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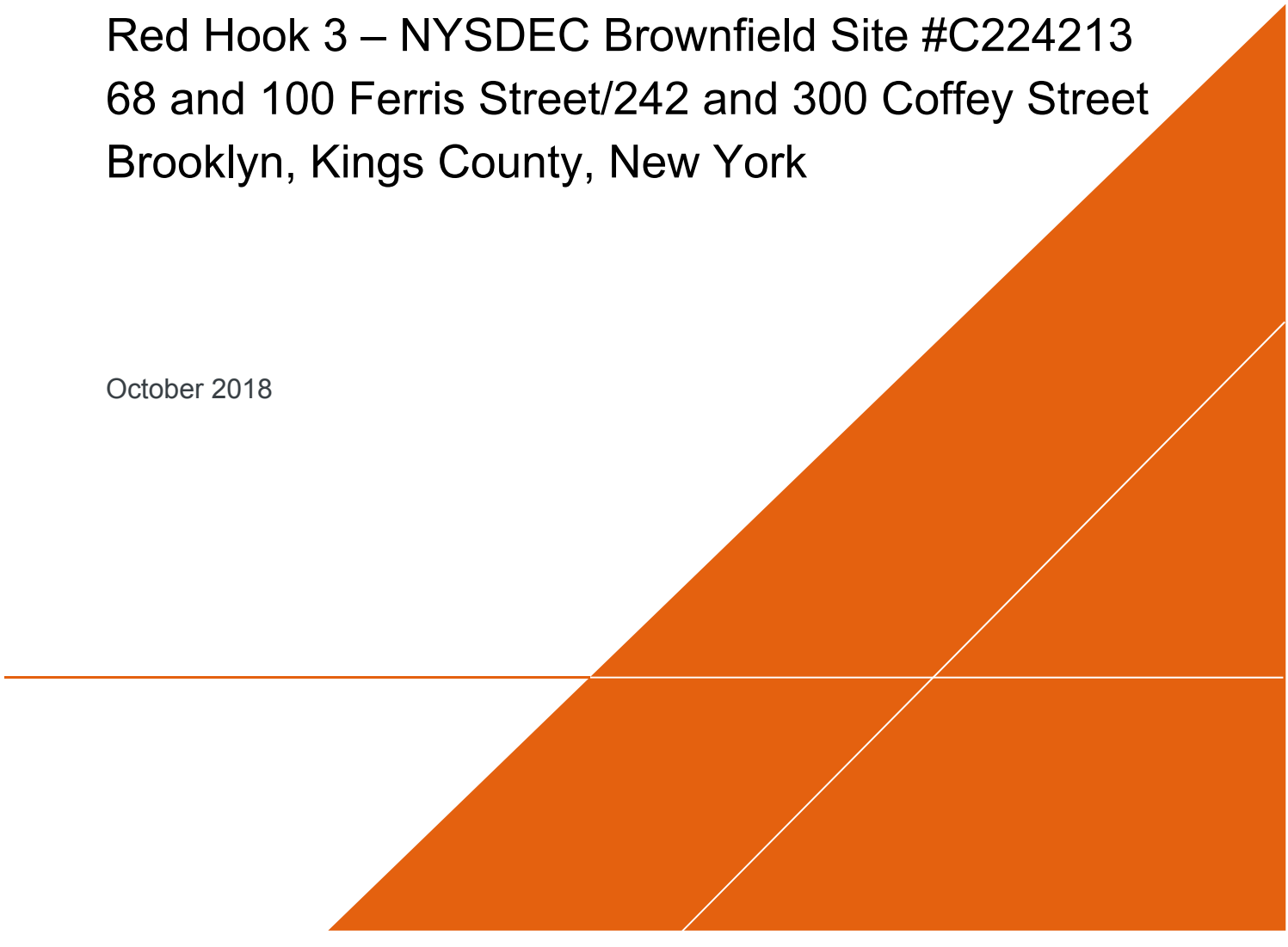
BT Red Hook, LLC

HUMAN HEALTH EXPOSURE ASSESSMENT

Red Hook 3 – NYSDEC Brownfield Site #C224213
68 and 100 Ferris Street/242 and 300 Coffey Street
Brooklyn, Kings County, New York

October 2018



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ACRONYMS AND ABBREVIATIONS

AESI	Atlantic Environmental Solutions, Inc.
Arcadis	Arcadis of New York, Inc.
ATSDR	Agency for Toxic Substances and Disease Registry
AWQS	Ambient Water Quality Standards
bgs	below ground surface
c12-DCE	cis-1,2-dichloroethene
COPC	constituent of potential concern
11-DCE	1,1-dichloroethene
DER	Division of Environmental Remediation
DNAPL	dense non-aqueous phase liquid
GSA	General Services Administration
HHEA	Human Health Exposure Assessment
HSDB	Hazardous Substances Data Bank
IA	indoor air
Langan	Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
LNAPL	light non-aqueous phase liquid
$\mu g/m^3$	micrograms per cubic meter
MEK	methyl ethyl ketone
NAPL	non-aqueous phase liquid
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PPE	personal protective equipment
RIR	Remedial Investigation Report
SCO	Soil Cleanup Objective

SV	soil vapor
SVI	soil vapor intrusion
SVOC	semi-volatile organic compound
111-TCA	1,1,1-trichloroethane
TCE	trichloroethene
TOGS	Technical and Operational Guidance Series
TPAH	total polyaromatic hydrocarbons
TPH	total petroleum hydrocarbons
USEPA	United States Environmental Protection Agency
VISL	Vapor Intrusion Screening Level
VOC	volatile organic compound

1 INTRODUCTION

Arcadis of New York, Inc. (Arcadis) conducted a qualitative Human Health Exposure Assessment (HHEA) for the Red Hook 3 Site in accordance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) requirements. The HHEA consists of an exposure assessment – an evaluation to determine the route, intensity, frequency, and duration of actual or potential exposures of humans to site-related contaminants (NYSDEC 2017). The HHEA characterizes the exposure setting including qualitative characterizations of the physical environment, the potentially exposed human populations, and associated exposure pathways at the Red Hook 3 Site and surrounding areas. Potentially complete exposure pathways are defined for the constituents of potential concern (COPCs). In addition, contaminant fate and transport mechanisms are evaluated.

1.1 Site Location and Description

Red Hook 3 (NYSDEC Brownfield Cleanup Program Site No. C224213) is located along 68 and 100 Ferris Street and 242 and 300 Coffey Street in Brooklyn, New York (collectively referred to as the "Site"). A site location map is provided as **Figure 1** and site plans are provided as **Figures 2** and **2A** (the latter including block and lot boundaries). The Site consists of several blocks/lots that currently contain three commercial buildings (a metal warehouse, a brick warehouse, and a General Services Administration [GSA] building). The Site is bounded by Ferris Street to the southeast, the Buttermilk Channel to the northwest, Wolcott Street to the northeast, and Dikeman and Coffey Streets to the southwest (**Figure 2** and **Figure 2A**). The metal and brick warehouses were most recently used as a commercial warehouse and a distribution space, respectively. The GSA building was most recently used as a commercial office building by the Bureau of Alcohol, Tobacco, Firearms and Explosives. Where not covered by structures, the land surface at the Site is covered by impervious surfaces, including pavement, asphalt, and/or concrete. Other than exposed sides of the buildings along Ferris and Wolcott Streets, the remainder of the Site is surrounded by a 6-foot-high fence with locked gates.

1.2 Site Background

A comprehensive background of the Site is included in the Remedial Investigation Report (RIR) prepared by Atlantic Environmental Solutions, Inc. (AESI) in October 2017 (AESI 2017). As identified in the RIR (AESI 2017), historical uses of the Site include the following:

- Chemical manufacturing facility located on the southern portion of the Site in 1886
- Tar manufacturing facility located on the east-central portion of the Site between 1904 and 1915
- Resin and tar storage on the northern portion of the Site between 1904 and 1915
- Historical use of fill material site-wide

The RIR (AESI 2017) concluded that petroleum- and tar-related constituents are the primary impacts at the Site. In addition, elevated levels of metals are present but are attributed to fill materials and are not related to site activities. Based on data collected for the RIR (AESI 2017), soil and groundwater concentrations of select volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals exceed the New York State Unrestricted Residential and Commercial Soil Cleanup Objectives (SCOs) and the Ambient Water Quality Standards (AWQS) (NYSDEC 1998, 2006).

2 DATA EVALUATED FOR THE HUMAN HEALTH EXPOSURE ASSESSMENT

The HHEA evaluates the data for soil, groundwater, soil vapor, and indoor and ambient air previously presented in the RIR (AESI 2017) and the data collected by Arcadis to further characterize the Site. Analytical results for surface and subsurface soil, groundwater, soil vapor, and indoor and ambient air samples collected by Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. (Langan) and AESI in 2017 and previously provided to NYSDEC are presented in **Appendix A**. Soil and groundwater samples were analyzed for metals, VOCs, SVOCs, polychlorinated biphenyls (PCBs), pesticides, and/or herbicides; soil vapor and indoor and ambient air samples were analyzed for volatile compounds.

In addition to analytical data, the soil and groundwater tables from the RIR (AESI 2017) provide New York State SCOs (6 New York Codes, Rules and Regulations [NYCRR] Part 375 Environmental Remediation Programs) and Technical and Operational Guidance Series (TOGS) 1.1.1 Standards for Class GA groundwater. These values are discussed further in the following subsections.

In addition to the results for soil vapor samples collected in February 2017, a laboratory report (Integrated Analytical Laboratories SDG E17-04284) containing analytical data for soil vapor samples collected on May 30 and 31, 2017 by AESI is included in Appendix D of the RIR (AESI 2017) but are not discussed or evaluated in that report. Accordingly, the May 2017 soil vapor data are evaluated in this HHEA.

The following subsections briefly discuss the analytical data representing each medium, as well as the results relative to risk-based screening levels used to identify COPCs — chemical constituents that exceed conservative screening levels protective of human health. The discussion includes the results of comparisons previously presented in the RIR (AESI 2017). Although the risk-based screening levels presented in the RIR (AESI 2017) have not changed, additional screening levels and guidance documents were consulted to evaluate soil, groundwater, and soil vapor data for the purposes of this HHEA and are also discussed below.

2.1 Soil

The RIR (AESI 2017) soil dataset is for multiple sampling events whereby surface and subsurface soil samples were analyzed for VOCs, SVOCs, polyaromatic hydrocarbons (PAHs), metals, PCBs, pesticides, and herbicides. The sampling events and corresponding data are presented in the RIR (AESI 2017) as follows (the cited RIR data tables are presented in **Appendix A** of this HHEA):

- February 2017: Surface and subsurface soil data are summarized in RIR Table 2A for VOCs; Table 2B for SVOCs; and Table 2C for inorganics, PCBs, and pesticides/herbicides (AESI 2017).
- May 2017: Surface and subsurface soil data for all analytes are summarized in RIR Table 1 (AESI 2017).
- June 2017: Surface and subsurface soil data are summarized in RIR Table 2 (AESI 2017).

In addition, the analytical results for seven subsurface soil samples collected by Arcadis in June 2017, September 2017, and October 2017 are presented in **Table 1**. Although additional soil samples were

collected, the data included in this HHEA reflect soil samples collected from the top 15 feet below ground surface (bgs), a depth relevant for potential exposure. Soil boring and sampling locations are shown on **Figure 3**.

The Residential SCOs and Restricted Residential SCOs (6 NYCRR Part 375 Table 375-6.8b) are presented along with the analytical data for the May and June 2017 sampling events (RIR Table 1 and Table 2 in **Appendix A**). However, the data for the February 2017 sampling event (RIR Tables 2A, 2B, and 2C in **Appendix A**) are compared to the Residential SCOs and Commercial SCOs in the RIR (AESI 2017). The Restricted Residential SCOs are risk-based soil levels protective of potential exposures by adult and child residents via incidental ingestion, inhalation of particulates and vapors, and dermal contact with soils. The Restricted Residential SCOs are also protective of potential exposures associated with active recreational land uses, which are defined as general public uses with a reasonable potential for soil contact (NYSDEC and New York State Department of Health [NYSDOH] 2006). The Residential SCOs are risk-based soil levels similar to the Restricted Residential SCOs in that they include the same exposure scenarios, but also include a vegetable consumption pathway. The Residential SCOs are considered protective of a single-family residence, which is an unlikely future land use at the Site (NYSDEC and NYSDOH 2006). Therefore, the Residential SCOs used in the RIR (AESI 2017) are not appropriate risk-based screening levels (given that the scenario is highly unlikely), are overly conservative, and are not considered in this HHEA.

Soil at the Site is covered by buildings, pavement, or asphalt and is therefore inaccessible. In addition to the Restricted Residential SCOs, Commercial SCOs are risk-based soil levels protective of potential exposures by adult workers and child visitors via incidental ingestion, inhalation of particulates and vapors, and dermal contact with soils. The Commercial SCOs are also protective of passive recreational land uses, which are defined as general public uses but with a limited potential for soil contact (NYSDEC and NYSDOH 2006). In addition to the Restricted Residential SCOs, the Commercial SCOs are used in this HHEA to evaluate the subsurface soil data.

2.1.1 Surface Soil

For the purposes of this HHEA, surface soil is defined as soil that is 0 to 2 feet bgs. However, the term “surface” is misleading in that soil samples were collected from beneath the impervious surface materials (asphalt and cement) currently present across the Site. The surface soil dataset, presented in **Appendix A** RIR Tables 1, 2, 2A, 2B, and 2C (AESI 2017), includes date for eight samples collected at depth intervals between 0 and 2 feet bgs in 2017 from seven locations (including one field duplicate) (**Figure 3)**. Although **Appendix A** Table 1 includes SCOs protective of both restricted residential and residential land use, the Restricted Residential SCOs are used in this HHEA as previously described in **Section 2.1**. The Restricted Residential SCOs are used to identify COPCs in surface soil under a future residential use scenario. Given that future land use is most likely to be consistent with current commercial land use, Commercial SCOs are also used to identify COPCs in surface soil under a future commercial use scenario when the soil may become accessible.

PCBs, pesticides, and herbicides were not observed in surface soil samples at concentrations exceeding detection limits. VOCs were not detected at concentrations exceeding the Commercial SCOs. Detected concentrations of the following metals and PAHs exceeded the Commercial SCOs:

Analytes in Surface Soil Exceeding Commercial SCOs:

barium	lead
benzo(a)anthracene	benzo(a)pyrene
dibenzo(a,h)anthracene	

Based on the assumption of future commercial land use involving accessible soil at the Site, and concentrations that exceed Commercial SCOs, the surface soil COPCs for a commercial use scenario include barium, lead, and the PAHs benzo(a)anthracene, benzo(a)pyrene, and dibenzo(a,h)anthracene.

VOCs were not detected at concentrations exceeding the Restricted Residential SCOs. Detected concentrations of the following metals and PAHs exceeded the Restricted Residential SCOs:

Analytes in Surface Soil Exceeding Restricted Residential SCOs:

barium	lead
benzo(a)anthracene	benzo(a)pyrene
benzo(b)fluoranthene	chrysene
dibenzo(a,h)anthracene	indeno(1,2,3-cd)pyrene

Based on a conservative assumption of future residential land use at the Site, and concentrations that exceed Restricted Residential SCOs, the surface soil COPCs for a residential use scenario include barium, lead, and the PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

The RIR states that contamination (e.g., PAHs and metals) consistent with historical fill has been identified in shallow soils across the Site (AESI 2017). A layer of historical fill is present across the Site and ranges from 2 to 13 feet bgs. The fill material was originally placed on the Site to raise the elevation prior to development and is likely present through the adjacent properties (AESI 2017). PAHs and metals consistent with fill material have also been identified in groundwater sitewide (AESI 2017). Therefore, it is likely the COPCs (particularly lead and PAHs) identified in surface soil beneath the paved surface are related to the historical fill used at the Site and surrounding areas.

2.1.2 Subsurface Soil

For purposes of the HHEA, it is assumed that the Site will undergo future redevelopment, and potential exposure to soils could occur. However, it is unlikely any future excavation would occur at depths greater than 15 feet bgs. Therefore, subsurface soils are defined as soil at depths ranging from 2 to15 feet bgs. As previously noted for surface soil, soil samples were collected from beneath the existing impervious material (asphalt or concrete) covering the entire Site.

Analytical results for a total of 43 soil samples (collected by Langan and AESI in February, May, and June 2017 from depth intervals ranging from 2 to 15 feet bgs) are presented in **Appendix A** (RIR Tables 1, 2, 2A, 2B, and 2C) and are evaluated in this HHEA. In addition to the data presented in the RIR (AESI 2017), analytical results for seven subsurface soil samples (including a field duplicate) collected by Arcadis in September 2017 at depth intervals ranging from 5 to 12 feet bgs are included in this HHEA (**Table 1**). Soil sampling locations are shown on **Figure 3**. Subsurface soil samples were analyzed for metals, VOCs, SVOCs (including PAHs), PCBs, pesticides, and herbicides. The detected levels of these

analytes in subsurface soil were compared to SCOs protective of restricted residential land use as described previously. These SCOs were deemed to be conservatively appropriate based on current and potential future land use at or in the vicinity of the Site. Future land use is most likely to be consistent with current land use, which is commercial. For this HHEA, subsurface soil data are compared to both Restricted Residential and Commercial SCOs.

PCBs were not identified in soil samples at concentrations exceeding method detection limits, and VOCs, pesticides, and herbicides were not detected at concentrations exceeding the Commercial SCOs. The detected concentrations of the following metals and PAHs exceeded the Commercial SCOs:

Analytes in Subsurface Soil Exceeding Commercial SCOs:

lead	benzo(a)anthracene
benzo(a)pyrene	benzo(b)fluoranthene
benzo(k)fluoranthene	dibenzo(a,h)anthracene
indeno(1,2,3-cd)pyrene	naphthalene

Based on the assumption of future commercial land use involving intrusive activities and accessible subsurface soil at the Site, and concentrations that exceed Commercial SCOs, the subsurface soil COPCs for a commercial use scenario include lead and the PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and naphthalene.

Pesticides and herbicides were not detected in subsurface soil at concentrations exceeding the Restricted Residential SCOs. The detected concentrations of the following metals, PAHs, and VOCs exceeded the Restricted Residential SCOs:

Analytes in Subsurface Soil Exceeding Restricted Residential SCOs:

lead	dibenzofuran
acenaphthene	anthracene
benzo(a)anthracene	benzo(a)pyrene
benzo(b)fluoranthene	benzo(k)fluoranthene
chrysene	dibenzo(a,h)anthracene
fluoranthene	fluorene
indeno(1,2,3-cd)pyrene	naphthalene
phenanthrene	pyrene
1,2,4-trimethylbenzene	ethylbenzene
total xylenes	

Based on exceedances of the Restricted Residential SCOs, the subsurface soil COPCs include lead; dibenzofuran; the PAHs acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene; and the VOCs 1,2,4-trimethylbenzene, ethylbenzene, and total xylenes. As noted previously, it is likely that the presence of lead and PAHs in soil beneath the paved surface is related to the historical fill used at the Site and surrounding areas.

2.2 Groundwater

The RIR (AESI 2017) provides the analytical laboratory reports for each groundwater sample and presents the full set of analytical data representing groundwater at the Site. Groundwater samples were collected in 2017 and analyzed for VOCs, SVOCs (including PAHs), PCBs, pesticides, and herbicides. The groundwater data as presented in the RIR tables (AESI 2017) are included in **Appendix A** (RIR Table 3 – June 2017 sampling event; Table 3A – VOCs and SVOCs for the February 2017 sampling event; and Table 3B – metals, PCBs, and pesticides/herbicides for the February 2017 sampling event).

NYSDEC TOGS 1.1.1 Class GA AWQS and guidance values (NYSDEC 1998) are compared to groundwater data presented in the RIR (AESI 2017) (**Appendix A** RIR Table 3, Table 3A, and Table 3B). The Class GA Standards are promulgated standards protective of drinking water resources. The guidance values are used for constituents that lack promulgated standards. The use of these values as risk-based screening levels in this HHEA is not appropriate given that site groundwater is not considered suitable for use as a potable source (New York City Department of Environmental Protection [NYCDEP] 2017). Therefore, although the standards and guidance values are presented in the RIR (AESI 2017) groundwater tables (**Appendix A**), they are not used in this HHEA to identify groundwater COPCs.

Given that there are three buildings on the Site, the United States Environmental Protection Agency (USEPA) Vapor Intrusion Screening Levels (VISLs) (USEPA 2018) are appropriate conservative risk-based screening values to evaluate the potential for vapor migration to indoor air in a future building (commercial or residential). The groundwater VISLs were obtained from USEPA's online VISL Calculator (2018) and are defined to be protective of indoor air in a commercial building or a residential building from a groundwater source. For each analyte, the groundwater VISL represents the lower of a risk-based screening level protective of noncarcinogenic health effects at a target hazard limit of 0.1 and/or a screening level protective of cancer risks at a one in one million (1E-06) target cancer risk limit. As discussed below, the evaluation consists of comparing the USEPA groundwater VISLs protective of future commercial and residential buildings to the groundwater data presented in **Appendix A** (RIR Table 3, Table 3A, and Table 3B).

Based on results of an April 27, 2018 gauging event (**Table 2**) and groundwater contour data prepared by Arcadis, groundwater intercepted by shallow-screened wells flows toward the north to northwest beneath the central, northern, and western portions of the Site, and flows toward the east to northeast beneath the eastern side of the Site in the vicinity of the metal warehouse. Groundwater was encountered at a depth of 5 to 12 feet bgs. Groundwater in the deeper-screened wells is indicated to flow toward the north to northwest. Bedrock has not been encountered at any depth, with borings completed at the Site at depths up to 95 feet bgs.

To identify the COPCs in groundwater, risk-based groundwater levels protective of the vapor intrusion indoor air pathway were compared to the detected groundwater analytes. As previously discussed, USEPA groundwater VISLs protective of indoor air in a commercial building and in a residential building (USEPA 2018) are used to identify COPCs under a future worker scenario and a future residential scenario, respectively.

Under a current commercial use scenario, detected concentrations in groundwater samples from wells LMW-1 through LMW-5 are compared to the commercial VISLs. Monitoring wells LMW-1 through LMW-5 are located adjacent to the GSA building, the only currently occupied building at the Site (**Figure 3**).

Based on this comparison, detected concentrations of the following groundwater analytes exceeded the commercial groundwater VISLs:

Analytes in Groundwater Exceeding Commercial Groundwater VISLs:

1,1'-biphenyl	naphthalene
benzene	ethylbenzene

Under a future commercial use scenario whereby a commercial building is occupied or constructed and occupied at the Site (including the area currently occupied by the GSA building), detected concentrations of the following groundwater analytes exceeded the commercial groundwater VISLs:

Analytes in Groundwater Exceeding Commercial Groundwater VISLs:

1,1'-biphenyl	naphthalene
benzene	ethylbenzene
total xylenes	

Under a future residential use scenario whereby a residential building is constructed and occupied at the Site, detected concentrations of the following groundwater analytes exceeded the residential groundwater VISLs":

Analytes in Groundwater Exceeding Residential Groundwater VISLs:

1,1'-biphenyl	benzo(a)anthracene
naphthalene	1,2,4-trimethylbenzene
benzene	chloroform
ethylbenzene	isopropylbenzene
total xylenes	

Based on risk-based screening against the commercial groundwater VISLs, the following analytes are identified as groundwater COPCs at the Site: benzene, ethylbenzene, total xylenes, 1,1-biphenyl, and naphthalene.

Based on screening against the residential groundwater VISLs, the following are future potential groundwater COPCs at the Site: benzene, chloroform, ethylbenzene, isopropylbenzene (also known as cumene), total xylenes, 1,2,4-trimethylbenzene, 1,1-biphenyl, naphthalene, and benzo(a)anthracene.

The wells in the most impacted locations include (**Figure 3**):

- LMW-2, located approximately 10 feet northeast of the GSA building
- LMW-8S, installed beneath the metal warehouse
- LMW-10S and LMW-10D, located beneath a concrete pad approximately 40 feet from the northwest wall of the metal warehouse
- MW-1, located beneath the pavement approximately 10 feet from the northwest wall of the metal warehouse

Based on interpretation of the conclusions provided in the RIR (AESI 2017) and recent guidance provided to Arcadis by NYSDEC during a meeting on December 12, 2017, groundwater impacts are not a driver for

remediation at the Site. Remedial alternatives being considered include source area excavation and in-situ stabilization.

2.3 Non-Aqueous Phase Liquid

Soil impacted with non-aqueous phase liquid (NAPL) has been identified primarily at two areas based on findings presented in the RIR (AESI 2017) and Arcadis observations. The areas of primary impacts are underneath the metal warehouse, located at the corner of Wolcott and Ferris Streets, and beneath the paved area adjacent to the northwest wall of the metal warehouse (**Figure 4**). NAPL impacts are present between 5 and 25 feet bgs. Dense non-aqueous phase liquid (DNAPL) was observed by Arcadis in monitoring well MW-1. DNAPL-impacted soil was observed (by Arcadis and AESI) in multiple borings located beneath, or in proximity to, the metal warehouse as shown on **Figure 4**. Light non-aqueous phase liquid (LNAPL) was observed by Arcadis in one boring (A-RH3-B13) south of the metal warehouse. NAPL was also previously reported by AESI to be present in well LMW-2 in 2017, but was not observed by Arcadis during the April 2018 gauging event.

As noted in the previous section, the remedial alternatives being considered for the Site include source area excavation and in-situ stabilization. In 2017, Arcadis conducted a forensic study of DNAPL and LNAPL samples from the Red Hook 4 Site and soil samples containing visible NAPL from both Red Hook 3 and Red Hook 4 Sites. The samples were analyzed by GC/MS for the full C8-C40 carbon range to characterize possible extractable hydrocarbons including the lighter petroleum products (e.g. gasoline) and the heavier diesel fuel/middle distillates and lube or motor oil. In addition, the samples were analyzed to quantify gasoline range organic (C3-C10) concentrations (for approximately 120 compounds), and total PAH (TPAH) or alkylated PAH concentrations of approximately 70 PAHs. Based on the forensic analyses, the petroleum impacts associated with the Red Hook 3 soil samples consist primarily of PAHs (TPAH concentrations range from 57% to 100% of TPH concentrations). The petroleum hydrocarbon fingerprint in the Red Hook 3 soil samples most closely resemble the fingerprint associated with the DNAPL sample collected from Red Hook 4. The DNAPL fingerprint of the Red Hook 4 sample is characterized as resembling tar and is expected to be a petroleum tar based on the high abundance of naphthalene and the presence of other biomarkers in the DNAPL sample. The Red Hook 3 soil sample does not match the LNAPL soil sample, which is characterized as resembling a heavy fuel oil, most likely a weathered crude oil or Bunker C oil. The forensic summary is provided in **Appendix B**.

