65	65			20	Feb-2020	May-2020
excavator	diesel	200	75%	1			1	1	20	Feb-2020	May-2020
trailers - delivery of pipe	diesel	500	50%	1	1	2			20	Feb-2020	May-2020
excavator - setting of pipe	diesel	200	50%	1			1	1	20	Feb-2020	May-2020
tamper	diesel	25	75%	1			1	1	20	Feb-2020	May-2020
20 yd dump trucks - supply of gravel & fill	diesel	400		32	32	32			20		141dy-2020
site utilities trucks	diesel	400		0.30	0.30	0.30			20	Feb-2020	May 2020
electric trucks	diesel	400		0.21	0.21	0.21			20	Feb-2020	May-2020
										1 60-2020	May-2020
INSTALL 70' SLURRY WALL @ PERIMETER			220						11.0		
yd dump trucks	diesel	400		1.6	1.6	16			20	Feb-2020	D 2000
crete truck	diesel	450		6	6	6					Dec-2020
ers of steel - rebar	diesel	500		0.9	0.9	9			20	Feb-2020	Dec-2020
rebar bender	diesel	200	50%	1	0.9				20	Feb-2020	Dec-2020
arc welder	electric	200					1	1	20	Feb-2020	Dec-2020
skylift forklift	gas	200	50%	2			2	2	20	Feb-2020	Dec-2020
375 HP air compresser	diesel	375	40%	2			2	2	20	Feb-2020	Dec-2020
40 ton hydraulic crane (handling rebar cages)	diesel		50%	2			2	2	20	Feb-2020	Dec-2020
bull dozer		450	50%	1			1	1	20	Feb-2020	Dec-2020
slurry supply system	diesel	400	25%	1			1	1	20	Feb-2020	Dec-2020
Crawler crane	diesel	400	50%	1			1	1	20	Feb-2020	Dec-2020
dawer dane	diesel	450	90%	1			1	1	20	Feb-2020	Dec-2020
EVCAVATE MITHIN CLUDDY MALL											
EXCAVATE WITHIN SLURRY WALL			100						5.0		
20 yd dump trucks	diesel	400		27.5	27.5	27.5			20	Jan-2021	May-2021
excavator	diesel	200	75%	1		- 1	1	1	20	Jan-2021	May-2021
drilling rig	diesel	250	75%	1			1	1	20	Jan-2021	May-2021
compressors	diesel	250	90%	1			1	1	20	Jan-2021	May-2021
								1			,
CONSTRUCT BELOW GRADE SUPERSTRUCTURE			120						6.0		
structure							1				
concrete truck	diesel	450		7.9	7.9	39.5			20	Mar-2021	Aug-2021
concrete pump	diesel	400	90%	1			0.2	1	20	Mar-2021	Aug-2021 Aug-2021
trailers of steel	diesel	500		0.9	0.9	2.25	3.2		20	Mar-2021	
crawler crane	diesel	450	90%	1			1	1			Aug-2021
rebar bender	diesel	200	50%	1			1		20	Mar-2021	Aug-2021
arc welder	electric	200	50%	2				1	20	Mar-2021	Aug-2021
troweling machine	gas	11	50%	2			2	2	20	Mar-2021	Aug-2021
piles:	900	- 11	50%				2	2	20	Mar-2021	Aug-2021
concrete truck	diesel	450			- 4 =						· · · · · · · · · · · · · · · · · · ·
concrete pump		450	050	1.2	1.2	6			20	Mar-2021	Aug-2021
trailers of steel	diesel	400	25%	1			0.2	1	20	Mar-2021	Aug-2021
rebar bender	diesel	500		0.4	0.4	1			20	Mar-2021	Aug-2021
	diesel	200	50%	1			1	1	20	Mar-2021	Aug-2021
arc welder	electric	20	50%	2			2	2	20	Mar-2021	Aug-2021
	diesel	450	90%	1			1	1	20	Mar-2021	Aug-2021
pile driving rig											9 2021
			180		+				9		
ESTORE EXISTING UTILITIES				65	65	65				Con 2024	11
ESTORE EXISTING UTILITIES	diesel	200			- 43	03			20	Sep-2021	May-2022
ESTORE EXISTING UTILITIES 0 yd dump trucks xcavator	diesel diesel	200	750	41							
ESTORE EXISTING UTILITIES 0 yd dump trucks xcavator	diesel	200	75%	1			1	1	20	Sep-2021	May-2022
EESTORE EXISTING UTILITIES 0 yd dump trucks xcavator ailers - delivery of pipe	diesel diesel	200 500	50%	1	1	2		1	20	Sep-2021	May-2022
EESTORE EXISTING UTILITIES 0 yd dump trucks xcavator ailers - delivery of pipe xcavator - setting of pipe	diesel diesel diesel	200 500 200	50% 50%	1	1	2	1	1	20 20	Sep-2021 Sep-2021	May-2022 May-2022
RESTORE EXISTING UTILITIES 0 yd dump trucks xcavator ailers - delivery of pipe xcavator - setting of pipe	diesel diesel diesel	200 500 200 25	50% 50% 75%	1 1		_2		1 1	20	Sep-2021	May-2022 May-2022
RESTORE EXISTING UTILITIES 0 yd dump trucks xcavator ailers - delivery of pipe xcavator - setting of pipe per per d dump trucks - supply of gravel & fill	diesel diesel diesel diesel	200 500 200 25 400	50% 50%	1	32	32	1	1 1	20 20	Sep-2021 Sep-2021 Sep-2021	May-2022 May-2022 May-2022
RESTORE EXISTING UTILITIES 10 yd dump trucks xcavator ailers - delivery of pipe xcavator - setting of pipe per d dump trucks - supply of gravel & fill fie utilities trucks	diesel diesel diesel diesel diesel diesel diesel	200 500 200 25 400 400	50% 50% 75%	1 1 1 32 0.30			1	1 1	20 20 20	Sep-2021 Sep-2021 Sep-2021 Sep-2021	May-2022 May-2022 May-2022 May-2022
RESTORE EXISTING UTILITIES 0 yd dump trucks xcavator ailers - delivery of pipe xcavator - setting of pipe per per d dump trucks - supply of gravel & fill	diesel diesel diesel diesel	200 500 200 25 400	50% 50% 75%	1 1 1 32	32	32	1	1 1	20 20 20 20	Sep-2021 Sep-2021 Sep-2021	May-2022 May-2022 May-2022

Construction Engine Activity Profile

	horse power	duration	equipment per day	truck		off-road		days per		İ
engine type				equip.	peak day	equip.	peak day		Start Month	End Month
		180								1.1.0000
diesel	500		0.5	0.5						Jul-2022
diesel	450	100%	1	1	3					Jul-2022
diesel	200	50%	1			<u> </u>	1			Jul-202
gas	200	50%	1				1			Jul-202
electric	20	50%				1	1			Jul-2022
diesel	400	100%	10	10	10					Jul-2022
diesel	300	25%	1				·			Jul-2022
diesel	25	75%	1			1	1			Jul-2022
diesel	350	25%	1			1	1	20	Nov-2021	Jul-2022
							L			ļ
		260								ļ
diesel	500		0.08							May-2022
diesel	500		0.08	0.08						May-202
diesel	500		0.09	0.09	2		1			May-202
	500		0.09	0.09	2			20		May-2022
	20	50%	4			4	4			May-2022
	250	50%	1.00			1	1	20	May-2021	May-202
900							Ţ			
		240	1					12.0		
diesel	500		0.02	0.02	1			20	Jun-2021	May-2022
			0.09	0.09	1			20		May-202:
					3 1			20	Jun-2021	May-202
		50%					1 4	20	Jun-2021	May-202
							1	20	Jun-2021	May-202
943			1		1					
diocal	400	 	4		1 1			20	Jan-2020	May-202
		 	0.5	0.5	1	 	1	20	Jan-2020	May-202
		9094					0 (20		T
				 	 		1	1 20	Jan-2020	Jan-202
				 	 	<u> </u>	1	1 20		
elecuto	100 arri	1	<u> </u>	 	·					
		 		 	 	†	1			
nac		20%		1	 	†	4	4 20	Jan-2020	Mar-202
					 		6	6 20		May-202
			+	1						May-202
	- 10		11		+	1				Jul-202
				1	+					Mar-202
			+		+					Jul-202
electric	15	5%			+					Jul-202
	diesel diesel gas electric diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel diesel electric gas diesel diesel diesel diesel electric gas gas electric diesel electric diesel electric diesel electric diesel electric diesel	engine type power	engine type	engine type	engine type	engine type	engine type	engine type	Peak day Peak day	Pengine type











Construction Worker Travel
Auto Split:
Auto Occupancy:
AM Peak Hour Dist.:
PM Peak Hour Dist.:

59% 1.20 80%

Construction Trucks
of Work Days in a Month:
AM Peak Hour Dist.: 20 25% 10% 2.00 2 Secondary Peak Hour Dist.: Truck PCE: In/Out Trips in Same Hour:

Year Month 2008 January February March April May June July August September October November Dec			Cons	truction Wo	rkers				Construct	ion Truck			Total	PCEs
2008 January February March April May June July August September October November July August September October November December July August September October November December July August September October November December July August September October November December July August September October November July August September October November July August September October November July August September October November July August September October November December January February March April May June July August September October November December January February March April May June July August September October November December October November January February March April May June July August		Daily	Daily	Daily	AM PH	PM PH	Monthly	Daily		ak Hour		Yes . T.T		
2008 January February March April May June July August September October November July August September October November December July August September October November December July August September October November December July August September October November December July August September October November July August September October November July August September October November July August September October November July August September October November December January February March April May June July August September October November December January February March April May June July August September October November December October November January February March April May June July August	nth	Persons		Veh-Trips			Trucks		Trucks	PCE	Trucks	ry Pk Hr		PM Peak
February March April May June July August September October November December July August September October November July August September October November December October November December July August September October November December January February March April May June July August September October November December July August September October November December October November December October November December October November December October November December October November December January February March April May June July August September October November December		45	22	44	18	18	483	24	· 11ucks	24	2	PCE	Hour	Hour
March April May June July August September October November December July August September October November July August September October November December July August September October November December July August September October November December July August September October November July August September October November July August September October November December July August September October November December October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August June July August July August July August	,	45	22	44	18	18	483	24	6	24	2	8	42	18
April May June July August September October November December January February March April May June July August September October November December 2010 January February March April May June July August September October November December 2010 January February March April May June July August September October November December 2011 January February March April May June July August September October November December December January February March April May June July August September October November December November December July August September October November December November November December November December November December November November December Novem	٠	79	39	78	31	31	1,783	89	22	88	9	36	119	18
May June July August September October November December July August September October March April May June July August September October November December January February March April May June July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December November November December November November December Nove		80	39	78	31	31	1,783	89	22	88	. 9	36	119	31
June July August September October November December 2009 January February March April August September October November December 2010 January February March April May June July August September October November December November December July August September October November July August September October November December October November December October November December October November December January February March April May June July August September October November December October November		163	80	160	64	64	1,863	93	! 23	92	: 9	36	156	64
July August September October November December January March April May June July August September October November December January March April May June July August September October November December July August September October November July August September October November July August September October November December July August September October November December January March April May June July August September October November December January February March April May June July August September October November December July August September October November December July August September October November December July August June July August June July August June July August April May June		163	80	160	64	64	2,065	103	26	104	: 10	40	168	64
August September October November December 2009 January February March April May June July August September October November December 2010 January February March April May June July August September October November December 2010 January February March April May June July August September October November December 2011 January February March April May June July August September October November December October November December July August September October November December July August September October November December		134	66	132	53	53	1,785	89	22	88	9	36	141	53
October November December 2009 January February March April May June July August September October November December July August September October November December July August September October November July August September October November December January February March April May June July August September October November December January February March April May June July August September October November December January February June July August September October November December October November December October November December October November December October November December October November December October November December October November December July August June July August April May June July August		134	66	132	53	53	1,785	89	22	88	9	36	141	53
November December January February March April May June July August September October November December January March April May June July August September October November December July August September October November December July August September October November December July August September October November December January March April May June July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August August June July August April May June July August April May June	er	128	63	126	50	50	1,785	89	22	88	9	36	138	50
December 2009 January February March April May June July August September December 2010 January February March April May June July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December November December November December November December July August September October November December November December July August Agril May June July August		128	63	126	50	50	1,527	76	19	76	. 8	32	126	50
2009 January February March April May June July August September October November July August June July August September October November October November October November October November July August September October November December July August September October November December October November July August September October November July August September October November July August September October November July August September October November July August September October November October November October November December October November July August September October November October November December October November July August June July August		127	62	124	50	50	1,527	76	19	76	8	32	126	50
February March April May June July August September October November December 2010 January February March April May June July August September October November December July August September October November December January February March April May June July August September October November December January February March April May June July August September October November December October November July August September October November December October November December October November December October November December July August June July August April May June July August	er	127	62	124	50	50	1,518	76	! 19	76	8	32	126	50
March April May June July August September October November December 2010 January February March April May June July August September October November December 2011 January February March April May June July August September October November December January March April May June July August September October November December July August September October November December July August September October November December October November July August September October November December July August June July August June July August April May June		112	55	110	44	44	126	6	2	8	: 1	4	52	44
April May June July August September October November December January February March April May June July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December November December November December November December November December November December November December November December July August April May June July August	<u>/</u>	112	55	110	44	44	126	6	2	- 8	1	4	52	44
May June July August September October November December October November December October November December October November July August September October November December October November December October November July August September October November December December October November December October November December Octo		118	58	116	46	46	1,882	94	24	96	9	36	142	46
June July August September October November July April May June July August September October November December January February March April May June July August September October November December January February March April May June July August September October November January February March April May June July August September October November December October November December October November December October November December October November December July August June July August April May June July August		118	58	116	46	46	1,872	94	24	96	9	36	142	46
July August September October November December 2010 January February March April May June July August September October November December 2011 January February March April May June July August September October November December January June July August September October November July August September October November December July August September October November December July August September October November December July August June July August June July August April May June July August		118	58	116	46	46	1,872	94	24	96	9	36	142	46
August September October November December January February March April May June July August September October November December July August September April May June July August September October November December January February March April May June July August September October November December October November December July August September October November December November December July August September October November December July August June July August April May June July August		265 255	130	260 250	104	104	1,787	89	22	88	; 9	36	192	104
September October November December 2010 January February March April May June July August September October November December July August September October November July August September October November July August September October November July August September October November July August September October November October November December July August September October November October November July August September October November October November July August June July August		255	125	250	100	100 100	1,787	89	22	88	9	36	188	100
October November December January February March April May June July August September October November December July August September October November July August September October November July August September October November July August September October November July August September October November October November December October November December July August September October November December July August June July August June July August April May June July August	or I	255	125	250	100	100	1,905 1,705	95	24	96	10	40	196	100
November December January February March April May June July August September October November December January March April May June July August September October November December January June July August September October November December July August September October November December July August September October November December July August September October November December July August June July August June July August April May June July August	C1	137	67	134	54	54		85	21	84	9	36	184	100
December January February March April May June July August September October November December July April May June July April May June July August September December July August September December July August September October November December July August September October November December July August September October November December July August July August July August April May June July August	er	137	67	134	54	54	1,705 2,340	85 117	21	84 116	9	36	138	54
2010 January February March April May June July August September October November December July Aure July Aure July Aure July Aure July Aure July August September October November December October November December July August September October November December July August September October November December July August September October November December July August June July June July August		157	77	154	62	62	2,232	112	29	112	11	48 44	170	54
February March April May June July August September October November December Pertuary March April May June July August September October November December July August September October November December October November December October November December October November December July August September October November December July August June July August April May June July August	-	157	77	154	62	62	687	34	9	36	3	12	174 98	62
March April May June July August September October November December January March April May June July August September October November December July August September October November December July August September October November December January February March April May June July August July August April May June July August	,	157	77	154	62	62	698	35	9	36	4	16	98	62
April May June July August September October November December January February March April May June July August September October November December July August September October November December July August April May June July August April May June July August April May June July August April May June July August		196	96	192	77	77	966	48	12	48	5	20	125	62 77
May June July August September October November December July August September October November December July August September October November December July August September October November December July August September October November December July August June July August April May June July August		176	87	174	70	70	966	48	12	48	5	20	118	70
June July August September October November December July March April May June July August September October November December October November December July August September October November December January March April May June July August April May June July August		182	89	178	71	71	1,177	59	15	60	6	24	131	71
August September October November December January February March April May June July August September October November December July August September October November December January February March April May June July August April May June July August		65	32	64	26	26	1,167	58	15	60	6	24	86	26
September October November December Pebruary March April May June July August September October November December December July August September October November December July August April May June July August August		102	50	100	40	40	892	45	11	44	5	20	84	40
October November December December Pebruary March April May June July August September October November December January February March April May June June June June June June June June		129	63	126	50	50	692	35	9	36	4	16	86	50
November December January March April May June July August September October November December January February March April May June January February March April May June July August	er	119 ;	59	118	47	47	682	34	9	36	3	12	83	47
December January February March April May June July August September October November December June July August July August August August August August August August August August April May June July August		119 ;	59	118 ;	47	47	800	40	10	40	4	16	87	47
Political January February March April May June July August September October November December December December April May June July August April May June July August		207 ;	102	204	82	82	600	30	8	32	3	12	114	82
February March April May June July August September October November December 012 January February March April May June July August	1	197	97	194 ¦	78	78	600	30	8	32	3	12	110	78
March April May June July August September October November December January February March April May June July August		108	53	106 ;	42	42	1,276	64	16	64	6	24	106	42
April May June July August September October November December January February March April May June July August		333	164	328	131	131	1,178	59 ;	15	60	6	24	191	131
May June July August September October November December January February March April May June July August		333	164	328	131	131	1,147	57	14	56	6	24	187	131
June July August September October November December Jebruary February March April May June July August		333	164	328	131	131	1,169	58	15	60	6	24	191	131
July August September October November December January February March April May June July August		317	156	312	125	125	1,539	_ 77 ;	19	76	8	32	201	125
August September October November December January February March April May June July August		297	146	292	117	117	1,459	73	18	72	7	28	189	117
September October November December Ol2 January February March April May June July August		215	106	212	85	85	1,002	50	13	52	5	20	137	85
October November December January February March April May June July August		215	106	212	85	85	834	42	11	44	4	16	129	85
November December 3012 January February March April May June July August	3	215	106	212	96	85	834	42	11	44	4	16	129	85
012 January February March April May June July August		235	116	232	93	96	794	40	10	40	4	16	136	96
O12 January February March April May June July August		235		····		93	434	22	6	24	2	8	117	93
February March April May June July August	· - 	453	223	446	93 ;	93 178	780	21	5	20	2	8	113	93
March April May June July August	-+	492	242	484	194	178	780	39	10	40	4	16	218	178
April May June July August		313	154	308	123	123	791	40	10	40	4	16	234	194
May June July August		668	328	656	262	262	702	35	9		4	16	163	123
June July August		844	415	830	332	332	702	35	9	36	4	16 16	298	262
July August		961	472	944	378	378	762	38	10	40	4		368	332 378
August		799	393	786	314	314	552	28	7	28	3	16	418	
		700	344	688	275	275	552	28	7	28	3	12	342	314 275
September	r	700	344	688	275	275	532	27	7	28	3	12	303	275
October		678	333	666 !	266	266	424	21	5	20	2	8	286	266
November	r	641	315	630	252	252	414	21	5	20	2	8	272	252
December		495	243	486	194	194	406	20	5	20	2	8	214	194



Construction Worker Travel Auto Split: 59% Auto Occupancy: AM Peak Hour Dist.: PM Peak Hour Dist.: 1.20 80% 80% Construction Trucks
of Work Days in a Month: 20 25% AM Peak Hour Dist.: 10% Secondary Peak Hour Dist.: 2.00 Truck PCE: In/Out Trips in Same Hour:

	I	1							Canatanati	on Trucke		****	Total	PCEs
			Const	ruction Wo			ļ		Constructi			D). IY		
	l	Daily	Daily	Daily	AM PH	PM PH	Monthly	Daily	AM Pea		Secondar		AM Peak	
Year	Month	Persons	Vehicles	Veh-Trips	Vehicles	Vehicles	Trucks	Trucks	Trucks	PCE	Trucks	PCE	Hour	Hour 259
2013	January	658	324	648	259	259	525	26		28	3	12	287	259
	February	658	324	648	259	259	465	23	6	24	2 2	8	263	239
	March	608	299	598	239	239	465	23	5	24	2	8	247	227
	April	577	284	568	227	227	429	21	5	20	2	- 8	247	227
	May	577	284	568	227	227	420	21		16	2	8	246	230
	June	585	288	576	230	230	315 130	16 7	4 2	8		4	234	226
	July	575	283	566	226 226	226 226	130	7	2	8	i	4	234	226
	August	575 490	283	566 482	193	193	130	$\frac{7}{7}$	2	8	i	4	201	193
	September	480	236	472	189	189	22	<u></u>	0	0	. 0	0	189	189
	October November	480	236	472	189	189	22	1	0	0	: 0	0	189	189
	December	500	246	492	197	197	13	1	. 0	0	: 0	0	197	197
2014	January	443	218	436	174	174	483	24	6	24	2	8	198	174
2014	February	443	218	436	174	174	472	24	6	24	2	8	198	174
	March	429	211	422	169	169	472	24	6	24	2	8	193	169
	April	329	162	324	130	130	472	24	6	24	2	8	154	130
	May	277	136	272	109	109	472	24	6	24	2	8	133	109
	June	247	121	242	97	97	590	30	8	32	3	12	129	97
	July	30	15	30	12	12	488	24	6	24	2	8	36	12
	August	30	15	30	12	12	488	24	6	24	2	8	36	12
	September	30	15	30	12	12	498	25	6	24	: 3	12	36	12
	October	20	10	20	8	8	390	20	1 5	20	2	8	28	8
	November	20	10	20	8	! 8	190	10	: 3	12	<u>! </u>	4	20	8
	December	40	20	1 40	16	16	181	9	2	8	1 1	4	24	26
2015	January	66	32	64	26	26	585	29	: 7	28	3	12 40	54 106	10
	February	26	13	26	10	10	1,902	95	24	96	10	40	125	25
	March	64	; 31	<u>:62</u>	25	25	1,962	98	25	100	10	40	125	25
	April	64	31	62	25	25	1,951	98 98	25	100	10	40	158	58
	May	146	72	144	58	58	1,951	98	25	100	10	40	170	70
	June	176	87	174	70	70	1,951	98	23	92	9	36	153	61
	July	154	76	152	61	61	1,869	93	23	92	9	36	153	61
	August	154	76	152	61	73	1,869	93	23	92	9	36	165	73
	September	186	91	182	73 70	70	1,869	93	23	92	9	36	162	70
	October	176	87	174	67	67	362	18	5	20	2	8	87	67
	November	171	84 94	168	75	75	244	12	3	12	1 1	4	87	75
2016	December	191 157	77	154	62	62	244	12	3	12	1	4	74	62
2016	January	189	93	186	74	74	235	12	3	12	1 1	4	86	74
	February	288	142	284	114	114	3,033	152	38	152	15	60	266	114
	March	268	132	264	106	106	3,033	152	38	152	15	60	258	106
	April	268	132	264	106	106	3,033	152	38	152	15	60	258	106
	May June	268	132	264	106	106	3,033	152	38	152	15	60	258	106
	July	288	142	284	114	114	2,901	145	36	144	15	60	258	114
	August	288	142	284	114	114	2,901	145	36	144	15	60	258	114
	September	288	142	284	114	114	2,890	145	36	144	15	60	258	114
	October	288	142	284	114	114	2,890	145	36	144	15	60	258	114
	November	261	128	256	102	102	2,890	145	36	144	15	60	246	102
	December	231	114	228	91	91	3,546	177	44	176	1 18	72	267	91
2017	January	231	114	228	91	91	3,546	177	. 44	176	18	72	267	91
2017	February	251	123	246	98	98	3,546	177	44	176	18	72	274	98
	March	363	178	356	142	142	746	37	: 9	36	1 4	16	178	142
	April	363	178	356	142	142	763	38	10	40	<u>. 4</u>	16	182	142_
	May	363	178	356	142	142	763	38	; 10	40	; 4	16	182	142
	June	363	178	356	142	142	763	38	; 10	40	; 4	16	182	142
	July	152	75	150	60	60	763	38	; 10	40	4	16	100	60
	August	132	65	130	52	52	763	38	; 10	40	4	16	92	52
	September	112	55	110	44	44	763	38	10	40	4	16	84	44
	October	112	, 55	; 110	44	44	763	38	10	40	4	16	84	44
	November	112	55	110	44	; 44	2,723	136	34	136	14	56	180	44
	December	288	142	284	114	114	2,723	136	; 34	136	14	56	250	114



Construction Worker Travel
Auto Split: 59% Auto Occupancy: AM Peak Hour Dist.: 1.20 80% PM Peak Hour Dist.: 80%

Construction Trucks

of Work Days in a Month:
AM Peak Hour Dist.:
Secondary Peak Hour Dist.:
Truck PCE: 20 25% 10% 2.00 In/Out Trips in Same Hour: 2

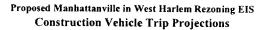
			Cons	truction We	orkers				Construct	ion Truck	s		Tota	PCEs
		Daily	Daily	Daily	AM PH	РМ РН	Monthly	Daily	1	ak Hour		ry Pk Hr	AM Peak	
Year	Month	Persons		Veh-Trips		Vehicles	Trucks	Trucks	Trucks	PCE	Trucks	PCE	Hour	Hour
2018	Јапиагу	288	142	284	114	114	2,643	132	33	132	13	52	246	114
İ	February	288	142	284	114	114	2,643	132	33	132	; 13	52	246	114
1	March April	176 259	87 127	174 254	70	70	2,653	133	33	132	13	52	202	70
1	May	259	127	254	102	102	2,835	142	36	144	14	56	246	102
	June	259	127	254	102	102	2,842 2,844	142	36	144	14	56	246	102
	July	259	127	254	102	102	2,834	142	36	144 144	14	56	246	102
	August	259	127	254	102	102	874	44	111	44	14	56 16	246	102
	September	259	127	254	102	102	874	44	11	44	4	16	146 146	102
	October	259	127	254	102	102	486	24	6	24	2	8	126	102
	November	291	143	286	114	114	486	24	6	24	2	8	138	114
	December	291	143	286	114	114	89	4	1	4	0	0	118	114
2019	January	308	151	302	121	121	89	4	1	4	0	0	125	121
	February	308	151	302	121	121	89	4	I	4	0	0	125	121
	March	327	161	322	129	129	89	4	1	4	0	0	133	129
	April	460	226	452	181	181	89	4	1	4	0	0	185	181
	May June	505 609	248 299	496 598	198	198	79	4	1	4	0	0	202	198
	July	590	299	580	239	239 232	79	4	11	4	0	0	243	239
	August	558	274	548	219	219	79	4	1	4	0	0	236	232
	September	558	274	548	219	219	79	4	1	4	0	0	223	219
	October	387	190	380	152	152	79	4	1	4	0	0	223	219
	November	387	190	380	152	152	79	4		4	0	0	156	152
	December	290	143	286	114	114	79	4		4	0	0	156 118	152
2020	January	290	143	286	114	114	909 !	45	11	44	5	20	158	114 114
	February	290	143	286	114	114	2,226	111	28	112	11	44	226	114
	March	290 ;	143	286 ;	114	114	2,406	120	30	120	12	48	234	114
	April	290	143	286	114	114	2,196	110	28	112	11	44	226	114
	May	149	73	146	58 ;	58	2,876	144	36	144	14	56	202	58
	June	149	73	146	58	58	2,734	137	34	136	14	56	194	58
	July	149	73	146	58	58	2,724	136	34	136	14	56	194	58
	August September	149	73	146	58	58	2,746	137	34	136	14	56	194	58
	October	I49	73 73	146	58	58	2,689	134	34	136	13	52	194	58
i	November	149	73	146	58	58 58	2,420	121	30	120	12	48	178	58
	December	149	73	146	58	58	1,261 571	63 29	16	64	6	24	122	58
2021	January	169	83	166	66	66	581	29	7 7	28	3	12	86	58
	February	201	99	198	79	79	571	29	7	28 28	3 3	12	94	66
- 1	March	207	102	204	82	82	583	29	7	28	3	12	107	79
	April	205	101	202	81	81	583	29	7	28	3	12	110	82 81
ĺ	Мау	333	164	328	131	131	4,571	229	57	228	23	92	359	131
	June	342	168	336	134	134	4,571	229	57	228	23	92	362	134
I	July	427	210	420	168	168	4,413	221	55	220	22	88	388	168
ļ	August	448	220	440	176	176	4,413	221	55	220	22	88	396	176
	September	449	221	442	177	177	4,413	221	55	220	22	88	397	177
	October	286	141	282	113 :	113	4,403	220	55	220	22	88	333	113
	November	368	181	362	145	145	5,157	258	65	260	26	104	405	145
	December	328	110	220	88	88	4,987	249 !	62	248 :	25	100	336	88
	January February	328	161	322	129	129	4,987	249	62	248	25	100	377	129
	March	636	313	322	129	129	5,003	250	63	252	25	100	381	129
P	April	636	313	626	250	250	5,003	250	63	252	25	100	502	250
	May	776	382	764	306	250 306	943	47	12	48	5	20	298	250
	lune	776	382	764	306	306	2,904	145	36	144 ;	15	60	450	306
	uly	663	326	652	261	261	2,380		27	108 ;	11	44	414	306
	August	663	326	652	261	261	2,380	119	30	120	12	48	381	261
	September	663	326	652	261	261	2,380	119	30	120	12	48	381	261
	October	559	275	550	220	220	2,370	119	30	120	12	48	381	261
	Vovember	746	367	734	294	294	2,370	119	30	120	12	48	414	294
I	December	655	322	644	258	258	2,370	119	30	120	12	48	378	258
			<u></u>	····			-,0/0	.,, ,	30	120 1	14	40	3/8	258

Construction Worker Travel

Auto Split: Auto Occupancy: AM Peak Hour Dist.: PM Peak Hour Dist.: 59% 1.20 80%

Construction Trucks
of Work Days in a Month:
AM Peak Hour Dist.: 25% Secondary Peak Hour Dist.: 10% Truck PCE: 2.00 In/Out Trips in Same Hour:

			F	ruction Wo	rkers				Constructi	on Trucks			Total	PCEs
						DA DIT	Monthly	Daily		k Hour	Secondar	v Pk Hr	AM Peak	PM Peal
		Daily	Daily	Daily	AM PH	PM PH	Trucks	Trucks	Trucks	PCE	Trucks	PCE	Hour	Hour
Year	Month	Persons		Veh-Trips			564	28	7	28	3	12	108	80
2023	January	203	100	200	80	80	564	28	7	28	3	12	108	80
	February	203	100	200	80 187	187	594	30	8	32	3	12	219	187
	March	475	234	468 552	221	221	614	31	. 8	32	3	12	253	221
	April	561	276 423	846	338	338	631	32	8	32	3	12	370	338
	May	861	423	846	338	338	631	32	8	32	3	12	370	338
	June	718	353	706	282	282	395	20	5	20	2	8	302	282
	July	718	353	706	282	282	395	20	5	20	2	8	302	282
	August September	658	324	648	259	259	277	14	4	16	1	4	275	259
	October	658	324	648	259	259	277	14	4	16	1 1	4	275	259
	November	586	288	576	230	230	267	13	3	12	1	4	242	230
	December	472	232	464	186	186	257	13	3	12	1	4	198	186
2024	January	472	232	464	186	186	257	13	3	12	1	4	198	186
	February	386	190	380	152	152	247	12	3	12	1	4	164	152
	March	386	190	380	152	152	247	12	3	12	1 1	4	164	152
	April	386	190	380	152	152	237	12	<u>; 3</u>	12	1 1	4	164	152
	May	386	190	380	152	152	237	12	3	12	1 1	4	164	152
	June	386	190	380	152	152	227	11	3	12	<u> </u>	4	107	99
	July	253	124	248	99	99	151	8 8	2 2	8	1	4	107	99
	August	253	124	248	99	99	151		1 1	4	0	0	48	44
	September	111	55	110	44	44	81	4	 	4	0	0	48	44
	October	111	55	110	44	44	2,410	121	30	120	12	48	164	44
	November	111	55	110	44	44	81	121	1	4	: 0	0	48	44
	December	111	55	110	54	54	941	47	12	48	: 5	20	102	54
2025	January	139	68	136	106	106	6,716	336	84	336	34	136	442	106
	February	269	132	264	106	106	6,716	336	84	336	: 34	136	442	106
	March	269	132	250	100	100	6,316	316	. 79	316	; 32	128	416	100
	April	255 348	171	342	137	137	6,374	319	80	320	32	128	457	137
	May June	284	140	280	112	112	2,776	139	35	140	14	56	252	112
	July	159	78	156	62	62	2,505	125	31	124	13	52	186	62
	August	127	62	124	50	50	548	27	7	28	3	12	78	50
	September	198	97	194	78	78	2,548	127	32	128	13	52	206	78
	October	198	97	194	78	78	2,548	127	32	128	13	52	206	78
	November	198	97	194	78	78	2,548	127	32	128	13	52	206	78
	December	198	97	194	78	78	2,548	127	32	128	13	52	206	78
2026	January	224	110	220	88	88	3,428	171	43	172	17	68	260	88
2020	February	224	110	220	88	88	3,428	171	43	172	17	68	260	88
	March	420	207	414	166	166	3,916	196	49	196	20	80	362 434	166 214
	April	544	267	534	214	214	4,428	221	55	220	22	88	413	193
	May	491	241	482	193	193	4,383	219	55	220	22	88 64	350	186
	June	471	232	464	186	186	3,289	164	41	164	16	64	350	186
	July	471	232	464	186	186	3,289	164	41	164	16	68	403	239
	August	608	299	598	239	239	3,306	165	41	164 336	34	136	530	194
	September	495	243	486	194	194	6,741	337	84	448	45	180	658	210
	October	535	263	526	210	210	8,971			472	47	188	747	275
	November	699	344	688	275	275	9,431	472	118	484	48	192	791	307
	December	781	384	768	307	307	9,661	483	1113	452	1 45	180	793	341
2027	January	867	426	852	341	341	9,001	499	125	500	50	200	890	390
	February	991	487	974	390	390	9,545	477	119	476	48	192	866	390
	March	992	488	976	390	390	9,545	477	119	476	48	192	866	390
	April	992	; 488	976		432	9,555	478	120	480	48	192	912	432
	May	1,099	540	1,080	432 514	514	5,587	279	70	280	28	112	794	514
	June	1,305	642	1,284	502	502	3,151	158	. 40	160	16	64	662	502
	July	1,276	627	1,254		447	2,249	112	28	112	11	44	559	447
	August	1,136	559	1,118	399	399	1,049	52	13	52	5	20	451	399
	September	1,015	499		412	412	1,049	53	1 13	52	5	20	464	412
	October	1,048	515	1,030 1,196	478	478	805	40	10	40	4	16	518	478
	November	1,217	, 598	1,170	, 4/0	+ 470	1 002	, 70	, , , ,	40	4	16	618	578



PM Peak Hour Dist.:

Construction Worker Travel
Auto Split: 59% Auto Occupancy: AM Peak Hour Dist.: 1.20 80%

80%

Construction Trucks
of Work Days in a Month: 20 AM Peak Hour Dist.: 25% Secondary Peak Hour Dist.: 10% Truck PCE: 2.00

In/Out Trips in Same Hour: 2

			Cons	truction Wo	rkers				Construct	ion Trucks	· · · · · · · · · · · · · · · · · · ·		Total	PCEs
	į.	Daily	Daily	Daily	AM PH	PM PH	Monthly	Daily	AM Pe	ak Hour	Seconda	ry Pk Hr	T	PM Peak
Year	Month	Persons	Vehicles	Veh-Trips	Vehicles	Vehicles	Trucks	Trucks	Trucks	PCE	Trucks	PCE	Hour	Hour
2028	January	1,406	691	1,382	553	553	707	35	9	36	. 4	16	589	553
	February	1,250	615	1,230	492	492	598	30	8	32	3	12	524	492
	March	1,117	549	1,098	439	439	464	23	6	24	2	8	463	439
	April	820	403	806	322	322	286	14	4	16	1	4	338	322
	May	820	403	806	322	322	286	14	4	16	1	4	338	322
	June	820	403	806	322	322	286	14	4	16	1	4	338	322
	July	820	403	806	322	322	286	14	4	16	1	4	338	322
	August	741	364	728	291	291	276	14	4	16	1	4	307	291
	September	595	293	586	234	234	266	13	3	12	1	4	246	234
	October	595	293	586	234	234	266	13	3	12	1	4	246	234
	November	595	293	586	234	234	266	13	3	12	1	4	246	234
	December	595	293	586	234	234	266	13	3	12	1	4	246	234
2029	January	595	293	586	234	234	256	13	3	12	1	4	246	234
	February	595	293	586	234	234	256	13	3	12	; i	4	246	234
	March	595	293	586	234	234	256	13	3	12	i	4	246	234
	April	500	246	492	197	197	243	12	3	12	1	4	209	197
	May	500	246	492	197	197	233	12	3	12	1	4	209	197
	June	500	246	492	197	197	233	12	3	12	1	4	209	197
	July	390	192	384	154	154	151	8	2	8	1	4	162	154
	August	390	192	384	154	154	151	8	2	8	1	4	162	154
	September	339	167	334	134	134	144	7	2	8	1	4	142	134
	October	253	124	248	99	99	141	7	2	8	1	4	107	99
İ	November	166	82	164	66	66	73	4	1	4	0	0	70	66
	December	166	82	164	66	66	73 !	4	1	4	0	0	70	66

Quarter-to-Quarter Estimates

			Curat	ruction Wo	rbors				Constructi	on Trucks			Total	PCEs
						D14 D14	Monthly	Daily	AM Per	1	Secondar	v Pk Hr	AM Peak	
	0	Daily	Daily	Daily Veh-Trips	AM PH		Trucks	Trucks	Trucks	PCE	Trucks	PCE	Hour	Hour
Year	Quarter	Persons		56	22	22	916	46	12	48	5	20	70	22
2008	l st	56	28	132	53	53	1,904	95	24	96	10	40	149	53
ŀ	2nd	135	66	130	52	52	1,785	89	22	88	9	36	140	52
1	3rd 4th	127	62	124	50	50	1,524	76	19	76	8	32	126	50
2000	1st	114	56	112	45	45	711	36	9	36	4	16	81	45
2009	2nd	167	82	164	66	66	1,844	92	23	92	9	36	158	66
	3rd	255	125	250	100	100	1,799	90	23	92	9	36	192	100
	4th	144	71	142	57	57	2,092	105	26	104	11	44	161	57
2010	l st	170	84	168	67	67	784	39	10	40	4	16	107	67
2010	2nd	141	69	138	55	55	1,103	55	14	56	6	24	111	55
	3rd	117	58	116	46	46	755	38	10	40	4	16	86	46
	4th	174	. 86	172	69	69	667	33	8	32	3	12	101	69
2011	1 st	258	127	254	102	102	1,200	60	15	60	6	24	162	102
2011	2nd	316	155	310	124	124	1,389	69	17	68	7	28	192	124
	3rd	215	106	212	85	85	890	45	11	44	5	20	129	85
	4th	238	117	234	94	94	548	27	7	28	3	12	122	94
2012	1 st	419	206	412	165	165	784	39	10	40	4	16	205	165
2012	2nd	824	405	810	324	324	722	36	9	36	*\^ 4	16	360	324
	3rd	733	360	720	288	288	545	27	7	28	3	12	316	288
	4th	605	297	594	238	238	415	21	5	20	2	8	258	238
2013	1 st	641	315	630	252	252	485	24	6	24	2	8	276	252
	2nd	580	285	570	228	228	388	19	5	20	2	8	248	228
	3rd	547	269	538	215	215	130	; 7	2	8	<u> </u>	4	223	215
	4th	487	239	478	191	191	19	; 1	0	0	0	0	191	191
2014	l st	438	215	430	172	172	476	24	6	24	2	8	196	172
l	2nd	284	140	280	112	112	511	26	7	28	3	12	140	112
	3rd	30	15	30	12	12	491	25	6	24	3	12	36	12
	4th	27	13	26	10	10	254	13	3	12	1	4	22	21
2015	1 st	52	26	52	21	21	1,483	74	19	76	7	28	97 150	50
1	2nd	129	63	126	50	50	1,951	98	25	100	10	40	157	65
	3rd	165	81	162	65	65	1,869	93	23	92	9	36	110	70
	4th	179	88	176	70	70	825	41	10	40	4	16 24	143	83
2016	1 st	211	104	208	83	83	1,171	59_	15	60	15	60	258	106
	2nd	268	132	264	106	106	3,033	152	38	152	15	60	258	114
	3rd	288	142	284	114	114	2,897	145	36	144	16	64	258	102
	4th	260	128	256	102	102	3,109	155	39		13	52	243	111
2017	1 st	282	139	278	111	111	2,613	131	33	132	4	16	182	142
	2nd	363	178	356	142	142	763	38	10	40	4 4	16	92	52
	3rd	132	65	130	52	52	763	·	26	104	10	40	171	67
	4th	171	84	168	67	67	2,070	104		132	13	52	230	98
2018	l st	251	123	246	98	98	2,646	132	33	144	14	56	246	102
1	2nd	259	127	254	102	102	2,840	76	19	76	1 8	32	178	102
	3rd	259	127	254	102	102	1,527	18	19	20	1 2	8	130	110
l	4th	280	138	276	110	; 110	354	18	<u> </u>	20		1	1 ,,,,	

Quarter-to-Quarter Estimates

			Cons	truction Wo	orkers				Construc	ion Trucks			Total	PCEs
		Daily	Daily	Daily	AM PH	РМРН	Monthly	Daily	,	ak Hour	1	Tab. YY		
Year	Quarter	Persons	·	Veh-Trips			Trucks	Trucks	Trucks	PCE	Trucks	ry Pk Hr PCE	AM Peak Hour	PM Peak
2019	lst	314	154	308	123	123	89	4	1 1	4	1 0	0	127	Hour 123
	2nd	525	258	516	206	206	82	4		4	. 0	0	210	206
	3rd	569	280	560	224	224	79	4	; ;	4	. 0	0	228	224
	4th	355	175	350	140	140	79	4	: 1	4	. 0	0	144	140
2020	lst	290	143	286	114	114	1,847	92	23	92	. 9	36	206	114
	2nd	196	96	192	77	77	2,602	130	33	132	13	52	209	77
	3rd	149	73	146	58	58	2,720	136	34	136	14	56	194	58
	4th	149	73	146	58	58	1,417	71	18	72	7	28	130	58
2021	l st	192	94	188	75	75	578	29	7	28	3	12	103	75
- [2nd	293	144	288	115	115	3,242	162	41	164	16	64	279	115
	3rd	441	217	434	174	174	4,413	221	55	220	22	88	394	174
	4th	293	144	288	115	115	4,849	242	61	244	24	96	359	115
2022	l st	431	212	424	170	170	4,998	250	63	252	25	100	422	170
1	2nd	729	358	716	286	286	1,999	100	25	100	10	40	386	286
	3rd	663	326	652	261	261	2,380	119	30	120	12	48	381	261
	4th	653	321	642	257	257	2,370	119	30	120	12	48	377	257
2023	l st	294	145	290	116	116	574	29	7	28	3	12	144	116
ļ	2nd	761	374	748	299	299	625	31	8	32	3	12	331	299
	3rd	698	343	686	274	274	356	18	5	20	2	8	294	274
	4th	572	281	562	225	225	267	13	3	12	1	4	237	225
2024	l st	415	204	408	163	163	250	13	3	12	1	4	175	163
- 1	2nd	386	190	380	152	152	234	12	3	12	1	4	164	152
	3rd	206	101	202	81	81	128	6	2	8	1	4	89	81
	4th	111	55	110	44	44	857	43	11	44	4	16	88	44
2025	l st	226	111	222	89	89	4,791	240	60	240	24	96	329	89
	2nd	296	146	292	117	117	5,155	258	65	260	26	104	377	117
	3rd	161	79	158	63	63	1,867	93	23	92	9	36	155	63
	4th	198	97	194	78	78	2,548	127	32	128	13	52	206	78
2026	lst	289	142	284	114	114	3,591	180	45	180	18	72	294	114
-	2nd	502	247	494	198	198	4,033	202	51	204	20	80	402	198
-	3rd	525	258	516	206	206	4,445	222	56	224	22	88	430	206
	4th	672	330	660	264	264	9,354	468	117	468	47	188	732	264
2027	l st	950	467	934	374	374	9,509	475	119	476	48	192	850	374
	2nd	1,132	557	1,114	446	446	8,229	411	103	412	41	164	858	446
	3rd	1,142	561	1,122	449	449	2,150	108	27	108	11	44	557	449
	4th	1,245	612	1,224	490	490	896	45	11	44	5	20	534	490
2028	l st	1,258	619	1,238	495	495	590	30		32 :	3	12	527	495
ļ	2nd	820	403	806	322	322	286	14	4	16	1	4	338	322
-	3rd	719	354	708	283	283	276	14	4	16	1	4	299	283
	4th	595	293	586	234	234	266	13	3	12	1	4	246	234
2029	l st	595	293	586	234	234	256	13	3	12 :	1	4	246	234
	2nd	500	246	492	197	197	236	12	3	12	1	4	209	197
	3rd	373	183	366	146	146	149	7	2	8 :	1	4	154	146
	4th	195	96	192	77	77	96	_ 5	1	4	1	4	81	77

Rolling Annual Estimates

								Constructi	on Trucks			Total	PCEs
		1	ruction Wo			24 (12)	Daily		k Hour	Secondar	∼ Pk Hr	AM Peak	PM Peak
	Daily	Daily	Daily	AM PH		Monthly	Trucks	Trucks	PCE	Trucks	PCE	Hour	Hour
1-Year Period	Persons		Veh-Trips			Trucks	77	19	76	8	32	121	45
Q1 2008 - Q4 2008	113	56	112	45	45	1,532		19	76	7	28	126	50
Q2 2008 - Q1 2009	127	62	124	50	50	1,481	74	18	72	7	28	125	53
Q3 2008 - Q2 2009	135	66	132	53	53	1,466		19	76	7	28	142	66
Q4 2008 - Q3 2009	166	82	164	66	66	1,470	74	20	80	8	32	147	67
Q1 2009 - Q4 2009	170	84	168	67	67	1,612	81	21	84	8	32	156	72
Q2 2009 - Q1 2010	184	90	180	72	72	1,630	82	18	72	7	28	142	70
Q3 2009 - Q2 2010	178	88	176	70	70	1,445	72		60	6	24	116	56
Q4 2009 - Q3 2010	143	70	140	56	56	1,184	59	15		4	16	99	59
Q1 2010 - Q4 2010	151	74	148	59	59	827	41	10	40	5	20	116	68
Q2 2010 - Q1 2011	173	85	170	68	68	931	47	12		5	20	137	85
Q3 2010 - Q2 2011	216	106	212	85	85	1,003	50	13	52	5	20	146	94
Q4 2010 - Q3 2011	241	118	236	94	94	1,037	52	13	52	5	20	153	101
Q1 2011 - Q4 2011	257	126	252	101	101	1,007	50	13	52	5	20	161	117
Q2 2011 - Q1 2012	297	146	292	117	117	903	45	11	44	í	16	202	166
Q3 2011 - Q2 2012	424	208	416	166	166	736	37	9	36	4			218
Q4 2011 - Q3 2012	554	272	544	218	218	650	33	8	32	3	12	250	254
Q1 2012 - Q4 2012	645	317	634	254	254	617	31	8 19802 - 38	32	<u>. 3</u> • : %%a-1% t	12	286 304	276
Q2 2012 - Q1 2013	701	345	690	276	276	542	27	7	28	100831113			252
Q3 2012 - Q2 2013	640	315	630	252	252	458	23	6	24	2	8	276	234
Q4 2012 - Q3 2013	593	292	584	234	234	355	18	5	20	2	8	254	222
Q1 2013 - Q4 2013	564	277	554	222	222	256	13	; 3	12	1 1	4	214	202
Q2 2013 - Q1 2014	513	252	504	202	202	253	13	3	12	1	4		173
Q3 2013 - Q2 2014	439	216	432	173	173	284	14	! 4 _	16	1	4	189	122
Q4 2013 - Q3 2014	310	152	304	122	122	374	19	5	20	2	8	142	77
Q1 2014 - Q4 2014	195	96	192	77	77	433	22	6	24	2	8	101	38
Q2 2014 - Q1 2015	98	48	96	38	38	685	34	9	36	3	12	74	24
Q3 2014 - Q2 2015	60	30	60	24	24	1,045	52	13	52	5	20	76	37
Q4 2014 - Q3 2015	93	46	92	37	37	1,389	69	17	68	7	28	105	
Q1 2015 - Q4 2015	131	64	128	51	51	1,532	77	19	76	8	32	127	51
Q2 2015 - Q1 2016	171	84	168	67	67	1,454	73	18	72	7	28	139	67 81
Q3 2015 - Q2 2016	206	101	202	81	81	1,725	86	22	88	1 9	36	169	94
Q4 2015 - Q3 2016	237	117	234	94	94	1,982	99	25	100	10	40	194	+
Q1 2016 - Q4 2016	257	126	252	101	101	2,553	128	32	128	13	52	229	101
Q2 2016 - Q1 2017	275	135	270	108	108	2,913	146	37	148	15	60	256	108
Q3 2016 - Q2 2017	298	147	294	118	118	2,346	117_	29	116	12	48	234	118
Q4 2016 - Q3 2017	259	127	254	102	102	1,812	91	23	92	. 9 -	36	194	102
Q1 2017 - Q4 2017	237	117	234	94	94	1,552	78	20	80	8	32	174	94
Q2 2017 - Q1 2018	229	113	226	90	90	1,561	78	20	80	1 8	32	170	90
Q3 2017 - Q2 2018	203	; 100	200	80	80	2,080	104	26	104	10	40	184	80
Q4 2017 - Q3 2018	235	116	232	93	93	2,271	114	29	116	<u>: 11</u>	44	209	93
Q1 2018 - Q4 2018	262	129	258	103	103	1,842	92	23	92	; 9	36	195	103
Q2 2018 - Q1 2019	278	137	274	110	110	1,203	60	15	60	6	24	170	110
Q3 2018 - Q2 2019	345	170	340	136	136	513	26	7	28	3	12	164	136
Q4 2018 - Q3 2019	422	207	414	166	166	151	8	2	8	<u> </u>	4	174	166
Q1 2019 - Q4 2019	441	217	434	174	174	82	; 4	1 1	4	; 0	0	178	174

Rolling Annual Estimates

[T					Kollin	g Annual	Estimates
		Cons	truction We	rkers	1	<u></u>		Construc	tion Truck	5		Tota	PCEs
	Daily	Daily	Daily	AM PH	PM PH	Monthly	Daily	AM Pe	ak Hour	Second	ary Pk Hr	AM Peak	PM Peak
1-Year Period	Persons	Vehicles	Veh-Trips	Vehicles	Vehicles	Trucks	Trucks	Trucks	PCE	Trucks	PCE	Hour	Hour
Q2 2019 - Q1 2020	435	214	428	171	171	522	26	7	28	; 3	12	199	171
Q3 2019 - Q2 2020	353	174	348	139	139	1,152	58	15	60	6	24	199	139
Q4 2019 - Q3 2020	248	122	244	98	98	1,812	91	23	92	9	36	190	98
Q1 2020 - Q4 2020	196	96	192	77	77	2,147	107	27	108	- 11	44	185	77
Q2 2020 - Q1 2021	172	85	170	68	68	1,829	91	23	92	9	36	160	68
Q3 2020 - Q2 2021	196	96	192	77	77	1,989	99	25	100	10	40	177	77
Q4 2020 - Q3 2021	269	132	264	106	106	2,413	121	30	120	12	48	226	106
Q1 2021 - Q4 2021	305	150	300	120	120	3,271	164	41	164	16	64	284	120
Q2 2021 - Q1 2022	365	179	358	143	143	4,376	219	55	220	22	88	363	143
Q3 2021 - Q2 2022	474	233	466	186	186	4,065	203	51	204	20	80	390	186
Q4 2021 - Q3 2022	529	260	520	208	208	3,557	178	45	180	18	72	388	208
Q1 2022 - Q4 2022	619	304	608	243	243	2,937	147	37	148	15	60	391	243
Q2 2022 - Q1 2023	585	288	576	230	230	1,831	92	23	92	9	36	322	230
Q3 2022 - Q2 2023	593	292	584	234	234	1,487	74	19	76	7	28	310	234
Q4 2022 - Q3 2023	602	296	592	237	237	981	49	12	48	5	20	285	237
Q1 2023 - Q4 2023	581	286	572	229	229	456	23	6	24	2	8	253	229
Q2 2023 - Q1 2024	612	301	602	241	241	375	19	5	20	2	8	261	241
Q3 2023 - Q2 2024	518	255	510	204	204	277	14	4	16	1	4	220	204
Q4 2023 - Q3 2024	395	194	388	155	155	220	11	3	12	1	4	167	155
Q1 2024 - Q4 2024	280	138	276	110	110	367	18	5	20	2	8	130	110
Q2 2024 - Q1 2025	232	114	228	91	91	1,503	75	19	76	8	32	167	91
Q3 2024 - Q2 2025	210	103	206	82	82	2,733	137	34	136	14	56	218	82
Q4 2024 - Q3 2025	199	98	196	78	78	3,168	158	40	160	16	64	238	78
Q1 2025 - Q4 2025	220	108	216	86	86	3,590	180	45	180	18	72	266	86
Q2 2025 - Q1 2026	236	116	232	93	93	3,290	165	41	164	17	68	257	93
Q3 2025 - Q2 2026	288	142	284	114	114	3,010	151	38	152	15	60	266	114
Q4 2025 - Q3 2026	379	186	372	149	149	3,654	183	46	184	18	72	333	149
Q1 2026 - Q4 2026	497	244	488	195	195	5,356	268	67	268	27	108	463	195
Q2 2026 - Q1 2027	662	325	650	260	260	6,835	342	86	344	34	136	604	260
Q3 2026 - Q2 2027	820	403	806	322	322	7,884	394	99	396	39	156	718	322
Q4 2026 - Q3 2027	974	479	958 ;	383 ;	383	7,311	366	92	368	37	148	751	383
Q1 2027 - Q4 2027	1,117	549	1,098	439	439	5,196	260	65	260	26	104	699	439
Q2 2027 - Q1 2028	1,194	587	1,174	470	470	2,966	148	37	148	15	60	618	470
Q3 2027 - Q2 2028	1,116	549	1,098	439	439	981	49	12	48	5	20	487	439
Q4 2027 - Q3 2028	1,011	497	994	398	398	512	26	7	28	3	12	426	398
Q1 2028 - Q4 2028	848	417	834	334	334	355	18	5	20	2	8	354	334
Q2 2028 - Q1 2029	682	335	670	268	268	271	14	4	16	1	4	284	268
Q3 2028 - Q2 2029	602	296	592	237	237	259	13	3	12	1	4	249	237
Q4 2028 - Q3 2029	516	254	508	203	203	227	11 :	3	12	1	4	215	203
Q1 2029 - Q4 2029	416	205	410	164	164	184	9	2	8	1	4	172	164

Worker and Truck Delivery Temporal Distribution

		Workers			Trucks	
Hour	In	Out	Total	In	Out	Total
6:00 AM - 7:00 AM	80%		80%	25%	25%	50%
7:00 AM - 8:00 AM	20%		20%	10%	10%	20%
8:00 AM - 9:00 AM			0%	10%	10%	20%
9:00 AM - 10:00 AM			0%	10%	10%	20%
10:00 AM - 11:00 AM			0%	10%	10%	20%
11:00 AM - 12:00 PM			0%	10%	10%	20%
12:00 PM - 1:00 PM			0%	10%	10%	20%
1:00 PM - 2:00 PM			0%	10%	10%	20%
2:00 PM - 3:00 PM		10%	10%	5%	5%	10%
3:00 PM - 4:00 PM		80%	80%			0%
4:00 PM - 5:00 PM		10%	10%			0%
7-3 Work Shift	100%	100%	200%	100%	100%	200%

Phase I (Pre-2015) Peak Month

Daily Worker Vehicles: 472
Daily Truck Deliveries: 38

June 2012

		Workers			Trucks		Passenger	Car Equivale	ents (PCEs)
Hour	In	Out	Total	In	Out	Total	In	Out	Total
6:00 AM - 7:00 AM	378		378	10	10	20	398	20	418
7:00 AM - 8:00 AM	94		94	4	4	8	102	8	110
8:00 AM - 9:00 AM			0	4	4	8	8	8	16
9:00 AM - 10:00 AM			0	4	4	8	8	8	16
10:00 AM - 11:00 AM			0	4	4	8	8	8	16
11:00 AM - 12:00 PM			0	4	4	8	8	8	16
12:00 PM - 1:00 PM		 	0	4	4	8	8	8	16
1:00 PM - 2:00 PM			0	2	2	4	4	4	8
2:00 PM - 3:00 PM		47	47	2	2	4	4	51	55
3:00 PM - 4:00 PM		378	378			0	0	378	378
		47	47			0	0	47	47
4:00 PM - 5:00 PM 7-3 Work Shift	472	472	944	38	38	76	548	548	1,096

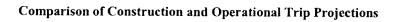
Phase II (Post-2015) Peak Month

Daily Worker Vehicles: 540
Daily Truck Deliveries: 478

May 2027

		Workers			Trucks		Passenger	Car Equivale	ents (PCEs)
Hour	In	Out	Total	In	Out	Total	In	Out	Total
6:00 AM - 7:00 AM	432		432	120	120	240	672	240	912
7:00 AM - 8:00 AM	108		108	48	48	96	204	96	300
8:00 AM - 9:00 AM			0	48	48	96	96	96	192
9:00 AM - 10:00 AM			0	48	48	96	96	96	192
10:00 AM - 11:00 AM			0	48	48	96	96	96	192
11:00 AM - 12:00 PM			, o	48	48	96	96	96	192
12:00 PM - 1:00 PM			0	48	48	96	96	96	192
			i o	46	46	92	92	92	184
		54	54	24	24	48	48	102	150
		432	432			0	0	432	432
3:00 PM - 4:00 PM		54	54			0	0	54	54
4:00 PM - 5:00 PM 7-3 Work Shift	540	540	1,080	478	478	956	1,496	1,496	2,992

Source: Bovis Construction August 14, 2006 Projections.