2.4 Ambient Air, Indoor Air, and Soil Vapor

Ambient air, indoor air, and soil vapor analytical data for samples collected in February 2017 are included in Table 4 of the RIR (AESI 2017) but are not discussed or evaluated in the RIR; Table 4 is presented in **Appendix A**. The data reflect one ambient air sample and five co-located indoor air and soil vapor samples. Based on information provided in Appendix A, Figure 1 of the RIR (AESI 2017), the approximate sampling locations are presented on **Figure 3**, with the prefix “LSV” for the co-located indoor air (IA) and soil vapor (SV) sample locations, and “AA” for the ambient air sample.

In addition, the RIR (AESI 2017) includes an analytical data package in Appendix D for nine soil vapor samples collected in May 2017; the sampling locations included in Figure 3 of the RIR are provided on **Figure 3** of this document.

The ambient air, indoor air, and soil vapor data presented in the RIR (AESI 2017) are interpreted following the NYSDOH Soil Vapor Intrusion (SVI) Guidance (NYSDOH 2006, 2017). To evaluate VOCs in the ambient air sample, the detected concentrations are compared to applicable background air datasets. The following two background datasets are defined in the guidance:

- A 2003 NYSDOH study of VOCs in the air of fuel-oil-heated homes (residential scenario) available in Appendix C, Table 1 of the guidance (NYSDOH 2006)
- A 2001 USEPA building assessment and survey evaluation database, representing samples collected by SUMMA® canister method (commercial/office scenario) available in Appendix C, Table 2 of the guidance (NYSDOH 2006)

As an initial screening benchmark comparison to these background datasets, concentrations that exceed the 90th percentile values are considered above background.

The May 2017 NYSDOH guidance update provides three soil vapor/indoor air decision matrices for eight volatile compounds (NYSDOH 2017). The matrices require the comparison of both sub-slab vapor (soil gas) and indoor air threshold concentrations to decision criteria. For this HHEA, the paired soil vapor and indoor air concentrations provided in the RIR (AESI 2017) are evaluated based on the NYSDOH decision matrices. For detected concentrations of indoor air analytes for which the NYSDOH guidance does not provide decision matrices, indoor air concentrations are compared to the USEPA risk-based air VISLs protective of indoor air in a commercial building and in a residential building.

2.4.1 Ambient Air Evaluation

Acetone, carbon tetrachloride, chloromethane, dichlorodifluoromethane, methyl ethyl ketone (MEK), and trichlorofluoromethane were detected in the outdoor air sample (AA-01; **Figure 3**). The detected concentrations were D-qualified, which is defined in the RIR Table 4 as follows: “Result is from an analysis that required dilution” (AESI 2017). No analytical method is defined in the RIR (AESI 2017) for the ambient air samples.

The analytical results for the ambient air sample (outdoor) were compared to two outdoor air background datasets summarized in the NYSDOH SVI Guidance as previously discussed. No sample result exceeded the 90th percentile threshold. Relative to the background data from the 2003 NYSDOH study (Appendix C, Table 1 in NYSDOH 2006), the concentration of MEK detected in the ambient air sample was less than the median background air concentration. Concentrations of the following five VOCs were less than the 75th percentile background concentrations presented in the NHSDOH air dataset: chloromethane, acetone, carbon tetrachloride, dichlorodifluoromethane, and trichlorofluoromethane.

When comparing the ambient air data to the 2001 USEPA background air dataset (Appendix C, Table 2 of the SVI Guidance (NYSDOH 2006), detected concentrations were less than the 50th percentile as follows:

- Chloromethane in the site ambient air sample was less than the 50th percentile background air concentration.
- Acetone was less than the 25th percentile background air concentration.
- Carbon tetrachloride, dichlorodifluoromethane, MEK, and trichlorofluoromethane were less than their lowest concentrations reported in the USEPA background air dataset.

Accordingly, the ambient air sample results do not indicate a potential for significant exposure to VOCs in outdoor air at the Site.

2.4.2 Indoor Air Evaluation—Paired Soil Vapor and Indoor Air Samples

The RIR (AESI 2017) data for the paired soil vapor and indoor air samples collected in February 2017 are summarized in **Table 3** and the sampling locations are shown on **Figure 3** (also see Table 4 in **Appendix A**). According to information provided in RIR (AESI 2017) Appendix A, Figure 1, the five samples were collected from beneath and within the brick warehouse. Currently, the warehouse is not occupied. The sampling and analytical methodology for these paired soil vapor and indoor air samples is not provided in the RIR (AESI 2017).

As previously noted, NYSDOH has prepared soil vapor/indoor air decision matrices for eight VOCs including trichloroethene (TCE), cis-1,2-dichloroethene (c12-DCE), 1,1-dichloroethene (11-DCE), carbon tetrachloride, tetrachloroethene (PCE), 1,1,1-trichloroethane (111-TCA), methylene chloride, and vinyl chloride. As indicated in **Table 3**, PCE, TCE, and methylene chloride either were not detected or were detected at concentrations that require no further action. Carbon tetrachloride was detected in soil gas and/or indoor air samples from locations SV/IA-04, SV/IA-06, SV/IA-07, and SV/IA-12 at concentrations that, based on the decision matrices, require no further action. Carbon tetrachloride was detected in soil vapor sample SV-05 at 8.5 micrograms per cubic meter ($\mu g/m^3$) and in the co-located indoor air sample IA-05 at a concentration of 0.69 $\mu g/m^3$; the concentrations of carbon tetrachloride, interpreted using the NYSDOH Decision Matrix B, suggest the need for future monitoring.

For the VOCs not included in the NYSDOH decision matrices, detected concentrations were compared to the indoor air VISLs protective of a commercial use scenario and those protective of a residential use scenario (**Table 4**). Detected concentrations of the following VOCs in the indoor air samples exceeded the commercial VISLs: 1,2,4-trichlorobenzene, 1,3-butadiene, benzene, ethylbenzene, and hexachlorobutadiene. Detected concentrations of the following VOCs exceeded the residential VISLs: 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,3-butadiene, 1,4-dichlorobenzene, benzene, ethyl acetate, ethylbenzene, and hexachlorobutadiene. However, although an indoor air sample contained detectable levels of 1,3,5-trimethylbenzene, 1,3-butadiene, benzene, and ethyl acetate, none of these analytes were detected in the co-located soil gas samples, indicating a possible indoor air source rather than a subsurface source for these compounds.

Based on the interpretation of the paired soil vapor and indoor air sampling results, carbon tetrachloride is a potential indoor air COPC under both residential and commercial use scenarios. Based on a comparison to USEPA VISLs, the indoor air COPCs defined under a commercial use scenario include 1,2,4-trichlorobenzene, 1,3-butadiene, benzene, ethylbenzene, and hexachlorobutadiene. The indoor air COPCs defined under a residential use scenario include 1,2,4-trichlorobenzene, trimethylbenzene, 1,3-butadiene, 1,4-dichlorobenzene, benzene, ethyl acetate, ethylbenzene, and hexachlorobutadiene. However, there is uncertainty regarding the nature of the sampling locations and methods and the analytical methods used for the February 2017 indoor air and soil vapor samples, as well as the potential for contributions to indoor air from other sources unrelated to the Site.

2.4.3 Soil Vapor Data (June 2017) Evaluation

As previously noted, laboratory reports are provided in Appendix D of the RIR (AESI 2017) for nine soil vapor samples collected in May 2017. The locations for six of these soil vapor samples are shown on Figure 3 of the RIR (AESI 2017). The nine samples appear to have been collected from beneath the paved surfaces, with none identified beneath any of the three buildings. The analytical report provided in RIR (AESI 2017) Appendix D indicates that the samples were collected on May 30, 2017 and analyzed for VOCs by the USEPA TO-15 method.

For evaluating the non-paired soil vapor data for this HHEA, it is assumed that future buildings at the Site would be used either for commercial/industrial use or for restricted residential use, although the latter is less likely. As previously noted, USEPA has developed soil gas VISLs protective of commercial use scenarios and residential use scenarios. Furthermore, NYSDOH SVI Guidance includes soil vapor/indoor air decision matrices for eight VOCs (NYSDOH 2017). Although the decision matrices require a comparison of both sub-slab vapor and indoor air thresholds, this particular dataset includes only soil vapor samples. Therefore, the NYSDOH decision matrices were adapted for this HHEA by using the sub-slab vapor thresholds for the eight VOCs as follows:

- TCE, c12-DCE, 11-DCE, and carbon tetrachloride:
  - If the soil gas concentration is less than 6 µg/m^3, no further action is required.
  - If the soil gas concentration is greater than 6 µg/m^3 but less than the USEPA soil gas VISL, no further action is required.
  - If the soil gas concentration exceeds the VISL or 60 µg/m^3, a potential exists for future risk from exposure.
- PCE, 111-TCA, and methylene chloride:
  - If the soil gas concentration is less than 100 µg/m^3, no further action is required.
  - If the soil gas concentration is greater than 100 µg/m^3 but less than the USEPA soil gas VISL, no further action is required.
  - If the soil gas concentration exceeds the VISL or 1,000 µg/m^3, a potential exists for future risk from exposure.
- Vinyl chloride:
  - If the soil gas concentration is less than 6 µg/m^3 and the VISL, no further action is required.
  - If the soil gas concentration is greater than 6 µg/m^3 but less than the USEPA soil gas VISL, no further action is required.
  - If the soil gas concentration exceeds the VISL or 60 µg/m^3, a potential exists for future risk from exposure.

Soil vapor sample results included in the October 2017 RIR (AESI 2017) are presented in **Table 5** (only detected values are presented). As previously described, for the purpose of the HHEA, the data for select compounds are compared to NYSDOH sub-slab thresholds when they exist, and USEPA's soil gas VISLs protective of residential indoor air and soil gas VISLs protective of commercial indoor air. Methylene

chloride, PCE, and TCE are the only detected analytes included in NYSDOH's matrices. TCE was detected in two samples (LSV-11 and LSV-14) at levels exceeding the lower matrix threshold (6 µg/m^3) and the residential soil gas VISL (6.95 µg/m^3) but less than the commercial soil gas VISL (29 µg/m^3). The detected concentrations of the other analytes were less than the lower NYSDOH matrix thresholds. In addition to TCE, benzene and ethylbenzene were detected in soil vapor samples at levels exceeding the residential VISLs and are identified as COPCs under a future residential use scenario. Under a commercial use scenario, ethylbenzene is identified as a COPC based on exceedances of the commercial VISLs in LSV-11 and LSV-14. It is noted that the brick and metal warehouses are currently unoccupied. Furthermore, there is uncertainty regarding the nature of the sampling locations and methods used to collect the May 2017 soil vapor samples.

2.5 Summary of Constituents of Potential Concern

The site COPCs identified for potential future residential and commercial use scenarios are summarized in **Table 6**. COPCs are identified for each exposure medium: surface soil, subsurface soil, groundwater (indoor air), and indoor air (by interpretation of soil vapor and indoor air data). COPCs were identified by comparison of sample results to risk-based screening levels and guidance documents protective of human health.

3 CONTAMINANT FATE AND TRANSPORT

This section discusses the general environmental fate and transport characteristics for chemicals based on information from toxicological profiles by the Agency for Toxic Substances and Disease Registry (ATSDR), as well as the Hazardous Substances Data Bank (HSDB).

Barium

Barium is identified as a COPC in surface soils. Barium released to the atmosphere is most likely to be present in particulate form and will be removed by wet and/or dry deposition to ground or water surfaces. In soils, barium is typically either bioconcentrated by plants or transported through soil with precipitation, although it is not very mobile in most soil systems because it forms water-insoluble barium salts. In aquatic systems, barium is most likely to precipitate out of the solution as an insoluble salt, which may settle into sediment. Barium is bioconcentrated by aquatic plants and also bioaccumulates in higher level biota (ATSDR 2007a).

Lead

Lead is identified as a COPC in surface and subsurface soils. Lead is an element. Per ATSDR, anthropogenic sources of lead include mining and smelting of ore, manufacture of lead-containing products, combustion of coal and oil, and waste incineration. Because it does not degrade, the historical uses of lead (including in gasoline, paint, solder [food cans], pesticides, etc.) result in elevated concentrations in the environment and particularly in urban environments. In the atmosphere, non-organic compounds of lead exist primarily in the particulate form. Upon release to the atmosphere, lead particles are dispersed and ultimately removed from the atmosphere by wet or dry deposition. Wet deposition is more important than dry deposition for removing lead from the atmosphere. The amount of soluble lead in surface waters depends upon the pH of the water and the dissolved salt content. A significant fraction of lead carried by river water is expected to be in an undissolved form, which can consist of colloidal particles or larger undissolved particles of lead carbonate, lead oxide, lead hydroxide, or other lead compounds incorporated in other components of surface particulate matters from runoff. Lead may occur either as sorbed ions or surface coatings on sediment mineral particles or may be carried as a part of suspended living or nonliving organic matter in water. The fate of lead in soil is affected by the adsorption at mineral interfaces, the precipitation of sparingly soluble solid forms of the compound, and the formation of relatively stable organic-metal complexes or chelates with soil organic matter. These processes are dependent on factors such as soil pH, soil type, particle size, organic matter content of soil, presence of inorganic colloids and iron oxides, cation exchange capacity, and amount of lead in soil. The mobility of lead will increase in environments having low pH due to the enhanced solubility of lead under acidic conditions. The accumulation of lead in most soils is primarily a function of the rate of deposition from the atmosphere. Most lead is retained strongly in soil, and very little is transported through runoff to surface water or leaching to groundwater except under acidic conditions. Lead is strongly sorbed to organic matter in soil, and although not subject to leaching, it may enter surface waters as a result of erosion of lead-containing soil particulates. Lead may be taken up in edible plants from the soil via the root system, by direct foliar uptake and translocation within the plant, and by surface deposition of particulate matter. Uptake of lead in animals may occur as a result of inhalation of contaminated ambient air or ingestion of contaminated plants. However, lead is not biomagnified in aquatic or terrestrial food chains. Plants and animals may bioconcentrate lead, but biomagnification is not expected (ATSDR 2007c).

Dibenzofuran

Dibenzofuran is identified as a COPC in subsurface soils for residential use. Dibenzofuran is present in coal tar; released into the atmosphere it will exist in the vapor phase until photochemically degraded in a few days. Dibenzofuran is expected to have slight mobility in soil and can both volatilize and/or adsorb to soil, although adsorption should attenuate volatilization. It can also be degraded by soil microorganisms. Dibenzofuran in an aquatic system will adsorb to particulates, similar to soil dynamics; in an aquatic system, volatilization is expected to be attenuated by adsorption to suspended solids and sediment. Dibenzofuran is not expected to leach into groundwater. Generally, occupational exposure to dibenzofuran occurs through the dermal and inhalation pathways at sites where coal tar, coal tar derivatives, and creosote are produced or used (HSDB 2004).

1,1-Biphenyl

1,1-Biphenyl is identified as a COPC for groundwater (indoor air exposure). Biphenyl occurs naturally in coal tar, crude oil, and natural gas. Biphenyl exists as a vapor in the ambient atmosphere; it volatilizes from moist soil surfaces. The importance of volatilization from soil decreases with increasing soil depth. Soil mobility is low, and if released into water, biphenyl is expected to adsorb to suspended solids and sediment. Biodegradation may be an important environmental fate process under aerobic conditions but may be resistant to biodegradation under anaerobic conditions. Biphenyl may bioaccumulate in aquatic organisms (HSDB 2005).

Polyaromatic Hydrocarbons

Several PAHs are identified as COPCs in surface and subsurface soils as well as in groundwater (indoor air exposure). SVOCs detected on the Site at concentrations exceeding SCOs are considered PAHs by definition, with the exception of dibenzofuran, which is discussed previously. PAHs are split into low-molecular weight PAHs, which have less than four aromatic rings, and high-molecular weight PAHs, which have greater than four aromatic rings (ATSDR 1995).

PAHs released to the atmosphere are subject to short- and long-range transport and are removed by wet and dry deposition onto soil, water, and vegetation. In surface water, PAHs can volatilize, photolyze, oxidize, biodegrade, bind to suspended particles or sediments, or accumulate in aquatic organisms (with bioconcentration factors often in the 10 to 10,000 range). In sediments, PAHs can biodegrade or accumulate in aquatic organisms. PAHs in soil can volatilize, undergo abiotic degradation (photolysis and oxidation), biodegrade, or accumulate in plants. PAHs in soil can also enter groundwater and be transported within an aquifer.

Generally in air, PAHs that have four rings (chrysene, benz[a]anthracene) are present in both the vapor and particulate phase, and PAHs having five or more rings (benzo[a]pyrene, benzo[g,h,i]perylene) are found predominantly in the particle phase. The high-molecular weight PAHS will volatilize from water only to a limited extent. In general, PAHs have low water solubilities. Because of their low solubility and high affinity for organic carbon, PAHs in aquatic systems are primarily found sorbed to particles that either have settled to the bottom or are suspended in the water column. Volatilization from soil and surface water is not an important transport mechanism for high-molecular weight PAHs (ATSDR 1995).

1,2,4-Trichlorobenzene

1,2,4-Trichlorobenzene is identified as a COPC in soil vapor. 1,2,4-Trichlorobenzene is primarily used as a solvent to dissolve special materials as oils, waxes, resins, greases, and rubber. It is also frequently used to produce dyes and textiles (https://www.dec.ny.gov/chemical/89942.html). 1,2,4-Trichlorobenzene is one of three isomers of trichlorobenzene and a derivative of benzene. 1,2,4-Trichlorobenzene will exist solely as a vapor in the atmosphere. It has no to moderate mobility and is expected to biodegrade slowly in soils. Adsorption to soil is expected to attenuate volatilization from moist soils. Likewise, in aquatic environments, adsorption to suspended soil and sediments is expected to attenuate volatilization. Aerobic biodegradation also plays a role in removal from soils. Bioconcentration in fish is high to very high. Degradation in the atmosphere occurs through reactions with photochemically produced hydroxyl radicals (HSDB 2009).

Trimethylbenzenes

1,2,4-Trimethylbenzene, is identified as a COPCs in subsurface soil, soil vapor and indoor air; and 1,3,5-trimethylbenzene is identified as a COPC in indoor air. 1,2,4-Trimethylbenzene and 1,3,5-trimethylbenzene are derivatives of benzene and are components of coal tar and/or refined fuels. 1,2,4-Trimethylbenzene is used as a solvent in the manufacture of dyes, perfumes, resins, and pharmaceuticals. It is used as a solvent and paint thinner. Production of 1,2,4-trimethylbenzene occurs during petroleum refining, and it is also a gasoline additive (https://www.dec.ny.gov/chemical/89942.html). 1,3,5-Trimethylbenzene is also used as a paint thinner, solvent, and motor fuel component. It is also used as an intermediate in the synthesis of dyes and antioxidants (https://www.dec.ny.gov/chemical/89942.html). These COPCs have low mobility and high volatilization from soils. Aerobic biodegradation also plays a role in removal from soils. In aquatic systems, these COPCs sorb to organic particulates and sediment, and volatilize from water surfaces. Bioconcentration in fish is moderate to high. Degradation in the atmosphere occurs through reactions with photochemically produced hydroxyl radicals (HSDB 2008a, 2008b).

1,3-Butadiene

1,3-Butadiene is identified as a COPC in soil vapor. 1,3-Butadiene is used in the production of rubber and plastics. It is also used in copolymers including acrylics (https://www.dec.ny.gov/chemical/89942.html). 1,3-Butadiene is highly volatile, suggesting that it will partition predominantly to the atmosphere; it does not absorb to particulate matter to any significant extent and is not expected to leach into groundwater. There is limited information on 1,3-butadiene in water and aquatic environments, although it is expected that it will not bioconcentrate in fish and aquatic organisms significantly (ATSDR 2012b).

1,4-Dichlorobenzene

1,4-Dichlorobenzene is identified as a COPC in soil vapor. 1,4-Dichlorobenzene is used as a space deodorant for toilets and refuse containers, and as a fumigant for control of moths, molds, and mildews. It is also an intermediate in the production of other chemicals such as 1,2,4-trichlorobenzene, and to control certain insects, ants, and molds (https://www.dec.ny.gov/chemical/89942.html). It is a solid at room temperature and sublimes readily. Dichlorobenzenes volatilize to the atmosphere from soil and water rapidly. 1,4-Dichlorobenzene is expected to sorb moderately to the organic fraction of soils and sediments. Adsorption is reversible, so leaching to groundwater is possible. Bioconcentration to aquatic organisms is expected (ATSDR 2006).

Benzene

Benzene is identified as a COPC in groundwater via indoor air, and soil vapor/indoor air. Per ATSDR, sources of benzene emissions include gasoline vapors, automobile exhaust, cigarette smoke, chemical production, and user facilities. The high volatility of benzene is the controlling physical property in the environmental transport and partitioning of this chemical (ATSDR 2007b). Benzene will exist solely as a vapor in the ambient atmosphere. Benzene is very water soluble and may be removed from the atmosphere by rain (HSDB 2014). A substantial portion of any benzene in rainwater that is deposited to soil or water will be returned to the atmosphere via volatilization. Benzene released to soil surfaces partitions to the atmosphere through volatilization, to surface water through runoff, and to groundwater as a result of leaching. Benzene is highly mobile in soil and readily leaches into groundwater. Greater soil adsorption occurs with increasing organic matter content (ATSDR 2007b). Benzene is expected to biodegrade in soils. If released into water, benzene is not expected to adsorb to sediment and suspended solids. Volatilization from soil and water surfaces is expected to be an important fate process (HSDB 2014). Benzene does not bioaccumulate in marine organisms. Since benzene exists primarily in the vapor phase, air-to-leaf transfer is considered to be the major pathway of vegetative contamination. Benzene accumulates in leaves and fruits of plants (ATSDR 2007b).

Carbon Tetrachloride

Carbon tetrachloride is identified as a COPC in soil vapor and indoor air. Most carbon tetrachloride in the environment is in the atmosphere; that which is released to surface water or soil (not to the atmosphere) will volatilize and evaporate within a few days (ATSDR 2005). Carbon tetrachloride is expected to volatize from soil but may adsorb to soil organic matter. It is expected to be moderately mobile in soils, and therefore has potential to leach into groundwater. Sorption is affected by soil organic matter and water content of soils and sediments. Carbon tetrachloride has little tendency to bioconcentrate or biomagnify in aquatic organisms and animals, but bioaccumulation is possible in humans for receptors with constant exposure such as occupational settings (ATSDR 2005).

Chloroform

Chloroform is identified as a COPC in groundwater (indoor air exposure). Chloroform is both a synthetic and naturally occurring compound, although anthropogenic sources are responsible for most of the chloroform in the environment (ATSDR 1997). Chloroform is released into the environment as a result of its manufacture and use; its formation in the chlorination of drinking water, municipal and industrial waste water, and swimming pool and spa water; and from other water treatment processes involving chlorination. Historically, chloroform was used as a solvent to extract fats, oils, and greases; as a dry-cleaning agent; in fire extinguishers; and as a fumigant and anesthetic (https://www.dec.ny.gov/chemical/89942.html).

Chloroform readily evaporates into air and dissolves in groundwater (ATSDR 1997). Chloroform typically volatizes to the atmosphere from surface water or shallow soils. Chloroform may leach from soil into groundwater; has a low adsorption capacity, and is soluble in water. Chloroform persists in groundwater for a long time. Most chloroform in the environment eventually enters the atmosphere where it may be transported and/or degraded by photochemical reactions. Significant bioaccumulation of chloroform does not occur in aquatic food chains (ATSDR 1997).

Ethyl Acetate

Ethyl acetate is identified as a COPC in soil vapor. Ethyl acetate is used as an artificial fruit flavor and essence, and as an industrial solvent. It can also be used for making smokeless powder, imitation leather and silk, perfumes, photography films, and contact lenses and for cleaning textiles. Ethyl acetate is expected to exist solely as a vapor in the ambient atmosphere and is not expected to be susceptible to direct photolysis by sunlight. It is highly mobile in soils and volatilization is expected to be an important fate process from moist soils. In aquatic environments, volatilization is expected and adsorption to suspended soils and sediments is not expected. Bioaccumulation in aquatic food chains is expected to be low (HSDB 2015).

Ethylbenzene

Ethylbenzene is identified as a COPC in subsurface soil, groundwater (indoor air exposure), and soil vapor/indoor air. Ethylbenzene is used primarily in the production of styrene. It is also used as a solvent, as a constituent of asphalt and naphtha, and in fuels (https://www.dec.ny.gov/chemical/89942.html). Ethylbenzene has a high vapor pressure and will partition into the atmosphere from surface soils and surface water; subsurface soil infiltration will also occur (ATSDR 2010). This chemical has a relatively high mobility in soils because sorption is not significant enough to prevent migration. Ethylbenzene will leach into groundwater, particularly in soils with low organic carbon content. Significant bioaccumulation does not occur in aquatic food chains. In surface water, ethylbenzene can be transformed via photo oxidation and biodegradation. In soils, aerobic soil microbes are responsible for biodegradation.

Hexachlorobutadiene

Hexachlorobutadiene is identified as a COPC in soil vapor. Hexachlorobutadiene, also known as hexachloro-1,3-butadiene, is used mainly as an intermediate in the manufacture of rubber compounds. It is also used in the production of lubricants, as a fluid for gyroscopes, as a heat transfer liquid, and in hydraulic fluids (https://www.dec.ny.gov/chemical/89942.html). Hexachlorobutadiene can exist in the atmosphere as a vapor or be adsorbed to airborne particulate matter, and significant dispersion of the chemical is confirmed by detection in remote areas. Adsorption to soils with high organic carbon content can occur. Transport and partitioning of hexachlorobutadiene in water and/or soil and sediment involve volatilization to the atmosphere and sorption to soil and sediments particulates; volatilization is reduced by adsorption to organic material in the water or soil. Volatilization from surface soils is low due to binding to organic carbon in soil. Hexachlorobutadiene is mobile in soils with low organic-carbon content; leaching to groundwater is possible in a low organic-carbon soil. Study of field samples of impacted soil and water show that hexachlorobutadiene occurs in two stages, a loosely bound stage and a tightly bound stage. Hexachlorobutadiene is anticipated to be highly bioaccumulative (ATSDR 1994, 2012a).

Isopropylbenzene

Propylbenzene is composed of two parts: isopropylbenzene, or cumene, which is a COPC for groundwater (indoor air exposure), and n-propylbenzene, which is not a COPC. Both are expected to have low mobility and high volatilization from soils. Aerobic biodegradation is the primary mechanism for removal from soils. In aquatic systems, they sorb to organic particulates and/or sediment, and volatilize from water surfaces. Bioconcentration in fish is moderate. Isopropylbenzene degrades in the atmosphere by reacting with photochemically produced hydroxyl radicals (HSDB 2013).

Xylenes (Total)

Total xylenes are identified as a COPC in subsurface soil and groundwater (indoor air exposure). If released to air, xylenes will exist solely in the vapor phase in the atmosphere. Once xylenes enter the atmosphere, they undergo rapid photooxidation such that washout and long-range atmospheric transport are not expected to be important processes. Volatilization is expected to be the dominant transport mechanism for xylenes in surface soil and surface water. Xylenes are mobile in soil and will not adsorb strongly to organic matter. Xylenes will leach into groundwater from soil. If released into water, xylenes are not expected to adsorb to suspended solids and sediment. Potential for bioconcentration in aquatic organisms is predicted but expected to be minimal for all isomers of xylenes. Biodegradation of xylenes is expected to occur rapidly in aerobic soil but may proceed more slowly under anaerobic conditions. Xylenes are biodegraded in groundwater under aerobic conditions and may be degraded under anaerobic denitrifying conditions (HSDB 2016; ATSDR 2007d).

4 POTENTIAL RECEPTORS AND EXPOSURE PATHWAYS

An initial step in evaluating the potential for human exposure is to identify potentially complete exposure pathways. For an exposure pathway to be complete, five elements must exist:

- contaminant source;
- contaminant release and transport mechanisms;
- point of exposure;
- route of exposure; and
- receptor population.

An exposure pathway is considered incomplete and may be eliminated from further evaluation in the HHEA when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and can reasonably be anticipated to not exist in the future (NYSDEC 2017).

Currently, the Site is used for commercial purposes. There are three existing buildings, including two unoccupied warehouses and an occupied office building. For the purposes of this assessment, it is assumed a trespasser could gain access to the Site by breaching security fencing. However, there is no potential for the receptors to be exposed to soils given that the ground surface is covered by impervious asphalt and cement outdoors and by building slabs indoors. Groundwater is not considered a drinking water source (NYCDEP 2017) and there is no potential for exposure via potable uses. Surface water reservoirs located in upstate New York serve as the source of drinking water (http://www.nyc.gov/html/dep/html/drinking_water/index.shtml).

There are potential vapor intrusion pathways in the three existing onsite buildings where workers could be exposed to site-related volatile compounds in indoor air from subsurface sources. Currently, only the GSA building is occupied by commercial office workers. Based on the risk-based screening of the June 2017 groundwater data (for monitoring wells LMW-1 through LMW-5) and the June 2017 soil vapor data (for LSV-8, LWV-10, and LSV-11 located in proximity to the GSA building), ethylbenzene in soil vapor and benzene, ethylbenzene, naphthalene, and 1,1-biphenyl are identified as COPCs under a current commercial use scenario at the GSA building. In addition to the current buildings, occupancy of buildings constructed in the future at the Site would also present a potential for vapor intrusion and exposure to COPCs in indoor air. The potential current and future site receptors include the commercial worker, trespasser, future resident, and construction/utility worker (**Table 7**).

Potentially complete human exposure pathways for the Site are evaluated below.

Potential direct contact exposure pathways: surface soils

Based on current and anticipated future land use, commercial workers, construction or utility workers, and/or trespassers are potential receptors at the Site. Currently, the Site is covered by three buildings and impervious surfaces of asphalt and cement, therefore prohibiting the exposure of any receptors to surface soils. Surface soil exposure is an incomplete pathway. Under a future use scenario whereby the impervious ground surface is accessible, receptors may be exposed to exposed soils located at the ground surface during non-intrusive, routine, or occasional activities at the Site and surrounding area.

Commercial workers represent indoor workers at the Site. Although trespassers may enter the Site from neighboring properties, it is assumed this would occur infrequently due to the presence of security fencing and the Site's lack of attractive features.

Potential direct contact exposure pathways: subsurface soils

Based on current and anticipated future land use, construction and utility workers may be exposed to subsurface soils if these receptors are involved in intrusive activities (e.g., remediation, development, utility maintenance/repair). Underground utility lines are presumed to be present on and in the vicinity of the Site. Subsurface soil samples with concentrations exceeding SCOs for commercial land use were primarily collected from locations beneath the metal warehouse and the adjacent paved area to the northwest, as well as a small area just northeast of the GSA building. Samples with the highest concentrations and exceedances of commercial SCOs include soil sample EB-1004 (13-13.5 feet bgs), located at depth and to the northwest of the metal warehouse, and soil sample EM-02/LMW-2 (14-15 feet bgs), also located at depth and to the northeast of the GSA building. Potential exposure by construction and utility workers to subsurface soils may occur during possible future intrusive activities. However, according to the RIR (AESI 2017), future development at the Site would likely require importation of additional fill material to raise the elevation. Any future use of the Site will likely involve construction of asphalt parking lots and buildings with concrete floor slabs; therefore, there will be no or minimal potential for access to the underlying site soils (AESI 2017). Additionally, if intrusive work is required, workers are expected to follow appropriate health and safety procedures (e.g., use of personal protective equipment [PPE], ventilation), which would mitigate potential exposure.

Potential inhalation exposure pathways: soil particulates and/or vapors from soil/groundwater

There are no exposed surface soils at the Site, as it is covered by impervious surfaces and buildings. There is currently no potential exposure route for receptors to soil particulates (i.e., wind transport). The indoor air of the existing buildings could be potential sources of exposure by commercial workers to volatile compounds that migrate into indoor air from a subsurface source. The detected concentration of carbon tetrachloride in a single indoor air sample (LSV-05) collected in February 2017 from the vacant brick warehouse (**Table 3**) indicates the need for future monitoring based on current NYSDOH SVI Guidance.

The elevated concentrations of other VOCs (not addressed in NYSDOH SVI Guidance) in soil gas samples collected in May 2017 relative to USEPA's VISLs at other locations (collected from beneath the pavement but not beneath an existing building) also indicate that there is potential for vapor migration into the indoor air at the Site (**Table 5**). The GSA building is currently occupied by commercial workers; the brick warehouse and metal warehouse are not currently occupied. Given that the volatile compounds are identified as COPCs in soil vapor and groundwater samples collected near the GSA building (**Table 6**), inhalation of volatile compounds in indoor air at the GSA building is a potentially complete exposure pathway. Additional evaluation is recommended to assess the potential for exposure to COPCs in indoor air from a subsurface source.

Construction and utility workers may be exposed to volatile COPCs in subsurface soils or groundwater via inhalation during future intrusive activities. However, as stated previously, future development of the Site may involve raising the elevation of the Site, and not intrusive work activities. If intrusive work is required,

workers are expected to follow appropriate health and safety procedures, which would mitigate the potential for exposure.

Potential direct contact exposure pathways: groundwater (construction/utilities)

Potential current/future receptors include commercial workers and utility/construction workers. Groundwater on the Site flows toward the northeast to northwest and is generally encountered at a depth of approximately 5 to 12 feet bgs. Groundwater is not used as a potable source at or near the Site, and the depth to groundwater precludes potential direct exposures of receptor groups that would not be involved in intrusive activities (i.e., commercial workers and trespassers). Construction and/or utility workers could potentially be exposed to site groundwater during intrusive activities if groundwater is encountered. However, as stated previously, future development of the Site may involve raising the elevation of the Site, not conducting intrusive work. Additionally, potential exposures for construction and/or utility workers would likely be mitigated with the use of engineering controls, PPE, and other health and safety protocols.

5 SUMMARY AND CONCLUSIONS

This HHEA presents a qualitative exposure assessment that characterizes the exposure setting, identifies exposure pathways, and evaluates contaminant fate and transport. Analytical data indicate that VOCs (primarily ethylbenzene, xylenes, and trimethylbenzenes), 15 PAHs, barium, and lead are COPCs in soil under a future residential use scenario. The RIR indicates that SCO exceedances for metals and PAHs are common in historical fill used in the area and are likely not due to site-related activities (AESI 2017). Surface soils do not represent a potentially complete exposure pathway, although if surface soils are exposed in the future and the Site is used for residential purposes, the soil COPCs include barium, lead, and 15 PAHs. The potential for exposure to COPCs in subsurface soils is limited to construction and/or utility workers that may be engaged in future intrusive activities, although potential exposures would likely be mitigated through the use of appropriate health and safety protocols (e.g., engineering controls and PPE). Subsurface soil COPCs include lead, dibenzofuran, PAHs, 1,2,4-trimethylbenzene, ethylbenzene, and xylenes. If the Site remains solely used for commercial purposes, the soil COPCs include barium, lead, and the PAHs benzo(a)anthracene, benzo(a)pyrene, and dibenz(a,h)anthracene.

VOCs were identified as groundwater COPCs based on the potential for migration into indoor air. Potential indoor air exposure pathways are complete under a current use scenario at the GSA building but are incomplete at the current brick and metal warehouses. Groundwater beneath the Site is not used as a potable source, and therefore, direct contact with groundwater is not a complete exposure pathway for most receptors (i.e., commercial workers or trespassers). Depth to groundwater across the Site averages 5 to 12 feet bgs. Exposure of construction/remediation workers and/or utility workers to site groundwater is possible should intrusive work activities extend to the depth of groundwater. Furthermore, potential exposures during any intrusive activities would likely be mitigated with the use of appropriate health and safety protocols including the use of PPE.

Based on a current commercial use scenario at the GSA building, the potential indoor air COPCs include benzene, ethylbenzene, naphthalene, and 1,1-biphenyl. Based on a future residential use scenario, potential indoor air COPCs include 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,3-butadiene, 1,4-dichlorobenzene, benzene, carbon tetrachloride, ethyl acetate, ethylbenzene, hexachlorobutadiene, and TCE. Based on a future commercial use scenario, potential indoor air COPCs include 1,2,4-trichlorobenzene, 1,3-butadiene, benzene, carbon tetrachloride, ethylbenzene, and hexachlorobutadiene. However, given that 1,3,5-trimethylbenzene, 1,3-butadiene, benzene, and ethyl acetate were detected only in the indoor air samples and not in the co-located soil gas samples, there is uncertainty as to the source of these analytes in indoor air. There is also uncertainty associated with the 2017 indoor air and soil gas datasets provided in the RIR (AESI 2017) based on the limited information regarding sample collection and analyses provided in the RIR. Given these findings, additional evaluation is recommended to assess the potential for exposure to COPCs in indoor air from a subsurface source.

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TABLES

Table 1
Subsurface Soil Analytical Results

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Analyte	Commercial SCO [1]	Restricted Residential SCO [1]	Location: / Depth Range: / Depth Unit: / Sample Date: / Sample Type: / Units	A-RB-DB2 5 ft 09/27/17 N	A-RH3-B10 9 ft 10/16/17 N	A-RH3-B11 11 ft 10/18/17 N	A-RH3-B12 11 ft 10/18/17 N/FD	A-RH3-B4 5-10 ft 06/28/17 N	A-RH3-B7 9-10 ft 06/28/17 N	A-RH3-B8 10-12 ft 06/29/17 N
General Chemistry										
Chromium III	1500	180	mg/kg							
Percent Moisture			mg/kg	11.2	19.8	16.1	10.2 [6.8]	15.9	14.3	15.0
Percent Solids			mg/kg							
Metals										
Aluminum			mg/kg	7640	9220	4350	3360 [3620]	6610 J	17000 J	7650 J
Antimony			mg/kg	0.153 J	0.196 J	< 0.343 UJ	< 0.320 UJ [< 0.325 UJ]	0.119 J	0.223 J	0.469
Arsenic	16	16	mg/kg	2.23	4.41	1.35	1.03 [1.45]	5.05 J	12 J	5 J
Barium	400	400	mg/kg	45.2	63.5	28.5 J	25.0 J [23.7 J]	42.9 J	50 J	72.6 J
Beryllium	590	72	mg/kg	0.485	0.398	0.224	0.181 [0.187]	0.369	1.13	0.491
Cadmium	9.3	4.3	mg/kg	0.0914 J	0.119 J	0.0412 J	< 0.160 U [0.0328 J]	0.0830 J	0.189	0.129 J
Calcium			mg/kg	5930	43700	1500 J	3370 J [3230 J]	1150 J	1470 J	36500 J
Chromium			mg/kg	14.4	34.3	8.02	7.06 [8.30]	16.2	30.4	15.7
Chromium III	1500	180	mg/kg					16.2	30.4	15.7
Chromium VI	400	110	mg/kg					< 1.8 U	< 1.8 U	< 1.8 U
Cobalt			mg/kg	6.65	15.1	4.09	2.89 [3.81]	6.6 J	13.8 J	12.3 J
Copper	270	270	mg/kg	30.5	24.5	8.04	7.84 [11.4]	11.7	18.1	64.4
Iron			mg/kg	15200	22100	8050	7460 [9210]	14400 J	47800 J	16500 J
Lead	1000	400	mg/kg	15.7	153	2.86 J	2.41 J [2.43 J]	23.3 J	12.5 J	62.3 J
Magnesium			mg/kg	3560	12400	2670	2730 [3240]	2530 J	4230 J	3360 J
Manganese	10000	2000	mg/kg	260	344	173	228 [196]	81.6 J	656 J	154 J
Mercury	2.8	0.81	mg/kg	< 0.109 U	0.0615 J	< 0.112 U	< 0.104 U [< 0.101 U]	< 0.113 U	< 0.111 U	0.0784 J
Nickel	310	310	mg/kg	17.4	137	21.5 J	12.7 J [15.7 J]	31.6 J	29.4 J	18.5 J
Potassium			mg/kg	1940	2050	906	680 [760]	1710	3580	1530
Selenium	1500	180	mg/kg	0.124 J	0.165 J	< 0.686 U	< 0.641 U [< 0.650 U]	0.325 J	0.221 J	0.217 J
Silver	1500	180	mg/kg	0.0345 J	< 0.235 U	< 0.171 U	< 0.160 U [< 0.163 U]	< 0.177 U	< 0.185 U	0.0858 J
Sodium			mg/kg	348	447	190	128 [183]	233	121	179
Thallium			mg/kg	0.110 J	0.385	0.0425 J	0.0274 J [0.0260 J]	0.0860 J	0.127 J	0.0993 J
Vanadium			mg/kg	24.2	24.6	11.8 J	13.1 J [18.1 J]	17.6	46.3	21.6
Zinc	10000	10000	mg/kg	41.9	53.2	18.8 J	16.4 J [17.5 J]	37.9 J	74.9 J	73.3 J
Herbicides										
2,4,5-T			mg/kg	< 0.0019 U D2	< 0.0021 U	< 0.0020 UJ	< 0.0019 U [< 0.0018 U]	0.0019 J	< 0.0020 U	< 0.0020 U
2,4,5-TP (Silvex)	500	100	mg/kg	< 0.0019 U D2	< 0.0021 U	< 0.0020 U	< 0.0019 U [< 0.0018 U]	0.0025	< 0.0020 U	< 0.0031 UJ
Organic Pesticides										
4,4-DDD	92	13	mg/kg	< 0.0019 U D2	0.0026 J	< 0.0020 U	< 0.0019 U [< 0.0091 UD1]	< 0.1 UJ	< 0.0020 U	< 0.02 U
4,4-DDT	47	7.9	mg/kg	< 0.0019 U D2	0.011 JN	< 0.0020 U	< 0.0019 UJ [< 0.0091 UVD2]	< 0.1 UJ	< 0.0020 U	0.0083 J
Alpha-chlordane	24	4.2	mg/kg	< 0.00093 U D1	< 0.0052 U	< 0.00098 U	< 0.00092 U [< 0.0044 UD2]	< 0.049 UJ	< 0.00095 U	< 0.0097 U
Chlordane			mg/kg	< 0.019 U D1	< 0.11 U	< 0.020 U	< 0.019 U [< 0.091 UD1]	< 1 UJ	< 0.02 U	< 0.2 U

See Notes on Page 3.

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Analyte	Commercial SCO [1]	Restricted Residential SCO [1]	Location: / Depth Range: / Depth Unit: / Sample Date: / Sample Type: / Units	A-RB-DB2 5 ft 09/27/17 N	A-RH3-B10 9 ft 10/16/17 N	A-RH3-B11 11 ft 10/18/17 N	A-RH3-B12 11 ft 10/18/17 N/FD	A-RH3-B4 5-10 ft 06/28/17 N	A-RH3-B7 9-10 ft 06/28/17 N	A-RH3-B8 10-12 ft 06/29/17 N
Organic Pesticides (cont.)										
Dieldrin	1.4	0.2	mg/kg	< 0.0019 U D1	0.0057 J	< 0.0020 U	< 0.0019 U [< 0.0091 UD2]	< 0.1 UJ	< 0.0020 U	< 0.02 U
Endosulfan I	200	24	mg/kg	< 0.00093 U D1	< 0.0052 U	< 0.00098 U	< 0.00092 UJ [< 0.0044 UVD2]	< 0.049 UJ	< 0.00095 U	0.0038 J
gamma-Chlordane			mg/kg							
Methoxychlor			mg/kg	< 0.0075 UV D1	< 0.042 U	< 0.0079 U	< 0.0074 U [< 0.036 UD1]	< 0.39 UJ	< 0.0077 U	< 0.078 U
SVOCs										
1,1-Biphenyl			mg/kg	< 0.037 U	0.031 J	< 0.039 U	< 0.037 U [0.018 J]	17	< 0.039 U	< 0.19 U
2,4-Dimethylphenol			mg/kg	< 0.037 U	0.029 J	< 0.039 U	< 0.037 U [< 0.036 U]	< 0.2 U	< 0.039 U	0.34
2,6-Dinitrotoluene			mg/kg	< 0.037 U	< 0.041 U	< 0.039 U	< 0.037 U [< 0.036 U]	< 0.2 U	< 0.039 U	< 0.19 U
2-Methylnaphthalene			mg/kg	< 0.019 U	0.12	< 0.020 U	0.006 J [0.052]	76 D	< 0.02 U	0.19
2-Methylphenol	500	100	mg/kg	< 0.037 U	0.19	< 0.039 U	< 0.037 U [< 0.036 U]	< 0.2 U	< 0.039 U	0.21
3-Methylphenol, 4-Methylphenol	500		mg/kg	< 0.037 U	0.96	< 0.039 U	< 0.037 U [< 0.036 U]	< 0.2 U	< 0.039 U	0.24
4-Methylphenol	500	100	mg/kg							
Acenaphthene	500	100	mg/kg	< 0.019 U	0.20	< 0.020 U	< 0.019 U [< 0.018 U]	**110 D**	< 0.02 U	0.19
Acenaphthylene	500	100	mg/kg	0.007 J	0.035	< 0.020 U	< 0.019 U [0.007 J]	20	< 0.02 U	0.28
Anthracene	500	100	mg/kg	0.008 J	0.13	< 0.020 U	0.004 J [0.021]	53 D	0.004 J	0.48
Benzo(a)anthracene	5.6	1	mg/kg	0.023	0.27	< 0.020 U	0.01 J [0.051]	**27 D**	0.006 J	0.47
Benzo(a)pyrene	1	1	mg/kg	0.031	0.29	< 0.020 U	0.011 J [0.055]	**29 D**	0.006 J	0.42
Benzo(b)fluoranthene	5.6	1	mg/kg	0.038	0.35	< 0.020 U	0.015 J [0.066]	**18**	0.008 J	0.45
Benzo(g,h,i)perylene	500	100	mg/kg	0.03	0.22	< 0.020 U	0.011 J [0.062]	16	0.008 J	0.27
Benzo(k)fluoranthene	56	3.9	mg/kg	0.017 J	0.14	< 0.020 U	0.006 J [0.032]	**5.9**	< 0.02 U	0.19
Benzoic Acid			mg/kg	< 0.56 U	< 0.62 U	< 0.59 U	< 0.55 U [< 0.53 U]	< 2.9 U	0.43 J	< 2.9 U
bis(2-Ethylhexyl)phthalate			mg/kg	< 0.19 U	0.087 J	< 0.20 U	< 0.19 U [0.083 J]	< 1 U	< 0.2 U	< 0.99 U
Carbazole			mg/kg	< 0.037 U	0.040 J	< 0.039 U	< 0.037 U [< 0.036 U]	< 0.2 U	< 0.039 U	< 0.19 U
Chrysene	56	3.9	mg/kg	0.03	0.29	< 0.020 U	0.013 J [0.10 J]	**24 D**	0.008 J	0.49
Dibenzo(a,h)anthracene	0.56	0.33	mg/kg	0.006 J	0.052	< 0.020 U	0.006 J [0.011 J]	**3.3**	< 0.02 U	0.078 J
Dibenzofuran	350	59	mg/kg	< 0.037 U	0.13	< 0.039 U	< 0.037 U [< 0.036 U]	6.7	< 0.039 U	0.15 J
Fluoranthene	500	100	mg/kg	0.053	0.46	< 0.020 U	0.032 J [0.15 J]	61 D	0.007 J	1.2
Fluorene	500	100	mg/kg	< 0.019 U	0.12	< 0.020 U	0.005 J [0.021]	67 D	< 0.02 U	0.25
Indeno(1,2,3-cd)pyrene	5.6	0.5	mg/kg	0.019	0.16	< 0.020 U	0.007 J [0.047]	**11**	0.005 J	0.21
Naphthalene	500	100	mg/kg	0.004 J	0.88	< 0.020 U	0.007 J [0.015 J]	100 D	0.006 J	0.37
Phenanthrene	500	100	mg/kg	0.021	0.42	< 0.020 U	0.018 J [0.11 J]	**150**	0.007 J	1.4
Phenol	500	100	mg/kg	< 0.037 U	< 0.041 U	< 0.039 U	< 0.037 U [< 0.036 U]	< 0.2 U	< 0.039 U	< 0.19 U
Pyrene	500	100	mg/kg	0.049	0.52	< 0.020 U	0.020 J [0.097 J]	**110**	0.011 J	1.3
VOCs										
1,2,4-Trimethylbenzene	190	52	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	5.4	< 0.005 U	0.11 J
1,3,5-Trimethylbenzene	190	52	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	2	< 0.005 U	< 0.27 U
2-Butanone (MEK)	500	100	mg/kg	< 0.011 U	0.006 J	< 0.014 U	< 0.012 U [< 0.012 U]	< 2.1 U	0.005 J	< 0.54 U
4-Methyl-2-Pentanone			mg/kg	< 0.011 U	< 0.013 U	< 0.014 U	< 0.012 U [< 0.012 U]	< 2.1 U	< 0.011 U	< 0.54 U

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VOCs (cont.)										
Acetone	500	100	mg/kg	0.021 J	0.43	0.016 J	< 0.024 U [< 0.023 U]	< 4.2 U	0.044	2.5
Benzene	44	4.8	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	0.044 J
Carbon Disulfide			mg/kg	< 0.005 U	0.002 J	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	0.13 J
Cymene (p-Isopropyltoluene)			mg/kg	< 0.005 U	0.012	< 0.007 U	< 0.006 U [< 0.006 U]	0.72 J	< 0.005 U	21 D
Dichloromethane	500	100	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	< 0.27 U
Ethylbenzene	390	41	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	0.7 J	< 0.005 U	0.076 J
Isopropylbenzene			mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	0.33 J	< 0.005 U	1.6
m&p-Xylenes			mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	2.1	< 0.005 U	0.18 J
Methyl Acetate			mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	0.24 J
Methylcyclohexane			mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	< 0.27 U
Naphthalene	500	100	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	0.001 J [0.001 J]	**120 D**	< 0.005 U	0.4
n-Butylbenzene	500	100	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	< 0.27 U
n-Propylbenzene	500	100	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	0.33 J	< 0.005 U	< 0.27 U
o-Xylene			mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	1 J	< 0.005 U	< 0.27 U
sec-Butylbenzene	500	100	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	< 0.27 U
Styrene (Monomer)			mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	< 0.27 U
tert-Butyl alcohol			mg/kg	< 0.11 U	< 0.13 U	< 0.14 U	< 0.12 U [< 0.12 U]	< 21 U	< 0.11 U	< 5.4 U
tert-Butylbenzene	500	100	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	< 1 U	< 0.005 U	< 0.27 U
Toluene	500	100	mg/kg	< 0.005 U	0.002 J	< 0.007 U	< 0.006 U [< 0.006 U]	0.24 J	< 0.005 U	0.18 J
Total VOC TICs			mg/kg							
Total VOCs			mg/kg							
Total Xylenes	500	100	mg/kg	< 0.005 U	< 0.007 U	< 0.007 U	< 0.006 U [< 0.006 U]	3.1	< 0.005 U	0.18 J

Notes:
Only detected constituents included; PCBs were not detected.
blank = not available or not analyzed
1. 6 NYCRR Part 375 SCOs for commercial land use and restricted residential land use (NYSDEC 2006)
Exceedances of commercial SCO are shaded.
Exceedances of restricted residential SCOs are bold.
< = not detected
B = constituent detected in blank
D = based dilution
J = estimated value
mg/kg = milligrams per kilogram
SVOCs = semi-volatile organic compounds
U = not detected
VOCs = volatile organic compounds

Table 2
Monitoring Well Gauging Data (4/27/2018)

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Well ID	Location	PVC Elevation (ft)	DTW (ft)	Water Elevation (ft)	DTP (ft)	DNAPL or LNAPL Thickness (ft)		Measured DTB (ft)	PID (ppm)
LMW-1	GSA	9.78	8.42	1.36	NP	NP		14.71	0.0
LMW-2	GSA	9.14	8.91	0.23	NP	NP		20.8	8.91
LMW-3	GSA	8.46	7.17	1.29	NP	NP		14.75	0.5
LMW-4	GSA	7.54	6.44	1.10	NP	NP		19.17	0.0
LMW-5	GSA	9.77	9.37	0.40	NP	NP		20.45	14.6
LMW-6	Brick Warehouse	11.52	12.38	-0.86	NP	NP		17.01	0.2
LMW-7S	Metal Warehouse	11.20	10.23	0.97	NP	NP		17.62	0.0
LMW-7D	Metal Warehouse	11.18	10.06	1.12	NP	NP		71.11	0.0
LMW-8S	Metal Warehouse	11.27	10.47	0.80	NP	NP		19.55	1.9
LMW-8D	Metal Warehouse	11.24	10.95	0.29	NP	NP		71.20	0.0
TMW-1	Metal Warehouse	11.14	10.15	0.99	NP	NP		19.45	0.0
MW-1	Metal Warehouse	8.55	6.17	2.38	6.56	**6.84**	**DNAPL**	13.4	20.6
MW-2	Metal Warehouse	9.93	7.39	2.54	NP	NP		15.13	0.0
MW-3	Metal Warehouse	6.96	5.04	1.92	NP	NP		13.1	0.0
MW-9S	Metal Warehouse	9.86	7.07	2.79	NP	NP		18.12	0.0
MW-9D	Metal Warehouse	9.81	8.98	0.83	NP	NP		49.54	0.0
MW-10S	Metal Warehouse	7.35	6.32	1.03	NP	NP		19.76	138.9
MW-10D	Metal Warehouse	7.60	NM	NM	NM	NM		NM	NM
MW-11S	Metal Warehouse	7.11	6.60	0.51	NP	NP		19.39	0.0
MW-11D	Metal Warehouse	6.99	7.44	-0.45	NP	NP		51.58	0.0
MW-12S	Metal Warehouse	7.10	5.52	1.58	NP	NP		8.13	0.0
MW-12D	Metal Warehouse	7.13	6.74	0.39	NP	NP		49.96	0.0

Notes:
NM = No measurement taken
ft = Feet
PVC = Polyvinyl Chloride
DTW = Depth to Water
DTP = Depth to Product
DTB = Depth to Bottom of Well
PID = Photoionization Detector
LNAPL = Light Non-Aqueous Phase Liquid (in gray)
DNAPL = Dense Non-Aqueous Phase Liquid (**in bold**)
NP = No product (LNAPL or DNAPL) measured
PPM = Parts per Million
Elevations surveyed by DPK Land Surveying, November 2017 and are in feet referenced to mean sea level.
Monitoring wells installed by others; Locations obtained from Figure 1 of Appendix A of the RIR (AESI, 2017).