			21	012 Const	ruction A	nalysis Ye	ar			2015	Operation	al Year
	Constru	ction Traf	fic (PCE)	Operati	onal Traf	fic (PCE)	Tota	l Traffic (PCE)		onal Traf	
Hour	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	2	9	11
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	1	10	11
2:00 AM - 3:00 AM	0	0	0	0	0	0	0	0	0	0	0	1 0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	398	20	418	0	0	0	398	20	418	0	0	0
7:00 AM - 8:00 AM	102	8	110	0	0	0	102	8	110	51	8	59
8:00 AM - 9:00 AM	8	8	16	0	0	0	8	8	16	248	54	302
9:00 AM - 10:00 AM	8	8	16	0	0	0	8	8	16	196	64	260
10:00 AM - 11:00 AM	8	8	16	0	0	0	8	8	16	169	59	228
11:00 AM - 12:00 PM	8	8	16	0	0	0	8	8	16	53	39	92
12:00 PM - 1:00 PM	8	8	16	0	0	0	8	8	16	74	74	148
1:00 PM - 2:00 PM	4	4	8	0	0	0	4	4	8	62	67	129
2:00 PM - 3:00 PM	4	51	55	0	0	0	4	51	55	32	36	68
3:00 PM - 4:00 PM	0	378	378	0	0	0	0	378	378	35	57	92
4:00 PM - 5:00 PM	0	47	47	0	0	0	0	47	47	58	231	289
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	48	180	228
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	51	134	185
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	33	70	103
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	36	42	78
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	17	19	36
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	8	15	23
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	3	9	12
Total	548	548	1096	0	0	0	548	548	1096	1177	1177	2354

			2	027 Cons	truction A	nalysis Ye	ar			2030	Operation	al Year
		ction Traf		Operat	ional Traf	fic (PCE)	Tota	al Traffic (PCE)	Operat	onal Traf	fic (PCE)
Hour	ln	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
12:00 AM - 1:00 AM	0	0	0	7	23	30	7	23	30	12	35	47
1:00 AM - 2:00 AM	0	0	0	5	21	26	5	21	26	7	31	38
2:00 AM - 3:00 AM	0	0	0	0	1	1	0	1	1	0	1	1
3:00 AM - 4:00 AM	0	0	0	0	1	1	0	1	1	0	1	1
4:00 AM - 5:00 AM	0	0	0	0	1	1	0	1	1	0	1	1 1
5:00 AM - 6:00 AM	0	0	0	0	1	1	0	1	1	0	i	i
6:00 AM - 7:00 AM	672	240	912	0	1	1	672	241	913	0	1	1
7:00 AM - 8:00 AM	204	96	300	116	24	140	320	120	440	172	35	207
8:00 AM - 9:00 AM	96	96	192	580	134	714	676	230	906	864	200	1064
9:00 AM - 10:00 AM	96	96	192	468	157	625	564	253	817	695	233	928
10:00 AM - 11:00 AM	96	96	192	377	146	523	473	242	715	559	216	775
11:00 AM - 12:00 PM	96	96	192	114	91	205	210	187	397	165	132	297
12:00 PM - 1:00 PM	96	96	192	162	162	324	258	258	516	235	235	470
1:00 PM - 2:00 PM	92	92	184	136	147	283	228	239	467	195	212	407
2:00 PM - 3:00 PM	48	102	150	68	77	145	116	179	295	98	112	210
3:00 PM - 4:00 PM	0	432	432	84	120	204	84	552	636	122	174	296
4:00 PM - 5:00 PM	0	54	54	140	538	678	140	592	732	210	806	1016
5:00 PM - 6:00 PM	0	0	0	116	417	533	116	417	533	176	626	802
6:00 PM - 7:00 PM	0	0	0	114	307	421	114	307	421	171	461	632
7:00 PM - 8:00 PM	0	0	0	79	147	226	79	147	226	119	220	339
8:00 PM - 9:00 PM	0	0	0	81	83	164	81	83	164	122	124	246
9:00 PM - 10:00 PM	0	0	0	39	42	81	39	42	81	61	65	126
10:00 PM - 11:00 PM	0	0	0	19	35	54	19	35	54	28	51	79
11:00 PM - 12:00 AM	0	0	0	11	26	37	11	26	37	15	38	53
Total	1496	1496	2992	2716	2702	5418	4212	4198	8410	4026	4011	8037

APPENDIX K.3 AIR QUALITY



		9	Source Parameters			Quantity	NON	NONROAD Emission Factor (php-hr)	ikan Factor 1)	Truck Eng	Truck Engine Emission Rate (g/s)		Short Term E	Short Term Engine Emissions (g/s)	ŧ	ķ	Short Term Fugitive Dust (g/s)	Sunt			Total Short-Term Emission Rate (Ares: g/s-m2; Point: g/s)	al Shori-Yerm Emission Ra (Ares: g/s-m2; Point: grs)	,
	Source	Robert Height (m)	Abbraviation	Engine	Power 7 Output (hp)	Trucks per Nonroad day Engines	PM2.5	9 PM10	8	호	Running	P.MZ.5	PKTO	50 1±	H 00	PM2.6 from Transfers	PM10 from Recuspended Road Dust	PM10 from Transfers	Shart-Term Source Area (in2)	P.M.Z. 6	7	00 144	00 H
Package A West 130th Street Sewer relocation							-																
FEROVAL RELOCATION OF SEWER 20 if durip broke . Inmove 10 iff exercision . Inmove 10 iff infairs develope these receivers stating of pipe exercise . Interpret to the control of the contr			00 77 80 90 90	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	200 200 200 200 200 250	32 2 2 2 32 1 2 1 1 1 1 1 1 1 1 1 1 1 1	0.015	6 0.023 6 0.023 1 0,163	0.402 0.402 1.110	2.07E-04 7.78E-08 2.07E-04	3,71E.05 2.32E-06 3.71E-05	2,45£04 8,09£04 1,01£05 8,09£04 2,45£04	2.706-04 1.256-03 1.126-03 1.256-03 8.48E-04 2.706-04	9.05E-03 4.46E-02 3.80E-04 4.48E-02 7.71E-03 9.05E-03	9.05E-03 2.23E-02 3.80E-04 2.23E-03 5.78E-03 9.05E-03	2,22E-03	9,36E-02 9,61E-03 9,36E-02	7,08E-03 7,08E-03					
STITE MARKON CERCINS STREETSCAPE CONTRIBUTION CONTRIBUTION CONTRIBUTION STREET BROKEN STREET BROKEN STREET BROKEN STREET BROKEN STREET BROKEN STREET BROKEN STREET			E C C C C C C C C C C C C C C C C C C C		§ § 5 + 6 8 x 8	0	0.050 0.079 0.015 0.015	0.054 0.096 0.023 0.163 0.163	345,508 382,040 0,464 1,110 0,793	3.89E-06 8.75E-06 6.48E-05	1,16E-06 3,48E-06 1,16E-05	5.05E-08 1.22E-05 6.45E-05 7.64E-05 3.06E-04 6.23E-04 2.48E-04	5,625-06 1,375-05 7,495-05 5,975-05 8,495-04 8,485-04 3,835-04	1,906-04 4,666-04 9,666-04 5,316-01 2,8316-03 7,716-03 7,716-03	1,90E-04 4,66E-04 4,80E-01 2,65E-01 2,83E-03 9,67E-03 1,83E-03	6.93E-04	1,81E-03 8,19E-03 2,92E-02	2216-03					
(Trash haubo) Alai fricata. 1 prory 2 verits on average hubber the crave misselerrouse equipment compensator garantor			RR FT C C LCAC LCGS	diesel gas diesel gas	90 80 m i	 0 44	0.008 0.085 0.089	0.012	0.240 403.381 482.094	6,48E-06 3,89E-08	1.16E-06	7.84E-06 5.05E-06 3.29E-04 1.89E-04 3.08E-04	8.45E-06 5.62E-06 5.08E-04 2.08E-04 3.35E-04	2,835-04 1,905-04 3,995-02 2,245-00 5,965-00			2,92E-03 1,81E-03						
Refectation P4 Refectation D44 Reference Refer	SRAEAL SRAEEL SRAEEL SRAEEL SRAEEL SRAEEL SRAEEL SRAEEL SRAEEL SROWIT SR	1.52 0.0000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00000 0.						ļ				1,476.9 2,226.9 2,226.9 3,476.9 3,476.9 3,476.9 3,466.	1 986 0 1 0 46 0 1 0 66 0 1 0	2.000.00 0.000.000.00 0.000.000.00 0.000.000.000.000.000 0.000.0	1				000.8 000.9 000.9 000.9 199.0 1143.8 1143.8	1886-0-27	2 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1,175.00 1,005.	4.286-65 0.0006-60 0.0006-60 0.0006-60 1.0006-60 0.0006-

Package B Below grade space atal Phase I Fectory																						
SITE DEMOLITION 20 yel dump incres excessed		OT E	de de de de de de de de de de de de de d	- 9 8	0.	0.015	0.023	0.728	6,485.05	1,16E-05	7.84E-05 6.07E-04	8.45E-05 9.39E-04	2.83E-03 4.05E-02	2.83E-03 3.04E-02	6.938-04	2,926-02	2.216-03					
NSTALL 70 SLURRY WALL @ PERINETER CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE LANGE CONCRETE CONCRETE LANGE CONCRETE CO		20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		\$ \$ \$ 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	4.8 4.8 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	410.0 910.0 910.0 910.0 910.0 910.0	0.022 0.021 0.008 0.008 0.016 0.016	0.992 40,540 0.807 0.664 1,138 1,708	5,31E-05 1,78E-05 1,79E-05	9.51E-06 6.95E-08 5.33E-06	6.27E-05 2.45E-05 2.45E-05 7.82E-04 8.65E-04 5.20E-04 2.35E-04 2.72E-04 4.94E-04	6,935-05 2,746-05 2,596-05 1,216-03 9,426-04 8,146-04 4,576-04 4,206-04 7,646-04	2,32E-03 9,31E-04 8,74E-04 1,10E-04 1,50E-00 1,88E-01 1,80E-02 1,80E-02 1,80E-03	2.32E.03 9.31E.04 8.74E.04 5.51E.02 1.80E.02 4.19E.02 3.25E.02 4.74E.02 6.23E.02	5,68E-04	2.40E-02 1.54E-02 8.31E-03	1,816-43					
interhibuting - 3 loads per day final louses - 1 every 2 weeks on average nubber lee crane		\$ F 0	as a second	5	-	900:0	900.0	990	6.48E-06 3.89E-06	1,16E-06 1,16E-06	7,64E-06 5,05E-08 2,56E-04	8.45E-06 5.62E-06 3.96E-04	2.83E-04 1.90E-04 8.46E-02	2.83E-04 1.90E-04 3.23E-02		2.92E-03 1.81E-03						
miscellandus equipment chan saw compressor generation		cs LCAC LCGS	:::	5 to 0	404	8.276 0.092 0.072	6.824 0.099 0.078	244.210 404.270 476.944			3,056-04	3.32E-04 3.47E-04	3,37E+00 5,30E+00	1,35E+00 2,12E+00								
Sid Damo Damo	# 8 # 8 # 8 # 8 # 8 # 8 # 8 # 8 # 8 # 8										0.00E.04 0.0	1,000,000,000,000,000,000,000,000,000,0	4.35E-02 0.00E-00 0.0	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				4.224.89 2.154.10 3.154.10 3.154.10	1,686.07 1,866.07 1,966.07 1,966.07 1,966.07 1,966.06 1,966.08 1,9	2.44.07 4.701.29 2.748.50 5.041.24 4.07	1006-00 1-476-00 5006-00 5006-00 5016-00 5016-00 1006-	731E-08 5.35E-04 5.35E-04 5.31E-04 7.35

Phase I, 2008 Annual Emissions			Source	Source Paremeters				Quentity	NONRO	MONROAD Emission Factor (@ttp-fu)	1	Truck Engine Emission Rate (p/s)	Emission	Annual Ave	Annus! Avarage Engine Emissions (grs)	masions		Annual Fugitive Dust (9'8)			Yotal A	Total Annual Emission Rate (Ares: gis-m2; Politi: gis)	Rate (*)
	Source	Height (B)	Abbraviation Engine		Power U Output Fr	Usage Months Factor On-Site (%)	the Trucks	u Noncead sy Engines	P.W2.5	# 0	ğ	±	Rumeing	12114	e M	Ŏ.	PMZ.6 from Transfers	PM10 from Resuspended Road Dust	PMID from Transfera	Annual Source Area (m2)	9 TZN	ŝ	ğ
Package A West 130th Street Sewer relocation							-													T			
SAW CUT PAVEMENT 20 yd dunp Inces			10	1	9	2	•					4.32E-06	7,736-07	3.846-06	4.07F-08	1355-04		50					
REMOVALIREL COCKTION OF SERVER Dy of Jump Values, removal of it includes central of it includes central of its includes central of its includes central of its includes central of its includes central of its includes central of its includes to the includes to the includes to the includes to the includes to the includes to the includes to the includes to the includes to the includes the include			2mt=82	111111		0.5 0.7 57.0 7 4 4	g - 8	n n=	0,015 0,016 0,156	0,023	1,181			8,738-05 2,886-04 2,106-06 3,376-04 1,986-04	9,856-06 4,476-04 2,346-08 5,226-04	1,236.03 2,346.02 7,926.05 2,736.02 2,566.03	7.926-04	3.34E-02 7.53E-04	2,526.43				
SITE IMPROCEDENTS STREETSCAPE (Marches) when of marcial control to the control of marcial when personal meet (Control common meet (Control common meet) (S) yet damp locats - calebray of explant which already exceptioned			# 10 00 00 00 00 00 00 00 00 00 00 00 00			0.5 0.25 0.75 0.75 0.25 0.25 0.25	\$ 50° 01	***	0.050 0.079 0.075 0.075 0.070	0.054 0.046 0.023 0.163	1,332 1,049 1,404 1,404		1,906-07 5,806-06	2.466.04 2.776.05 2.776.05 2.776.05 3.856.04 3.856.04	1,006-06 2,206-00 2,306-06 3,026-06 3,026-06 1,098-04 1,378-04	2.338E-65 7.43E-65 7.43E-66 8.69CE-04 2.70E-04 1.04E-02 3.64E-02	2,486.04	2.236-52 3.236-54 9.736-54 1.046-52	7.885.04				
fresh hauding fuel trucks - 1 eventy 2 veeks on everage rubber far crano	•		% E ∘	Įij		12 19 0.25 5	25 55		900'0	2100		1,826-08	2.416-07	1.386-06 7.516-07 9.796-06	1,51E-06 8,37E-07 1,51E-04	\$.05E-06 2.83E-06		5.22E-04 2.59E-04					
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Total Annual Emission Rate (Arsa: g/s-m2; Point: g/s)	9130							1,426-07 3,476-08 1,246-08 5,036-07 1,736-08 5,106-07									9,62E-07 1,97E-06 2,42E-08 9,24E-06 9,24E-06 5,48E-07 1,91E-06
Total Ar (Area:	PM2.5	-						1,386,67 3,196,69 1,206,68 5,036,07 1,676,68									8.32E-07 1,81E-06 2,36E-05 1,94E-07 1,94E-07 2,04E-07 2,02E-07 0,00E-07
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Annual Average Engine Emissions (g/s)	PM10	7,61E-08 1,82E-04 2,84E-07 2,44E-04 8,03E-06	7,92E-09 7,92E-09 7,92E-09 7,92E-09	2.64E-07	1,085-08 1,085-08 1,085-08	1,51E-06 1,00E-07 3,45E-04	3,045,06	2.47E-04 6.03E-06 3.48E-04 1,11E-04 1,30E-04	8.64E.06 8.61E-04	1,73E-05 1,25E-00 1,27E-03	3.04E-05 7.95E-04 1.06E-06 1.07E-03 2.42E-05	2,846-06 2,646-09 2,646-09 2,646-09 3,586-05	2.64E-07	2.64E-08 2.64E-08 2.64E-08 3.58E-07	2.596.06 3.176.07 8.736.04	1,35E-04 2,45E-05 2,51E-05	1.18E-03 2.42E-05 8.77E-05 8.27E-05 8.25E-04 2.81E-03 8.70E-04 2.34E-03 3.42E-04
1	P42,5	6,996-06 1,776-04 2,416-07 2,376-04 5,556-06	724E-09 724E-09 724E-08 724E-08 1,07E-04	2.416.07	9.86E-09 9.86E-09 9.86E-09	1,396,06 9,865,08 3,356,04	2.81E-06	2,395,04 5,856,06 3,356,04 1,116,04 1,866,04	7.87E-06 6.42E-04	1,566.05 1,216.03	2.79E-05 7.71E-04 9.86E-07 1.04E-03 2.22E-05	2.41E.09 2.41E.09 2.41E.09 2.41E.09 3.58E.05	2,416-07	2.41E-09 2.41E-09 2.41E-08 3.58E-07	2,37E-06 2,90E-07 6,53E-04	125E-04 225E-05 231E-05	1.14E-03 2.22E-05 8.53E-04 3.84E-05 7.59E-04 2.52E-03 8.50E-04 2.48E-04 0,00E-00
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MONROA	PM2.5	0.178 0.143 0.061	0.017		0.017	0.067	0.085		0.128	0.02	0.194 0.157 0.081	710.0		0.017	0.075	6.278 0.065 0.070	
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Phase 1, 2011 Annual Emissions		aire 18 COASTRUCTURE COASTRUCTURE overses bust overses bust overses bust overses bust overses bust overses bust overses bust overses bust overses bust overses	MEP Burling abovas Burling abovas Sprink delicers TACL decuss NC Antwises	BUILDING ENCLOSURE & ROOFING VARING	INTERIORS / FIT-OUT drywal trakers additional interiors - box traker PFA & E.	trach haufing fuel trucks - 1 every 2 weeks on everage rubber tre crane	miscellaneous aquipment compressor	Ground Level Equipments (RB, COMP, GEN) Replant Tea Course Trucks + Fousits Frontes Tea Concerts Pump Frights - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts Trucks - Concerts - Con	Sire 18 SITE DEMOLITION 20 yrd Jamp Bricks exeryeter	EXCAVATION & POLANDATIONS 20 you should bucks compressed	CONSTRUCT SUPERSTRUCTURE concrete trust concrete page concrete page results of state results tender results tender results tender results tender	MED STANDING GRAVITAL STANDING GRAVITAL STANDING GRAVITAL STANDING GRAVITAL STANDING GRAVITAL STANDING GRAVITAL STANDING GRAVITAL	BUILDING ENCLOSURE & ROOFING BY MAGEST	INTERIORS / PITOUT downs trailers additional releiers - box traver FFE f.E.	brah haukng Kiel Usoka - 1 avery 2 veeka on average rubber Ve crane	miscellaneous equemond chain sav compressor genotator	Gound Level Equipments (RB CS, COMF, GEN) Threshop Meeting Robert in Come The Come of the Come of the Come Threshop Meeting T





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	3,906-06 3,006-06 3,526-06 2,166-04 7,256-05	1,78E-07 1,78E-07 4,40E-07 4,70E-07 3,58E-04	1.175.06	2.54E-08 7.92E-08 1.32E-07	1,000,00	2.456.05	2.70E.04 7.25E.08 7.04E.04 5.39E.08		2.23E-05	3.386.04 1.9866.04	1.85E-06 2.50E-05 8.31E-07	3,626-05	7.346.09	2.000 0.00 0.00 0.00 0.00 0.00 0.00 0.0		8.70E-08 8,03E-08 1,67E-07	1.34E-08	2015-08	1.45E.04
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Package I #7 Residented building	SONSTRUCTURE CONTRIBUTED SUPERSTRUCTURE CONTRIBUTED SUPERSTRUCTURE Tradain of seed Intert sonser Intert sonser Intert sonser	Parinistra deliveries parinistra deliveries sprinistra deliveries seculto - deliveries NG fortalit	BULDING ENCLOSURE & ROOFING Taken	INTERIORS / FIT-OUT drywal trafers a delitheria rhanom - box trailor FFE E.E.	resh hauding - 3 loads per day Net trucks - 1 every 2 weeks on average	macella neous equipment compressor generator	Ground Lavel Equipments (RB, CS, COMP, GEN) Trovelyg Matchine Trucks - Solution Trucks - Solution Trucks - Solution Trucks - Dust	Package T #1 Academic building wicellar aka Conference Center	SITE DEMOUTION 20 yd dwnp theka excretator	EXCAVATION & FOUNDATIONS 20 yd chung tucks esterniesi esterniesi compressors	CONSTRUCT SUPERSTRUCTURE CONSTRUCT SUPERSTRUCTURE CONSTRUCT NOT FRANCE OF 1941 IN THE STRUCT SUPERSTRUCTURE FRANCE OF 1941 IN THE STRUCTURE FRANCE OF 1941 IN	nsk having - 3 loads per day ut incks - 1 every 2 weeks on average	intralleracus equipment chain saw compressor generation	Ground Level Equipments (RB C3 COLMP GEN) Treesting Welcher Control Brists Govern Brists - Control Brists Govern Brists - Control Brists Govern Brists - Control Brists - Extravelaci Govern England Control Brists - Extravelaci Govern England Control Govern England Control Govern Control Gove	Pachage B Balow grade space ake Phase I Pactory	MEP Internal advances Bondar debrens MG fords MG fords	BELOW GRADE INTERIORS / FIT-OUT drywell trains tectional sharon - but train No forth	rash hauding - 3 loads par day	Trucks + Fordelts Fuggitive Dasi

	XH-100				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		3,59E.04 1,25E.36 0,00E+40 0,00E+40 3,40E-03 2,17E-02 2,17E-02						1.65E.04 0.07E.44 0.07E.44 0.07E.44 0.07E.44 0.07E.44 0.07E.44 0.07E.43 0.0
Emiesion Rat Point: g/s)	¥7.00						9 196-04 1,626-06 0,006-00 0,006-00 3,406-03 3,696-02 3,696-02						8.19E-04 1.00E-00
Total Biost-Term Emission Rate (Area: gra-m2: Point: g/s)	244						1,635-06 9,775-06 1,225-06 1,225-04 1,006-04 1,006-04 9,665-04						2.11 E.06 1.06 E.05 1.06 E.05 2.00 E.05 2.00 E.05 4.00 E.05 8.00 E.05 8.10 E
ř	P. Carr						1,31E-06 5,15E-04 0,00E+00 0,00E+00 8,98E-06 6,98E-06 6,75E-04						1,876.08 1,066.69 1,066.69 1,166.06 1,236.04 2,376.04 3,386.04 3,3
	Short-Term Source Area (m2)						3,847,4 431,4 431,4 180,5						1,667,1 1,667,1 7,136,6 7,136,6
3	PMT0 from Transfere	6,076-03							4195-03	2276-02			
Short Term Fugitive Dust (1873)	Assurpand ed Rose Dust	7.15E-02	5,046-02 7,276-04	7,686-03	2.606-03 1.61E-03				3.06E-02 7.66E-03 1.61E-03	2.80E-01	2.606-03		
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	8	7.62E-03 2.95E-03 9.86E-03	3,566-03 9,916-03 9,325-02 4,106-04 3,325-03 6,446-03	1,20E-02	2.775-04 1,845-04 5,186-03	1,635-01 6,485-01 2,15E-00	1,42E+00 8,30E-04 0,00E+00 0,00E+00 3,40E-03 2,12E-02 2,12E-02		5.27E-03 8.97E-04 8.97E-04 3.03E-03 2.14E-01 1.65E-02 1.85E-02 1.85E-02 1.20E-02	2.77E-02 2.96E-03 9.84E-03 3.56E-03	1.845-04 1.845-04 1.045-02	1.836-01 4.486-01 2.156-00	3.06E-01 0.000E-00 0.000E-
the Errittion	8	7,826-03 3,946-03	3,966-03 3,696-02 4,156-04 6,846-03 1,296-02	8,975.04 3,896.02 1,846.03 6,646.03	2.77E-04 1.84E-04 1.04E-02	8,14E-01 1,12E-00 5,36E+00	3.77E+00 8.30E-04 0.00E+00 0.00E+00 3.40E-03 3.40E-03 3.69E-02		5.27E-03 8.97E-04 8.22E-04 8.38E-07 3.27E-02 1.33E-02 1.39E-02 1.39E-02	2.77E-02 3.94E-03 1.31E-02 3,96E-03	2,776-04 1,546-04 2,076-02	8.14E-01 1.12E-400 5.36E+00	9.646-01 0.006-00 0.006-00 0.006-00 0.006-00 0.006-00 1.036-02 1.036-02 1.036-02 1.036-02 1.036-02 1.036-02 1.036-03 1.0
Short Term Engine Emissions (g/s)	ST#4	2.25E-04 2.21E-04 8.49E-04	0,436-04 1,746-04 1,516-03 1,236-05 8,346-04	2.65E.05 4.20E.04 5.47E.08 4.92E.04 9.17E.04	8,29E-08 5,47E-06 3,98E-04	4,556-03 1,036-04 3,356-04	6,445-03 2,476-03 5,286-03 5,816-02 1,006-04 1,006-04 9,686-04 9,666-04		1.58E-04 2.09E-05 2.79E-05 4.97E-05 1.00E-03 8.14E-04 5.50E-04 4.40E-04 8.40E-04 9.17E-04	8.295-04 2.915-04 5.495-04 6.435-04	8,296.06 5,476-06 7,936-04	455E-03 1,03E-04 3,35E-04	391E-03 491E-03 992E-03 366E-03 492E-04 407E-04 407E-04 407E-04 510E-0
	7H2.1	2.07E-04 2.82E-04	4,70E-04 1,56E-04 1,11E-05 3,81E-04 7,8E-04	2.37E-05 2.72E-04 4.92E-06 3.91E-04 5.93E-04	7,516,06 4,926,08 2,586,04	4,186.03 9,466.05 3,086.04	5,18E-03 2,22E-05 0,005+00 0,005+00 8,98E-05 6,29E-04 6,29E-04		1.436.04 2.376.08 2.466.05 3.916.04 3.206.04 5.206.04 5.206.04 5.406.04 5.306.04	7,51E-04 2,62E-04 3,55E-04 4,70E-04	7,516.06 4,926.08 5,136.04	4.19E-03 9.48E-05 3.08E-04	1,465-03 1,325-03 8,645-03 8,645-03 2,375-04 2,385-04 2,385-04 2,385-04 8,4
Emersion	Running	2.83E-05	4.07E-06	6.18E-06 1.03E-08	1,035-06				1,90E-05 6.18E-06 5,15E-06	1.036-04	1.03E-06 1.03E-06		
Truck Englise Ereistion Rate (g/s)	ž	1.78E-04	1.19E-04 8.75E-06	1,73E-05 3,89E-06	5,485-08 3,195-06				1,385.04 1,785.05 1,946.05	6.48E-04	8.48E-06 3.89E-08		
	8	0.071	0.057	0,10,0 0,51,0 0,10,0	0.107	244,210 403,381 482,704			0.120 0.157 0.157 0.157 0.137 0.137	0.007 0.057	6,107	244.210 403.381 482.704	
NONKOAD Emission Factor (glip-lut)	911	700.0	0.00 0.015 0.018 7.000	810.0 810.0 810.0	9.00	6,824 0,093 0,075			0.018 0.002 0.008 0.008 0.016 0.016	0,007 0,011 0,018	900.0	6,824 0,093 0,075	
HOME	201	700.0	0,006 0,010 0,014 0,014	0,000	90.0	6.276 0.085 0.089			0.014 0.021 0.005 0.005 0.011 0.011	0.007	8000	6.278 0.085 0.069	
entity	Horroad Engines		e een		*	41/4			e 0 00 m m m m		~	4 64 4	
ð	Trucks per day	27.6	2 25 2 25 2 26	v r					5 e m	8 -			
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	Power Ite Output (hp)	88		\$ \$8888 5 #####	2 2 3 2 2 3 3 2 3 3				Service 200 Control 200 Contro	90 00 00 00 00 00 00 00 00 00 00 00 00 0	00 4 100 100 350	118	
A remotest a	Abbrevistian Engine	Į i			AT TO SEELE	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			200 200 200 200 200 200 200 200 200 200	10 898 808 84 8	e s	50 50 50 50 50 50 50 50 50 50 50 50 50 5	
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	Referense Helight												Okeas Okeas
	Source						HATERS NAMES		a				5555888888888
Phase 2 short-Term Emissions		Package M Before grade space @ West 133nd Street EXCAVATE WITHIN SLUBRY WALL ST PS CAMP flucts PEXCAVATOR	CONSTRUCT BELOW GRADE STUCTOR BLOW GRADE STUCTOR BLOW GROSSE DATE (1815 FOR BLOW (1815 FOR BLOW (1815 FOR BLOW (1815 FOR BLOW)	crawlet crane feet concrete fruit concrete pump tracker pump ple demograp ple divinging	nam hauding - 3 hadis per day use facilities - 1 every 2 weeks on siverage Usber His claine	chan saw compression	According to Pictope N of Iumped Registration of the Facility of State of the Facility of State of Sta	Package O Below grade space aka Phase N Factory	FASTAL TO BLURRY WALL & PERINGTER CONTROL OF THE TOTAL PROPERTY OF	EXCAVATE WITHIN BLURRY WALL. 20 ya dung bucks stremmer stremmer defing sign	itiath hauding - 3 loads pet day (uef tucks - 1 evany 2 weeks on average ruiteer tire onne	chan saw compressor compressor	Survivos Exponenti Survivos Exponenti Survivos Expose Onto- Survivos Expose Onto- Survivos Expose Onto- Survivos Expose Survivos

						***************************************			(hthe drig)	(ht-qrive)	Rate (9/8)	Rate (Q/s)		(1/0)			Annual Fugitive Dust (pls)			Total Amenal Emission Rate (Area: gis-m2; Point: gis)	ission Rate Point: g/s)
	Source Name Height (m)		Abbrevlation Engine	Power Output (hp)	Pactor (X)	Months On-Sike	Trucks Non perday Eng	Nonroad Engines	2.5 PM10	40 NOX	<u>\$</u>	Running	PM2.6	P.M.10	X ON	PM10 from PM2.5 from Resuspend Transfera ed Road Dust	PM10 from Resuspend PM1 ed Road Trai	Annual Annual Source Transfers Area (m2)	mz)	.a. P16410	Ϋ́O
Package N Below grade space (§ West 132nd Street						 		-			-							+	+		
INSTALL 70 SLURRY WALL @ PERIMETER 20 vd dump facka																····					
concrete truck				ĝ ĝ			9.1				5.19E-0			4.74E-08	1.588-04		9.195-04				
(retain of steet - retain		•		8			6 0				735.08	5 3.09E-08	1.586.06	786-08	4.32E-04		2.745-03				
akykit forklist		,		8,8	0.5	φ 4								1.78E-04	3.566-03	_					
375 MP air compresser 40 fon hydrauth crane (hondern seher seens)		2		375	5 50	, v	•	_					3,295-04	3,576-04	3.786-03						
build dozer				3	0.5	19							1.188-04	1.825-04	9.176-03						
aking supply aystem crawler crane		, 0	00E	3 3 3	8 S 8			0.010	0.015	15 0.333			1,986-04	1.60E-04 3.00E-04	3.30E-03 1.53E-02	3.96E-05	7	.26E-04			
EXCAVATE MITHIN SLURRY WALL													2,126-04	3.28E-04	1,65E-02						
20 yá dump mucke				9			37.K				,				_						
excavator drifting no		•		200	0.75	100		- 8			- C	8	8,156,05	8.796-05	2,27E-03	200	2.136-02	- !			
compressors		- 5	BDR deser	8 S	0.75	us us	. •	0.007	0.011	11 0.784			1.088.04	1,635-04	1216-02	1	9 '2	200			
CONSTRUCT BELOW GRADE SUPERSTRUCTURE														5	77						
structure contrate truck																					
concrete pump		- (T 25	8 8	;	4	6'2				1.156-05	5 2.71E-08	1.025-05	1,135-05	3.785-04		2 405-07				
traders of steet		, .		3 8	a.	•	0.2	2 0,010	0.015	0.766			4,865-05	7,206-05	3,66E-03						
(ebar bender		U		8	0.5	. 4					1.175.08	3,036-07	1.056-08	1,176-08	306.08		5.926-05				
Crawder Crains			P.E.	8	0.5	•		2 0,014	4 0.017	7 0.337			1.675-04	2.225-04	4.465-03						
pides				ğ	n D	4	-						1,415.04	2,185-04	1.10€-02						
concrete purity		٠,	DT diese	\$		•	1.2				1.73E-06	4.125-07	1.546.06	1715.08	A 766.08	_	20 283				
traders of steel		,		3 5	979	•	0.2	0,010	0.015	5 0.789			1,295-05	2.006-05	1.02E-03						
return bender		0	OCE diesel	8	0.5	. •		1 0.014	4 0.018	0.359	5, 196-07	1.37E-07	4.68E-07	5.216-07	1,756-08		3.08E-05				
9				ŝ	6.9	•	-						1.416.04	2.186-04	1.106-02						
Bermand.		2		•		_															
sprinklar				3 3		7 1	8 8				5.196.0	1,375-08	4.698-06	5.21E-08	1.76E-06	_	90-380'				
NV NC		3 6 3		8		17	60.0				5.836.06		5.27E-08	5,215-08	766.06		90-390				
NG Forkin		Σž	NGFL gas	8 8	50		6.98	7100	7 0017	10.00	5.835-04	1,556-08	5.27E-08	5.866-08	1,985.08		3,486.06				
BELOW GRADE INTERIORS / FIT-OUT							•						7.135-70	7.155-05	1.206-03						
drywesh trackers		_		8		_	7.02				A. 4.6.		2				:				
FF&E		- 3	T. Cherry	8 8		-	60.0				2.92E-08	7,736-09	2.546-06	2,935-06	2.196.07 9.886.07	_	3,84E-07				
NG Ferkin		ŧ¥		36.5	0.5		0.03	0,017	7 0.017	7 0.291	9.72E-06		3,585,06	9.77E-09	3.296-07		775.07				
nash hauking - 3 loads per day		ac	S. dieses	90			7														
COST INCOME - I EVERY Z. WRENE ON BVETBOR			FT General Co	9 gg	85	2 2	0.5	0.000	9000	0.411	1.946-06	5.156-07	1.765-06	1.955.06	7.926-04 8.586-05		4,60E-03 1,15E-04				
miscellaneous equipment								_					322	7.835-04	1436-62						
Compressor		2	LCAC gas	ю	0.4	:	2	0.085	0.093	1007			90,00	E							
		•		41																	





Estimated Peak-Hour Emission Rates Fugitive Dust Sources - PM₁₀ Mobile Equipment Operating on Paved Roads

		Analysis Period	Surface Type	k	sL (g/m2)	w	PM ₁₀ Emission Factor g/VMT
Concrete Truck	CT	Short Term	Paved	7.3	12	30	739.81
Dump Truck	DT	Short Term	Paved	7.3	12	35	932.27
Heavy Truck		Short Term	Paved	7.3	12	12	187.16
Concrete Truck	CT	Annual ^b	Paved	7.3	12	30	528.44
Dump Truck	DT	Annual ^b	Paved	7.3	12	35	665.91
Heavy Truck		Annual⁵	Paved	7.3	12	12	133.68

Notes: a. Road dust emissions were not calculated on a per vehicle basis but rather on a fleet-wide basis. Excavators, loaders, and backhoes move about in small incremental steps as the excavation progresses (i.e., minimal distances) and would therefore generate negligible amounts of fugitive dust.

b. Annual emissions were multiplied by 5/7 to account for a five day work week.

Paved Road Emission Factor - Sample Calculation (Short Term):

Equation 1 from Section 13.2.1 of USEPA's AP-42

 $E_f = k * (sL/2)^{0.65} * (W/3)^{1.5} - C$

where:

 E_f = size specific emission factor in pounds per vehicle mile traveled (g/VMT)

k = an empirical constant selected from AP-42 Table 13.2.1-1 for PM₁₀

sL = road surface silt loading in grams per square meter selected from AP-42 Table 13.2.1-3 for conditions with a low average daily traffic (ADT) classification.

W = mean vehicle weight in tons

C = emission factor for 1980's vehicle fleet exhaust, break wear and tire wear

 $E_f = 7.3 * (12/2)^{0.65} * (36/3)^{1.5} - 0.00047$

 $E_f = 740 \text{ g/VMT}$

Sample Emission Rate Calculation (Short Term):

 $E_R = (E_f \text{ paved * VMT}) / 60 (\text{min/hr}) / 60 (\text{s/min}) * 0.5$

where:

 $E_R = PM_{10}$ emission rate in grams per second

E_f paved = paved road emission factor in g/VMT

VMT = vehicle miles traveled

0.5 = 50% control for watering program

 $E_R = (740 * x) * 453.59 (g/lb) / 60 (min/hr) / 60 (s/min) * 0.5$



Estimated Peak-Hour Emission Rates Fugitive Dust Sources - PM₁₀ Mobile Equipment Operating on Unpaved Roads

		Analysis Period	Surface Type	k	s (% silt)	W	PM ₁₀ Emission Factor g/VMT
Concrete Truck	СТ	Short Term	Unpaved	1.5	8.5	30	1405.95
Dump Truck	DT	Short Term	Unpaved	1.5	8.5	35	1506.94
Heavy Truck		Short Term	Unpaved	1.5	8.5	12	930.89
Concrete Truck	СТ	Annual ^b	Unpaved	1.5	8.5	30	1004.25
Dump Truck	DT	Annual ^b	Unpaved	1.5	8.5	35	1076.39
Heavy Truck	<u> </u>	Annual⁵	Unpaved	1.5	8.5	12	664.92

Notes: a. Road dust emissions were not calculated on a per vehicle basis but rather on a fleet-wide basis. Excavators, loaders, and backhoes move about in small incremental steps as the excavation progresses (i.e., minimal distances) and would therefore generate negligible amounts of fugitive dust.

b. Annual emissions were multiplied by 5/7 to account for a five day work week.

Unpaved Road Emission Factor - Sample Calculation (Short Term):

Equation 1a from Section 13.2.2 of USEPA's AP-42

 $E_f = k * (s/12)^a * (W/3)^b$

where:

E_f = size specific emission factor in pounds per vehicle mile traveled (lb/VMT)

k = an empirical constant selected from AP-42 Table 13.2.2-2 for PM $_{10}$

s = surface material silt content in percent silt selected from AP-42 Table 13.2.2-1 (for a construction site)

a = an empirical constant selected from AP-42 Table 13.2.2-2 for PM₁₀

W = mean vehicle weight in tons

b = an empirical constant selected from AP-42 Table 13.2.2-2 for PM₁₀

 $E_f = 1.5 * (8.5/12)^{0.9} * (30/3)^{0.45}$

 $E_f = 3.10 \text{ lb/VMT}$

Sample Emission Rate Calculation (Short Term):

 $E_R = (E_f \text{ unpaved * VMT}) * 453.59 (g/lb) / 60 (min/hr) / 60 (s/min) * 0.5$

where:

E_R = PM₁₀ emission rate in grams per second

Ff unpayed = unpayed road emission factor in lb/VMT

VMT = vehicle miles traveled

0.5 = 50% control for watering program

 $E_R = (3.10 * x) * 453.59 (g/lb) / 60 (min/hr) / 60 (s/min) * 0.5$



Estimated Peak-Hour Short-Term Emission Rates Fugitive Dust Sources - PM₁₀ and PM_{2.5}

Transfer Operations - Excavation

			Number	Volume			PM ₁₀	PM ₁₀	PM _{2.5}	PM _{2.5}
		Emission	ţ	Removed	Default	Tons	Emission	Emission	Emission	Emission
		Factor	Trucks	Hourly	Soil Density	Removed	Rate	Rate	Rate	Rate
Operation	Activity	lb/ton		cubic yards1	lbs/cubic yard	Hourt	p/hr	8/10	lb/hr	8/0
Transfer Operation	Excavates/Transfers to 20 cy Truck	5.39E-04	1.6	4.0	2,600	٦,	0.003	3 53E 04	VO LIK K	1,10,00
Transfer Operation	Excavates/Transfers to 20 cv Truck	5 30E 04	,	ļ	200	,	333	0.325-04	0.0	
Transfer Operation	100 1 100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40-386-6	P	p. 4	2,500	9	0.003	4.19E-04	1.0E-03	1.3E-04
Tailsie Chalation	Excavates/ Hansters to 20 cy Truck	5.39E-04	4.1	10,3	2.600	13	2000	9 04F-04	2 3E-03	2 RF_04
Transfer Operation	Excavates/Transfers to 20 cy Truck	5.39E-04	10	25.0	2,600	33	0.018	2.21E.03	5 C L C C C C C C C C C C C C C C C C C	A 00 0 0
Transfer Operation	Excavates/Transfers to 20 ov Traint	5 30E 04				3		20.7	3.31	0.00
Transfer Organization	ביינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים ומיינים	9.39E-04	Q	40.0	2,600	25	0.028	3.53E-03	8.8E-03	1.1E-03
i ai isiei Operation	Excavates/ I ransfers to 20 cy Truck	5.39E-04	18	45.0	2 600	59	0.032	3 07E 03	0 00 0	1 2E 02
Transfer Operation	Excavates/Transfers to 20 cy Truck	5 39F-04	ę	17 K	009 6		200.0	2000	3.35.0	1.41-00
Transfer Operation	Exceptatos/Transfers to 30 at Tail.	5000	2	2.7	2,000	70	0.033	4.19E-U3	1.05-02	1.3E-03
Total obsider	Excavates/ Haristers to 20 cy 110CK	5.39E-04	27.5	68.8	2,600	68	0.048	6.07E-03	1.5E-02	1 9F-03
I ransier Operation	Excavates/Transfers to 20 cy Truck	5.39E-04	32	80.0	2,600	104	0.056	7 08E 03	1 85 00	3 35 03
Transfer Operation	Excavates/Transfers to 20 cv Truck	F 20E 04	2	1 33,	00012	,	3	2000	1.01-702	4.4E-03
Transfer Operation	NODEL CONTROLLED TO THE PARTY OF THE PARTY O	0.030-04	60	6.291	2,600	211	0.114	1.43E-02	3.6E-02	4.5E-03
I alisiel Opelalion	Excavates/ I ransfers to 20 cy Truck	5.39E-04	100	250 0	2 600	325	0 175	2 21E-02	5 5E 00	S OF 03
Transfer Operation	Excavates/Transfers to 20 cv Truck	5.39F-04	103	257 5	2000	200	2 6	2.2.1.2.2	2.30-02	0.35
		0.00	2	5.763	2,000	CCC	0.180	2.4/E-02	5.7E-02	/1E-03

Notes:

A maximum "excavation" transfer is based on.....
 Emission factors for soil transfer operations are based on Equation 1 from Section 13.2.4 of AP-42. Emission factor calculations are provided below.

12.5 7.9

wind spd moist. %

Transfer/Drop Operation Emission Factor - Sample Calculation for PM₁₀:

 $E_1 = k^* (0.0032)^* (U/5)^{1.3} / (M/2)^{1.4}$

 $E_{\rm f}$ = size specific emission factor in pounds per ton (lb/ton)

k = an empirical constant selected from AP-42 (0.35 for PM $_{\rm 10}$ and 0.11 for PM $_{\rm 2.5})$

U = mean wind speed in miles per hour (mph)

M = material moisture content in percent moisture (%) from Table 13.2.4-1 of AP-42 (for overburden)

 $E_{l} = 0.35 * (0.0032) * (12.5/5)^{1.3} / (7.9/2)^{1.4}$

 $E_{t} = 5.39E-04 lb/ton$

Sample Emission Rate Calculation for PM₁₀ (loader):

 $E_{\rm R} = E_{\rm f} \; PM_{10} \; ^*$ (soil volume * soil density / 2,000 lbs/ton) * 453.59 / 60 / 60

E_R = PM₁₀ emission rate in grams per second

Er PM₁₀ = PM₁₀ emission factor in Ib/ton

soil volume = volume of soil handled in cubic yards per hour

soil density = $2,600 \text{ lbs/YD}^3$

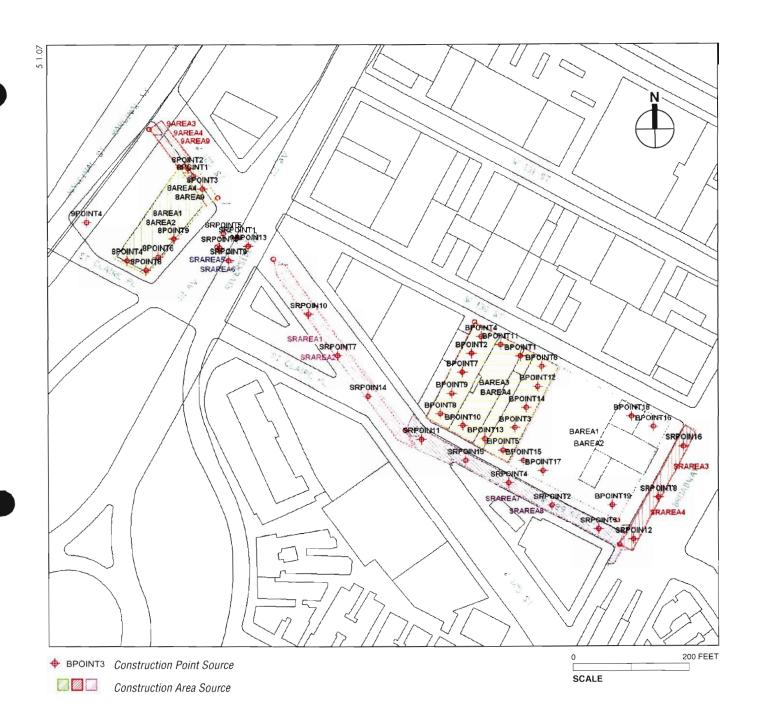
2 = material handling factor (accounts for multiple handling)

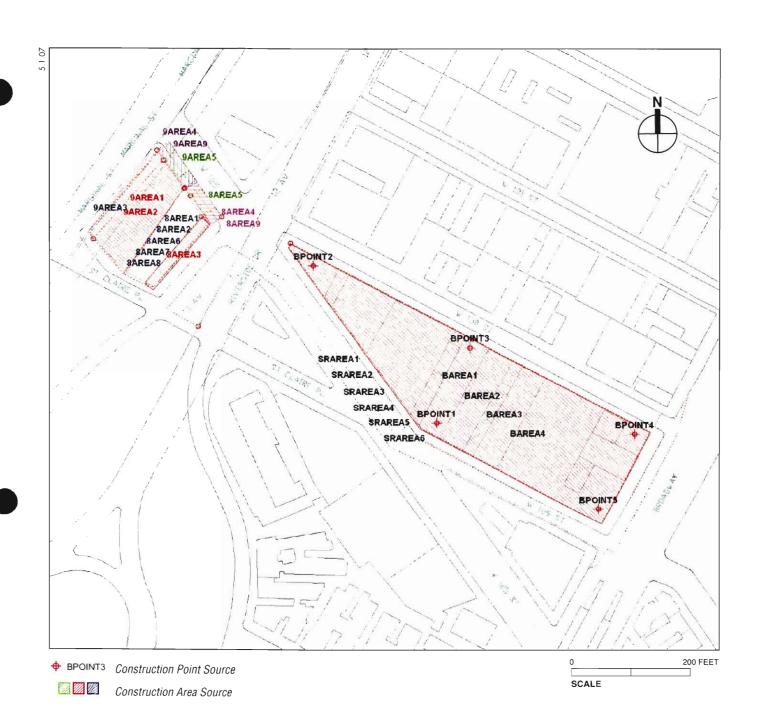
0.5 = Dust Watering Factor

 $E_R = 5.39E-04*(45*2,600/2,000)*2*453.59/60/60*0.5$

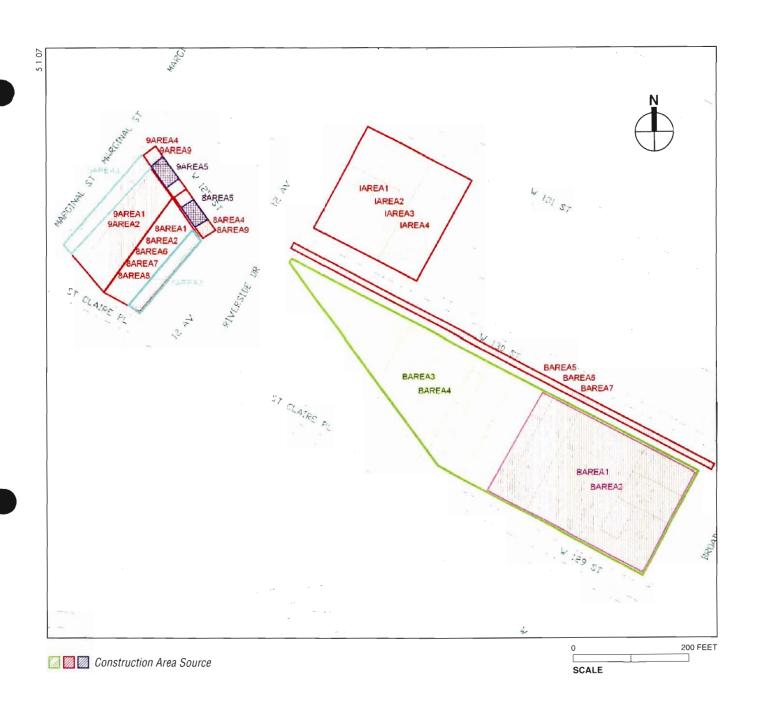
 $E_R = 1.20E-03 g/s$

Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development DRAFT EIS









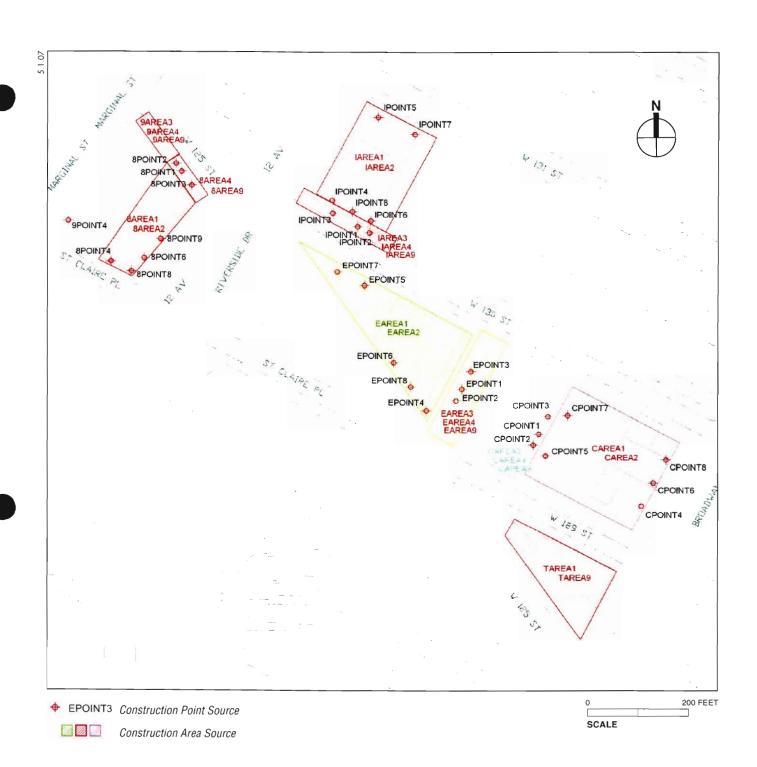
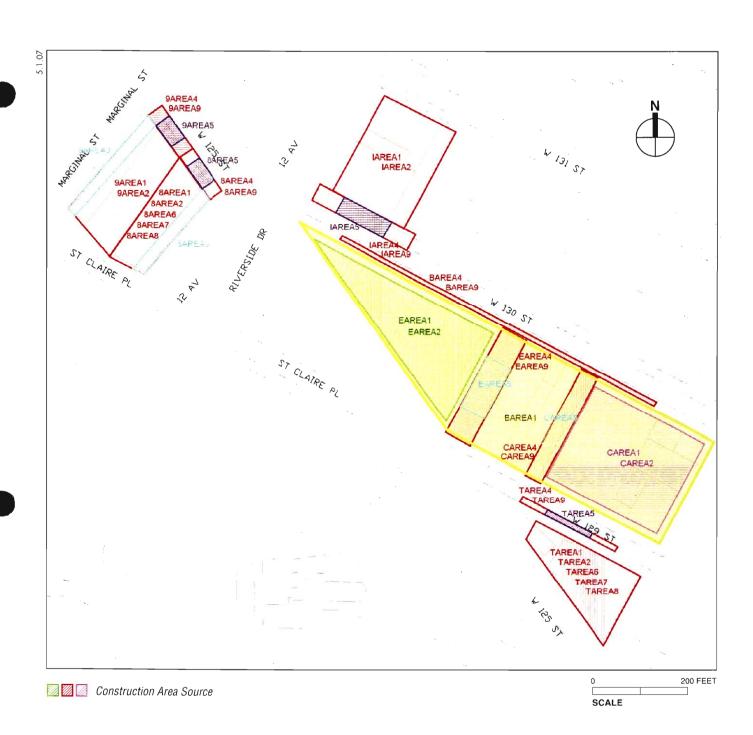


Figure K.3-5
Construction Equipment Layout
Phase I 2011: Short-Term Analysis



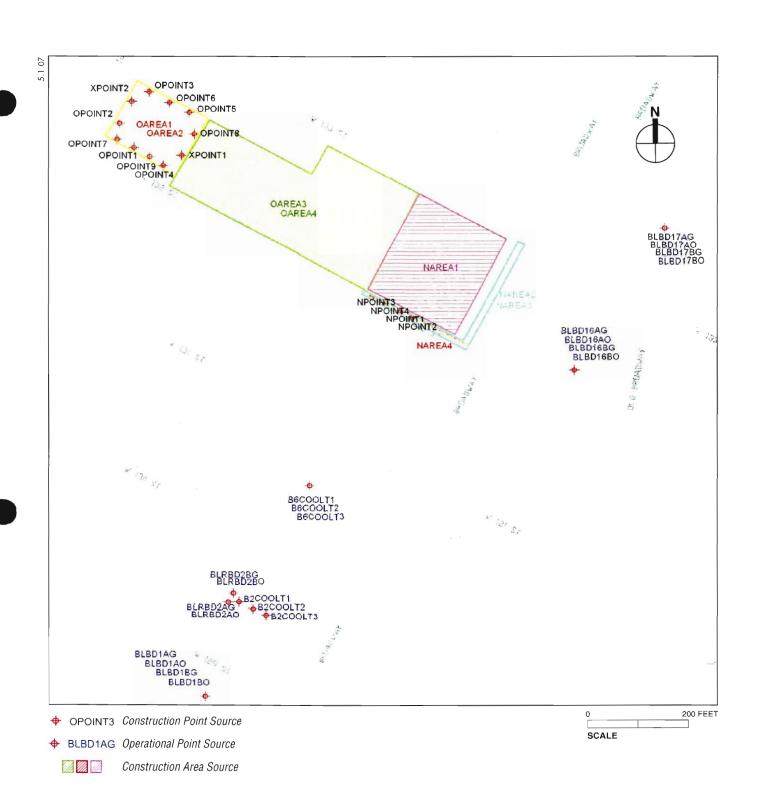


Figure K.3-7
Construction Equipment and
Operational Source Layout
Phase 2: Short-Term Analysis



Figure K.3-8

Construction Equipment and

Operational Source Layout

Phase 2: Annual Analysis







Table K.4-1 ر

ig S		Phase 1-2009 Analysis Year	A P	is Year	Phase 1-2010 Analysis Year	0 Analys	s Year	Phase 1-2011 Analysis Year	1 Analys	Is Year	CONSTITUCTION (1701SC Analysis Nest 1.2014 Analysis Year Phase 1.2014 Analysis Year Phase 1.2012 Analysis Year	Analysi	Year Year
		ğ	71.5	ncrease 0.8	Construction 54.8	10tal 71.6	ese o	Construction 46 6	71.5	Increase 0.8	Construction 57.8	71 6	ncrease
77	4 0.8	46.2	71.4	8.0	52.3	71.5	6.0	52.5	71.5	6.0	59.4	717	-
71.4	H	54.5	71.4	6.0	58.6	71.5	1.0	9.09	71.7	1.2	59.9	71.6	1,1
11.5	+	58.6	71.3	1	61.0	71.5	6.1	61.3	71.5	1.3	60.2	71.4	1.2
208	15	60.5	70.6	136	63.4	71.0	. L	62.2	7.1.7	0. 6	62.1	0.1%	4. R
71.	╀	47.0	71.6	6.0	53.6	71.6	6.0	55.0	71.6	6.0	56.8	71.7	0
71.6		53.8	71.5	6.0	55.9	71.6	1.0	62.3	72.0	4.1	62.2	71.9	1.3
71.6		58.0	71.5	11	58.0	71.5	1.1	61.6	7.17	1.3	60.7	71.6	1.2
72.6	\dashv	49.1	72.6	0.9	9.05	72.6	6.0	59.9	72.8	1.1	60.1	72.8	1.1
72.5	\dashv	51.9	72.5	0.9	53.8	72.5	6.0	59.8	72.7	1,1	59.2	72.6	1.0
12.4	\dashv	55.0	72.4	21	56.0	72.4	1.0	60.4	72.6	1.2	59.4	72.5	1.1
72.2	\dashv	56.9	72.1	27	57.0	72.1	1.0	61.0	72.3	1.2	0.09	72.3	1.2
71.9	\dashv	0.09	71.7	1.2	59.9	71.7	1.2	62.1	71.9	1.4	60.7	71.8	1.3
71.7	18	61.0	71.5	1.4	61.6	71.6	1.5	63.2	71.8	1.7	61.4	71.6	1.5
71.3	1.7	61.8	71.1	1.5	63.1	71.3	1.7	63.9	71.4	1.8	62.3	71.2	1.6
71.2	139	63.0	71.0	17	63.1	71.0	1.7	64.2	71.2	1.9	62.3	6.07	1.6
71.0	27	63.4	70.8	1.9	64.8	71.1	2.2	64.5	71.0	2.1	62.6	9.07	1.7
602	2.3	63.4	<u>20.6</u>	2.0	65.5	71.1	2.5	64.6	6.07	2.3	62.7	70.5	1.9
70.8	2.5	63.4	70.3	2.0	9.99	71.2	2.9	64.5	9.07	2.3	62.8	70.2	1.9
70.7	2.8	63.3	70.1	2.2	66.5	71.0	3.1	64.5	70.4	2.5	62.8	70.0	2.1
707	29	63.4	70.1	2.3	66.4	70.9	3.1	64.6	70.4	5.6	63.0	0.07	2.2
65.1	1.3	54.3	64.9	11	54.7	64.9	1.1	8.09	0.99	2.2	59.3	65.6	1.8
65.8	21	57.5	65.2	1.5	58.0	65.3	1.6	61.5	66.2	2.5	59.8	65.7	2.0
66.1	2.4	59.4	65.6	1.9	59.4	65.6	1.9	62.0	66.4	2.7	0.09	65.7	2.0
66.2	56	0.09	<u>7.29</u>	2.1	9.09	62.9	2.3	62.1	66.4	2.8	60.3	65.8	2.2
99	2.6	60.4	65.8	2.2	62.1	66.3	2.7	62.0	66.3	2.7	60.1	65.7	2.1
299	4	61.1	629	2.4	63.1	2.99	3.2	62.6	66.5	3.0	8.09	65.8	2.3
90 6	+	62.2	299	28	64.0	67.0	3.6	63.6	8.99	3.4	61.2	62.9	2.5
g	4	779	56.4	3.1	64.5	67.3	4.0	63.5	8.99	3.5	6.09	65.7	2.4
	\downarrow	61.9	0.99	28	64.7	67.3	7.	63.0	66.5	3.3	60.7	65.6	
8	4	61.8	0.99	2.9	64.4	67.2	4.1	62.8	66.4	3.3	60.7	65.6	2.5
99	4	61.8	66.5	² 6	65.0	67.8	3.9	62.9	6.99	3.0	62.8	8.99	2.9
64 B	-	53.8	64.3	1.1	53.1	64.2	1.0	59.8	65.3	2.1	59.8	65.3	2.1
65	4	57.6	64.8	1.6	56.0	64.6	1.4	61.3	65.8	2.6	6.09	65.7	2.5
ଥା	_	59.1	65.1	1.9	57.8	64.8	1.6	62.1	66.1	2.9	6.09	65.7	2.5
ဖျ	-	59.7	65.3	2.1	59.2	65.2	2.0	62.2	66.1	2.9	61.0	65.7	2.5
ø	-	61.0	66.2	2.3	61.4	66.4	2.5	62.6	8.99	5.9	61.1	66.3	2.4
ଥ	4	61.3	66.3	2.4	61.9	66.5	2.6	62.9	6.99	3.0	61.4	66.4	2.5
ଥ	-	62.0	9.99	2.7	63.7	67.2	3.3	63.6	67.2	3.3	61.8	66.5	5.6
79	\dashv	62.3	7.99	2.8	64.4	9.79	3.7	64.8	67.8	3.9	62.5	66.8	2.9

Table K.4-1 (cont'd)
Construction Noise Analysis Results for Phase 1 (Leq(1) values in dBA)

10	9		8											7								6	5Ь													Receptor	Noise
5 feet	3rd floor	1st floor	26th floor	23rd floor	20th floor	17th floor	15th floor	12th floor	10th floor	7th floor	5th floor	3rd floor	1st floor	26th floor	23rd floor	20th floor	17th floor	15th floor	12th floor	10th floor	7th floor	5 feet	36th floor	33rd floor	30th floor	27th floor	25th floor	22nd floor	20th floor	17th floor	15th floor	12th floor	10th floor	7th floor	5th floor	Height	Receptor
76.7	75.5	75.8	68.2	68.3	68.4	68.4	68.5	68.6	68.6	68.4	68.2	68.4	68.6	62.9	63.1	63,1	63.1	63.1	63.2	62.9	60.6	69.7	64.4	64.5	64.6	64.8	64.9	64.9	64.9	65 1	65.2	65.3	65.3	65.3	65.1	Existing	
85.6	82.0	82.0	77.5	78.0	78.7	79.5	0.08	80.8	81.3	82.2	82.7	84.1	84.0	76.3	76.8	77.2	77.5	77.4	26.9	74.9	68.2	72.8	65.3	65.6	65.4	0.66	65.9	65.8	65.9	65.0	64.8	64.7	64.6	63.0	60.2	Construction	Phase 1-2008 Analysis Year
86.2	83.1	83.1	78.2	78.6	79.2	80.0	80.4	81.2	81.6	82.5	82.9	84.3	84.2	76.5	0.77	77.4	77.7	27.6	77.1	75.2	0.69	75.0	68.3	68.5	68.4	8.86	68.8	68.7	68.8	68.4	68.4	68.4	68.4	67.8	66.9	Total	08 Analys
9.5	9.7	7.3	10.0	10.3	10.8	11.6	11.9	12.6	13.0	14.1	14.7	15.9	15.6	13.6	13.9	14.3	14.6	14.5	13.9	12.3	8.4	5.3	3.9	4.0	3.8	4.0	3.9	3.8	3.9	33	32	23	2	25	1.8	increase	is Year
65.4	67.1	64.0	73.8	74.3	74.8	75.5	76.0	76.5	26.6	77.1	77.2	76.0	75.4	71.9	72.2	72.4	72.5	72.6	72.7	72.7	67.2	62.6	63.1	63.2	63.2	64.4	64.7	64.9	65.2	63.8	63.2	62.8	62.2	0.00	57.9	Construction	Phase 1-2009 Analysis Year
77.9	76.9	77.0	75.3	75.6	76.0	76.6	77.0	77.4	77.5	77.9	27.9	77.0	76.6	72.5	72.8	73.0	73.1	73.2	73.3	73.2	68.2	71.7	67.3	67.4	67.5	68.1	68.2	68.3	68.5	67.9	67.8	67.7	67.6	67.0		Iotal	9 Analys
1,2	1.4	1.2	7.1	7.3	Z.G	8,2	8.5	8.8	8.9	9.5	9.7	8.6	8.0	9.6	9.7	9.9	10.0	10.1	10.1	10.3	7.6	2.0	2.9	2.9	29	3.3	3.3	3.4	3.6	2.8	2.6	2.4	2.3	1.7	1.4	Increase	is Year
64.5	65.9	62.8	76.8	77.3	77.8	78.2	78.5	78.7	79.0	78.9	77.9	76.9	72.0	75.4	75.7	75.9	75.4	75.2	75.1	72.8	66.5	66.9	66.9	67.1	66.7	66.8	66.6	66.4	66.8	65.7	65.0	63.4	63.0	61.0	58.7	Construction	Phase 1-2010 Analysis Year
77.8	76.8	76.9	77.6	78.0	78.5	78.8	79.1	79.3	79.5	79.4	78.5	77.7	74.3	75.7	76.0	76.2	75.7	75.5	75.4	73.3	67.7	72.5	69.2	69.3	69.1	69.3	69.2	69.1	69.3	68.8	68.5	67.9	67.8	67.2	66.6	Total	10 Analys
1.1	1.3	1.1	9.4	9.7	10.1	10.4	10.6	10.7	10.9	11.0	10.3	9.3	5.7	12.8	12.9	13.1	12.6	12.4	12.2	10.4	7.1	2.8	4.8	4.8	4.5	4.5	4.3	4.2	4.4	3.7	3.3	2.6	2.5	1.9	1.5	Increase	is Year
68.4	62.5	62.7	75.6	76.1	76.5	76.9	77.1	77.5	77.7	78.1	78.0	76.1	75.2	71.7	71.8	71.8	71.9	71.9	72.0	71.0	68.7	69.1	64.5	64.5	64.7	65.8	66.3	66.1	67.1	66.5	65.1	64.8	65.5	64.9	64.2	Construction	Phase 1-2011 Analysis Year
78.1	76.6	76.9	76.6	77.0	77.4	77.7	77.9	78.2	78.4	78.7	78.6	77.1	76.4	72.4	72.5	72.5	72.6	72.6	72.7	71,8	69.5	73.2	67.9	67.9	68.1	68.7	69.0	68.9	69.5	69.2	68.5	68.5	68.8	68.5	68.1	Total	1 Analys
1,4	1.1	1.1	8.4	8.7	9.0	9.3	9.4	9.6	9.8	10.3	10.4	8.7	7.8	9.5	9.4	9.4	9,5	9.5	9.5	8.9	8.9	3,5	3.5	3.4	3.5	3.9	4.1	4.0	4.6	4.1	3.3	3.2	3.5	3.2	3.0	ş	s Year
67.1	68.6	64.9	75.1	75.6	/6.1	76.6	/6.8	77.3	77.5	77.8	77.9	76.7	76.0	69.7	69.9	/0.1	/0.3	70.4	/0.5	69.7	67.3	65.9	63.1	62.7	62.7	63.7	64.0	64.0	64.9	64.4	63.5	63.2	63.8	63.2	62.6	ᅙ	Phase 1-2012 Analysis Year
/8.0	77.1	17.0	76.2	76.6	17.0	1/.5		78.1	78.2	78.5	78.5	77.6	77.0	70.7	/0.9	11.1	/1.2	71.3	/1.4	i à	68.3	12.2	67.3	67.2	67.3	67.8	68.0	67.9	68.3	68.2	67.9	67.8	68.1	67.9	67.5	Total	2 Analys
1.3	1.6	1.2	8.0	8.3	0.0	9.1	7.6	9.5	9.6	10.1	10.3	9.2	8.4	7.8	7.8	8.0	8.1	8.2	8.2	2.0	1.1	2.0	2.9	2.7	2.7	3.0	3.1	3.0	3.4	3.1	2.7	2.5	2.8	2.6	2.4	Increase	ils Year

Table K.4-1 (cont'd)

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Noise	Receptor		Phase 1-2008 Analysis Y	8 Analys	is Year	Phase 1-2009 Analysis Year	9 Analys	sis Year	Phase 1-2010 Analysis Year	10 Analys	ils Year	Phase 1-2011 Analysis Year	1 Analys	ils Year	Phase 1-2012 Analysis Year	Analys	lalysis Year Phase 1-2010 Analysis Year Phase 1-2011 Analysis Year Phase 1-2012 Analysis Year
Receptor	Height	Existing	Construction	Total	ease	Construction	Total	Increase	Construction	Total	Increase	Construction	Total	Increase	Construction	Total	Increase
	1st floor	72.3	80.5		8.9	63.4	73.6	1.3	62.8	73.5	1.2	0.79	74.1	1.8	65.6	73.8	1.5
4	3rd floor	71.8	80.5	81.2	9.4	65.1	73.4	1.6	65.4	73.4	1.6	67.2	73.8	2.0	65.3	73.4	1.6
	5th floor	71.9	80.5		9.3	68.6	74.2	2.3	68.4	74.1	2.2	9'29	73.9	2.0	65.5	73.5	1.6
	7th floor	71.8	80.4		9.3	69.2	74.3	2.5	9'02	74.8	3.0	68.1	74.0	2.2	65.5	73.5	1.7
	10th floor	71.9	80.2		9.0	69.2	74.3	2.4	70.8	74.9	3.0	67.8	74.0	2.1	65.6	73.5	1.6
	12th floor	71.8	80.0		8.9	69.3	74.3	2.5	71.6	75.1	3.3	68.9	74.1	2.3	65.7	73.4	1.6
4	15th floor	71.5	77.7		7.3	0.69	74.1	2.6	71.1	74.8	3.3	68.8	74.0	2.5	62.9	73.3	1.8
	17th floor	71.5	27.5		7.2	68.9	74.0	2.5	72.2	75.3	3.8	68.4	73.9	2.4	66.2	73.3	1.8
=	20th floor	71.4	Z0.3	74.4	3.0	69.3	74.1	2.7	72.0	75.2	3.8	68.7	73.9	2.5	9.99	73.3	1.9
	1st floor	6.69	51.6		8.0	47.6	70.7	0.8	49.7	70.7	0.8	49.3	70.7	0.8	49.0	7.07	9.0
	3rd floor	70.5	52.2		9.0	49.4	71.1	9.0	50.5	71.1	9.0	50.3	71.1	9.0	50.1	71.1	9.0
	5th floor	70.5	53.0		0.5	50.8	71.0	0.5	52.0	71.0	0.5	51.4	71.0	0.5	51.3	71.0	0.5
	10th floor	70.4	53.7		0.5	52.0	Z0.9	0.5	53.3	70.9	0.5	52.4	6.07	0.5	52.5	6.07	0.5
	12th floor	70.3	53.7	\neg	0.5	52.1	20.8	0.5	53.3	70.8	0.5	52.4	70.8	0.5	52.5	70.8	0.5
	15th floor	70.1	53.5	П	9.0	52.0	Z0.6	0.5	53.3	70.7	9.0	52.2	9.07	0.5	52.5	9.07	0.5
	17th floor	70.0	53.5		0.5	51.9	70.5	0.5	53.2	70.5	0.5	52.1	70.5	0.5	52.6	70.5	0.5
12	20th floor	9.07	58.6		0.8	56.1	71.3	0.7	57.5	71.4	0.8	62.6	71.7	1.1	61.7	71.8	1.0
	1st floor	74.9	80.9		7.2	62.9	76.5	1.6	65.7	76.5	1.6	66.7	9.92	1.7	0.99	76.5	1.6
	3rd floor	75.1	80.9	П	7.1	68.6	27.0	139	69.1	77.0	1.9	6.99	8.92	1.7	66.4	76.7	1.6
	5th floor	75.1	81.0	П	7.2	71.0	77.4	23	72.4	77.7	2.6	67.3	8.92	1.7	67.4	76.8	1.7
	7th floor	75.0	80.8	П	7.1	70.8	77.2	2.2	72.0	77.5	2.5	67.5	9.92	1.6	67.8	76.7	1.7
1	10th floor	74.7	78.9	╗	5.9	71.4	77.1	2.4	73.0	77.6	2.9	68.0	76.4	1.7	67.3	76.3	1.6
	12th floor	74.6	78.7	80.5	5.9	71.4	77.1	2.5	74.5	78.2	3.6	68.3	76.5	1.9	67.5	76.4	1.8
	15th floor	74.3	70.7		2.4	72.2	77.1	2.8	74.6	78.1	3.8	69.0	76.4	2.1	68.5	76.3	2.0
	17th floor	74.1	71.4		2.6	72.4	27.0	2.9	74.4	77.8	3.7	0.69	76.1	2.0	68.3	0.92	1.9
12a	20th floor	74.0	Z1.6	Т	2.8	72.2	0.27	ä	74.3	77.8	3.8	0.69	76.1	2.1	68.1	0.97	2.0
	1st floor	69.3	51.2		1.1	46.7	70.4	11	49.2	70.4	1.1	50.6	70.4	1.1	48.9	70.4	1.1
1	3rd floor	70.1	51.8		11	49.1	71.2	1.1	50.0	71.2	1.1	53.0	71.3	1.2	50.9	71.2	1.1
	5th floor	70.0	52.5	71.1	11	50.0	71.1	1.1	51.2	71.1	1.1	52.9	71.1	1.1	51.1	71.1	1.1
	7th floor	0.07	54.5		17	50.9	71.1	1.1	52.4	71.1	1.1	53.1	71.1	1.1	51.6	71.1	1.1
	10th floor	70.1	53.6		0.1	52.2	71.1	1.0	53.7	71.1	1.0	53.7	71.1	1.0	52.5	71.1	1.0
	12th floor	70.2	53.9		0.8	52.5	71.0	0.8	54.0	71.0	0.8	53.7	71.0	0.8	52.7	71.0	8.0
t	15th floor	70.1	54.0	20.9	0.8	52.6	6.07	8.0	54.2	70.9	0.8	53.6	6.07	8.0	52.6	70.9	8.0
	17th floor	70.0	54.2		0.9	52.7	Z0.8	80	54.6	6.02	0.9	53.7	70.9	6.0	52.6	70.8	0.8
13	20th floor	70.0	57.7	П	1.0	55.4	Z0.9	0.9	57.0	71.0	1.0	62.0	71.4	1.4	2.09	71.2	1.2