Table 3
Co-Located Indoor Air and Ambient Air Analytical Results -- February 2017 (AESI 2017)

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Analyte [2]	Location: Sample ID: Sample Date: Matrix : Units	IA04 IA04_020817 2/8/2017 IA	SV04 SV04_020817 2/8/2017 SV	LSV-04 Action Determined [1]	IA05 IA05_020817 2/8/2017 IA	SV05 SV05_020817 2/8/2017 SV	LSV-05 Action Determined [1]	IA06 IA06_020817 2/8/2017 IA	SV06 SV06_020817 2/8/2017 SV
1,1,2,2-Tetrachloroethane	ug/m^3	0.69 U	14 U		0.83 U	15 D		0.69 U	13 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m^3	0.77 U	16 U		0.93 D	13 D		0.77 U	15 U
1,2,4-Trichlorobenzene	ug/m^3	0.74 U	15 U		8.4 D	110 D		0.74 U	14 U
1,2,4-Trimethylbenzene	ug/m^3	21	10 U		6.4 D	13 D		12	9.5 U
1,2-Dichlorobenzene	ug/m^3	0.6 U	12 U		0.95 D	17 D		0.6 U	12 U
1,2-Dichlorotetrafluoroethane	ug/m^3	0.7 U	14 U		0.85 U	13 D		0.7 U	13 U
1,3,5-Trimethylbenzene (Mesitylene)	ug/m^3	7.5	10 U		2.4 D	9.9 D		4.2	9.5 U
1,3-Butadiene	ug/m^3	0.66 U	14 U		0.8 D	11 U		0.66 U	13 U
1,3-Dichlorobenzene	ug/m^3	0.6 U	12 U		0.73 D	13 D		0.6 U	12 U
1,4-Dichlorobenzene	ug/m^3	0.6 U	12 U		0.87 D	11 D		0.6 U	12 U
4-Ethyltoluene	ug/m^3	23	10 U		7 D	13 D		13	9.5 U
Acetone	ug/m^3	18	15 D		13 D	45 D		23	44 D
Benzene	ug/m^3	2	6.6 U		2.1 D	5.4 U		1.9	6.2 U
Carbon Disulfide	ug/m^3	0.44	6.5 U		0.38 U	6.8 D		0.87	6 U
Carbon Tetrachloride	ug/m^3	0.31	3.3 U	NFA	0.69 D	8.5 D	MONITOR	0.38	3 U
Chlorobenzene	ug/m^3	0.46 U	9.5 U		0.56 U	7.7 D		0.46 U	8.9 U
Chloromethane	ug/m^3	1.2	4.3 U		1.4 D	3.5 U		1.3	4 U
Cyclohexane	ug/m^3	0.55	7.1 U		0.46 D	5.8 U		0.65	6.6 U
Dichlorodifluoromethane	ug/m^3	1.9	10 U		2.3 D	10 D		2.1	9.5 U
Ethyl Acetate	ug/m^3	1.8	15 U		1.5 D	12 U		2.7	14 U
Ethylbenzene	ug/m^3	5.7	9 U		2.4 D	7.3 D		4.1	8.4 U
Hexachlorobutadiene	ug/m^3	1.1 U	22 U		2.7 D	65 D		1.1 U	21 U
Isopropanol	ug/m^3	3.5	10 U		3.2 D	8.3 U		3.7	9.5 U
M,P-Xylene	ug/m^3	21	18 U		9.1 D	25 D		20	17 U
Methyl Ethyl Ketone (2-Butanone)	ug/m^3	5	6.1 U		2.4 D	22 D		3.5	13 D
Methylene Chloride	ug/m^3	2.2	14 U	NFA	1 D	12 U	NFA	1.9	13 U
N-Heptane	ug/m^3	1.4	8.5 U		1.1 D	6.9 U		1.4	7.9 U
N-Hexane	ug/m^3	1.6	7.3 U		1.4 D	5.9 U		1.6	6.8 U
O-Xylene (1,2-Dimethylbenzene)	ug/m^3	7	9 U		3.3 D	7.3 U		6.6	8.4 U
Propylene	ug/m^3	0.17 U	3.6 U		0.21 U	24 D		0.17 U	3.3 U
Styrene	ug/m^3	0.43 U	8.8 U		0.52 U	7.2 U		0.43 U	8.2 U
Tetrachloroethylene (PCE)	ug/m^3	0.34	3.5 U	NFA	0.57 D	10 D	NFA	0.41	3.3 U
Tetrahydrofuran	ug/m^3	0.59 U	12 U		0.71 U	9.9 U		0.59 U	11 U
Toluene	ug/m^3	15	7.8 U		11 D	9.5 D		36	7.3 U
Trichloroethylene (TCE)	ug/m^3	0.13 U	2.8 U	NFA	0.26 D	5.4 D	NFA	0.13 U	2.6 U
Trichlorofluoromethane	ug/m^3	1.7	12 U		2.2 D	12 D		1.8	11 U

See Notes on Page 3.

Table 3
Co-Located Indoor Air and Ambient Air Analytical Results -- February 2017 (AESI 2017)

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Analyte [2]	Location: Sample ID: Sample Date: Matrix : Units	LSV-06 Action Determined [1]	IA07 IA07_020817 2/8/2017 IA	SV07 SV07_020817 2/8/2017 SV	SV07 DUP01_020817 2/8/2017 SV	LSV-07 Action Determined [1]	IA12 IA12_020817 2/8/2017 IA	SV12 SV12_020817 2/8/2017 SV	LSV-12 Action Determined [1]
1,1,2,2-Tetrachloroethane	ug/m^3		0.75 U	14 U	13 U		0.71 U	13 U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m^3		0.83 U	16 U	15 U		1 D	14 U	
1,2,4-Trichlorobenzene	ug/m^3		0.81 U	16 U	14 U		0.76 U	14 U	
1,2,4-Trimethylbenzene	ug/m^3		0.75 D	10 U	9.5 U		6.9 D	9.3 U	
1,2-Dichlorobenzene	ug/m^3		0.65 U	13 U	12 U		0.62 U	11 U	
1,2-Dichlorotetrafluoroethane	ug/m^3		0.76 U	15 U	13 U		0.72 U	13 U	
1,3,5-Trimethylbenzene (Mesitylene)	ug/m^3		0.53 U	10 U	9.5 U		2.1 D	9.3 U	
1,3-Butadiene	ug/m^3		0.72 U	14 U	13 U		0.68 U	13 U	
1,3-Dichlorobenzene	ug/m^3		0.65 U	13 U	12 U		0.62 U	11 U	
1,4-Dichlorobenzene	ug/m^3		0.65 U	13 U	12 U		0.62 U	11 U	
4-Ethyltoluene	ug/m^3		0.91 D	10 U	9.5 U		6.6 D	9.3 U	
Acetone	ug/m^3		17 D	19 D	14 D		37 D	16 D	
Benzene	ug/m^3		0.83 D	6.7 U	6.2 U		2 D	6 U	
Carbon Disulfide	ug/m^3		1.1 D	6.6 U	6 U		0.32 U	5.9 U	
Carbon Tetrachloride	ug/m^3	NFA	0.34 D	3.3 U	3 U	NFA	0.78 D	3 U	NFA
Chlorobenzene	ug/m^3		0.5 U	9.7 U	8.9 U		0.47 U	8.7 U	
Chloromethane	ug/m^3		1.3 D	4.4 U	4 U		2.5 D	3.9 U	
Cyclohexane	ug/m^3		0.37 U	7.3 U	6.6 U		0.46 D	6.5 U	
Dichlorodifluoromethane	ug/m^3		1.9 D	10 U	9.5 U		3.5 D	9.3 U	
Ethyl Acetate	ug/m^3		0.82 D	15 U	14 U		13 D	14 U	
Ethylbenzene	ug/m^3		0.71 D	9.2 U	8.4 U		4.7 D	8.2 U	
Hexachlorobutadiene	ug/m^3		1.2 U	22 U	21 U		1.1 U	20 U	
Isopropanol	ug/m^3		0.53 U	10 U	9.5 U		2.5 D	9.3 U	
M,P-Xylene	ug/m^3		2.9 D	18 U	17 U		17 D	25 D	
Methyl Ethyl Ketone (2-Butanone)	ug/m^3		13 D	36 D	23 D		6.2 D	21 D	
Methylene Chloride	ug/m^3	NFA	0.76 U	15 U	13 U	NFA	1.6 D	13 U	NFA
N-Heptane	ug/m^3		0.45 D	8.6 U	7.9 U		1.2 D	7.7 U	
N-Hexane	ug/m^3		2.6 D	7.4 U	6.8 U		2.5 D	6.7 U	
O-Xylene (1,2-Dimethylbenzene)	ug/m^3		0.99 D	9.2 U	8.4 U		5.6 D	8.2 U	
Propylene	ug/m^3		0.19 U	3.6 U	3.3 U		0.18 U	3.2 U	
Styrene	ug/m^3		0.93 D	9 U	8.2 U		0.44 U	8 U	
Tetrachloroethylene (PCE)	ug/m^3	NFA	3.8 D	3.6 U	3.3 U	NFA	1.1 D	3.8 D	NFA
Tetrahydrofuran	ug/m^3		0.64 U	12 U	11 U		2 D	11 U	
Toluene	ug/m^3		2.3 D	7.9 U	7.3 U		12 D	7.1 D	
Trichloroethylene (TCE)	ug/m^3	NFA	0.15 U	2.8 U	2.6 U	NFA	0.28 D	2.5 U	NFA
Trichlorofluoromethane	ug/m^3		1.7 D	12 U	11 U		3.2 D	11 U	

See Notes on Page 3.

Table 3
Co-Located Indoor Air and Ambient Air Analytical Results -- February 2017 (AESI 2017)

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Notes:

1. Action Determined is based on interpretation of the detected subslab soil vapor and indoor air sample results using NYSDOH updated Soil Vapor/Indoor Air Matrix A & Matrix B (NYSDOH 2017).
2. Data Source: "Draft Table 4: Ambient Air, Indoor Air, and Soil Vapor Sample Analytical Results Summary of the RIR - Partial Implementation" (AESI, 2017).
3. Blank cells in the "Action Determined" columns indicated that analytes are not addressed by NYSDOH guidance; detected concentrations of these analytes in indoor air are compared to USEPA VISLs in Table 3.

All sampling locations are defined in Figure 1 of Appendix A of the 2017 RIR as LSV/IA, and are shown in Figure 4 of this HHEA as "LSV##". Based on Figure 1 of Appendix A of the RIR (AESI, 2017), the co-located samples were obtained from the Brick Warehouse building.

AA = ambient air
IA = indoor air
NFA = no further action
ug/m^3 = micrograms per cubic meter
SV = soil vapor
D = Result is from an analysis that required dilution.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
Per SVI Guidance:

For initial screening benchmark values, use the 90th percentile values from the EPA BASE data for indoor air in office and commercial buildings (see Appendix C.2).
Table C1. NYSDOH 2003: Study of volatile organic chemicals in air of fuel oil heated homes
Table C2. EPA 2001: Building assessment and survey evaluation (BASE) database, SUMMA® canister method

Table 4
Indoor Air Analytical Results -- February 2017 (AESI 2017)

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Analyte [1,2]	CAS	Location: / Sample ID: / Sample Date: / Matrix : / Units	VISL [3] Residential Indoor Air	VISL [3] Commercial Indoor Air	IA04 IA04_020817 2/8/2017 IA	IA05 IA05_020817 2/8/2017 IA	IA06 IA06_020817 2/8/2017 IA	IA07 IA07_020817 2/8/2017 IA	IA12 IA12_020817 2/8/2017 IA
1,1,2,2-Tetrachloroethane	79-34-5	ug/m3	0.0484	0.211	0.69 U	0.83 U	0.69 U	0.75 U	0.71 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ug/m3	521	2190	0.77 U	0.93 D	0.77 U	0.83 U	1 D
1,2,4-Trichlorobenzene	120-82-1	ug/m3	0.209	0.876	0.74 U	**8.4 D**	0.74 U	0.81 U	0.76 U
1,2,4-Trimethylbenzene	95-63-6	ug/m3	6.26	26.3	**21**	**6.4 D**	**12**	0.75 D	**6.9 D**
1,2-Dichlorobenzene	95-50-1	ug/m3	20.9	87.6	0.6 U	0.95 D	0.6 U	0.65 U	0.62 U
1,2-Dichlorotetrafluoroethane	76-14-2	ug/m3	NA	NA	0.7 U	0.85 U	0.7 U	0.76 U	0.72 U
1,3,5-Trimethylbenzene	108-67-8	ug/m3	6.26	26.3	**7.5**	2.4 D	4.2	0.53 U	2.1 D
1,3-Butadiene	106-99-0	ug/m3	0.0936	0.409	0.66 U	**0.8 D**	0.66 U	0.72 U	0.68 U
1,3-Dichlorobenzene	541-73-1	ug/m3	NA	NA	0.6 U	0.73 D	0.6 U	0.65 U	0.62 U
1,4-Dichlorobenzene	106-46-7	ug/m3	0.255	1.11	0.6 U	**0.87 D**	0.6 U	0.65 U	0.62 U
4-Ethyltoluene	622-96-8	ug/m3	NA	NA	23	7 D	13	0.91 D	6.6 D
Acetone	67-64-1	ug/m3	3220	13500	18	13 D	23	17 D	37 D
Benzene	71-43-2	ug/m3	0.36	1.57	**2**	**2.1 D**	**1.9**	**0.83 D**	**2 D**
Carbon Disulfide	75-15-0	ug/m3	73	307	0.44	0.38 U	0.87	1.1 D	0.32 U
Chlorobenzene	108-90-7	ug/m3	5.21	21.9	0.46 U	0.56 U	0.46 U	0.5 U	0.47 U
Chloromethane	74-87-3	ug/m3	9.39	39.4	1.2	1.4 D	1.3	1.3 D	2.5 D
Cyclohexane	110-82-7	ug/m3	626	2630	0.55	0.46 D	0.65	0.37 U	0.46 D
Dichlorodifluoromethane	75-71-8	ug/m3	10.4	43.8	1.9	2.3 D	2.1	1.9 D	3.5 D
Ethyl Acetate	141-78-6	ug/m3	7.3	30.7	1.8	1.5 D	2.7	0.82 D	**13 D**
Ethylbenzene	100-41-4	ug/m3	1.12	4.91	**5.7**	**2.4 D**	**4.1**	0.71 D	**4.7 D**
Hexachlorobutadiene	87-68-3	ug/m3	0.128	0.557	1.1 U	**2.7 D**	1.1 U	1.2 U	1.1 U
Isopropanol	67-63-0	ug/m3	20.9	87.6	3.5	3.2 D	3.7	0.53 U	2.5 D
M,P-Xylene	108-38-3/106-42-3	ug/m3	NA	NA	21	9.1 D	20	2.9 D	17 D
Methyl Ethyl Ketone (2-Butanone)	78-93-3	ug/m3	521	2190	5	2.4 D	3.5	13 D	6.2 D
N-Heptane	142-82-5	ug/m3	41.7	175	1.4	1.1 D	1.4	0.45 D	1.2 D
N-Hexane	110-54-3	ug/m3	73	307	1.6	1.4 D	1.6	2.6 D	2.5 D
O-Xylene	95-47-6	ug/m3	10.4	43.8	7	3.3 D	6.6	0.99 D	5.6 D
Propylene	115-07-1	ug/m3	313	1310	0.17 U	0.21 U	0.17 U	0.19 U	0.18 U
Styrene	100-42-5	ug/m3	104	438	0.43 U	0.52 U	0.43 U	0.93 D	0.44 U
Tetrahydrofuran	109-99-9	ug/m3	209	876	0.59 U	0.71 U	0.59 U	0.64 U	2 D
Toluene	108-88-3	ug/m3	521	2190	15	11 D	36	2.3 D	12 D
Trichlorofluoromethane	75-69-4	ug/m3	-	-	1.7	2.2 D	1.8	1.7 D	3.2 D

See Notes on Page 2.

Table 4
Indoor Air Analytical Results -- February 2017 (AESI 2017)

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Notes:

1. Analytes displayed reflect those for which NYSDOH decision matrices are not available (NYSDOH 2017).
2. Data Source: "Draft Table 4: Ambient Air, Indoor Air, and Soil Vapor Sample Analytical Results Summary of the RIR - Partial Implementation" (AESI 2017).
3. Concentrations for residential and commercial use from the VISL Calculator (USEPA 2018).
   Exceedances of residential VISLs are bold, exceedances of commercial VISLs are shaded.

All sampling locations are defined in Figure 1 of Appendix A of the 2017 RIR as LSV/IA, and are shown in Figure 4 of this HHEA as "LSV##". Based on Figure 1 of Appendix A of the RIR (AESI, 2017), the co-located samples were obtained from the Brick Warehouse building.

D = Result is from an analysis that required dilution.

IA = indoor air

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

ug/m^3 = micrograms per cubic meter

VISL = Vapor Intrusion Screening Level

Per SVI Guidance:

For initial screening benchmark values, use the 90th percentile values from the EPA BASE data for indoor air in office and commercial buildings (see Appendix C.2).
Table C1. NYSDOH 2003: Study of volatile organic chemicals in air of fuel oil heated homes
Table C2. EPA 2001: Building assessment and survey evaluation (BASE) database, SUMMA® canister method

Table 5
Soil Vapor Analytical Results -- May 2017 (AESI 2017)

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Analyte [1]	NYSDOH Matrix Threshold [2]		USEPA Target Sub-Slab Soil Vapor Concentration [3]		Location: / Sample Date: / Units	LSV 01 / unknown / 5/30/2017	LSV 02 / unknown / 5/30/2017	LSV 14 / unknown / 5/30/2017	LSV 03 Metal Warehouse / 5/30/2017	LSV 09 Metal Warehouse / 5/30/2017	LSV 13 Metal Warehouse / 5/30/2017	LSV 08 GSA Building / 5/31/2017	LSV 10 GSA Building / 5/31/2017	LSV 11 GSA Building / 5/30/2017	Residential Indoor Air COPC	Commercial Indoor Air COPC
	Lower Limit	Upper Limit	Residential	Commercial												
VOCs																
Acetone			107000	451000	ug/m^3	50	54	32	210	19	76	160	77	180		
Benzene			12	52.4	ug/m^3	ND	9.0	9.6	7.4	ND	10	**26**	**21**	**13**	X	
Carbon disulfide			2430	10200	ug/m^3	ND	ND	ND	ND	ND	ND	ND	13	16		
Cyclohexane			20900	87600	ug/m^3	ND	ND	43	ND	ND	ND	ND	12	ND		
1,4-dioxane			18.7	81.8	ug/m^3	ND	13	ND	ND	ND	ND	ND	ND	ND		
Ethylbenzene			37.4	164	ug/m^3	ND	ND	**300**	ND	24	ND	ND	12	**230**	X	X
Methylene chloride	100	1000	2090	8760	ug/m^3	ND	ND	ND	ND	ND	7.6	9.4	ND	ND		
Methyl ethyl ketone			17400	73000	ug/m^3	ND	ND	ND	23	ND	8.3	7.4	ND	26		
n-Heptane			1390	5840	ug/m^3	ND	14	98	ND	ND	ND	ND	ND	ND		
n-Hexane			2430	10200	ug/m^3	ND	13	180	ND	ND	ND	ND	7.1	ND		
Tetrachloroethene	100	1000	139	584	ug/m^3	ND	ND	ND	20	16	ND	ND	ND	ND		
Toluene			17400	73000	ug/m^3	16	20	32	17	17	25	23	26	21		
1,1,1-trichloroethane			17400	73000	ug/m^3	ND	ND	ND	13	ND	ND	ND	ND	ND		
Trichloroethene	6	60	6.95	29.2	ug/m^3	3.8	ND	**11**	3.8	3.8	ND	ND	5.9	**7.5**	X	
1,2,4-trimethylbenzene			209	876	ug/m^3	ND	11	ND	ND	ND	ND	ND	ND	ND		
Xylenes (m&p)			NS	NS	ug/m^3	11	20	660	11	85	14	30	36	820		
Xylenes (o)			348	1460	ug/m^3	ND	ND	120	ND	17	ND	8.7	11	180		

Notes:
1. Soil vapor sample results obtained from Appendix D (IAL SDG-04284) in the RIR (AESI, 2017). Only detected analytes are presented.
2. NYSDOH has published a decision matrix for eight volatile compounds as subslab soil gas samples (NYSDOH 2017), adapted for use at this Site. If soil gas concentrations are below the lower limit or VISLs, no further action is required. If soil gas concentrations exceed the lower limit but are below the VISL, no further action is required. If soil gas concentrations exceed the upper limit or VISLs, analyte is identified as COPC for vapor migration to indoor air pathway.
   COPCs for residential indoor air are bold, COPCs for commercial indoor air are shaded.
3. Target sub-slab soil vapor concentrations for residential and commercial use from the VISL Calculator (USEPA 2018).

Sampling locations are partially displayed in Figure 3 of the 2017 RIR and in Figure 4 of this HHEA. Locations LSV01, LSV02, and LSV14 are unknown. The building locations assigned to each sampling location reflects the closest building to the sample based on Figure 3 of the 2017 RIR.

ug/m^3 = micrograms per cubic meter
ND = not detected
NS = no standard
NYSDOH = New York State Department of Health
SVI = Soil Vapor Intrusion
USEPA = United States Environmental Protection Agency
VISL = Vapor Intrusion Screening Level
VOCs = volatile organic compounds

Table 6
COPC Summary

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

COPC	COPC under Residential Scenario				COPC under Commercial Scenario			
	Surface Soil	Subsurface Soil	Groundwater (Indoor Air)	Soil Vapor & Indoor Air	Surface Soil	Subsurface Soil	Groundwater (Indoor Air)	Soil Vapor & Indoor Air
Inorganics								
Barium	x				x			
Lead	x	x			x	x		
Organochlorine Pesticides								
Dibenzofuran		x						
SVOCs								
1,1-Biphenyl			x				x**	
Acenaphthene		x						
Anthracene		x						
Benzo(a)anthracene	x	x	x		x	x		
Benzo(a)pyrene	x	x			x	x		
Benzo(b)fluoranthene	x	x				x		
Benzo(k)fluoranthene		x				x		
Chrysene	x	x						
Dibenzo(a,h)anthracene	x	x			x	x		
Fluoranthene		x						
Fluorene		x						
Indeno(1,2,3-cd)pyrene	x	x				x		
Naphthalene		x	x			x	x**	
Phenanthrene		x						
Pyrene		x						
VOCs								
1,2,4-Trichlorobenzene				x				x
1,2,4-Trimethylbenzene		x	x	x				
1,3,5-Trimethylbenzene				x *				
1,3-Butadiene				x *				x *
1,4-Dichlorobenzene				x				
Benzene			x	x *			x**	x *
Carbon tetrachloride				x				x
Chloroform			x					
Ethyl acetate				x *				
Ethylbenzene		x	x	x			x**	x
Hexachlorobutadiene				x				x
Isopropylbenzene			x					
Xylenes		x	x				x	

Notes:
x = selected as a COPC
x * = although this analyte is noted as an indoor air COPC, it was not detected in the co-located soil gas sample and therefore may reflect an indoor air source and not a subsurface source.
x ** = analyte detected in groundwater wells (LMW-1 through LMW-5) adjacent to GSA building at levels above groundwater VISL (hazard quotient 0.1; target cancer risk 1 x 10^{-6}). The GSA building is the only currently occupied building at the Site.
COPC = constituent of potential concern
SVOCs = semi-volatile organic compounds
VOCs = volatile organic compounds

Table 7
Qualitative Exposure Assessment Summary

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 3 - NYSDEC Brownfield Site #C224213
Brooklyn, Kings County, New York

Environmental Media	Exposure Route	Human Receptor Exposure Assessment	
		Current	Future
Surface Soil	Direct Contact	None exists.	Future Outdoor Commercial Workers - contact only if impervious surfaces removed.
	Particulate/Vapor Inhalation	Impervious surface present.	Trespassers - contact only if impervious surfaces and fences removed.
Subsurface Soil	Direct Contact	None exists.	Construction/Utility Workers - conducting intrusive work.
	Particulate Inhalation	Impervious surface present.	
Groundwater	Direct Contact	No direct contact with groundwater exists.	No direct contact by commercial worker or resident. Potential pathway for construction/utility worker conducting intrusive work.
	Vapor Inhalation	Current commercial worker at GSA building via inhalation of indoor air. None exists at unoccupied Brick or Metal Warehouses.	Future Commercial Worker or Future Resident occupying buildings via inhalation. Inhalation trench air is potential pathway for construction/utility worker conducting intrusive work.