Table K.4-1 (cont'd)
Construction Noise Analysis Results for Phase 1 (Leq(1) values in dBA)

	Noise	Receptor	Evieting	Phase 1-2008 Analysis Year	08 Analys	ils Year	Construe	Anal C	onstruc	Construction Noise Analysis Ralysis Year Phase 1-2010 Analysis Year Phase 1-2010 Total Increase	e Anal		Lesults for Phase 1 (1 Phase 1-2011 Analysis Year Construction Total Increas	Phas 1 Analy Total	sls Y	ear L	ase Te	(Leq(1) valuer Phase 1-2012
1st floor 63.1 54.3 64.1 1.0 54.3 64.1 1.0 58.7 3rd floor 63.0 58.5 64.7 1.7 57.3 64.4 1.4 57.7 5th floor 63.0 59.9 65.0 2.0 58.3 64.6 1.6 57.2 7th floor 63.0 59.3 64.8 1.8 56.8 94.2 1.2 57.9 10th floor 63.1 62.4 66.9 2.8 60.2 65.0 1.9 60.7 12th floor 63.3 64.3 66.9 3.6 61.6 65.7 2.4 63.1 17th floor 63.3 64.2 66.9 3.6 61.7 65.8 2.5 63.2 20th floor 73.5 72.2 77.3 3.8 67.2 76.2 2.7 63.8 1st floor 73.3 73.2 77.4 4.1 68.7 76.2 2.9 68.1 7th floor 73.1	ceptor	Helght	Existing	Construction	Total	Increase	Construction	Total	Increase	Construction	Total	Increase	Cons	truction	Total	Total	Total Increase Construction	Total
3rd floor 63.0 58.5 64.7 1.7 57.3 64.4 1.4 57.7 5th floor 63.0 59.9 65.0 2.0 58.3 64.6 1.6 57.2 7th floor 63.0 59.3 64.8 1.8 56.8 64.2 1.2 57.9 10th floor 63.1 62.4 65.9 2.8 60.2 65.0 1.9 60.7 11th floor 63.3 63.8 66.9 3.6 61.6 65.7 2.4 63.1 15th floor 63.3 64.2 66.9 3.6 61.6 65.7 2.4 63.1 1st floor 73.5 72.2 77.3 3.8 67.2 76.2 2.7 63.8 5th floor 73.3 73.2 77.4 4.1 68.7 76.2 2.7 63.8 7th floor 73.3 74.8 77.9 4.5 71.4 68.1 69.8 10th floor 73.2 74.8		1st floor	63.1	54.3	64.1	1.0	54.3	64.1	1.0	58.7	64.8	1.7		61.3	_	65.6	65.6 2.5	65.6 2.5 60.0
5th floor 63.0 59.9 65.0 2.0 58.3 64.6 1.6 57.2 7th floor 63.0 59.3 64.8 1.8 56.8 64.2 1.2 57.9 10th floor 63.1 62.4 65.9 2.8 60.2 65.0 1.9 60.7 12th floor 63.3 63.8 66.6 3.3 60.1 65.1 1.8 63.1 15th floor 63.3 64.2 66.9 3.6 61.7 65.8 2.5 63.1 17th floor 63.3 64.3 66.9 3.6 61.7 65.8 2.5 63.1 17th floor 63.3 64.2 77.3 3.4 61.7 65.8 2.5 63.1 1st floor 73.5 72.2 77.3 3.4 67.2 76.2 2.7 67.0 1st floor 73.4 74.4 77.9 4.5 68.7 76.2 2.2 68.1 7th floor 73.1		3rd floor	63.0	58.5	64.7	1.7	57.3	64.4	1.4	57.7	64.5	1.5		60.3	L	L	65.2 2.2	65.2 2.2 59.6
7th Roor 63.0 59.3 64.8 1.8 56.8 64.2 1.2 57.9 10th Roor 63.1 62.4 65.9 2.8 60.2 65.0 1.9 60.7 12th Roor 63.1 62.4 65.9 2.8 60.2 65.0 1.8 63.1 15th Roor 63.3 64.3 66.9 3.6 61.7 65.8 2.4 63.1 17th Roor 63.3 64.2 66.9 3.6 61.7 65.8 2.5 63.2 20th Roor 63.2 63.0 66.3 3.1 62.0 65.9 2.7 63.8 1st Roor 73.5 72.2 77.3 3.8 67.2 76.2 2.2 67.0 3d Roor 73.4 74.4 77.9 4.5 68.7 76.2 2.2 68.1 7th Roor 73.3 74.3 77.8 4.5 71.4 68.8 71.2 10th Roor 73.1 74.8 <t< td=""><td></td><td>5th floor</td><td>63.0</td><td>59.9</td><td>65.0</td><td>2.0</td><td>58.3</td><td>64.6</td><td>1.6</td><td>57.2</td><td>64.3</td><td>1.3</td><td></td><td>60.3</td><td></td><td>65.1</td><td>65.1 2.1</td><td>65.1 2.1 59.5</td></t<>		5th floor	63.0	59.9	65.0	2.0	58.3	64.6	1.6	57.2	64.3	1.3		60.3		65.1	65.1 2.1	65.1 2.1 59.5
10th floor 63.1 62.4 65.9 2.8 60.2 65.0 1.9 60.7 12th floor 63.3 63.8 66.6 3.3 60.1 65.1 1.8 63.1 15th floor 63.3 64.3 66.9 3.6 61.7 65.8 2.7 63.2 20th floor 63.3 64.2 66.9 3.1 62.0 65.9 2.7 63.2 20th floor 63.3 72.2 77.3 3.8 67.2 76.2 2.7 63.8 3ch floor 73.5 72.2 77.4 4.1 68.7 76.2 2.7 68.1 3rd floor 73.4 74.4 77.9 4.5 69.8 76.2 2.9 68.1 7th floor 73.3 74.3 77.8 4.5 71.4 76.7 3.4 77.2 10th floor 73.2 74.8 78.0 4.8 70.9 76.5 3.4 77.2 15th floor 73.1		7th floor	63.0	59.3	64.8	1.8	56.8	64.2	1.2	57.9	64.4	1.4		59.6	59.6 64.9		64.9 1.9	64.9 1.9 58.1
12th floor 63.3 63.8 66.6 3.3 60.1 65.1 1.8 63.1 15th floor 63.3 64.3 66.9 3.6 61.6 65.7 2.4 63.1 17th floor 63.3 64.2 66.9 3.6 61.7 65.8 2.5 63.2 20th floor 63.2 63.0 66.3 3.1 62.0 65.9 2.7 63.8 1st floor 73.5 72.2 77.3 3.8 67.2 76.2 2.7 67.0 3rd floor 73.3 73.2 77.4 4.1 68.7 76.2 2.2 68.1 3rd floor 73.4 74.4 77.9 4.5 69.8 76.2 2.2 68.1 3th floor 73.4 74.4 77.9 4.5 69.8 76.2 2.2 68.1 10th floor 73.3 74.8 78.0 4.8 70.9 76.5 3.3 71.6 12th floor 73.1		10th floor	63.1	62.4	6.59	2.8	60.2	65.0	1.9	60.7	65.2	2.1		60.6	60.6 65.1		65.1 2.0	65.1 2.0 58.5
15th floor 63.3 64.3 66.9 3.6 61.6 65.7 2.4 63.1 17th floor 63.3 64.2 66.9 3.6 61.7 65.8 2.5 63.2 20th floor 63.2 63.0 66.3 3.1 62.0 65.9 2.7 63.8 1st floor 73.5 72.2 77.3 3.8 67.2 76.2 2.7 66.0 3rd floor 73.3 73.2 77.4 4.1 68.7 76.2 2.2 68.1 3rd floor 73.4 74.4 77.9 4.5 69.8 76.2 2.2 68.1 3rd floor 73.4 74.4 77.9 4.5 69.8 76.2 2.9 68.1 3th floor 73.3 74.3 77.8 4.5 71.4 76.1 3.4 71.2 10th floor 73.1 74.8 78.0 4.8 70.9 76.5 3.3 73.4 15th floor 73.1		12th floor	63.3	63.8	9.99	3.3	60.1	65.1	1.8	63.1	66.3	3.0		61.0	ļ.	65,4	65.4 2.1	65.4 2.1 59.8
17th floor 63.3 64.2 66.9 3.6 61.7 65.8 2.5 63.2 20th floor 63.2 63.0 66.3 3.1 62.0 65.9 2.7 63.8 1st floor 73.5 72.2 77.3 3.8 67.2 76.2 2.7 67.0 3rd floor 73.3 73.2 77.4 4.1 68.7 76.2 2.9 68.1 5th floor 73.4 74.4 77.9 4.5 69.8 76.2 3.4 71.2 10th floor 73.3 74.8 78.0 4.8 70.9 76.5 3.4 71.2 10th floor 73.1 74.8 78.0 4.8 70.9 76.5 3.3 71.6 15th floor 73.1 74.8 78.0 4.8 70.9 76.5 3.4 73.4 15th floor 73.1 74.6 77.9 4.7 70.8 76.5 3.3 73.2 19th floor 73.1		15th floor	63.3	64.3	66.9	3.6	61.6	65.7	2.4	63.1	66.3	3.0	_	61.4	-	65.6	65.6 2.3	65.6 2.3 60.4
20th floor 63.2 63.0 66.3 3.1 62.0 65.9 2.7 63.8 1st floor 73.5 72.2 77.3 3.8 67.2 76.2 2.7 67.0 3rd floor 73.3 73.2 77.4 4.1 68.7 76.2 2.9 68.1 5th floor 73.4 72.4 77.9 4.5 68.8 76.5 3.1 69.8 7th floor 73.3 72.4 77.9 4.5 68.8 76.5 3.1 69.8 10th floor 73.3 72.4 78.0 4.8 70.9 76.5 3.3 71.6 12th floor 73.1 74.8 78.0 4.8 70.8 76.5 3.4 73.4 15th floor 73.1 74.8 77.9 4.7 70.8 76.5 3.3 73.3 17th floor 73.1 74.5 77.8 4.7 70.8 76.5 3.3 73.2 19th floor 73.1		17th floor	63.3	64.2	6.99	3.6	61.7	65.8	2.5	63.2	66.4	3.1	L	61.5		65.7	65.7 2.4	65.7 2.4 60.4
1st floor 73.5 72.2 77.3 3.8 67.2 76.2 2.7 67.0 3rd floor 73.3 73.2 77.4 4.1 68.7 76.2 2.9 68.1 5th floor 73.4 74.4 77.9 4.5 69.8 76.5 3.1 69.8 7th floor 73.3 74.3 77.2 4.5 71.4 76.7 3.4 71.2 10th floor 73.2 74.8 78.0 4.8 70.9 76.5 3.4 73.4 15th floor 73.1 74.8 78.0 4.9 70.8 76.5 3.4 73.4 15th floor 73.1 74.6 77.9 4.7 70.8 76.5 3.3 73.3 17th floor 73.1 74.5 77.8 4.7 70.8 76.5 3.3 73.2 19th floor 73.1 74.5 77.8 4.7 70.8 76.5 3.3 73.2 21st floor 72.9	14	20th floor	63.2	63.0	6.3	3.1	62.0	65.9	2.7	63.8	66.7	3.5	L	62.0		65.9	65.9 2.7	65.9 2.7 60.6
3rd floor 73.3 73.2 77.4 4.1 68.7 76.2 2.9 68.1 5th floor 73.4 74.4 77.9 4.5 69.8 76.5 3.1 69.8 7th floor 73.3 74.3 17.8 4.5 71.4 76.7 3.4 71.2 10th floor 73.2 74.8 78.0 4.8 70.9 76.5 3.3 71.6 12th floor 73.1 74.8 78.0 4.8 70.9 76.5 3.4 73.4 15th floor 73.1 74.6 77.9 4.7 70.8 76.5 3.3 73.3 17th floor 73.1 74.5 77.8 4.7 70.8 76.5 3.3 73.2 19th floor 73.1 74.5 77.8 4.7 70.8 76.5 3.3 73.2 19th floor 73.2 74.5 77.9 4.7 70.8 76.5 3.3 73.2 19th floor 72.9		1st floor	73.5	72.2	77.3	3.8	67.2	76.2	2.7	67.0	76.2	2.7	L	69.3	69.3 76.5	76.5	76.5 3.0	76.5 3.0 68.8
5th floor 73.4 74.4 77.9 4.5 69.8 76.5 3.1 69.8 7th floor 73.3 74.3 77.8 4.5 71.4 76.7 3.4 71.2 10th floor 73.2 74.8 78.0 4.8 70.9 76.5 3.3 71.6 12th floor 73.1 74.8 78.0 4.9 70.8 76.5 3.3 73.4 15th floor 73.1 74.6 77.9 4.7 70.8 76.5 3.3 73.2 19th floor 73.1 74.5 77.9 4.7 70.8 76.5 3.3 73.2 19th floor 73.2 74.5 77.9 4.7 70.8 76.5 3.3 73.2 19th floor 73.2 74.5 77.9 70.8 76.5 3.3 73.2 21st floor 72.9 74.2 77.5 4.7 70.8 76.5 3.3 73.1		3rd floor	73.3	73.2	77.4	4.1	68.7	76.2	2.9	68.1	76.1	2.8		72.3	72.3 77.1	72.3 77.1 3.8	77.1	77.1 3.8
7th floor 73.3 74.3 77.8 4.5 71.4 76.7 3.4 71.2 10th floor 73.2 74.8 78.0 4.8 70.9 76.5 3.3 71.6 12th floor 73.1 74.8 78.0 4.9 70.8 76.5 3.4 73.4 15th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.3 17th floor 73.1 74.5 77.8 4.7 70.8 76.4 3.3 73.2 19th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.2 19th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.2 21st floor 72.9 74.2 72.6 4.7 70.8 76.5 3.3 73.1 21st floor 72.9 74.2 72.6 4.7 70.2 76.3 3.4 73.1		5th floor	73.4	74.4	6.77	4.5	8.69	76.5	3.1	69.8	76.5	3.1		75.8	75.8 78.6	78.6	78.6 5.2	78.6 5.2 69.5
10th floor 73.2 74.8 78.0 4.8 70.9 76.5 3.3 71.6 12th floor 73.1 74.8 78.0 4.9 70.8 76.5 3.4 73.4 15th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.3 17th floor 73.1 74.5 77.8 4.7 70.8 76.4 3.3 73.2 19th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.2 21st floor 72.9 74.2 72.6 4.7 70.1 76.3 3.4 73.1		7th floor	73.3	74.3	77.8	4.5	71.4	76.7	3.4	71.2	76.7	3.4		75.1		78.2	78.2 4.9	78.2 4.9 69.3
12th floor 73.1 74.8 78.0 4.9 70.8 76.5 3.4 73.4 15th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.3 17th floor 73.1 74.5 77.8 4.7 70.8 76.4 3.3 73.2 19th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.2 21st floor 72.9 74.2 77.6 4.7 70.7 76.3 3.4 73.1		10th floor	73.2	74.8	78.0	4.8	70.9	76.5	3,3	71.6	76.7	3.5	1	75.6		78.4	78.4 5.2	78.4 5.2 69.6
15th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.3 17th floor 73.1 74.5 77.8 4.7 70.8 76.4 3.3 73.2 19th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.2 21st floor 72.9 74.2 72.6 4.7 70.7 76.3 3.4 73.1		12th floor	73.1	74.8	78.0	4.9	70.8	76.5	3.4	73.4	77.3	4.2			75.2	75.2 /8.2	75.2 /8.2 5.1	75.2 /8.2 5.1 69.5
17th floor 73.1 74.5 77.8 4.7 70.8 76.4 3.3 73.2 19th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.2 21st floor 72.9 74.2 77.6 4.7 70.7 76.3 3.4 73.1		15th floor	73.2	74.6	77.9	4.7	70.8	76.5	3.3	73.3	77.3	4.1			74.7	74.7 //.9	74.7 //.9 4./	74.7 //.9 4./ 69.5
19th floor 73.2 74.6 77.9 4.7 70.8 76.5 3.3 73.2 21st floor 72.9 74.2 77.6 4.7 70.7 76.3 3.4 73.1		17th floor	73.1	74.5	77.8	4.7	70.8	76.4	3.3	73.2	77.2	4		/4.3		1/1./	//./ 4.6	//./ 4.6 69.5
21st floor 72.9 74.2 77.6 4.7 70.7 76.3 3.4 73.1		19th floor	73.2	74.6	77.9	4.7	70.8	76.5	3.3	73.2	77.3	4.1	L	74.5		77.8	77.8 4.6	77.8 4.6 69.5
	15	21st floor	72.9	74.2	377.6	4.7	<u>70.7</u>	76.3	3.4	73.1	77.1	4.2	1	73.5	73.5 77.3	L	77.3	77.3 4.4

Table K.4-2

orioly							ŭ	onstruc	tion Nois	e Ana	lysis R	Construction Noise Analysis Results for Phase 2	Phas		Leq(1) vali	values in	dBA)
Receptor	Receptor Height	Existing	Phase 2-2024 Analysis Y	24 Analys		Phase 2-202	5 An	2-2025 Analysis Year	Phase 2-2026 Analysis Year	26 Analys	ils Year	Phase 2-2027	7 Analysis	is Year	Phase 2-202	8 Analy	
	1st floor	202	consu ucuon	E C		Construction	_	Increase	Construction	Total	Increase	Construction	Total	Increase	Construction	ction Total Increas	Increase
	3rd floor	70.6	58.5	00.1	9,4	62.5	67.0	-3.7	59.0	66.1	4.6	71.0	72.0	1.3	70.3	71.5	8.0
	5th floor	70.5	59.6	66.3	0,7	75.0	0.27	4.	64.8	68.0	-2.6	78.5	78.7	8.1	71.2	72.2	1.6
	7th floor	70.2	60.6	66.6	7 6	76.3	7.07	, o	71.1	72.1	1.6	79.5	79.7	9.5	71.2	72.2	1.7
	10th floor	9.69	619	67.0	9,5	76.3	76.6	4.0	7.4.3	75.7	9.4	80.0	80.1	6.6	71.1	72.1	1.9
-	12th floor	69.3	62.0	67.0	5.23	75.5	0.07	0,1	40.4	/9.	7.1	79.1	79.3	9.7	71.0	72.0	2.4
	1st floor	70.7	54.9	65.7	2.7	67.0	0.0	5	76.2	76.5	7.2	78.1	78.3	9.0	70.5	71.7	2.4
2	3rd floor	70.6	56.7	66.2	2 4	07.0	0.00	P. C	80.8	7.99	0	75.2	75.6	4.9	70.5	71.7	1.0
3	5 feet	70.4	59.1	68.8	4 6	72.0	20.0	5.0	69.2	70.8	0.2	78.3	78.5	7.9	71.2	72.3	1.7
	1st floor	717	56.3	20.02	1.5.0	64.0	6.5.5	3.5	68.3	70.3	-Q.	74.2	74.8	4.4	69.2	70.9	0.5
	3rd floor	716	2,00	2007	, ,	04.0	2 6	7.0	60.7	70.3	-1.4	71.3	73.6	1.9	67.2	7.17	0.0
	5th floor	714	57.3	80.6	, ·	13.4	64.9	3.3	6.99	71.4	-0.2	71.7	73.7	2.1	67.0	71.4	-0.2
*	7th floor	711	57.1	03.0	7.0	677	8 1	6.7	74.2	75.4	4.0	71.8	73.7	2.3	6.99	71.3	6.1
•	10th floor	70.5	57.5	4.60	<u>- </u>	6.//	(%)	7.0	75.4	76.3	5.2	71.8	73.7	2.6	66.7	71.1	0.0
	12th floor	20.2	57.0	4.80	-	9.//	78.2	7:7	76.8	77.5	7.0	71.9	73.7	3.2	66.4	71.0	0.5
-	15th floor	909	50.4	4.60	, i	77.6	78.2	8.1	76.5	77.2	7.1	71.9	73.7	3.6	66.1	70.8	0.7
1	17th floor	03.0	700	08.1	-0.5	77.3	77.9	8.3	76.2	6.92	7.3	72.2	73.8	4.2	65.7	70.5	60
-1	20th floor	69.0	20.2	03.0	-0.3	77.1	77.7	8.4	76.0	76.7	7.4	72.2	73.8	4.5	65.5	70.4	-
-1-	22nd floor	88.6	50.9	08.0	0.1	76.7	77.3	8.4	75.8	76.5	7.6	72.5	74.0	5.1	65.2	70.2	13
-	25th floor	00.00	20.8	00.9	5.0	76.4	77.0	8.4	75.7	76.5	7.9	72.5	73.9	5.3	64.9	70.07	14
.	27th floor	00.0	20.7	7.00	4.0	75.9	9.9/	8.3	75.4	76.2	6.7	72.6	74.0	5.7	64.5	8 9 8	1
4	27th floor	67.9	58.7	68.5	9.0	75.6	76.3	8.4	75.2	76.0	8.1	72.7	74.0	6.1	64.3	9 69	2/2
	200111000	0.70	28.5	68.5	0.7	75.1	75.9	8.1	74.8	75.6	7.8	73.0	74.2	8.4	65.0	102	23
	5th floor	63.8	55.3	63.9	0.1	58.8	64.6	0.8	54.0	63.7	5.1	69.2	70.2	6.4	65.9	67.8	6.3
	10th floor	63.7	39.0	04.0	0.3	61.8	9.29	1.9	54.8	63.8	0.1	70.2	71.0	7.3	62.9	67.8	1.4
	12th floor	63.6	37.2	27.5	0.5	67.4	8.8	5.1	56.9	64.1	0.4	71.8	72.4	8.7	66.1	6 2 9	4.2
1	15th floor	63.6	57.3	2.50	9.0	9.69	70.5	6.9	59.5	64.7	1.1	73.1	73.5	9.6	9.99	68.2	4.6
1_	17th floor	03.0	27.7	2,40	9.0	72.3	72.8	9.2	63.6	66.4	2.8	73.1	73.5	6.6	66.4	68.1	4.5
1	20th floor	0.50	100.4	200	8.0	/3.2	73.6	10.1	65.6	67.5	4.0	72.7	73.1	9.6	66.2	67.9	4.4
J	22nd floor	63.3	57.5	2.5		73.5	73.9	10.5	68.9	6.69	6.5	72.3	72.8	9.4	65.3	67.3	3.9
	25th floor	63.2	57.5	0.4.0); 	73.5	/3.9	10.8	9.69	70.4	7.1	72.5	72.9	9.6	65.3	67.3	0.4
	27th floor	63.1	57.5	8.5.9	0.7	73.5	3.8	10.6	71.3	71.9	8.7	72.8	73.2	10.0	65.0	0.79	3.8
2	30th floor	63.0	57.0	0.00	0.7	13.1	(3.5	10.4	70.7	71.3	8.2	72.7	73.1	10.0	65.7	67.4	4.3
	5th floor	63.2	52.6	02.0	- 00	8.77	/3.2	9.3	71.0	71.6	7.7	72.4	72.8	8.9	65.8	67.5	3.6
	7th floor	63.2	0.12	62.8	7.7	1	03.7	6.0	54.1	62.7	-0.5	69.1	6.69	6.7	66.7	68.0	4.8
	10th floor	63.2	57.1	63.3	9,5		04.0	5,1	54.9	62.8	4.0	6.69	9.07	7.4	6.99	68.1	4.9
	12th floor	63.2	57.4	2.53			2.70	4.6	58.3	63.6	0.4	72.0	72.4	9.5	66.7	68.0	8.4
	15th floor	63.9	57.4	22.5	-	1	09.0	4.0	61.3	64.7	1.5	73.1	73.4	10.2	66.7	68.0	4.8
<u></u>	17th floor	63.9	57.5	25.5 7.05.0	1 5	72.0	72.4	8.5	6.99	68.2	4.3	72.5	72.9	0.6	8.99	68.1	4.2
L	19th floor	63.9	57.6	2.23	4.0	1	17.7	8.8	68.1	69.1	5.2	72.2	72.6	8.7	8.99	68.1	4.2
5a	21st floor	63.0	57.7	93.0	4	1	73.1	9.5	68.6	69.5	5.6	72.6	73.0	9.1	9.99	67.9	4.0
	100111111	00.0	1.70	03.0	-U.4	72.7	73.1	9.2	69.1	6.69	9.0	73.0	73.3	9.4	9.99	68.0	4.1

Table K.4-2 (cont'd)
Construction Noise Analysis Results for Phase 2 (Leq(1) values in dBA)

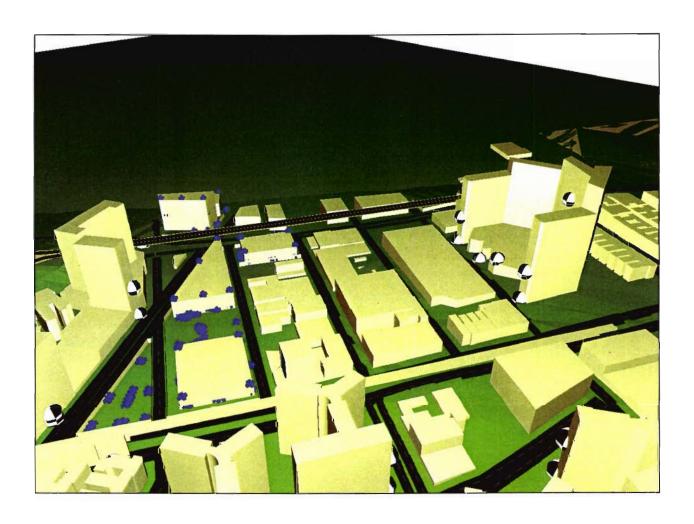
10	9		œ											7								6	56													Receptor	Noise	
5 feet	3rd floor	1st floor	26th floor	23rd floor	20th floor	17th floor	15th floor	12th floor	10th floor	7th floor	5th floor	3rd floor	1st floor	26th floor	23rd floor	20th floor	17th floor	15th floor	12th floor	10th floor	7th floor	5 feet	36th floor	33rd floor	30th floor	27th floor	25th floor	22nd floor	20th floor	17th floor	15th floor	12th floor	10th floor	7th floor	5th floor	Height	Receptor	
76.7	75.5	75.8	68.2	68.3	68.4	68.4	68.5	68.6	68.6	68.4	68.2	68.4	68.6	62.9	63.1	63.1	63.1	63.1	63.2	62.9	60.6	69.7	64.4	64.5	64.6	64.6	64.9	64.9	64.9	65.1	65.2	65.3	6 5.3	65.3	65.1	Existing		
57.7	59.6	57.7	59.6	61.0	57.8	57.4	57.9	58.5	58.9	59.7	60.3	61.5	62.4	63.5	63.9	55.8	53.7	53.8	53.6	53.3	52.1	50.1	45.1	54.3	55.8	55.9	56.5	57.5	57.5	57.6	58.7	58.2	57.1	55.8	56.2	Construction	Phase 2-2	
78.0	77.0	78.0	77.0	77.4	74.1	74.2	74.2	74.2	74.3	74.5	74.7	74.7	74.6	75.1	75.6	65.5	65.4	65.4	65.3	65.3	65.3	65.1	60.5	70.7	64.3	64.4	64.6	64.9	65.0	65.0	65.3	65.3	65.2	65.1		n Total	Phase 2-2024 Analysis Year	
1.3	1.5	1.3	1.5	1.6	5.9	5.9	5.8	5.8	5.8	5.9	6.1	6.3	6.4	6.7	7.0	2.6	2.3	2.3	2.2	2.2	2.1	2.2	-0.1	1.0	.b.1	6.1	0.0	0.1	0.1	0.1	0.4	0.2	0.0	-0.2	0.0	Increase	sis Year	
58.0	59.8	61.1	56.5	56.8	57.5	58.2	58,7	59.6	60.3	61.4	62.4	63.5	63.9	54.4	54.0	54.0	53.9	53.5	52.4	50.6	46.5	51.6	73.0	73.3	74.6	75.1	75.2	75.3	76.1	76.2	75.6	75.0	74.4	69.4	63.2	Construction	Phase 2-2025 Analysis Year	
78.0	77.0	77.4	74.0	74.2	74.2	74.2	74.3	74.5	74.7	74.7	74.6	75.1	75.6	65.3	65.4	65.4	65.3	65.4	65.3	65.1	60.5	70.7	73.5	73.8	75.0	75.4	75.5	75.6	76.4	76.5	75.9	75.4	74.8	70.7	67.1	n Total	025 Analy	
1.3	1.5	1.6	5,8	5.9			5.8	5.9	6.1	6.3	6.4	6.7	7.0	2.4	2.3	2.3	2.2	2.3	2.1	2.2	-0.1	1.0	9.1	9.3	10.4	10.6	10.6	10.7	11.5	11.4	10.7	1 <u>6</u> .1	9.5	5,4	2.0	Increase	/sis Year	n nemo
5/.8	59.7	61.0	56.3	56.8	57.4	58.2	58.7	59.6	60.3	61.4	62.4	63.5	63.8	54.3	53.9	53.9	53.8	53.5	52.3	50.5	46.4	50.9	73.4	/2.6	73.4	73.4	73.2	72.6	73.1	72.9	69.2	66.4	63.7	58.3	57.0	Construction	Phase 2-2026 Analysis Year	Constituction traise variations as
/8.0	1/.0	11.4	14.0	/4.2	/4.2	/4.2	74.3	/4.5	14.	74./	/4.6	75.1	75.6	65.3	65.4	65.4	65.3	65.4	65.3	65.1	60.5	70.7	73.8	13.1	/3.9	/3.9	/3./	73.2	73.6	73.5	70.5	68.6	67.2	65.6	65.4	Total)26 Analys	20, 73, 100
1.3	1.0	iō	ν.α	9.5	0.2	5.8	5.8	9.8	0	6.3	σ. 4	6.7).o	2.4	2.3	2.3	2.2	2.3	2.1	2.2	6.1	1.0	9.4	8.0	9.3	1.8	8,8	8.3	8.	8.4	5.3	3.3	1.9	0.3	0.3	Increase	sis Year	1,010 1
29.0	50.6	00.4	28.2	57.6	57.9	28.5	59.0	59.9	00.0	67.6	62.5	63.6	64.0	56.7	55.0	54.8	54.8	54.5	53.6	52.0	50.2	60.6	/2.6	72.0	73.0	73.8	73.8	74.0	/4./	74.6	/4.6	74.3	74.1	72.8	72.0	Construction	Phase 2-2027 Analysis Year	Course Tor
70.0	70.0	77.4	1,4	74.2	14.6	74.2	74.3	74.0	74.1	74.7	74.0	(5.1	/5.0	50.0	000	80.4	65.4	65.4	65.4	5	ου.α	3 2.0	13.1	70.0	73.0	73.6	74.2	74.4	10.	/5.0	1000	14.7	74.6	73.4	/2.8	Total	Analy	
1.0	3 0	n c	1 0.0	n 0	0.0	5.0	5.Q	5.0	n :	6.5	0.4	6.1	ìè	2,1	2.4	2.3	2.3	2.3	2.2	2.2	0.2	2.3	ο.,	0.0	0,0	9.4	9.0	0.0	2.5	9.9	9.0	9.4	9.3	8.7	1:	se		
00.0		60.0	61.5	5000	67.0	20.2	50.0	09.0	50.6	60.3	64.5	63.0	03.9	57.3	8.	57.4	54.0	20.7	97.6	50.8	40.0	29.0	50.3	66.0	66.5	67.1	67.3	66.5	66.5	68.1	88.1	68.2	68.9	69, 1	68.6	Construction	Phase 2-2028 Analysis rear	
70.0	78.0	770	77.	74.4	74.2	7,7	74.0	7/3	745	74.7	7,7	77.0	75.0	03.0	300	200.4	00,3	200.4	20.0	200	200.0	20.0	7.00	200	68.0	60.0	80.0	00.0	09.2	09.0	200	60.7	20.3	10.0	3 2	. I	& Analy	
-	<u>م</u> ا	л . Л	1 0		500		7 C	7 (.0	n (B 1	2 4	a 0.	200	7,	2.4	2 1.0	3 / /	200	22	2.2			3.0	3 0	3 4	3 1	٥	3 0.0	3 4.0	3 0	1.0	, t	0.0	5.2	500	Increase	SIS Year	,

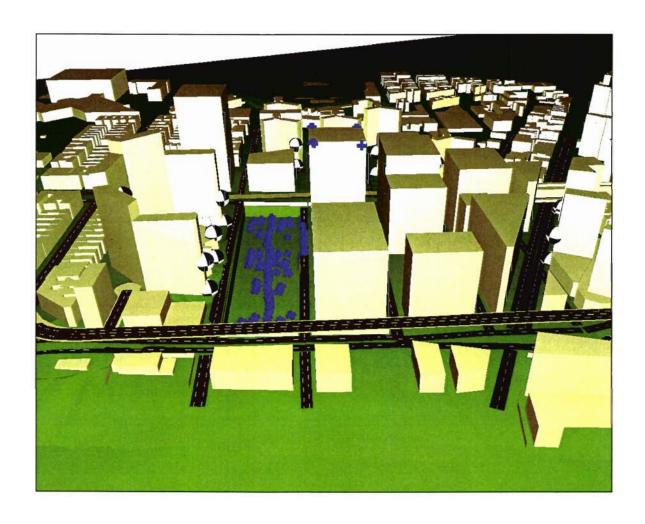
Construction Noise Analysis Results for Phase 2 (Leg(1) values in dBA)

Noise	Receptor		Phase 2-2024 Analysis Y	24 Analys	is Year	Phase 2.2025	` ă	Analysis Year	Dhase 2-2028 Analysis Vers	28 Analys	is Veer	Phase 2,2027 Applicate Version	r nas	(L) 2 a	Construction holse Analysis Results for Phase 2 (Leg(1) Values in dBA	les in	abA)
Receptor	Helght	Existing	Construction	Total	Increase	Construction	, [_	Increase	Construction	Total	Increase	Construction	Total	Increase	Construction	Total	ncrease
	1st floor	72.3	50.3	73.6	1.3	51.0		1.3	50.8	73.6	1.3	52.2		1.3	52.0	73.6	1.3
	3rd floor	71.8	51.9	73.1	1.3	52.5	73.1	1.3	52.3	73.1	1.3	53.3	73.2	1.4	53.1	73.1	1.3
	5th floor	71.9	52.9	73.3	4.1	53.4	73.3	1.4	53.3	73.3	1.4	54.0	73.3	1.4	53.9	73.3	1.4
	7th floor	71.8	53.1	73.2	4.1	53.6	73.2	1.4	53.5	73.2	1.4	54.4	73.2	1.4	54.2	73.2	1.4
	10th floor	71.9	52.8	73.1	1.2	53.3	73.1	1.2	53.2	73.1	1.2	54.1	73.1	1.2	53.8	73.1	1.2
	12th floor	71.8	52.8	73.0	1.2	53.3	73.0	1.2	53.2	73.0	1.2	54.1	73.0	1.2	53.8	73.0	1.2
	15th floor	71.5	52.4	72.8	1.3	53.0	72.8	1.3	52.9	72.8	1.3	53.9	72.8	1.3	53.6	72.8	1.3
,	17th floor	71.5	52.3	72.7	1.2	52.9	72.7	1.2	52.7	72.7	1.2	53.8	72.8	1.3	55.8	72.8	1.3
-	20th floor	71.4	51.9	72.5	1.1	52.6	72.6	1.2	52.4	72.6	1.2	53.8	72.6	1.2	57.9	72.7	1.3
	1st floor	6.69	49.2	9.07	0.7	51.7	9.02	0.7	51.0	9.07	0.7	63.2	71.3	1.4	67.2	72.2	2.3
	3rd floor	70.5	51.6	71.0	0.5	54.3	71.0	0.5	53.5	71.0	0.5	6.79	72.7	2.2	0.79	72.4	1.9
	5th floor	70.5	53.7	71.0	0.5	56.4	71.0	0.5	55.1	71.0	0.5	72.4	74.7	4.2	67.0	72.4	1.9
	10th floor	70.4	55.9	70.9	0.5	60.1	71.1	0.7	56.0	70.9	0.5	72.7	74.8	4.4	67.0	72.3	1.9
	12th floor	70.3	56.0	70.8	0.5	8.09	71.1	0.8	56.2	70.8	0.5	72.7	74.8	4.5	6.99	72.2	1.9
	15th floor	70.1	56.1	9.07	0.5	62.0	71.0	0.9	56.3	9.07	0.5	72.5	74.6	4.5	8.99	72.0	1.9
(17th floor	70.0	56.0	70.5	0.5	62.7	71.0	1.0	56.4	70.5	0.5	72.2	74.4	4.4	66.4	71.8	1.8
12	20th floor	70.6	55.6	70.9	0.3		71.4	0.8	55.5	6.07	0.3	9'02	73.7	3.1	64.4	71.7	1.
	1st floor	74.9	59.1	76.7	1.8		76.8	1.9	59.4	8.97	1.9	61.5	76.8	1.9	61.6	76.8	1.9
	3rd floor	75.1	61.7	76.9	1.8		6.97	1.8	61.8	6.97	1.8	63.8	0.77	1.9	63.4	77.0	1.9
	5th floor	75.1	61.7	76.9	1.8		6.92	1.8	61.8	6.97	1.8	65.2	77.1	2.0	64.5	77.0	1.9
	7th floor	75.0	61.5	76.7	1.7		76.7	1.7	61.4	76.7	1.7	66.1	6.97	1.9	65.4	6.97	1.9
	10th floor	74.7	61.3	76.4	1.7		76.4	1.7	8.09	76.4	1.7	65.7	9.92	1.9	63.2	76.5	1.8
	12th floor	74.6	61.3	76.3	1.7	7	76.4	1.8	60.4	76.3	1.7	65.6	9.92	2.0	63.0	76.4	1.8
	15th floor	74.3	61.0	76.0	1.7	7	76.1	1.8	59.8	76.0	1.7	65.4	76.3	2.0	62.7	76.1	1.8
Ċ	1/th floor	74.1	8.09	75.7	1.6	┪	75.9	1.8	59.5	75.7	1.6	65.4	0.97	1.9	63.6	75.8	1.7
P71	Zuth floor	74.0	8.09	75.7	1.7		75.9	1.9	59.1	75.7	1.7	65.3	0.97	2.0	65.2	76.0	2.0
	1st floor	69.3	56.0	70.1	9.0		70.0	0.7	48.6	70.0	0.7	61.7	70.5	1.2	65.7	71.3	2.0
	3rd floor	70.1	57.7	70.8	0.7	1	70.8	0.7	50.7	7.07	9.0	67.4	72.3	2.2	65.7	71.8	1.7
	5th floor	70.0	0.09	71.0	1.0		70.8	8.0	51.7	9.02	9.0	71.8	74.2	4.2	65.7	71.8	1.8
	/th floor	70.0	63.0	71.3	1.3		71.1	1.1	52.7	9.07	9.0	71.8	74.2	4.2	65.7	71.8	1.8
	10th floor	70.1	64.5	71.4	1.3		71.3	1.2	54.8	9.02	0.5	71.8	74.2	4.1	9:59	7.17	1.6
	12th floor	70.2	64.2	71.3	1.1	63.7	71.2	1.0	55.0	70.5	0.3	71.8	74.2	4.0	65.5	71.6	4
	15th floor	70.1	65.6	71.6	1.5	65.3	71.5	1.4	55.4	70.4	0.3	71.6	74.0	3.9	65.3	71.5	1.4
	17th floor	70.0	65.5	71.5	1.5		71.5	1.5	55.6	70.3	0.3	71.4	73.8	3.8	65.2	71.4	1.4
13	20th floor	70.0	65.4	71.4	4.		71.5	1.5	56.4	70.3	0.3	71.1	73.6	3.6	65.3	713	1.3

Table K.4-2 (cont'd)
Construction Noise Analysis Results for Phase 2 (Leg(1) values in dBA)

							СОПО	מתכנ	Collect action traise what sis is	OH4		Course Total Control			The page Analysis Year	<u> </u>	· V
Noise	Receptor		Phase 2-2024 Analysis Year	24 Analys	is Year	Phase 2-2025 Analysis Year	Analysis \	ear	Phase 2-2026 Analysis Year	6 Analys	is Year	Phase 2-2027 Analysis Year	Analys	is Year	Phase 2-2028 Analysis rear	Analys	sis rear
Receptor	Height	Existing	Construction	Total	Increase	Construction Total	_	Increase (Construction	Total	ncrease	Construction	10131	Increase	ğ	1014	IIICI Edae
ļ	1 et floor	63.1	48.3	63.9	8.0	55.9	64.5	1.4	53.6	64.2	1.1	65.6	67.8	4./	67.0	8	0.0
	351 8007	83 O	49 9	63.8	0.8		65.5 2	2.5	55.0	64.2	1.2	73.0	73.5	10.5	72,4	/2.9	8.8
	State floor	63.0	50.5	63.8	0.8	_	7	3.0	56.2	64.3	1.3	75.3	75.6	12.6	75.5	75.8	12.8
***	7th #507	63.0	51.7	63.0	0 9		1	3.4	57.8	64.6	1.6	75.1	75.4	12.4	75.5	75.8	12.8
	IOOH U17	03.0	50.7	3 6	0 0	1	1	7	58.4	64.6	1.5	75.4	75.7	12.6	75.3	75.6	12.5
	10th floor	63.1	33.7	00.9			†	n i	50.7	2	17	75.4	75.7	12.4	75.0	75.3	12.0
	12th floor	63.3	53.9	03.9	0.0		t	3 5	24.5	200	3	75.0	75.5	122	74.5	74.8	11.5
	15th floor	63,3	53.7	63.8	0.5	L			2	3 2	3 1	75.0	75.3	130	74.9	74.5	11.2
	17th floor	63.3	54.0	63.8	0.5	69.9	/0.8	ن	04.	00.7		7.0	1 0	1	72 7	7/1	0
14	20th floor	63.2	55.0	63.8	0.6	70.5	71.2	8.0	66.2	68.0	4.8	/4./	10.0	-	3 2	7 7	3 2
	1st floor	73.5	63.4	75.9	2.4	63.4	75.9 2	2.4	63.4	/5.9	2.4	63.5	10.9	1.4	20.4	75.4) t
	3rd floor	73.3	62.9	75.4	2.1	63.0	75.4	2.1	63.0	/5.4	<u>.</u>	03.0	10.4	<u>.</u>	61 B	75.7	2 .
	5th floor	73.4	61.7	75.2	1.8	61.8	75.2	8	61.7	10.2	0	01.0	2 0	, -	20.0	740	3 -
	7th floor	73.3	60.6	74.9	1.6	60.7	74.9	1.6	60.6	/4.9	5	60.9	14.9	1 -	50.7	71.0	1 7
•	10th floor	73.2	59.4	74.9	1.7	59.5	74.9 1	1.7	59.4	74.9	1./	59.9	74.9	1	50.0	74.7	3 -
	12th floor	73.1	58.7	74.7	1.6	58.8	74.7	6	58.8	/4./	1.0	59.0	14.7	n c	50.0	747	л i
	15th floor	73.2	57.8	74.7	1.5	57.9	74.7	Ċ	57.9	(4./	1.0	20.0	14.7		57.6	74.6	ה ל ה
	17th floor	73.1	57.3	74.6	1.5	57.4	74.6	5	57.4	/4.6	1.0	50.1	74.0	n c	57.0	74.7	א ה ה
	19th floor	73.2	57.6	74.7	1.5	57.8	74.7	.5	5/./	74.7	1.0	57 n	74.5	200	л Б	74.5	1
15	21st floor	72.9	56.4	74.5	1.6	56.5	74.5	6	56.4	/4.5	1.0	07.3	4.0		00.0		





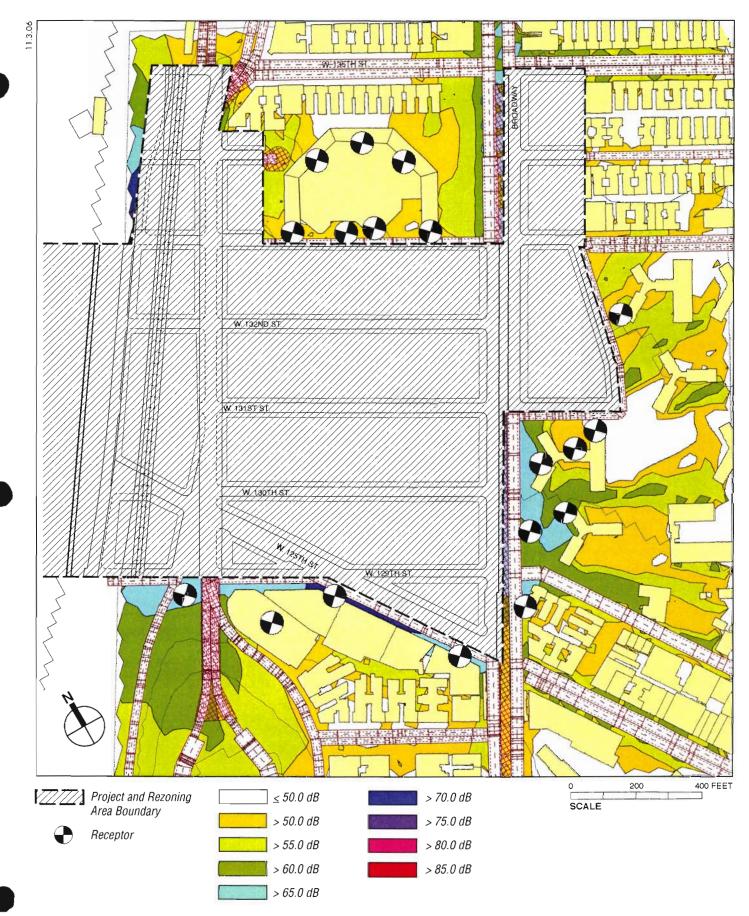


Figure K.4-3

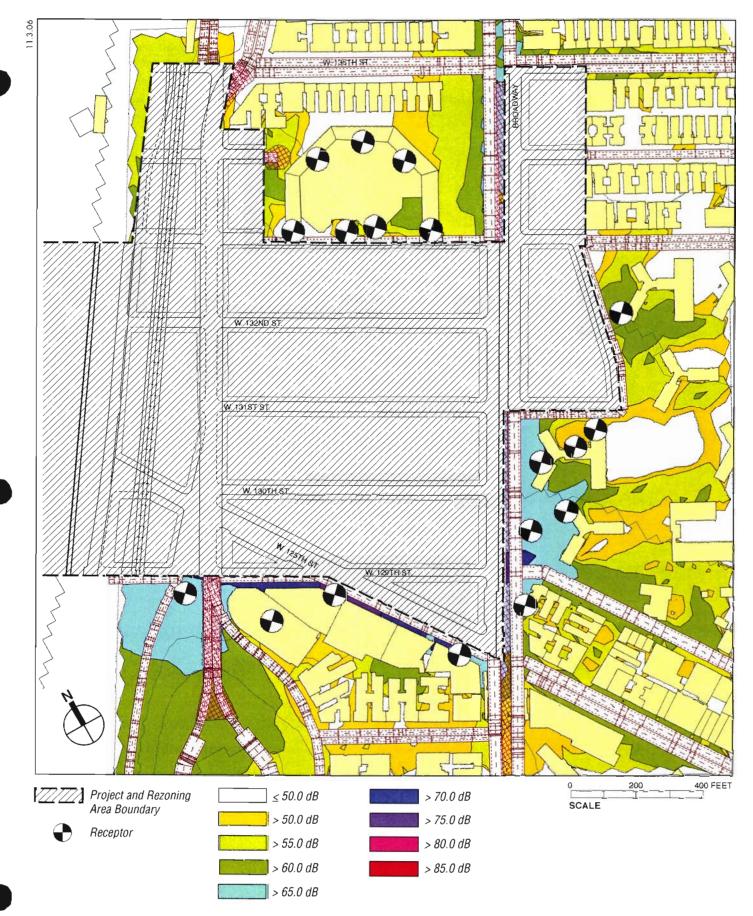


Figure K.4-4



Figure K.4-5



Figure K.4-6



Figure K.4-7



Figure K.4-8

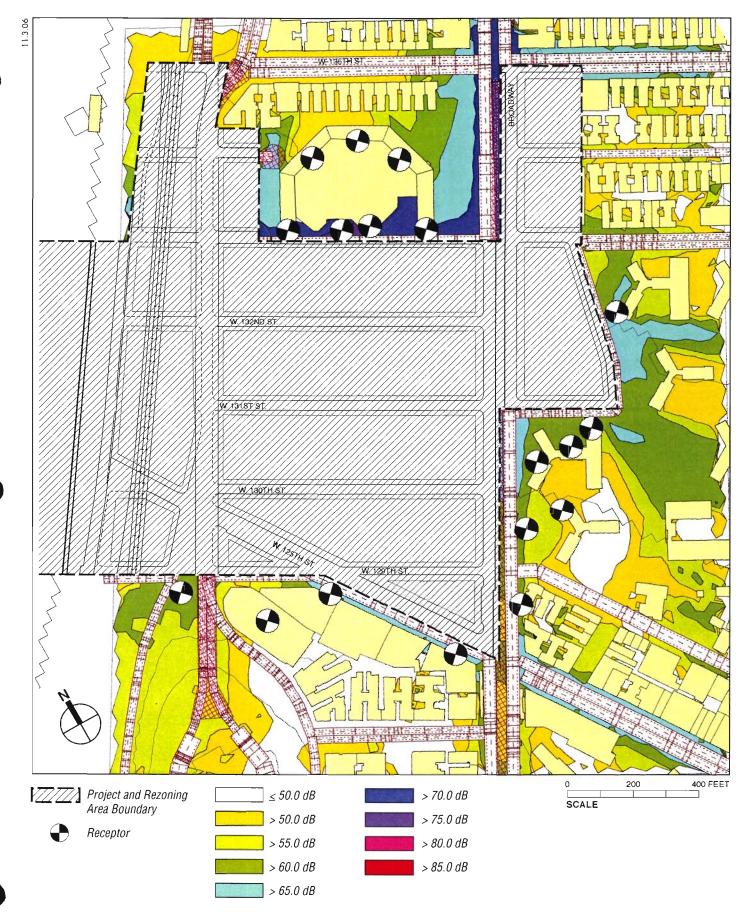


Figure K.4-9

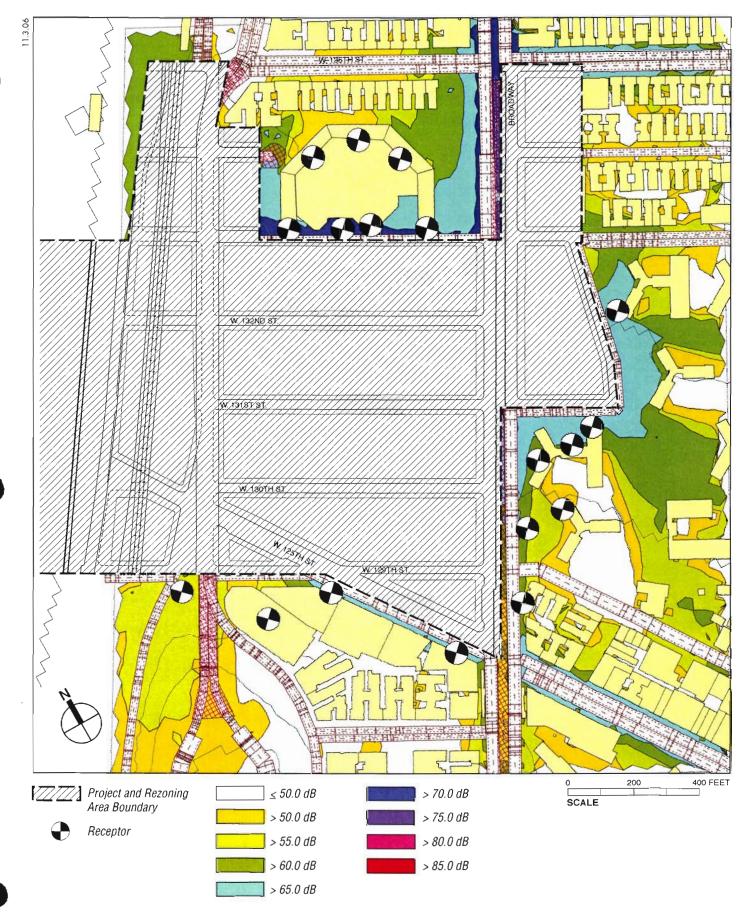


Figure K.4-10

APPENDIX L ENVIRONMENTAL JUSTICE

A. INTRODUCTION

This environmental justice analysis has been prepared under the standards set forth in *CP-29 Environmental Justice and Permitting*, (the "Policy"), issued by the New York State Department of Environmental Conservation (DEC) on March 19, 2003, to identify and address any disproportionate significant adverse impacts on minority or low-income populations (i.e., a potential environmental justice community) that could result from the Proposed Project.

The Policy provides guidance for incorporating environmental justice concerns into the DEC environmental permit review process and the DEC application of the State Environmental Quality Review Act (SEQRA). The Proposed Project would require two permits and approvals from DEC that, pursuant to the Policy, trigger the need for an environmental justice analysis: a permit for the construction and operation of the central energy plants, and a State Pollutant Discharge Elimination System (SPDES) permit to use an existing abandoned outfall for stormwater discharges into the Hudson River. The use of the abandoned outfall may also require a Tidal Wetlands permit and a Protection of Waters permit from DEC.

In order to provide the information necessary for such DEC review, this analysis identifies minority and low-income populations that could be affected by the Proposed Actions, and determines whether these populations would be disproportionately affected by adverse environmental impacts resulting from the Proposed Actions. This analysis also summarizes the Proposed Project's Public Participation Plan, to the extent that it is required under the Policy.

B. METHODOLOGY

DEC POLICY

Following the Policy, an environmental justice analysis involves identifying potential significant adverse environmental impacts and the area to be affected, and determining whether potential significant adverse environmental impacts are likely to affect a potential environmental justice community. Where it is determined that a project is likely to so affect a potential environmental justice community, public participation from the affected areas must be actively sought, and a Public Participation Plan must be submitted to DEC in accordance with the standards set forth in the Policy. In addition, consistent with the SEQRA regulations, any significant adverse environmental impact must be avoided or minimized to the greatest extent practicable.

METHODOLOGY USED FOR THIS ASSESSMENT

The assessment of environmental justice for the Proposed Actions was based on the Policy as described above. It involved four basic steps:

1. Identify the area where the Proposed Actions may cause significant adverse impacts;

- 2. Compile demographic data for the study area and identify potential environmental justice areas;
- 3. Identify the Proposed Actions' potential significant adverse impacts on potential environmental justice communities; and
- 4. Evaluate the Proposed Actions' potential significant adverse impacts on potential environmental justice communities relative to the Proposed Actions' overall effects to determine whether any potential significant adverse impacts on those potential environmental justice communities would be disproportionate.

DELINEATION OF STUDY AREA

The study area for environmental justice encompasses the area most likely to be affected by the Proposed Actions. For this analysis, the study area for environmental justice includes the census block groups that are substantially within a ½-mile of the Project Area. This is the geographic area likely to be affected by the Proposed Actions for a given technical area, or the area in which impacts of that type could occur. As shown in Figure L-1, the study area includes 38 census block groups.

IDENTIFICATION OF POTENTIAL ENVIRONMENTAL JUSTICE COMMUNITIES

Data on race and ethnicity and poverty status were gathered from the U.S. Census Bureau's *Census 2000* for the census block groups within the study area, and then aggregated for the study area as a whole. In addition, to put the population and economic characteristics of the study area into perspective, these characteristics were compared with those of the broader area of Manhattan, as well as New York City as a whole. Potential environmental justice areas were identified as follows:

- Minority Communities: The Policy defines minority populations to include persons identified by the U.S. Census Bureau as Hispanic, African-American or Black, Asian and Pacific Islander, or American Indian. To be conservative, this environmental justice analysis also identifies Alaska Natives and persons of some other race or two or more races as being minority. Following the guidance in the Policy, as the study area is in an urban (rather than rural) setting, minority communities were identified where the minority population of the affected area exceeds 51.1 percent.
- Low-Income Communities: The Policy defines a low-income population as having an annual income that is less than the poverty threshold as established by the U.S. Census Bureau. In accordance with the Policy, any census block group having a low-income population equal to or greater than 23.59 percent of the total population is considered a low-income community.

C. IDENTIFICATION OF POPULATIONS OF CONCERN WITHIN THE STUDY AREA

Based on the Policy and the methodology described above, all but four of the study area's 38 census block groups exceed DEC's thresholds used for defining minority and low-income communities. Therefore, as a whole, the entire study area would be considered a potential environmental justice area. The characteristics of the study area are summarized in Table L-1 and described below.

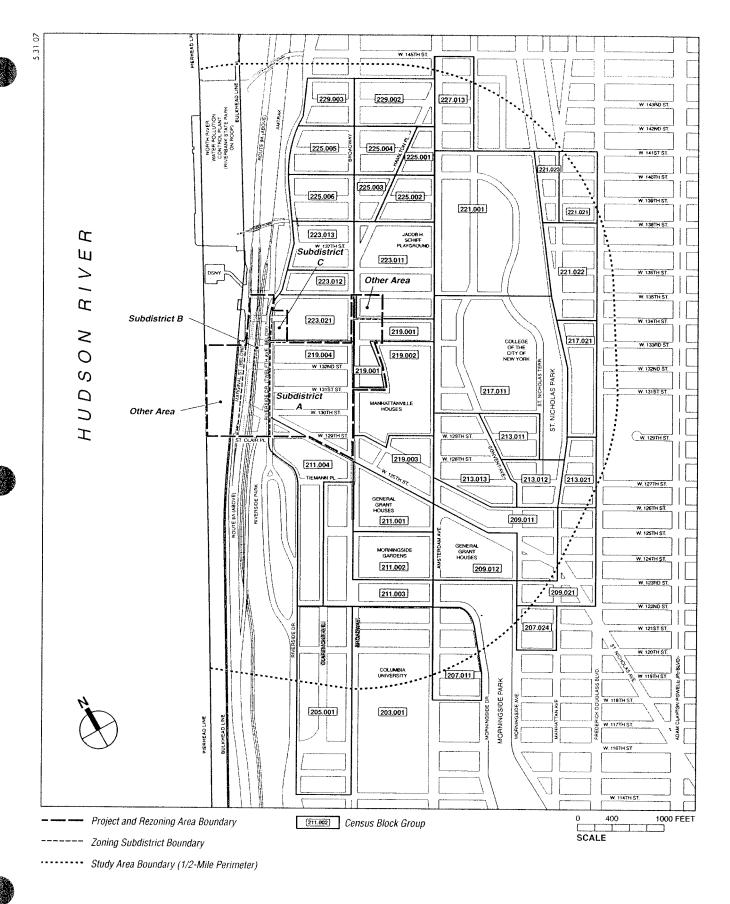


Figure L-1
Environmental Justice Study Area

Table L-1
Study Area Population and Economic Characteristics

	T			<u></u>	stuuy	Aita	r obe	HALIUI	ı ailt	1 ECOHO	111110	Спага	cteristics
													Economic
							(0000)						Profile
		·				pulation							(1999)
				·	Ra	ce and Et	hnicity	*]	individuals
Canana Diash				ŀ		ŀ			1			Total	Below
Census Block	2000		1			1			1			Minority	Poverty
Groups	Total	White	%	Black	%	Asian	%	Other	%	Hispanic	%	(%)	Level (%)**
CT 203 BG 1	1,859	1,097	59.0	213	11.5	309	16.6	45	2.4	195	10.5	41.0	22.96
CT 205 BG 1	1,562	1,158	74.1	126	8.1	165	10.6	30	1.9	83	5.3	25.9	9.14
CT 207.01 BG 1	2,548	1,555	61.0	193	7.6	475	18.6	87	3.4	238	9.3	39.0	22.94
CT 207.02 BG 4	504	49	9.7	384	76.2	5	1.0	17	3.4	49	9.7	90.3	13.54
CT 209.01 BG 1	1,332	54	4.1	786	59.0	59	4.4	31	2.3	402	30.2	95.9	41.25
CT 209.01 BG 2	2,116	9	0.4	1,190	56.2	11	0.5	17	0.8	889	42.0	99.6	51.81
CT 209.02 BG 1	1,006	52	5.2	688	68.4	12	1.2	54	5.4	200	19.9	94.8	50.49
CT 211 BG 1	3,007	28	0.9	1,609	53.5	30	1.0	85	2.8	1,255	41.7	99.1	50.00
CT 211 BG 2	1,672	838	50.1	363	21.7	294	17.6	64	3.8	113	6.8	49.9	2.56
CT 211 BG 3	2,791	1,156	41.4	381	13.7	239	8.6	99	3,5	916	32.8	58.6	29.39
CT 211 BG 4	3,246	1,494	46.0	487	15.0	597	18.4	146	4.5	522	16.1	54.0	19.47
CT 213.01 BG 1	1,879	44	2.3	1,176	62.6	7	0.4	45	2.4	607	32.3	97.7	25.90
CT 213.01 BG 2	1,427	43	3.0	971	68.0	9	0.6	64	4.5	340	23.8	97.0	21.41
CT 213.01 BG 3	1,237	21	1.7	718	58.0	30	2.4	47	3.8	421	34.0	98.3	65.80
CT 213.02 BG 1	256	6	2.3	186	72.7	0	0.0	11	4.3	53	20.7	97.7	47.95
CT 217.01 BG 1	1,399	29	2.1	603	43.1	25	1.8	30	2.1	712	50.9	97.9	26.29
CT 217.02 BG 1	2,669	20	0.7	2,287	85.7	4	0.1	98	3.7	260	9.7	99.3	38.49
CT 219 BG 1	1,391	18	1.3	274	19.7	10	0.7	15	1.1	1,074	77.2	98.7	31.83
CT 219 BG 2	3,092	22	0.7	1,696	54.9	40	1.3	62	2.0	1,272	41.1	99.3	41.65
CT 219 BG 3	1,670	77	4.6	459	27.5	26	1.6	17	1.0	1,091	65.3	95.4	43.94
CT 219 BG 4	270	11	4.1	84	31.1	0	0.0	11	4.1	164	60.7	95.9	31.40
CT 221.01 BG 1	474	32	6.8	273	57.6	21	4.4	29	6.1	119	25.1	93.2	43.28
CT 221.02 BG 1	560	16	2.9	441	78.8	4	0.7	11	2.0	88	15.7	97.1	27.12
CT 221.02 BG 2	656	23	3.5	531	80.9	9	1.4	37	5.6	56	8.5	96.5	14.29
CT 221.02 BG 3	834	7	0.8	690	82.7	2	0.2	20	2.4	115	13.8	99.2	26.79
CT 223.01 BG 1	4,161	58	1.4	171	4.1	14	0.3	70	1.7	3,848	92.5	98.6	36.04
CT 223.01 BG 2	1,657	28	1.7	59	3.6	19	1.1	25	1.5	1,526	92.1	98.3	29.77
CT 223.01 BG 3	2,592	106	4.1	149	5.7	97	3.7	47	1.8	2,193	84.6	95.9	33.59
CT 223.02 BG 1	3,997	55	1.4	1,214	30.4	7	0.2	48	1.2	2,673	66.9	98.6	38.17
CT 225 BG 1	1,167	10	0.9	387	33.2	5	0.4	36	3.1	729	62.5	99.1	40.61
CT 225 BG 2	2,661	69	2.6	452	17.0	35	1.3	43	1.6	2,062	77.5	97.4	39.43
CT 225 BG 3	611	22	3.6	59	9.7	6	1.0	5	0.8	519	84.9	96.4	12.66
CT 225 BG 4	1,062	50	4.7	332	31.3	21	2.0	33	3.1	626	58.9	95.3	21.42
CT 225 BG 5	2,718	123	4.5	500	18.4	53	1.9	50	1.8	1,992	73.3	95.5	32.78
CT 225 BG 6	2,889	131	4.5	647	22.4	40	1.4	39	1.3	2,032	70.3	95.5	22.11
CT 227.01 BG 3	1,428	103	7.2	933	65.3	29	2.0	70	4.9	293	20.5	92.8	25.63
CT 229 BG 2	3,191	49	1.5	1,105	34.6	20	0.6	47	1.5	1,970	61.7	98.5	37.00
CT 229 BG 3	1,960	94	4.8	309	15.8	19	1.0	63	3.2	1,475	75.3	95.2	33.28
Study Area	69,551	8,757	12.6	23,126	33.3	23,126	33.3	1,748	2.5	33,172	47.7	87.4	33.02
Manhattan	1,537,195	703,873	46	234,698	15	143,291	9	37,517	2	417,816	27	54.2	20.00
New York City	8,008,278	2,801,267	35	1,962,154	25	780,229	10	304,074	4	2,160,554	27	65.0	21.25

Notes:

BOLD denotes potential environmental justice areas.