Note:
Direct contact with COPCs includes incidental ingestion and dermal contact.

FIGURES

REFERENCE: BASE MAP USGS 7.5 MIN. TOPO. QUADS., JERSEY CITY, NJ-NY, 2016, AND BROOKLYN, NY, 2016

0 1000' 2000'

Approximate Scale: 1 in. = 1000 ft.

BT RED HOOK, LLC - RED HOOK 3
68 AND 100 FERRIS STREET/242 AND 300 COFFEY STREET
BROOKLYN, NEW YORK

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB/LD: L.POSENAUER PM:(Reqd) TM: J.RODDY LYR:(Opt)ON=*;OFF=*REF*
C:\Users\CTI01012\OneDrive - ARCADIS\BIM 360 Docs\UNITED PARCEL SERVICE\Red Hook 3 Supplemental Del Inv\2018\B0038932.0002\01-DWG\COMP\Figure 1-RH3-SLM.dwg LAYOUT: 1 SAVED: 6/27/2018 5:43 PM ACADVER: 20.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB
PLOTTED: 6/27/2018 5:58 PM BY: THORWATH, CHANDRAKANTH
IMAGES:
NJ_Jersey_City_20161101_TM_geo.jpg
NY_Brooklyn_20160824_TM_geo.jpg

LEGEND:

- SITE BOUNDARY
- FENCE
- UTILITY POLES

NOTE:

1. BASED ON "EXISTING SITE" FIGURE (AESI MARCH 2017) AND "NY CITY DEPARTMENT OF FINANCE DIGITAL TAX MAP" (AUGUST 15, 2017).

0 100' 200'

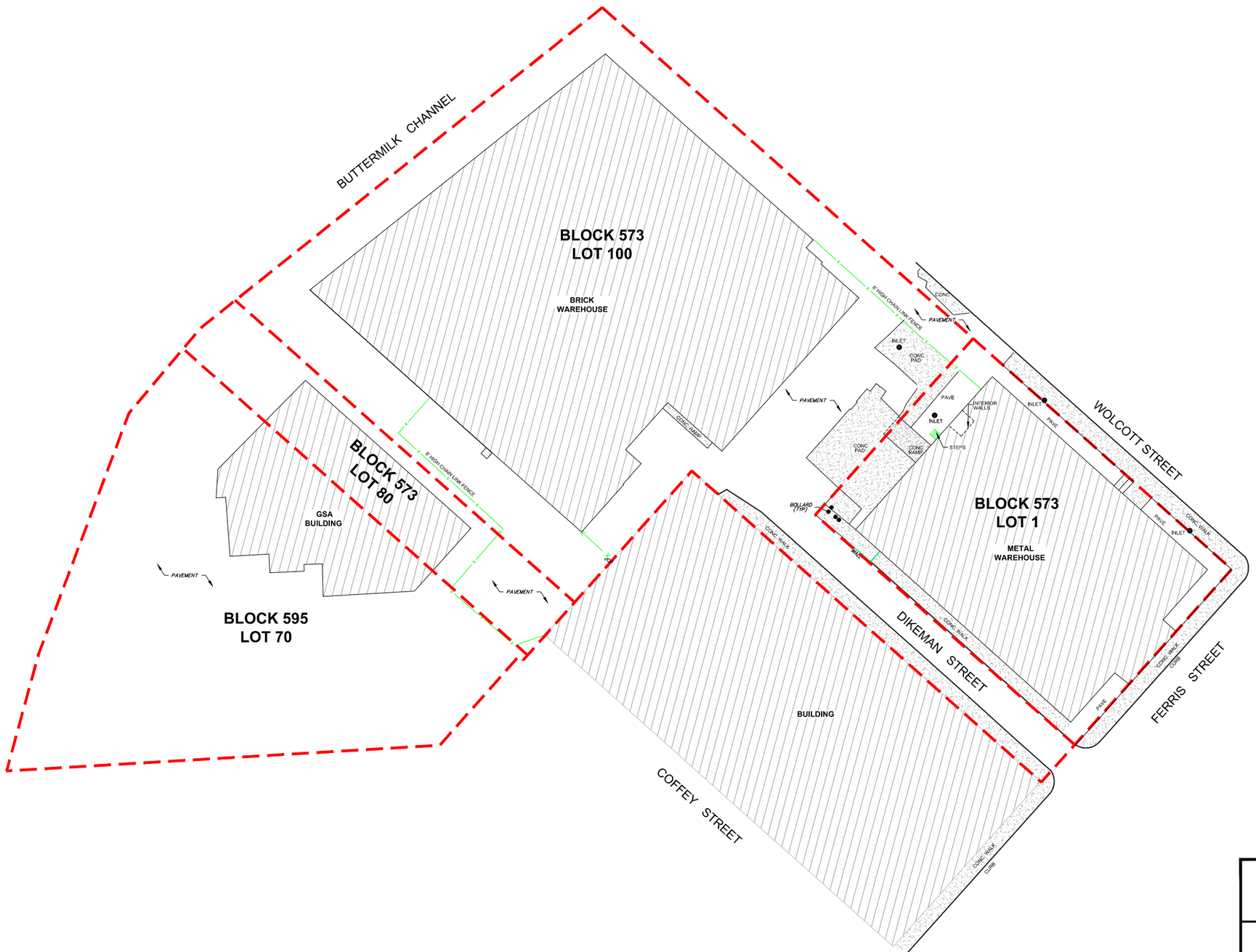
GRAPHIC SCALE

BT RED HOOK, LLC - RED HOOK 3
68 AND 100 FERRIS STREET/242 AND 300 COFFEY STREET
BROOKLYN, NEW YORK

SITE MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2



LEGEND:

- SITE BOUNDARY
- FENCE
- UTILITY POLES

NOTE:

1. BASED ON "EXISTING SITE" FIGURE (AESI MARCH 2017) AND "NY CITY DEPARTMENT OF FINANCE DIGITAL TAX MAP" (AUGUST 15, 2017).

0 100' 200'

GRAPHIC SCALE

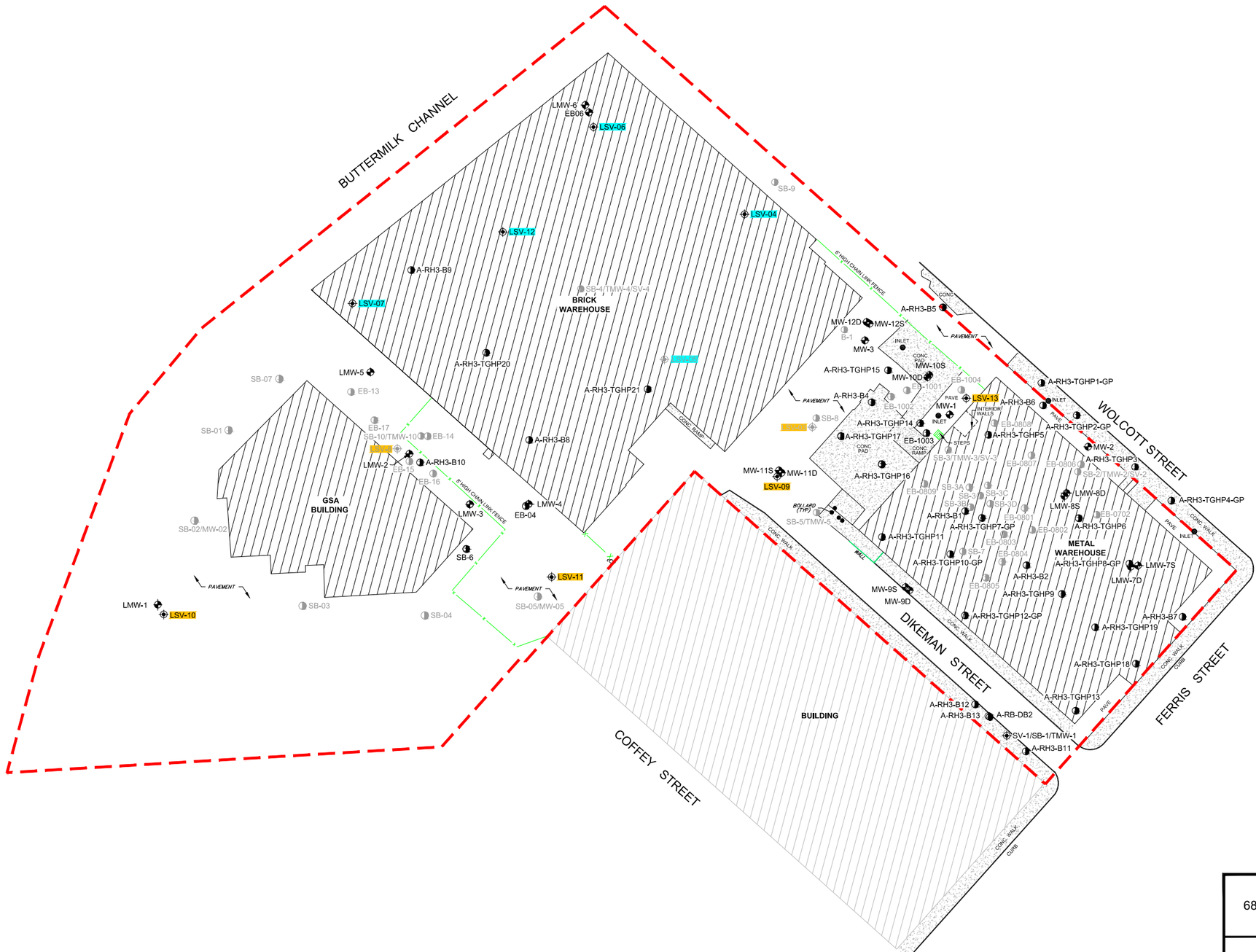
BT RED HOOK, LLC - RED HOOK 3
68 AND 100 FERRIS STREET/242 AND 300 COFFEY STREET
BROOKLYN, NEW YORK

SITE MAP WITH BLOCK/LOT BOUNDARIES

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2A

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\CT10112\OneDrive - ARCADIS\BIM 360 Docs\UNITED PARCEL SERVICE\Red Hook 3 Supplemental Del Inv\2018\B0038932.0002\01-DWG\COMP\Figure 2A - RH3 Site Map.dwg LAYOUT: 2A SAVED: 6/27/2018 6:17 PM ACADVER: 20.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE:
PLTFULL.CTB PLOTTED: 6/29/2018 5:19 PM BY: THORWATH, CHANDRAKANTH
XREFS: IMAGES: PROJECTNAME: ----
TEMP.jpg



LEGEND:

- MONITORING WELL
- SOIL BORING
- SOIL BORING (NOT SURVEYED)
- SOIL VAPOR MONITORING POINT
- SOIL VAPOR MONITORING POINT (NOT SURVEYED)
- SITE BOUNDARY
- FENCE
- UTILITY POLES

NOTES:

1. FIGURE IS BASED ON A SURVEY PREPARED BY DPK LAND SURVEYING, LLC ON 11/2/2017.
2. PROPERTY BOUNDARIES OBTAINED FROM FIGURE ENTITLED "ALTA/NSPS LAND TITLE SURVEY" (LANGAN APRIL 4, 2017).
3. BORING LOCATIONS SHOWN IN GRAY WERE NOT FIELD LOCATED OR SURVEYED BY ARCADIS AND WERE DIGITIZED FROM FIGURES PROVIDED BY AESI AND LANGAN.
4. "TGHP" INDICATES A TarGOST® LOCATION ONLY.
5. TarGOST® -TAR SPECIFIC GREEN OPTICAL SENSING TOOL.
6. "TGHP#-GP" INDICATES A GEOPROBE BORING ADVANCED IMMEDIATELY ADJACENT TO A TarGOST® LOCATION; HOWEVER, THE TarGOST® LOCATION IS NOT SHOWN. FOR EXAMPLE, A-RH3-TGHP4-GP WAS ADVANCED IMMEDIATELY ADJACENT TO TarGOST® LOCATION A-RH3-TGHP4.
7. SOIL BORINGS AND TarGOST® LOCATIONS WITH AN "A-" PREFIX WERE ADVANCED BY ARCADIS.

CO-LOCATED SOIL VAPOR AND INDOOR AIR SAMPLES COLLECTED IN FEBRUARY 2017. LOCATIONS REFLECT INFORMATION PROVIDED IN APPENDIX A FIGURE 1 OF RIR (AESI 2017).

SOIL VAPOR SAMPLES COLLECTED IN JUNE 2017. LOCATIONS REFLECT INFORMATION PROVIDED IN FIGURE 3 OF RIR (AESI 2017). LOCATIONS FOR LSV-1, LSV-2, AND LSV-14 ARE NOT PRESENTED IN RIR.

0 100' 200'

GRAPHIC SCALE

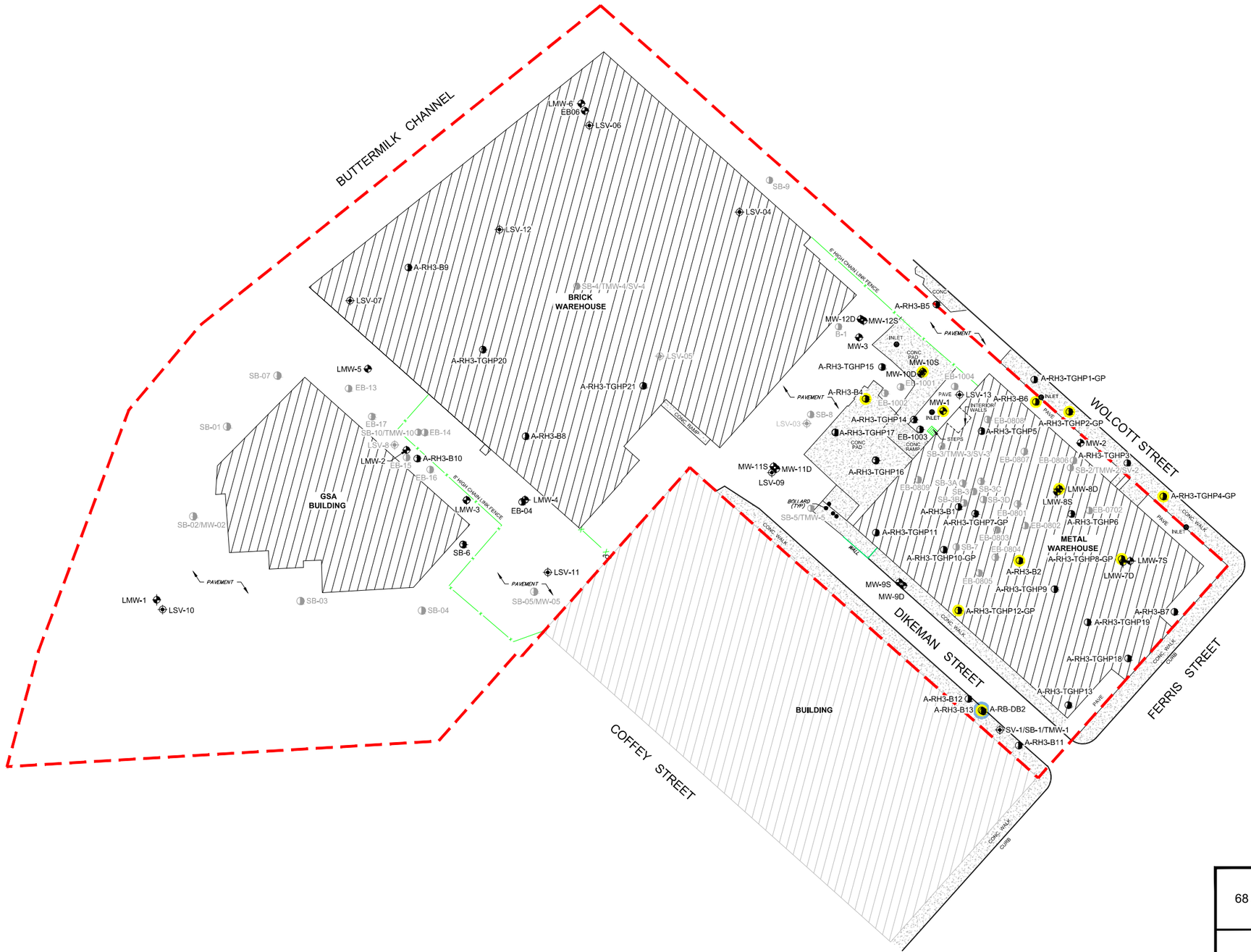
BT RED HOOK, LLC - RED HOOK 3
68 AND 100 FERRIS STREET/242 AND 300 COFFEY STREET
BROOKLYN, NEW YORK

SAMPLE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\CTI01012\OneDrive - ARCADIS\BIM 360 Docs\UNITED PARCEL SERVICE\Red Hook 3 Supplemental Del Inv\2018\B0038932.0002\01-DWG\COMP\Figure 3_New.dwg LAYOUT: 3 SAVED: 6/29/2018 10:38 AM ACADVER: 20.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB
PLOTTED: 6/29/2018 5:21 PM BY: THORWATH, CHANDRAKANTH
XREFS: IMAGES: PROJECTNAME: ----



LEGEND:

- MONITORING WELL
- SOIL BORING
- SOIL BORING (NOT SURVEYED)
- SOIL VAPOR MONITORING POINT
- SOIL VAPOR MONITORING POINT (NOT SURVEYED)
- SITE BOUNDARY
- FENCE
- UTILITY POLES
- VISIBLE DNAPL NOTED IN BORING LOG OR MEASURABLE DNAPL DURING WELL GAUGING ON 4/27/2018
- VISIBLE LNAPL NOTED IN BORING LOG OR MEASURABLE LNAPL DURING WELL GAUGING ON 4/27/2018

NOTES:

1. FIGURE IS BASED ON A SURVEY PREPARED BY DPK LAND SURVEYING, LLC ON 11/2/2017.
2. PROPERTY BOUNDARIES OBTAINED FROM FIGURE ENTITLED "ALTA/NSPS LAND TITLE SURVEY" (LANGAN APRIL 4, 2017).
3. BORING LOCATIONS SHOWN IN GRAY WERE NOT FIELD LOCATED OR SURVEYED BY ARCADIS AND WERE DIGITIZED FROM FIGURES PROVIDED BY AESI AND LANGAN.
4. "TGHP" INDICATES A TarGOST® LOCATION ONLY.
5. TarGOST® -TAR SPECIFIC GREEN OPTICAL SENSING TOOL.
6. LNAPL - LIGHT NON-AQUEOUS PHASE LIQUID.
7. DNAPL - DENSE NON-AQUEOUS PHASE LIQUID.
8. "TGHP#-GP" INDICATES A GEOPROBE BORING ADVANCED IMMEDIATELY ADJACENT TO A TarGOST® LOCATION; HOWEVER, THE TarGOST® LOCATION IS NOT SHOWN. FOR EXAMPLE, A-RH3-TGHP4-GP WAS ADVANCED IMMEDIATELY ADJACENT TO TarGOST® LOCATION A-RH3-TGHP4.
9. SOIL BORINGS AND TarGOST® LOCATIONS WITH AN "A-" PREFIX WERE ADVANCED BY ARCADIS.

0 100' 200'

GRAPHIC SCALE

BT RED HOOK, LLC - RED HOOK 3
68 AND 100 FERRIS STREET/242 AND 300 COFFEY STREET
BROOKLYN, NEW YORK

OCCURRENCE OF VISIBLE DNAPL AND LNAPL

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

APPENDIX A

Atlantic Environmental Solutions, Inc. Remedial Investigation Report Tables

Table 1
Brownfield Cleanup Program
C224213 "Red Hook 3"
Soil Analytical Data (RI Scope)

Sample #:		Part 375-6.8(a) Unrestricted Use Soil Cleanup	Part 375-6.8(b) Protection of Public Health		EB01-015	EB01-130	EB01-180	EB04-025	EB04-105	EB04-155	EB04-050	EB04-075	EB04-175	EB05-045	EB05-115	EB05-210	EB07-55	EB07-105	EB07-345	EB09-025	EB09-095	EB09-230	EB10-025	EB10-135	EB10-080	EB13-020	EB13-055	EB13-195	EB14-125	EB15-140	EB16-145	EB17-150	DUP-1	DUP-2
Field ID:																																	
Lab ID:					04083-001	04083-002	04083-003	04199-005	04199-006	04199-007	04341-001	04341-002	04341-003	04341-004	04341-005	04341-006	04083-010	04083-011	04083-012	04199-002	04199-003	04199-004	04083-007	04083-008	04083-009	04083-004	04083-005	04083-006	04199-001	04341-007	04395-001	04395-002	04199-010	04341-008
Date Sampled:					05/15/2017	05/15/2017	05/15/2017	05/18/2017	05/18/2017	05/18/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/16/2017	05/16/2017	05/16/2017	05/17/2017	05/17/2017	05/17/2017	05/16/2017	05/16/2017	05/16/2017	05/15/2017	05/15/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	05/17/2017	05/23/2017
Depth(ft):	CAS	Objectives (ppm)	Residential (ppm)	Restricted Residential (ppm)	1.5/2	12.5/13	17.5/18	2/2.5	10/10.5	15/15.5	4.1120.4.5/5	7/7.5	17/17.5	4/4.5	11/11.5	20.5/21	5/5.5	10/10.5	34/34.5	2/2.5	9/9.5	22.5/23	2/2.5	13/13.5	7.5/8	1.5/2	5/5.5	19/19.5	12/12.5	13.5/14	14/14.5	14.5/15		
Volatiles (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dichlorodifluoromethane	75-71-8	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	0.02	0.21	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	0.33	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	67-64-1	0.05	100	100	**1.15**	**1.08**	0.018	ND	**0.098**	**0.089**	**22.7**	**0.368**	**0.078**	**3.04**	ND	0.044	ND	ND	0.011	0.047	ND	0.030	ND	ND	ND	ND	ND	ND	ND	ND	**0.161**	**0.051**	**0.437**
Carbon disulfide	75-15-0	NS	100	NS	0.248	0.214	0.00138	ND	0.00108	0.00645	ND	0.044	0.000787	ND	ND	0.000786	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00189	0.041	ND	0.108
Methylene chloride	75-09-2	0.05	51	100	ND	ND	ND	ND	0.00317	ND	ND	ND	0.00229	ND	ND	ND	0.00213	0.00198	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00427	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	0.19	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether (MTBE)	1634-04-4	0.93	62	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	0.27	19	26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	0.25	59	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3	0.12	100	100	ND	ND	ND	ND	0.010	0.00578	ND	ND	0.00141	ND	ND	0.00168	ND	ND	0.000679	0.00164	ND	0.000807	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	74-97-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	0.37	10	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	0.68	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	0.76	1.4	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane (EDC)	107-06-2	0.02	2.3	3.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	0.06	2.9	4.8	ND	ND	ND	ND	ND	ND	ND	ND	0.000929	**0.190**	ND	ND	ND	ND	ND	0.000517	ND	ND	**0.351**	ND	ND	**0.511**	ND	ND	ND	ND	**0.125**	ND	ND	ND
Trichloroethene	79-01-6	0.47	10	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	123-91-1	0.1	9.8	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	0.7	100	100	0.075	0.081	ND	ND	ND	ND	ND	ND	0.00235	0.223	ND	ND	ND	ND	ND	ND	ND	ND	**0.878**	0.133	ND	**1.21**	**1.73**	ND	0.046	ND	ND	0.051	ND	ND
trans-1,3-Dichloropropene	10061-02-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	1.3	5.5	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	142-28-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	591-78-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	106-93-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	1.1	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	1	30	41	0.038	ND	ND	ND	ND	ND	ND	ND	0.000385	0.054	ND	ND	ND	ND	0.000402	ND	ND	ND	0.439	**20.5**	**22.2**	**1.18**	**1.41**	ND	0.040	ND	ND	0.036	ND	ND
Total Xylenes	1330-20-7	0.26	100	100	0.094	0.122	ND	ND	ND	ND	ND	ND	0.00097	0.130	ND	0.000391	ND	ND	0.000647	ND	ND	ND	**0.845**	**19.9**	**12.8**	**4.00**	**4.45**	ND	ND	ND	ND	0.069	ND	ND
Styrene	100-42-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.130	ND	ND	0.331	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	98-82-8	NS	100	NS	ND	ND	0.00128	ND	ND	ND	ND	ND	0.000363	ND	ND	ND	ND	ND	0.000403	ND	ND	ND	0.041	2.54	7.12	0.407	ND	ND	0.021	ND	ND	0.014	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	NS	35	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	96-18-4	NS	80	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	103-65-1	3.9	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.042	1.95	**5.90**	0.143	ND	ND	0.024	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	108-67-8	8.4	47	52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000236	ND	ND	ND	0.098	5.26	**11.8**	1.64	2.03	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	98-06-6	5.9	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	95-63-6	3.6	47	52	0.036	ND	ND	ND	ND	ND	ND	ND	ND	0.090	ND	0.000555	ND	ND	0.000543	ND	ND	ND	0.158	**14.1**	**39.8**	3.00	**4.96**	ND	0.039	ND	ND	0.017	ND	ND
sec-Butylbenzene	135-98-8	11	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	2.4	17	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	99-87-6	NS	NS	NS	0.646	0.614	0.00134	0.000331	0.000685	0.001	35.8	0.356	0.0064	24.6	17.3	0.00153	ND	ND	0.000226	ND	0.00371	0.000488	0.00098	0.060	1.31	2.63	1.26	127	10.5	0.136	3.67	ND	0.178	0.00112	0.858
1,4-Dichlorobenzene	106-46-7	1.8	9.8	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	104-51-8	12	100	100	ND	ND	ND	ND	ND	ND	ND	ND	0.068	ND	ND	ND	ND	ND	0.000269	ND	ND	ND	0.032	1.13	3.94	ND	0.668	ND	ND	0.523	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1.1	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	87-61-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl acetate	79-20-9	NS	NS	NS	1.54	ND	ND	ND	ND	0.00178	ND	0.333	ND	ND	ND	0.00215	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.364
Cyclohexane	110-82-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	108-87-2	NS	NS	NS	ND	ND	ND	ND	ND	0.000816	ND	ND	ND	ND	ND	ND	ND	ND	0.00141	ND	ND	ND	0.106	1.33	2.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL VO's:		NS	NS	NS	3.83	2.11	0.022	0.000331	0.113	0.105	58.5	1.10	0.094	28.4	17.3	0.051	0.00213	0.00221	0.015	0.053	0.000488	0.031	3.18	68.2	108	13.7	142	10.5	0.306	4.19	0.00616	0.692	0.052	1.77
TOTAL TIC's:		NS	NS	NS	10.3	4.00	0.021	ND	0.00544	ND	514	1.27	ND	124	73.2	0.072	ND	ND	0.225	ND	ND	ND	7.36	227	648	132	788	2.35	13.6	915	ND	1.96	ND	0.788
TOTAL VO's & TIC's:		NS	NS	NS	14.1	6.11	0.043	0.000331	0.118	0.105	573	2.37	0.094	152	90.5	0.123	0.00213	0.00221	0.240	0.053	0.000488	0.031	10.5	295	756	146	930	12.9	13.9	919	0.00616	2.65	0.052	2.56

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc Indicates a concentration that exceeds restricted residential criteria.
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.
NS = No Standard Available
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 1
Brownfield Cleanup Program
C224213 "Red Hook 3"
Soil Analytical Data (RI Scope)

Sample #:		Part 375-6.8(a)	Part 375-6.8(b)		EB01-015	EB01-130	EB01-180	EB04-025	EB04-105	EB04-155	EB04-050	EB04-075	EB04-175	EB05-045	EB05-115	EB05-210	EB07-55	EB07-105	EB07-345	EB09-025	EB09-095	EB09-230	EB10-025	EB10-135	EB10-080	EB13-020	EB13-055	EB13-195	EB14-125	EB15-140	EB16-145	EB17-150	DUP-1	DUP-2
Field ID:		Unrestricted Use	Protection of																														
Lab ID:		Soil Cleanup	Public Health		04083-001	04083-002	04083-003	04199-005	04199-006	04199-007	04341-001	04341-002	04341-003	04341-004	04341-005	04341-006	04083-010	04083-011	04083-012	04199-002	04199-003	04199-004	04083-007	04083-008	04083-009	04083-004	04083-005	04083-006	04199-001	04341-007	04395-001	04395-002	04199-010	04341-008
Date Sampled:		Objectives	Residential	estricted Resident	05/15/2017	05/15/2017	05/15/2017	05/18/2017	05/18/2017	05/18/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/16/2017	05/16/2017	05/16/2017	05/17/2017	05/17/2017	05/17/2017	05/16/2017	05/16/2017	05/16/2017	05/15/2017	05/15/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	05/17/2017	05/23/2017
Depth(ft):	CAS	(ppm)	(ppm)	(ppm)	1.5/2	12.5/13	17.5/18	2/2.5	10/10.5	15/15.5	4.1120.4.5/5	7/7.5	17/17.5	4/4.5	11/11.5	20.5/21	5/5.5	10/10.5	34/34.5	2/2.5	9/9.5	22.5/23	2/2.5	13/13.5	7.5/8	1.5/2	5/5.5	19/19.5	12/12.5	13.5/14	14/14.5	14.5/15		
Semivolatiles - BNA (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Benzaldehyde	100-52-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	108-95-2	0.33	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl) ether	111-44-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	95-48-7	0.33	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2'-Oxybis(1-Chloropropane)	108-60-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol **	106-44-5	0.33	34	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.059	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetophenone	98-86-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	NS	3.7	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	78-59-1	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	105-67-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy) methane	111-91-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	91-20-3	12	100	100	1.20	0.477	ND	ND	ND	ND	0.157	ND	ND	4.83	0.448	ND	0.056	ND	ND	0.050	ND	ND	1.58	**85.7**	**99.4**	1.32	**26.0**	ND	0.391	ND	ND	0.059	ND	ND
4-Chloroaniline	106-47-8	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Caprolactam	105-60-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	59-50-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	91-57-6	NS	0.41	NS	**0.698**	**0.470**	ND	ND	ND	ND	0.197	ND	ND	**10.1**	0.111	ND	0.049	ND	ND	0.041	ND	ND	**0.582**	**44.5**	**64.6**	**1.35**	**27.5**	ND	0.254	**2.43**	ND	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	92-52-4	NS	NS	NS	0.155	ND	ND	ND	ND	ND	0.047	ND	ND	0.671	ND	ND	ND	ND	ND	ND	ND	ND	1.04	5.90	6.45	0.208	3.65	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	88-74-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2	NS	1.03	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	100	100	100	0.644	0.176	ND	ND	ND	ND	0.076	ND	ND	1.28	ND	ND	0.045	ND	ND	ND	ND	ND	3.48	1.32	2.22	0.473	6.87	ND	ND	0.346	ND	ND	ND	ND
3-Nitroaniline	99-09-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	83-32-9	20	100	100	0.678	1.90	ND	ND	ND	ND	0.128	ND	ND	6.00	0.121	ND	0.043	ND	ND	0.042	ND	ND	5.91	**24.9**	**39.9**	1.30	17.7	ND	0.497	**22.5**	ND	ND	ND	ND
2,4-Dinitrophenol	51-28-5	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	100-02-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	132-64-9	7	14	59	0.153	1.01	ND	ND	ND	ND	0.044	ND	ND	1.73	0.067	ND	ND	ND	ND	0.040	ND	ND	0.224	0.787	1.02	0.352	3.65	ND	0.275	**17.0**	ND	ND	ND	ND
Diethyl phthalate	84-66-2	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	86-73-7	30	100	100	0.684	1.84	ND	ND	ND	ND	0.066	ND	ND	9.13	0.091	ND	0.039	ND	ND	0.048	ND	ND	4.62	14.1	20.8	1.52	20.8	ND	0.197	16.2	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	7005-72-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	100-01-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	101-55-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	118-74-1	0.33	0.41	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Atrazine	1912-24-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	0.8	2.4	6.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	85-01-8	100	100	100	6.44	10.0	ND	ND	ND	ND	0.534	ND	ND	44.0	0.296	ND	0.245	ND	0.038	0.586	ND	ND	12.4	48.4	65.3	7.61	78.7	ND	0.219	35.9	ND	ND	ND	ND
Anthracene	120-12-7	100	100	100	2.06	3.21	ND	ND	ND	ND	0.128	ND	ND	7.89	0.108	ND	0.084	ND	ND	0.125	ND	ND	5.00	14.6	19.1	1.85	20.9	ND	ND	9.34	ND	ND	ND	ND
Carbazole	86-74-8	NS	NS	NS	0.123	0.299	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.054	ND	ND	ND	ND	ND	0.113	1.57	ND	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	84-74-2	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	206-44-0	100	100	100	6.74	10.5	ND	ND	ND	0.059	ND	0.064	ND	ND	24.3	0.145	ND	0.302	ND	ND	0.799	ND	ND	7.06	12.3	17.3	5.51	50.5	ND	0.091	10.1	0.098	0.043	ND	ND
Pyrene	129-00-0	100	100	100	14.7	8.44	ND	ND	ND	0.068	ND	0.598	ND	ND	42.1	0.188	ND	0.259	ND	ND	0.604	ND	ND	12.2	18.6	29.2	9.31	69.3	ND	0.060	8.36	0.119	0.037	ND	0.038
Butyl benzyl phthalate	85-68-7	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	56-55-3	1	1	1	**6.84**	**4.57**	ND	ND	ND	0.039	ND	0.171	ND	**16.1**	0.071	ND	0.206	ND	ND	0.370	ND	ND	**4.39**	**5.52**	**9.20**	**4.19**	**29.3**	ND	ND	**2.86**	0.074	ND	ND	ND
Chrysene	218-01-9	1	1	3.9	**7.79**	**3.71**	ND	ND	ND	ND	0.298	ND	ND	**17.5**	0.062	ND	0.206	ND	ND	0.348	ND	ND	**4.07**	**5.15**	**8.68**	**4.51**	**31.1**	ND	ND	**2.25**	0.061	ND	ND	ND
Bis(2-ethylhexyl) phthalate	117-81-7	NS	50	NS	0.247	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.034	ND	ND	ND
Di-n-octyl phthalate	117-84-0	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	205-99-2	1	1	1	**4.38**	**2.82**	ND	ND	ND	ND	0.080	ND	ND	**8.94**	0.042	ND	0.176	ND	ND	0.302	ND	ND	**2.27**	**1.60**	**2.79**	**2.06**	**15.8**	ND	ND	**1.19**	ND	ND	ND	ND
Benzo[k]fluoranthene	207-08-9	0.8	1	3.9	**2.87**	**2.55**	ND	ND	ND	ND	0.066	ND	ND	**7.49**	0.036	ND	0.132	ND	ND	0.273	ND	ND	**2.28**	**2.48**	**3.79**	**2.02**	**13.6**	ND	ND	**1.35**	ND	ND	ND	ND
Benzo[a]pyrene	50-32-8	1	1	1	**6.63**	**3.31**	ND	ND	ND	ND	0.154	ND	ND	**13.4**	0.066	ND	0.230	ND	ND	0.348	ND	ND	**4.64**	**3.85**	**6.75**	**3.73**	**24.2**	ND	ND	**1.62**	0.046	ND	ND	ND
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	0.5	0.5	**2.96**	**1.79**	ND	ND	ND	ND	ND	ND	ND	**5.91**	ND	ND	0.139	ND	ND	0.184	ND	ND	**1.72**	ND	**1.14**	**1.43**	**6.31**	ND	ND	**0.666**	ND	ND	ND	ND
Dibenz[a,h]anthracene	53-70-3	0.33	0.33	0.33	**1.15**	**0.910**	ND	ND	ND	ND	ND	ND	ND	**2.77**	ND	ND	0.147	ND	ND	0.062	ND	ND	**0.972**	ND	ND	**0.719**	**3.14**	ND	ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	191-24-2	100	100	100	4.80	1.85	ND	ND	ND	ND	ND	ND	ND	9.44	0.050	ND	0.295	ND	ND	0.180	ND	ND	2.60	ND	0.769	2.24	6.74	ND	ND	0.709	ND	ND	ND	ND
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL BNA'S:		NS	NS	NS	71.9	59.8	ND	ND	0.166	ND	2.81	ND	ND	234	1.90	ND	2.65	ND	0.038	4.46	ND	ND	77.0	290	398	51.8	457	ND	1.98	133	0.432	0.198	ND	0.038
TOTAL TIC's:		NS	NS	NS	352	268	15.6	ND	24.6	ND	73.0	2.17	0.456	221	15.1	ND	0.575	1.68	ND	0.504	ND	ND	41.5	199	266	28.2	677	ND	8.94	99.4	6.53	13.4	ND	2.01
TOTAL BNA'S & TIC's:		NS	NS	NS	424	328	15.6	ND	24.8	ND	75.8	2.17	0.456	455	17.0	ND	3.23	1.68	0.038	4.96	ND	ND	119	489	664	80.0	1130	ND	10.9	232	6.96	13.6	ND	2.05

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc Indicates a concentration that exceeds restricted residential criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 1
Brownfield Cleanup Program
C224213 "Red Hook 3"
Soil Analytical Data (RI Scope)

Sample #:		Part 375-6.8(a)	Part 375-6.8(b)		EB01-015	EB01-130	EB01-180	EB04-025	EB04-105	EB04-155	EB04-050	EB04-075	EB04-175	EB05-045	EB05-115	EB05-210	EB07-55	EB07-105	EB07-345	EB09-025	EB09-095	EB09-230	EB10-025	EB10-135	EB10-080	EB13-020	EB13-055	EB13-195	EB14-125	EB15-140	EB16-145	EB17-150	DUP-1	DUP-2
Field ID:		Unrestricted Use	Protection of																														
Lab ID:		Soil Cleanup	Public Health		04083-001	04083-002	04083-003	04199-005	04199-006	04199-007	04341-001	04341-002	04341-003	04341-004	04341-005	04341-006	04083-010	04083-011	04083-012	04199-002	04199-003	04199-004	04083-007	04083-008	04083-009	04083-004	04083-005	04083-006	04199-001	04341-007	04395-001	04395-002	04199-010	04341-008
Date Sampled:		Objectives	Residential	estricted Resident	05/15/2017	05/15/2017	05/15/2017	05/18/2017	05/18/2017	05/18/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/23/2017	05/16/2017	05/16/2017	05/16/2017	05/17/2017	05/17/2017	05/17/2017	05/16/2017	05/16/2017	05/16/2017	05/16/2017	05/15/2017	05/15/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	05/17/2017	05/23/2017
Depth(ft):	CAS	(ppm)	(ppm)	(ppm)	1.5/2	12.5/13	17.5/18	2/2.5	10/10.5	15/15.5	4.1120.4.5/5	7/7.5	17/17.5	4/4.5	11/11.5	20.5/21	5/5.5	10/10.5	34/34.5	2/2.5	9/9.5	22.5/23	2/2.5	13/13.5	7.5/8	1.5/2	5/5.5	19/19.5	12/12.5	13.5/14	14/14.5	14.5/15		
PCB's (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aroclor-1016	12674-11-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	11104-28-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	11141-16-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	53469-21-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	12672-29-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	11097-69-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1260	11096-82-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1262	37324-23-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1268	11100-14-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs	1336-36-3	0.1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pesticides (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
alpha-BHC	319-84-6	0.02	0.097	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
beta-BHC	319-85-7	0.036	0.072	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	58-89-9	0.1	0.28	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	319-86-8	0.04	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	76-44-8	0.042	0.42	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	309-00-2	0.005	0.019	0.097	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	1024-57-3	NS	0.077	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	959-98-8	2.4	4.8	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	72-55-9	0.0033	1.8	8.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	60-57-1	0.005	0.039	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	72-20-8	0.014	2.2	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	33213-65-9	2.4	4.8	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	72-54-8	0.0033	2.6	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	7421-93-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	1031-07-8	2.4	4.8	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	50-29-3	0.0033	1.7	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	53494-70-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	72-43-5	NS	100	NS	ND	ND	ND	ND	ND	ND	0.246	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-Chlordane	5103-71-9	0.094	0.91	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	5103-74-2	NS	0.54	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	8001-35-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan (I and II)	115-29-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane (alpha and gamma)	57-74-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Herbicides (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dalapon	75-99-0	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dicamba	1918-00-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-D	94-75-7	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TP (Silvex)	93-72-1	3.8	58	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-T	93-76-5	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DB	94-82-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dinoseb	88-85-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aluminum	7429-90-5	NS	NS	NS	8940	12300	1710	3860	9140	4580	4970	7270	7030	6370	8330	5420	8070	7460	5300	9370	8120	4090	5900	8780	5480	6700	5230	6400	12300	14500	5910	4830	3770	10900
Antimony	7440-36-0	NS	NS	NS	1.80	0.519	0.367	ND	ND	ND	7.75	ND	ND	1.70	ND	ND	0.343	ND	ND	0.403	ND	ND	0.944	ND	ND	0.387	1.72	ND	ND	ND	ND	ND	ND	ND
Arsenic	7440-38-2	13	16	16	7.62	6.58	8.12	1.36	4.79	2.13	9.23	4.31	2.07	7.37	4.58	2.71	4.18	3.76	1.17	3.93	2.80	1.50	4.39	3.33	2.93	2.73	6.22	3.94	5.67	0.663	4.10	3.90	1.03	6.17
Barium	7440-39-3	350	350	400	99.1	65.1	6.02	31.1	32.3	13.5	96.2	29.4	74.1	81.0	39.2	43.1	58.3	29.1	27.2	94.3	65.5	34.4	63.0	85.5	52.2	38.6	88.0	34.6	70.5	211	26.7	22.5	26.0	60.6
Beryllium	7440-41-7	7.2	14	72	0.479	0.640	ND	ND	0.499	ND	0.651	0.485	0.581	0.328	0.614	0.403	0.426	0.468	ND	0.493	0.657	ND	0.332	0.396	0.403	0.352	0.317	0.411	0.725	ND	0.420	0.417	ND	0.590
Cadmium	7440-43-9	2.5	2.5	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	7440-70-2	NS	NS	NS	29500	5480	11400	1220	3130	1230	9440	2870	2390	34800	2230	1010	3360	662	8440	4300	2690	1500	2040	1860	1190	2700	21200	892	4320	4220	1460	695	1000	13500
Chromium	7440-47-3	NS	NS	NS	25.8	22.8	13.0	9.68	16.6	11.4	18.2	15.1	16.2	16.1	15.9	12.0	20.0	16.2	12.3	18.8	15.3	8.55	13.4	22.5	15.4	12.7	17.6	13.7	23.1	18.8	12.9	11.3	6.62	19.8
Cobalt	7440-48-4	NS	30	NS	7.05	8.13	2.65	3.12	7.60	4.31	9.05	6.22	4.94	4.40	6.85	4.96	7.61	6.72	4.44	7.63	7.04	4.38	12.5	8.73	6.29	5.91	4.68	5.54	10.4	13.5	5.67	4.33	3.25	7.45
Copper	7440-50-8	50	270	270	**76.2**	24.9	3.27	3.45	11.0	2.10	**101**	8.43	11.2	36.8	14.1	6.84	24.4	10.1	9.90	36.7	12.9	4.05	**111**	17.2	8.88	13.7	46.8	8.69	22.6	10.6	8.29	5.99	2.78	16.9
Iron	7439-89-6	NS	2000	NS	**23100**	**20800**	**12000**	**8580**	**19400**	**11200**	**45300**	**19600**	**18500**	**15700**	**24000**	**17200**	**16100**	**15100**	**9790**	**17300**	**17100**	**12300**	**34400**	**19600**	**13100**	**14700**	**12600**	**13400**	**26900**	**33800**	**15700**	**19500**	**8120**	**26700**
Lead	7439-92-1	63	400	400	**875**	**68.6**	7.17	2.94	26.4	6.51	**177**	14.7	12.6	**1910**	43.6	36.2	**136**	5.99	3.43	**219**	8.75	3.20	**391**	8.24	5.00	**1010**	**996**	10.9	58.2	8.17	15.4	10.3	2.81	26.2
Magnesium	7439-95-4	NS	NS	NS	9530	5830	743	1770	3590	2340	1280	2490	3790	4040	3300	2560	3180	2150	4810	3710	3270	2460	843	3280	1900	3030	7840	2870	5640	10900	2560	1760	2350	4220
Manganese	7439-96-5	1600	2000	2000	281	359	68.5	243	214	84.6	163	190	208	162	240	111	274	323	224	284	472	112	222	412	244	226	152	134	384	183	146	124	90.1	361
Mercury	7439-97-6	0.18	0.81	0.81	**0.660**	**0.250**	0.012	ND	0.016	ND	ND	0.073	ND	0.131	0.049	ND	0.056	ND	ND	**0.190**	ND	ND	0.051	ND	ND	0.166	**0.442**	0.016	0.051	ND	0.022	0.016	ND	0.073
Nickel	7440-02-0	30	140	310	24.9	26.5	8.04	**33.2**	19.7	15.3	26.0	13.0	14.6	13.9	19.8	15.6	**32.2**	19.2	18.1	15.5	13.0	12.3	24.7	**40.6**	20.7	17.0	15.4	22.7	**33.6**	25.5	18.2	11.5	11.6	21.0
Potassium	7440-09-7	NS	NS	NS	1250	2520	473	833	1670	867	808	1730	2340	1150	1610	1240	1430	1060	1120	1520	2010	717	661	2080	1450	1130	751	1270	2270	8560	1090	1120	588	2150
Selenium	7782-49-2	3.9	36	180	ND	1.46	ND	1.82	2.13	1.28	2.17	0.960	1.52	0.556	1.05	0.610	0.710	ND	1.13	1.39	2.14	1.13	0.825	ND	ND	1.18	1.58	ND	2.90	ND	ND	0.651	0.507	1.49
Silver	7440-22-4	2	36	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	7440-23-5	NS	NS	NS	257	758	1020	135	76.0	20.8	167	82.5	258	212	243	97.8	138	58.3	228	175	133	34.3	200	144	80.6	285	353	237	45.7	430	16.1	22.1	31.5	173
Thallium	7440-28-0	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.271	ND	ND	ND	ND
Vanadium	7440-62-2	NS	100	NS	28.6	29.4	20.9	14.2	21.7	19.0	31.6	22.1	24.4	18.7	20.0	17.2	22.0	19.1	16.5	25.5	30.5	17.8	29.3	24.4	18.7	15.2	16.7	16.0	28.9	60.3	15.8	16.0	8.85	26.6
Zinc	7440-66-6	109	2200	10000	**163**	85.7	22.9	12.9	46.1	18.4	99.1	39.7	36.9	107	43.2	30.7	52.5	31.0	17.3	**184**	45.7	16.8	**116**	39.6	27.8	43.8	**148**	35.9	75.5	53.5	29.1	25.6	13.6	43.2
General Analytical					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Hexavalent Chromium-mg/Kg	18540-29-9	1	22	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide, Total-mg/Kg	57-12-5	27	27	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc Indicates a concentration that exceeds restricted residential criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224213 "Red Hook 3"
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b) Protection of Public Health		EB07-02	EB08-05	EB08-06	EB08-07	EB08-08	EB08-09	EB10-01	EB10-02	EB10-03	EB10-04	EB13-020	EB14-125	EB15-140	EB16-145	EB17-150	SB-3A	SB-3A-19.5	SB-3B	SB-3C	SB-3D	DUP531
Field ID:																								
Lab ID:				04588-002	04467-001	04467-002	04467-003	04467-004	04467-005	04467-006	04588-001	04588-008	04588-009	04083-004	04199-001	04341-007	04395-001	04395-002	04588-003	04588-004	04588-005	04588-006	04588-007	04467-007
Date Sampled:				06/01/2017	05/30/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	06/01/2017	06/01/2017	06/02/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	05/31/2017
Depth(ft):				19.5/20	15/16	12/13	17	16/17	17/18	19/20	16/16.5	7/7.5	13/13.5	1.5/2	12/12.5	13.5/14	14/14.5	14.5/15	5/10	19/19.5	5/10	5/10	5/10	
Volatiles (mg/Kg)	CAS	Residential (ppm)	Restricted Residential (ppm)	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dichlorodifluoromethane	75-71-8	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Chloromethane	74-87-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Vinyl chloride	75-01-4	0.21	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Bromomethane	74-83-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Chloroethane	75-00-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Trichlorofluoromethane	75-69-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,1-Dichloroethene	75-35-4	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Acetone	67-64-1	100	100	ND	0.021	ND	ND	ND	0.064	ND	ND	ND	ND	ND	ND	ND	ND	0.161	~	ND	~	~	~	ND
Carbon disulfide	75-15-0	100	NS	ND	0.00624	ND	ND	ND	0.017	ND	ND	ND	ND	ND	ND	ND	0.00189	0.041	~	ND	~	~	~	ND
Methylene chloride	75-09-2	51	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00427	ND	~	ND	~	~	~	ND
trans-1,2-Dichloroethene	156-60-5	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Methyl tert-butyl ether (MTBE)	1634-04-4	62	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,1-Dichloroethane	75-34-3	19	26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
cis-1,2-Dichloroethene	156-59-2	59	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2-Butanone (MEK)	78-93-3	100	100	ND	ND	ND	ND	ND	0.00394	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Bromochloromethane	74-97-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Chloroform	67-66-3	10	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,1,1-Trichloroethane	71-55-6	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Carbon tetrachloride	56-23-5	1.4	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2-Dichloroethane (EDC)	107-06-2	2.3	3.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Benzene	71-43-2	2.9	4.8	ND	ND	**3.06**	**54.2**	ND	ND	ND	ND	0.074	ND	0.511	ND	ND	ND	0.125	~	ND	~	~	~	ND
Trichloroethene	79-01-6	10	21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2-Dichloropropane	78-87-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,4-Dioxane	123-91-1	9.8	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Bromodichloromethane	75-27-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
cis-1,3-Dichloropropene	10061-01-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Toluene	108-88-3	100	100	11.5	ND	ND	**233**	ND	ND	ND	ND	0.371	ND	1.21	0.046	ND	ND	0.051	~	0.574	~	~	~	ND
trans-1,3-Dichloropropene	10061-02-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,1,2-Trichloroethane	79-00-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Tetrachloroethene	127-18-4	5.5	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,3-Dichloropropane	142-28-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2-Hexanone	591-78-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Dibromochloromethane	124-48-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2-Dibromoethane (EDB)	106-93-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Chlorobenzene	108-90-7	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Ethylbenzene	100-41-4	30	41	**946**	0.00047	**113**	**215**	**71.3**	0.000489	**60.1**	23.8	0.083	**240**	1.18	0.040	ND	ND	0.036	~	**228**	~	~	~	**42.9**
Total Xylenes	1330-20-7	100	100	**1370**	0.000579	**123**	**285**	**149**	0.000929	74.9	27.7	0.261	**220**	4.00	ND	ND	ND	0.069	~	**320**	~	~	~	55.6
Styrene	100-42-5	NS	NS	ND	ND	ND	ND	ND	0.000876	ND	ND	0.134	ND	0.331	ND	ND	ND	ND	~	ND	~	~	~	ND
Bromoform	75-25-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Isopropylbenzene	98-82-8	100	NS	**118**	ND	11.4	15.1	12.6	0.00117	9.35	3.26	ND	27.4	0.407	0.021	ND	ND	0.014	~	31.8	~	~	~	6.74
1,1,2,2-Tetrachloroethane	79-34-5	35	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2,3-Trichloropropane	96-18-4	80	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
n-Propylbenzene	103-65-1	100	100	91.8	ND	4.00	7.65	6.43	0.000964	7.60	1.92	ND	15.8	0.143	0.024	ND	ND	ND	~	25.1	~	~	~	5.09
1,3,5-Trimethylbenzene	108-67-8	47	52	**171**	ND	16.4	29.7	30.1	0.000423	20.6	6.80	0.044	**49.7**	1.64	ND	ND	ND	ND	~	**51.6**	~	~	~	14.1
tert-Butylbenzene	98-06-6	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2,4-Trimethylbenzene	95-63-6	47	52	**493**	ND	**51.3**	**105**	**87.6**	0.00343	**58.6**	20.5	0.147	**138**	3.00	0.039	ND	ND	0.017	~	**142**	~	~	~	38.8
sec-Butylbenzene	135-98-8	100	100	8.26	ND	ND	ND	ND	0.00105	ND	ND	ND	1.70	ND	ND	ND	ND	ND	~	2.16	~	~	~	ND
1,3-Dichlorobenzene	541-73-1	17	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4-Isopropyltoluene	99-87-6	NS	NS	44.2	ND	3.91	7.04	15.4	0.000574	5.20	1.49	ND	12.4	1.26	0.136	3.67	ND	0.178	~	12.7	~	~	~	3.43
1,4-Dichlorobenzene	106-46-7	9.8	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
n-Butylbenzene	104-51-8	100	100	40.5	ND	2.23	3.76	3.31	ND	5.09	1.14	ND	7.88	ND	ND	0.523	ND	ND	~	9.47	~	~	~	3.39
1,2-Dichlorobenzene	95-50-1	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2-Dibromo-3-chloropropane	96-12-8	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2,4-Trichlorobenzene	120-82-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2,3-Trichlorobenzene	87-61-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Methyl acetate	79-20-9	NS	NS	ND	0.00181	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Cyclohexane	110-82-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Methylcyclohexane	108-87-2	NS	NS	37.6	ND	ND	ND	ND	0.00434	ND	0.508	ND	9.14	ND	ND	ND	ND	ND	~	9.32	~	~	~	ND
TOTAL VO's:		NS	NS	3330	0.030	328	955	376	0.099	241	87.1	1.11	722	13.7	0.306	4.19	0.00616	0.692	~	833	~	~	~	170
TOTAL TIC's:		NS	NS	10400	ND	1610	3490	1990	2.94	1480	553	23.1	3220	132	13.6	915	ND	1.96	~	2580	~	~	~	985
TOTAL VO's & TIC's:		NS	NS	13700	0.030	1940	4450	2370	3.04	1720	640	24.2	3940	146	13.9	919	0.00616	2.65	~	3410	~	~	~	1160