Sources: U.S. Census Bureau, Census 2000.

Based on 2000 Census data, the study area had approximately 69,551 people, with Hispanic persons making up the largest racial or ethnic group (47.7 percent), followed by African-American or Black persons and Asians (both 33.3 percent). With these and other minorities making up approximately 87 percent of the total population, the study area exceeds DEC's definition of a minority community. In comparison, 54 percent of Manhattan's total population and 65 percent of New York City's total population are made up of minority residents. Moreover, approximately 33 percent of the study area's residents were living below the poverty

^{*} The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); Black (Black or African American alone, not Hispanic or Latino); Asian (Asian alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino, Persons of Hispanic origin may be of any race).

^{**} Percent of individuals with incomes below established poverty level. The U.S. Census Bureau's established income thresholds for poverty levels defines poverty level.

level in 1999, compared with approximately 20 percent of the population in Manhattan and New York City. With the number of individuals living below the poverty level exceeding DEC's threshold of 23.59 percent, the study area is also defined as a low-income community. All but four of the study area's 38 census block groups (concentrated in the southern portion of the study area) exceed DEC's thresholds used for defining minority and low-income populations, with total minority populations ranging from 54 percent to nearly 100 percent and low-income populations ranging from 25.63 percent to 65.80 percent. Therefore, as a whole, the entire study area would be considered a potential environmental justice area.

D. SUMMARY OF EXISTING ENVIRONMENTAL BURDENS ON POTENTIAL ENVIRONMENTAL JUSTICE COMMUNITIES

This section identifies existing sources of environmental issues not related to the Proposed Actions that may be a burden on the community. Data on air, surface water and groundwater emissions discharges were gathered to assess how the community may be burdened by the presence of local discharges and to determine if the local community is currently disproportionately burdened by these discharges. To make this determination, the U.S. Environmental Protection Agency's (EPA) pollution data contained in its Toxic Release Inventory (TRI) database was reviewed. TRI provides data on emissions or release for air, surface water, and groundwater discharges. The data provided in TRI generally focuses on major sources of emissions such as power plants, chemical plants, and major manufacturing complexes. There are two sites identified on the TRI within ½ mile of the project site. These are a water services company located at 608 West 132nd Street, and a bus depot located at 1381 Amsterdam Avenue. Although the facility status for these two sites remains open, they have not reported any uncontrolled releases since 1989 and 1997, respectively.

In addition to TRI, which focuses on major releases, data were gathered on total air discharge permits within a distance of ½ mile from the proposed facility. These permits cover the much broader range of all regulated air discharge activities, including major sources referenced above, but also minor sources such as dry cleaners, gas stations, and auto body shops. These data for the ½-mile study area were compiled by Toxics Targeting. Twenty-six sites within a ½-mile radius were listed on the database of New York State Air Discharges. The uses listed within the ½-mile study area are uses found in other residential neighborhoods within New York City. The majority of these facilities are listed as being in compliance with federal and state regulations, which are enforced by DEC and the New York City Department of Environmental Protection (DEP) in the City.

Gas stations and the Metropolitan Transportation Authority (MTA) Manhattanville Bus Depot are uses found within the study area that store large of quantities of gasoline and diesel fuel. A number of formerly or perhaps presently leaking petroleum storage tanks from various sources such as apartment buildings, office buildings, Consolidated Edison facilities, and New York City Transit (NYCT) facilities are also present in the study area. A number of these facilities are also considered generators of minor quantities of hazardous waste.

Overall, there is not a disproportionate concentration of sites with significant air, surface water and groundwater emissions discharges in the vicinity of the project site.

E. SUMMARY OF POTENTIAL SIGNIFICANT ADVERSE IMPACTS RESULTING FROM THE PROPOSED PROJECT AND PROPOSED MITIGATION

The Draft Environmental Impact Statement (DEIS) has concluded that the Proposed Actions would result in significant adverse impacts in several analysis areas. The analysis areas where practicable and feasible mitigation measures may not fully mitigate significant adverse impacts are described below. Mitigation measures that will be more thoroughly explored between the DEIS and Final EIS (FEIS) are also discussed.

SOCIOECONOMIC CONDITIONS

As described in Chapter 4, "Socioeconomic Conditions," the projected University demand in the socioeconomic reasonable worst-case development scenario (for an estimated 839 non-University housing units in the primary study area), combined with potential demand generated by a non-University population due to the increased livability and overall residential appeal of the neighborhood, could place upward pressure on market-rate rents, which could result in significant adverse indirect residential displacement impacts in the primary study area by 2030.

Residential demand generated by the Proposed Actions would be partially absorbed by individuals' purchases of owner-occupied housing in the study area, and by turnover within the rent-regulated housing stock in the study area. The remaining demand could place upward rent pressure on the 1,318 units in the primary study area that would be vulnerable to rent increases, which in turn could lead to the indirect displacement of approximately 3,293 residents of these at-risk units by 2030. While it is impossible to quantify the exact number of at-risk residents who would be indirectly displaced as a result of the Proposed Actions, there is the potential for the indirect residential displacement impact within the primary study area to be significant and adverse.

Recognizing that the Proposed Actions may result in upward pressure on market rents, Columbia is seeking appropriate opportunities to contribute to the need for affordable housing within Community Board 9 (CB9). Specifically, Columbia has stated that it would seek to mitigate the significant adverse impacts of the Proposed Actions through two primary means: develop or preserve affordable housing within CB9 and reduce University-generated housing demand. The mechanisms for this mitigation include several options that will be developed prior to completion of the FEIS with the affected communities and interested agencies within New York City, including Housing Preservation and Development (HPD), local elected officials, and/or the West Harlem Local Development Corporation. Any such measures will be identified in the FEIS. In addition, the mechanisms by which Columbia's proposed University-generated demand reduction measures and any other identified practicable mitigation measures can be ensured will also be developed and presented in the FEIS. However, it is possible that these mitigation measures would only partially mitigate the significant adverse indirect residential displacement impact. In addition, if the proposed mitigation measures are determined to be infeasible, the significant adverse impact would remain unmitigated.

OPEN SPACE

Chapter 6, "Open Space," identifies both direct and indirect impacts on open spaces. Specifically, the Proposed Actions would result in the following significant adverse impacts on open space:

- Direct shadow impacts in the 2030 analysis year on the I.S. 195 Playground during the March and December analysis periods, when large incremental shadows would cover the playground for long durations.
- Indirect significant adverse impacts on the passive open space ratios in the non-residential study area in both the 2015 and 2030 analysis years, and an indirect significant adverse impact on the active open space ratio in the residential study area in the 2030 analysis year.

MITIGATION FOR SHADOWS ON OPEN SPACE

As discussed in Chapter 23, "Mitigation," Columbia has initiated discussion with the New York City Department of Parks and Recreation (DPR) and anticipates discussions with the New York City Department of Education (DOE) to develop potential mitigation measures to ameliorate the shadow effects on the I.S. 195 Playground. These measures will focus on improving the attractiveness and usability of the open space and could include the reconfiguration and/or the addition of seating to portions of the open space receiving more sunlight and upgrading the recreational facilities within the playground or within the school. If the proposed mitigation measures are determined to be infeasible, the significant adverse impacts would remain unmitigated.

INDIRECT EFFECTS MITIGATION

As presented in Chapter 23, the following describes possible ways in which to mitigate the indirect significant adverse impacts from the Proposed Actions on the passive and active open space ratios:

- Renovations of playgrounds at local parks and/or at the New York City Housing Authority (NYCHA) Manhattanville Houses and General Grant Houses.
- Contribute to a dedicated maintenance fund for the West Harlem Waterfront park.
- Fund the opening of existing school yards for public recreation during non-school hours and times not being used for school functions. The school yards would remain under the jurisdiction of DOE, but would be open for public use after school, on weekends, and during the summer.

These options will be further explored and evaluated between the DEIS and FEIS. If the proposed mitigation measures are determined to be infeasible, the significant adverse impacts would remain unmitigated.

HISTORIC RESOURCES

HISTORIC RESOURCES: 2015

As described in Chapter 8, "Historic Resources," the portion of the Academic Mixed-Use Development assumed to occur by 2015 (the "2015 development area") would directly affect one architectural resource, the former Sheffield Farms Stable at 3229 Broadway. As part of the Proposed Actions, a study to evaluate the feasibility of reusing the former Sheffield Farms Stable at 3229 Broadway in the Academic Mixed-Use Area would be developed in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). If demolition of this historic resource is deemed necessary, such demolition would constitute a significant adverse impact on architectural resources. Measures to partially mitigate the impact of the demolition of

this historic resource, which could include archival photo documentation, would be developed in consultation with the New York State OPRHP between the DEIS and FEIS.

As described in Chapter 18, "Transit and Pedestrians," modifications would need to be made at the 125th Street IRT Subway Station and the Manhattan Valley IRT viaduct. To avoid and minimize any adverse impacts to these historic resources, mitigation measures would be designed in consultation with MTA/NYCT and in coordination with OPRHP and the New York City Landmarks Preservation Commission (LPC).

Mitigation measures would be stipulated in a Letter of Resolution (LOR) among the Empire State Development Corporation (ESDC), OPRHP, Columbia, and MTA/NYCT as appropriate, and will be developed between the DEIS and FEIS. The LOR is required for the ESDC approval process.

PARKING

With regard to parking, while adequate parking supply would be provided for the Columbia University demand projected for the Proposed Actions, significant adverse parking impacts attributable to the displacement of existing parking facilities within the Project Area were identified. Columbia is currently reviewing its inventory of existing parking, evaluating its long-term parking demand, and exploring options to accommodate future parking supply. Columbia will identify and evaluate measures between the DEIS and FEIS to mitigate in whole or part the significant adverse impact, including making spaces available at Columbia-owned or controlled properties to accommodate public parking. Absent these measures, the projected off-street parking shortfall, although small relative to the total off-street parking supply, would be deemed an unmitigated significant adverse impact.

NOISE

The Proposed Actions would have a significant noise impact at Noise Receptor 10, located at West 125th Street between Twelfth Avenue and St. Clair Place. This impact would result from a combination of project-generated traffic and the effects of adding a traffic light midblock on West 125th Street between Twelfth Avenue and Broadway to facilitate pedestrian crossings at this location. There are no effective mitigation measures that could be implemented to eliminate the noise impact predicted at this location. The impact at this location would affect pedestrians and would be considered an unmitigated significant adverse impact. Buildings adjacent to the proposed site are either existing buildings owned by Columbia University (e.g., 560 Riverside Drive) or new buildings that would be constructed by Columbia University as part of the Proposed Actions (e.g., Sites 4 and 5). These existing buildings already have double-glazed windows, and the new buildings would be designed to have double-glazed windows and central air conditioning (i.e., alternative ventilation), and, consequently, noise levels within these buildings would satisfy City Environmental Quality Review (CEQR) interior noise level requirements.

CONSTRUCTION

NOISE

As described in Chapter 21, "Construction," during Phase 1, construction activities would be expected to result in significant noise impacts at:

- Residences at elevated locations of Riverside Park Community (3333 Broadway) which have a direct line-of-sight to areas of Phase 1 construction (receptor Sites 5, 5a, and 5b);
- Residences at 560 Riverside Drive which have a direct line-of-sight to the areas of Phase 1 construction (Receptor Sites 7 and 8); and
- The new school on 125th Street west of Broadway.

During Phase 2, construction activities would be expected to result in significant noise impacts at:

- Residences at Riverside Park Community (3333 Broadway) which have a direct line-of-sight to areas of Phase 2 construction (receptor Sites 1, 4, 5, 5a, and 5b);
- Residences at 560 Riverside Drive (receptor Site 81); and
- Residences at Manhattanville Houses which have a direct line-of-sight to the areas of Phase 2 construction (receptor Site 14).

With regard to the residential locations identified above where significant noise impacts are predicted to occur-Riverside Park Community, Manhattanville Houses, and 560 Riverside Drive-all of these residences have double-glazed windows, which with a closed window condition would produce approximately 30-35 dBA of noise attenuation. Riverside Park Community contains sleeves for air-conditioning units, and some, but not all, of the units contain air conditioning; Manhattanville Houses does not contain air-conditioning sleeves, but some units do contain window air-conditioning units; and 560 Riverside Drive, a Columbia University-owned building, contains packaged air-conditioning units. At 560 Riverside Drive, the combination of double-glazed windows and air-conditioning units would provide approximately 35 dBA of attenuation. While the building construction at all of the residential structures cited above would provide a significant amount of sound attenuation during cold weather months when windows are closed, except for 560 Riverside Drive and the units in the other buildings with air conditioning, the buildings would provide only limited attenuation (i.e., approximately 10 dBA) during time periods when windows are open for ventilation. Residents in buildings without air conditioning in units which have a direct line-of-sight to the areas of construction would be significantly impacted by the proposed construction and would experience noise levels that are above the 45 dBA L10 noise level recommended by CEQR for residences. Some residents in buildings with air conditioning in units which have a direct lineof-sight to the areas of construction may also be significantly impacted because insufficient attenuation would be provided by the air-conditioning units.

With regard to institutional locations where significant noise impacts are predicted to occur—Prentis Hall (which is being renovated) and the new school, located on West 125th Street—the design for these buildings will incorporate sufficient sound attenuation measures (e.g., double-glazed windows and alternative ventilation [air conditioning], which would provide approximately 35 dBA of attenuation), to mitigate the significant impacts due to construction activities for users of these facilities.

Between the DEIS and FEIS a number of options will be explored to determine whether any additional measures (beyond the noise reduction methods assumed in the construction impact

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¹ The impact at this location during Phase 2 is principally due to the installation of a traffic light midblock on West 125th Street between Broadway and Twelfth Avenue, and not due to Phase 2 construction-related activities.

analysis) could be implemented during construction to reduce the magnitude of or eliminate project impacts. These would include: (a) use of additional quiet construction equipment and construction techniques, (b) further optimization of equipment placement to reduce noise; (c) additional use of noise barriers, noise enclosures, and curtains; (d) implementation of similar noise construction restrictions on non-Subdistrict A construction, as Columbia University has committed to for Subdistrict A construction; and (e) consideration of other measures, including the feasibility (i.e., electrical capacity of individual residences, number of units necessary, costs, etc.) of providing alternative ventilation (e.g., air conditioner units or ventilating fans) to the affected units. Absent the implementation of the additional noise reduction measures outlined above due to construction, the Proposed Project would have unmitigated significant noise impacts at the locations specified above.

CONCLUSIONS ON ENVIRONMENTAL JUSTICE IMPACTS

Based on the Policy and the methodology described above, the entire study area has been determined to be a potential environmental justice area. As discussed above and detailed more fully in Chapter 23, the Proposed Actions would mitigate significant adverse impacts to the maximum extent practicable. The Proposed Project would be expected to have significant adverse impacts that could not be fully mitigated in the following areas: historic resources, noise, and construction noise. Mitigation measures related to socioeconomic, historic, open space, parking and construction noise impacts will be more thoroughly explored after the completion of the DEIS. Absent the development of feasible mitigation measures, unmitigated significant adverse impacts in these analysis areas would occur.

The potential demolition of the historic Sheffield Farms Stable to allow for the proposed development of an academic research building would constitute a significant adverse impact on architectural resources. Measures to partially mitigate the impact of the demolition of this historic resource, which could include archival photo documentation, would be developed in consultation with OPRHP between the DEIS and FEIS.

While there would be a significant adverse noise impact at Site 10, the impact at this location would not impact any sensitive land uses, other than buildings owned by or proposed to be built by Columbia University.

Between the DEIS and FEIS a number of options will be explored to determine whether any additional measures (beyond the noise reduction methods assumed in the construction impact analysis) could be implemented during construction to reduce the magnitude of or eliminate project impacts. These would include: (a) use of additional quiet construction equipment and construction techniques, (b) further optimization of equipment placement to reduce noise; (c) additional use of noise barriers, noise enclosures, and curtains; (d) implementation of similar noise construction restrictions on non-Subdistrict A construction, as Columbia University has committed to for Subdistrict A construction; and (e) consideration of other measures, including the feasibility (i.e., electrical capacity of individual residences, number of units necessary, costs, etc.) of providing alternative ventilation (e.g., air conditioner units or ventilating fans) to the affected units.

In addition to the consideration of the above-mentioned project-related impacts, these conclusions include consideration of other existing pollutant sources located in the area (as described above under Section D). An analysis of existing environmental burdens in the study area determined that there is not a disproportionate concentration of sites with significant air emissions within the study area. Therefore, relative to the Proposed Actions' overall effects, the

Proposed Actions are not expected to result in any disproportionate significant adverse impacts on minority and low-income populations.

F. PUBLIC PARTICIPATION

In addition to the extensive public participation process being undertaken as part of the Proposed Actions' environmental review process, public participation will be sought throughout the DEC permit review process, in accordance with the DEC Policy. An extensive public outreach program to the affected communities will be implemented, including minority and low-income populations in the study area, providing these groups with ample opportunity to have any of their concerns addressed (see "Public Participation," below). A Public Participation Plan will be developed and submitted to DEC in conjunction with the required permit applications. The key elements of the plan will include the following tasks:

- Identify stakeholders to the Proposed Actions;
- Distribute and post written information on the Proposed Actions and permit review process;
- Hold a public information meeting(s) to keep the public informed about the Proposed Actions and the permit review status;
- Establish easily accessible document repositories in or near the potential environmental justice area;
- Provide a report(s) that summarizes all progress to-date in implementing the plan, all
 substantive concerns raised to-date, all resolved and outstanding issues, the components of
 the plan yet to be implemented, and an expected timeline for completion of the plan; and
- Upon completion of the plan, submit written certification that the applicant has complied with the plan and submit a final report detailing the activities that occurred pursuant to the plan.

With implementation of the Public Participation Plan, the Proposed Project will be consistent with the public participation requirements of the Policy.

APPENDIX M







Appendix M: Proposed Actions Without Transportation Improvements

TRAFFIC AND PARKING

INTRODUCTION

The analysis described in Chapter 17, "Traffic and Parking," included several project-related improvements for the future with the Proposed Actions ("Build" condition) in 2015 and 2030. This appendix examines the same Build conditions for 2015 and 2030 but assumes that none of the project-related improvements would be implemented.

For the purpose of the future Build analysis without the project-related improvements, operating conditions of intersections within and bordering the Project Area (19 locations within the primary traffic study area) were analyzed. In this analysis, West 133rd Street between Broadway and Twelfth Avenue, West 132nd Street between Broadway and Marginal Street, West 131st Street between Broadway and Twelfth Avenue, and West 125th Street between Twelfth Avenue and Marginal Street would continue to operate as two-way, east—west streets. Several new traffic signals, incorporated into the Proposed Actions along Twelfth Avenue, Marginal Street, West 125th Street, West 130th Street, West 131st Street, and West 132nd Street, would not be installed, and signal timing/phasing adjustments for enhancing area traffic circulation would not be conducted. All project-generated traffic was routed to conform to the existing street network. In addition, traffic generated by the Harlem Piers project was also routed to conform to the existing two-way street network. Since traffic volumes and operating characteristics at the analysis locations outside of the Project Area (assessed in Chapter 17) would be the same absent the project-related improvements, they are not further discussed in this section. A more detailed discussion of the midday peak hour analysis will be presented in the FEIS.

PRINCIPAL CONCLUSIONS

As demonstrated in the analysis results, traffic conditions in the Build condition are generally worse without project-related improvements than with these improvements. The recommended improvements, which include typical mitigation measures such as signal timing changes, lane restriping, and intersection daylighting, and those listed below, would substantially improve overall network operations and circulation:

- Conversion of West 133rd Street between Broadway and Twelfth Avenue from two-way to one-way westbound;
- Conversion of West 132nd Street between Broadway and Marginal Street from two-way to one-way eastbound;
- Conversion of West 131st Street between Broadway and Twelfth Avenue from two-way to one-way westbound;

Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development

- Conversion of West 125th Street between Twelfth Avenue and Marginal Street from twoway to one-way westbound;
- Installation of traffic signals (and associated pavement markings) at several stop-controlled intersections, including Twelfth Avenue and West 131st Street, Twelfth Avenue and St. Clair Place/Riverside Drive, West 125th Street and St. Clair Place/West 129th Street, Marginal Street and West 133rd Street, Marginal Street and West 132nd Street, Marginal Street and St. Clair Place, and midblock locations along West 130th, West 131st, and West 132nd Streets between Broadway and Twelfth Avenue (2030); and,
- Reconfiguration of the intersection of Broadway and West 125th Street by aligning northbound and southbound left-turn movements and making other operational adjustments.

Analysis results show that, absent the traffic improvements, significant traffic impacts would occur at a number of intersections within and bordering the Project Area in both the 2015 and 2030 future analysis years, as listed below.

2015 AM Peak Hour (7 intersections)

- Marginal Street at West 133rd and West 132nd Streets
- Twelfth Avenue at West 133rd, West 132nd, West 131st, and West 125th Streets
- Broadway at West 125th Street

2015 PM Peak Hour (10 intersections)

- Marginal Street at West 133rd and West 132nd Streets, and St. Clair Place
- Riverside Drive at St. Clair Place
- Twelfth Avenue at West 133rd, West 131st, and West 125th Streets
- Broadway at West 133rd (east intersection) and West 125th Streets
- West 125th Street at West 129th Street/St. Clair Place

2030 AM Peak Hour (11 intersections)

- Marginal Street at West 133rd and West 132nd Streets, and St. Clair Place
- Riverside Drive at St. Clair Place
- Twelfth Avenue at West 133rd, West 132nd, West 131st, and West 125th Streets, and St. Clair Place
- Broadway at West 125th Street
- West 125th Street at West 129th Street/St. Clair Place

2030 PM Peak Hour (11 intersections)

- Marginal Street at West 133rd and West 132nd Streets, and St. Clair Place
- Riverside Drive at St. Clair Place
- Twelfth Avenue at West 133rd, West 131st, and West 125th Streets
- Broadway at West 130th and West 125th Streets
- Broadway northbound and West 133rd Street
- West 125th Street at West 129th Street/St. Clair Place

These significant adverse traffic impacts would not occur with the Proposed Actions with project-related improvements. Potential measures to mitigate the significant adverse impacts identified above are presented at the end of this section.

2015 FUTURE WITH THE PROPOSED ACTIONS

The future 2015 Build condition, analyzed in this Appendix, reflects increases in traffic volumes that are part of the Proposed Actions and was developed by adding the 2015 reasonable worst-case transportation scenario project-generated trips to the 2015 future without the Proposed Actions ("No Build") traffic network, and adjusting for No Build trips that would be redistributed or not occur at all with the Proposed Actions. However, it does not incorporate the project-related improvements described in Chapter 17.

Figures M-1 and M-2 depict the 2015 project-generated traffic volumes within the primary study area for the weekday AM and PM peak hours, respectively. These volumes were superimposed onto the 2015 No Build network, after adjusting for No Build trips, to generate the future 2015 Build AM and PM peak hour traffic networks, as presented in Figures M-3 and M-4, respectively. Tables M-1 through M-4 compare the 2015 No Build and Build peak hour conditions for the analysis intersections. Based on the thresholds established in the *City Environmental Quality Review (CEQR) Technical Manual*, as described in Section B of Chapter 17, significantly impacted movements are denoted with a + sign in the tables and detailed below.

Twelfth Avenue and West 133rd Street

During the AM peak hour, the northbound left-turn movement would deteriorate from LOS E to LOS F, with delay increasing from 65.9 to 82.6 seconds and v/c ratio increasing from 1.02 to 1.08. The westbound approach would continue to operate at LOS D, with delay increasing from 37.1 to 47.7 seconds and v/c ratio increasing from 0.76 to 0.87.

During the PM peak hour, the northbound left-turn movement would deteriorate from LOS D to LOS E, with delay increasing from 44.2 to 79.9 seconds and v/c ratio increasing from 0.94 to 1.07. The westbound approach would continue to operate at LOS F, with delay increasing from 177.1 to 278.3 seconds and v/c ratio increasing from 1.30 to 1.53.

Twelfth Avenue and West 132nd Street

During the AM peak hour, the eastbound approach would continue to operate at LOS D, with delay increasing from 37.2 to 51.1 seconds and v/c ratio increasing from 0.79 to 0.92.

Twelfth Avenue and West 125th Street

During the AM peak hour, the westbound right-turn movement would deteriorate from LOS D to LOS F, with delay increasing from 48.8 to 95.0 seconds and v/c ratio increasing from 0.96 to 1.11.

During the PM peak hour, the westbound right-turn movement would continue to operate at LOS F, with delay increasing from 100.5 to 195.3 seconds and v/c ratio increasing from 1.14 to 1.36.

Broadway Northbound and West 133rd Street

During the PM peak hour, the westbound approach would continue to operate at LOS D, with delay increasing from 40.9 to 52.5 seconds and v/c ratio increasing from 0.86 to 0.94.

Table M-1 Comparison of 2015 No Build and Build AM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

					rsection		oi-Service		
	No	Build 2015	AM Peak H	our	Build 2015 AM Peak Hour				
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	
Marginal Street @ We	st 125th S	treet							
Southbound	LT	0.42	13.7	В	LT	0.43	13.8	В	
Westbound	L	0.48	25.5	С	L	0.48	25.5	С	
	Int.		19.2	В	Int.		19.2	В	
Tweifth Avenue @ W	est 133rd	Street							
Northbound	L	1.02	65.9	E	L	1.08	82.6	F	
	LTR	0.19	11.0	В	LTR	0.30	12.2	В	
Southbound	LTR	0.15	10.4	В	LTR	0.15	10.4	В	
Westbound	LTR	0.76	37.1	D	LTR	0.87	47.7	D -	
	Int.		42.1	D	Int.		50.1	D	
Twelfth Avenue @ W	est 132nd	Street							
Northbound	LTR	0.49	13.8	В	LTR	0.56	15.0	В	
Southbound	LTR	0.13	10.3	В	LTR	0.18	10.7	В	
Eastbound	LTR	0.79	37.2	D	LTR	0.92	51.1	D -	
Westbound	LTR	0.12	20.7	С	LTR	0.15	21.0	С	
	Int.		21.1	С	Int.		25.9	С	
Twelfth Avenue @ W	est 125th	Street							
Northbound	LTR	0.32	20.6	С	LTR	0.42	22.2	С	
Southbound	LT	0.38	22.1	С	LT	0.49	24.8	С	
Eastbound	LTR	0.21	12.9	В	LTR	0.22	13.0	В	
Westbound	L	0.14	12.9	В	L	0.15	13.0	В	
	T	0.69	22.1	С	Т	0.68	21.7	С	
	R	0.96	48.8	D	R	1.11	95.0	F	
	Int.		28.8	С	Int.	<u> </u>	44.0	D	
Broadway NB @ Wes	st 133rd St	reet							
Northbound	LT	0.56	13.9	В	LT	0.59	14.4	В	
	R	0.11	9.6	A	R	0.23	11.9	В	
Eastbound	LT	0.21	17.4	В	LT	0.35	19.2	В	
Westbound	TR	0.51	24.3	С	TR	0.40	22.1	С	
	Int.		16.8	В	Int.		16.5	В	
Broadway SB @ Wes	st 133rd S	treet						·	
Southbound	LTR	0.52	12.7	В	LTR	0.58	13.6	В	
Eastbound	TR	0.12	18.0	В	TR	0.25	19.5	В	
Westbound	LT	0.43	20.6	C	LT	0.40	20.0	В	
	Int.		14.6	В	Int.	<u> </u>	15.5	<u>B</u>	
Broadway NB @ We	st 132nd S	treet							
Northbound	LT	0.41	11.7	В	LTR	0.48	12.5	B	
Eastbound	L	0.40	20.5	С	LT	0.66	30.3	C	
Westbound					TR	0.01	16.9	В	
	Int.		14.0	В	Int.		18.1	В	
Broadway SB @ We	st 132nd S	treet							
Southbound	LTR	0.51	12.9	В	LTR	0.53	13.2	В	
Eastbound		0.61	27.9	С	TR	0.78	35.6	D	
Westbound		0.06	15.8	В	LT	0.07	15.9	В	
	Int.		17.0	В	Int.		20.5	C	

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

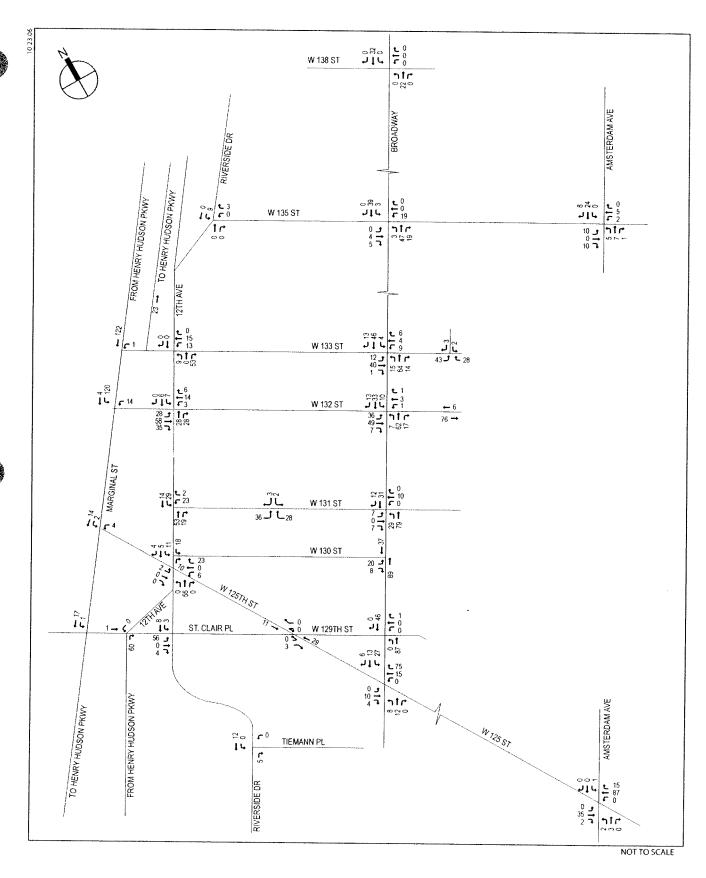


Figure M-1
Primary Study Area
2015 Project-Generated Morning Peak Hour

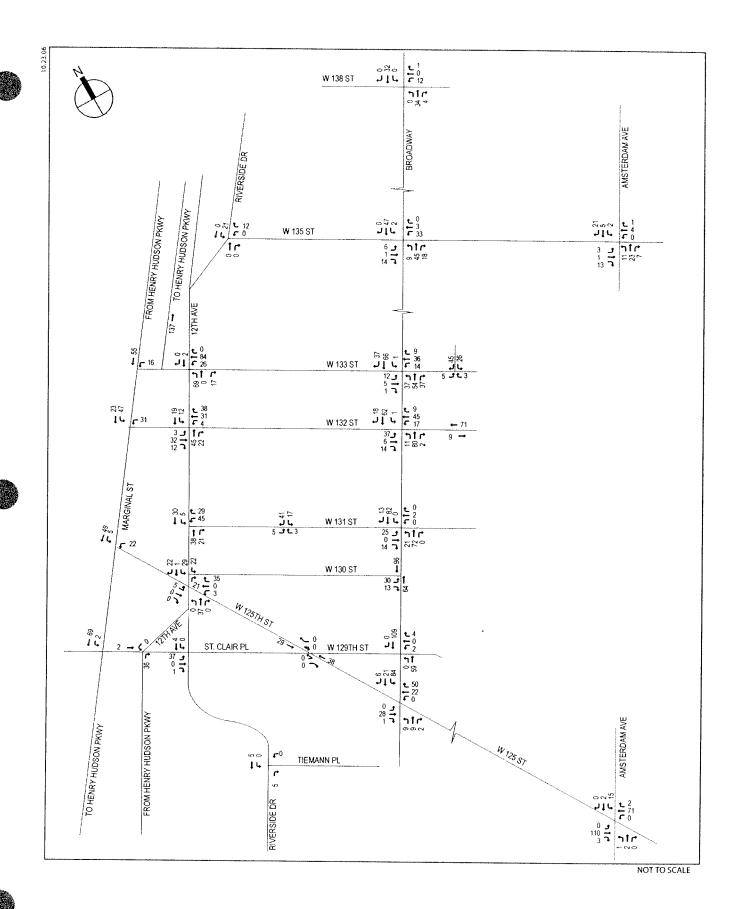


Figure M-2
Primary Study Area
Project-Generated 2015 Evening Peak Hour

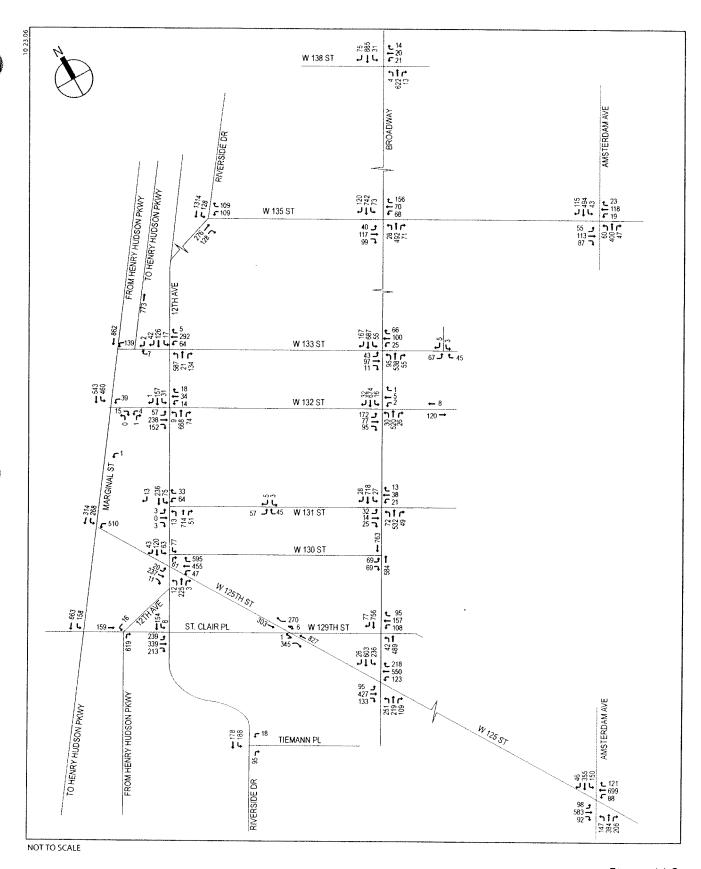


Figure M-3
Primary Study Area
2015 Build Without Improvements
Morning Peak Hour

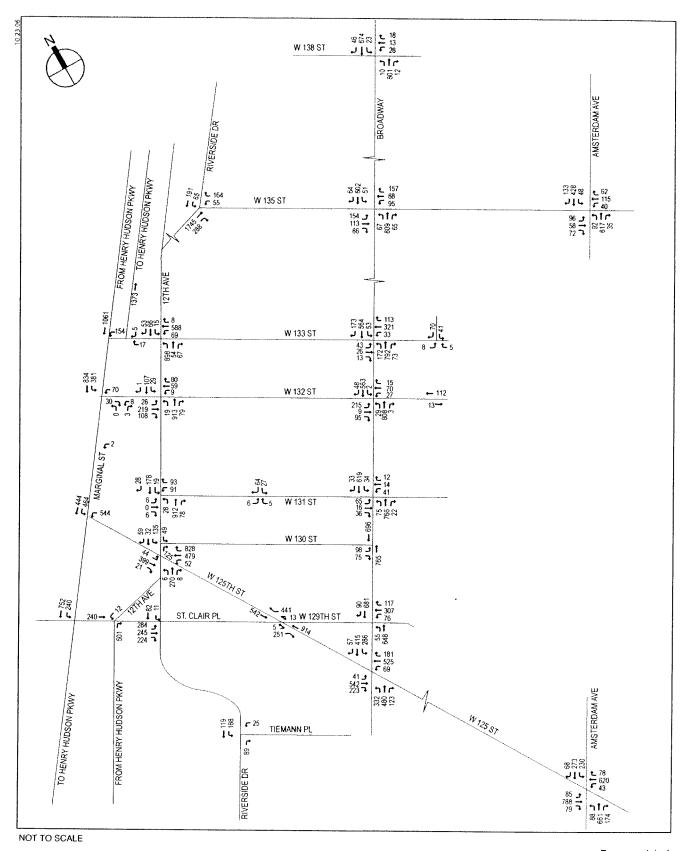


Figure M-4
Primary Study Area
2015 Build Without Improvements
Evening Peak Hour

Table M-1 (continued) Comparison of 2015 No Build and Build AM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	No	Build 201	5 AM Peak H				5 AM Peak H		
Intersection	Lane Group	V/C	Delay	Los	Lane Group	V/C	Delay	LOS	
Broadway @ West 13	1st Street			<u> </u>	<u> </u>				
Northbound	LTR	0.37	8.8	Α	LTR	0.48	9,8	Α	
Southbound	LTR	0.50	9.9	Α	LTR	0.49	9.8	A	
Eastbound	LTR	0.20	21.7	С	LTR	0.17	21.3	С	
Westbound	LT	0.11	20.6	С	LT	0.15	21.1	C	
	R	0.04	19.8	В	R	0.04	19.8	В	-
	Int.		10.6	В	Int.		10.8	В	
Broadway @ West 13	0th Street			•	· /		<u> </u>	L	
Northbound	LT	0.26	5.7	Α	LT	0.29	5.8	Α	
Southbound	LT	0.37	6.3	Α	LT	0.37	6.3	Α	
Eastbound	LR	0.25	25.6	С	LR	0.47	30.6	С	_
	Int.		7.2	Α	Int.		8.4	A	
Broadway @ West 12	9th Street				•		·		
Northbound	DefL	0.61	34.9	С					
	Т	0.48	19.2	В	LT	0.47	18.9	В	
Southbound	TR	0.60	17.7	В	TR	0.61	17.9	В	
Westbound	LT	0.43	19.1	В	LT	0.44	19.5	В	
	R	0.20	16.1	В	R	0.23	16.7	В	
	Int.		19.1	В	Int.		18.4	В	
Broadway @ West 12	5th Street						<u> </u>		
Northbound	L	0.46	32.7	С	L	0.49	33.4	С	
	LT	0.48	31.6	С	LT	0.49	31.8	Ċ	
	R	0.61	43.5	D	R	0.70	51.5	D	
Southbound	L	0.38	30.6	С	L	0.40	31.1	С	-
	LTR	1.04	77.8	Ε	LTR	1.11	101.1	F	_
Eastbound	L.	1.29	213.1	F	L	1.25	207.5	F	
	TR	0.72	31.0	С	TR	0.77	33.5	С	_
Westbound	L	0.99	102.6	F	L	1.10	139.8	F	
	TR	0.95	49.1	D	TR	1.08	85.1	F	_
	Int.		57.8	E	Int.		73.0	E	

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-2 Comparison of 2015 No Build and Build PM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	No	Build 2015	PM Peak H	our		Build 2015 PM Peak Hour				
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS		
larginal Street @ We			Dolay		1 I					
Southbound	LT	0.61	16.6	В	T LT	0.66	17.5	В		
Westbound	L	0.55	26.6	C	L	0.54	26.4	С		
Westboard	Int.	0.00	20.6	Č	Int.		20.9	С		
Twelfth Avenue @ W		Stroot				1				
Northbound	L L	0.94	44.2	D	TI	1.07	79.9	E		
Nottribourid	LTR	0.71	21.6	c	LTR	0.82	28.4	С		
Southbound	LTR	0.10	10.0	В	LTR	0.11	10.1	В		
Westbound	LTR	1.30	177.1	F	LTR	1.53	278.3	F		
westbound	Int.	1.50	81.7	F	Int.		134.9	F		
Turnellith Arramina @ 14		Stroot	01	<u> </u>						
Twelfth Avenue @ W Northbound	LTR	0.69	17.6	В	LTR	0.74	19.0	В		
	LTR	0.09	9.7	A	LTR	0.13	10.3	В		
Southbound	LTR	0.60	28.9	c	LTR	0.69	31.9	c		
Eastbound Westbound	LTR	0.60	20.6	C	LTR	0.32	23.4	C		
vvestbound	Int.	0.12	19.9	В	Int.	0.02	21.5	Ċ		
T		Ctup of	13.3		1110					
Twelfth Avenue @ W	est 125th	0.42	22.2	С	LTR	0.49	23.4	С		
Northbound	LTR LT	0.42	21.8	C	LT	0.63	32.2	C		
Southbound	LTR	0.34	14.4	В	LTR	0.37	14.5	В		
Eastbound		0.35	14.9	В		0.19	13.8	В		
Westbound	L T	0.28	23.8	C	T	0.69	22.1	C		
	R	1.14	100.5	F	' R	1.36	195.3	F		
	Int.	1,14	49.3	D	Int.	1.00	85.0	F		
5 · N5 0 11/			43.3		1114.	L				
Broadway NB @ We		0.78	18.9	В	T LT	0.87	24.0	С		
Northbound	LT_	0.78	9.2	A	R	0.33	14.0	В		
Factballed	R LT	0.07	17.8	B	LT	0.32	19.5	В		
Eastbound	TR	0.23	40.9	D	TR	0.94	52.5	D		
Westbound	Int.	0.00	25.3	C	Int.	0.54	31.3	C		
			25.5		1114.	<u> </u>	00			
Broadway SB @ We	St 133ra Si	7eet 0.48	12.2	В	LTR	0.53	12.9	В		
Southbound	LTR TR	0.48	17.7	В	TR	0.33	18.1	В		
Eastbound	LT	0.10	28.5	C	LT	0.13	36.0	D		
Westbound	Int.	0.74	18.2	В	Int.	1 - 0.00	21.9	c		
B		tro of	10.2	1 0						
Broadway NB @ We		0.57	13.6	В	LT	0.64	14.8	В		
Northbound		0.57	18.7	В	LT	0.68	32.4	c		
Eastbound		0.31	10.7	- 	TR	0.00	18.8	В		
Westbound			14.6	В	Int.	0.13	18.6	В		
	Int.	<u> </u>	14.6	<u> </u>	i iii.	L	10.0			
Broadway SB @ We	st 132nd S	treet	1 4:5		170	1 0.46	12.2	В		
Southbound		0.43	11.9	B	LTR	0.46		C		
Eastbound		0.46	22.9	C	TR	0.62	27.1 17.8	В		
Westbound		0.04	15.6	B	LT	0.24		В		
	Int		15.2	В	Int		17.4	B		

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-2 (continued) Comparison of 2015 No Build and Build PM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

			5 PM Peak H			Build 2015 PM Peak Hour				
Intersection	Lane Group	V/C	DELAY	LOS	Lane Group	V/C	DELAY	LO	S	
Broadway @ West 13	31st Street					<u> </u>				
Northbound	LTR	0.47	9.6	Α	LTR	0.56	10.6	В		
Southbound	LTR	0.42	9.1	Α	LTR	0.45	9.4	Α		
Eastbound	LTR	0.21	21.8	С	LTR	0.28	22.9	С		
Westbound	LT	0.16	21.3	С	LT	0.17	21.5	С		
	R	0.04	19.8	В	R	0.04	19.8	В		
	Int.		10.7	В	Int.		11.4	В		
Broadway @ West 13	0th Street									
Northbound	LT	0.32	6.0	Α	LT	0.34	6.1	Α		
Southbound	LT	0.32	6.0	Α	LT	0.35	6.2	Α		
Eastbound	LR	0.31	26.5	С	LR	0.55	32.5	С		
	Int.		7.5	Α	Int.		9.0	Α		
Broadway @ West 12	9th Street		-							
Northbound	LT	0.69	23.5	С	LT	0.70	23.8	С		
Southbound	TR	0.49	18.8	В	TR	0.54	19.7	В		
Westbound	LT	0.57	21.8	С	LT	0.60	22.8	С		
	R	0.27	17.1	В	R	0.32	18.1	В		
	Int.		21.0	ပ	Int.		21.6	С		
Broadway @ West 12	5th Street									
Northbound	L	0.60	36.7	D	L	0.63	38.1	D		
	LT	0.91	50.5	D	LT	0.92	52.4	D		
	R	0.65	45.9	D	R	0.79	61.8	E		
Southbound	L	0.36	30.1	С	L	0.43	31.3	С		
	LTR	0.87	47.5	D	LTR	0.99	67.9	Е		
Eastbound	L	0.44	34.4	С	L	0.48	39.8	D		
	TR	1.04	73.0	Е	TR	1.09	88.0	F		
Westbound	L	0.96	119.6	F	L	0.96	119.6	F		
	TR	0.83	36.2	D	TR	0.95	49.7	D		
	Int.		51.7	D	Int.		62.5	E		

Notes:
L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-3 Comparison of 2015 No Build and Build AM Peak Hour Conditions **Unsignalized Intersection Level-of-Service Analysis**

		No Build	2015 AM			Buile	1 2015 AM	
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS
Marginal Street @ We	st 133rd S	Street						
Southbound	Т	1.07	74.1	F	T	1.15	101.3	F
Westbound	Ĺ	0.20	10.6	В	L	0.19	10.6	В
Marginal Street @ We	st 132nd	Street						
Southbound	LT		73.8	F	LT	-	94.9	F
	Т	-	8.3	Α	T	-	8.2	Α
Westbound	L	-	10.2	В	L	_	9.9	Α
	Int.		60.0	F	Int.		78.9	F
Marginal Street @ St.	Clair Plac	:e						
Southbound	L	0.18	9.9	Α	L	0.19	9.9	Α
	Т	0.90	34.9	D	Т	0.91	37.1	E
Twelfth Avenue @ W	est 131st 3	Street						
Northbound	LT	0.01	7.8	Α	LT	0.01	7.9	Α
Southbound	LT	0.15	10.8	В	LR	0.12	10.8	В
Westbound	LTR	0.33	30.3	D	LTR	0.74	78.8	F
Eastbound	LTR	0.02	16.4	С	LTR	0.02	16.6	С
Twelfth Avenue @ St	. Clair Pla	ce				******		
Northbound	R	-	14.7	В	R	-	16.2	С
Southbound	L	-	9.1	A	L	-	9.2	Α
Eastbound	T	-	10.0	<u>A</u>	T	-	10.2	В
	Int.		13.6	В	Int.		14.8	В
Riverside Drive @ St	. Clair Pla	ce				,		
Southbound	LT	0.42	34.0	D	LT	0.39	29.8	D
	Т	0.38	32.3	D	T	0.35	27.7	D _
Eastbound	LTR	0.13	7.8	A	LTR	0.18	7.9	Α
West 125th Street @	129th Stre	et/St. Clai	r Place			,		
Eastbound	L	0.02	75.6	F	L	0.01	46.4	E
	R	0.64	20.0	С	R	0.63	20.4	С
Westbound	L	0.14	101.9	F	L	0.07	50.5	F
	R	0.81	44.7	E	R	0.52	17.8	С

Notes:
L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-4 Comparison of 2015 No Build and Build PM Peak Hour Conditions Unsignalized Intersection Level-of-Service Analysis

			d 2015 PM		Build 2015 PM					
	1	I I I I I I	U 2013 FW	r	 	Bui	10 2015 PM	T		
Intersection	Lane Group	V/C	Dalass	1.00	Lane	\//C			_	
			Delay	LOS	Group	V/C	Delay	LOS	5	
Marginal Street @ We	est 133rd .		T							
Southbound	T	1.10	81.0	F	T	1.15	99.3	F	+	
Westbound	<u> </u>	0.20	10.5	В	L	0.21	10.6	В		
Marginal Street @ We	est 132nd	Street								
Southbound	LT	-	76.5	F	LT	-	100.2	F	+	
	T	-	10.7	В	Т	-	10.5	В		
Westbound	L	-	10.3	В	L	-	10.6	В		
	Int.		54.7	F	Int.		71.5	F		
Marginal Street @ St.	Clair Plac	e								
Southbound	L	0.29	10.6	В	L	0.29	10.6	В		
	Т	1.04	64.1	F	Т	1.10	84.7	F	+	
Twelfth Avenue @ W	est 131st	Street						<u> </u>		
Northbound	LT	0.02	7.8	Α	LT	0.02	7.9	Α		
Southbound	LT	0.07	11.9	В	LR	0.04	12.0	В		
Westbound	LTR	0.86	85.7	F	LTR	1,49	313.7	F	+	
Eastbound	LTR	0.05	19.2	С	LTR	0.05	20.2	С		
Twelfth Avenue @ St	. Clair Pla	ce	<u> </u>		***************************************					
Northbound	R	_	13.2	В	R	-	14.5	В		
Southbound	L	-	8.9	Α	L	-	9.0	Ā		
Eastbound	Т	-	11.3	В	Т	-	11.6	В		
	Int.		12.5	В	Int.		13.4	В		
Riverside Drive @ St.	Clair Plac	e			<u> </u>	······				
Southbound	LT	0.40	34.3	D	LT	0.37	41.5	Е	+	
	Т	0.25	33.2	D	Т	0.32	41.7	E	+	
Eastbound	LTR	0.18	7.9	A	LTR	0.21	8.0	A		
West 125th Street @	129th Stre	et/St. Clai								
Eastbound	L			F	L	0.24	223.5	F		
	R	0.83	45.4	E	R	0.86	56.5	, F	+	
Westbound	L	1.56	1074.0	F	È	0.67	340.3	F		
	R	1.83	412.6	F	R	0.85	36.8	Ē		
Notos:					L	0.00				

Notes:

L = Left Tum; T = Through; R = Right Tum; DefL = Defacto Left Tum; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Broadway and West 125th Street

During the AM peak hour, the northbound right movement would continue to operate at LOS D, with delay increasing from 43.5 to 51.5 seconds and v/c ratio increasing from 0.61 to 0.70. The southbound left-through-right movement would deteriorate from LOS E to LOS F, with delay increasing from 77.8 seconds to 101.1 seconds and v/c ratio increasing from 1.04 to 1.11. The westbound left-turn movement would continue to operate at LOS F, with delay increasing from 102.6 to 139.8 seconds and v/c ratio increasing from 0.99 to 1.10, and the westbound through-right movement would deteriorate from LOS D to LOS F, with delay increasing from 49.1 to 85.1 and v/c ratio increasing from 0.95 to 1.08.

During the PM peak hour, the northbound right-turn movement would deteriorate from LOS D to LOS E, with delay increasing from 45.9 to 61.8 seconds and v/c ratio increasing from 0.65 to 0.79. The southbound left-through-right movement would deteriorate from LOS D to LOS E, with delay increasing from 47.5 to 67.9 seconds and v/c ratio increasing from 0.87 to 0.99. The

eastbound through-right movement would deteriorate from LOS E to LOS F, with delay increasing from 73.0 to 88.0 seconds and v/c ratio increasing from 1.04 to 1.09. The westbound through-right movement would continue to operate at LOS D, with delay increasing from 36.2 to 49.7 seconds and v/c ratio increasing from 0.83 to 0.95.

Marginal Street and West 133rd Street

During the AM peak hour, the southbound approach would continue to operate at LOS F, with delay increasing from 74.1 to 101.3 seconds and v/c ratio increasing from 1.07 to 1.15.

During the PM peak hour, the southbound through movement would continue to operate at LOS F, with delay increasing 81.0 to 99.3 and v/c ratio increasing from 1.10 to 1.15.

Marginal Street and West 132nd Street

During the AM peak hour, the southbound left-through movement would continue to operate at LOS F, with delay increasing from 73.8 to 94.9 seconds.

During the PM peak hour, the southbound left-through movement would continue to operate at LOS F, with delay increasing from 76.5 to 100.2 seconds.

Marginal Street and St. Clair Place

During the PM peak hour, the southbound through movement would continue to operate at LOS F, with delay increasing from 64.1 to 84.7 seconds and v/c ratio increasing from 1.04 to 1.10.

Twelfth Avenue and 131st Street

During the AM peak hour, the westbound approach would deteriorate from LOS D to LOS F, with delay increasing from 30.3 to 78.8 seconds and v/c ratio increasing from 0.33 to 0.74.

During the PM peak hour, the westbound approach would continue to operate at LOS F, with delay increasing from 85.7 to 313.7 seconds and v/c ratio increasing from 0.86 to 1.49.

Riverside Drive and St. Clair Place

During the PM peak hour, the southbound left-through movement would deteriorate from LOS D to LOS E, with delay increasing from 34.3 to 41.5 seconds and v/c ratio decreasing from 0.40 to 0.37. The southbound through movement would deteriorate from LOS D to LOS E, with delay increasing from 33.2 to 41.7 seconds and v/c ratio increasing from 0.25 to 0.32.

West 125th Street and West 129th Street/St. Clair Place

During the PM peak hour, the eastbound right movement would deteriorate from LOS E to LOS F, with delay increasing from 45.4 to 56.5 seconds and v/c ratio increasing from 0.83 to 0.86.

SIGNIFICANT IMPACTS

Without the proposed project improvements, the Proposed Actions would result in significant adverse impacts at the following intersections:

AM Peak Hour

- Twelfth Avenue and West 133rd Street
- Twelfth Avenue and West 132nd Street
- Twelfth Avenue and West 125th Street

- Broadway and West 125th Street
- Marginal Street and West 133rd Street (unsignalized)
- Marginal Street and West 132nd Street (unsignalized)
- Twelfth Avenue and West 131st Street (unsignalized)

PM Peak Hour

- Twelfth Avenue and West 133rd Street
- Twelfth Avenue and West 125th Street
- Broadway Northbound and West 133rd Street
- Broadway and West 125th Street
- Marginal Street and West 133rd Street (unsignalized)
- Marginal Street and West 132nd Street (unsignalized)
- Marginal Street and St. Clair Place (unsignalized)
- Twelfth Avenue and West 131st Street (unsignalized)
- West 125th and West 129th Street/St. Clair Place (unsignalized)
- Riverside Drive and St. Clair Place (unsignalized)

With the proposed project improvements, no significant adverse impacts would result at any of the above intersections.

PARKING SUPPLY AND UTILIZATION

ON-STREET PARKING

As shown in Table 17-30, 57 on-street spaces would be displaced due to geometric modifications associated with the proposed transportation improvements. The expected on-street parking utilization in the 2015 Build condition without the proposed transportation improvements is summarized in Table M-5.

Within ¼ mile of the Project Area, on-street parking would be 87, 93, and 88 percent utilized during the morning, midday, and evening periods, respectively, in the 2015 Build condition (compared to 80, 83, and 80 percent utilization for the same time periods under the 2015 No Build condition). Spaces available in the 2015 No Build condition would be 36, 62, and 39 percent utilized in the 2015 Build condition during the morning, midday, and evening periods, respectively. Since these utilization levels exceed 50 percent, a larger ½-mile on-street area was evaluated. Overall, within a ½-mile, on-street parking would be 78, 86, and 86 percent utilized during the morning, midday, and evening periods, respectively, in the 2015 Build condition. Spaces available in the 2015 No Build condition would be 12, 23, and 18 percent utilized in the 2015 Build condition during the morning, midday, and evening periods, respectively. Since less than half of the on-street parking capacity available in the 2015 No Build condition would be utilized in the Build condition, no significant adverse impacts to on-street parking conditions would occur.

OFF-STREET PARKING

Since off-street parking conditions would be the same in the Proposed Actions with or without transportation improvements, the analysis results are the same as those presented in Chapter 17.

Table M-5 2015 Build On-Street Parking Utilization Summary

2015 Build	АМ	MD	PM
1/4-Mile Radius			
Capacity	1847	1847	1847
Spaces Removed due to Geometric Modifications	0	0	0
Effective 2015 Build Capacity	1847	1847	1847
2015 No Build Demand	1471	1524	1480
Subdistrict B and "Other Area" Demand	136	201	142
2015 Build Demand	1607	1725	1622
Remaining Spaces	240	122	225
Utilization	87%	93%	88%
% No Build Availability Utilized in Build Condition	36%	62%	39%
½-Mile Radius			
Capacity	4783	4783	4783
Spaces Removed due to Geometric Modifications	0	0	0
Effective 2015 Build Capacity	4783	4783	4783
2015 No Build Demand	3613	3903	3982
Subdistrict B and "Other Area" Demand	136	201	142
2015 Build Demand	3749	4104	4124
Remaining Spaces	1034	679	659
Utilization	78%	86%	86%
% No Build Availability Utilized in Build Condition	12%	23%	18%
Note: See Appendix H for detailed parking accumulat	ion analysis.		

2030 FUTURE WITH THE PROPOSED ACTIONS

The future 2030 Build condition reflects increases in traffic volumes that are part of the Proposed Actions and was developed by adding the 2030 reasonable worst-case transportation scenario project-generated trips to the 2030 No Build traffic network, and adjusting for No Build trips that would be redistributed or not occur at all with the Proposed Actions. However, it does not incorporate the project-related improvements described in Chapter 17.

Figures M-5 and M-6 depict the 2030 project-generated traffic volumes within the primary study area for the weekday AM and PM peak hours, respectively. These volumes were superimposed onto the 2030 No Build network, after adjusting for No Build trips, to generate the future 2030 Build AM and PM peak hour traffic networks, as presented in Figures M-7 and M-8, respectively. Tables M-6 through M-9 compare the 2030 No Build and Build peak hour conditions for the analysis intersections. Based on the thresholds established in the *CEQR Technical Manual*, as described in Section B of Chapter 17, significantly impacted movements are denoted with a + sign in the tables and detailed below.

Twelfth Avenue and West 133rd Street

During the AM peak hour, the northbound left-turn movement would continue to operate at LOS F, with delay increasing from 94.3 to 149.5 seconds and v/c ratio increasing from 1.11 to 1.25. The westbound left-through-right movement would deteriorate from LOS D to LOS F, with delay increasing from 40.5 to 81.1 seconds of delay and v/c ratio increasing from 0.80 to 1.04.

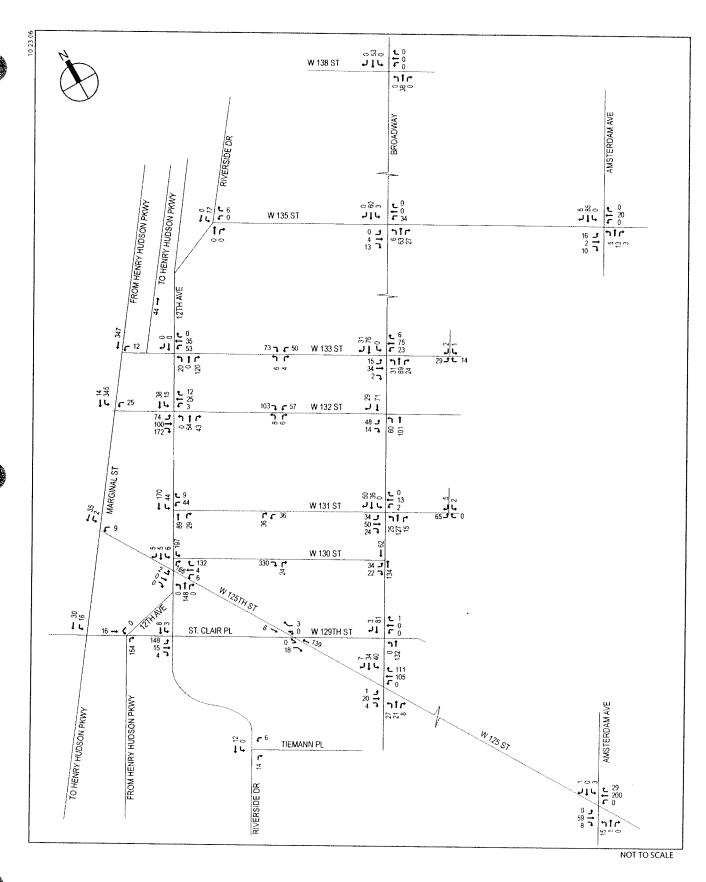


Figure M-5
Primary Study Area
2030 Project-Generated Morning Peak Hour

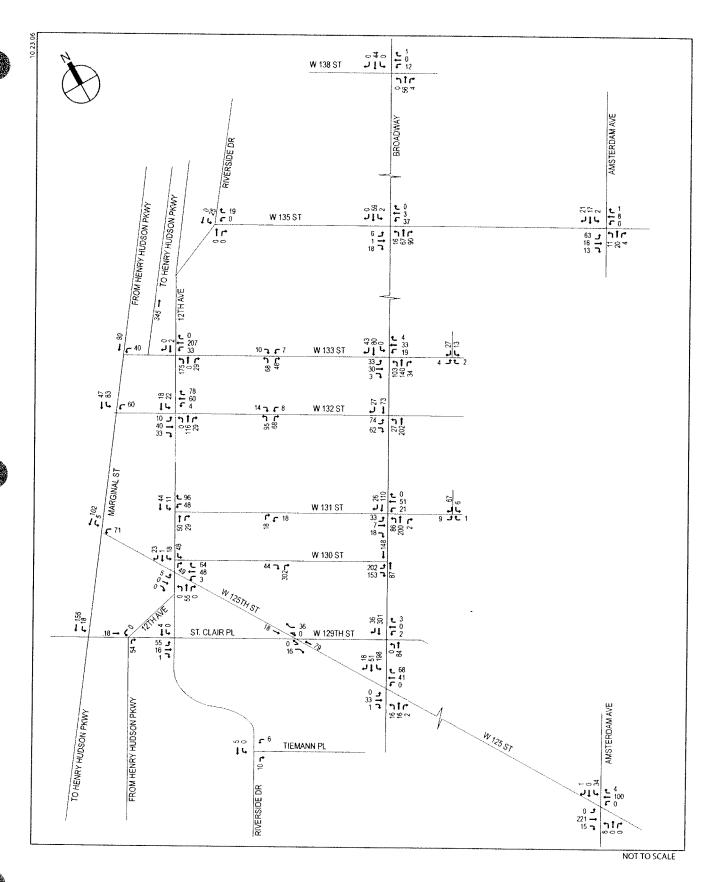


Figure M-6
Primary Study Area
2030 Project-Generated Evening Peak Hour

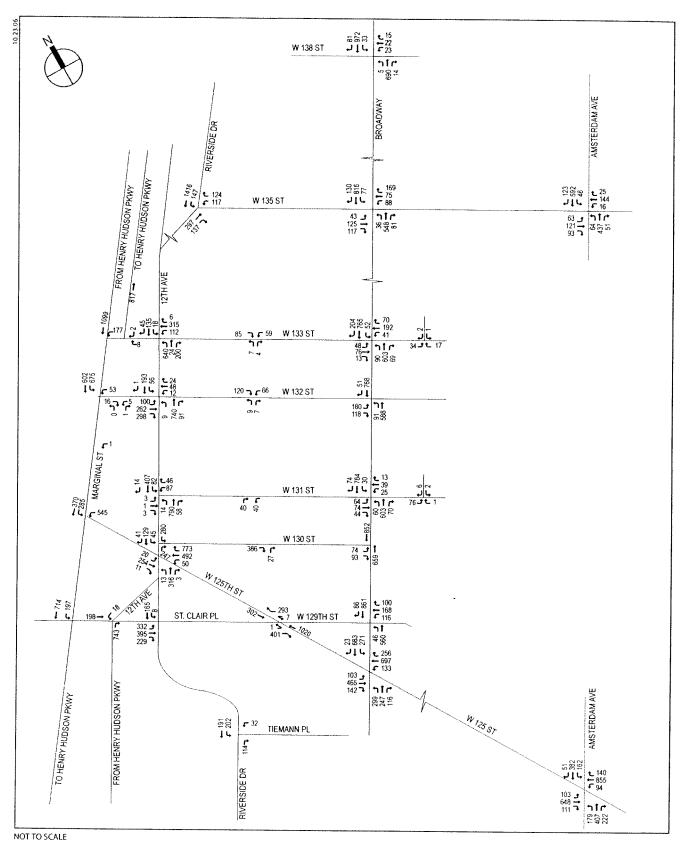


Figure M-7
Primary Study Area
2030 Build Without Improvements
Morning Peak Hour

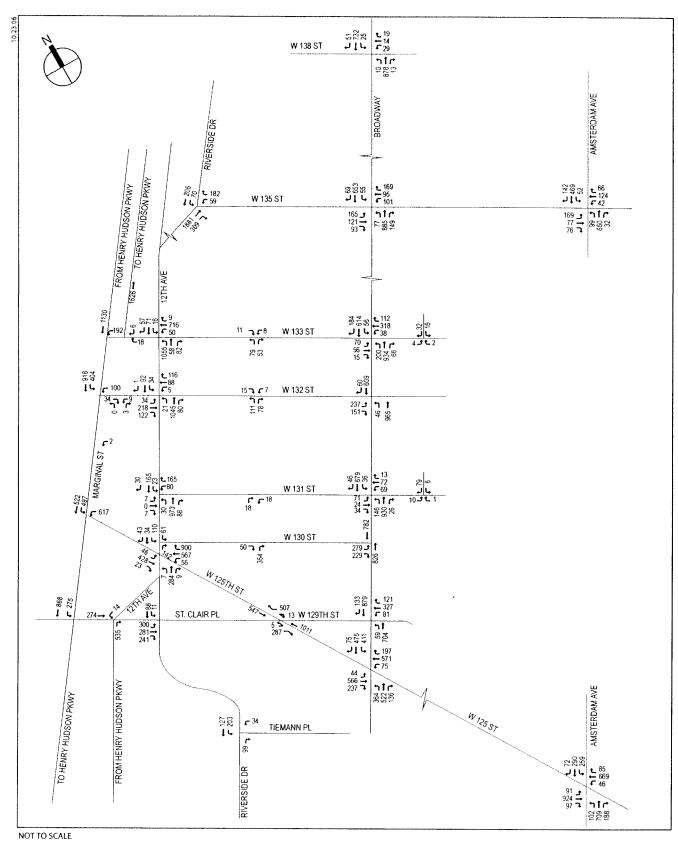


Figure M-8
Primary Study Area
2030 Build Without Improvements
Evening Peak Hour

During the PM peak hour, the northbound left-turn movement would deteriorate from LOS E to LOS F, with delay increasing from 60.1 to 173.6 seconds of delay and v/c ratio increasing from 1.01 to 1.31, and the northbound left-through-right movement would deteriorate from LOS C to LOS E, with delay increasing from 24.1 to 57.4 seconds and v/c ratio increasing from 0.76 to 1.00. The westbound approach would continue to operate at LOS F, with delay increasing from 206.1 to 390.9 and v/c ratio increasing from 1.36 to 1.78.