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

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J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

B = The compound was detected in the blank and the sample

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224213 "Red Hook 3"
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b) Protection of Public Health		EB07-02	EB08-05	EB08-06	EB08-07	EB08-08	EB08-09	EB10-01	EB10-02	EB10-03	EB10-04	EB13-020	EB14-125	EB15-140	EB16-145	EB17-150	SB-3A	SB-3A-19.5	SB-3B	SB-3C	SB-3D	DUP531
Field ID:																								
Lab ID:				04588-002	04467-001	04467-002	04467-003	04467-004	04467-005	04467-006	04588-001	04588-008	04588-009	04083-004	04199-001	04341-007	04395-001	04395-002	04588-003	04588-004	04588-005	04588-006	04588-007	04467-007
Date Sampled:		Residential	tricted Reside	06/01/2017	05/30/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	06/01/2017	06/01/2017	06/02/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	05/31/2017
Depth(ft):	CAS	(ppm)	(ppm)	19.5/20	15/16	12/13	17	16/17	17/18	19/20	16/16.5	7/7.5	13/13.5	1.5/2	12/12.5	13.5/14	14/14.5	14.5/15	5/10	19/19.5	5/10	5/10	5/10	
Semivolatiles - BNA (mg/Kg)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Benzaldehyde	100-52-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Phenol	108-95-2	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Bis(2-chloroethyl) ether	111-44-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2-Chlorophenol	95-57-8	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2-Methylphenol	95-48-7	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,2'-Oxybis(1-Chloropropane)	108-60-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4-Methylphenol **	106-44-5	34	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.059	~	ND	~	~	~	ND
N-Nitrosodi-n-propylamine	621-64-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Acetophenone	98-86-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Hexachloroethane	67-72-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Nitrobenzene	98-95-3	3.7	15	5.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Isophorone	78-59-1	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2-Nitrophenol	88-75-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,4-Dimethylphenol	105-67-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Bis(2-chloroethoxy) methane	111-91-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,4-Dichlorophenol	120-83-2	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Naphthalene	91-20-3	100	100	954	ND	394	1740	421	2.07	528	5.65	6.52	828	1.32	0.391	ND	ND	0.059	~	369	~	~	~	573
4-Chloroaniline	106-47-8	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Hexachlorobutadiene	87-68-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Caprolactam	105-60-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4-Chloro-3-methylphenol	59-50-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2-Methylnaphthalene	91-57-6	0.41	NS	479	ND	185	414	165	0.878	244	2.59	0.834	427	1.35	0.254	2.43	ND	ND	~	171	~	~	~	310
Hexachlorocyclopentadiene	77-47-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,4,6-Trichlorophenol	88-06-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,4,5-Trichlorophenol	95-95-4	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,1'-Biphenyl	92-52-4	NS	NS	60.1	ND	18.0	32.3	13.5	0.560	29.6	0.524	1.36	49.2	0.208	ND	ND	ND	ND	~	24.8	~	~	~	29.1
2-Chloronaphthalene	91-58-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2-Nitroaniline	88-74-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Dimethyl phthalate	131-11-3	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,6-Dinitrotoluene	606-20-2	1.03	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Acenaphthylene	208-96-8	100	100	19.6	ND	10.4	83.9	3.23	0.521	8.87	0.094	2.61	12.9	0.473	ND	0.346	ND	ND	~	3.86	~	~	~	9.22
3-Nitroaniline	99-09-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Acenaphthene	83-32-9	100	100	169	ND	99.6	140	46.1	2.43	93.4	2.03	7.55	223	1.30	0.497	22.5	ND	ND	~	65.1	~	~	~	152
2,4-Dinitrophenol	51-28-5	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4-Nitrophenol	100-02-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,4-Dinitrotoluene	121-14-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Dibenzofuran	132-64-9	14	59	6.24	ND	4.87	26.6	2.33	0.352	4.84	0.194	0.742	18.0	0.352	0.275	17.0	ND	ND	~	4.58	~	~	~	8.70
Diethyl phthalate	84-66-2	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Fluorene	86-73-7	100	100	113	ND	62.1	135	34.1	2.41	58.5	1.51	7.93	124	1.52	0.197	16.2	ND	ND	~	38.7	~	~	~	101
4-Chlorophenyl phenyl ether	7005-72-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4-Nitroaniline	100-01-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
N-Nitrosodiphenylamine	86-30-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
4-Bromophenyl phenyl ether	101-55-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Hexachlorobenzene	118-74-1	0.41	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Atrazine	1912-24-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Pentachlorophenol	87-86-5	2.4	6.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Phenanthrene	85-01-8	100	100	299	ND	148	343	76.5	9.72	150	4.10	16.4	309	7.61	0.219	35.9	ND	ND	~	110	~	~	~	247
Anthracene	120-12-7	100	100	81.9	ND	46.1	243	25.7	2.99	41.2	1.04	4.70	98.1	1.85	ND	9.34	ND	ND	~	32.1	~	~	~	73.6
Carbazole	86-74-8	NS	NS	ND	ND	2.65	14.8	0.742	ND	1.02	ND	ND	ND	0.113	ND	ND	ND	ND	~	ND	~	~	~	1.24
Di-n-butyl phthalate	84-74-2	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Fluoranthene	206-44-0	100	100	71.7	ND	40.3	113	15.3	3.88	36.5	0.814	2.47	82.8	5.51	0.091	10.1	0.098	0.043	~	27.2	~	~	~	64.9
Pyrene	129-00-0	100	100	163	ND	3.90	68.4	26.6	5.24	78.4	1.38	5.59	165	9.31	0.060	8.36	0.119	0.037	~	50.3	~	~	~	111
Butyl benzyl phthalate	85-68-7	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
3,3'-Dichlorobenzidine	91-94-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
Benzo[a]anthracene	56-55-3	1	1	52.5	ND	26.7	55.2	4.53	1.80	20.4	0.352	1.55	55.0	4.19	ND	2.86	0.074	ND	~	14.6	~	~	~	29.5
Chrysene	218-01-9	1	3.9	50.9	ND	25.3	54.6	4.23	1.59	19.7	0.325	1.91	50.2	4.51	ND	2.25	0.061	ND	~	13.7	~	~	~	26.5
Bis(2-ethylhexyl) phthalate	117-81-7	50	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.034	ND	ND	~	~	~	ND
Di-n-octyl phthalate	117-84-0	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND
Benzo[b]fluoranthene	205-99-2	1	1	17.0	ND	8.44	20.1	1.50	0.667	7.50	0.142	1.76	21.5	2.06	ND	1.19	ND	ND	~	4.72	~	~	~	10.4
Benzo[k]fluoranthene	207-08-9	1	3.9	18.5	ND	7.05	18.2	1.32	0.516	5.65	0.099	1.05	19.6	2.02	ND	1.35	ND	ND	~	6.52	~	~	~	8.40
Benzo[a]pyrene	50-32-8	1	1	40.2	ND	15.0	33.0	2.80	1.27	15.1	0.227	4.07	40.9	3.73	ND	1.62	0.046	ND	~	10.2	~	~	~	19.2
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	0.5	12.0	ND	4.12	12.5	0.840	0.431	4.42	0.084	1.56	14.3	1.43	ND	0.666	ND	ND	~	2.14	~	~	~	5.77
Dibenz[a,h]anthracene	53-70-3	0.33	0.33	7.16	ND	2.64	7.01	0.559	0.226	2.86	ND	0.686	6.42	0.719	ND	ND	ND	ND	~	ND	~	~	~	3.44
Benzo[g,h,i]perylene	191-24-2	100	100	18.6	ND	5.55	15.5	1.15	0.653	6.92	0.106	2.35	18.4	2.24	ND	0.709	ND	ND	~	2.29	~	~	~	8.01
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	ND	~	~	~	ND
TOTAL BNA'S:		NS	NS	2640	ND	1110	3570	847	38.2	1360	21.3	71.6	2560	51.8	1.98	133	0.432	0.198	~	951	~	~	~	1790
TOTAL TIC's:		NS	NS	1300	ND	298	324	69.9	16.1	379	9.80	47.7	1220	28.2	8.94	99.4	6.53	13.4	~	1850	~	~	~	319
TOTAL BNA'S & TIC's:		NS	NS	3940	ND	1410	3890	917	54.3	1740	31.1	119	3780	80.0	10.9	232	6.96	13.6	~	2800	~	~	~	2110

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc Indicates a concentration that exceeds restricted residential criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

B = The compound was detected in the blank and the sample

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224213 "Red Hook 3"
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b)		EB07-02	EB08-05	EB08-06	EB08-07	EB08-08	EB08-09	EB10-01	EB10-02	EB10-03	EB10-04	EB13-020	EB14-125	EB15-140	EB16-145	EB17-150	SB-3A	SB-3A-19.5	SB-3B	SB-3C	SB-3D	DUP531
Field ID:		Protection of																						
Lab ID:		Public Health		04588-002	04467-001	04467-002	04467-003	04467-004	04467-005	04467-006	04588-001	04588-008	04588-009	04083-004	04199-001	04341-007	04395-001	04395-002	04588-003	04588-004	04588-005	04588-006	04588-007	04467-007
Date Sampled:		Residential	tricted Reside	06/01/2017	05/30/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	06/01/2017	06/01/2017	06/02/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	05/31/2017
Depth(ft):		(ppm)	(ppm)	19.5/20	15/16	12/13	17	16/17	17/18	19/20	16/16.5	7/7.5	13/13.5	1.5/2	12/12.5	13.5/14	14/14.5	14.5/15	5/10	19/19.5	5/10	5/10	5/10	
	CAS																							
PCB's (mg/Kg)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aroclor-1016	12674-11-2	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1221	11104-28-2	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1232	11141-16-5	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1242	53469-21-9	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1248	12672-29-6	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1254	11097-69-1	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1260	11096-82-5	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1262	37324-23-5	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aroclor-1268	11100-14-4	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
PCBs	1336-36-3	1	1	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~

Sample #:		Part 375-6.8(b)		EB07-02	EB08-05	EB08-06	EB08-07	EB08-08	EB08-09	EB10-01	EB10-02	EB10-03	EB10-04	EB13-020	EB14-125	EB15-140	EB16-145	EB17-150	SB-3A	SB-3A-19.5	SB-3B	SB-3C	SB-3D	DUP531
Field ID:		Protection of																						
Lab ID:		Public Health		04588-002	04467-001	04467-002	04467-003	04467-004	04467-005	04467-006	04588-001	04588-008	04588-009	04083-004	04199-001	04341-007	04395-001	04395-002	04588-003	04588-004	04588-005	04588-006	04588-007	04467-007
Date Sampled:		Residential	tricted Reside	06/01/2017	05/30/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	06/01/2017	06/01/2017	06/02/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	05/31/2017
Depth(ft):		(ppm)	(ppm)	19.5/20	15/16	12/13	17	16/17	17/18	19/20	16/16.5	7/7.5	13/13.5	1.5/2	12/12.5	13.5/14	14/14.5	14.5/15	5/10	19/19.5	5/10	5/10	5/10	
	CAS																							
Pesticides (mg/Kg)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
alpha-BHC	319-84-6	0.097	0.48	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
beta-BHC	319-85-7	0.072	0.36	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
gamma-BHC (Lindane)	58-89-9	0.28	1.3	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
delta-BHC	319-86-8	100	100	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Heptachlor	76-44-8	0.42	2.1	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Aldrin	309-00-2	0.019	0.097	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Heptachlor epoxide	1024-57-3	0.077	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Endosulfan I	959-98-8	4.8	24	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
4,4'-DDE	72-55-9	1.8	8.9	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Dieldrin	60-57-1	0.039	0.2	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Endrin	72-20-8	2.2	11	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Endosulfan II	33213-65-9	4.8	24	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
4,4'-DDD	72-54-8	2.6	13	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Endrin aldehyde	7421-93-4	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Endosulfan sulfate	1031-07-8	4.8	24	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
4,4'-DDT	50-29-3	1.7	7.9	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Endrin ketone	53494-70-5	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Methoxychlor	72-43-5	100	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
alpha-Chlordane	5103-71-9	0.91	4.2	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
gamma-Chlordane	5103-74-2	0.54	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Toxaphene	8001-35-2	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Endosulfan (I and II)	115-29-7	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Chlordane (alpha and gamma)	57-74-9	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~

BNYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

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BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

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J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

B = The compound was detected in the blank and the sample

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224213 "Red Hook 3"
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b) Protection of Public Health		EB07-02	EB08-05	EB08-06	EB08-07	EB08-08	EB08-09	EB10-01	EB10-02	EB10-03	EB10-04	EB13-020	EB14-125	EB15-140	EB16-145	EB17-150	SB-3A	SB-3A-19.5	SB-3B	SB-3C	SB-3D	DUP531
Field ID:																								
Lab ID:				04588-002	04467-001	04467-002	04467-003	04467-004	04467-005	04467-006	04588-001	04588-008	04588-009	04083-004	04199-001	04341-007	04395-001	04395-002	04588-003	04588-004	04588-005	04588-006	04588-007	04467-007
Date Sampled:		Residential	tricted Reside	06/01/2017	05/30/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	06/01/2017	06/01/2017	06/02/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	05/31/2017
Depth(ft):		(ppm)	(ppm)	19.5/20	15/16	12/13	17	16/17	17/18	19/20	16/16.5	7/7.5	13/13.5	1.5/2	12/12.5	13.5/14	14/14.5	14.5/15	5/10	19/19.5	5/10	5/10	5/10	
Herbicides (mg/Kg)	CAS			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dalapon	75-99-0	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Dicamba	1918-00-9	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
2,4-D	94-75-7	100	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
2,4,5-TP (Silvex)	93-72-1	58	100	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
2,4,5-T	93-76-5	100	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
2,4-DB	94-82-6	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Dinoseb	88-85-7	NS	NS											ND	ND	ND	ND	ND	~	~	~	~	~	~
Sample #:		Part 375-6.8(b) Protection of Public Health		EB07-02	EB08-05	EB08-06	EB08-07	EB08-08	EB08-09	EB10-01	EB10-02	EB10-03	EB10-04	EB13-020	EB14-125	EB15-140	EB16-145	EB17-150	SB-3A	SB-3A-19.5	SB-3B	SB-3C	SB-3D	DUP531
Field ID:																								
Lab ID:				04588-002	04467-001	04467-002	04467-003	04467-004	04467-005	04467-006	04588-001	04588-008	04588-009	04083-004	04199-001	04341-007	04395-001	04395-002	04588-003	04588-004	04588-005	04588-006	04588-007	04467-007
Date Sampled:		Residential	tricted Reside	06/01/2017	05/30/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	05/31/2017	06/01/2017	06/01/2017	06/02/2017	05/15/2017	05/17/2017	05/23/2017	05/25/2017	05/26/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	06/01/2017	05/31/2017
Depth(ft):		(ppm)	(ppm)	19.5/20	15/16	12/13	17	16/17	17/18	19/20	16/16.5	7/7.5	13/13.5	1.5/2	12/12.5	13.5/14	14/14.5	14.5/15	5/10	19/19.5	5/10	5/10	5/10	
	CAS																							
Cadmium	7440-43-9	2.5	4.3	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Calcium	7440-70-2	NS	NS	~	~	~	~	~	~	~	~	~	~	2700	4320	4220	1460	695	~	~	~	~	~	~
Chromium	7440-47-3	NS	NS	~	~	~	~	~	~	~	~	~	~	12.7	23.1	18.8	12.9	11.3	~	~	~	~	~	~
Cobalt	7440-48-4	30	NS	~	~	~	~	~	~	~	~	~	~	5.91	10.4	13.5	5.67	4.33	~	~	~	~	~	~
Copper	7440-50-8	270	270	~	~	~	~	~	~	~	~	~	~	13.7	22.6	10.6	8.29	5.99	~	~	~	~	~	~
Iron	7439-89-6	2000	NS	~	~	~	~	~	~	~	~	~	~	**14700**	**26900**	**33800**	**15700**	**19500**	~	~	~	~	~	~
Lead	7439-92-1	400	400	~	~	~	~	~	~	~	~	~	~	**1010**	58.2	8.17	15.4	10.3	169	~	34.8	18.9	7.05	~
Magnesium	7439-95-4	NS	NS	~	~	~	~	~	~	~	~	~	~	3030	5640	10900	2560	1760	~	~	~	~	~	~
Manganese	7439-96-5	2000	2000	~	~	~	~	~	~	~	~	~	~	226	384	183	146	124	~	~	~	~	~	~
Mercury	7439-97-6	0.81	0.81	~	~	~	~	~	~	~	~	~	~	0.166	0.051	ND	0.022	0.016	~	~	~	~	~	~
Nickel	7440-02-0	140	310	~	~	~	~	~	~	~	~	~	~	17.0	33.6	25.5	18.2	11.5	~	~	~	~	~	~
Potassium	7440-09-7'	NS	NS	~	~	~	~	~	~	~	~	~	~	1130	2270	8560	1090	1120	~	~	~	~	~	~
Selenium	7782-49-2	36	180	~	~	~	~	~	~	~	~	~	~	1.18	2.90	ND	ND	0.651	~	~	~	~	~	~
Silver	7440-22-4	36	180	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Sodium	7440-23-5	NS	NS	~	~	~	~	~	~	~	~	~	~	285	45.7	430	16.1	22.1	~	~	~	~	~	~
Thallium	7440-28-0	NS	NS	~	~	~	~	~	~	~	~	~	~	ND	ND	0.271	ND	ND	~	~	~	~	~	~
Vanadium	7440-62-2	100	NS	~	~	~	~	~	~	~	~	~	~	15.2	28.9	**60.3**	15.8	16.0	~	~	~	~	~	~
Zinc	7440-66-6	2200	10000	~	~	~	~	~	~	~	~	~	~	43.8	75.5	53.5	29.1	25.6	~	~	~	~	~	~
General Analytical				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Hexavalent Chromium-mg/Kg	18540-29-9	22	110	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
Cyanide, Total-mg/Kg	57-12-5	27	27	~	~	~	~	~	~	~	~	~	~	ND	ND	ND	ND	ND	~	~	~	~	~	~
TCLP Metals (mg/L)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
TCLP Lead	7439-92-1	NS	NS	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	1.30	~	ND	ND	ND	~

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

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All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

B = The compound was detected in the blank and the sample

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 3
Brownfield Cleanup Program
C224213 "Red Hook 3"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	LMW01	LMW01 FILT	LMW 2	LMW 2 FILT	LMW03	LMW03 FILT	LMW04	LMW04 FILT	LMW05	LMW05 FILT	LMW06	LMW06 FILT	LMW 7S	LMW 7S FIL1	LMW 7D	LMW 7D FILT	LMW 8S	LMW 8S FILT	LMW 8D	LMW 8D FILT	LMW09S	LMW09S FILT	LMW09D
Field ID:																									
Lab ID:			04815-001	04815-009	04934-001	04934-010	04815-003	04815-011	04815-004	04815-012	04815-005	04815-013	04838-003	04838-015	04934-002	04934-011	04934-003	04934-012	04934-004	04934-013	04934-005	04934-014	04838-006	04838-018	04838-007
Date Sampled:			06/09/2017	06/09/2017	06/14/2017	06/14/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/12/2017	06/12/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/12/2017	06/12/2017	06/12/2017
Depth(ft):																									
	CAS																								
Volatiles (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dichlorodifluoromethane	75-71-8	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Chloromethane	74-87-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Vinyl chloride	75-01-4	2	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Bromomethane	74-83-9	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Chloroethane	75-00-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Trichlorofluoromethane	75-69-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,1-Dichloroethene	75-35-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Acetone	67-64-1	50	24.5	~	**252**	~	9.56	~	13.1	~	34.5	~	ND	~	ND	~	11.4	~	ND	~	ND	~	ND	~	ND
Carbon disulfide	75-15-0	60	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	4.96	~	ND	~	19.5
Methylene chloride	75-09-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
trans-1,2-Dichloroethene	156-60-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Methyl tert-butyl ether (MTBE)	1634-04-4	10	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	2.93	~	ND	~	**51.0**	~	ND	~	ND
1,1-Dichloroethane	75-34-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
cis-1,2-Dichloroethene	156-59-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Butanone (MEK)	78-93-3	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Bromochloromethane	74-97-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Chloroform	67-66-3	7	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	1.98	~	ND	~	ND	~	ND	~	ND
1,1,1-Trichloroethane	71-55-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Carbon tetrachloride	56-23-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2-Dichloroethane (EDC)	107-06-2	0.6	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Benzene	71-43-2	1	ND	~	**34.4**	~	ND	~	ND	~	ND	~	ND	~	ND	~	**56.8**	~	**183**	~	**1.39**	~	ND	~	ND
Trichloroethene	79-01-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2-Dichloropropane	78-87-5	1	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,4-Dioxane	123-91-1	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Bromodichloromethane	75-27-4	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
cis-1,3-Dichloropropene	10061-01-5	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Toluene	108-88-3	5	1.87	~	**42.3**	~	ND	~	ND	~	0.939	~	ND	~	**6.84**	~	3.54	~	**20.6**	~	ND	~	ND	~	ND
trans-1,3-Dichloropropene	10061-02-6	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,1,2-Trichloroethane	79-00-5	1	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Tetrachloroethene	127-18-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Hexanone	591-78-6	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dibromochloromethane	124-48-1	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2-Dibromoethane (EDB)^	106-93-4	0.0006	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Chlorobenzene	108-90-7	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Ethylbenzene	100-41-4	5	ND	~	**84.9**	~	ND	~	ND	~	2.16	~	ND	~	**73.2**	~	**53.5**	~	**1980**	~	3.75	~	ND	~	**5.21**
Total Xylenes	1330-20-7	15	ND	~	**77.0**	~	ND	~	ND	~	6.10	~	ND	~	**276**	~	**151**	~	**2920**	~	2.18	~	ND	~	2.46
Styrene	100-42-5	930	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Bromoform	75-25-2	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Isopropylbenzene	98-82-8	5	ND	~	**24.9**	~	ND	~	ND	~	1.68	~	ND	~	**45.6**	~	**19.0**	~	**123**	~	**5.30**	~	ND	~	0.900
1,1,2,2-Tetrachloroethane	79-34-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,3-Dichlorobenzene	541-73-1	3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,4-Dichlorobenzene	106-46-7	3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2-Dichlorobenzene	95-50-1	3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2-Dibromo-3-chloropropane^	96-12-8	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2,4-Trichlorobenzene	120-82-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2,3-Trichlorobenzene	87-61-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Methyl acetate	79-20-9	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Cyclohexane	110-82-7	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	5.82	~	3.84	~	8.25	~	1.91	~	ND	~	ND
Methylcyclohexane	108-87-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	18.0	~	6.06	~	9.93	~	0.620	~	ND	~	ND
1,3-Dichloropropene (cis- and trans-)	542-75-6	0.4	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
TOTAL VO's:		NS	26.4	~	516	~	9.56	~	13.1	~	45.4	~	ND	~	425	~	310	~	5240	~	71.1	~	ND	~	28.1
TOTAL TIC's:		NS	283	~	41800	~	69.1	~	ND	~	1290	~	ND	~	4780	~	2190	~	20900	~	210	~	ND	~	30.9
TOTAL VO's & TIC's:		NS	309	~	42300	~	78.7	~	13.1	~	1340	~	ND	~	5210	~	2500	~	26100	~	281	~	ND	~	59.0

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

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BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