Twelfth Avenue and West 132nd Street

During the AM peak hour, the eastbound approach would deteriorate from LOS D to LOS F, with delay increasing from 39.0 to 225.1 seconds and v/c ratio increasing from 0.81 to 1.41.

Twelfth Avenue and West 125th Street

During the AM peak hour, the westbound right-turn movement would deteriorate from LOS E to LOS F, with delay increasing from 68.0 to 229.0 seconds and v/c ratio increasing from 1.03 to 1.44.

During the PM peak hour, the westbound right-turn movement would continue to operate at LOS F, with delay increasing from 135.7 to 250.0 seconds and v/c ratio increasing from 1.23 to 1.49.

Broadway Northbound and West 133rd Street

During the PM peak hour, the westbound approach would deteriorate from LOS D to LOS E, with delay increasing from 50.9 to 60.0 seconds and v/c ratio increasing from 0.93 to 0.97.

Broadway and West 130th Street

During the PM peak hour, the eastbound approach would deteriorate from LOS C to LOS F, with delay increasing from 27.0 to 268.3 seconds and v/c ratio increasing from 0.34 to 1.50.

Broadway and West 125th Street

During the AM peak hour, the northbound right-turn movement would deteriorate from LOS D to LOS F, with delay increasing from 47.4 to 94.1 seconds and v/c ratio increasing from 0.67 to 0.93. The southbound left-through-right movement would continue to operate at LOS F, with delay increasing from 102.9 to 142.7 seconds and v/c ratio increasing from 1.11 to 1.21. The westbound left-turn movement would continue to operate at LOS F, with delay increasing from 159.4 to 260.8 seconds and v/c ratio increasing from 1.16 to 1.41, and the westbound through-right movement would deteriorate from LOS E to LOS F, with delay increasing from 62.0 to 177.6 seconds and v/c ratio increasing from 1.01 to 1.31.

During the PM peak hour, the northbound left-through movement would continue to operate at LOS E, with delay increasing from 62.1 to 70.7 seconds and v/c ratio increasing from 0.97 to 1.01, and the northbound right-turn movement would deteriorate from LOS D to LOS F, with delay increasing from 49.9 to 132.6 seconds and v/c ratio increasing from 0.70 to 1.08. The southbound left-through-right movement would deteriorate from LOS E to LOS F, with delay increasing from 55.7 to 126.0 seconds and v/c ratio increasing from 0.94 to 1.17. The eastbound left-turn movement would continue to operate at LOS D, with delay increasing from 39.9 to 54.8 seconds and v/c ratio increasing from 0.51 to 0.61, and the through-right movement would continue to operate at LOS F, with delay increasing from 96.7 to 120.0 seconds and v/c ratio increasing from 1.11 to 1.17. The westbound through-right movement would deteriorate from LOS D to LOS E, with delay increasing from 39.4 to 73.9 seconds and v/c ratio increasing from 0.87 to 1.05.

Table M-6 Comparison of 2030 No Build and Build AM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

					rsection		of-Service	
	No	Build 203	AM Peak H	our		Build 203	0 AM Peak H	our
	Lane				Lane			
Intersection	Group	V/C	DELAY	LOS	Group	VIC	DELAY	LOS
Marginal Street @ We	est 125th S	treet						
Southbound	LT	0.45	14.0	В	LT	0.49	14.5	В
Westbound	L	0.52	26.0	С	L	0.53	26.2	С
	Int.		19.7	В	Int.		19.8	В
Twelfth Avenue @ W	est 133rd	Street						
Northbound	L	1.11	94.3	F	L	1.25	149.5	F ·
	LTR	0.21	11.2	В	LTR	0.41	13.7	В
Southbound	LTR	0.16	10.5	В	LTR	0.16	10.5	В
Westbound	LTR	0.80	40.5	D	LTR	1.04	81.1	F
	Int.		55.4	E	Int.		85.1	F
Twelfth Avenue @ W		Street	<u> </u>	ł				
Northbound	LTR	0.52	14.4	В	LTR	0.64	16.5	В
Southbound	LTR	0.14	10.4	В	LTR	0.27	11.7	В
Eastbound	LTR	0.81	39.0	D	LTR	1.41	225.1	F
Westbound	LTR	0.12	20.8	c	LTR	0.19	21.5	С
Westbourid	Int.	0.12	21.7	C	Int.		91.8	F
Twelfth Avenue @ W		Stroot	1			l		·
Northbound	LTR	0.34	20.8	С	LTR	0.57	25.3	С
Southbound	LT	0.42	22.9	c	† <u>L</u> T	0.46	23.9	i č –
Eastbound	LTR	0.42	13.0	В	LTR	0.23	13.1	B
	L	0.22	13.0	В	<u> </u>	0.16	13.2	B
Westbound	 	0.74	24.0	C	† '	0.73	23.8	c
	R	1.03	68.0	E	R	1.44	229.0	F
	Int.	1.03	35. 7	D	Int.	1.77	94.8	F
5		L	33.7		1 1110	L	0-1.0	<u> </u>
Broadway NB @ Wes			14.5	Гв	T LT	0.65	15.5	В
Northbound	LT	0.59	<u> </u>	A	R	0.37	15.7	В
—	R LT	0.12	9.8	B	LT	0.37	19.8	B
Eastbound		0.23		· · · · · · · · · · · · · · · · · · ·	TR	0.64	28.1	C
Westbound	TR	0.53	24.9	<u>c</u>		0.04	19.2	В
	Int.	<u> </u>	17.3	В	Int.		13.2	<u> </u>
Broadway SB @ Wes			1		T . =5	1 0 74	1 40.0	1 5
Southbound	LTR	0.56	13.2	B	LTR	0.71	16.0	<u>B</u>
Eastbound	TR	0.13	18.1	<u>B</u>	TR	0.23	19.2	B
Westbound	LT	0.44	20.9	C	LT	0.59	23.8	
	Int.	<u> </u>	15.0	В	Int.	<u> </u>	18.0	В
Broadway NB @ We:						T	T 42 =	т -
Northbound	LT	0.43	12.0	B	LT	0.55	13.5	B
Eastbound	<u> </u>	0.41	20.7	C	<u>L</u>	0.38	20.0	<u>c</u>
	Int.		14.2	В	Int.		14.9	В
Broadway SB @ Wes	st 132nd S	treet						
Southbound	LTR	0.55	13.3	В	LTR	0.64	14.8	В
Eastbound	TR	0.63	28.7	С	TR	0.71	32.0	С
Westbound	LT	0.06	15.8	В	LT	0.18	17.0	В
	Int.	1	17.4	В	Int.		19.2	В

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volurne to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-6 (continued) Comparison of 2030 No Build and Build AM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	No	Build 203	0 AM Peak H	our		Build 203	0 AM Peak H	our	
	Lane				Lane				
Intersection	Group	V/C	DELAY	LOS	Group	V/C	DELAY	LOS	;
Broadway @ West 13	1st Street								
Northbound	LTR	0.40	9.0	Α	LTR	0.54	10.5	В	
Southbound	LTR	0.54	10.3	В	LTR	0.61	11.4	В	
Eastbound	LTR	0.21	21.8	С	LTR	0.43	25.6	С	
Westbound	LT	0.13	20.8	С	LT	0.19	21.8	С	
	R	0.04	19.8	В	R	0.04	19.8	В	
	Int.		10.9	В	Int.		12.9	В	
Broadway @ West 13	Oth Street								
Northbound	LT	0.28	5.8	Α	LT	0.32	6.0	Α	
Southbound	LT	0.40	6.5	Α	LT	0.42	6.6	Α	
Eastbound	LR	0.27	26.0	С	LR	0.53	32.0	С	~
	Int.		7.4	Α	Int.		9.0	Α	
Broadway @ West 12	9th Street			,					
Northbound	DefL	0.70	43.5	D					
	Т	0.50	19.7	В	LT	0.55	20.1	С	
Southbound	TR	0.64	18.5	В	TR	0.71	19.9	В	
Westbound	LT	0.46	19.6	В	LT	0.51	20.9	С	
	R	0.22	16.4	В	R	0.27	17.4	В	
	Int.		20.2	С	Int.		20.0	В	
Broadway @ West 12	5th Street								
Northbound	L	0.50	33.5	С	L	0.58	36.0	D	
	LT	0.52	32.2	С	LT	0.56	33.2	С	
	R	0.67	47.4	D	R	0.93	94.1	F	+
Southbound	<u> L </u>	0.40	31.1	С	L	0.47	32.4	С	
	LTR	1.11	102.9	F	LTR	1.21	142.7	F	+
Eastbound	L	1.57	331.3	F	L	1.42	278.7	F	
	TR	0.77	33.0	С	TR	0.86	39.8	D	
Westbound	L	1.16	159.4	F	L	1.41	260.8	F	+
	TR	1.01	62.0	E	TR	1.31	177.6	F	+
	Int.		74.9	E	Int.		117.8	F	

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-7 Comparison of 2030 No Build and Build PM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

					136611011		oi-Service		113
		Build 203	PM Peak H	our		Build 203	0 PM Peak H	our	
• • • •	Lane				Lane				
Intersection	Group	V/C	Delay	LOS	Group	V/C	Delay	LOS	
Marginal Street @ W									
Southbound	LT	0.65	17.5	С	LT	0.75	20.0	В	
Westbound	L	0.59	27.3	C	L	0.60	27.6	С	
	Int.		21.4	С	Int.		22.9	С	
Twelfth Avenue @ W	est 133rd :	Street							
Northbound	L	1.01	60.1	E	L	1.31	173.6	F	
	LTR	0.76	24.1	С	LTR	1.00	57.4	ΕΕ	
Southbound	LTR	0.11	10.1	В	LTR	0.11	10.1	В	
Westbound	LTR	1.36	206.1	F	LTR	1.78	390.9	F	
	Int.		96.8	F	Int.		211.3	F	
Twelfth Avenue @ W	est 132nd	Street							
Northbound	LTR	0.74	19.1	В	LTR	0.87	25.0	С	
Southbound	LTR	0.06	9.8	Α	LTR	0.13	10.3	В	_
Eastbound	LTR	0.63	29.9	С	LTR	0.74	34.7	С	_
Westbound	LTR	0.12	20.7	С	LTR	0.45	25.8	С	
	Int.		21.1	С	Int.		26.1	С	
Twelfth Avenue @ W	est 125th	Street		<u> </u>					
Northbound	LTR	0.45	22.7	С	LTR	0.52	24.0	С	
Southbound	LT	0.39	22.8	С	LT	0.56	29.3	С	
Eastbound	LTR	0.40	14.9	В	LTR	0.44	15.6	В	
Westbound	L	0.29	15.6	В	L	0.22	14.5	В	
***COLDOUNG	T	0.78	25.9	C	Т	0.81	28.1	С	
	R	1.23	135.7	F	R	1.49	250.0	F	-
	Int.		63.0	E	Int.		105.9	F	_
Broadway NB @ We		reet							
Northbound	LT	0.83	21.1	С	LT	0.99	40.4	D	
Horaiboano	R	0.06	9.1	Ā	R	0.37	15.9	В	_
Eastbound	LT	0.26	18.3	В	LT	0.61	28.3	С	_
Westbound	TR	0.93	50.9	D	TR	0.97	60.0	E	
**C3B0dild	Int.	0.50	29.6	c	Int.	1111	43.3	D	_
Broadway SB @ We		root		<u> </u>		L			
Southbound	LTR	0.50	12.6	В	LTR	0.58 -	13.7	В	
Eastbound	TR	0.10	17.8	B	TR	0.23	19.3	В	
Westbound	LT	0.78	30.4	C	T LT	0.92	44.0	D	
AACSMOOHIO	Int.	0.70	19.0	В	Int.	•••	25.0	C	
Broadway NB @ We		troot	1 10.0		1 1111	<u> </u>			
Northbound	LT	0.61	14.3	В	T LT	0.77	18.1	В	
Eastbound		0.81	19.0	В	L	0.44	20.8	C	
Eastbound		0.33	15.1	В	Int.	0.44	18.6	В	
	Int.		13.1	1 6	1 111.	<u> </u>	10.0		
Broadway SB @ We			1 400		I TO	0.50	10.7	В	
Southbound	LTR	0.46	12.2	B	TR	0.50	12.7		
Eastbound	TR	0.49	23.5	C	TR	0.74	31.5	C	
Westbound	LT	0.04	15.6	В	LT_	0.08	15.9	В	
	Int		15.5	В	Int	<u></u>	19.5	В	

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-7 (continued) Comparison of 2030 No Build and Build PM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	No	Build 203	0 PM Peak H	our		Build 203	0 PM Peak H	our	
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	3
Broadway @ West 13	1st Street								
Northbound	LTR	0.51	10.0	Α	LTR	0.81	16.6	В	
Southbound	LTR	0.45	9.4	Α	LTR	0.52	10.2	В	
Eastbound	LTR	0.22	21.9	С	LTR	0.34	24.1	С	
Westbound	LT	0.17	21.6	С	LT	0.41	25.7	С	
	R	0.04	19.8	В	R	0.04	19.8	В	
	Int.		11.0	В	Int.		15.4	В	
Broadway @ West 13	0th Street	•							
Northbound	LT	0.35	6.2	Α	LT	0.39	6.4	Α	
Southbound	LT	0.35	6.2	Α	LT	0.38	6.4	Α	***
Eastbound	LR	0.34	27.0	С	LR	1.50	268.3	F	+
	Int.		7.7	Α	Int.		69.2	E	
Broadway @ West 12	9th Street								
Northbound	LT	0.74	25.4	С	LT	0.80	27.6	С	
Southbound	TR	0.52	19.3	В	TR	0.74	23.8	С	
Westbound	LT	0.62	23.1	С	LT	0.66	24.6	С	
	R	0.27	17.1	В	R	0.34	18.7	В	
	Int.		22.2	С	Int.		25.0	С	
Broadway @ West 12	5th Street	•							
Northbound	L	0.64	38.4	D	L	0.74	43.4	D	
	LT	0.97	62.1	E	LT	1.01	70.7	Е	+
	R	0.70	49.9	D	R	1.08	132.6	F	+
Southbound	L	0.38	30.4	С	L	0.63	36.3	D	
	LTR	0.94	55.7	Е	LTR	1.17	126.0	F	+
Eastbound	L	0.51	39.9	D	L	0.61	54.8	D	+
	TR	1.11	96.7	F	TR	1.17	120.0	F	+
Westbound	L	1.04	140.8	F	L	1.04	140.8	F	
	TR	0.87	39.4	D	TR	1.05	73.9	Е	+
	Int.		62.6	E	Int.		91.2	F	

Notes:
L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-8
Comparison of 2030 No Build and Build AM Peak Hour Conditions
Unsignalized Intersection Level-of-Service Analysis

		No Build	2030 AM			Build 2030 AM				
Intersection	Lane Group	VIC	Delay	LOS	Lane Group	V/C	Delay	LOS	;	
Marginal Street @ We	est 133rd S	Street								
Southbound	Т	1.12	92.2	F	T	1.46	231.3	F	+	
Westbound	L	0.22	10.8	В	L	0.24	10.9	В		
Marginal Street @ We	est 132nd	Street		A						
Southbound	LT		88.5	F	LT		241.5	F	4	
	Т		8.4	Α	Т		8.4	Α		
Westbound	L		9.7	Α	L		10.1	В		
	Int.		71.4	F	Int.		202.5	F		
Marginal Street @ St	Clair Plac	e		· · · · · · · · · · · · · · · · · · ·						
Southbound	L	0.20	9.9	Α	L	0.23	10.2	В		
	Т	0.96	45.0	E	Т	0.98	50.4	F	+	
Riverside Drive @ Ti	emann Pla	ce								
Northbound	R		7.4	A	R		7.6	Α		
Southbound	Ĺ		10.4	В	L		10.5	В		
	Т		9.0	A	Т		9.2	Α		
Westbound	Ĺ		8.4	Α	L		8.6	Α		
	Int.		9.3	Α	Int.		9.3	Α		
Twelfth Avenue @ W	est 131st	Street	<u> </u>		<u> </u>					
Northbound	LT	0.01	7.8	Α	LT	0.01	8.3	Α		
Southbound	LT	0.18	11.8	В	LR	0.15	12.1	В		
Westbound	LTR	0.43	40.5	E	LTR	1.33	268.9	F		
Eastbound	LTR	0.02	17.4	С	LTR	0.03	22.8	С		
Twelfth Avenue @ W			thbound Ric	ht Turn	<u>'</u>					
Southbound	R	0.07	11.6	В	T R	0.07	11.5	В		
Twelfth Avenue @ S			<u> </u>	:·!						
Northbound	R	T	16.7	С	R		30.4	D	+	
Southbound	l È		9.2	A	L		9.6	Α		
Eastbound	T T		10.4	В	T		11.6	В		
	Int.		15.2	С	Int.		26.0	D		
Riverside Drive @ St		ce	1			<u> </u>	h	\		
Southbound	LT	0.50	41.9	E	LT	1.03	181.6	F	-	
2000,200110	T	0.46	39.3	E	T	0.95	157.8	F	-	
Eastbound	LTR	0.14	7.8	A	LTR	0.24	8.1	Α		
West 125th Street @			1			•	·	·····		
Eastbound	L	0.06	244.5	l F	TL	0.02	80.0	F		
<u> </u>	R	0.71	23.5	C	R	17.80	7859.0	F		
Westbound	 	0.23	158.3	ŤĚ	† L			F		
1100000110	R	0.94	68.0	† F	R	0.67	25.7	D		

Notes

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection V/C = Volume to Capacity; LOS = Level of Service; --- = No results given in HCS; + indicates movements with significant impacts in Build condition

Table M-9
Comparison of 2030 No Build and Build PM Peak Hour Conditions
Unsignalized Intersection Level-of-Service Analysis

				eu inte	rsection		oi-Service	Anary	SIS				
		No Buil	d 2030 PM			Build 2030 PM							
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	 }				
Marginal Street @ We	est 133rd S	Street						· · · · · · · · · · · · · · · · · · ·					
Southbound	T	1.18	110.0	F	T	1.23	129.2	F	+				
Westbound	L	0.21	10.6	В	L	0.26	11.0	В	·				
Marginal Street @ We	est 132nd	Street											
Southbound	LT		105.2	F	LT		149.3	F	+				
	Т		11.3	В	T		11.5	В					
Westbound	L		10.4	В	L		10.8	В					
	Int.		73.9	F	Int.		103.7	F					
Marginal Street @ St.	Clair Plac	e		**************************************									
Southbound	L	0.31	10.8	В	L	0.34	11.0	В					
	Т	1.10	84.7	F	Т	1.27	149.9	F	+				
Riverside Drive @ Tie	emann Pla	ce			***************************************								
Northbound	R		7.3	Α	R		7.4	Α					
Southbound	L		10.4	В	L		10.5	В					
	T		8.4	Α	Т		8.5	Α					
Westbound	L		8.4	Α	L		8.5	Α					
	Int.		9.1	Α	Int.		9.2	Α					
Twelfth Avenue @ W	est 131st S	Street							•				
Northbound	LT	0.02	7.8	Α	LT	0.03	7.9	Α					
Southbound	LT	0.07	12.1	В	LR	0.05	12.4	В					
Westbound	LTR	0.94	105.9	F	LTR	1.62	354.8	F	+				
Eastbound	LTR	0.05	19.9	С	LTR	0.08	26.4	D					
Twelfth Avenue @ W	est 125th :	Street Sou	thbound Rig	ht Turn									
Southbound	R	0.08	11.1	В	R	0.08	11.3	В					
Twelfth Avenue @ St	Clair Place	ce											
Northbound	R		14.8	В	R		17.3	С					
Southbound	L		9.0	Α	L		9.2	Α					
Eastbound	T		11.9	В	Т		12.9	В					
	Int.		13.7	В	Int.		15.6	С					
Riverside Drive @ St.	Clair Plac	e											
Southbound	LT	0.47	42.1	E	LT	0.47	55.1	F	+				
	T	0.31	39.6	E	Т	- 0.40	54.3	F	+				
Eastbound	LTR	0.19	8.0	Α	LTR	0.22	8.1	Α					
West 125th Street @	129th Stre	et/St. Clai	r Place										
Eastbound	L			F	L			F	+				
	R	0.96	71.7	F	R	1.07	108.5	F	+				
Westbound	L	7.00	5892.0	F	L			F	+				
	R	2.15	556.4	F	R	1.06	84.5	F					

Notes

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection
V/C = Volume to Capacity; LOS = Level of Service; --- = No results given in HCS; + indicates movements with significant impacts in Build condition

Marginal Street and West 133rd Street

During the AM peak hour, the southbound approach would continue to operate at LOS F, with delay increasing from 92.2 to 231.3 seconds and v/c ratio increasing from 1.12 to 1.46.

During the PM peak hour, the southbound approach would continue to operate at LOS F, with delay increasing from 110.0 to 129.2 seconds and v/c ratio increasing from 1.18 to 1.23.

Marginal Street and West 132nd Street

During the AM peak hour, the southbound left-through movement would continue to operate at LOS F, with delay increasing from 88.5 to 241.5 seconds.

During the PM peak hour, the southbound left-through movement would continue to operate at LOS F, with delay increasing from 105.2 to 149.3 seconds

Marginal Street and St. Clair Place

During the AM peak hour, the southbound through movement would deteriorate from LOS E to LOS F, with delay increasing from 45.0 to 50.4 seconds and v/c ratio increasing from 0.96 to 0.98.

During the PM peak hour, the southbound through movement would continue to operate at LOS F, with delay increasing from 84.7 to 149.9 seconds and v/c ratio increasing from 1.10 to 1.27.

Twelfth Avenue and West 131st Street

During the AM peak hour, the westbound approach would deteriorate from LOS E to LOS F, with delay increasing from 40.5 to 268.9 seconds and v/c ratio increasing from 0.43 to 1.33.

During the PM peak hour, the westbound approach would continue to operate at LOS F, with delay increasing from 105.9 to 354.8 seconds and v/c ratio increasing from 0.94 to 1.62.

Twelfth Avenue and St. Clair Place

During the AM peak hour, the northbound approach would deteriorate from LOS C to LOS D, with delay increasing from 16.7 to 30.4 seconds.

Riverside Drive and St. Clair Place

During the AM peak hour, the southbound left-through movement would deteriorate from LOS E to LOS F, with delay increasing from 41.9 to 181.6 seconds and v/c ratio increasing from 0.50 to 1.03, and the southbound through movement would deteriorate from LOS E to LOS F, with delay increasing from 39.3 to 157.8 seconds and v/c ratio increasing from 0.46 to 0.95.

During the PM peak hour, the southbound left-through movement would deteriorate from LOS E to LOS F, with delay increasing from 42.1 to 55.1 seconds and v/c ratio remaining at 0.47, and the southbound through movement would deteriorate from LOS E to LOS F, with delay increasing from 39.6 to 54.3 seconds and v/c ratio increasing from 0.31 to 0.40.

West 125th Street and West 129th Street/St. Clair Place

During the AM peak hour, the eastbound right-turn movement would deteriorate from LOS C to LOS F, with delay increasing from 23.5 to 7859.0 seconds and v/c ratio increasing from 0.71 to 17.80. In addition, the westbound left-turn movement would further deteriorate within LOS F.

During the PM peak hour, the eastbound right-turn movement would continue to operate at LOS F, with delay increasing from 71.7 to 108.5 seconds and v/c ratio increasing from 0.96 to 1.07. In addition, the eastbound and westbound left turn movements would further deteriorate within LOS F.

SIGNIFICANT IMPACTS

Without the proposed project improvements, the Proposed Actions would result in significant adverse impacts on the follow intersections:

AM Peak Hour

- Twelfth Avenue and West 133rd Street
- Twelfth Avenue and West 132nd Street
- Twelfth Avenue and West 125th Street
- Broadway and West 125th Street
- Marginal Street and West 133rd Street (unsignalized)
- Marginal Street and West 132nd Street (unsignalized)
- Marginal Street and St. Clair Place (unsignalized)
- Twelfth Avenue and West 131st Street (unsignalized)
- Twelfth Avenue and St. Clair Place (unsignalized)
- Riverside Drive and St. Clair Place (unsignalized)
- West 125th Street and West 129th Street/St. Clair Place (unsignalized)

PM Peak Hour

- Twelfth Avenue and West 133rd Street
- Twelfth Avenue and West 125th Street
- Broadway NB and West 133rd Street
- Broadway and West 130th Street
- Broadway and West 125th Street
- Marginal Street and West 133rd Street (unsignalized)
- Marginal Street and West 132nd Street (unsignalized)
- Marginal Street and St. Clair Place (unsignalized)
- Twelfth Avenue and West 131st Street (unsignalized)
- Riverside Drive and St. Clair Place (unsignalized)
- West 125th Street and West 129th Street/St. Clair Place (unsignalized)

With the proposed project improvements, no significant adverse impacts would result at any of the above intersections.

PARKING SUPPLY AND UTILIZATION

ON-STREET PARKING

As shown in Table 17-47, 67 on-street spaces would be displaced due to geometric modifications associated with the proposed transportation improvements. The expected on-street parking utilization in the 2030 Build conditions without the proposed transportation improvements is summarized in Table M-10.

Table M-10 2030 Build On-Street Parking Utilization Summary

2030 Duna On-Su	cce i airiiii	Ctimetton	Summing
2030 Build	AM	MD	PM
1/4-Mile Radius			
Capacity	1847	1847	1847
Spaces Removed due to Geometric Modifications	0	0	0
Effective 2030 Build Capacity	1847	1847	1847
2030 No Build Demand	1586	1643	1595
Subdistrict B and "Other Area" Demand	136	201	142
2030 Build Demand	1722	1844	1737
Remaining Spaces	125	3	110
Utilization	93%	100%	94%
% No Build Availability Utilized in Build Condition	52%	99%	56%
1/2-Mile Radius			
Capacity	4783	4783	4783
Spaces Removed due to Geometric Modifications	0	0	0
Effective 2030 Build Capacity	4783	4783	4783
2030 No Build Demand	3893	4207	4291
Subdistrict B and "Other Area" Demand	136	201	142
2030 Build Demand	4029	4408	4433
Remaining Spaces	754	375	350
Utilization	84%	92%	93%
% No Build Availability Utilized in Build Condition	15%	35%	29%
Note: See Appendix H for detailed parking accumulat	on analysis.		

Within ¼ mile of the Project Area, on-street parking would be 93, 100, and 94 percent utilized during the morning, midday, and evening periods, respectively, in the 2030 Build condition (compared to 86, 89, and 86 percent utilization for the same time periods under the 2030 No Build condition). Spaces available in the 2030 No Build condition would be 52, 99, and 56 percent utilized in the 2030 Build condition during the morning, midday, and evening periods, respectively. Since these utilization levels exceed 50 percent, a larger ½-mile on-street area was evaluated. Overall, on-street parking would be 84, 92, and 93 percent utilized during the morning, midday, and evening periods, respectively, in the 2030 Build condition. Spaces available in the 2030 No Build condition would be 15, 35, and 29 percent utilized in the 2030 Build condition during the morning, midday, and evening periods, respectively. Since less than half of the on-street parking capacity available in the 2030 No Build condition would be utilized in the Build condition, no significant adverse impacts to on-street parking conditions would occur.

OFF-STREET PARKING

Since off-street parking conditions would be the same under the Proposed Actions with or without transportation improvements, the analysis results are the same as those presented in Chapter 17.

2015 MITIGATION

Of the 8 intersections during the AM peak hour and 10 intersections during the PM peak hour identified to result in significant adverse traffic impacts with the Proposed Actions without proposed project improvements, all could be fully mitigated with standard traffic engineering measures, except for the Broadway intersection with West 125th Street. The impacts at this intersection could not be mitigated without a redirection of existing and future traffic in combination with a physical

reconfiguration of the intersection, which would be possible with the conversion of West 131st, West 132nd, and West 133rd Streets between Broadway and Twelfth Avenue from two-way to one-way operation, as described in Chapter 17 for the future Build condition with proposed project improvements. Recommended measures to mitigate impacts at the other intersections are described below and summarized in Tables M-11 to M-14.

Table M-11 Comparison of 2015 No Build, Build and Mitigation AM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	201	No Bu 5 AM Po	uild eak Hou	ır	Build	2015 A	M Peak	Hour	20		ation Peak Ho	ur			
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Changes		
Twelfth Aven	Twelfth Avenue @ West 133rd Street														
Northbound	L	1.02	65.9	E	L	1.08	82.6	F+	L	0.88	36.5	D	Restripe NB as one 16' left		
	LTR	0.19	11.0	В	LTR	0.30	12.2	В	LTR	0.37	13.8	В	turn lane and one 14.1'		
Southbound	LTR	0.15	10.4	В	LTR	0.15	10.4	В	LTR	0.27	24.2	С	left-through-right shared		
Westbound	LTR	0.76	37.1	D	LTR	0.87	47.7	D+	LTR	0.85	43.5	D	lane. Shift 1 second from		
													NS to WB and shift 20 seconds from NS to new NB exclusive signal		
	Int.		42.1	D	Int.		50.1	D	Int.		32.9	С	phase.		
Twelfth Aven	Twelfth Avenue @ West 132nd Street														
Northbound	LTR	0.49	13.8	В	LTR	0.56	15.0	В	LTR	0.59	16.6	В	Shift 2 seconds from NS to		
Southbound	LTR	0.13	10.3	В	LTR	0.18	10.7	В	LTR	0.19	11.8	В	EW		
Eastbound	LTR	0.79	37.2	D	LTR	0.92	51.1	D+	LTR	0.86	41.9	D			
Westbound	LTR	0.12	20.7	С	LTR	0.15	21.0	С	LTR	0.14	19.6	В			
	Int.		21.1	С	Int.		25.9	C	Int.		24.0	С			
Twelfth Aven	Twelfth Avenue @ West 125th Street														
Northbound	LTR	0.32	20.6	С	LTR	0.42	22.2	С	LTR	0.42	22.2	С	Restripe WB approach to		
Southbound	LT	0.38	22.1	С	LT	0.49	24.8	С	LT	0.49	24.8	С	provide 2 LTR & 1 R		
Eastbound	LTR	0.21	12.9	В	LTR	0.22	13.0	В	LTR	0.22	13.0	В			
Westbound	L	0.14	12.9	В	L	0.15	13.0	В	LTR	0.57	17.6	В			
	T	0.69	22.1	С	Т	0.68	21.7	С							
	R	0.96	48.8	D	R	1.11	95.0	F+	R	0.89	38.8	D			
	Int.		28.8	С	Int.		44.0	۵	Int.		23.7	С			

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-12 Comparison of 2015 No Build, Build and Mitigation PM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	201	No Bu 5 PM Pc	iild eak Hou	Г	Build 2	2015 PN	Peak F	lour	201	Mitiga 5 PM Pe	tion eak Hou	ır	
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Changes
Twelfth Avenue	@ Wes	t 133rd	Street										
Northbound	L	0.94	44.2	D	L	1.07	79.9	E+	L	0.92	41.7	D	Restripe NB as one 16'
	LTR	0.71	21.6	С	LTR	0.82	28.4	С	LTR	0.90	37.8	D	left turn lane and one 14.1' left-through-right
Southbound	LTR	0.10	10.0	В	LTR	0.11	10.1	В	LTR	0.21	24.9	С	shared lane. Shift 23
Westbound	LTR	1.30	177.1	F	LTR	1.53	278.3	F+	LTR	1.14	108.3	F	seconds from NS to new
								_			24.4	_	NB exclusive signal phase. Daylight WB
	Int.		81.7	F	Int.		134.9	F	Int.		64.1	E	approach.
Twelfth Avenue					r		1				·	Т	I
Northbound	LTR	0.42	22.2	С	LTR	0.49	23.4	C	LTR	0.49	23.4	<u>C</u>	Restripe WB approach to provide 2 LTR & 1 R
Southbound	LT	0.34	21.8	С	LT	0.63	32.2	С	LT	0.63	32.2	С	piovide 2 LTR & TR
Eastbound	LTR	0.35	14.4	В	LTR	0.37	14.5	В	LTR	0.37	14.6	В	
Westbound	L_	0.26	14.9	В	L	0.19	13.8	В	LTR	0.66	19.6	В	
	T	0.73	23.8	С	Т	0.69	22.1	C	 			ļ	
	R	1.14	100.5	F	R	1.36	195.3	F+	R	1.09	84.3	F	
	Int.		49.3	D	Int.	<u> </u>	85 .0	F	Int.		39.1	D	
Broadway NB (@ West	133rd S	treet		•			,	y				1
Northbound	LT	0.78	18.9	В	LT	0.87	24.0	C	LT	0.89	26.6	C	Transfer 1 second from
	R	0.07	9.2	Α	R	0.33	14.0	В	R	0.35	15.1	В	NB phase to EW phase.
Eastbound	LT	0.23	17.8	В	LT	0.32	19.5	В	LT	0.30	18.3	В	
Westbound	TR	0.86	40.9	D	TR	0.94	52.5+	D	TR	0.80	33.7	С	
	Int.		25.3	С	Int.		31.3	С	Int.		27.5	С	

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-13 Comparison of 2015 No Build, Build and Mitigation AM Peak Hour Conditions

													our Condition
		Build 2	2015 AM			Build 20	MA CI	Τ		10n 201	O AM PE	ak Hour	
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Changes
Marginal Stre	et @ W	est 133	rd Stree	ŧ									
Southbound	Т	1.07	74.1	F	Т	1.15	101.3	F+	T	0.87	23.3	С	Change Intersection
Westbound	L	0.20	10.6	В	L	0.19	10.6	В	L	0.41	31.1	С	Control from
									Int.		24.4	С	Unsignalized to Signalized
Margina/ Stre	et @ W	est 132	nd Stre	et			I	1			L		10.3
Southbound	LT	-	73.8	F	LT	_	94.9	F+	LT	0.74	18.2	В	Change Intersection
	T		8.3	A	Т	-	8.2	Α		-	-	-	Control from
Westbound	L	-	10.2	В	L	-	9.9	Α	L	0.10	21,1	С	Unsignalized to Signalized
	Int.		60.0	F	Int.		78.9	F	Int.		18.3	В	Signalized
Marginal Stre		t. Clair		L				1					L
Southbound	L	0.18	9.9	Α	L	0.19	9.9	Α	L	0.10	9.6	Α	Change Intersection
	Т	0.90	34.9	D	Т	0.91	37.1	Ε	LT	0.46	12.7	В	Control from
									Int.		12.4	В	Unsignalized to Signalized
Twelfth Aver	wa @ W	loct 12	1ct Stra	•			L	L			12.7		Cigridii2Cu
Northbound	LT	0.01	7.8	A	LT	0.01	7.9	Α	LTR	0.58	15.4	В	Change Intersection
Southbound	LT	0.01	10.8	В	LR	0.12	10.8	В	LTR	0.34	12.3	В	Control from Unsignalized to
Westbound	LTR	0.13	30.3	D	LTR	0.12	78.8	F+	LTR	0.34	22.4	C	
Eastbound	LTR	0.02	16.4	C	LTR	0.74	16.6	C	LTR	0.24	19.5	В	Signalized
Lasibourio	LIK	0.02	10.4	۲	LIK	0.02	10.0	1	Int.	0.01	15.1	В	İ
Twelfth Aver		4 Clair	Diana	<u> </u>		L	<u> </u>	<u> </u>		L	1 13.1		<u> </u>
Northbound	R	L Clair	14.7	В	R	-	16.2	С	R	0.86	40.6	D	Change Intersection
Southbound	L		9.1	A	L	-	9.2	A	L	0.08	32.4	С	Control from
Eastbound	T		10.0	A	T		10.2	В	T	0.27	23.1	C	Unsignalized to
Lastboaria	Int.		13.6	В	Int.		14.8	В	Int.	0.21	36.8	D	Signalized
Riverside Dr		t Clair	<u></u>		1114		1			L	1		1
Southbound	LT	0.42	34.0	D	LT	0.39	29.8	Гр	LT	0.37	35.5	D	Change Intersection
Stonioodila	T	0.38	32.3	D		0.35	27.7	D					Control from
Eastbound	LTR	0.13	7.8	A	LTR	0.18	7.9	A	LTR	0.49	6.7	Α	Unsignalized to
Lacibodila			7.0	<u> </u>		0.70	1.15	 ``	Int.		12.9	В	Signalized
West 125th S	Street @	129th	Street/S	t. Cla	ir Place								· · · · · · · · · · · · · · · · · · ·
Northbound	T				т Т		T	Ι	Т	0.73	24.4	С	Change Intersection
Southbound	T				Ť			 	Т	0.26	16.2	В	Control from Unsignalized to Signalized
Eastbound	L	0.02	75.6	F	L	0.01	46.4	E	L	0.00	13.9	В	
	R	0.64	20.0	c	R	0.63	20.4	c	R	0.70	27.6	C	
Westbound	L	0.14	101.9	F	L	0.07	50.5	F	L	0.01	14.0	В	
	R	0.81	44.7	E	R	0.52	17.8	C	R	0.45	19.6	В	1

Notes

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; --- = No results given in HCS; + indicates movements with significant impacts in Build condition

Table M-14 Comparison of 2015 No Build, Build and Mitigation PM Peak Hour Conditions Unsignalized Intersection Level-of-Service Analysis

	No	Build 2	015 PM		E	Build 20	15 PM		Mitiga	tion 20 Hou	15 PM P	eak	
	Lane		1		Lane		T		Lane		Ť T	Γ	
Intersection	Group	V/C	DELAY	LOS		V/C	DELAY	LOS		VIC	DELAY	LOS	Changes
Marginal Str											1		· · · · · · · · · · · · · · · · · · ·
Southbound	T	1.10	81.0	F	T	1.15	99.3	F+	Т	0.93	28.3	С	Change Intersection
Westbound	L	0.20	10.5	В	L	0.21	10.6	В	L	0.43	31.3	С	Control from Unsignalized
									Int.		28.7	С	to Signalized
Marginal Str	eet @ V	/est 132	nd Stree	et .			•					***************************************	
Southbound	LŤ	-	76.5	F	LT	-	100.2	F+	LT	0.84	22.1	С	Change Intersection
	Т	-	10.7	В	T	-	10.5	В		-	-	-	Control from
Westbound	L	-	10.3	В	L	-	10.6	В	L	0.19	22.4	С	Unsignalized to
	Int.		54.7	F	Int.		71.5	F	Int.		22.1	С	Signalized
Marginal Str	eet @ S	t. Clair	Place										
Southbound	L	0.29	10.6	В	L	0.29	10.6	В	L	0.15	10.1	В	Change Intersection
	Т	1.04	64.1	F	Т	1.10	84.7	F+	LT	0.58	14.4	В	Control from
						!			l I		1	_	Unsignalized to
					<u> </u>			L	Int.		13.9	В	Signalized
Twelfth Ave.							1				1 212		
Northbound	LT	0.02	7.8	<u> </u>	LT	0.02	7.9	A	LTR	0.80	21.2	C	Change Intersection Control from
Southbound	LT	0.07	11.9	В	LR	0.04	12.0	В	LTR	0.18	10.7	В	Unsignalized to
Westbound	LTR	0.86	85.7	F	LTR	1.49	313.7	F+	LTR	0.43	25.5	C	Signalized
Eastbound	LTR	0.05	19.2	С	LTR	0.05	20.2	С	LTR	0.03	19.6	B	Olgitalized
			<u></u>				<u> </u>		Int.	<u> </u>	20.1	<u> </u>	
Twelfth Ave		t. Clair					1 44 5			0.70	1 00 0	<u> </u>	06
Northbound	R		13.2	В	R		14.5	В	R	0.73	32.6	C	Change Intersection Control from
Southbound	L -		8.9	<u>A</u>	<u> </u>	-	9.0	A	L	0.05	31.9	C	Unsignalized to
Eastbound	T		11.3 12.5	В В	T		11.6 13.4	<u>В</u>	Int.	0.43	25.5 30.2	C	Signalized
	Int.			В	Int.	<u> </u>	13.4		Int.	<u> </u>	30.2	<u> </u>	Torgridin 200
Riverside Di Southbound	rive @ S	0.40	71ace 34.3	D	LT	0.37	41.5	E+	LT	0.21	33.4	ГС	Change Intersection
Southbound	T	0.40	33.2	D	T T	0.37	41.7	E+	'	0.21	33.4		Control from
Eastbound	LTR	0.25	7.9	A	LTR	0.32	8.0	A	LTR	0.64	9.0	A	Unsignalized to
Easinonin	LIK	0.10	7.5		LIIX	0.21	- 0.0	<u> </u>	Int.	0.04	11.7	B	Signalized
West 125th	Stroot 6	12046	Stroot/S	. (1)	ir Place	<u> </u>	1		1110.	L	1		
Northbound	Street @		Sueevs	. U/c	T	, 		Γ	ГТ	0.84	28.8	ГС	Change Intersection
Southbound	T		<u> </u>		T T				 	0.47	18.8	В	Control from
Eastbound	<u> </u>		$+ \equiv$	F	Ľ	0.24	223.5	F	 	0.01	14.0	В	Unsignalized to
Eastboullo	R	0.83	45.4	E	R	0.24	56.5	F+	R	0.59	24.2	C	Signalized
14/								F				+	1
Westbound	L	1.56	1074.0	F	L L	0.67	340.3	<u> </u>	L	0.03	14.2	В	-
	R	1.83	412.6	F	R	0.85	36.8	E	R	0.73	27.6	C	+
	l	L			1			1	Int.		25.4	C	

Notes:

L = Left Tum; T = Through; R = Right Tum; DefL = Defacto Left Tum; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; --- = No results given in HCS; + indicates movements with significant impacts in Build condition

Twelfth Avenue and West 133rd Street

During the AM peak hour, restriping northbound Twelfth Avenue as one 16-foot left-turn lane and one 14-foot left-through-right shared lane and shifting 1 second of green time from Twelfth Avenue to West 133rd Street would be necessary. In addition, shifting 20 seconds of green time from Twelfth Avenue to create a new signal phase for its northbound approach would be necessary. With these changes, the northbound left-turn lane would improve from LOS F (82.6 seconds of delay, 1.08 v/c ratio) to LOS D (36.5 seconds of delay, 0.88 v/c ratio). The

southbound approach would improve within LOS D (47.7 seconds of delay, 0.87 v/c ratio to 43.5 seconds of delay, 0.85 v/c ratio).

During the PM peak hour, restriping northbound Twelfth Avenue as one 16-foot left-turn lane and one 14-foot left-through-right shared lane and daylighting the westbound approach would be necessary. In addition, shifting 23 seconds of green time from Twelfth Avenue to create a new signal phase for its northbound approach would be necessary. With these changes, the northbound left-turn lane would improve from LOS E (79.9 seconds of delay, 1.07 v/c ratio) to LOS D (41.7 seconds of delay, 0.92 v/c ratio). The westbound approach would improve within LOS F (from 278.3 seconds of delay, 1.53 v/c ratio to 108.3 seconds of delay, 1.14 v/c ratio).

Twelfth Avenue and West 132nd Street

During the AM peak hour, shifting 2 seconds of green time from Twelfth Avenue to West 132nd Street would improve the eastbound approach within LOS D (from 51.1 seconds of delay, 0.92 v/c ratio to 41.9 seconds of delay, 0.86 v/c ratio).

Twelfth Avenue and West 125th Street

During the AM peak hour, restriping the westbound approach to provide two left-through-right and one right turn lanes would improve the westbound right-turn lane from LOS F (95.0 seconds of delay, 1.11 v/c ratio) to LOS D (38.8 seconds of delay, 0.89 v/c ratio).

During the PM peak hour, restriping the westbound approach to provide two left-through-right and one right turn lanes would improve the westbound right-turn lane within LOS F (from 195.3 seconds of delay, 1.36 v/c ratio to 84.3 seconds of delay, 1.09 v/c ratio).

Broadway Northbound and West 133rd Street

During the PM peak hour, a transfer of 1 second of green time from Broadway to West 133rd Street would improve the westbound approach from LOS D (52.5 seconds of delay, 0.94 v/c ratio) to LOS C (33.7 seconds of delay, 0.80 v/c ratio).

By signalizing the intersections listed below, the projected significant adverse impacts at these unsignalized intersections would be fully mitigated, with all movements operating at acceptable levels of service.

- Marginal Street and West 133rd Street
- Marginal Street and West 132nd Street
- Marginal Street and St. Clair Place
- Twelfth Avenue and West 131st Street
- Twelfth Avenue and St. Clair Place
- Riverside Drive and St. Clair Place
- West 125th and West 129th Street/St. Clair Place

2030 MITIGATION

Of the 11 intersections during the AM peak hour and 11 intersections during the PM peak hour identified to result in significant adverse traffic impacts with the Proposed Actions without proposed project improvements, all could be fully mitigated with standard traffic engineering measures, except for the Broadway intersection with West 125th Street. The impacts at this intersection could not be mitigated without a redirection of existing and future traffic in combination with a physical

reconfiguration of the intersection, which would be possible with the conversion of West 131st, West 132nd, and West 133rd Streets between Broadway and Twelfth Avenue from two-way to one-way operation, as described in Chapter 17 for the future Build condition with proposed project improvements. Recommended measures to mitigate impacts at the other intersections are described below and summarized in Tables M-15 to M-18.

Table M-15 Comparison of 2030 No Build, Build and Mitigation AM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	203	No Bu 0 AM Po	uild eak Hou	r	Build 2	20 30 AN	l Peak H	lour	203	Mitiga 0 AM Po		ır		
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Changes	
Twelfth Ave	nue @ V	Vest 13:	3rd Stre	et										
Northbound	L	1.11	94.3	F	L	1.25	149.5	F+	L	1.04	66.2	E	Daylighting WB	
	LTR	0.21	11.2	В	LTR	0.41	13.7	В	LTR	0.44	14.2	В	approach. Shift centerline to create 2 10-foot WB	
Southbound	LTR	0.16	10.5	В	LTR	0.16	10.5	В	LTR	0.16	10.5	В	LTR lanes. Restripe NB	
Westbound	LTR	0.80	40.5	D	LTR	1.04	81.1	F+	LTR	0.49	25.0	С	as one 16' left turn lane	
													and one 14.1' left- through-right shared	
	Int.		55.4	E	Int.		85.1	F	Int.		36.9	D	lane.	
Twelfth Ave	Twelfth Avenue @ West 132nd Street													
Northbound	LTR	0.52	14.4	В	LTR	0.64	16.5	В	LTR	0.63	16.3	В	Shift centerline 6' to north	
Southbound	LTR	0.14	10.4	В	LTR	0.27	11.7	В	LTR	0.27	11.6	В	side and restripe EB to	
Eastbound	LTR	0.81	39.0	D	LTR	1.41	225.1	F+	LTR	0 .86	38.5	D	provide 2 LTR with 10' each	
Westbound	LTR	0.12	20.8	С	LTR	0.19	21.5	С	LTR	0.19	21.5	<u></u>		
	Int.		21.7	С	Int.		91.8	F	Int.		2 4.0	С		
Twelfth Ave	nue @ V	Vest 12	5th Stre	et										
Northbound	LTR	0.34	20.8	С	LTR	0.57	25.3	С	LTR	0.63	29.1	С	Restripe WB to provide	
Southbound	LT	0.42	22.9	С	LT	0.46	23.9	С	LT	0.51	27.6	С	1L, 2TR, 1R. Transfer 3 seconds from NS phase	
Eastbound	LTR	0.22	13.0	В	LTR	0.23	13.1	В	LTR	0.22	11.5	В	to EW phase.	
Westbound	L	0.15	13.0	В	L	0.16	13.2	В	L	0.15	11.5	В	,	
	Т	0.74	24.0	С	T	0.73	23.8	С	TR	0.57	15.8	В		
	R	1.03	68.0	Е	R	1.44	229.0	F+	R	1.02	64.4	E		
	Int.		3 5.7	D	Int.		94. 8	F	Int.		30.2	С		

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-16 Comparison of 2030 No Build, Build and Mitigation PM Peak Hour Conditions Signalized Intersection Level-of-Service Analysis

	203	No E 30 PM F	Build Peak Ho	our	Build	2030 P	M Peak	Hour	200	Mitig 30 PM I	ation Peak Ho	our	
Intersection	Lane Group	VIC	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Changes
Twelfth Avei	nue @ I	Vest 13	3rd Str	eet									
Northbound	L	1.01	60.1	Е	L	1.31	173.6	F+	L	0.97	45.0	D	Daylighting WB
	LTR	0.76	24.1	С	LTR	1.00	57.4	E+	LTR	0.96	42.7	D	approach. Shift
Southbound	LTR	0.11	10.1	В	LTR	0.11	10.1	В	LTR	0.10	7.8	Α	centerline to create 2 10-foot WB LTR lanes.
Westbound	LTR	1.36	206.1	F	LTR	1.78	390.9	F+	LTR	1.01	64.2	Ε	Restripe NB as one 16'
													left turn lane and one
													14.1' left-through-right shared lane. Shift 5
	Int.		96.8	F	Int.		211.3	F	Int.		48.9	D	seconds EW to NS
Twelfth Avei	nue @ I	Nest 13	2nd St	reet									
Northbound	LTR	0.74	19.1	В	LTR	0.87	25.0	С	LTR	0.86	24.4	С	Shift centerline 6' to
Southbound	LTR	0.06	9.8	Α	LTR	0.13	10.3	В	LTR	0.13	10.3	В	north side and restripe
Eastbound	LTR	0.63	29.9	С	LTR	0.74	34.7	С	LTR	0.46	24.7	С	EB to provide 2 LTR with 10' each
Westbound	LTR	0.12	20.7	С	LTR	0.45	25.8	С	LTR	0.45	25.8	С	with to each
	Int.		21.1	С	Int.		26.1	С	Int.		23.6	С	
Twelfth Ave	nue @ I	Nest 12	25th Str	eet									
Northbound	LTR	0.45	22.7	С	LTR	0.52	24.0	С	LTR	0.52	24.0	С	Restripe WB to provide
Southbound	LT	0.39	22.8	С	LT	0.56	29.3	С	LT	0.56	29.3	C	1L, 2TR, 1R
Eastbound	LTR	0.40	14.9	В	LTR	0.44	15.6	В	LTR	0.44	15.5	В	
Westbound	L	0.29	15.6	В	L	0.22	14.5	В	L	0.22	14.5	В	
	Т	0.78	25.9	С	Т	0.81	28.1	С	TR	0.71	20.7	С	
	R	1.23	135.7	F	R	1.49	250.0	F+	R	1.14	103.3	F	
	Int.		63.0	E	Int.		105.9	F	Int.		41.5	D	
Broadway N	B @ W	est 133	rd Stree	et									
Northbound	LT	0.83	21.1	С	LT	0.99	40.4	D	LT	0.97	37.7	D	Shift 2 second from NB
	R	0.06	9.1	Α	R	0.37	15.9	В	R	0.40	18.7	В	to EW.
Eastbound	LT	0.26	18.3	В	LT	0.61	28.3	С	LT	0.54	23.1	C_	Restrict NB parking access
Westbound	TR	0.93	50.9	D	TR	0.97	60.0	E+	TR	0.92	47.4	D	access
	Int.		29.6	С	Int.		43.3	D	Int.		38 .0	D	
Broadway @	West	130th S	treet										
Northbound	LT	0.35	6.2	Α	LT	0 .39	6.4	Α	LT	0.39	6.4	Α	Daylight and restipe EB
Southbound	LT	0.35	6.2	Α	LT	0.38	6.4	Α	LT	0.38	6.4	Α	approach to provide 1L, 1LR shared and
Eastbound	LR	0.34	27.0	С	LR	1.50	268.3	F+	L	0.44	29.2	С	1R.
									LR	0.64	34.2	С	
									R	0.48	32.0	С	
	Int.		7. 7	Α	Int.		69.2	E	Int.		12.6	В	1

Notes

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; + indicates movements with significant impacts in Build condition

Table M-17 Comparison of 2030 No Build, Build and Mitigation AM Peak Hour Conditions Unsignalized Intersection Level-of-Service Analysis

	No	Build 2	030 AM		В	uild 20	30 AM		203	Mitiga 0 AM Pe	tion eak Hou	ır	
Intersection	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	VIC	Delay	LOS	Changes
Marginal Str	eet @ V	/est 133	rd Stree	et									
Southbound	Т	1.12	92.2	F	T	1.46	231.3	F+	Т	1.04	51.2	D	Change Intersection
Westbound	L	0.22	10.8	В	L	0.24	10.9	В	L	0.64	42.5	D	Control from Unsignalized to
									Int.		49.9	D	Signalized
Marginal Str	eet @ V	/est 132	nd Stre	et	· · · · · · · · · · · · · · · · · · ·						<u> </u>	•	
Southbound	LT		88.5	F	LT		241.5	F+	LT	0.95	32.1	С	Change Intersection
	Т		8.4	Α	Т		8.4	Α					Control from
Westbound	L	***	9.7	Α	L		10.1	В	L	0.14	21.6	С	Unsignalized to Signalized
	Int.		71.4	F	int.		202.5	F	Int.		31.7	С	- · · · · · · · · · · · · · · · · · ·
Marginal Str	eet @ S	t. Clair	Place										
Southbound	L	0.20	9.9	Α	L	0.23	10.2	В	L	0.12	9.8	Α	Change Intersection
	Т	0.96	45.0	Ε	Т	0.98	50.4	F+	LT	0.50	13.3	В	Control from Unsignalized to
									Int.		12.9	В	Signalized
Twelfth Ave	nue @ V	Vest 13	1st Stree	et									
Northbound	LT	0.01	7.8	Α	LT	0. 0 1	8.3	Α	LTR	0.65	16.7	В	Change Intersection
Southbound	LT	0.18	11.8	В	LR	0.15	12.1	В	LTR	0.54	15.1	В	Control from Unsignalized to Signalized
Westbound	LTR	0.43	40.5	E	LTR	1.33	268.9	F+	LTR	0.34	24.0	С	
Eastbound	LTR	0.02	17.4	С	LTR	0.03	22.8	С	LTR	0.01	19.5	В	
									Int.		1 6 .8	В	
Twelfth Ave	nue @ S	t. Clair	Place						·····	,		·	T
Northbound	R		16.7	С	R		30.4	D+	R	0.91	41.2	D	Change Intersection
Southbound	L		9.2	Α	L		9.6	Α	L	0.11	34.6	С	Control from Unsignalized to
Eastbound	T	<u></u>	10.4	В	Т		11.6	В	T	0.36	25.8	С	Signalized
	Int.		15.2	С	int.		26.0	D	Int.	<u> </u>	37.8	D	
Riverside D			1		r	T	I	Ι_	T		T	т	To. 1: ::
Southbound	 	0.50	41.9	E	LT	1.03	181.6	F+	LT	0.46	38.8	D	Change Intersection Control from
	T	0.46	39.3	E	T	0.95	157.8	F+			44.0		Unsignalized to
Eastbound	LTR	0.14	7.8	Α_	LTR	0.24	8.1	Α	LTR	0.79	11.9	B B	Signalized
1474-405**	<u> </u>	1 4004:	C44/2	4.00	tu Ola : :		<u> </u>	l	Int.	1	16.0	ΙВ	
West 125th	Street @	0 129th	T		ir Place T		T		Т	0.95	41.7	Гр	Change Intersection
Northbound					l				T	0.95	17.6	В	Control from
Southbound	1				T				†		T	1	Unsignalized to
Eastbound	L	0.06	244.5	F	L L	0.02	80.0	F	L	0.00	12.8	В	Signalized
	R	0.71	23.5	C	R	17.80	7859.0		R	1.10	98.9	F	
Westbound	L	0.23	158.3	F	L		<u></u>	F+	L	0.02	13.0	1	B
	R	0.94	68.0	F	R	0.67	25.7	D	R	0.47	18.6		
<u> </u>	<u> </u>		<u>L</u> .					<u> </u>	Int.		46.0	D	1

Notes:

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; --- = No results given in HCS; + indicates movements with significant impacts in Build condition

Table M-18 Comparison of 2030 No Build, Build and Mitigation PM Peak Hour Conditions Unsignalized Intersection Level-of-Service Analysis

					<u> </u>				T				I-Service Analy	
	No	Build 2	2030 PM		E	Bulld 20	30 PM		203	Mitiga O PM P	tion eak Hou	r		
Intersection	Lane	V/C	Delay	108	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	100	Changes	
Marginai Str		····			Group	V/C	Delay	LUG	Group	VIC	Delay	LUS	Unanges	
Southbound	T	1.18	110.0	F	Т	1.23	129.2	F+	Т	0.99	39.6	D	Change Intersection	
Westbound	L	0.21	10.6	В	L	0.26	11.0	В	l i	0.53	33.8	C	Control from	
			1				1	<u> </u>	Int.	0.00	38.7	D	Unsignalized to	
Marginal Str	oot @ V	Voct 12	and Stro		<u> </u>	<u> </u>		Į	L	<u> </u>			Signalized	
Southbound	LT		105.2	F	LT		149.3	F+	LT	0.91	27.3	С	Change Interes etile	
Oodarboaria	T		11.3	В	Т		11.5	В	L'		21.3		Change Intersection Control from	
Westbound	L		10.4	В	L L		10.8	В	L	0.27	23.7	С	Unsignalized to	
Wedibodila	Int.		73.9	F	Int.		103.7	F	Int.	0.21	27.1	C	Signalized	
Marginal Str		t. Clair		•	7710.		1 100.7	<u>'</u>	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		21.1		<u> </u>	
Southbound	L	0.31	10.8	В	L	0.34	11.0	В	L	0.18	10.3	В	Change Intersection	
	T	1.10	84.7	F	T	1.27	149.9	F+	LT	0.66	16.1	В	Control from	
·-····································							T	<u> </u>	Int.	0.00	15.4	В	Unsignalized to	
Twelfth Aver	nua @ k	Voct 12	1ct Stra					L			L		Signalized	
Northbound	LT	0.02	7.8	A	LT	0.03	7.9	Α	LTR	0.85	24.2	С	Change Intersection	
Southbound	LT	0.02	12.1	В	LR	0 .05	12.4	В	LTR	0.19	10.7	В	Control from	
Westbound	LTR	0.94	105.9	F	LTR	1.62	354.8	F+	LTR	0.19	28.4	С	Unsignalized to	
Eastbound	LTR	0.05	19.9	c	LTR	0.08	26.4	D.	LTR	0.03	19.7	В	Signalized	
		0.00	10.0			0.00	20.4		Int.	0.03	23.0	C		
Twelfth Avei	nue @ S	t. Clair	Place				<u> </u>	L			20.0			
Northbound	R		14.8	В	R		17.3	С	R	0.78	34.8	С	Change Intersection	
Southbound	L		9.0	Α	L		9.2	Α	L	0.06	32.0	C	Control from	
Eastbound	Т		11.9	В	Т		12.9	В	Т	0.49	26.6	С	Unsignalized to	
	int.		13.7	В	Int.		15.6	С	Int.		31.9	С	Signalized	
Riverside Dr	ive @ S	t. Clair	Place											
Southbound	LT	0.47	42.1	Ε	LT	0.47	55.1	F+	LT	0.23	33.6	С	Change Intersection	
	T	0.31	39.6	Ε	Т	0.40	54.3	F+					Control from	
Eastbound	LTR	0.19	8.0	Α	LTR	0.22	8.1	Α	LTR	0.70	10.3	В	Unsignalized to Signalized	
									Int.		12. 8	В	Oignalized	
West 125th S	treet @	129th	Street/S	t. Cla	ir Place									
Northbound	T								T	0.95	40.6	D	Change Intersection	
Southbound	Т								Т	0.49	19.7	В	Control from	
Eastbound	L			F	L			F+	L	0.01	13.4	В	Unsignalized to Signalized	
	R	0.96	71.7	F	R	1.07	108.5	F+	R	0.87	44.7	D	3	
Westbound	L	7.00	5892.0	F	L			F+	L	0.03	13.7	В		
	R	2.15	556.4	F	R	1.06	84.5	F	R	0.82	32.1	c		
									Int.		34.3	С		

Notes

L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection

V/C = Volume to Capacity; LOS = Level of Service; --- = No results given in HCS; + indicates movements with significant impacts in Build condition

Twelfth Avenue and West 133rd Street

During the AM peak hour, restriping northbound Twelfth Avenue as one 16-foot left-turn lane and one 14-foot left-through-right shared lane would be necessary. In addition, daylighting the West 133rd Street approach and shifting the centerline to provide two 10-foot westbound left-through-right shared lanes would be necessary. With these changes, the northbound left-turn movement would improve from LOS F (149.5 seconds of delay, 1.25 v/c ratio) to LOS E (66.2 seconds of delay, 1.04 v/c ratio). The westbound approach would improve from LOS F (81.1 seconds of delay, 1.04 v/c ratio) to LOS C (25.0 seconds of delay, 0.49 v/c ratio).

During the PM peak hour, restriping northbound Twelfth Avenue as one 16-foot left-turn lane and one 14-foot left-through-right shared lane would be necessary. In addition, daylighting the West 133rd Street approach, shifting the westbound centerline to provide two 10-foot westbound left-through-right shared lanes, and shifting 5 seconds of green time from the eastbound/westbound phase to the northbound/southbound phase would be necessary. With these changes, the northbound left-turn movement would improve from LOS F (173.6 seconds of delay, 1.31 v/c ratio) to LOS D (45.0 seconds of delay, 0.97 v/c ratio), and the northbound left-through-right movement would improve from LOS E (57.4 seconds of delay, 1.00 v/c ratio) to LOS D (42.7 seconds of delay, 0.96 v/c ratio). The westbound approach would improve from LOS F (390.9 seconds of delay, 1.78 v/c ratio) to LOS E (64.2 seconds of delay, 1.01 v/c ratio).

Twelfth Avenue and West 132nd Street

During the AM peak hour, shifting the centerline 6 feet to the north and restriping eastbound West 132nd Street to provide two 10-foot left-through-right lanes would be necessary to improve the eastbound approach from LOS F (225.1 seconds of delay, 1.41 v/c ratio) to LOS D (38.5 seconds of delay, 0.86 v/c ratio).

During the PM peak hour, the above restriping would not materially alter the intersection's operating levels.

Twelfth Avenue and West 125th Street

During the AM peak hour, restriping westbound West 125th Street to provide one left-turn lane, two through-right lanes, and one right-turn lane, along with shifting 3 seconds of green time from Twelfth Avenue to West 125th Street would be necessary. With these changes, the westbound right-turn lane would improve from LOS F (229.0 seconds of delay, 1.44 v/c ratio) to LOS E (64.4 seconds of delay, 1.02 v/c ratio).

During the PM peak hour, restriping the westbound West 125th Street approach to provide one left-turn lane, two through-right lanes, and one right-turn lane would improve the westbound right-turn lane within LOS F (from 250.0 seconds of delay, 1.49 v/c ratio to 103.3 seconds of delay, 1.14 v/c ratio).

Broadway Northbound and West 133rd Street

During the PM peak period, a 2-second shift of green time from northbound Broadway to westbound West 133rd Street, along with restricting parking on the west side of northbound Broadway would be necessary. With these changes, the westbound through-right movement would improve from LOS E (60.0 seconds of delay, 0.97 v/c ratio) to LOS D (47.4 seconds of delay, 0.92 v/c ratio).

Broadway and West 130th Street

During the PM peak hour, daylighting and restriping the eastbound approach of West 130th Street to provide one left-turn lane, one left-right shared lane, and one right-turn lane would improve the eastbound left-right movement from LOS F (268.3 seconds of delay, 1.50 v/c ratio) to a left-turn lane operating at LOS C (29.2 seconds of delay, 0.44 v/c ratio), a left-right lane operating at LOS C (34.2 seconds of delay, 0.64 v/c ratio), and a right-turn lane operating at LOS C (32.0 seconds of delay, 0.48 v/c ratio).

Signalizing the intersections listed below would fully mitigate the projected significant adverse impacts at each of these intersections.

- Marginal Street and West 133rd Street
- Marginal Street and West 132nd Street
- Marginal Street and St. Clair Place
- Twelfth Avenue and West 131st Street
- Twelfth Avenue and St. Clair Place
- Riverside Drive and St. Clair Place
- West 125th and West 129th Street/St. Clair Place

TRANSIT AND PEDESTRIANS

INTRODUCTION

The future 2015 and 2030 scenarios without the project-related transportation improvements were evaluated to identify the potential impacts on transit and pedestrian facilities in the vicinity of the Project Area. Since the project-related improvements would only affect vehicular and pedestrian circulation, operating conditions at study area transit facilities would not be different from those described in Chapter 18, "Transit and Pedestrians," and, therefore, are not discussed further. Operating conditions of the affected pedestrian elements are presented below.

For the purpose of the future with the Proposed Actions (Build condition) analysis without the project-related improvements, operating conditions of the affected pedestrian elements were assessed. The key improvements affecting pedestrian circulation that were excluded from this analysis are:

- Installation of a traffic signal and crosswalk at the intersection of West 125th Street and West 129th Street/St. Clair Place. The new traffic signal would include a pedestrian-only phase. This crosswalk would improve pedestrian travel between the Project Area, the 125th Street No. 1 subway station, and the Morningside Heights campus to the south. The crosswalk would connect to the "central spine" of the Manhattanville university area.
- Installation of new traffic signals and crosswalks at midblock locations on West 130th, West 131st, and West 132nd Streets between Broadway and Twelfth Avenue to provide connection among different sections of the pedestrian pathway or "spine" spanning between West 125th/West 129th Street and West 132nd Street.
- Crosswalk widenings throughout the study area.

PRINCIPAL CONCLUSIONS

Analysis results show that no significant pedestrian impacts would be expected to occur with the Proposed Actions in the 2015 Build year, absent the above-described improvements. However, the Proposed Actions, when fully completed in 2030 and absent the project-related transportation improvements, would result in significant adverse pedestrian impacts at the following locations and peak periods:

- The west crosswalk of Broadway and West 125th Street in the AM, midday, and PM peak periods;
- The west crosswalk of Broadway and West 129th Street in the midday and PM peak periods; and,
- The west crosswalk of Broadway and West 130th Street in the midday and PM peak periods.

These significant adverse pedestrian impacts would not occur with the Proposed Actions with project-related improvements. Potential measures to mitigate the significant adverse impacts identified above are presented at the end of this section.

2015 FUTURE WITH THE PROPOSED ACTIONS

The future 2015 Build condition would include the completion of five Columbia University buildings between West 125th and West 131st Streets, in addition to the developments projected for Subdistricts B, C, and the Other Areas. Because the central pedestrian spine between Broadway and Twelfth Avenue from West 125th Street to West 133rd Street would not have been completed at this time, pedestrian circulation patterns under the future conditions with and without project-related improvements would be similar. Based on the criteria discussed in Chapter 18, the Proposed Actions without project-related improvements would not result in significant adverse sidewalk, corner, or crosswalk impacts in the 2015 Build condition, with all analysis locations operating at LOS C or better. Tables M-19, M-20, and M-21 illustrate projected operating levels for study area sidewalks. Service levels for corner reservoirs and crosswalks are presented in Tables M-22 and M-23, respectively.

Table M-19 2015 Build Condition: Pedestrian LOS Analysis for Sidewalks

2013 Build C			15-Minute		rage		oon
		Width	Two-Way	AVE	raye	riat	.0011
Location	Sidewalk	(feet)	Volume	PFM	LOS	PFM	LOS
	AM Peak F	Period					
W.131st St between Twelfth Av and Broadway	North	11	28	0.2	A	4.2	Α
(near Twelfth)	South	13	16	0.1	Α	4.1	A
Broadway between W.132nd St and W.131st St	West	23	34	0.1	Α	4.1	A
	East	23	64	0.2	Α	4.2	Α
Broadway between W.131st St and W.130th St	West	18	231	0.9	Α	4.9	A
	East	17	142	0.6	Α	4.6	Α
W.131st St between Twelfth Av and Broadway	North	12	140	0.8	Α	4.8	Α
(near Broadway)	South	8	22	0.2	Α	4.2	Α
W.130th St between Twelfth Av and Broadway	North	10	69	0.5	Α	4.5	Α
(near Broadway)	South	15	98	0.4	Α	4.4	Α
Twelfth Av between W.131st/W.130th St and	West	19	10	0.0	Α	4.0	Α
W.125th St	East	16	58	0.2	Α	4.2	Α
W.130th St between Twelfth Av and Broadway	North	15	35	0.2	Α	4.2	Α
(near Twelfth)	South	13	44	0.2	Α	4.2	Α
W.125th St between Twelfth Av and W.129th St	North	14	259	1.2	Α	5.2	В
	South	14	32	0.2	Α	4.2	Α
Broadway between W.130th St and W.129th St	West	19	125	0.4	Α	4.4	Α
	East	15	80	0.4	Α	4.4	Α
Broadway between W.129th St and W.125th St	West	17	213	0.8	Α	4.8	Α
	East	13	174	0.9	Α	4.9	Α
W. 129th St between W. 125th Street and	North	15	15	0.1	Α	4.1	Α
Broadway	South	15	68	0.3	A	4.3	Α
W.125th St between Broadway and Amsterdam	North	13	164	0.8	Α	4.8	Α
Av	South	7	235	2.2	Α	6.2	В
Broadway between W.125th St and Tiemann Pl	East	10	393	2.6	Α	6.6	В
W 405th OLL-1 W 400th OL	West	10	336	2.2	Α	6.2	В
W.125th St between W.129th St and Broadway	South	14	262	1.2	Α	5.2	В
W.C. DEM	North	13	317	1.6	A	5.6	В
Note: PFM = pedestrians per foot per minute		***************************************					

Table M-20 2015 Build Condition: Pedestrian LOS Analysis for Sidewalks

			15-Minute	Ave	rage	Plat	oon
	01.1	Width	Two-Way				
Location	Sidewalk	(feet)	Volume	PFM	LOS	PFM	LOS
	Midday Peal						*
W.131st St between Twelfth Av and Broadway	North	11	20	0.1	Α	4.1	Α
(near Twelfth)	South	13	12	0.1	A	4.1	A
Broadway between W.132nd St and W.131st St	West	23	30	0.1	Α	4.1	Α
	East	23	43	0.1	A	4.1	A
Broadway between W.131st St and W.130th St	West	18	213	8.0	Α	4.8	Α
	East	17	185	0.7	A	4.7	Α
W.131st St between Twelfth Av and Broadway	North	12	88	0.5	Α	4.5	Α
(near Broadway)	South	8	20	0.2	A	4.2	Α
W.130th St between Twelfth Av and Broadway	North	10	105	0.7	Α	4.7	Α
(near Broadway)	South	15	76	0.3	A	4.3	A
Twelfth Av between W.131st/W.130th St and	West	19	12	0.0	Α	4.0	Α
W.125th St	East	16	86	0.4	Α	4.4	Α
W.130th St between Twelfth Av and Broadway	North	15	12	0.1	Α	4.1	Α
(near Twelfth)	South	13	56	0.3	Α	4.3	Α
W.125th St between Twelfth Av and W.129th St	North	14	357	1.7	Α	5.7	В
	South	14	46	0.2	Α	4.2	Α
Broadway between W.130th St and W.129th St	West	19	90	0.3	Α	4.3	Α
•	East	15	80	0.4	Α	4.4	Α
Broadway between W.129th St and W.125th St	West	17	177	0.7	Α	4.7	Α
•	East	13	164	0.8	Α	4.8	A
W. 129th St between W. 125th Street and	North	15	33	0.1	Α	4.1	Α
Broadway	South	15	50	0.2	Α	4.2	Α
W.125th St between Broadway and Amsterdam	North	13	150	0.8	Α	4.8	Α
Av	South	7	261	2.5	A	6.5	В
Broadway between W.125th St and Tiemann Pl	East	10	314	2.1	Α	6.1	В
-	West	10	370	2.5	A	6.5	В
W.125th St between W.129th St and Broadway	South	14	333	1.6	Α	5.6	В
	North	13	144	0.7	A	4.7	A
Note: PFM = pedestrians per foot per minute							

Table M-21 2015 Build Condition: Pedestrian LOS Analysis for Sidewalks

		Effective Width	15-Minute Two-Way	Ave	rage	Plat	toon
Location	Sidewalk	(feet)	Volume	PFM	LOS	PFM	LOS
	PM Peak F	eriod					
W.131st St between Twelfth Av and Broadway	North	11	27	0.2	Α	4.2	Α
(near Twelfth)	South	13	8	0.0	Α	4.0	Α
Broadway between W.132nd St and W.131st St	West	23	44	0.1	Α	4.1	Α
	East	23	66	0.2	Α	4.2	Α
Broadway between W.131st St and W.130th St	West	18	250	0.9	Α	4.9	Α
	East	17	182	0.7	Α	4.7	Α
W.131st St between Twelfth Av and Broadway	North	12	112	0.6	Α	4.6	Α
(near Broadway)	South	8	35	0.3	Α	4.3	Α
W.130th St between Twelfth Av and Broadway	North	10	105	0.7	Α	4.7	Α
(near Broadway)	South	15	97	0.4	Α	4.4	Α
Twelfth Av between W.131st/W.130th St and	West	19	20	0.1	Α	4.1	Α
W.125th St	East	16	107	0.4	Α	4.4	Α
W.130th St between Twelfth Av and Broadway	North	15	35	0.2	Α	4.2	Α
(near Twelfth)	South	13	44	0.2	A	4.2	Α
W.125th St between Twelfth Av and W.129th St	North	14	341	1.6	Α	5.6	В
	South	14	32	0.2	Α	4.2	Α
Broadway between W.130th St and W.129th St	West	19	137	0.5	Α	4.5	Α
	East	15	102	0.5	Α	4.5	Α
Broadway between W.129th St and W.125th St	West	17	257	1.0	Α	5.0	В
	East	13	201	1.0	A	5.0	В
W. 129th St between W. 125th Street and	North	15	55	0.2	Α	4.2	Α
Broadway	South	15	44	0.2	A	4.2	Α_
W.125th St between Broadway and Amsterdam Av	North	13	196	1.0	Α	5.0	В
	South	7	317	3.0	A	7.0	С
Broadway between W.125th St and Tiemann Pl	East	10	373	2.5	Α	6.5	В
W 105th Ct hat was W 100th Ct - 15	West	10	439	2.9	A	6.9	В
W.125th St between W.129th St and Broadway	South	14	334	1.6	Α	5.6	В
Note: DEM - redestries (-)	North	13	138	0.7	<u> </u>	4.7	<u> </u>
Note: PFM = pedestrians per foot per minute							

Table M-22 2015 Build Condition: Pedestrian LOS Analysis for Corner Reservoirs

		AM Peal	Period	Midday Pe	ak Period	PM Peak Period		
Location	Corner	SFP	LOS	SFP	LOS	SFP	LOS	
Broadway and W.131st St	Northeast	287.6	Α	266.7	Α	284.9	Α	
	Southeast	285.6	Α	220.4	Α	249.7	Α	
	Southwest	151.7	Α	158.3	Α	131.3	Α	
	Northwest	233.0	Α	251.5	Α	202.1	Α	
Broadway and W.130th St	Southwest	208.3	Α	197.5	Α	182.9	Α	
,	Northwest	289.7	Α	274.0	Α	255.8	Α	
Twelfth Av and W.125th St	Northeast	465.3	A	357.9	Α	301.0	Α	
World / (Construction of	Southeast	1278.2	Α	1499.6	Α	979.9	Α	
	Southwest	1240.2	Α	1082.7	Α	879.9	Α	
	Northwest	1156.7	Α	1073.6	Α	723.3	A	
Broadway and W.129th St	Northeast	242.6	A	193.0	Α	171.7	Α	
	Southeast	187.4	Α	156.3	Α	161.9	Α	
	Southwest	206.2	Α	228.6	Α	183.0	Α	
	Northwest	361.7	Α	372.6	Α	312.4	Α	
Broadway and W.125th St	Northeast	105.5	Α	81.0	Α	82.6	Α	
,	Southeast	78.1	Α	69.2	Α	74.6	Α	
	Southwest	108.0	Α	116.7	Α	117.3	Α	
	Northwest	105.8	Α	98.7	Α	89.3	Α	

Table M-23 2015 Build Condition: Pedestrian Crosswalk LOS Analysis

		Street	Crosswalk	Co	ondition	s with co	onflictin	g vehicle	s
		Width	Width	A	VI	Mid	day	Pl	М
Location	Crosswalk	(feet)	(feet)	SFP	LOS	SFP	LOS	SFP	LOS
Broadway and W.131st St	North	102	11	292.4	Α	274.4	Α	235.8	Α
	East	52	14	144.7	Α	114.8	Α	129.0	Α
	South	109	11	380.1	Α	270.7	Α	365.7	Α
	West	34	19	119.6	_A	130.9	Α	102.6	A
Broadway and W.130th St	North	110	11	299.4	Α	151.9	Α	243.2	Α
	South	110	11	256.3	Α	153.4	Α	208.3	Α
	West	29	11	71.0	Α	75.0	Α	63.5	Α
Twelfth Av and W.125th St	North	110	12	642.6	Α	607.2	Α	403.6	Α
	East	70	12	548.6	Α	854.1	Α	345.5	Α
	South	134	11	1209.8	Α	1082.4	Α	979.6	Α
	West	70	12	424.5	Α	363.8	A	272.6	A
Broadway and W.129th St	North	110	11	283.2	Α	197.0	Α	196.3	Α
	East	50	15	119.1	Α	107.6	Α	107.1	Α
	South	115	15	292.9	Α	173.2	Α	208.8	Α
	West	30	15	104.0	Α	137.0	Α	90.7	Α
Broadway and W.125th St	North	118	17	97.2	Α	61.7	Α	85.3	Α
	East	70	13	34.2	С	29.2	С	31.0	С
	South	118	14	79.5	Α	62.7	Α	78.2	Α
	West	70	19	36.0	С	41.4	В	33.1	С

2030 FUTURE WITH THE PROPOSED ACTIONS

The future 2030 Build condition would include the completion of all Columbia University buildings between West 125th and West 134th Streets, in addition to the developments projected for Subdistricts B, C, and the Other Areas. Under the future conditions without project-related improvements, access to the completed buildings would not realize the full benefit of the central pedestrian spine absent the controlled crossings at West 125th and West 129th Street/St. Clair Place, and at the midblock locations along West 130th, West 131st, and West 132nd Streets between Broadway and Twelfth Avenue. Instead, pedestrian flow is expected to be more concentrated along Broadway, particularly at and near West 125th Street. Based on the criteria discussed in Chapter 18, the Proposed Actions without project-related improvements would result in significant adverse pedestrian impacts in the 2030 Build condition at the following locations and peak periods:

- The west crosswalk of Broadway and West 125th Street in the AM, midday, and PM peak periods;
- The west crosswalk of Broadway and West 129th Street in the midday and PM peak periods; and,
- The west crosswalk of Broadway and West 130th Street in the midday and PM peak periods.

These significant adverse pedestrian impacts would not occur with the Proposed Actions with project-related improvements. Tables M-24, M-25, and M-26 illustrate projected operating levels for the study area sidewalks. Service levels for corner reservoirs and crosswalks are presented in Tables M-27 and M-28, respectively.

Table M-24 2030 Build Condition: Pedestrian LOS Analysis for Sidewalks

		Effective Width	15-Minute Two-Way	Ave	rage	Plat	oon
Location	Sidewalk	(feet)	Volume	PFM	Los	PFM	LOS
	AM Peak P	eriod					
Twelfth Av between W.134th St and W.133rd St	West	18	17	0.1	Α	4.1	Α
	East	16	24	0.1	Α	4.1	Α
W.133rd St between Twelfth Av and Broadway	North	6	19	0.2	Α	4.2	Α
(near Twelfth)	South	11	41	0.2	Α	4.2	Α
Broadway between W.134th St and W.133rd St	West	25	151	0.4	Α	4.4	Α
	East	21	364	1.2	Α	5.2	В
Broadway between W.133rd St and W.132nd St	West	19	337	1.2	Α	5.2	В
	East	22	251	0.8	Α	4.8	Α
W. 133rd St between Twelfth Av and Broadway	North	16	16	0.1	Α	4.1	Α
(near Broadway)	South	6	70	0.8	Α	4.8	Α
Twelfth Av between W.133rd St and W.132nd St	West	11	17	0.1	Α	4.1	Α
	East	12	27	0.2	A	4.2	Α
W.132nd St between Twelfth Av and Broadway	North	14	132	0.6	Α	4.6	Α
(near Twelfth)	South	14	23	0.1	Α	4.1	A
W.132nd St between Twelfth Av and Broadway	North	8	155	1.3	Α	5.3	В
(near Broadway)	South	9	53	0.4	A	4.4	Α
Twelfth Av between W.132nd St and W.131st St	West	16	12	0.1	Α	4.1	Α
	East	16	124	0.5	Α	4.5	Α
W.131st St between Twelfth Av and Broadway	North	11	113	0.7	Α	4.7	Α
(near Twelfth)	South	13	44	0.2	A	4.2	Α
Broadway between W.132nd St and W.131st St	West	23	379	1.1	Α	5.1	В
•	East	23	222	0.6	Α	4.6	A
Broadway between W.131st St and W.130th St	West	18	652	2.4	Α	6.4	В
•	East	17	186	0.7	A	4.7	Α
W.131st St between Twelfth Av and Broadway	North	12	136	8.0	Α	4.8	Α
(near Broadway)	South	8	40	0.3	A	4.3	A
W.130th St between Twelfth Av and Broadway	North	10	35	0.2	Α	4.2	Α
(near Broadway)	South	15	16	0.1	A	4.1	Α
Twelfth Av between W.131st/W.130th St and	West	19	10	0.0	Α	4.0	Α
W.125th St	East	16	88	0.4	A	4.4	A
W.130th St between Twelfth Av and Broadway	North	15	35	0.2	Α	4.2	Α
(near Twelfth)	South	13	44	-0.2	Α	4.2	A
W.125th St between Twelfth Av and W.129th St	North	14	297	1.4	Α	5.4	В
	South	14	45	0.2	A	4.2	Α_
Broadway between W.130th St and W.129th St	West	19	680	2.4	Α	6.4	В
•	East	15	186	0.8	A	4.8	A
Broadway between W.129th St and W.125th St	West	17	685	2.7	Α	6.7	В
_	East	13	263	1.3	Α	5.3	В
W. 129th St between W. 125th Street and	North	15	82	0.4	Α	4.4	Α
Broadway	South	15	11	0.0	Α	4.0	A_
W.125th St between Broadway and Amsterdam	North	13	251	1.3	Α	5.3	В
Av	South	7	265	2.5	A	6.5	B
Broadway between W.125th St and Tiemann Pl	East	10	732	4.9	Α	8.9	C
	West	10	415	2.8	<u> </u>	6.8	В
W.125th St between W.129th St and Broadway	South	14	285	1.4	Α	5.4	В
	North	13	302	1.5	Α	5.5	В

Table M-25 2030 Build Condition: Pedestrian LOS Analysis for Sidewalks

			15-Minute Two-Way		rage		oon
Location	Sidewalk	(feet)	Volume	PFM	LOS	PFM	LOS
	Midday Peak						
Twelfth Av between W.134th St and W.133rd St	West	18	34	0.1	Α	4.1	A
	East	16	30	0.1	A	4.1	A
W.133rd St between Twelfth Av and Broadway	North	6	37	0.4	A	4.4	A
(near Twelfth)	South	11	29	0.2	Α	4.2	A
Broadway between W.134th St and W.133rd St	West	25	115	0.3	A	4.3	A
	East	21	405	1.3	Α	5.3	В
Broadway between W.133rd St and W.132nd St	West	19	248	0.9	Α	4.9	Α
	East	22	283	0.9	Α	4.9	Α
W. 133rd St between Twelfth Av and Broadway	North	16	26	0.1	Α	4.1	Α
(near Broadway)	South	6	99	1.1	Α	5.1	В
Twelfth Av between W.133rd St and W.132nd St	West	11	25	0.2	Α	4.2	Α
	East	12	29	0.2	A	4.2	Α
W.132nd St between Twelfth Av and Broadway	North	14	101	0.5	Α	4.5	Α
(near Twelfth)	South	14	15	0.1	A	4.1	A
W.132nd St between Twelfth Av and Broadway	North	8	99	8.0	Α	4.8	Α
(near Broadway)	South	9	41	0.3	A	4.3	Α
Twelfth Av between W.132nd St and W.131st St	West	16	10	0.0	Α	4.0	Α
W 121st St between Twelfib Av and Deep t	East	16	104	0.4	A	4.4	A
W.131st St between Twelfth Av and Broadway (near Twelfth)	North	11	136	0.8	A	4.8	Α
Broadway between W.132nd St and W.131st St	South West	13	66	0.3	<u>A</u>	4.3	Α
bloadway between w. 132nd St and w. 131st St		23	438	1.3	A	5.3	В
Broadway between W.131st St and W.130th St	East West	23 18	271	0.8	<u>A</u>	4.8	A
broadway between W.131St St and W.130th St	East		705	2.6	A	6.6	В
W.131st St between Twelfth Av and Broadway	North	17 12	232	0.9	A	4.9	A
(near Broadway)	South		155	0.9	A	4.9	A
W.130th St between Twelfth Av and Broadway	North	8 10	61 32	0.5	A	4.5 4.2	Α
(near Broadway)	South	15	12	0.2			A
Twelfth Av between W.131st/W.130th St and	West	19	12	0.0	A 	4.1	A A
W.125th St	East	16	168	0.7			
W.130th St between Twelfth Av and Broadway	North	15	12	0.1	A 	4.7 4.1	A
(near Twelfth)	South	13	56	0.1	A	4.1	
W.125th St between Twelfth Av and W.129th St	North	14	333	1.6		5.6	A B
	South	14	71	0.3	Ā	4.3	A
Broadway between W.130th St and W.129th St	West	19	754	2.6	$\frac{\Delta}{A}$	6.6	B
•	East	15	247	1.1	Â	5.1	В
Broadway between W.129th St and W.125th St	West	17	675	2.6	A	6.6	В
•	East	13	278	1.4	A	5.4	В
W. 129th St between W. 125th Street and	North	15	71	0.3	A	4.3	Ā
Broadway	South	15	20	0.1	A	4.1	A
W.125th St between Broadway and Amsterdam	North	13	294	1.5	A	5.5	В
Av	South	7	326	3.1	A	7.1	C
Broadway between W.125th St and Tiemann Pl	East	10	564	3.8	Α	7.8	č
	West	10	469	3.1	A	7.1	č
W.125th St between W.129th St and Broadway	South	14	281	1.3	A	5.3	В
	North	13	184	0.9	Α	4.9	A
Note: PFM = pedestrians per foot per minute							

Table M-26 2030 Build Condition: Pedestrian LOS Analysis for Sidewalks

2030 Bullu C			15-Minute Two-Way		rage		oon
Location	Sidewalk	(feet)	Volume	PFM	LOS	PFM	LOS
	PM Peak F		10.0				
Twelfth Av between W.134th St and W.133rd St	West	18	47	0.2	Α	4.2	Α
Two narrive bottoon trive at ordina trive at	East	16	53	0.2	Α	4.2	A
W.133rd St between Twelfth Av and Broadway	North	6	34	0.4	Α	4.4	Α
(near Twelfth)	South	11	56	0.3	Α	4.3	Α
Broadway between W.134th St and W.133rd St	West	25	172	0.5	Α	4.5	Α
,	East	21	444	1.4	Α	5.4	В
Broadway between W.133rd St and W.132nd St	West	19	368	1.3	Α	5.3	В
	East	22	356	1.1	Α	5.1	В
W. 133rd St between Twelfth Av and Broadway	North	16	29	0.1	Α	4.1	Α
(near Broadway)	South	6	83	0.9	Α	4.9	Α
Twelfth Av between W.133rd St and W.132nd St	West	11	33	0.2	Α	4.2	Α
	East	12	39	0.2	A	4.2	Α
W.132nd St between Twelfth Av and Broadway	North	14	135	0.6	Α	4.6	Α
(near Twelfth)	South	14	17	0.1	A	4.1	A
W.132nd St between Twelfth Av and Broadway	North	8	156	1.3	Α	5.3	В
(near Broadway)	South	9	51	0.4	Α	4.4	Α
Twelfth Av between W.132nd St and W.131st St	West	16	16	0.1	Α	4.1	Α
	East	16	130	0.5	A	4.5	A
W.131st St between Twelfth Av and Broadway	North	11	113	0.7	A	4.7	Α
(near Twelfth)	South	13	36	0.2	A	4.2	<u>A</u>
Broadway between W.132nd St and W.131st St	West	23	417	1.2	A	5.2	В
	East	23	261	0.8	A A	4.8	A B
Broadway between W.131st St and W.130th St	West	18	683	2.5		6.5	
T 181 A 1 D	East	17	226	0.9	A 	4.9 4.8	A A
W.131st St between Twelfth Av and Broadway (near Broadway)	North	12	137				
	South North	8 10	31 37	0.3	A A	4.3	A
W.130th St between Twelfth Av and Broadway (near Broadway)	South	15	19	0.2	A	4.1	Â
Twelfth Av between W.131st/W.130th St and	West	19	20	0.1	$\frac{\hat{A}}{\hat{A}}$	4.1	A
W.125th St	East	16	144	0.6	Â	4.6	Â
W.130th St between Twelfth Av and Broadway	North	15	35	0.2		4.2	A
(near Twelfth)	South	13	44	-0.2	Â	4.2	A
W.125th St between Twelfth Av and W.129th St	North	14	383	1.8	A	5.8	В
77. 125ar of between Twenti 717 and 77. 125ar of	South	14	45	0.2	A	4.2	Ā
Broadway between W.130th St and W.129th St	West	19	736	2.6	A	6.6	В
Disastray Sources 11. 100th Stand 11. 120th St	East	15	238	1.1	Α	5.1	В
Broadway between W.129th St and W.125th St	West	17	755	3.0	A	7.0	В
	East	13	300	1.5	Α	5.5	В
W. 129th St between W. 125th Street and	North	15	87	0.4	Α	4.4	Α
Broadway	South	15	13	0.1	Α	4.1	Α
W.125th St between Broadway and Amsterdam	North	13	295	1.5	Α	5.5	В
Av	South	7	371	3.5	Α	7.5	С
Broadway between W.125th St and Tiemann Pl	East	10	744	5.0	Α	9.0	С
	West	10	529	3.5	Α	7.5	С
W.125th St between W.129th St and Broadway	South	14	304	1.4	Α	5.4	В
	North	13	157	8.0	Α	4.8	Α
Note: PFM = pedestrians per foot per minute							

Table M-27 2030 Build Condition: Pedestrian LOS Analysis for Corner Reservoirs

		AM Peal	Period	Midday Pe	ak Period		Period
Location	Corner	SFP	LOS	SFP	LOS	SFP	LOS
Twelfth Av and W.133rd St	Northeast	1460.0	Α	1088.8	Α	756.9	Α
	Southeast	1012.3	Α	810.5	Α	521.2	Α
	Southwest	1470.8	Α	1034.7	Α	643.0	Α
	Northwest	3280.1	Α	2055.6	Α	1383.3	Α
Broadway and W.133rd St	Northeast	177.2	Α	200.9	Α	165.3	Α
	Southeast	235.7	Α	212.3	Α	195.0	Α
	Southwest	167.3	Α	203.8	Α	151.4	Α
	Northwest	188.8	Α	290.6	Α	178.3	Α
Twelfth Av and W.132nd St	Northeast	609.7	Α	775.0	Α	467.7	Α
	Southeast	630.1	Α	527.4	Α	479.0	Α
	Southwest	1186.3	Α	619.1	Α	1091.8	Α
	Northwest	1234.2	Α	976.9	Α	937.2	Α
Broadway and W.132nd St	Southwest	184.7	Α	172.2	Α	181.4	Α
	Northwest	168.8	Α	157.7	Α	155.0	Α
Broadway and W. 131st St	Northeast	277.0	Α	206.5	Α	233.3	Α
	Southeast	245.7	Α	197.0	Α	224.8	Α
	Southwest	63.8	Α	58.7	В	65.6	Α
	Northwest	113.3	Α	99.2	Α	97.1	Α
Broadway and W.130th St	Southwest	76.6	Α	71.7	Α	76.9	Α
	Northwest	111.2	Α	101.2	A	98.6	Α
Twelfth Av and W.125th St	Northeast	299.2	Α	286.8	Α	222.0	Α
	Southeast	835.8	Α	1317.9	Α	937.2	Α
	Southwest	1240.2	Α	1082.7	Α	879.9	Α
	Northwest	1156.7	Α	1073.6	A	723.3	A
Broadway and W.129th St	Northeast	146.2	Α	109.5	Α	121.0	Α
	Southeast	121.5	Α	93.3	Α	108.8	Α
	Southwest	55.0	В	53.7	В	58.2	В
	Northwest	101.4	A	86.7	Α	83.4	A
Broadway and W.125th St	Northeast	81.7	Α	63.8	Α	68.1	Α
	Southeast	62.6	Α	53.7	В	60.5	Α
	Southwest	40.9	В	42.4	В	47.8	В
	Northwest	50.0	В	41.9	В	30.4	С
Note: SFP = square feet per p	edestrian						

Table M-28 2030 Build Condition: Pedestrian Crosswalk LOS Analysis

North Crosswalk North Go 10 1611.9 A 998.6 A 1337.3 A			Street	Crosswalk	Co	ondition	ons with conflicting vehicles							
Twelfth Av and W.133rd St					Al	M	Mid	day	PI	VI				
East 38 18 1934.0 A 2058.0 A 901.2 A North 60 10 345.9 A 257.5 A 180.2 A 180.2 A 180	Location	Crosswalk	(feet)	(feet)	SFP	LOS	SFP	LOS	SFP	LOS				
South 60 10 345.9 A 257.5 A 180.2 A West 30 13 1319.7 A 839.4 A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A A 460.7 A 460.	Twelfth Av and W.133rd St	North	60	10	1611.9	Α	998.6	À	1337.3	Α				
Broadway and W.133rd St		East	38	18	1934.0	Α	2058.0	Α	901.2	Α				
Broadway and W.133rd St		South	60	10	345.9	Α	257.5	Α	180.2	Α				
East 30 24 146.7 A 120.8 A 105.5 A South 103 11 131.4 A 141.2 A 151.4 A Mest 38 17 104.6 A 153.3 A 101.1 A A 140.8 A 151.4 A Mest 38 17 104.6 A 153.3 A 101.1 A A 140.8 A 151.4 A Mest 38 17 104.6 A 153.3 A 101.1 A A 140.8 A 151.4 A Mest 30 16 451.5 A 583.8 A 424.6 A A 424.6 A 424.6 A 424.6 A 424.6 A A		West		13	1319.7	Α		Α	460.7					
South West 38	Broadway and W.133rd St	North	103	10		Α	92.0	Α		Α				
West 38 17 104.6 A 153.3 A 101.1 A		East	30	24	146.7	Α	120.8	Α	105.5	Α				
Twelfth Av and W.132nd St		South	103	11	131.4	Α	141.2	Α	151.4	Α				
East 30 16 451.5 A 585.7 A 329.2 A South 60 13 697.1 A 235.8 A 523.3 A A A A A A A A A		West	38	17	104.6	Α	153.3	Α	101.1	Α				
South West 30 14 1192.9 A 707.8 A 868.7 A	Twelfth Av and W.132nd St	North	60	13	502.4	Α	583.8	Α	424.6	Α				
Broadway and W.132nd St North 102 13 797.1 A 957.3 A 730.0 A 730.0 A West 30 14 416.8 A 246.3 A 339.4 A West 30 14 51.7 B 47.2 B 43.9 B Broadway and W.131st St North 102 11 430.2 A 312.9 A 312.2 A 115.9 A 94.1 A 105.0 A South 109 11 453.5 A 396.3 A 869.6 A West 34 19 53.3 B 43.6 B 40.5 B Broadway and W.130th St North 110 11 1246.3 A South 110 11 296.5 A 167.0 A 286.3 A West 29 11 25.1 C 19.1 D* 16.3 D* Twelfth Av and W.125th St North 110 11 296.5 A 167.0 A 286.3 A 396.6 A West 29 11 25.1 C 19.1 D* 16.3 D* Twelfth Av and W.125th St North 110 11 1209.8 A West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St North 110 11 173.2 A 111.0 A 1246.A Broadway and W.125th St North 110 11 173.2 A 111.0 A 124.5 A 363.8 A 272.6 A Broadway and W.125th St North 110 11 173.2 A 111.0 A 124.6 A South 115 15 197.0 A 104.5 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A 68.7 A 730.0 A 740.2 B 74		East	30	16	451.5	Α	585.7	Α	329.2	Α				
Broadway and W.132nd St		South	60	13	697.1	Α	235.8	Α	523.3	Α				
South West 30 14 416.8 A 246.3 A 339.4 A West 30 14 51.7 B 47.2 B 43.9 B B B B B B B B B		West	30	14	1192.9	Α	707.8	Α	868.7	Α				
South West 30 14 416.8 A 246.3 A 339.4 A West 30 14 51.7 B 47.2 B 43.9 B B B B B B B B B	Broadway and W.132nd St	North	102	13	797.1	Α	957.3	Α	730.0	Α				
Broadway and W.131st St Broadway and W.131st St Broadway and W.131st St Broadway and W.131st St Broadway and W.131st St Broadway and W.131st St Broadway and W.131st St Broadway and W.130th St Broadway and W.130th St Broadway and W.130th St Broadway and W.130th St Broadway and W.130th St Broadway and W.130th St Broadway and W.130th St Broadway and W.130th St Broadway and W.125th St Broadw	,	South	102	14	416.8	Α	246.3	Α	339.4	Α				
Broadway and W.131st St		West	30	14		В	47.2	В	43.9	В				
East 52 14 115.9 A 94.1 A 105.0 A South 109 11 453.5 A 396.3 A 869.6 A West 34 19 53.3 B 43.6 B 40.5 B Broadway and W.130th St North 110 11 1246.3 A 665.5 A 950.2 A South 110 11 296.5 A 167.0 A 286.3 A West 29 11 25.1 C 19.1 D* 16.3 D* Twelfth Av and W.125th St North 110 12 618.1 A 596.6 A 396.6 A South 134 11 1209.8 A 1082.4 A 979.6 A West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St North 110 11 173.2 A 111.0 A 124.6 A South 135 15 197.0 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*	Broadway and W.131st St	North	102	11	430.2	Α	312.9	Α	312.2					
South 109		East		14	115.9	Α	94.1	Α	105.0	Α				
Broadway and W.130th St		South		11	453.5	Α	396.3	Α	869.6	Α				
Broadway and W.130th St		West	34	19	53.3	В	43.6	В	40.5	В				
South 110 11 296.5 A 167.0 A 286.3 A West 29 11 25.1 C 19.1 D* 16.3 D* Twelfth Av and W.125th St North 110 12 618.1 A 596.6 A 396.6 A South 134 11 1209.8 A 1082.4 A 979.6 A West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St North 110 11 173.2 A 111.0 A 124.6 A South 115 15 197.0 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*	Broadway and W.130th St	North	110		1246.3	, , , , , , , , , , , , , , , , , , , 	665.5	Α	950.2					
West 29 11 25.1 C 19.1 D* 16.3 D* Twelfth Av and W.125th St North 110 12 618.1 A 596.6 A 396.6 A East 70 12 240.0 A 591.3 A 316.7 A South 134 11 1209.8 A 1082.4 A 979.6 A West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St North 110 11 173.2 A 111.0 A 124.6 A East 50 15 72.9 A 63.1 A 69.4 A South 115 15 197.0 A 104.5 A 142.1 A Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70	,	South	110	11	296.5	Α	167.0	Α	286.3	Α				
Twelfth Av and W.125th St North 110 12 618.1 A 596.6 A 396.6 A South 134 11 1209.8 A 1082.4 A 979.6 A West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St North 110 11 173.2 A 111.0 A 124.6 A South 115 15 197.0 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*		West	29	11	25.1		19.1	D*	16.3	D*				
East 70 12 240.0 A 591.3 A 316.7 A South 134 11 1209.8 A 1082.4 A 979.6 A West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St	Twelfth Av and W.125th St							A		A				
West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St North 110 11 173.2 A 111.0 A 124.6 A East 50 15 72.9 A 63.1 A 69.4 A South 115 15 197.0 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*		East	70	12	240.0		591.3	Α	316.7	Α				
West 70 12 424.5 A 363.8 A 272.6 A Broadway and W.129th St North 110 11 173.2 A 111.0 A 124.6 A East 50 15 72.9 A 63.1 A 69.4 A South 115 15 197.0 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*		South	134	11	1209.8	Α	1082.4	Α	979.6	Α				
Broadway and W.129th St North 110 11 173.2 A 111.0 A 124.6 A East 50 15 72.9 A 63.1 A 69.4 A South 115 15 197.0 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*		West			424.5		363.8							
East 50 15 72.9 A 63.1 A 69.4 A South 115 15 197.0 A 104.5 A 142.1 A West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*	Broadway and W.129th St	North	110											
South West 115 30 15 15 24.4 C 19.0 D* A 142.1 A A D* Broadway and W.125th St North East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*	,	East	50	15	72.9	Α	63.1	Α	69.4	Α				
West 30 15 24.4 C 19.0 D* 15.8 D* Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*														
Broadway and W.125th St North 118 17 74.9 A 49.8 B 68.1 A East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*														
East 70 13 28.4 C 27.6 C 26.9 C South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*	Broadway and W.125th St													
South 118 14 51.1 B 33.0 C 44.2 B West 70 19 14.98 E* 14.6 E* 11.2 E*														
West 70 19 14.98 E* 14.6 E* 11.2 E*														
Note: SEP = square feet per pedestrian * denotes significant adverse impact														
	Note: SEP = square feet per pedes	trian * denotes	significant	adverse impact				·····						

2030 MITIGATION

Each of the projected significant adverse crosswalk impacts identified above could be mitigated with crosswalk widening, as follows.

Broadway and West 130th Street-West Crosswalk

The significant adverse impacts projected for the midday and PM peak hours could be mitigated by widening this crosswalk 2 feet, from 11 feet to 13 feet.

Broadway and West 129th Street-West Crosswalk

The significant adverse impacts projected for the midday and PM peak hours could be mitigated by widening this crosswalk 3 feet, from 15 feet to 18 feet.

Broadway and West 125th Street—West Crosswalk

The significant adverse impacts projected for the AM, midday, and PM peak hours could be mitigated by widening this crosswalk 12 feet, from 19 feet to 31 feet.

AIR QUALITY

As presented in Chapter 19, "Air Quality," the analysis of air quality effects of the Proposed Actions with project-related transportation improvements showed that the maximum predicted carbon monoxide (CO) and particulate matter (PM₁₀ and PM_{2.5}) concentrations would not result in any significant adverse air quality impacts. This section considers the effects on air quality of the Proposed Actions without the proposed transportation improvements.

This section consists of an analysis of potential mobile source air quality impacts at receptor sites 1 and 3 for CO, and the two sites analyzed for PM₁₀ and PM_{2.5} for the Proposed Actions with improvements (receptor sites 2 and 3). The CO receptor sites were selected for analysis because they were the locations in the primary traffic study area that had the highest No Build and Build concentrations based upon the analyses of the Proposed Actions with proposed traffic improvements. At other locations, the No Build and Build concentrations were lower and/or the receptor sites were situated in the secondary study area, outside of where build traffic improvements were proposed.

The tables presented below illustrate the maximum predicted pollutant concentrations with the Proposed Actions without the proposed traffic improvements. Tables M-29 and M-30 summarize the maximum CO build concentrations with and without improvements for the 2015 and 2030 analysis years, respectively. Tables M-31 and M-32 show the results of the PM₁₀ 24-hour analyses for the 2015 and 2030 analysis years, with and without the proposed traffic improvements, respectively. Tables M-33 and M-34 summarize the maximum 24-hour PM_{2.5} increments for the 2015 and 2030 analysis years, with and without the proposed traffic improvements, respectively, while Tables M-35 and M-36 show the future maximum predicted 2015 and 2030 annual average PM_{2.5} concentrations, respectively.

The values shown are the highest predicted concentrations for the analyzed receptor locations. The results show that without the proposed traffic improvements, future concentrations of pollutants with the Proposed Actions would be below the National Ambient Air Quality Standards (NAAQS) and would not result in any significant adverse air quality impacts using the *de minimis* criteria for CO impacts or PM_{2.5} interim guidance criteria.

Table M-29
Future (2015) Maximum Predicted 8-Hour Average Carbon Monoxide
Build with and without Improvements (parts per million)

5			8-Hour Concentration (ppm) (1)				
Receptor Site	Location	Time Period	Build with Improvements	Build without Improvements			
1	Twelfth Avenue and West 133rd Street	РМ	4.3	4.3			
3	Broadway and West 125th Street	PM	4.3	4.3			

Table M-30
Future (2030) Maximum Predicted 8-Hour Average Carbon Monoxide
Build with and without Improvements (parts per million)

Receptor Site			8-Hour Conce	ntration (ppm) ⁽¹⁾
	Location	Time Period	Build with Improvements	Build without Improvements 4.2
1	Twelfth Avenue and West 133rd Street	PM	4.3	
3			4.5	4.4

Table M-31
Future (2015) Maximum Predicted 24-Hour PM₁₀
Build with and without Improvements (μg/m³)

Receptor Site	Location	Build with Improvements	Build without Improvements	
2	Broadway and West 133rd Street	52.32	51.72	
3	Broadway and West 125th Street	56.95	57.64	

Table M-32 Future (2030) Maximum Predicted 24-Hour PM_{10} Build with and without Improvements (µg/m³)

Location	Build with Improvements	Build without Improvements		
Broadway and West 133rd Street	53.20	52.68		
Broadway and West 125th Street	55.34	55.87		
	Broadway and West 133rd Street Broadway and West 125th Street	Broadway and West 133rd Street 53.20		

Table M-33
Future (2015) Maximum Predicted 24-Hour PM_{2.5} Increment
Build with and without Improvements (μg/m³)

Receptor Site	Location	Build with Improvements	Build without Improvements	
2	Broadway and West 133rd Street	0.09	-0.03	
3	Broadway and West 125th Street	0.01	0.0004	

Table M-34
Future (2030) Maximum Predicted 24-Hour PM_{2.5} Increment
Build with and without Improvements (μg/m³)

Receptor Site	Location	Build with Improvements	Build without Improvements 0.03	
2	Broadway and West 133rd Street	0.11		
3	Broadway and West 125th Street	0.04	0.02	
Note: PM _{2.5} ir	nterim guidance criteria—24-hour average,	5 μg/m³.	*****	

Table M-35 Future (2015) Maximum Predicted Annual Average PM_{2.5} Increment Build with and without Improvements (µg/m³)

Receptor Site	Location	Build with Improvements	Build without Improvements							
2	Broadway and West 133rd Street	0.00	-0.002							
3	Broadway and West 125th Street	0.001	0.003							
Note: PM _{2.5}	Note: PM _{2.5} interim guidance criteria—annual (neighborhood scale), 0.1 μg/m ³ .									

Table M-36
Future (2030) Maximum Predicted Annual Average PM_{2.5} Increment
Ruild with and without Improvements (ug/m³)

Receptor Site	Location	Build with Improvements	Build without Improvements	
2	Broadway and West 133rd Street	0.01	0.02	
3	Broadway and West 125th Street	0.00	0.006	

NOISE

In Chapter 20, "Noise," potential impacts are presented for the Proposed Actions with the transportation improvements proposed as part of the Proposed Actions. This section considers the effects on noise receptors of the Proposed Actions without the proposed transportation improvements. For this analysis, potential noise impacts are examined at receptor sites 6, 10, and 13. These three noise receptor sites were selected for analysis because they are the locations which, based upon the analyses of the Proposed Actions with the transportation improvements, have the largest incremental change in noise levels (i.e., comparing Build with No Build values).

Tables M-37 and M-38 show the results of the analyses for the 2015 and 2030 analysis years, both with and without the proposed transportation improvements.

Table M-37 2015 Build $L_{eq(1)}$ Noise Levels

		Time	No Build	With Imp	rovements	Without Improvements		
Site	Location	Period		Build	Increase	Build	Increase	
6	Twelfth Av. between W. 131st & W. 132nd Sts	AM	75.4	76.3	0.9	75.8	0.4	
		PM	68.5	69.3	0.8	68.7	0.2	
10	W. 125th St. between	AM	70.4	73.6	3.2	69.4	-1.0	
	Twelfth Av. & St. Clair Pl.	PM	69.8	74.8	5.0	69.4	-0.4	
13	Bway between Tiemann	AM	77.1	76.5	-0.6	77.8	0.7	
	Pl. & W. 125th St.	PM	76.1	75.7	-0.4	76.2	0.1	

Table M-38 2030 Build $L_{eq(1)}$ Noise Levels

		Time	No Build	With Imp	rovements	Without Improvements		
Site	Location	Period		Build	Increase	Build	Increase	
6	Twelfth Av. between W. 131st & W. 132nd Sts	AM	75.7	77.2	1.5	77.2	1.5	
		PM	68.1	69.5	1.4	69.4	1.3	
10	W. 125th St. between	AM	69.8	73.3	3.5	69.2	-0.6	
	Twelfth Av. & St. Clair Pl.	PM	69.8	74.7	4.9	69.4	-0.4	
13	Bway between Tiemann	AM	77.2	77.0	-0.2	77.7	0.5	
	Pl. & W. 125th St.	PM	76.2	76.5	0.3	76.9	0.7	

At Site 6, the differences in noise levels, comparing the Build without improvements and the Build with improvements, would be relatively small (i.e., less than 0.5 dBA), and due to the differences in the traffic assignments for the two cases.

At Site 10, the differences in noise levels, comparing the Build with improvements and the Build without improvements, would be significant (i.e., more than 4 dBA). The differences are principally due to two factors: the Build without improvements does not contain the midblock traffic light on West 125th Street between Broadway and Twelfth Avenue, and differences in speed between the two cases. Build without traffic improvements noise levels are less than No Build values because of the decrease in speed that is due to project-generated traffic for the Build without traffic improvements case. This analysis shows that eliminating the midblock traffic light, which facilitates pedestrian crossings at this location, would eliminate the significant adverse noise impact at this location; however, it would result in a potentially unsafe and dangerous pedestrian condition.

At Site 13, the differences in noise levels, comparing the Build without improvements and the Build with improvements, would be relatively small (i.e., less than 0.5 dBA). These changes are principally due to changes in roadway geometry. (This location is the only location where there would be a significant geometry change due to proposed traffic improvements.)

In conclusion, with one exception, Build noise levels, both with and without the proposed transportation improvements, would be comparable. The exception would be Site 10, where the midblock crossing traffic light that is part of the transportation improvements proposed as part of the Proposed Actions would result in a significant adverse noise impact. For Build conditions without the traffic improvements (i.e., without the midblock traffic signal), no significant adverse noise impacts would occur at this location.



APPENDIX N.1

CB9 PROPOSED A-PLAN ALTERNATIVE TRAFFIC AND NOISE ANALYSIS

A. TRAFFIC

TRAVEL DEMAND ASSUMPTIONS

The CB9 proposed 197-a Plan would result in different uses within the Project Area. The travel demand assumptions for developing the trip estimates presented in Chapter 24, "Alternatives," are summarized in Table N.1-1.

> Table N.1-1 Travel Demand Assumptions for the CB9 Proposed 197-a Plan Alternative

Daily Trip Rates	Manufacturing Component		Residential Component		Offic Facil	Office/Community Facility Component		Destination Retail Component			Neighborhood Retai Component				
Person Trips	1	(1,4)		(6,7)			(1,8)		(1,9)			(1,9)			
Truck Trips	5.0		8.075		1	15.34		ĺ	47.42		47.42				
Modal Split			<u> </u>	0.03		L	0.2		0.35			0.35			
wodai Spiit	(3)		(10)	(3)		(3)	(3)		(10)	(1,9		(1,9)	(1)		
A 4 .	AM/PM		MD	AM/F	PM	MD	AM/F	M	MD	I AM/F		MD			(1)
Auto	26.0%		5.0%	12.0	%	12.0%	26.0	%	5.0%	5.09		5.0%	AM/F		MD
Taxi	1.5%		5.0%	3.09	6	3.0%	1.59		5.0%	4.09			2.09		2.0%
Subway	39.5%		10.0%	52.0	%	52.0%	39.5		10.0%	20.0		4.0%	3.09		3.0%
Bus	15.5%		5.0%	12.5		12.5%	15.5		5.0%			20.0%	20.0		20.0%
Commuter Rail	5.5%		0.0%	1.5%		1.5%	5.59		0.0%	5.09		5.0%	5.09		5.0%
Walk	12.0%		75.0%	19.0	-	19.0%	12.0		75.0%	0.09		0.0%	0.09		0.0%
Total	100%		100%	1009		100%	1009		100%	66.0		66.0%	70.0		70.0%
/ehicle Occupancy		(2,3)			(3,10)	10070	100,	(2,3)	100%	1009		100%	1009		100%
Auto	1	1.20		!	1.20		ı			ı	(2)			(2)	
Taxi		1.40		1.20		1.20		1.60		1.60					
emporal Distribution		(1,4)			(5,6)		L	1.40			1.20			1.20	
Person Trips	Total	In	Out i	Total	In	O.4		(1,2)			(1)			(1)	
AM Peak Hour	1	7.0%	23.0%	9.1%	20.0%	Out	Total	ln	Out	Total	In	Out	Total	in	Out
MD Peak Hour		8.0%	52.0%	4.7%	51.0%	80.0%	14.0%	95.0%	5.0%	3.1%	50.0%	50.0%	3.1%	50.0%	
PM Peak Hour		6.0%	64.0%	10.7%			15.6%	36.0%	64.0%	19.0%	50.0%	50.0%	19.0%	50.0%	
Truck Trips	1 .0.0%	0.070	04.0 /6	10.776	65.0%	35.0%	11.8%	11.0%	89.0%	9.6%	50.0%	50.0%	9.6%	50.0%	
AM Peak Hour	1 10	0.0%	J		0.70/										
MD Peak Hour		1.0%	ĺ		9.7%			10.0%			8.0%			8.0%	
PM Peak Hour		.0%	- 1		9.1%			11.0%	-		11.0%	1		11.0%	
	^	.076]		5.1%			2.0%			2.0%			2.0%	

Source:

- (1) Harlem Park Development EAS (May 2004)
- (2) Harlem Center Project EA (December 1999)
- (3) Census Data, US Census Bureau
- (4) ITE Trip Generation Manual, 7th Edition
- (5) Urban Space for Pedestrians (1975), Pushkarev & Zupan
- (6) Motor Trucks in the Metropolis (1969), Wilbur Smith Associates
- (7) CEQR Technical Manual
- (8) Columbia University Department of Facilities Planning and Space Management (July 2004, June 2006)
- (9) Retail and Industrial Zoning Text Amendments FGEIS (October 1996)
- (10) AKRF assumptions and comparisons of various sources

DETAILED TRAFFIC ANALYSIS

Both the Proposed Actions and the CB9 proposed 197-a Plan would result in primarily destination uses, with a relatively smaller portion of housing. Travel to these destination uses, including community facilities, offices, manufacturing space, and local retail, would share similar characteristics and peaking patterns among the two alternatives. As discussed in Chapter 17, "Traffic and Parking," the Henry Hudson Parkway is the primary highway connection to the area, with West 125th Street, Riverside Drive, Broadway, and Amsterdam Avenue providing key local access. Travel to area destinations with either the Proposed Actions or the CB9 proposed 197-a Plan would involve traversing one or more of these corridors and follow similar travel patterns. However, the vehicle trips generated by the Proposed Actions would be oriented toward central access points to the underground garage and truck loading, whereas the trips under this alternative would be directed toward all the available on-street parking spaces in the area. The AM and PM peak hour vehicle trip assignments are illustrated in Figures N.1-1 to N.1-6 for the primary study area, and in Figures N.1-7 to N.1-12 for the secondary study area. The corresponding future AM and PM peak hour traffic networks are shown in Figures N.1-13 and N.1-14, respectively, for the primary study area, and in Figures N.1-15 and N.1-16, respectively, for the secondary study area.

2030 197-A PLAN DEVELOPMENT SCENARIO BUILD ANALYSIS

A detailed analysis of intersection operations was conducted for the same intersections analyzed for the Proposed Actions. The results comparing the future 2030 condition with the implementation of the CB9 proposed 197-a Plan and the 2030 No Build condition are presented in Tables N.1-2 through N.1-5. In addition, analysis results for the 2030 Build and Mitigated Build conditions are included for comparison. Overall, the CB9 proposed 197-a Plan would result in significant adverse impacts at 17 intersections during the AM peak hour and 18 intersections during the PM peak hour. As detailed below and discussed in Chapter 24, "Alternatives," the same or similar mitigation measures recommended for the 2030 Build condition are expected to be adequate in mitigating the CB9 proposed 197-a Plan significant traffic impacts, with the exception of those at the Broadway and West 125th Street intersection, where projected impacts would remain unmitigated. For the FEIS, a quantitative mitigation analysis will be provided to demonstrate whether the projected CB9 proposed 197-a Plan significant adverse traffic impacts could be fully mitigated with the measures recommended for the Proposed Actions and, where necessary, with variations of these measures. If there are no feasible measures to mitigate certain significant adverse traffic impacts (i.e., at the Broadway and West 125th Street intersection), this analysis will also demonstrate that the projected impacts are unmitigatable.

For comparison purposes, analysis results presented for the Build and Mitigated Build conditions correspond to those in Appendix M for intersections within and bordering the Project Area and in Chapters 17 and 23 for the other study area intersections.

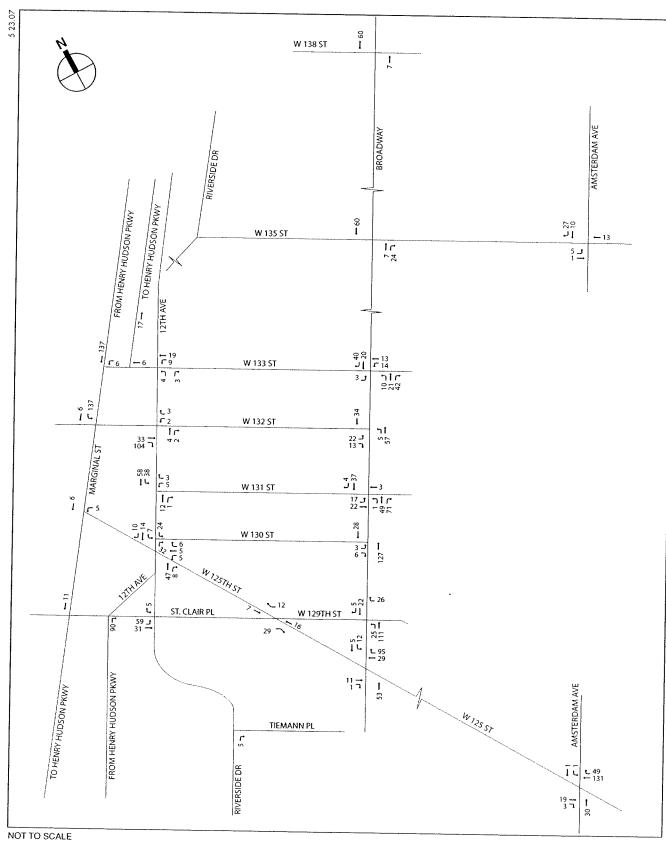


Figure N.1-1
Primary Study Area
2030 197-a Plan Alternative Generated Traffic
Auto • Morning Peak Hour

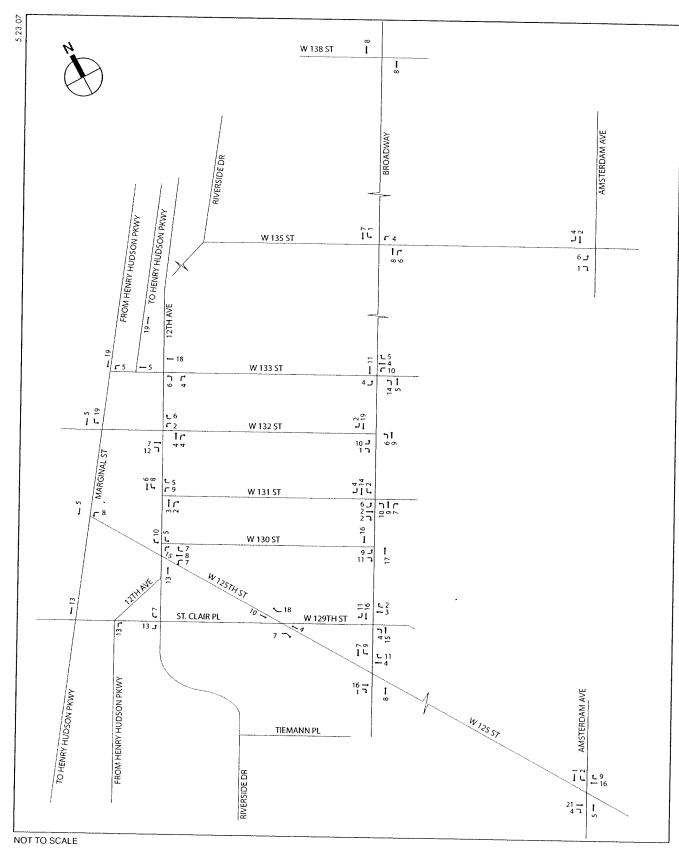


Figure N.1-2
Primary Study Area
2030 197-a Plan Alternative Generated Traffic
Taxi and Delivery • Morning Peak Hour

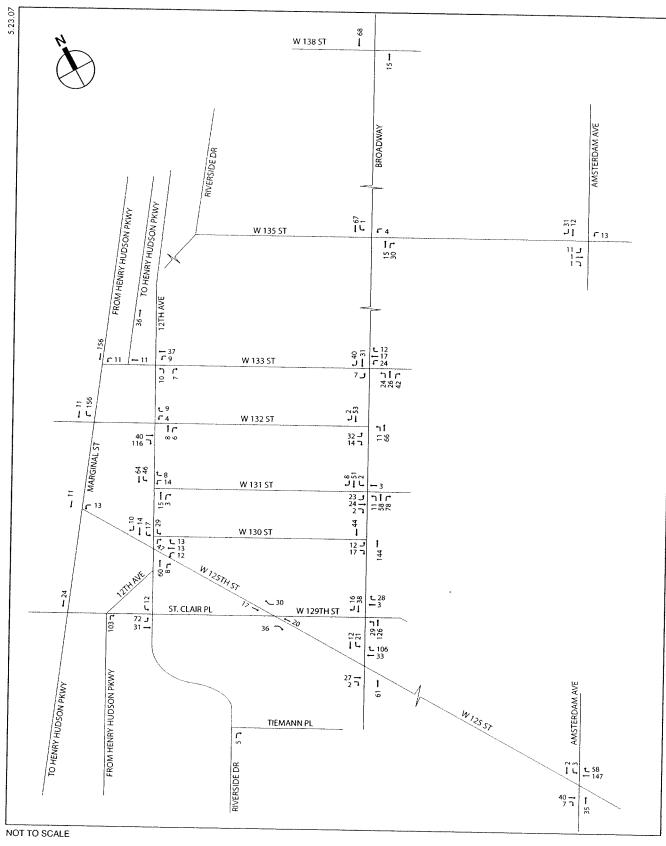


Figure N.1-3
Primary Study Area
2030 197-a Plan Alternative Generated Traffic
Morning Peak Hour

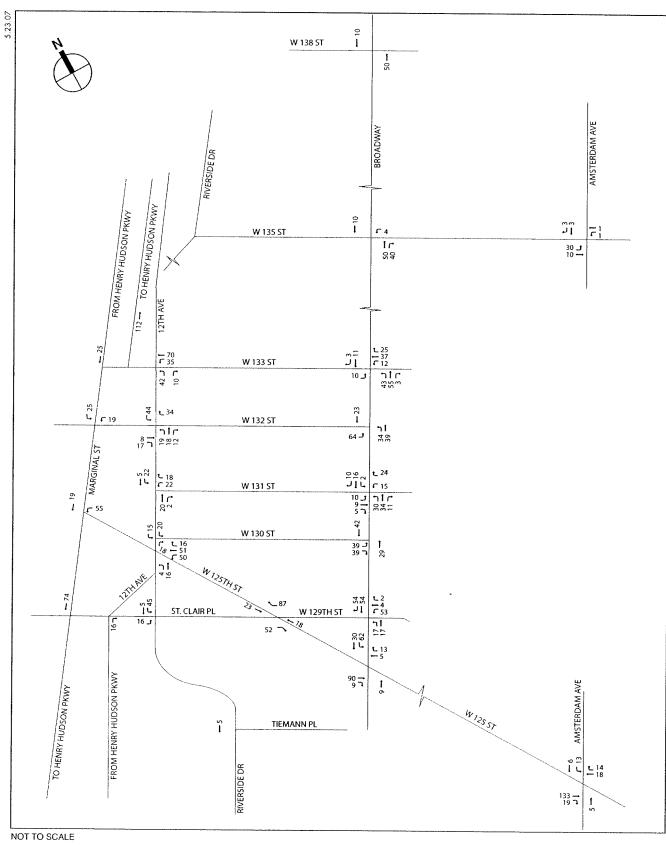


Figure N.1-4
Primary Study Area
2030 197-a Plan Alternative Generated Traffic
Auto • Evening Peak Hour

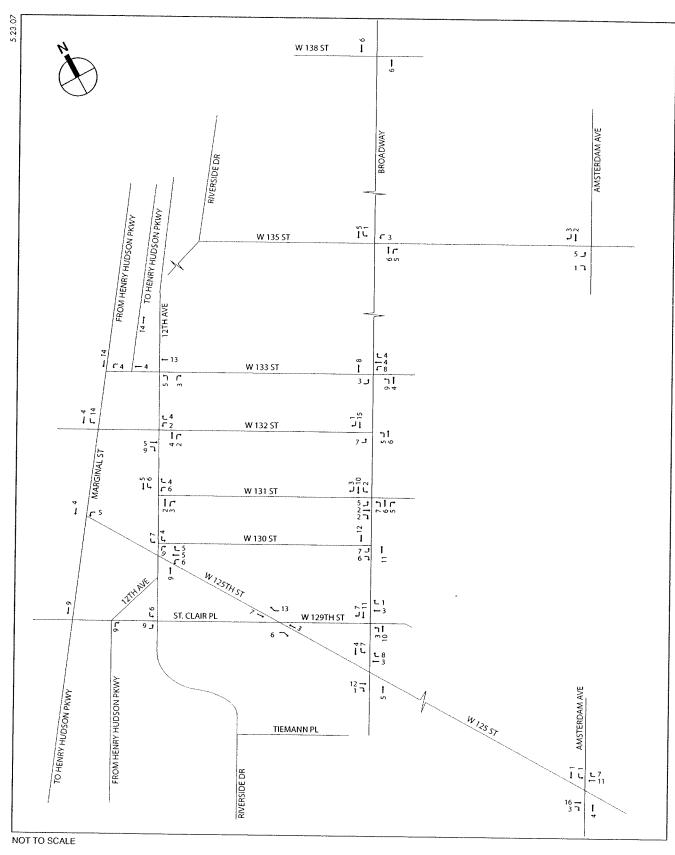


Figure N.1-5
Primary Study Area
2030 197-a Plan Alternative Generated Traffic
Taxi and Delivery • Evening Peak Hour

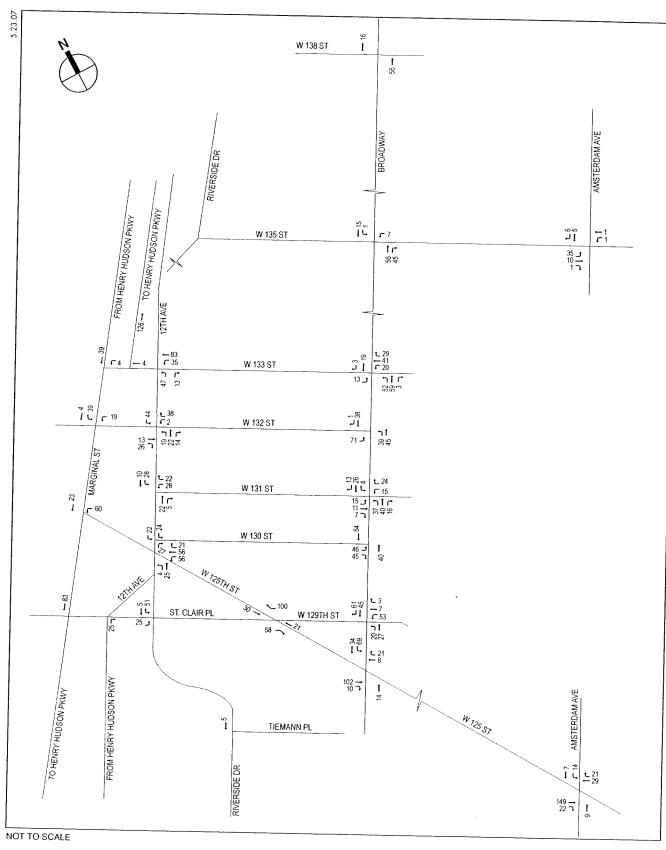
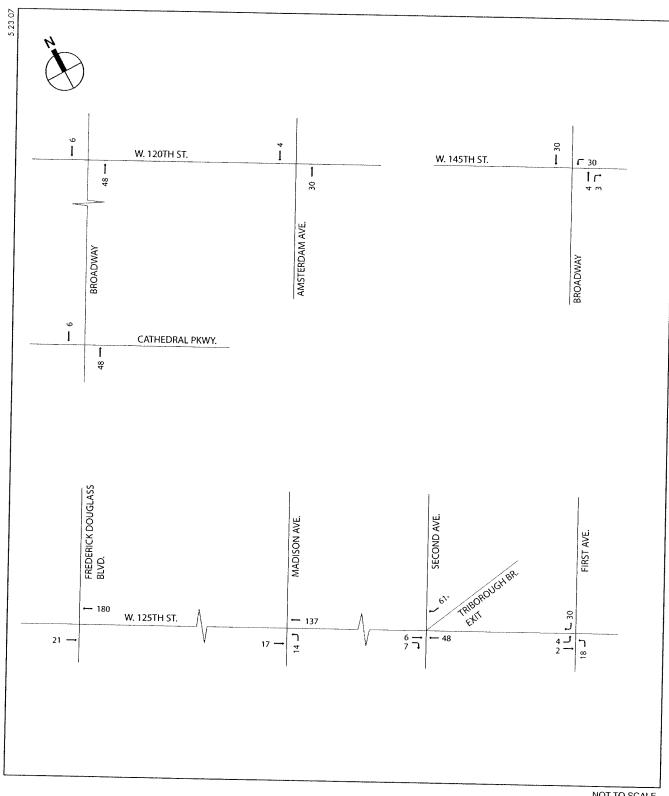
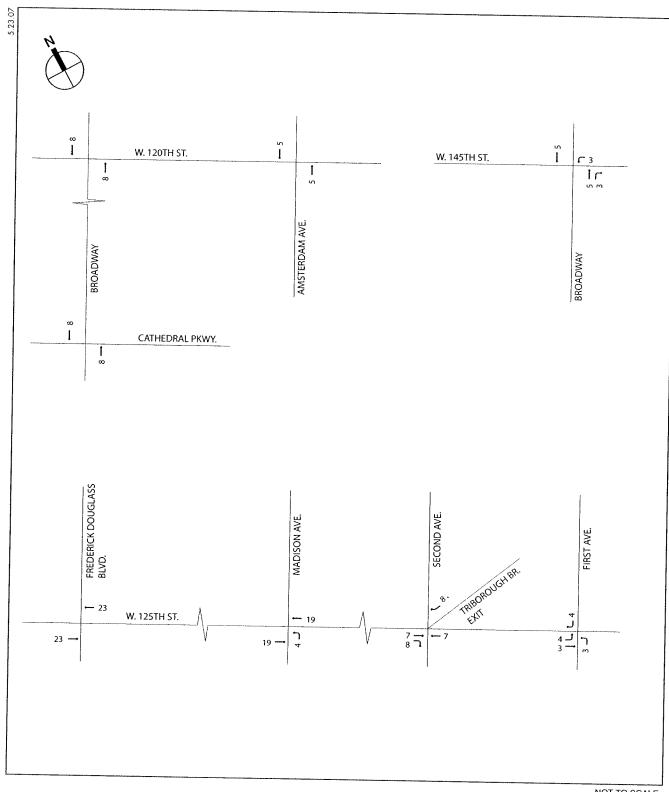




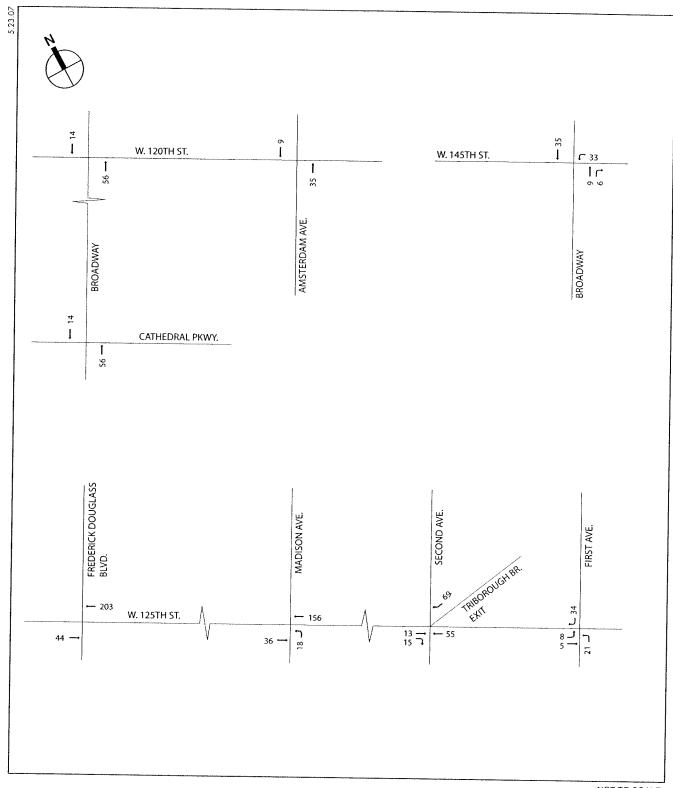
Figure N.1-6
Primary Study Area
2030 197-a Plan Alternative Generated Traffic
Evening Peak Hour



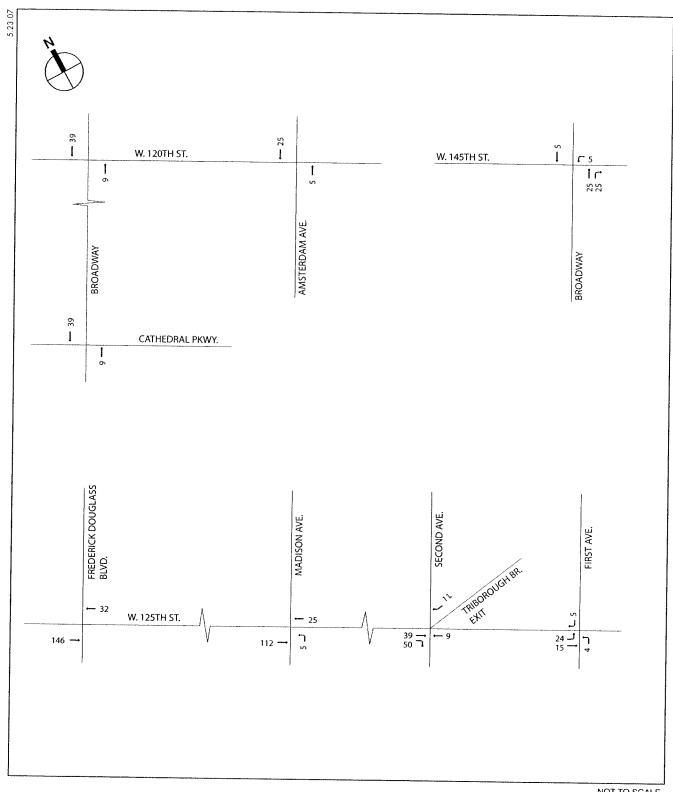




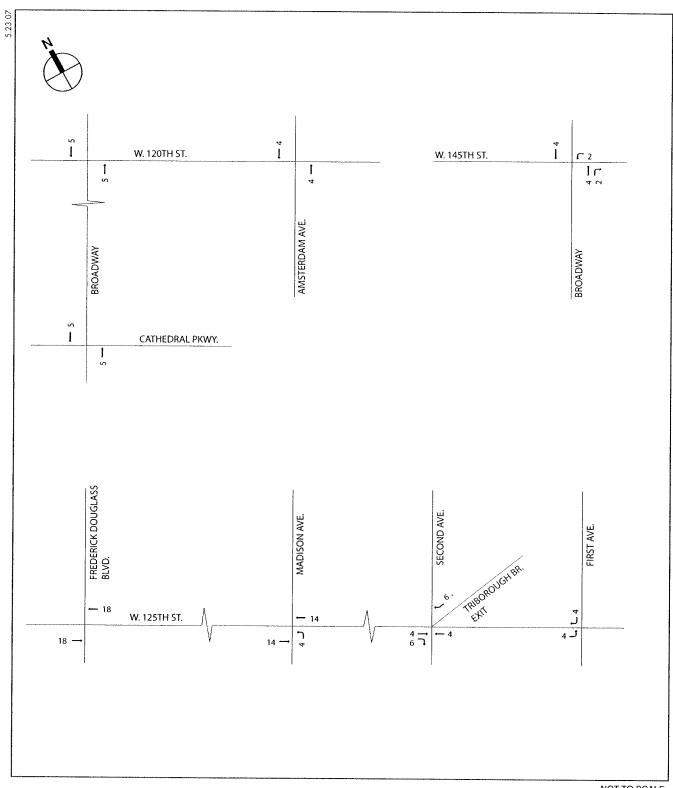




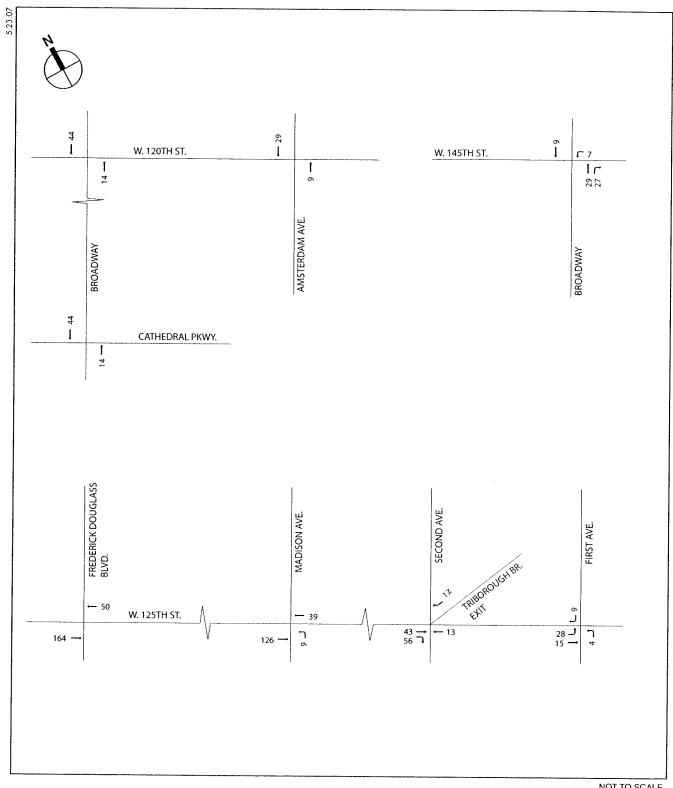














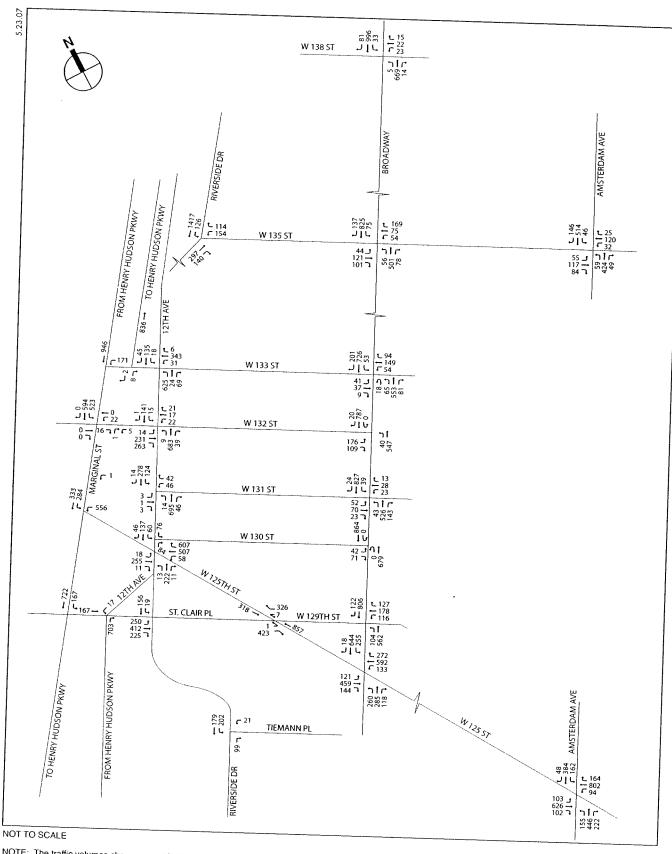
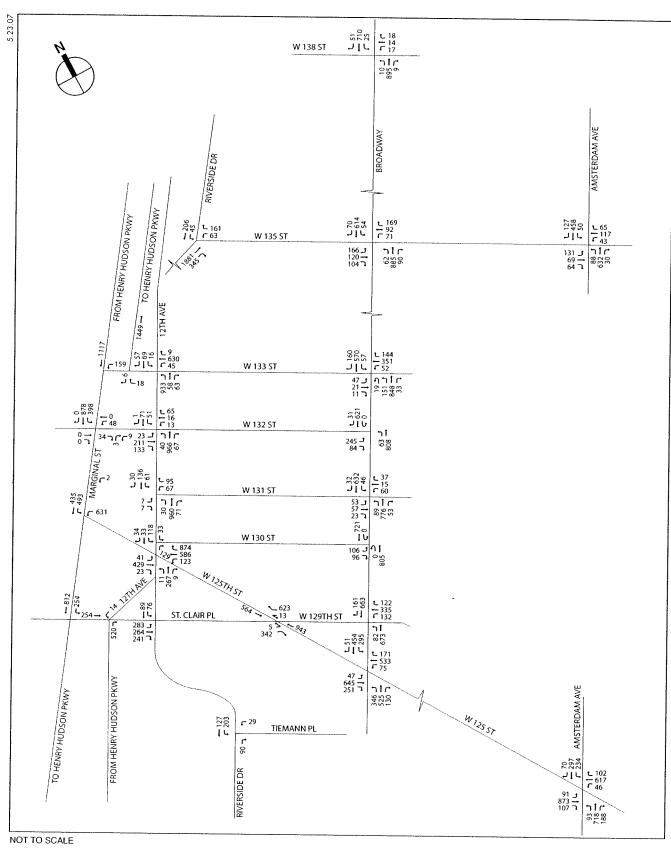
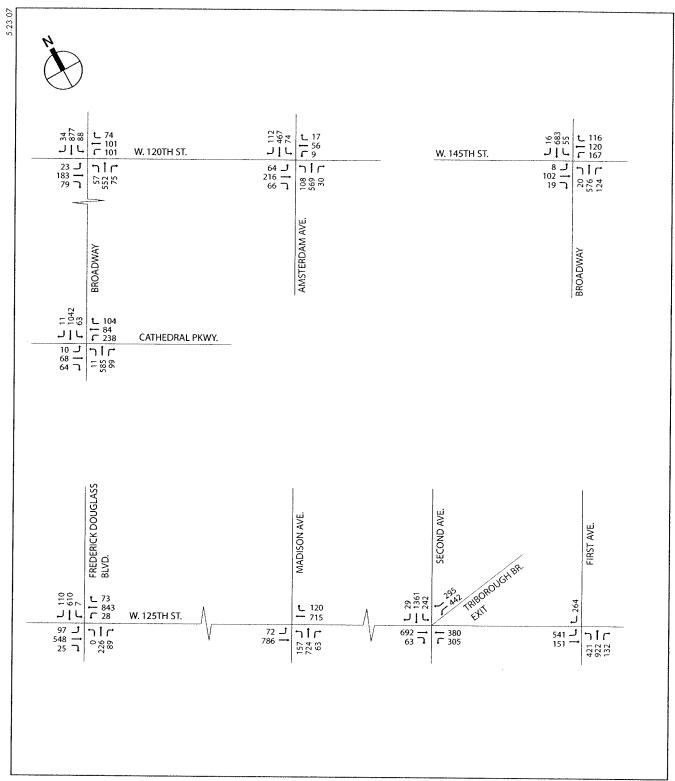


Figure N.1-13
Primary Study Area
2030 197-a Plan Alternative
Morning Peak Hour



NOTE: The traffic volumes shown are not balanced because auto trips were assigned on-street to curbside parking.

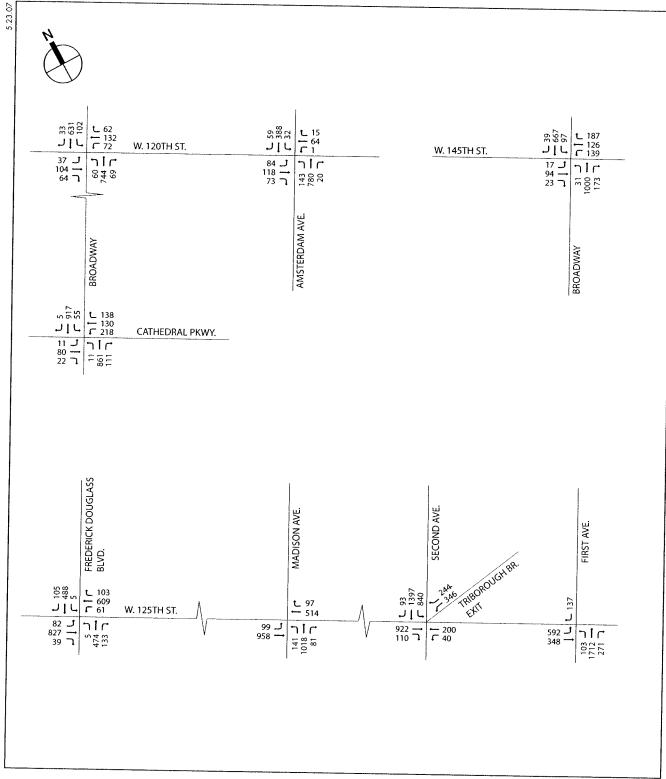




NOT TO SCALE



AND ACADEMIC MIXED-USE DEVELOPMENT



NOT TO SCALE

Table N.1-2
Primary Study Area Signalized Intersection Level-of-Service Analysis

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Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development

Table N.1-2 (Continued) Primary Study Area Signalized Intersection Level-of-Service Analysis

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Broadway	-@	st 131st	10,						1 :		1		The second of delays 1 and 1887		- 1	1	Ļ	1	ì	1	-	0	40.0	10			
Northbound	ᢆᠳ	0.40		<u> </u>	į	Ì		LTR	0.54	10.5				5	ا30 كا 10 كا				0.62		7 2	0.0	10.0	0 00			
Southbound			10.3				10.7 B	F :		11.4				S E							- H	0.34	24.1	. · ·			
Eastbound	LIK	0.21	27.8) C						27.0											느	0.41	25.7	U			
vvestbound		0.04	19.8			0.04	19.8 B	<u>.</u>		19.8	<u>ш</u>			α.		19.8	<u>م</u>	o œj		20.7 C	<u>د</u> <u>د</u>	0.04	19.8				
	Int.		10.9	<u>-</u>	Int.		1.8 B			12.9				Ξ		2.1.2	-1	į	1				2	,			I
Notes:	L=Leff	= Left Turn;	T = Thr	ough; F	۶ = Rig	ht Turi	= Through; R = Right Turn; DefL		cto Let	ft Turn;	Int. = 1	Defacto Left Turn; Int. = Intersection. "+" = Significant Adverse Traffic Impact	ר. זימר														
	//C = /	V/C = Volume to Capacity, LOS = Level of Service	to Cap	SCITY, L	3	200	001		5	Carre	3	>															

Table N.1-2 (Continued)

Northbound Lane VIC Delay VIC Delay V		2			-		THE SCHOOL DEVEL-UI-DELVICE AHAIYSIN	I-Serv	ice An	alysis
No Build					2030 PM I	eak Hou				
Lane V/C Delay Lane V/C Delay Lane V/C Delay Lane V/C Delay Lane V/C Delay Lane V/C Delay Los Group Ratio Group Ra	ents PA w	Mitigation No Build		Alt 197-a	Plan	PA w/o Ir	/o Improvements	A	w Mitigation	Į.
Unest 130th Street	Lane V	Delay Lane V/C Delay (spv) LOS Group Ratio (spv)	SOT	Lane V/C Delay GroupRatio (spv)		LOSGroupRatio (snv)	(C Delay tio (spy) (OS	Lane	Lane V/C Delay	ye y
Int. 7.4 Int. 7.9 Int. 7.9 Int. 7.9 Int. 7.4 Int. 7.9 Int	1									4
Int. 7.4 A Int. 7.9 A Int. West 129th Street To 50 19.7 B To 61 21.9 C LT 0.56 T 0.50 19.7 B T 0.61 21.9 C LT 0.56 TR 0.22 16.4 B R 0.28 17.2 B R 0.27 Int. 20.2 C Int. 22.0 C Int. West 125th Street L 0.50 33.5 C L 0.50 33.5 C L 0.63 33.5 C L 0.47 1.2 D L 0.40 31.1 C L 0.40 31.1 C L 0.40 32.2 C L 0.47 1.2 D R 0.37 1.2 D L 0.40 31.1 C L 0.40 33.2 C L 0.47 30.5 F L 1.41 1.2 D L 0.47 1.2 D L 0.40 31.1 C L 0.40 32.2 C L 0.47 30.5 F L 1.41 1.2 D L 1.41 1.2 D L 0.40 31.1 C L 0.40 32.2 C L 0.47 30.5 F L 1.41 1.2 D R 0.37 4.4 D R 0.37 4.4 D L 0.40 31.1 C L 0.40 32.2 C L 0.47 30.5 F L 1.41 1.2 D L 1.41 1.2 D TR 1.11 102.9 F L 1.24 190.5 F+ L 1.41 1.2 D L 1.41 1.2 D L 1.41 1.2 D TR 1.01 62.0 E TR 1.17 120.6 F+ TR 1.31 D L 1.41 D L 1.41 D T	32 6.0 A 42 6.6 A	LT 0.35	6.2 A 6.2 A	LT 0.36	6.2 A		0.39 6.4 A			
National Color Nati	32.0	0.34	. O		ı m		268.3		0.44 29	
Nest 129th Street	9.0 A	<u>tu</u>	7.7 A 1r	ţ	9 6	į	100	5 cc <u>t</u>	0.48 32.0	, o e
Defl. 0.70 43.5 D Defl. 0.81 59.2 E+ TR 0.64 19.6 B TR 0.68 19.3 B TR 0.71 TR 0.64 19.6 B TR 0.68 19.3 B TR 0.71 TR 0.62 16.4 B R 0.28 17.2 B R 0.27 Int. 20.2 C Int. 22.0 C Int. 0.50 West 125th Street L 0.50 33.5 C LT 0.61 34.2 C LT 0.68 R 0.67 47.4 D R 0.67 47.4 D R 0.93 L 0.40 31.1 C L 0.46 32.2 C L 0.47 LTR 1.11 102.9 F LTR 1.12 105.5 F LTR 1.21 TR 0.77 33.0 C TR 0.89 34.8 F L 1.41 TR 1.01 62.0 E TR 1.17 120.6 F+ TR 1.31 Int. 0.49 30.2 C LT 0.55 LT 0.44 28.8 C LT 0.49 30.2 C LT 0.55 LT 0.44 28.8 C LT 0.49 30.2 C LT 0.55 LT 0.44 28.8 C LTR 0.53 31.4 C LTR 0.54 Int. 0.44 28.8 C LTR 0.53 31.4 C LTR 0.54 Int. 0.42 29.6 C LTR 0.53 31.4 C LTR 0.54 Int. 0.44 28.8 C LTR 0.53 31.4 C LTR 0.54 Int. 0.45 29.6 C LTR 0.53 31.4 C LTR 0.54 Int. 0.45 29.6 C LTR 0.53 31.4 C LTR 0.54 Int. 0.40 30.7 C R 0.44 Int. 0.40 30.7 C R 0.44 Int. 0.40 30.7 C R 0.58 Int. 0.40 30.7 C R 0.58 Int. 0.40 30.7 C R 0.54 Int. 0.40 30.7 C R 0.54 Int. 0.50 31.7 B LTR 0.54 Int. 0.50 31.7 B LTR 0.54	1			2	ا د		ı۱	je L	71	- 1
1.00 19.7 19.7 19.7 19.5 19.5 19.5 19.5 19.6 19.5 19.5 19.6 19.5 19.6 19.5 19.6 19.5 19.6 19.5	-				Ī	***************************************				
LT 0.46 19.6 B	55 20.1 C 71 19.9 B	LT 0.74 28	25.4 C L	LT 0.84	30.4 C	11				
N. 0.22 16.4 B R 0.28 17.2 B R 0.27 Mest 125th Street	20.9	0.62	<u>.</u> د				24.6			
West 125th Street	17.4	0.27	<u>ه</u> ر		17.3 B		34 18.7 B	· · · · · · · · · · · · · · · · · · ·		
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L 1.57 33.1.3 L 1.67 381.4 F + L 1.42 TR 0.77 33.0 C TR 0.80 34.8 C TR 0.86 L 1.16 159.4 E L 1.24 190.5 F + L 1.41 TR 1.01 62.0 E TR 1.17 120.6 F + TR 1.31 Int. 74.9 E Int. 92.1 F Int. Avenue @ West 135th Street	142.7	0.94	_ . w	0.95			26.3			
Name Name	278.7	0.51		0.53			54.8			
TR 1.01 62.0 E TR 1.17 120.6 F+ TR 1.31 Avenue @ West 135th Street LTR 0.53 8.4 A LTR 0.53 8.5 A LTR 0.58 LTR 0.62 9.6 A LTR 0.66 10.2 B LTR 0.72 LT 0.44 28.8 C LT 0.49 30.2 C LT 0.55 R 0.41 30.6 C R 0.41 30.7 C R 0.58 LTR 0.47 29.6 C LTR 0.53 31.4 C LTR 0.51 Int. 142 B Int. 15.0 B Int. Avenue @ West 125th Street L 0.59 17.1 B L 0.59 17.1 B L 0.46	39.8 260.8	£ 5	LL LL	1.24			1.17 120.0 F+			
Avenue @ West 135th Street LTR 0.53 8.4 A LTR 0.53 8.5 A LTR 0.58 LTR 0.62 9.6 A LTR 0.65 10.2 B LTR 0.55 LT 0.44 28.8 C LT 0.49 30.2 C LT 0.55 R 0.41 30.6 C LT 0.55 R 0.58 LTR 0.51 LTR 0.51 Int. 14.2 B Int. 15.0 B Int. Avenue @ West 125th Street L 0.39 17.1 B L 0.46 L 0.39 17.1 B L 0.46 L 0.46			39.4 D T		43.4 D	규.	73.9 E+			
LTR 0.53 8.4 A LTR 0.53 8.5 A LTR 0.58 LTR 0.62 9.6 A LTR 0.66 10.2 B LTR 0.72 LT 0.44 28.8 C LT 0.49 30.2 C LT 0.55 R 0.41 30.6 C LT 0.49 30.2 C LT 0.55 LTR 0.47 29.6 C LTR 0.53 31.4 C LTR 0.51 lnt. 14.2 B lnt. 15.0 B lnt. 15.0 B lnt. 15.0 B Lnt			ם			EI.	91.2 F			
LTR 0.64 28.8 C LT 0.49 30.2 C LT 0.55 R 0.41 30.6 C R 0.41 30.7 C R 0.58 LTR 0.47 29.6 C LTR 0.53 31.4 C LTR 0.51 Int. 14.2 B Int. 15.0 B Int. Avenue @ West 125th Street L 0.39 17.1 B L 0.39 17.1 B L 0.46	9.4 A LTR 0.58	A LTR 0.76	8 4	1	1	ĺ	16.3	-		
R	11.6 B LTR 0.72 32.1 C L 0.34		٠ ۲ ۵	LTR 0.61	9.6 A 62.7 E+	LTR 0.67	37 10.6 B			
LTR 0.47 29.6 C LTR 0.53 31.4 C LTR 0.51 Int. 14.2 B Int. 15.0 B Int. Avenue @ West 125th Street L 0.39 17.1 B L 0.39 17.1 B L 0.46	37.1 D D 0.29		. (3 3	J ⊢ (0.16 21.1	0 ()
Avenue @ West 125th Street L 0.39 17.1 B L 0.39 17.1 B L 0.46 TD 0.70 31.0 C D 0.70 31.0 C D 0.46	30.8 C LTR 0.51	C LTR 0.70	39.1 D LT	LTR 0.78	46.2 D+	LTR 0.89	39 60.9 Et			
L 0.39 17.1 B L 0.39 17.1 B L 0.46	16.6 B Int.	B Int.	8	- 1			33.5	- 1	- 1	- 1
TD 0.70 010 CT 0.00 010	19.3 B 0.54	2 C 1 0.25	3 B			i	70.0	- 1	- 1	
0.79 31.0 C IN 0.02 33.0 C IN 0.78	30.9 C T 0.42	21.4 C TR 0.98 50.	AT O TR	3 0.99	52.6 D	TR 0.97	7 48.9 D	J ⊢ (0.30 19.2	и Ф р О
31.0 C L 0.62 33.3 C L 0.59	30.8 C L 0.59	5 C 081		0.86			22.6			
TR 0.47 22.2 C TR 0.47 22.2 C TR 0.48	22.3 C TR 0.48	3 C TR 0.87	ص م م	0.89			47.5			
F L 1.46 294.2 F L 1.46	294.2 F L 1.46	2 F L 0.99	ш.	1.13			198.5			
1.10 151.9 F L 1.24 208.6 F+ L 1.27	2212 F+ 1K 0.97	ლ 4	ы. Н П	1.31			224.8			
TR 1.04 72.8 E TR 1.30 172.8 F+ TR 1.30	172.1 F+ T 0.88	2 D TR 0.90	10	0.97	54.6 D+	TR 1.02	2 57.1 E+			
58.3 E Int. 93.6 F Int.	0.45	ω ~	.8 E		90.3 F	ij	107.6 F			
Deft. =	= Defacto Left Turn: Int. =	section V/C = Volum	Canari	- H		- "+" . OO!	, [Troffic leader	

Table N.1-3 mary Study Area Unsignalized Intersection Level-of-Service Analysis





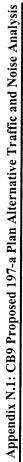


Table N.1-3 (Continued) Primary Study Area Unsignalized Intersection Level-of-Service Analysis

		1000 MA Deal	M Dook Lone		man y Study A	ca Unsignanteu III	Timaly Study Area Onsignatized three section Level-01-3et vice Analysis	vice Alialysis
		¥ nenz	IN FEAR HOUR			2030 PM	2030 PM Peak Hour	
	No Build	Alt 197-a Plan	PA w/o Improvements	PA w Mitigation	No Build	Alt 197-a Plan	Alt 197-a Plan PA w/o Improvements PA	PA w Mitigation
	Lane V/C Delay	Lane V/C Delay	Lane V/C Delay	Lane V/C Delay	Lane V/C Delay	Lane V/C Delay Lane V/C Delay	١-	W/C Delay
ection	ntersection Group Ratio (spv) LOS Group Ratio (spv) LOS Gro	SGroup Ratio (spv) L	OS Group Ratio (spv) LOS G	roupRatio (spv) LOS	Group Ratio (spv) L(OSIGnoupRatio (spv) LOS	pupRatio (spv) LOSGroupRat	Ratio (snv) I OS
125th	Vest 125th Street @ West 129th Street/St. Clair Place	Street/St. Clair Place						2001/242/2000
Northbound	-			T 0.95 417 D	***************************************		<u> </u>	0 05 40 5 0
Southbound	المنابعة الم					٠		7 0
Eastbound	_	1	F+ L 0.02 80.0 F	12.8	-	1 1 1	# 1	
	R 0.71 23.5 C	R 0.76 27.3 D	D R 17.80 7859.0 F+	R 1.10 98.9 F	R 0.96 717	R 158 347	B 107 108 5	77.7
vestbound	L 0.23 158.3 F		±			: -		
	R 0.94 68.0 F	R 1.05 95.9 F+	F+ R 0.67 25.7 D	18.6	R 2.15 556.4	R 1.78 386.8	3 84.5	
				Int. 46.0 D		NAME OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER O		34.3
 	. = Left Turn; T = Throug	gh; R = Right Turn; De	Notes: L = Left Turn; T = Through; R = Right Turn; Deft = Defacto Left Turn; Int. = Intersection.	Intersection.				
>	//C = Volume to Capacil	ty; LOS = Level of Sen	V/C = Volume to Capacity, LOS = Level of Service: "+" = Significant Adverse Traffic Impact	Traffic Impact				

												Š	Table N.1-4 Secondary Study Area Signalized Intersection Level-of-Service Analysis	ıry St	ndy A	rea S	ignal	ized I	nters	ection	Leve	-J-0-[-	T Servi	Table N.1-4 ice Analysis	V.1-4
						2030 A	M Pe	2030 AM Peak Hour										2030 P	2030 PM Peak Hour	Hour					
		No Build	1	Ŧ	Alt 197-a Plan	Plan	PA	4 W/O II	nprov	w/o Improvements	PA w Mitigation	gation		No Build	_	₹	Alt 197-a Plan	Plan	PA	PA w/o Improvements	rovem	ents	PA w	PA w Mitigation	5
Intercontion	Lane	Lane V/C Delay	2	Lane	V/C Delay	Selay	<u>ر د</u>	Lane V/C Delay	C De	lay	Lane V/C Delay	elay	Lane	Lane V/C Delay	lay	Lane	Lane V/C Delay	elay	Lar	Lane V/C Delay	Delay		ane	Lane V/C Delay	>
ווונין פברווחוו	000	Valid Isp	3	dnois	Vallo	3 DV/I	5000	oupk	slon	SI I	mer securific or physical (spv) LOS (group Ratio) (spv) (spv) LOS (group Ratio) (spv	spv) LOS	Group	atio (s	ov) LOS	Group	Ratio	Spv) L	Sero	upRati	o (spv)		roupRa	tio (spv	SOT (
Broadway @) West	110th Stree	eet																						
Northbound				LTR	0.52		_	ì		i .			į	0.65 1	15.6 B	TR	0.66	1	-	R 0 68		1			
Southbound	LTR								0.81 2							<u> </u>									
Eastbound	LTR		0	LTR	0.25	21.0	0	LTR 0.		25.4 C			LTR	0.17	19.9 B	, A	0.17	19.9	, E	200	22.0) C			
Westbound	DefL										-	-		•		Def	•								
	꿈	0.67 35.7														R									
	ᆵ	36.	0.	Int.			_	ij	m						31.1 C	n.									
Broadway @ West 120th Street	West (120th Str	eet												1			1	┨			1			
Northbound	LTR	0.42 6.	ر ک		0.45	ì			0.45 (ì	***************************************	-	1	į		LTR	0.54	7.3	\vdash	1	ŧ		***************************************		
Southbound	L R		9 Y						0.67	9.0 A						LTR		7.6		R 0.55					
Eastbound			28.5 C	LTR		28.4	<u>ဂ</u>	LTR 0.		8.3 C			LTR	0.36 2	26.9 C	TR	0.36	26.9	CLTR		27.0				
Westbound		1.36 220.2	F	LTR	1.35		_		1.33 209	209.4 F				4		LTR		1.04.1							•••
	ᆵ	36.6	.e D	Int.				Ħ.	ಹ						21.6 C	ī.		21.4							
Amsterdam Avenue @ West 120th Stree	Avenu	e @ West	120th	Street					!										4						
Northbound	LTR	0.68 6.	6.8 A	LTR		7.3	⊢	LTR 0	0.69	7.0 A			ŧ	Į.		LTR	Ī	1	-	į	i			***************************************	
Southbound	TR	0.62 5.	8 A	LTR	0.63	0.9	A			6.0 A			LTR	0.39	3.5 A	TR	0.41		ALTR	039) d			
Eastbound		0.48 41.0	0	_		41.0	Δ									د.									
	ቷ ፈ		ж ш	꿈	·~	103.8	<u>, </u>	TR O	0.96 7	75.5 E						X.									
Westbound			ပ	_		30.3										د									
	H H	0.33 32.8	ပ စ	H H	0.33	32.8		TR 0	0.33 32							2									
	ı;	24.	၁	Int.		24.2	آ ن	nt.	7	19.9 B						ī.		23.0			22.3				
Notes:	= Left T	urn; T = T	hrough	R=R:	Right Tu	im; De	f. = D	efacto	Left Tu	m; Int.	L = Left Turn; T = Through; R = Right Turn; DefL = Defacto Left Turn; Int. = Intersection.														Τ
^) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	Dacity	3	רבאבו	100 10	200	Ď	ill.Ca	II Adve	se i ramc impa	ot.													

Secondary Study Area Signalized Intersection Level-of-Service Analysis

																					ŀ					
					2030	AM	Peak Hour	ını											2030 P	2030 PM Peak Hour			-	1		
	N _N	No Build		Alt 197-a	7-a Plan		PA w/o	A w/o Improvem	vemen	ents	PA w M	w Mitigation		ν	o Build		₹	Alt 197-a Plan	a Plan	A.	m/o/m			≱Ľ		ᆰ
	Lane V/C	-	Lane	ne V/C	C Delay	<u> </u>	Lane	Lane V/C Delay	elay	Lane	Lane V/C Delay	Delay	30	Lane V/C Delay	V/C Del	ay O	Lane	Lane V/C Delay	Delay (snv)	OSGre	Lane V/C	Colsov) LOS	ros	Lane V	V/C Delay Ratio (spv)	Delay (spv) LOS
Intersection Group Ratio (spv)	GroupRat	io(spv)	ő	upRa	tio (sp)) Losigi	Group	Katlo	Spvic	os co	upikati	olepvi	3	roupir.				21912	1							
Frederick Douglass Boulevard	ouglass B.	oulevaro	9 X	1721	Ž		- 1	- [- 1	-	į	l	-	ì	ì	(1	790	000	-	TE OR7	7 20 2	_ _	24	0.73 24	ပ မ
Northbound	LT 0.20	20 15.6	<u>B</u>										20 (۳ ت	0.67 20.	V	 		7.07			3)			•
	R 0.21		<u>~</u>			ы. В	œ	0.21	16.3	m :			<u>α</u> (<u> </u>	0	0				α			
Southbound			_										ا ن				<u> </u>	0.4	5 0				. a			
			<u>م</u>										m 1	r į	0.37 19.	9 c 2 c 2 c	z į	0.3	0 0	o [75.0 GH	2 4 6 7	ם כל			
Eastbound	'n		<u>п</u>	ξ.	1.15 110.9			•			0.81		ш		•	_		.30	203.9						20.00	
							_						י מו				£		7 7 7 7		1 20		į,			
Westbound			0	~	1.01 54	54.9 D+	LT.	0.97	46.0 L	+ - - -		23.8	<u>ی</u> د	- Y <u>:</u>	50.E	0.70			102.7	. <u>-</u>	<u>*</u> : =	112.5	ш	: : :		37.0 D
	Int.	31.5		اي	53	4	ij		اه	4	اد	24.3	7			-	1			4						1
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Appendix N.1: CB9 Proposed 197-a Plan Alternative Traffic and Noise Analysis

Table N.1-5
Secondary Study Area Unsignalized Intersection I evel of Service Analysis

				OSAC	ndary Study A	rea Unsign	ializeo ini	ersection Lev	Secondary Study Area Unsignalized Intersection Level-01-Service Analysis	S
		2030 A	2030 AM Peak Hour				2030 PM	2030 PM Peak Hour		Г
	No Build	Alt 197-a Plan	PA w/o Improvements PA w Mitigation	PA w Mitigation	No Build	Alt 19	7-a Plan	PA w/o Improvem	Alt 197-a Plan PA w/o Improvements PA w Mitigation	Т
	Lane V/C Delay	Lane V/C Delay	Lane V/C Delay	Lane V/C Delay	Lane V/C Delay	Lane V/(Delay	Lane V/C Delay	Lane V/C Delay Lane V/C Delay Lane V/C Delay Lane V/C Delay Lane V/C Delay	Τ
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>	V/C = Volume to Capacity; LOS = Level of Service; "	" LOS = Level of Serv	rice; "+" = Significant Adverse Traffic Impact	e Traffic Impact						

Primary Study Area

Twelfth Avenue and West 133rd Street

During the AM peak hour, the northbound left-turn movement would continue to operate at LOS F, with delay increasing from 94.3 to 99.9 seconds and v/c ratio increasing from 1.11 to 1.13. The westbound approach would continue to operate at LOS D, with delay increasing from 40.5 to 52.5 seconds and v/c ratio increasing from 0.80 to 0.91.

During the PM peak hour, the westbound approach would continue to operate at LOS F, with delay increasing from 206.1 to 297.4 seconds and v/c ratio increasing from 1.36 to 1.57.

Twelfth Avenue and West 132nd Street

During the AM peak hour, the eastbound approach would deteriorate from LOS D to LOS E, with delay increasing from 39.0 to 77.9 seconds and v/c ratio increasing from 0.81 to 1.06.

Twelfth Avenue and West 125th Street

During the AM peak hour, the westbound right-turn movement would continue to operate at LOS E, with delay increasing from 68.0 to 74.4 seconds and v/c ratio increasing from 1.03 to 1.06.

During the PM peak hour, the westbound right-turn movement would continue to operate at LOS F, with delay increasing from 135.7 to 148.2 seconds and v/c ratio increasing from 1.23 to 1.26.

Broadway Northbound and West 133rd Street

During the PM peak hour, the westbound approach would deteriorate from LOS D to LOS F, with delay increasing from 50.9 to 94.4 seconds and v/c ratio increasing from 0.93 to 1.10.

Broadway Southbound and West 133rd Street

During the PM peak hour, the westbound approach would deteriorate from LOS C to LOS D, with delay increasing from 30.4 to 51.5 seconds and v/c ratio increasing from 0.78 to 0.96.

Broadway and West 129th Street

During the AM peak hour, the northbound *de facto* left-turn movement would deteriorate from LOS D to LOS E, with delay increasing from 43.5 to 59.2 seconds and v/c ratio increasing from 0.70 to 0.81.

Broadway and West 125th Street

During the AM peak hour, the eastbound left-turn movement would continue to operate at LOS F, with delay increasing from 331.3 to 381.4 seconds and v/c ratio increasing from 1.57 to 1.67. The westbound left-turn movement would continue to operate at LOS F, with delay increasing from 159.4 to 190.5 seconds and v/c ratio increasing from 1.16 to 1.24, and the westbound through-right movement would deteriorate from LOS E to LOS F, with delay increasing from 62.0 to 120.6 seconds and v/c ratio increasing from 1.01 to 1.17.

During the PM peak hour, the eastbound through-right movement would continue to operate at LOS F, with delay increasing from 96.7 to 149.3 seconds and v/c ratio increasing from 1.11 to 1.24.

Amsterdam Avenue and West 135th Street

During the PM peak hour, the eastbound left-through movement would deteriorate from LOS D to LOS E, with delay increasing from 39.0 to 62.7 seconds and v/c ratio increasing from 0.65 to 0.88. The westbound approach would continue to operate at LOS D, with delay increasing from 39.1 to 46.2 seconds and v/c ratio increasing from 0.70 to 0.78

Amsterdam Avenue and West 125th Street

During the AM peak hour, the eastbound through-right movement would continue to operate at LOS E, with delay increasing from 56.5 to 73.1 seconds and v/c ratio increasing from 0.98 to 1.04. The westbound left-turn movement would continue to operate at LOS F, with delay increasing from 151.9 to 208.6 seconds and v/c ratio increasing from 1.10 to 1.24, and the westbound through-right movement would deteriorate from LOS E to LOS F, with delay increasing from 72.8 to 172.8 seconds and v/c ratio increasing from 1.04 to 1.30.

During the PM peak hour, the southbound left-turn movement would deteriorate from LOS D to LOS E, with delay increasing from 53.3 to 59.7 seconds and v/c ratio increasing from 0.81 to 0.86. The eastbound left-turn movement would continue to operate at LOS F, with delay increasing from 118.0 to 165.8 seconds and v/c ratio increasing from 0.99 to 1.13, and the eastbound through-right movement would continue to operate at LOS F, with delay increasing from 98.6 to 179.2 seconds and v/c ratio increasing from 1.12 to 1.31. The westbound through-right movement would continue to operate at LOS D, with delay increasing from 43.1 to 54.6 seconds and v/c ratio increasing from 0.90 to 0.97.

Marginal Street and West 133rd Street

During the AM peak hour, the southbound approach would continue to operate at LOS F, with delay increasing from 92.2 to 144.9 seconds and v/c ratio increasing from 1.12 to 1.26.

During the PM peak hour, the southbound approach would continue to operate at LOS F, with delay increasing from 110.0 to 123.4 seconds and v/c ratio increasing from 1.18 to 1.22.

Marginal Street and West 132nd Street

During the AM peak hour, the southbound left-through movement would continue to operate at LOS F, with delay increasing from 76.9 to 132.5 seconds.

During the PM peak hour, the southbound left-through movement would continue to operate at LOS F, with delay increasing from 86.3 to 112.1 seconds.

Marginal Street and St. Clair Place

During the AM peak hour, the southbound through movement would deteriorate from LOS E to LOS F, with delay increasing from 45.0 to 53.0 seconds and v/c ratio increasing from 0.96 to 0.99.

During the PM peak hour, the southbound through movement would continue to operate at LOS F, with delay increasing from 84.7 to 117.1 seconds and v/c ratio increasing from 1.10 to 1.19.

Twelfth Avenue and West 131st Street

During the AM peak hour, the westbound approach would deteriorate from LOS E to LOS F, with delay increasing from 40.5 to 80.4 seconds and v/c ratio increasing from 0.43 to 0.72.

During the PM peak hour, the westbound approach would continue to operate at LOS F, with delay increasing from 105.9 to 278.3 seconds and v/c ratio increasing from 0.94 to 1.39.

Riverside Drive and St. Clair Place

During the AM peak hour, the southbound left-through movement would deteriorate from LOS E to LOS F, with delay increasing from 41.9 to 88.5 seconds and v/c ratio increasing from 0.50 to 0.78, and the southbound through movement would deteriorate from LOS E to LOS F, with delay increasing from 39.3 to 65.8 seconds and v/c ratio increasing from 0.46 to 0.62.

During the PM peak hour, the southbound left-through movement would deteriorate from LOS E to LOS F, with delay increasing from 42.1 to 70.4 seconds and v/c ratio increasing from 0.47 to 0.76, and the southbound through movement would continue to operate at LOS E, with delay increasing from 39.6 to 46.6 seconds and v/c ratio increasing from 0.31 to 0.37.

West 125th Street and West 129th Street at St. Clair Place

During the AM peak hour, the eastbound left-turn movement would continue to operate at LOS F, with delay and v/c ratio increasing further beyond No Build levels. The westbound left-turn movement would continue to operate at LOS F, with delay increasing from 158.3 to 219.3 seconds and v/c ratio increasing from 0.23 to 0.30, and the westbound right-turn movement would continue to operate at LOS F, with delay increasing from 68.0 to 95.9 seconds and v/c ratio increasing from 0.94 to 1.05.

During the PM peak hour, the eastbound left-turn movement would continue to operate at LOS F, with delay and v/c ratio increasing further beyond No Build levels, and the eastbound right-turn movement would continue to operate at LOS F, with delay increasing from 71.7 to 317.4 seconds and v/c ratio increasing from 0.96 to 1.58. The westbound left-turn movement would continue to operate at LOS F, with delay and v/c ratio increasing further beyond No Build levels.

Secondary Study Area

Frederick Douglass Boulevard and West 125th Street

During the AM peak hour, the eastbound approach would deteriorate from LOS E to LOS F, with delay increasing from 58.4 to 110.9 seconds and v/c ratio increasing from 1.00 to 1.15. The westbound approach would deteriorate from LOS C to LOS D, with delay increasing from 30.0 to 54.9 seconds and v/c ratio increasing from 0.83 to 1.01.

During the PM peak hour, the eastbound approach would continue to operate at LOS F, with delay increasing from 118.1 to 203.9 seconds and v/c ratio increasing from 1.18 to 1.38. The westbound approach would deteriorate from LOS E to LOS F, with delay increasing from 67.6 to 114.7 seconds and v/c ratio increasing from 1.03 to 1.17.

Madison Avenue and East 125th Street

During the AM peak hour, the eastbound approach would continue to operate at LOS F, with delay increasing from 113.3 to 166.9 seconds and v/c ratio increasing from 1.17 to 1.29.

During the PM peak hour, the eastbound approach would continue to operate at LOS F, with delay increasing from 178.6 to 245.5 seconds and v/c ratio increasing from 1.32 to 1.47.

Second Avenue and East 125th Street

During the AM peak hour, the eastbound through movement would continue to operate at LOS F, with delay increasing from 209.9 to 220.0 seconds and v/c ratio increasing from 1.36 to 1.39. The westbound through movement would continue to operate at LOS F, with delay increasing from 220.3 to 303.6 seconds and v/c ratio increasing from 1.36 to 1.56. The exit ramp from the

Triborough Bridge would continue to operate at LOS F, with delay increasing from 164.8 to 210.8 seconds and v/c ratio increasing from 1.26 to 1.37.

During the PM peak our, the eastbound through movement would continue to operate at LOS F, with delay increasing from 130.7 to 142.3 seconds and v/c ratio increasing from 1.19 to 1.22. The exit ramp from the Triborough Bridge would continue to operate at LOS F, with delay increasing from 87.0 to 96.1 seconds and v/c ratio increasing from 1.05 to 1.08.

First Avenue and East 125th Street

During the AM peak hour, the eastbound left-turn movement would continue to operate at LOS F, with delay increasing from 119.8 to 126.7 seconds and v/c ratio increasing from 1.16 to 1.18.

During the PM peak hour, the eastbound left-turn movement would continue to operate at LOS F, with delay increasing from 87.7 to 104.0 seconds and v/c ratio increasing from 1.08 to 1.12.

Broadway and West 145th Street

During the AM peak hour, the westbound approach would continue to operate at LOS E, with delay increasing from 62.8 seconds at the approach to 77.6 seconds at the *de facto* left-turn movement and 68.4 seconds at the through-right movement, and v/c ratio decreasing from 0.95 at the approach to 0.93 at the *de facto* left-turn movement and 0.93 at the through-right movement.

During the PM peak hour, the westbound approach would continue to operate at LOS E, with delay increasing from 71.7 to 78.4 and v/c ratio increasing from 1.00 to 1.03.

2030 197-A PLAN DEVELOPMENT SCENARIO MITIGATION ASSESSMENT

Because the projected impacts for the 197-a Plan development scenario would be different from those identified for the Proposed Actions without project improvements¹, different mitigation measures could be required for the study area intersections. The following summarizes a detailed comparison of operating conditions under the two development scenarios (see Tables N.1-2 through N.1-5) and provides a qualitative assessment of whether mitigation measures proposed as part of the Proposed Actions would still be needed with the 197-a Plan development scenario, a variation of the proposed mitigation measures would be more appropriate, or new/additional mitigation measures would be needed to address projected impacts associated with the 197-a Plan development scenario. For the FEIS, a quantitative mitigation analysis will be provided to demonstrate the conclusions made in this qualitative assessment. If there are no feasible measures to mitigate certain significant adverse traffic impacts (i.e., at the Broadway and West 125th Street intersection), this analysis will also demonstrate that the projected impacts are unmitigatable.

Primary Study Area

Riverside Drive and West 135th Street

The mitigation measures proposed for the PM peak hour under the Proposed Actions would not be required with the 197-a Plan development scenario.

¹ For comparison purposes, references to the Proposed Actions correspond to Appendix M for intersections within and bordering the Project Area and to Chapters 17 and 23 for the other study area intersections.

Twelfth Avenue and West 133rd Street

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Twelfth Avenue and West 132nd Street

The mitigation measures proposed for the AM peak hour under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Twelfth Avenue and West 125th Street

The mitigation measures proposed for the AM and PM peak hour under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Broadway Northbound and West 133rd Street

A restricting parking on the north side of westbound West 133rd street along with a minor signal timing adjustment to the mitigation measures proposed for the PM peak hour under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Broadway Southbound and West 133rd Street

During the PM peak hour, a significant adverse impact was identified for the intersection's westbound approach, an impact that would otherwise not occur under the Proposed Actions. To fully mitigate this impact, a shift in green time from the southbound phase to the east-west phase would be necessary.

Broadway and West 130th Street

The mitigation measures proposed for the PM peak hour under the Proposed Actions would not be required with the 197-a Plan development scenario.

Broadway and West 129th Street

During the AM peak hour, a significant adverse impact was identified for the intersection's northbound approach, an impact that would otherwise not occur under the Proposed Actions. To fully mitigate this impact, a shift in green time from the westbound phase to the north-south phase would be necessary.

Broadway and West 125th Street

As with the Proposed Actions, the significant adverse impacts identified at this intersection for both the AM and PM peak hours would be unmitigatable without a redirection of existing and future traffic, which would be possible with the conversion of West 131st, West 132nd, and West 133rd Streets between Broadway and Twelfth Avenue from two-way to on-way operation, as described in Chapter 17, "Traffic and Parking."

Amsterdam Avenue and West 135th Street

The mitigation measures proposed for the PM peak hour under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Amsterdam Avenue and West 125th Street

The mitigation measures proposed for the AM peak hour under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario. During the PM peak hour, a minor signal timing adjustment to the mitigation proposed would also be necessary.

Marginal Street and West 133rd Street

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Marginal Street and West 132nd Street

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Marginal Street and St. Clair Place

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Twelfth Avenue and West 131st Street

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Twelfth Avenue and St. Clair Place

The mitigation measures proposed for the AM peak hour under the Proposed Actions would not be required with the 197-a Plan development scenario.

Riverside Drive and St. Clair Place

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

West 125th Street and West 129th Street/St. Clair Place

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Secondary Study Area

Frederick Douglass Boulevard and West 125th Street

The mitigation measures proposed for the PM peak hour under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario. During the AM peak hour, a minor signal timing adjustment to the mitigation proposed would also be necessary.

Madison Avenue and East 125th Street

The mitigation measures proposed for the AM and PM peak hours under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

Second Avenue and East 125th Street

The mitigation measures proposed for the AM and PM peak hour under the Proposed Actions would fully mitigate the projected significant adverse impacts identified for the 197-a Plan development scenario.

First Avenue and East 125th Street

During the AM peak hour, a significant adverse impact was identified for the intersection's eastbound approach, an impact that would otherwise not occur under the Proposed Actions. To fully mitigate this impact, a minor shift in green time from the northbound phase to the east-west phase would be necessary. During the PM peak hour, the mitigation measures proposed for the Proposed Actions would fully mitigate the projected significant adverse impacts under the 197-a Plan development scenario.

Broadway and West 145th Street

During the AM peak hour, two significant adverse impacts were identified for the intersection's westbound approach, an impact that would otherwise not occur under the Proposed Actions. To fully mitigate these impacts, a minor shift in green time from the north-south phase to the eastwest phase would be necessary. During the PM peak hour, the mitigation measures proposed for the Proposed Actions would fully mitigate the projected significant adverse impacts under the 197-a Plan development scenario.

PARKING ANALYSIS

As discussed in Chapter 24, "Alternatives," because there would already be a lack of off-street parking supply in the area under the No Build condition, the majority of the incremental parking demand generated by the 197-a Plan Alternative is expected to be distributed onto the available on-street supply. The analysis presented below assumes that 95 percent of the projected 197-a Plan parking demand would be accommodated on-street and the remaining 5 percent off-street.

ON-STREET PARKING

Table N.1-6 illustrates the anticipated parking utilization in 2030 under the 197-a Plan Alternative development scenario. Within the ½-mile on-street parking study area, the morning, midday, and evening on-street parking utilization is expected to increase to 94, 107, and 101 percent respectively. The maximum predicted on-street parking shortfall would be 357 parking spaces, constituting a significant adverse on-street parking impact.

Table N.1-6 2030 197-a Plan Alternative On-Street Parking Utilization Summary

2030 197-a Plan Build Condition	AM	MD	PM
2030 No Build Capacity	4,783	4,783	4,783
Spaces Removed due to Geometric Modifications	0	О	o
Total 2030 197-a Plan Build Capacity	4,783	4,783	4,783
2030 No Build Demand	3,893	4,207	4,291
2030 197-a Plan Incremental Demand	618	933	550
Total 2030 197-a Plan Build Demand	4,511	5,140	4,841
Remaining Spaces	272	-357	-58
Utilization	94%	107%	101%

OFF-STREET PARKING

As with the 2030 off-street parking analysis conducted for the Proposed Actions, a credit of 16 percent was applied to parking facilities within the Project Area to account for the displacement of existing uses and the relocation of existing parking demand to other areas. Four public parking facilities (sites 1, 2, 3, and 4 in Figures 17-11a and 17-11b) would also be displaced as a result of the 197-a Plan Alternative. In addition, the replacement of No Build projects by components of the 197-a Plan development scenario would result in the parking demand reduction of 90 spaces in the morning, 64 spaces in the midday, and 5 spaces in the evening at area off-street parking facilities. As shown in Table N.1-7, the maximum predicted off-street parking shortfall under the 197-a Plan Alternative would be 515 parking spaces, constituting a significant adverse off-street parking impact.

Table N.1-7 2030 197-a Plan Alternative Off-Street Parking Utilization Summary

2030 197-a Plan Build Condition	AM	MD	PM
2030 No Build Capacity	3,576	3,576	3,576
Displaced Garages			·
MTP 3300 Broadway Corp.	200	200	200
West 129th Street LLC	134	134	134
Uni Facility Corp.	100	100	100
Y&H Enterprises Inc.	175	175	175
Total 2030 197-a Plan Build Capacity	2,967	2,967	2,967
2030 No Build Demand	3,687	3,727	2,877
2030 197-a Plan Incremental Demand	32	49	29
Credit for Removal and Reduction of No Build Projects			
New Columbia Office Building (No. 23)	77	70	17
New Columbia Office Building (No. 24)	48	45	11
16% Credit for Displaced Parking Demand	97	97	97
Total 2030 197-a Plan Build Demand	3,497	3,564	2,781
Remaining Spaces	-530	-597	186
Utilization	118%	120%	94%

B. NOISE

Table N.1-8 $L_{eq(1)}$ and $L_{10(1)}$ Noise Levels for the 197-a Plan Alternative in the Year 2030 (in dBA)

			197-a Plan	Alternative
Site	Location	Time Period	Build L _{eq(1)}	Build L ₁₀₍₁₎
6	12th Av, W131-W132	AM	75.8	78.0
	,2,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	PM	69.0	74.6
10	W125th, 12th Av -St Clair Pl	AM	69.3	72.5
,0		PM	69.7	71.8
13	B'way, Tiemann PI– W125th	AM	77.6	82.5
	2 may, manuality of the annual of the same	PM	76.9	82.2

Note: Build $L_{10(1)}$ values are based on field measurements that were performed by AKRF, Inc. on April 27-29, 2004; May 1, 4-6, 8, 9, And 15, 2004; and October 12, 2004; and August 15, 2006, and September 23, 2006.

*

APPENDIX N.2

CB9 PROPOSED A-PLAN ALTERNATIVE COLUMBIA DEVELOPMENT SCENARIO

))			Table N.2-1: Comparsion of 197-a Plan	: Compars	ion of 197	-a Plan	native to
		197-a Plan	Alternative.	197-a Plan Alternative. Columbia Development Scenario	Someont Score	ojata				197-a Plai	197-a Plan Alternative, Columbia Development Scenario (in GSF)	Columbia I	Developm	ent Scenar	io (in GSF)
			,	Department of the second	and manufo	nario					197-a Plan	197-a Plan Alternative			
-	Academic		University	>							Office/				
# 9110	Kesearch	Academic	Housing		Residen-tial	Retail	Mfg	Total	197-a Site #2	Block: Lot ³		Residential	Retail	Mfa	Total
4			New	new construction							New Cor	New Construction			
									-	1996:21	57,000		9,000		66.000
									2	1996:23	142,500		22,000		164,500
	385 714					3-12-0-25-0-3-10-0-0			8	1996:29	57,952		9,990		67.942
α	1000					42,964		428,674		TOTAL	257,452		40,990		298,442
			40,352			5,008		45,360	4	1996:30	5,009	24,023	5,009		34,041
0			17,478			2,248		19,726	8	1997:33	14,500		2,500		17,000
									7	1997:27	92,000		9,000		66.000
	226,603								6	1997:40	114,000		18,000		132,000
ш			2 400			27,476		254,078		TOTAL	171,000		27,000		198,000
u			7,482			2,248		9,740	9	1997:17	6,250		2,250		8.500
			7,492			2,248		9,740	10	1997:47	6,250		2 250		8 500
ŋ									и	4007. n 1-1-1					000
									> ;	(b/d) a (b/o)	42,750		6,750		49,500
									-	1997:49	42,750		6,750		49,500
		178 921							12	1997:52	42,750		6,750		49.500
I		1000				19,733		196,653		TOTAL	128,250		20,250		148,500
									15(half)	1998:24	28,500		4,500		33.000
		56.928				,000			16	1998:26	28,500		4,500		33,000
_			39 455			188'0		65,919		TOTAL	57,000		9,000		66,000
			204,02			4,495		32,950	32,950 15(half)	1998:24	28,500		4,500		33,000
7									13	1998: 10 (p/o)	28,500		4.500		33 000
Overbuild									14	1998:16	2,250	12,000	2,250		16.500
		85,396				207 07			35	1998:13	35,971		2,998	11,990	50,959
¥			37 536			13,407		98,883		TOTAL	66,721	12,000	9,748	11,990	100,459
			2001			0,4/4		44,010	18	1986:10	6,474	31,075	6,474		44,023
73.									17	1986:1	57,901		9,983		67,884
	262,546				(2)	0000			18	1986:30	186,646		29,533		216,179
Σ		110 759				40,030		303,376		TOTAL	244,547		39,516		284,063
Columbia	874 859	430,004	430 001			17,235		127,994	20	1987:7	17,550	93,600	17,550		128,700
	200,1	ton'net	138,805	0	0	193,436	0	1,637,103	Columbia		435,447	0	77,732		
Subtotal	874,859	430,004	138.805	c	4	409 496	٠		Non-Columbia		574,056	160,698	109,305	11,990	1,369,228
	and the state of t			,	,	195,450	>	1,637,103 Subtotal	Subtotal		1,009,503	160,698	187,037	11,990	1,369,228

۵	
Plan	
a Plan Alternative, Columbia Development Scenario (in GSF	Table N.2-
Columbia	1: Compar:
Developme	Table N.2-1: Comparsion of 197-a Planternative to
ent Scena	-a Plan
ario (in G	ernative
SF	=

Academic Research Au Dia 874,859								197-a Plan	197-a Plan Alternative, Columbia Development Scenario (in GSF)	olumbia De	evelopme	nt Scenari	o (in GSF)
Academic Research Au 874,859	Plan Alternative (197-a Plan Alternative. Columbia Development Scenario	ent Scenario						197-a Plan Alternative	Alternative			
Academic Research Acad		Office/							Office/				
Research Acad	University	Eacility Resid	Residen-tial Retail		Mfa	Total	197-a Site #2	Block: Lot3		Residential	Retail	Mfg	Total
874,859			ł						Conve	Conversions			
874,859		20,000		2.000	8.000	30,000	21	1996:34	20,000		2,000	8,000	30,000
874,859	•	20,000		880	3.520	4.400		1996:15	0		880	3,520	4,400
874,859				4.000	16,000	20,000	23	1996:16	0		4,000	16,000	20,000
874,859	2		23 (3 968	15.870	29,757	24	1996:18	9,919		3,968	15,870	29,757
874,859	7 0			3.004	12,017	22,532	25	1997:18	7,511		3,004	12,017	22,532
874,859		44.896		2.245	8,979	56,120	26	1997:30	44,896		2,245	8,979	56,120
874,859	281	3		3,885	15,540	43,706	27	1997:34	24,281		3,885	15,540	43,706
874,859		22,482		2,998	11,990	37,470	28	1997:44	22,482		2,998	11,990	37.470
874,859		39,820		7,964	31,856	79,640	29	1998:29	39,820		7,964	31,856	79,640
874,859	,000			2,800	11,200	28,000	30	1986:6	14,000		2,800	11,200	28,000
874,859	044					184,044	31-Nash	1986: 65	131,460		10,017	12,007	141 077
874,859	,755				54,627	294,382	Columbia -	Nash	131,460		10,017	c	141,011
874,859		127,198	ω	33,744	80,345	241,287	241,287 Non-Columbia		182,909		33,744	177,039	393,692
umbia 874,859 umbia	.755 0	127,198	0 3	33,744	134,972	535,669 Subtotal	Subtotal		314,369	0	44,261	850,771	200,000
umbia 874,859 umbia		Conversions and Expansions							Conversions and Expansion	and Expansion	1		
umbia 874,859 umbia			86,323	7,194	28,774	122,291	32	1987.1		86,323	7,194	28,774	167,721
umbia 874,859 umbia			45,562	3,797	15,187	64,546	33	1988: 60		40,000	1 0	10,10	100,000
umbia 874,859 (86,323	7,194	28,774	122,291	34	1988:1		86,323	7,194	28,114	187,77
874,859				18.5	72 735	309.128	Subtotal Non-Columbia			218,208	18,185	72,735	309,128
0,4,000	759 138.805		_	193,436	54,627	1,931,485	1,931,485 Columbia		566,907		88,249		141,977
		127 198	218 208		153.080	550,415	550,415 Non-Columbia		756,965	378,906	161,234	261,764	2,072,048
TOTAL 874 859 669	669.759 138.805	1	218,208 2	245,365	207,707	2,481,900	TOTAL		1,323,872	378,906	249,483	261,764	2,214,025
Site reference corresponds to Figure N.2-2													
² Site reference corresponds to Figure 24-9.													
² Block/lat reference corresponds to Figure 24-8.													
p/a = part of Sources: CB9, DCP													

Table N.2-2

Comparison of Total Developn	Existing	Proposed	Actions	Infill 6	FAR	Infill Fu	ıll Build		Plan
Į.	1	New Uses	Remaining	New Uses	Remaining	New Uses	Remaining	New Uses	Remaining
SUBDISTRICT A		Conversions	Uses	Conversions	Uses	Conversions	Uses	Conversions	Uses
Market Rate Residential	0.0				Ĭ				
Affordable Residential	119.1	[110.4			123.5	
Commercial	278.2				112.4 59.4		112.4	123.5	119.
Ground Floor Retail	(a)				55.4		59.4	469.0	12.
Community Facility	396.8				3.5		3.5	120.6	3.5
Industrial	396.8				235.5		235.5	217.8	21.4
Transportation	558.2				336.9		336.9	277.0	346.2
Utility	20.0				20.0		20.0		20.0
Parking Vacant Building	7.5				2.5		2.5		
Vacant Land	63.9								12.4
Public Open Space	3.7 0.0		İ					ĺ	3.7
Subtotal Non CU Uses			0.0		770.4			ļ	
CU Above Grade Development	1,044.1	'	0.0		770.1		770.1	1,054.4	539.0
Academic		1,255.5		1,085.6		4 224 2			
Academic Research		2,597.0		1,622.6		1,324.3		184.0	
University Housing		509.2		374.8	İ	2,894.2 507.5		670.8	
Recreation		250.7	j	0/4.0		396.1		1	
Ground Floor Retail		162.6	1		1	51.9		447.0	
Parking					1	341.7		117.9	
CU Administrative		1	220.5	1	220.5	0,1,,,	220.5	ĺ	297.9
Major Above-Grade Mechanical/Storage				İ		398.6	220.0		291.9
CU Development Above Grade Total		4,775.0	220.5	3,083.0	220.5	5,914.3	220.5	972.8	297.9
CU Below Grade (b)				Ī		· 1		0,2.0	251.5
Academic Research Support		296.2		56.0			- 1		
Below-grade academic program Central Energy Plant		69.8		1			ľ		
Mechanical, Freight, Loading		70.2	ĺ		Ī		1		
Storage		429.2		220.0	1	276.0			
Parking		189.2 785.6	Ī	164.0		164.0			
Recreation		145.4	1		- 1	1		i	
CU Below Grade Total		1,985.7	0.0	440,0	0.0	440.0			
CU Development Total		6,760.7	220.5	3,523.0	220.5	6,354.3	0.0 220.5	0.0	0.0
All Development Total	1,844.1	6,760.7	220.5	3,523.0	990.6	6,354.3	990.6	972.8 2,027.2	297.9
TOTAL DEVELOPMENT SUBDISTRICT A	1,844.1	6,981		4,513		7,344		2,027.2	836.9
Public Open Spaces	0.0	94.0		38.8		38.8	4	17.8	
SUBDISTRICT B Residential								1	
Commercial	0.0				ĺ		1		0.0
Community Facility	33.6	197.0	33.6	197.0	33.6	197.0	33.6		33.6
Industrial	78.6		45.0					1	0.0
Transportation	3.0		15.0	j	15.0	Ī	15.0	1	78.6
Parking	0.0		j	1				j	3.0
Vacant Building	0.0		1			[İ	1	0.0
Vacant Land	3.7		3.667	1	3.667	1	3.667		0.0
Land Under Construction	1.8	1	5,557		0.007		3.007	ŀ	3.7
	120.7	197.0	52.2	197.0	52.2	197.0	52.2	0.0	1.8 120.7
TOTAL DEVELOPMENT SUBDISTRICT B	120.7	249.2		249.2		249.2		120.7	
Public Open Spaces	0.0	0.0		0.0		0.0	f	0.0	ľ
SUBDISTRICT C	1								
Residential Commercial	0.0		0.0		0.0		0.0		0.0
Community Facility	0.0		0.0		0.0		0.0	1	0.0
ndustrial	0.0 204.5		0.0	Ī	0.0	1	0.0	j	0.0
ransportation	0.0		204.5		204.5	- 1	204.5	İ	204.5
Parking	0.0	İ	0.0	j	0.0		0.0		0.0
	204.5	0.0	204.5	0.0	0.0	ام	0.0	_	0.0
TOTAL DEVELOPMENT SUBDISTRICT C	204.5	204.5	204.5	204.5	204.5	0.0	204.5	0.0	204.5
Public Open Spaces	0.0	0.0		0.0	Ī	204.5 0.0	'	204.5	1
OTHER AREA EAST OF BROADWAY						0.0		0.0	
Market Rate Residential	0.0	88.8		88.8		88.8	İ	65.9	[
Affordable Residential	17.0	1	17.0		17.0	00.0	17.0	65.9	16,7
Commercial	93.5						''	03.5	43.0
Ground Floor Retail	(a)			ĺ	1			11.0	45.0
Community Facility	18.8	61.7	1	61.7		61.7			
ndustrial	0.0	1			1			44.0	
ransportation	0.0		İ						
arking	0.0				ļ		1		
TOTAL DEVELOPMENT OTHER SEC	129.2	150.5	17.0	150.5	17.0	150.5	17.0	186.8	59.7
TOTAL DEVELOPMENT OTHER AREA	129.2	167.5		167.5		167.5		246.5	
Dublis Ossa Os									
Public Open Spaces	0.0	0.0		0.0		0.0		0.0	
Public Open Spaces TOTAL DEVELOPMENT ALL SUBDISTRICTS Public Open Spaces	2,298.4 0.0	7,602.3 94.0		0.0 5,134.8 38.8		7,966.1 38.8	<u> </u>	0.0 3,435.8	

a) ground-floor retail is included in commercial floor area, except for new construction and conversions.
 b) below-grade space is measured for University uses only.

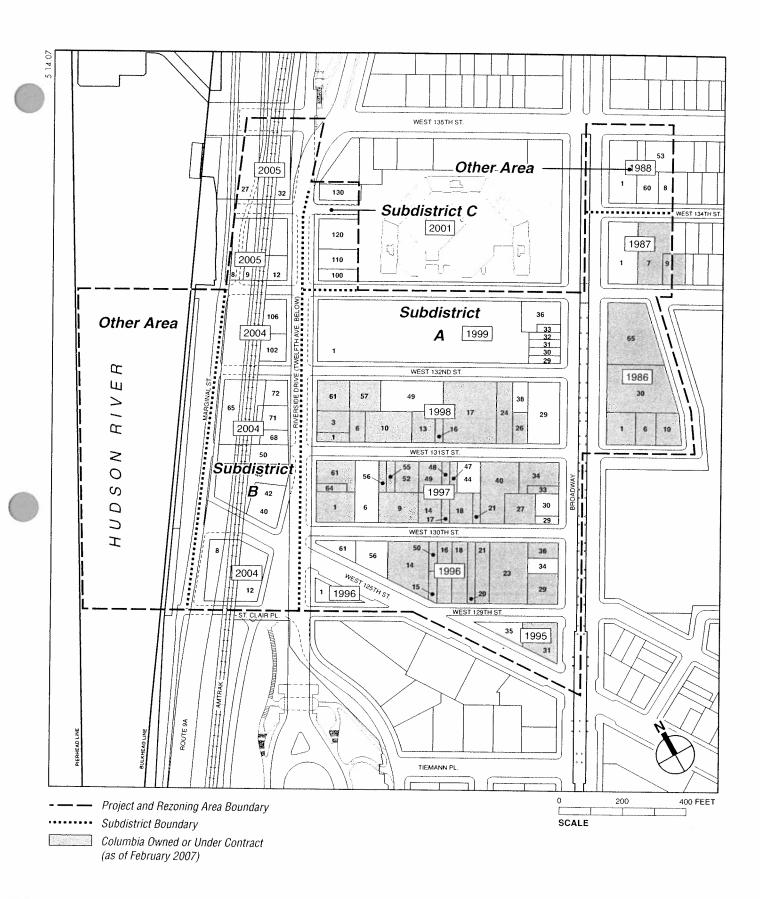


Figure N.2-1
Columbia University Property Owned or Under Contract

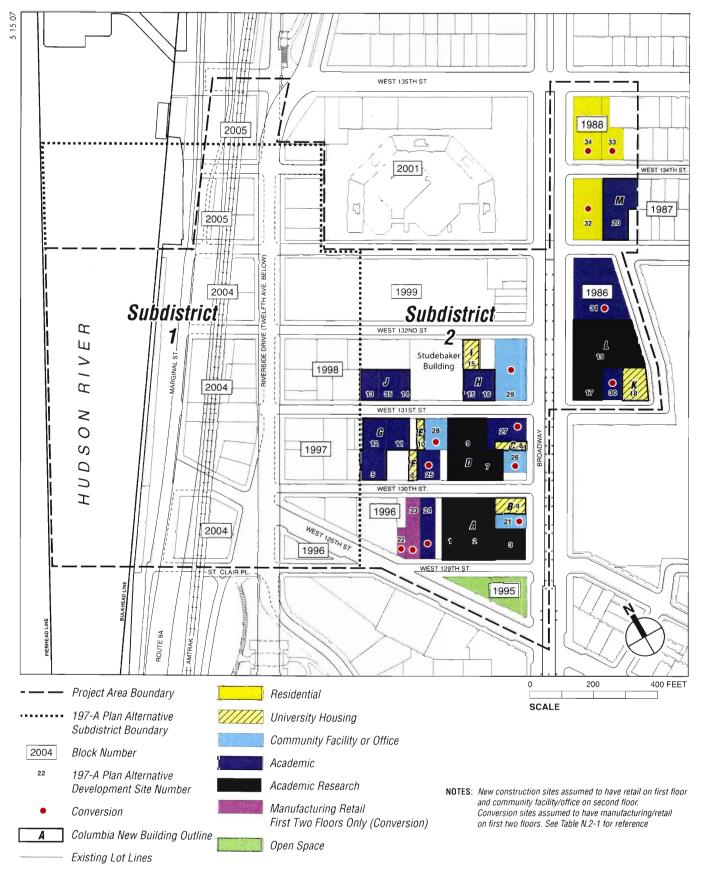


Figure N.2-2

Figure N.2-3
197-a Plan Alternative Columbia Scenario:
Massing Diagram View Northwest

Retail (First Floor Only, New Construction)

APPENDIX O

APPENDIX 0.1

GENERAL ANALYSIS OF THE MANHATTANVILLE BUS DEPOT RELOCATION

A. INTRODUCTION

Development on the western portion of the block between Broadway and Twelfth Avenue, West 132nd and West 133rd Streets, which is occupied by the Metropolitan Transportation Authority/New York City Transit (MTA/NYCT) Manhattanville Bus Depot ("Bus Depot"), is included in the Academic Mixed-Use Development plan. Such development would be contingent upon Columbia entering into an agreement with MTA for modifying or reconstructing the Bus Depot, which agreement has not been reached at the time of publication of this Draft Environmental Impact Statement (DEIS). Such an agreement would involve a variety of MTA processes addressing a modification or reconstruction plan, including but not limited to SEQRA and/or the National Environmental Policy Act (NEPA) and Title VI of the U.S. Civil Rights Act of 1964. These processes would include review and analysis of the feasibility and environmental and other impacts of any proposed modification or reconstruction plan, as of the time such a plan was to be formulated and prior to any implementation.

In order to address a reasonable worst case, this EIS analyzes a scenario in which the Bus Depot remains in the Project Area at a below-grade location generally beneath its existing site with Columbia buildings developed above. In this case, Columbia would attain the maximum development, as permitted by the proposed zoning, for the Academic Mixed-Use Development plan (6.8 million square feet). In the event that a different Bus Depot plan would ultimately be pursued, additional environmental review of the new scenario may be required at that time.

If MTA, after undertaking site planning and review under its regulatory mandates, agrees to relocate and reconstruct the Bus Depot below grade, the Proposed Actions would require the temporary relocation, for approximately a three- to four-year time period beginning in the year 2025, of operations that occur at the Bus Depot. This temporary relocation would be necessary to facilitate the planned construction activities on the northern block of Subdistrict A (i.e., the block bounded by West 133rd Street to the north, Broadway to the east, West 132nd Street to the south, and Twelfth Avenue to the west). This EIS assumes, for illustrative purposes, that the Proposed Project would rebuild the Bus Depot below grade generally at its current site on the western portion of this block and place University buildings above it.

The NYCT Bus Depot currently accommodates a fleet of 247 buses. This fleet contains TMC and Nova Bus RTS T8O206, Orion 07.501 diesel electric hybrid, GMC TDH-5106, and GMC TDH-5303AC model buses. The bus routes served by the Bus Depot include the M3, M4, M5, M10, M11, M18, M60, M96, M98, M104, and M106.

The Bus Depot occupies a four-story building (ranging in height from 24 feet to 36 feet) of approximately 318,000 square feet, with roof-top parking. The structure contains offices, locker rooms, bathrooms, and material and equipment storage areas. The Bus Depot is heated by space heaters and three dual-fired (natural gas/No.2 oil) boilers. The Bus Depot has 16 underground tanks storing various petroleum products, chemicals, and antifreeze products.

The Bus Depot's current full-time staff of 163 employees, consisting of maintenance personnel, dispatchers, managers, and line supervisors, operates in three shifts with 71 employees working the 7:30 AM to 3:30 PM regular day shift, 54 employees working the 3:30 PM to 11:30 PM evening shift, and 38 employees working the 11:30 PM to 7:30 AM late night shift. In addition to these employees, 617 bus operators, who do not work on a shift basis, currently report at various times throughout the day and evening. On a typical day, approximately 214 buses are dispatched from and returned to the Bus Depot.

It is currently not known where operations of the Bus Depot would be relocated to during the anticipated temporary construction period. It is assumed that operations at the Bus Depot would need to be relocated to one or more existing facilities or new temporary facilities, or to a combination of existing facilities and new temporary facilities. As described in Chapter 19, "Construction," any construction on the Bus Depot block would not start before 2025. Since temporary relocation of the Bus Depot would be many years away, it would be speculative to identify potential relocation sites. Therefore, a detailed environmental assessment can not be undertaken at this time. If and when a specific temporary bus relocation plan is set forth at a later time, a further review, which would include public participation, would also be undertaken.

The temporary relocation of the Bus Depot, as discussed above, would require environmental review under SEQRA (and possibly NEPA). Depending on the actions involved in the relocation, the level of disturbance of existing conditions, extent of construction, and sensitivity of the area surrounding relocation sites, the environmental review would determine whether a significant adverse impact could occur and whether an EIS would have to be prepared. Because the period of relocation could be as much as four years, any significant adverse impact, although short term, would need to be fully analyzed and mitigation measures examined. Alternatives to avoid such impacts would also have to be considered.

This generic analysis assesses the categories of environmental impacts that could result from temporarily relocating the operations currently undertaken at the Bus Depot. This generic qualitative assessment is based on the likely criteria for siting and operating the temporary facility/facilities. This generic analysis includes an assessment of potential impacts of the relocated facility/facilities on each of the City Environmental Quality Review (CEQR) impact categories.

MTA has the authority to site its facilities without regard for local zoning. Although such a scenario is unlikely—the agency usually seeks appropriately zoned sites for its facilities—it cannot be ruled out in a conservative generic analysis. As described below, the temporary relocation of the Bus Depot could result in significant, if short term, adverse impacts in the following areas: land use, zoning, and public policy; socioeconomic conditions; community facilities; historic resources, shadows; urban design and visual resources; neighborhood character; hazardous materials; waterfront revitalization, traffic; parking; air quality; noise; and public health. This assessment is conservative, and many, if not all, of the potential impacts identified below may not occur due to either judicious siting of the temporary facility/facilities or the implementation of mitigation measures. However, absent these site-specific details, it is assumed that the temporary relocation of the Bus Depot would result in the significant short term adverse impacts noted above, and discussed below.

B. ANALYSES

LAND USE, ZONING, AND PUBLIC POLICY

Under New York City's Zoning Resolution the Bus Depot would be classified as Use Group 16. The Zoning Resolution specifies that uses within this use group cannot be sited in residential districts, and are permitted only in C8 commercial districts as well as manufacturing districts. C8 districts provide for automotive and other heavy commercial services that often require a large amount of land. Typical uses are automobile showrooms and repair shops, warehouses, gas stations, and car washes; residential uses are not permitted in C8 districts. It is most likely that the Bus Depot operations would be temporarily relocated to areas zoned for such use where they would not be disruptive. In that case, the operations would be relocated to areas where any existing public policy initiatives support light industrial and automotive uses.

However, if MTA cannot find appropriately zoned sites for temporarily relocating the Bus Depot's operations, the agency would have the power to acquire land in any zoning district for transportation purposes. If the Bus Depot were sited in a residential or particularly busy commercial area, on the waterfront, or near a park, school or other sensitive use, its presence might be considered disruptive and incompatible with existing land uses. Therefore, the potential for significant short term adverse impacts on land use, zoning and public policy from temporary relocation of the Bus Depot cannot be ruled out and would have to be analyzed once specific locations are identified.

SOCIOECONOMIC CONDITIONS

According to the CEQR Technical Manual, a socioeconomic assessment should be conducted if an action may reasonably be expected to create substantial socioeconomic changes within the area affected by the action that would not occur in its absence. Actions that would trigger a CEQR analysis include the following:

- The direct displacement of a residential population so that the socioeconomic profile of the neighborhood would be substantially altered.
- The displacement of substantial numbers of businesses or employees, or the direct displacement of a business or institution that is unusually important because of its critical social or economic role in the community, and that would have unusual difficulty in relocating successfully because it is of a type or in a location that makes it the subject of other regulations or publicly adopted plans aimed at its preservation; because it serves a population uniquely dependent on its services in its present location; or because it is particularly important to neighborhood character.
- The introduction of substantial new development that is markedly different from existing
 uses, development, and activities within the neighborhood. Such an action could lead to
 indirect displacement.

It is probable that the operations of the Bus Depot would not be temporarily relocated to sites with existing residential use, and therefore no residents would be displaced. Similarly, the operations would not likely be temporarily relocated to sites with existing businesses. Hence, the temporary relocation of the Bus Depot operations is not expected to result in the displacement of businesses or employees, or the displacement of businesses or institutions that have critical social or economic roles. However, if MTA could not find relocation sites within appropriate

zoned areas, the agency could site its facility/facilities in commercial or even residentially zoned areas, as described above, under "Land Use, Zoning, and Public Policy," or it could acquire appropriately rezoned property for transportation purposes that required displacement of existing businesses. Since the businesses would be displaced for a period of up to four years, it is unlikely that they would or could return once the property was vacated by the Bus Depot. Thus, significant long term impacts on socioeconomic conditions through direct displacement of businesses, although unlikely, cannot be ruled out and would have to be analyzed once specific locations are identified.

COMMUNITY FACILITIES

It is most likely that the operations of the Bus Depot would be temporarily relocated to sites that would not displace or interfere with the functioning of any community facilities. However, if MTA were to site its temporary facility/facilities in residentially or commercially zoned areas, it is possible that the presence of the facility/facilities or the operations of the buses could be incompatible with or in some way interfere with the operations of a nearby community facility. Thus, significant short term impacts on community facilities, although unlikely, cannot be ruled out and would have to be analyzed once specific locations are identified.

Because the Bus Depot is not a residential use, the temporary relocation of its operations would not result in indirect effects on public schools, libraries, hospitals, or day care centers, and therefore, it would not have significant indirect adverse impacts on these community facilities.

The New York City Police Department regularly reviews its operations for each precinct. Based on geographic area, population change, and crime statistics, it adjusts staffing to maintain adequate community protection. The New York City Fire Department similarly adjusts its operations as needed. It is anticipated that the operations of the Bus Depot would not be relocated to a site that would require the direct displacement of a police or fire station. The existing or newly constructed temporary facility/facilities that could be used to temporarily accommodate the operations of the Bus Depot would be located in an area already served by the local precincts and fire houses. Therefore, the temporary relocation of the Bus Depot operations is not expected to result in significant adverse impacts on the delivery of police or fire protection.

OPEN SPACE

The CEQR Technical Manual guidelines indicate the need for an open space analysis when an action would result in the physical loss of public open space (direct impact), or the introduction of 200 or more residents or 500 or more workers to an area (indirect impact). It is anticipated that the temporary relocation of the Bus Depot operations would not displace any public open spaces, nor would it substantially increase the use of open spaces that may be located within ½ mile of the relocation sites. Since bus operators would spend their days off-site, the number of stationary employees that could be temporarily relocated to any one site location would not exceed 500. Therefore, the temporary relocation of the Bus Depot operations is not expected to result in significant adverse impacts on open space.

SHADOWS

The CEQR Technical Manual recommends that a screening for potential shadow impacts be conducted for any action that would result in new structures or enlargements 50 feet high or taller, and for shorter structures adjacent to public open spaces or sun-sensitive architectural

resources. It is anticipated that the Bus Depot operations would be temporarily relocated to either comparable existing facility/facilities or to newly constructed temporary facility/facilities. With the existing depot structure standing at less than 50 feet high, it is likely the facility/facilities to which the Bus Depot operations could potentially be relocated would also be under 50 feet. Therefore, the temporary relocation of the Bus Depot operations is not expected to result in significant adverse shadows impacts. If the temporary facility/facilities were to exceed a height of 50 feet and be in close proximity to a sensitive public use, then a shadow analysis would have to be undertaken. In this case a shadow impact would be possible, although not likely.

HISTORIC RESOURCES

For CEQR purposes, historic resources include any of the following: designated New York City Landmarks; properties calendared for consideration as such; properties listed on, eligible for, or within a district listed on the State and/or National Register of Historic Places; properties recommended by the New York State Board for such listing; National Historic Landmarks; and properties not identified by any of the above that meet one or more of their eligibility requirements. Historic resources include both architectural resources, such as historically important buildings, structures, objects, sites, and districts; and archaeological resources, such as physical remains from historic or prehistoric periods.

Sites of architectural resources that are listed on the National/State Register of Historic Places or are New York City Landmarks or have been determined to be eligible for historic status by the State Office of Historic Preservation and Recreation or the New York City Landmarks Commission are unlikely to be used or displaced for a temporary bus depot. However, it is possible that impacts on historic or archaeological resources could occur in the following manner. If the temporary bus depot were to use or displace a building that, although not a known historic resource, could be found eligible, a significant adverse historic impact could occur. In addition, for any new construction or expansion requiring excavation, the possibility of a potential archaeological resource to be present would need to be examined. If any potential architectural or archaeological resources are identified, appropriate mitigation measures would be required to avoid significant adverse impacts on these resources.

URBAN DESIGN AND VISUAL RESOURCES

According to the CEQR Technical Manual, a detailed assessment of urban design and visual resources is necessary when a proposed action would result in a building or structure substantially different in height, bulk, form, setbacks, size, scale, use, or arrangement than those around it; or when an action would change block form, demap an active street, map a new street, or affect the street hierarchy, streetwall, curb cuts, pedestrian activity, or other streetscape elements. Proposed actions are considered to have potential impacts on visual resources when they would directly result in a new above-ground development or would otherwise change the bulk of new above-ground development (as with a rezoning), and are proposed in an area that includes significant visual resources.

The Bus Depot currently occupies an industrial building that is built to the lot line. The depot operations would most likely be temporarily relocated to existing or newly constructed temporary facility/facilities that are similar in terms of form and scale of the buildings found in areas characterized by industrial and automotive uses. These potential sites would not change block form, map or demap streets, or affect any other streetscape elements. If the siting of

potential facility/facilities would be located in areas characterized by industrial and automotive uses, it is not expected that the relocation building would affect any notable visual resources nearby.

However, as noted above, if MTA could not find appropriately zoned sites for the Bus Depot relocation, it could site the facility/facilities in a commercial or residential area. This facility/facilities, once constructed, would be unlikely to be demolished after four years. If that were the case, the potential for significant long term adverse impacts on urban design or visual resources would increase, and a significant adverse impact cannot be ruled out. Thus, potential impacts to urban design and visual resources would have to be analyzed once specific locations are identified.

NEIGHBORHOOD CHARACTER

The CEQR Technical Manual suggests that neighborhood character is an amalgam of the various elements that give neighborhoods their distinct "personality." A neighborhood character assessment may be appropriate if an action would affect the areas of land use, urban design, visual resources, historic resources, socioeconomics, traffic, and noise. An action can fall below thresholds in these individual areas but still cause a significant impact on neighborhood character by causing moderate changes in all or several of these contributing areas.

As described above, it is most likely that the operations of the Bus Depot would be temporarily relocated to neighborhoods characterized by industrial and/or automotive uses and are expected to occupy buildings of similar size, form, and character to the surrounding buildings. Although the relocated operations could generate new traffic and/or noise impacts, they are unlikely to affect the character of such areas.

However, as noted above, the possibility that MTA could site the relocation facility/facilities in a commercial or residential area cannot be ruled out, so an impact on neighborhood character, stemming from land use incompatibility or impacts on socioeconomic conditions, historic resources, community facilities, urban design, visual resources, traffic and noise, also cannot be ruled out and would have to be analyzed once specific locations are identified.

NATURAL RESOURCES

A natural resources assessment is conducted when a natural resource is present on or near the site of a proposed action, and the action involves the potential disturbance of that resource. The CEQR Technical Manual defines natural resources as water resources, including surface water bodies and groundwater; wetland resources, including freshwater and tidal wetlands; upland resources, including beaches, dunes and bluffs, thickets, grasslands, meadows and old fields, woodlands and forests, and gardens and other ornamental landscaping; and built resources, including piers and other waterfront structures.

It is not anticipated that the relocation sites for the Bus Depot would include any natural resources of significance. The sites would either be vacant land or would be developed with buildings. In either case, any vegetation on the sites would be typical urban invasive vegetation with little wildlife habitat value. Therefore, the temporary relocation of the Bus Depot operations is not expected to result in significant adverse impacts on natural resources.

HAZARDOUS MATERIALS

According to the CEQR Technical Manual, the potential for significant adverse impacts related to hazardous materials can occur when a) elevated levels of hazardous materials exist on the site, b) an action would increase pathways to their exposure, or c) an action would introduce new activities or processes using hazardous materials, and the risk of human or environmental exposure is increased.

As described above, the Bus Depot structure contains offices, locker rooms, bathrooms, and material and equipment storage areas. The facility is heated by space heaters and three dual-fired (natural gas/No.2 oil) boilers. The facility has 16 underground tanks storing various petroleum chemicals and antifreeze products. A newly constructed relocation site would require comparable storage capabilities. If the operations were relocated to existing bus depot sites, additional storage capacity may be required at these locations. Both new and/or existing underground tanks would have to be inspected and operated in accordance with all applicable requirements.

Because potential sites that could accommodate the temporary relocation of the Bus Depot's operations have not yet been identified, it is not known whether the sites would include hazardous materials to which users of the sites may be exposed during their construction or operation. Therefore, potential significant adverse impacts due to hazardous materials cannot be ruled out at this time. However, when temporary relocation sites are identified, a Phase I Environmental Site Assessment would be conducted to determine whether there is evidence of potential site contamination. If necessary, further testing would be carried out, and contaminants would be removed in accordance with all applicable standards and regulations.

WATERFRONT REVITALIZATION PROGRAM

If the Bus Depot operations were to be temporarily relocated to sites within the boundaries of New York City's Coastal Zone, an assessment for consistency with the City's Local Waterfront Revitalization Program (LWRP) would be required. These policies, which are described in detail in Chapter 13, "Waterfront Revitalization Program," include the following:

- Support and facilitate residential and commercial redevelopment in appropriate coastal zone areas;
- Support water-dependent and industrial uses in New York City coastal areas that are well suited to their continued operation;
- Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers;
- Protect and restore the quality and function of ecological systems within the New York City coastal area;
- Protect and improve water quality in the New York City coastal area:
- Minimize loss of life, structures, and natural resources caused by flooding and erosion;
- Minimize environmental degradation from solid waste and hazardous substances;
- Provide public access to and along New York City's coastal waters;
- Protect scenic resources that contribute to the visual quality of New York City; and
- Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

If, as expected, the temporary relocation of the depot operations would be to an area zoned for manufacturing and/or transportation use, even if it were in a coastal zone, it could comply with the policies of the WRP. However, if MTA were to site the facility/facilities in a commercial or residential area within the coastal zone, it is possible that the action would not fully comply with all WRP policies. MTA would seek to achieve consistency with the policies of the WRP. However, the potential for significant short term adverse impacts to the WRP from the temporary relocation of the Bus Depot cannot be ruled out and would have to be analyzed once specific locations are identified.

INFRASTRUCTURE

For CEQR purposes, infrastructure is concerned with water supply, sewage treatment, and stormwater management. As stated in the CEQR Technical Manual, the City is committed both to maintaining adequate water supply and pressure for all users and to adequately treating all wastewater generated in the City. An assessment of a project's effects on the City's water supply is necessary only for projects that would have an exceptionally large demand for water. An assessment of a project's effects on the City's sanitary sewage system is necessary only for unusual actions with very large flows. The temporary relocation of the Bus Depot operations would not result in an exceptionally large demand for water, nor would it generate unusually large sanitary or stormwater flows.

The existing Bus Depot is served by the New York City Department of Environmental Protection's North River Water Pollution Control Plant (WPCP), which is permitted to treat a monthly flow of 170 million gallons of water per day (gpd). The Bus Depot's operations could be moved to sites served by this or any of the city's 13 other WPCPs.

As described above, the Bus Depot is located in an approximately 318,000-square-foot building and has 780 employees (617 of whom are bus operators who do not remain on-site for long durations). Based on the *CEQR Technical Manual* rates for commercial uses, even if all facility employees remain at the depot full-time, the facility would use approximately 48,750 gpd of water and produce approximately 19,500 gpd of sewage. This amount of water is insignificant compared with Citywide water consumption, and this amount of sewage flow is negligible compared with the amount handled by any of the City's WPCPs. Therefore, the temporary relocation of the Bus Depot operations, whether it is in whole or in part, would not result in significant adverse impacts on infrastructure.

SOLID WASTE AND SANITATION SERVICES

Because the temporary relocation of the Bus Depot operators would not result in an incremental increase in the solid waste stream, there would not be any significant adverse impacts on the collection or disposal of solid waste.

ENERGY

The relocation of the Bus Depot operations would result in a consolidation of operations at other existing bus depots or similar operations at newly constructed temporary facilities. These facilities are all subject to the New York State Energy Conservation Code in providing heating and cooling. Since the energy needs associated with the temporary relocation of the Bus Depot operations would not exceed what would be required currently and any building in conformance with the New York State Energy construction codes would not create significant adverse energy

impacts under CEQR guidelines. Therefore, no significant adverse impacts with respect to energy would be expected with the Bus Depot's temporary relocation.

TRAFFIC AND PARKING

The relocation of the Bus Depot operations would have the potential to affect traffic and parking enough require a detailed analysis of traffic and parking under CEQR criteria. The existing facility currently has approximately 163 full-time employees, consisting of maintenance personnel, dispatchers, managers, and line supervisors, with 71 employees working the 7:30 AM to 3:30 PM regular day shift, 54 employees working the 3:30 PM to 11:30 PM evening shift, and 38 employees working the 11:30 PM to 7:30 AM late night shift. In addition to these employees, 617 bus operators, who do not work on a shift basis, currently report at various times throughout the day and evening. On a typical day, approximately 214 buses are dispatched from and returned to the Bus Depot.

MTA estimates that 85 to 90 percent of the facility's employees commute to the site via private automobile and provided information on typical dispatch and bus pull-in and pull-out patterns at the Bus Depot. Based on the employee travel patterns and the bus pull-in and pull-out information, hourly commuting and bus trip estimates were developed, as presented in Table O.1-1. These estimates assume that on-site employees for the three shifts would arrive and depart between 7:00 and 8:00 AM and between 3:00 and 4:00 PM, respectively, for the regular day shift; between 3:00 and 4:00 PM and between 11:00 PM and 12:00 AM, respectively, for the evening shift; and, between 11:00 PM and 12:00 AM and between 7:00 and 8:00 AM, respectively, for the late night shift. The bus operators were assumed to arrive in the hour before their scheduled pull-out and depart in the hour after their pull-in. Conservatively, 90 percent of both the on-site employees and bus operators were assumed to commute alone via automobile. In accordance with the *CEQR Technical Manual*, a 2.0 passenger car equivalent (PCE) factor was applied to the bus pull-in and pull-out trips for impact analysis determination.

If the Bus Depot operations were temporarily relocated to a single facility with similar site amenities (i.e., on-site parking) and area characteristics (i.e., industrial in nature, modest transit service, and proximity to regional highways), the incremental increase in traffic to and from this facility would exceed the CEQR analysis threshold of 50 PCEs an hour for the 11:00 PM to 2:00 AM, 5:00 to 8:00 AM, 10:00 to 11:00 AM, 1:00 to 2:00 PM, 3:00 to 4:00 PM, and 6:00 to 10:00 PM time periods. While background traffic levels during most of these hours (except for 7:00 to 8:00 AM, 3:00 to 4:00 PM, and 6:00 to 7:00 PM) are relatively lower than during commuter peak periods, more detailed analyses would be required to determine the potential for significant adverse traffic impacts. The Bus Depot could be relocated to one facility, or because of the high number of employees and buses, operations could be temporarily distributed among several facilities. The potential for significant short term adverse traffic impacts could occur in either case. These impacts would be short term in nature, occurring only during the approximately four-year period when the West 132nd/133rd Street block of the Manhattanville rezoning area would be under construction (see Chapter 21, "Construction").

With regard to parking, it is not certain whether off-street parking would be provided at or near the locations of the temporary relocated facilities. Once potential temporary relocation sites are identified, detailed parking inventories of area parking supply would be necessary to determine the potential of parking shortfalls resulting from the temporary relocation of the Bus Depot operations. Absent specific relocation plans, the possibility that significant temporary parking impacts would occur cannot be dismissed.

Table O.1-1
Bus Depot Hourly Vehicle Trip Estimates

				Dus Depot Hours						,		p 23ti	
Hour Ending	Site Employee Vehicle-Trips			Bus Operator Vehicle-Trips			Bus Pull-Ins and Pull-Outs			Total Vehicle Trips			PCE
	In	Out	Total	ln	Out	Total	ln	Out	Total	ln	Out	Total	Totals
1:00 AM	0	0	0	0	23	23	26	0	26	26	23	49	75
2:00 AM	0	0	0	0	23	23	20	0	20	20	23	43	63
3:00 AM	0	0	0	0	18	18	0	0	0	0	18	18	18
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	37	0	37	0	0	0	37	0	37	37
6:00 AM	0	0	0	69	0	69	0	41	41	69	41	110	151
7:00 AM	0	0	0	57	0	57	0	77	77	57	77	134	211
8:00 AM	64	34	98	15	0	15	0	63	63	79	97	176	239
9:00 AM	0	0	0	0	0	0	0	17	17	0	17	17	34
10:00 AM	0	0	0	0	0	0	20	0	20	20	0	20	40
11:00 AM	0	0	0	0	18	18	26	0	26	26	18	44	70
12:00 PM	0	0	0	0	23	23	0	0	0	0	23	23	23
1:00 PM	0	0	0	15	0	15	0	0	0	15	0	15	15
2:00 PM	0	0	0	22	0	22	0	17	17	22	17	39	56
3:00 PM	0	0	0	13	0	13	0	24	24	13	24	24	48
4:00 PM	49	64	113	0	0	0	0	15	15	49	79	128	143
5:00 PM	0	0	0	0	0	0	7	0	7	7	0	7	14
6:00 PM	0	0	0	0	6	6	11	0	11	11	6	17	28
7:00 PM	0	0	0	0	10	10	31	0	31	31	10	41	72
8:00 PM	0	0	0	0	28	28	27	0	27	27	28	55	82
9:00 PM	0	0	0	0	24	24	33	0	33	33	24	57	90
10:00 PM	0	0	0	0	30	30	15	0	15	15	30	45	60
11:00 PM	0	0	0	0	13	13	18	0	18	18	13	31	49
12:00 AM	34	49	83	0	16	16	25	0	25	59	65	124	149
Day Total	147	147	294	228	232	460	259	254	513	634	633	1,267	1,767
Sources:	MTA												

TRANSIT AND PEDESTRIANS

Most of the current trips associated with the Bus Depot are made via auto or bus, even though the facility is located near two subway stations. The preference for auto use is a characteristic of this type of worker, whose hours are not typical and do not correspond to peak service on the subway, and for whom parking is often provided. It is expected that this pattern of journey to work will continue, and the temporary relocation of its operations would not yield 200 or more new transit or pedestrian trips, the CEQR Technical Manual threshold requiring detailed transit and pedestrian analyses. Therefore, no significant adverse impacts on transit and pedestrian conditions would be expected with the Bus Depot's temporary relocation.

AIR QUALITY

The maximum hourly incremental traffic from temporarily relocating the operations to existing or newly constructed facilities could exceed the *CEQR Technical Manual* air quality screening threshold of 100 peak hour trips or the City's current screening threshold of 21 peak heavy-duty diesel trucks per hour for PM_{2.5}. Therefore, as part of the development of a detailed relocation plan, a quantified assessment of on-street mobile source emissions would be required. Furthermore, a stationary source analysis may be warranted to assess on-site emissions at the potential relocated facilities. Since potential relocation sites have not yet been identified, the possibility of significant short term adverse air quality impacts cannot be ruled out and would have to be analyzed once specific locations are identified.

NOISE

The increased traffic due to employee and bus trips would have the potential for causing significant increases in noise levels at locations near the relocation facilities. As part of the development of a detailed relocation plan, noise analyses would need to be prepared to examine this possibility and, if necessary, to explore mitigation options. Absent specific relocation plans, the possibility that significant short term noise impacts would occur cannot be dismissed.

CONSTRUCTION

It is not likely that the temporary relocation of the Bus Depot operations would involve the construction of new buildings. If the depot operations were to move into existing buildings, there would be little to no substantial construction activity. However, temporary relocation could involve the construction of temporary structures or facilities associated with the Bus Depot operations. MTA Capital Projects has issued regulations for its own construction that require substantial measures to reduce air and noise emissions. Such measures to reduce air emissions include the use of ultra-low-sulfur diesel, diesel particulate filters, diesel oxidation catalysts, and, in general, best available technologies. Noise measures would include use of low noise emission construction equipment, as well as mufflers, acoustical enclosures, and temporary noise barriers. As a result, significant adverse impacts from construction of a temporary structure are not anticipated.

PUBLIC HEALTH

According to the CEQR Technical Manual, public health involves the activities society undertakes to create and maintain conditions in which people can be healthy. Public health may be jeopardized by poor air quality resulting from traffic or stationary sources, hazardous materials in soil or groundwater used for drinking water, significant adverse impacts related to noise or odors, solid waste management practices that attract vermin and pest populations, and actions that result in the exceedance of accepted federal, state, or local standards.

As mentioned above, since the relocation sites have not yet been identified, the potential for significant adverse air quality and noise impacts cannot be ruled out and would have to be analyzed once specific locations are identified. Therefore, until detailed air quality and noise analyses are conducted, the potential for significant short term public health impacts cannot be dismissed. Any necessary hazardous materials remediation measures would be undertaken in accordance with applicable federal, state, and local requirements.

APPENDIX 0.2

GENERIC ANALYSIS OF THE 131st STREET SHOP RELOCATION

A. INTRODUCTION

The Proposed Actions would require the relocation of a Metropolitan Transportation Authority/New York City Transit (MTA/NYCT) facility located in Subdistrict A at 640 West 131st Street between Broadway and Twelfth Avenue. The facility, known as the "131st Street Shop," is the headquarters of the MTA Facility Operations, North Division, and is operated by the NYCT Department of Buses facilities group. The North Division sends out maintenance personnel, skilled tradespeople, and equipment to repair NYCT bus depot facilities in Manhattan and the Bronx. It does not provide bus repair services. In addition to serving as the dispatch site, the building also houses the equipment, tools, and supplies needed for maintaining the bus depots. A relocation site for this facility is not known at this time.

The 131st Street Shop is currently located on a 15,000-square-foot lot in a one-story building of approximately 15,000 square feet (sf) plus a mezzanine. The structure has parking for service vehicles and contains offices, locker rooms, bathrooms, material and equipment storage areas, and a shop area. The shop stores only limited supplies, including emergency generators, paint, and plumbing materials. It stores some NYCT maintenance trucks for workers to use, accommodates short-term vehicle access to pick up/drop off equipment, and has space for a few selected employees to park. The shop is heated by space heaters and a gas boiler. There are no underground storage tanks on the site.

The facility has a full-time staff of approximately 40 employees, including five supervisors and three managers, who work in three shifts. During the day, up to six people remain at the shop. During the other two shifts, only two to three people remain at the shop. The regular day-shift workers report no later than 7:30 AM to get their assignments, pick up supplies or equipment needed, and travel to assigned site locations via one of the 20 maintenance trucks kept at the site. By approximately 8:00 AM, only site managers and supervisors remain. The workers typically return to the shop by 3:00 PM. Repair dispatches during the other two shifts are made only on an as-needed basis. The site managers and supervisors park on-site, but parking is not provided for the other employees.

Workers are dispatched to bus facilities elsewhere in Manhattan and the Bronx to undertake work such as boiler and air-conditioning repair, plumbing, painting, and masonry. Summer activities typically involve air-conditioning equipment and plumbing, while winter activities typically involve plumbing. Activity levels are relatively constant year-round.

MTA has indicated that the 131st Street Shop operations would be relocated to a larger facility than the existing 131st Street Shop. The relocated facility would contain approximately 40,000 sf of interior enclosed space and 10,000 sf of yard space for exterior storage of nonperishable construction material. The MTA has indicated that the relocated facility would contain the same approximate number of employees and operational functions as the existing facility. MTA's space requirements for the relocated facility, which exceed the area of the existing 131st Street

Shop, were developed with regard to operational, safety, and code compliance requirements needed to construct, operate, and maintain a modern facility of this type.

MTA has also indicated that the relocated facility would be located within close proximity to a major highway or commercial vehicle thoroughfare.

It is currently not known where the 131st Street Shop operations would be relocated. Since relocation would be several years away, it would be speculative to identify potential relocation sites. Therefore, a detailed environmental assessment can not be undertaken at this time. When a specific shop relocation plan is set forth at a later time, a further review, which would include public participation, would also be undertaken.

The generic analysis assesses the potential environmental impacts that could result from relocating this facility, based on the likely criteria for siting and operating the relocated facility. It is expected that the activities occurring at the relocated new facility would be approximately the same as the existing facility. The relocation of this facility will be subject to MTA's approval procedures. Because the existing shop would be relocated as a direct result of the Proposed Actions, the potential for impacts from this relocation are analyzed in this appendix. This generic analysis includes an assessment of potential impacts of the relocated facility on each of the City Environmental Quality Review (CEQR) impact categories.

MTA has the authority to site its facilities without regard for local zoning. Although such a scenario is unlikely—the agency usually seeks appropriately zoned sites for its facilities—it cannot be ruled out in a conservative generic analysis. As described below, the relocation of the 131st Street Shop could result in significant adverse impacts in the following areas: land use, zoning, and public policy; socioeconomic conditions; community facilities; shadows; historic resources; urban design and visual resources; neighborhood character, hazardous materials, and waterfront revitalization. This assessment is conservative, and many, if not all, of the potential impacts identified below may not occur due to either judicious siting of the facility or the implementation of mitigation measures. However, absent these site-specific details, it is assumed that the relocation of the 131st Street Shop would result in the significant adverse impacts noted above and discussed below.

B. ANALYSES

LAND USE, ZONING, AND PUBLIC POLICY

Under New York City's Zoning Resolution the 131st Street Shop would be classified as Use Group 16. The Zoning Resolution specifies that uses within this use group cannot be sited in residential districts, and are permitted only in C8 commercial districts as well as manufacturing districts. C8 districts provide for automotive and other heavy commercial services that often require a large amount of land. Typical uses are automobile showrooms and repair shops, warehouses, gas stations, and car washes; residential uses are not permitted in C8 districts. It is most likely that the 131st Street Shop would be relocated to an area zoned for such use where its operations would not be disruptive. In that case, the facility would be relocated to an area where any existing public policy initiatives support light industrial and automotive uses.

However, even if the shop were moved to an appropriately zoned area, it is possible that it might conflict with nearby non-conforming residential uses. Further, if MTA cannot find appropriately zoned sites for relocation of the 131st Street Shop, the agency has the power to acquire land in any zoning district for transportation purposes. If the facility were sited in a residential or

particularly busy commercial area, on the waterfront, or near a park, school or other sensitive use, its presence might be considered disruptive and incompatible with existing land uses. Therefore, the potential for significant adverse impacts on land use, zoning, and public policy from the relocation of the 131st Street Shop cannot be ruled out and would have to be analyzed once a specific location is identified.

SOCIOECONOMIC CONDITIONS

According to the CEQR Technical Manual, a socioeconomic assessment should be conducted if an action may reasonably be expected to create substantial socioeconomic changes within the area affected by the action that would not occur in its absence. Actions that would trigger a CEQR analysis include the following:

- The direct displacement of a residential population so that the socioeconomic profile of the neighborhood would be substantially altered.
- The displacement of substantial numbers of businesses or employees; or the direct displacement of a business or institution that is unusually important because of its critical social or economic role in the community and that would have unusual difficulty in relocating successfully; because it is of a type or in a location that makes it the subject of other regulations or publicly adopted plans aimed at its preservation; because it serves a population uniquely dependent on its services in its present location; or because it is particularly important to neighborhood character.
- The introduction of substantial new development that is markedly different from existing uses, development, and activities within the neighborhood. Such an action could lead to indirect displacement.

It is probable that the 131st Street Shop would not be relocated to a site with existing residential uses or businesses. However, if MTA could not find a relocation site within appropriate zoned areas, the agency could site its facility in commercially or even residentially zoned areas, as described above under "Land Use, Zoning, and Public Policy," or it could acquire property for transportation purposes that required displacement of existing businesses. Thus, the relocation of this facility is not expected to have a significant adverse impact on socioeconomic conditions. However, absent a specific relocation plan, a significant adverse impact cannot be ruled out and would have to be analyzed once a specific location is identified.

COMMUNITY FACILITIES

It is most likely that the operations of the 131st Street Shop would be relocated to a site that would not displace or interfere with the functioning of any community facilities. However, if MTA were to site its facility in residentially or commercially zoned areas, it is possible that the presence or operations of the facility could be incompatible with or in some way interfere with the operations of a nearby community facility. Thus, significant impacts on community facilities, although unlikely, cannot be ruled out and would have to be analyzed once a specific location is identified.

Because the 131st Street Shop is not a residential use, the relocation of its operations would not result in indirect effects on public schools, libraries, hospitals, or day care centers, and therefore, it would not have significant indirect adverse impacts on these community facilities.

The New York City Police Department regularly reviews its operations for each precinct. Based on geographic area, population change, and crime statistics, it adjusts staffing to maintain adequate community protection. The New York City Fire Department similarly adjusts its operations as needed. It is anticipated that the shop would not be relocated to where it would directly displace a police or fire station. It is anticipated that the facility would be relocated to an area that is already served by the local precinct and fire house. Therefore the relocation of this facility is not expected to have a significant adverse impact on the delivery of police or fire protection.

OPEN SPACE AND RECREATIONAL FACILITIES

The CEQR Technical Manual guidelines indicate the need for an open space analysis when an action would result in the physical loss of public open space (direct impact), or the introduction of 200 or more residents or 500 or more workers to an area (indirect impact). The relocation of the 131st Street Shop is not anticipated to displace any public open space, nor substantially increase the use of open spaces that may be located within ¼ mile of the relocation site. The relocated facility would have only approximately 40 employees, most of whom would spend their days off-site at bus depots elsewhere in Manhattan and in the Bronx, and would therefore not have any indirect impacts on existing public open space. Therefore, the relocation of this facility is not expected to have a significant adverse impact on open space.

SHADOWS

The CEQR Technical Manual recommends that a screening for potential shadow impacts be conducted for any action that would result in new structures or enlargements 50 feet high or taller, and for shorter structures adjacent to public open spaces or sun-sensitive architectural resources. It is anticipated that the 131st Street Shop would be relocated to either an existing building of appropriately 40,000 sf or in a newly constructed building. With the existing 131st Street Shop structure standing at less than 50 feet high, it is likely the relocated facility would also be under 50 feet. Therefore, the relocation of the 131st Street Shop operations is not expected to result in significant adverse shadows impacts. However, if the relocated facility were to exceed a height of 50 feet and be in close proximity to a sensitive public use, then a shadow analysis would have to be undertaken. In this case a shadow impact would be possible, although not likely.

HISTORIC RESOURCES

For CEQR purposes, historic resources include any of the following: designated New York City Landmarks; properties calendared for consideration as such; properties listed on, eligible for, or within a district listed on the State and/or National Register of Historic Places; properties recommended by the New York State Board for such listing; National Historic Landmarks; and properties not identified by any of the above that meet one or more of their eligibility requirements. Historic resources include both architectural resources, such as historically important buildings, structures, objects, sites, and districts; and archaeological resources, such as physical remains from historic or prehistoric periods.

It is anticipated that the 131st Street Shop would not be relocated to a site containing an architectural historic resource. As the facility would likely be relocated to an area where existing public policy initiatives support light industrial and automotive uses, it is unlikely that its presence there would adversely affect the context of any historically significant architectural resources near its site. However, if MTA were to site the shop in a commercial or residential

area, the possibility that the relocation would cause an impact on the context of a historic resource cannot be ruled out and would have to be analyzed once a specific location is identified.

Potential impacts on archaeological historic resources cannot be eliminated at this time, since a relocation site has not yet been determined. If a new building were to be constructed to house the relocated facility, the possibility of a potential archaeological resource to be present would need to be examined. If potential archaeological resources are identified, appropriate mitigation measures would be required to avoid significant adverse impacts on these resources.

URBAN DESIGN AND VISUAL RESOURCES

According to the CEQR Technical Manual, a detailed assessment of urban design and visual resources is only necessary when a proposed action would result in a building or structure substantially different in height, bulk, form, setbacks, size, scale, use, or arrangement than those around it; or when an action would change block form, demap an active street, map a new street, or affect the street hierarchy, streetwall, curb cuts, pedestrian activity, or other streetscape elements. Proposed actions are considered to have potential impacts on visual resources when they would directly result in a new above-ground development or would otherwise change the bulk of new above-ground development (as with a rezoning), and are proposed in an area that includes significant visual resources.

The 131st Street Shop currently occupies a one-story industrial building that is built to the lot line. The shop is expected to be relocated to a similar, but larger, one-story structure typical in terms of form and scale of the buildings found in areas characterized by industrial and automotive uses. It is anticipated that the relocation of the facility would not change block form, map or demap streets, or affect any other streetscape elements. As the facility would likely be relocated to an area characterized by industrial use, it is not expected that its presence would adversely affect any notable visual resources nearby. However, given that MTA could use its powers to site the shop facility in a non-industrial area, absent specific relocation plans, significant adverse impacts cannot be ruled out and would have to be analyzed once a specific location is identified.

NEIGHBORHOOD CHARACTER

The CEQR Technical Manual suggests that neighborhood character is an amalgam of the various elements that give neighborhoods their distinct "personality." A neighborhood character assessment may be appropriate if an action would affect the areas of land use, urban design, visual resources, historic resources, socioeconomics, traffic, and noise. An action can fall below thresholds in these individual areas but still cause a significant impact on neighborhood character by causing moderate changes in all or several of these contributing areas.

As described above, it is most likely that the 131st Street shop would be relocated to a neighborhood characterized by industrial and/or automotive uses and would occupy a building of similar size, form, and character to the surrounding buildings. Also, as noted below, the facility would be small enough that it would not adversely affect traffic or noise conditions.

However, as noted above, the possibility that MTA could site the shop in a commercial or residential area cannot be ruled out, so an impact on neighborhood character, stemming from land use incompatibility or impacts on socioeconomic conditions, historic resources, community facilities, urban design, or visual resources, also cannot be ruled out and would have to be analyzed once a specific location is identified.

NATURAL RESOURCES

A natural resources assessment is conducted when a natural resource is present on or near the site of a proposed action, and the action involves the disturbance of that resource. The CEQR Technical Manual defines natural resources as water resources, including surface water bodies and groundwater; wetland resources, including freshwater and tidal wetlands; upland resources, including beaches, dunes and bluffs, thickets, grasslands, meadows and old fields, woodlands and forests, and gardens and other ornamental landscaping; and built resources, including piers and other waterfront structures.

The 131st Street Shop, which currently occupies a 15,000-square-foot site in Manhattan, is anticipated to be relocated to a site in a developed area. It is anticipated that the relocation site would either be vacant land or would be developed with buildings. In either case, it is expected that any vegetation on the site would be typical urban invasive vegetation with no wildlife habitat value. Therefore, the relocation of this facility is not expected to result in significant adverse impacts on natural resources.

HAZARDOUS MATERIALS

According to the CEQR Technical Manual, the potential for significant adverse impacts related to hazardous materials can occur when a) elevated levels of hazardous materials exist on the site, b) an action would increase pathways to their exposure, or c) an action would introduce new activities or processes using hazardous materials, and the risk of human or environmental exposure is increased.

As described above, the 131st Street Shop stores limited maintenance materials and is heated by a gas boiler, but does not have underground storage tanks. A constructed relocation site would contain comparable facilities. Any new and/or existing underground tanks would have to be inspected and operated in accordance with all applicable requirements.

Because a site for the facility's relocation has not yet been identified, it is not known whether the site would include hazardous materials to which users of the site may be exposed during its construction or operation. Therefore, potential significant adverse impacts due to hazardous materials cannot be dismissed at this time. However, when a relocation site is identified, a Phase I Environmental Site Assessment would be conducted to determine whether there is evidence of potential site contamination. If necessary, further testing would be carried out, and contaminants would be removed in accordance with all applicable standards and regulations.

WATERFRONT REVITALIZATION PROGRAM

If the 131st Street Shop were to be relocated to a site within the boundaries of New York City's Coastal Zone, it would have to be assessed for consistency with the City's Local Waterfront Revitalization Program (LWRP). These policies, which are described in detail in Chapter 13, "Waterfront Revitalization Program," include the following:

- Support and facilitate residential and commercial redevelopment in appropriate coastal zone areas;
- Support water-dependent and industrial uses in New York City coastal areas that are well suited to their continued operation;
- Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers;

- Protect and restore the quality and function of ecological systems within the New York City coastal area;
- Protect and improve water quality in the New York City coastal area;
- Minimize loss of life, structures, and natural resources caused by flooding and erosion;
- Minimize environmental degradation from solid waste and hazardous substances;
- Provide public access to and along New York City's coastal waters;
- Protect scenic resources that contribute to the visual quality of New York City; and
- Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

If, as expected, the relocation of this facility would be to an area zoned for manufacturing and/or transportation use, even if it were in a coastal zone, it could comply with the policies of the WRP. However, if MTA were to site the shop in a commercial or residential area within the coastal zone, it is possible that the action would not fully comply with all WRP policies.

INFRASTRUCTURE

For CEQR purposes, infrastructure is concerned with water supply, sewage treatment, and stormwater management. As stated in the CEQR Technical Manual, the City is committed both to maintaining adequate water supply and pressure for all users and to adequately treating all wastewater generated in the City. An assessment of a project's effects on the City's water supply is necessary only for projects that would have an exceptionally large demand for water. An assessment of a project's effects on the City's sanitary sewage system is necessary only for unusual actions with very large flows. The relocation of the 131st Street Shop would not result in an exceptionally large demand for water, nor would it generate unusually large sanitary or stormwater flows.

The existing 131st Street Shop is served by the New York City Department of Environmental Protection's North River Water Pollution Control Plant (WPCP), which is permitted to treat a monthly flow of 170 million gallons of water per day. The facility could be moved to a site served by this or one of the city's 13 other WPCPs.

As described above, the relocated facility would accommodate approximately 40,000-square-foot building and 40 employees. Based on the *CEQR Technical Manual* rates for commercial uses, the facility would use approximately 5,000 gallons per day (gpd) of water and produce approximately 1,000 gpd of sewage. This amount of water is insignificant compared with Citywide water consumption, and this amount of sewage flow is negligible compared with the amount handled by any of the City's WPCPs. Therefore, the relocation of this facility would not result in significant adverse impacts on infrastructure.

SOLID WASTE AND SANITATION SERVICES

Because the relocated facility is expected to have the same number of employees and operations as the existing 131st Street Shop, there would be no incremental increase in the solid waste stream. Therefore, there would be no significant adverse impact on the collection or disposal of solid waste.

ENERGY

The relocated 131st Street Shop would have approximately the same energy needs as the existing facility. The relocated facility, like all new structures requiring heating and cooling built in New York City, is subject to the New York State Energy Conservation Code. Any building in conformance with this code would not create significant adverse energy impacts under CEQR guidelines. Therefore, no significant adverse impacts with respect to energy would be expected with the relocation of the 131st Street Shop.

TRAFFIC AND PARKING

The relocation of the 131st Street Shop would not necessitate a detailed analysis of traffic and parking under CEQR criteria. The existing facility has approximately 40 full-time employees including managers, supervisors, and staff, and operates in three shifts: 7:30 AM to 3:30 PM; 3:30 PM to 11:30 PM; and 11:30 PM to 7:30 AM. The eight managers and supervisors typically arrive earlier and depart later than the regular 7:30 AM to 3:30 PM shift. MTA estimates that 65 to 75 percent of the facility's employees commute to the site via private automobile.

The regular day-shift workers report no later than 7:30 AM to get their assignments, pick up supplies or equipment needed, and travel to assigned site locations via one of the 20 maintenance trucks kept at the site. By approximately 8:00 AM, only site managers and supervisors remain. The workers typically return to the shop by 3:00 PM. Repair dispatches during the other two shifts are made only on an as-needed basis. Workers would travel to the sites of their assignments via one of the 20 maintenance trucks stored on the site.

It is expected that the relocated facility would have approximately the same number of employees working the same shifts. Even if all employees commute via auto, the trips generated by the relocated facility would not exceed the CEQR threshold of 50 peak hour vehicle trips to warrant a detailed analysis. Similarly, the trips associated with employees dispatched to various locations in Manhattan and the Bronx for servicing needs would also not exceed this CEQR threshold. Therefore, the relocation of this facility would not have the potential to result in significant adverse impacts on traffic and parking. Furthermore, based on the shifts described, trips to and from the site would not take place during peak commuting hours when background traffic levels would be the greatest.

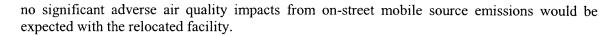
With regard to parking, although it is not certain that off-street parking would be provided at or near the location of the relocated facility, the parking demand generated by this facility is nominal, such that its effect on any neighborhood where it could be relocated would not be perceptible.

TRANSIT AND PEDESTRIANS

Because the relocated facility would have only about 40 employees, most of whom commute via automobile, it would not result in 200 or more new pedestrian or transit trips, the *CEQR Technical Manual* threshold requiring detailed transit and pedestrian analyses. Therefore, no significant adverse impacts on transit and pedestrian conditions would be expected with the relocated facility.

AIR QUALITY

The maximum hourly incremental traffic from the relocated 131st Street Shop would not exceed the CEQR Technical Manual air quality screening threshold of 100 peak hour trips. Therefore,



NOISE

The relocated facility would not generate sufficient traffic to have the potential to cause a significant noise impact (i.e., it would not result in a doubling of passenger car equivalents, which would be necessary to cause a 3 dBA increase in noise levels). Because the facility would not include residential, office, or meeting space, monitoring of ambient noise levels to determine attenuation is not necessary. Therefore, there would be no significant adverse noise impacts, and no further analysis is necessary.

CONSTRUCTION

Depending on the site chosen, the relocation of the 131st Street Shop may or may not involve the construction of a new building. If the facility moves into an existing building, there would be little to no substantial construction activity on the site. If the relocation site is vacant or occupied by a building that does not suit the needs of the facility, a new building would be constructed on the site. MTA Capital Projects has issued regulations for its own construction that require substantial measures to reduce air and noise emissions. Such measures to reduce air emissions include: use of ultra-low-sulfur diesel, diesel particulate filters, diesel oxidation catalysts, and, in general, best available technologies. Noise measures would include use of low noise emission construction equipment, as well as mufflers, acoustical enclosures, and temporary noise barriers. As a result, significant adverse impacts from construction of a temporary structure are not anticipated.

PUBLIC HEALTH

According to the CEQR Technical Manual, public health involves the activities society undertakes to create and maintain conditions in which people can be healthy. Public health may be jeopardized by poor air quality resulting from traffic or stationary sources, hazardous materials in soil or groundwater used for drinking water, significant adverse impacts related to noise or odors, solid waste management practices that attract vermin and pest populations, and actions that result in the exceedance of accepted federal, state, or local standards.

The relocation of the 131st Street Shop is not expected to result in any significant adverse impacts on air quality or noise. No exceedance of federal, State, or City standards would occur as a result of the relocation. Any necessary hazardous materials remediation measures would be undertaken in accordance with applicable federal, state, and local requirements. Therefore, the relocation of the shop is not expected to result in any significant adverse impacts on public health.

APPENDIX P MITIGATION CORRESPONDENCE



Metropolitan Transportation Authority

State of New York

May 29, 2007

Robert Dobruskin, Director Environmental Review and Assessment Division Department of City Planning 22 Reade Street New York, NY 10007-1216

Dear Mr. Dobruskin:

The MTA and NYCT have reviewed the analysis presented in the PDEIS for the Columbia University Manhattanville project and are in general agreement with the findings and the proposed mitigation measures.

The PDEIS analysis identified significant adverse impacts at the following locations:

- 125th Street/Broadway station E101 and E102 escalators located on the west side of Broadway south of West 125th Street exceeding practical guideline capacity under the 2030 full build-out; and
- Bx15 bus route eastbound loads during the PM peak period exceeding practical guideline capacity under the 2030 full build-out.

The proposed mitigation for the station escalator impacts would involve replacing the existing 24-inch tread E101 and E102 escalators with 40-inch tread escalators. The enclosures around the escalators will also need to be replaced. The applicant will coordinate with MTA/NYCT regarding implementation, allowing enough time for design and specification approvals by MTA/NYCT and for the actual construction in order to address the increased demand that will result from build out of the development by 2030. MTA understands that the applicant will bear the costs of implementing this mitigation, and that the mitigation will occur at commencement of phase two of the development.

As for the Bx15 bus route, the proposed mitigation for the bus line-haul impact would involve the addition of three buses during the PM peak period. MTA/NYCT will evaluate this need and make the necessary adjustments where warranted, subject to operational and financial constraints.

Sincerer

William Wheeler Director of Planning (212-878-7258)