~ = Sample not analyzed for

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224213 "Red Hook 3"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	LMW09D FILT	LMW10S	LMW10S FILT	LMW10D	LMW10D FILT	LMW11S	LMW11S FILT	LMW11D FILT	LMW11D	LMW12S	LMW12S FILT	LMW12D	LMW12D FILT	TMW-1	TMW-1 FILT	MW-1	MW-1 FILT	MW-3	MW-3 FILT
Field ID:																					
Lab ID:			04838-019	04862-002	04862-010	04862-003	04862-011	04838-008	04838-020	04838-021	04838-009	04838-010	04838-022	04862-004	04862-012	04838-001	04838-016	04862-001	04862-009	04838-002	04838-014
Date Sampled:			06/12/2017	06/13/2017	06/13/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017
Depth(ft):																					
Volatiles (ug/L)	CAS		Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dichlorodifluoromethane	75-71-8	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Chloromethane	74-87-3	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Vinyl chloride	75-01-4	2	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Bromomethane	74-83-9	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Chloroethane	75-00-3	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Trichlorofluoromethane	75-69-4	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,1-Dichloroethene	75-35-4	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Acetone	67-64-1	50	~	ND	~	ND	~	9.33	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Carbon disulfide	75-15-0	60	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Methylene chloride	75-09-2	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
trans-1,2-Dichloroethene	156-60-5	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Methyl tert-butyl ether (MTBE)	1634-04-4	10	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,1-Dichloroethane	75-34-3	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
cis-1,2-Dichloroethene	156-59-2	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2-Butanone (MEK)	78-93-3	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Bromochloromethane	74-97-5	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Chloroform	67-66-3	7	~	ND	~	ND	~	ND	~	~	ND	ND	~	1.37	~	ND	~	ND	~	ND	~
1,1,1-Trichloroethane	71-55-6	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Carbon tetrachloride	56-23-5	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichloroethane (EDC)	107-06-2	0.6	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Benzene	71-43-2	1	~	**49.2**	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	**401**	~	ND	~
Trichloroethene	79-01-6	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichloropropane	78-87-5	1	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,4-Dioxane	123-91-1	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	2340	~	ND	~
Bromodichloromethane	75-27-4	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
cis-1,3-Dichloropropene	10061-01-5	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Toluene	108-88-3	5	~	**17.0**	~	**13.4**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**45.5**	~	ND	~
trans-1,3-Dichloropropene	10061-02-6	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,2-Trichloroethane	79-00-5	1	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Tetrachloroethene	127-18-4	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2-Hexanone	591-78-6	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Dibromochloromethane	124-48-1	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dibromoethane (EDB)^	106-93-4	0.0006	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Chlorobenzene	108-90-7	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Ethylbenzene	100-41-4	5	~	**1290**	~	**775**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**1630**	~	3.40	~
Total Xylenes	1330-20-7	15	~	**844**	~	**623**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**1600**	~	ND	~
Styrene	100-42-5	930	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Bromoform	75-25-2	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Isopropylbenzene	98-82-8	5	~	**87.1**	~	**53.3**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**59.5**	~	**10.6**	~
1,1,2,2-Tetrachloroethane	79-34-5	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,3-Dichlorobenzene	541-73-1	3	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,4-Dichlorobenzene	106-46-7	3	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichlorobenzene	95-50-1	3	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dibromo-3-chloropropane^	96-12-8	0.04	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,4-Trichlorobenzene	120-82-1	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,3-Trichlorobenzene	87-61-6	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Methyl acetate	79-20-9	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Cyclohexane	110-82-7	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	2.64	~
Methylcyclohexane	108-87-2	NS	~	14.3	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	1.96	~
1,3-Dichloropropene (cis- and trans-)	542-75-6	0.4	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
TOTAL VO's:		NS	~	2300	~	1460	~	9.33	~	~	ND	ND	~	1.37	~	ND	~	6080	~	18.6	~
TOTAL TIC's:		NS	~	12600	~	9940	~	11.2	~	~	ND	ND	~	ND	~	ND	~	14500	~	199	~
TOTAL VO's & TIC's:		NS	~	14900	~	11400	~	20.5	~	~	ND	ND	~	1.37	~	ND	~	20600	~	218	~

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Table 3
Brownfield Cleanup Program
C224213 "Red Hook 3"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	LMW01	LMW01 FILT	LMW 2	LMW 2 FILT	LMW03	LMW03 FILT	LMW04	LMW04 FILT	LMW05	LMW05 FILT	LMW06	LMW06 FILT	LMW 7S	LMW 7S FIL1	LMW 7D	LMW 7D FILT	LMW 8S	LMW 8S FILT	LMW 8D	LMW 8D FILT	LMW09S	LMW09S FILT	LMW09D
Field ID:																									
Lab ID:			04815-001	04815-009	04934-001	04934-010	04815-003	04815-011	04815-004	04815-012	04815-005	04815-013	04838-003	04838-015	04934-002	04934-011	04934-003	04934-012	04934-004	04934-013	04934-005	04934-014	04838-006	04838-018	04838-007
Date Sampled:			06/09/2017	06/09/2017	06/14/2017	06/14/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/12/2017	06/12/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/12/2017	06/12/2017	06/12/2017
Depth(ft):																									
	CAS																								
Semivolatiles - BNA (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
N-Nitrosodimethylamine	62-75-9	NS	~	~	ND	~	~	~	~	~	~	~	ND	~	ND	~	ND	~	ND	~	ND	~	~	~	~
Benzaldehyde	100-52-7	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Phenol	108-95-2	see total phenols	ND	~	39.0	~	ND	~	ND	~	ND	~	ND	~	ND	~	21.9	~	ND	~	ND	~	ND	~	ND
Bis(2-chloroethyl) ether	111-44-4	1	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Chlorophenol	95-57-8	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Methylphenol	95-48-7	see total phenols	ND	~	293	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,2'-Oxybis(1-Chloropropane)	108-60-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Methylphenol **	106-44-5	see total phenols	ND	~	218	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
N-Nitrosodi-n-propylamine	621-64-7	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Acetophenone	98-86-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Hexachloroethane	67-72-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Nitrobenzene	98-95-3	0.4	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Isophorone	78-59-1	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Nitrophenol	88-75-5	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-Dimethylphenol	105-67-9	see total phenols	ND	~	630	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Bis(2-chloroethoxy) methane	111-91-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-Dichlorophenol	120-83-2	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Naphthalene	91-20-3	10	1.32	~	**3980**	~	ND	~	ND	~	ND	~	ND	~	3.66	~	3.87	~	**4030**	~	ND	~	ND	~	ND
4-Chloroaniline	106-47-8	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Hexachlorobutadiene	87-68-3	0.5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Caprolactam	105-60-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Chloro-3-methylphenol	59-50-7	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Methylnaphthalene	91-57-6	NS	0.883	~	1730	~	ND	~	ND	~	ND	~	ND	~	8.67	~	0.935	~	792	~	ND	~	ND	~	ND
Hexachlorocyclopentadiene	77-47-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,6-Trichlorophenol	88-06-2	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,5-Trichlorophenol	95-95-4	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,1'-Biphenyl	92-52-4	5	0.164	~	**369**	~	ND	~	ND	~	ND	~	ND	~	**17.9**	~	0.157	~	**101**	~	ND	~	ND	~	ND
2-Chloronaphthalene	91-58-7	10	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Nitroaniline	88-74-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dimethyl phthalate	131-11-3	50	0.418	~	ND	~	ND	~	ND	~	2.83	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,6-Dinitrotoluene	606-20-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Acenaphthylene	208-96-8	NS	0.267	~	35.1	~	ND	~	ND	~	ND	~	ND	~	4.75	~	0.712	~	21.9	~	ND	~	ND	~	ND
3-Nitroaniline	99-09-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Acenaphthene	83-32-9	20	2.23	~	**1590**	~	0.479	~	0.929	~	4.18	~	ND	~	ND	~	**25.5**	~	**233**	~	ND	~	ND	~	ND
2,4-Dinitrophenol	51-28-5	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Nitrophenol	100-02-7	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-Dinitrotoluene	121-14-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dibenzofuran	132-64-9	NS	0.898	~	1130	~	ND	~	ND	~	ND	~	ND	~	1.40	~	0.389	~	18.5	~	ND	~	ND	~	ND
Diethyl phthalate	84-66-2	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Fluorene	86-73-7	50	1.62	~	**977**	~	0.271	~	0.424	~	ND	~	ND	~	32.1	~	8.90	~	**144**	~	ND	~	ND	~	ND
4-Chlorophenyl phenyl ether	7005-72-3	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Nitroaniline	100-01-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,3,4,6-Tetrachlorophenol	58-90-2	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,6-Dinitro-2-methylphenol	534-52-1	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
N-Nitrosodiphenylamine	86-30-6	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2,-Diphenylhydrazine		NS	~	~	ND	~	~	~	~	~	~	~	ND	~	ND	~	ND	~	ND	~	ND	~	~	~	~
4-Bromophenyl phenyl ether	101-55-3	NS	ND	~	2.00	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Hexachlorobenzene	118-74-1	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Atrazine	1912-24-9	7.5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Pentachlorophenol	87-86-5	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Phenanthrene	85-01-8	50	4.24	~	**1570**	~	0.198	~	0.217	~	1.19	~	ND	~	43.8	~	6.38	~	**297**	~	ND	~	ND	~	ND
Anthracene	120-12-7	50	1.44	~	**382**	~	ND	~	ND	~	0.319	~	ND	~	10.3	~	3.43	~	**86.3**	~	ND	~	ND	~	ND
Carbazole	86-74-8	NS	0.684	~	82.8	~	ND	~	ND	~	ND	~	ND	~	0.425	~	7.50	~	13.7	~	ND	~	ND	~	ND
Di-n-butyl phthalate	84-74-2	50	0.315	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Fluoranthene	206-44-0	50	ND	~	**458**	~	ND	~	ND	~	1.75	~	ND	~	5.15	~	2.06	~	**64.2**	~	ND	~	ND	~	ND
Benzidine		5	~	~	ND	~	~	~	~	~	~	~	ND	~	ND	~	ND	~	ND	~	ND	~	~	~	~
Pyrene	129-00-0	50	2.54	~	**284**	~	ND	~	0.532	~	4.28	~	ND	~	8.78	~	2.45	~	**85.9**	~	ND	~	ND	~	ND
Butyl benzyl phthalate	85-68-7	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
3,3'-Dichlorobenzidine	91-94-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Benzo[a]anthracene	56-55-3	0.002	**1.12**	~	**97.6**	~	ND	~	ND	~	**1.63**	~	ND	~	**0.905**	~	ND	~	**24.5**	~	ND	~	ND	~	ND
Chrysene	218-01-9	0.002	**0.990**	~	**79.2**	~	ND	~	ND	~	**1.75**	~	ND	~	**1.71**	~	ND	~	**20.3**	~	ND	~	ND	~	ND
Bis(2-ethylhexyl) phthalate	117-81-7	5	3.44	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Di-n-octyl phthalate	117-84-0	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Benzo[b]fluoranthene	205-99-2	0.002	**0.799**	~	**34.7**	~	ND	~	ND	~	**1.07**	~	ND	~	**0.299**	~	ND	~	**7.37**	~	ND	~	ND	~	ND
Benzo[k]fluoranthene	207-08-9	0.002	**0.825**	~	**39.9**	~	ND	~	ND	~	**0.940**	~	ND	~	**0.225**	~	ND	~	**6.63**	~	ND	~	ND	~	ND
Benzo[a]pyrene	50-32-8	NS	1.11	~	55.9	~	ND	~	ND	~	1.70	~	ND	~	0.642	~	ND	~	14.3	~	ND	~	ND	~	ND
Indeno[1,2,3-cd]pyrene	193-39-5	0.002	**0.663**	~	**20.0**	~	ND	~	ND	~	**0.874**	~	ND	~	**0.240**	~	ND	~	**4.49**	~	ND	~	ND	~	ND
Dibenz[a,h]anthracene	53-70-3	NS	ND	~	13.3	~	ND	~	ND	~	ND	~	ND	~	0.150	~	ND	~	2.67	~	ND	~	ND	~	ND
Benzo[g,h,i]perylene	191-24-2	NS	0.781	~	20.2	~	ND	~	ND	~	1.21	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
TOTAL BNA'S:		NS	26.7	~	14100	~	0.948	~	2.10	~	23.7	~	ND	~	141	~	84.2	~	5970	~	ND	~	ND	~	ND
TOTAL TIC's:		NS	2230	~	1390	~	25.3	~	57.4	~	371	~	ND	~	515	~	460	~	2020	~	52.1	~	ND	~	ND
TOTAL BNA'S & TIC's:		NS	2260	~	15500	~	26.2	~	59.5	~	395	~	ND	~	656	~	544	~	7990	~	52.1	~	ND	~	ND

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

BOLD Conc Indicates a concentration that exceeds applicable criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

~ = Sample not analyzed for

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224213 "Red Hook 3"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	LMW09D FILT	LMW10S	LMW10S FILT	LMW10D	LMW10D FILT	LMW11S	LMW11S FILT	LMW11D FILT	LMW11D	LMW12S	LMW12S FILT	LMW12D	LMW12D FILT	TMW-1	TMW-1 FILT	MW-1	MW-1 FILT	MW-3	MW-3 FILT
Field ID:																					
Lab ID:			04838-019	04862-002	04862-010	04862-003	04862-011	04838-008	04838-020	04838-021	04838-009	04838-010	04838-022	04862-004	04862-012	04838-001	04838-016	04862-001	04862-009	04838-002	04838-014
Date Sampled:			06/12/2017	06/13/2017	06/13/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017
Depth(ft):																					
	CAS																				
Semivolatiles - BNA (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
N-Nitrosodimethylamine	62-75-9	NS	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~
Benzaldehyde	100-52-7	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Phenol	108-95-2	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Bis(2-chloroethyl) ether	111-44-4	1	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2-Chlorophenol	95-57-8	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2-Methylphenol	95-48-7	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,2'-Oxybis(1-Chloropropane)	108-60-1	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4-Methylphenol **	106-44-5	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	1.39	~	ND	~
N-Nitrosodi-n-propylamine	621-64-7	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Acetophenone	98-86-2	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Hexachloroethane	67-72-1	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Nitrobenzene	98-95-3	0.4	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Isophorone	78-59-1	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2-Nitrophenol	88-75-5	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-Dimethylphenol	105-67-9	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	4.34	~	ND	~
Bis(2-chloroethoxy) methane	111-91-1	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-Dichlorophenol	120-83-2	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Naphthalene	91-20-3	10	~	**2040**	~	3.91	~	ND	~	~	ND	ND	~	2.02	~	ND	~	**1860**	~	ND	~
4-Chloroaniline	106-47-8	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Hexachlorobutadiene	87-68-3	0.5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Caprolactam	105-60-2	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4-Chloro-3-methylphenol	59-50-7	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2-Methylnaphthalene	91-57-6	NS	~	362	~	28.7	~	ND	~	~	ND	ND	~	0.331	~	ND	~	287	~	ND	~
Hexachlorocyclopentadiene	77-47-4	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,6-Trichlorophenol	88-06-2	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,5-Trichlorophenol	95-95-4	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,1'-Biphenyl	92-52-4	5	~	**17.0**	~	**13.8**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**22.1**	~	ND	~
2-Chloronaphthalene	91-58-7	10	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2-Nitroaniline	88-74-4	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Dimethyl phthalate	131-11-3	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,6-Dinitrotoluene	606-20-2	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Acenaphthylene	208-96-8	NS	~	3.17	~	2.16	~	ND	~	~	ND	ND	~	ND	~	ND	~	6.49	~	0.304	~
3-Nitroaniline	99-09-2	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Acenaphthene	83-32-9	20	~	**110**	~	**51.0**	~	ND	~	~	ND	0.445	~	0.518	~	0.253	~	**95.7**	~	10.7	~
2,4-Dinitrophenol	51-28-5	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4-Nitrophenol	100-02-7	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-Dinitrotoluene	121-14-2	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Dibenzofuran	132-64-9	NS	~	2.68	~	2.49	~	ND	~	~	ND	ND	~	ND	~	ND	~	7.96	~	0.188	~
Diethyl phthalate	84-66-2	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Fluorene	86-73-7	50	~	48.5	~	29.6	~	ND	~	~	ND	ND	~	ND	~	ND	~	**59.2**	~	0.728	~
4-Chlorophenyl phenyl ether	7005-72-3	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4-Nitroaniline	100-01-6	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,4,5-Tetrachlorobenzene	95-94-3	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,3,4,6-Tetrachlorophenol	58-90-2	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4,6-Dinitro-2-methylphenol	534-52-1	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
N-Nitrosodiphenylamine	86-30-6	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,-Diphenylhydrazine		NS	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~
4-Bromophenyl phenyl ether	101-55-3	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Hexachlorobenzene	118-74-1	0.04	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Atrazine	1912-24-9	7.5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Pentachlorophenol	87-86-5	see total phenols	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Phenanthrene	85-01-8	50	~	**84.4**	~	43.3	~	ND	~	~	0.301	ND	~	0.240	~	ND	~	**110**	~	0.355	~
Anthracene	120-12-7	50	~	21.2	~	9.82	~	ND	~	~	ND	ND	~	ND	~	ND	~	29.4	~	0.512	~
Carbazole	86-74-8	NS	~	3.23	~	0.663	~	ND	~	~	ND	ND	~	ND	~	ND	~	18.7	~	ND	~
Di-n-butyl phthalate	84-74-2	50	~	ND	~	ND	~	ND	~	~	ND	0.230	~	ND	~	ND	~	ND	~	ND	~
Fluoranthene	206-44-0	50	~	16.0	~	4.59	~	ND	~	~	ND	ND	~	ND	~	0.252	~	27.1	~	1.49	~
Benzidine		5	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~
Pyrene	129-00-0	50	~	32.3	~	ND	~	ND	~	~	ND	ND	~	ND	~	0.346	~	46.7	~	2.54	~
Butyl benzyl phthalate	85-68-7	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
3,3'-Dichlorobenzidine	91-94-1	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Benzo[a]anthracene	56-55-3	0.002	~	**8.14**	~	**0.857**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**14.0**	~	ND	~
Chrysene	218-01-9	0.002	~	**7.18**	~	**1.15**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**13.4**	~	ND	~
Bis(2-ethylhexyl) phthalate	117-81-7	5	~	0.624	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	0.562	~	0.745	~
Di-n-octyl phthalate	117-84-0	50	~	0.503	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Benzo[b]fluoranthene	205-99-2	0.002	~	**3.18**	~	**0.266**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**4.43**	~	ND	~
Benzo[k]fluoranthene	207-08-9	0.002	~	**3.13**	~	**0.274**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**5.96**	~	ND	~
Benzo[a]pyrene	50-32-8	NS	~	5.75	~	0.543	~	ND	~	~	ND	ND	~	ND	~	ND	~	9.32	~	ND	~
Indeno[1,2,3-cd]pyrene	193-39-5	0.002	~	**2.42**	~	**0.223**	~	ND	~	~	ND	ND	~	ND	~	ND	~	**3.05**	~	ND	~
Dibenz[a,h]anthracene	53-70-3	NS	~	1.66	~	0.117	~	ND	~	~	ND	ND	~	ND	~	ND	~	1.52	~	ND	~
Benzo[g,h,i]perylene	191-24-2	NS	~	3.41	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	4.82	~	ND	~
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
TOTAL BNA'S:		NS	~	2780	~	193	~	ND	~	~	0.301	0.675	~	3.11	~	0.851	~	2630	~	17.6	~
TOTAL TIC's:		NS	~	1460	~	433	~	ND	~	~	ND	25.5	~	ND	~	16.9	~	1280	~	4.70	~
TOTAL BNA'S & TIC's:		NS	~	4240	~	626	~	ND	~	~	0.301	26.2	~	3.11	~	17.8	~	3910	~	22.3	~

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

BOLD Conc Indicates a concentration that exceeds applicable criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

~ = Sample not analyzed for

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224213 "Red Hook 3"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	LMW01	LMW01 FILT	LMW 2	LMW 2 FILT	LMW03	LMW03 FILT	LMW04	LMW04 FILT	LMW05	LMW05 FILT	LMW06	LMW06 FILT	LMW 7S	LMW 7S FIL1	LMW 7D	LMW 7D FILT	LMW 8S	LMW 8S FILT	LMW 8D	LMW 8D FILT	LMW09S	LMW09S FILT	LMW09D
Field ID:																									
Lab ID:			04815-001	04815-009	04934-001	04934-010	04815-003	04815-011	04815-004	04815-012	04815-005	04815-013	04838-003	04838-015	04934-002	04934-011	04934-003	04934-012	04934-004	04934-013	04934-005	04934-014	04838-006	04838-018	04838-007
Date Sampled:			06/09/2017	06/09/2017	06/14/2017	06/14/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/09/2017	06/12/2017	06/12/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/14/2017	06/12/2017	06/12/2017	06/12/2017
Depth(ft):																									
	CAS																								
PCB's (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aroclor-1016	12674-11-2	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1221	11104-28-2	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1232	11141-16-5	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1242	53469-21-9	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1248	12672-29-6	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1254	11097-69-1	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1260	11096-82-5	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1262	37324-23-5	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1268	11100-14-4	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
PCBs	1336-36-3	0.09	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Pesticides (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
alpha-BHC	319-84-6	0.01	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
beta-BHC	319-85-7	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
gamma-BHC (Lindane)	58-89-9	0.05	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
delta-BHC	319-86-8	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Heptachlor	76-44-8	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aldrin	309-00-2	ND	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Heptachlor epoxide	1024-57-3	0.03	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan I	959-98-8	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,4'-DDE	72-55-9	0.2	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dieldrin	60-57-1	0.004	ND	~	ND	~	ND	~	ND	~	ND	~	0.00581	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endrin	72-20-8	ND	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan II	33213-65-9	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,4'-DDD	72-54-8	0.3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endrin aldehyde	7421-93-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan sulfate	1031-07-8	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,4'-DDT	50-29-3	0.2	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endrin ketone	53494-70-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Methoxychlor	72-43-5	35	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
alpha-Chlordane	5103-71-9	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
gamma-Chlordane	5103-74-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Toxaphene	8001-35-2	0.06	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan (I and II)	115-29-7	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Chlordane (alpha and gamma)	57-74-9	0.05	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Herbicides (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dalapon	75-99-0	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dicamba	1918-00-9	0.44	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-D	94-75-7	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,5-TP (Silvex)	93-72-1	0.26	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,5-T	93-76-5	35	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-DB	94-82-6	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dinoseb	88-85-7	2	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Sample #:		**TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)**	**LMW01**	**LMW01 FILT**	**LMW 2**	**LMW 2 FILT**	**LMW03**	**LMW03 FILT**	**LMW04**	**LMW04 FILT**	**LMW05**	**LMW05 FILT**	**LMW06**	**LMW06 FILT**	**LMW 7S**	**LMW 7S FIL1**	**LMW 7D**	**LMW 7D FILT**	**LMW 8S**	**LMW 8S FILT**	**LMW 8D**	**LMW 8D FILT**	**LMW09S**	**LMW09S FILT**	**LMW09D**
Field ID:																									
Lab ID:			**04815-001**	**04815-009**	**04934-001**	**04934-010**	**04815-003**	**04815-011**	**04815-004**	**04815-012**	**04815-005**	**04815-013**	**04838-003**	**04838-015**	**04934-002**	**04934-011**	**04934-003**	**04934-012**	**04934-004**	**04934-013**	**04934-005**	**04934-014**	**04838-006**	**04838-018**	**04838-007**
Date Sampled:			**06/09/2017**	**06/09/2017**	**06/14/2017**	**06/14/2017**	**06/09/2017**	**06/09/2017**	**06/09/2017**	**06/09/2017**	**06/09/2017**	**06/09/2017**	**06/12/2017**	**06/12/2017**	**06/14/2017**	**06/14/2017**	**06/14/2017**	**06/14/2017**	**06/14/2017**	**06/14/2017**	**06/14/2017**	**06/14/2017**	**06/12/2017**	**06/12/2017**	**06/12/2017**
Depth(ft):																									
	CAS																								
Metals (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aluminum	7429-90-5	2000	638	10.5	27.0	13.5	116	ND	135	6.41	236	6.70	261	5.67	2570	4.15	35.0	24.9	616	4.72	19.6	10.8	48.5	5.16	112
Antimony	7440-36-0	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	7440-38-2	50	5.04	5.08	22.1	25.7	3.21	ND	13.1	12.0	2.45	1.25	3.08	1.69	9.77	7.57	8.38	6.42	17.1	20.0	2.92	2.31	ND	ND	9.20
Barium	7440-39-3	2000	566	491	422	453	262	261	342	333	156	148	196	178	287	200	514	305	473	473	90.5	56.1	144	164	108
Beryllium	7440-41-7	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	7440-43-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	7440-70-2	NS	349000	264000	185000	209000	197000	200000	200000	203000	195000	190000	190000	173000	131000	133000	51900	49000	184000	199000	209000	97600	90900	91600	6760
Chromium	7440-47-3	100	3.98	1.35	1.30	ND	ND	ND	1.34	ND	2.07	1.02	ND	ND	4.43	ND	ND	ND	1.78	ND	ND	ND	ND	ND	ND
Cobalt	7440-48-4	NS	0.998	ND	1.08	1.22	ND	ND	ND	ND	ND	ND	ND	ND	13.4	4.09	ND	ND	1.15	ND	4.64	2.16	1.08	ND	ND
Copper	7440-50-8	1000	14.1	16.0	1.64	ND	5.99	ND	13.5	1.95	17.0	8.33	5.28	5.92	23.3	7.47	3.89	ND	3.75	ND	1.52	ND	6.21	5.59	4.46
Iron	7439-89-6	600	81400	65400	83700	93200	55300	55800	71900	72700	77600	73900	3010	1820	13500	3600	1740	823	43900	44000	912	413	193	188	392
Lead	7439-92-1	50	34.8	ND	ND	ND	1.35	ND	1.34	ND	44.0	ND	13.0	ND	27.2	ND	ND	ND	1.54	ND	ND	ND	ND	ND	ND
Magnesium	7439-95-4	35000	617000	381000	25000	4230	10200	10600	21600	17400	85000	81800	257000	212000	22800	22000	73900	51400	44300	47400	957000	382000	8650	9160	11100
Manganese	7439-96-5	600	1820	1530	672	730	1050	1070	1050	1020	1100	1050	461	473	3540	3420	281	185	1510	1600	3960	1820	770	165	333
Mercury	7439-97-6	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	7440-02-0	200	2.70	ND	1.61	1.51	ND	ND	1.05	ND	ND	ND	3.69	ND	28.7	3.48	1.10	ND	5.87	ND	2.67	1.21	2.64	ND	4.23
Potassium	7440-09-7	NS	207000	137000	28800	32500	25600	26200	39400	39100	52600	50800	120000	99700	14000	13900	32800	26300	18100	19500	269000	144000	4710	5280	35400
Selenium	7782-49-2	20	ND	ND	1.86	ND	ND	ND	ND	ND	ND	ND	2.09	ND	2.42	ND	5.33	ND	2.37	ND	ND	ND	5.50	4.26	ND
Silver	7440-22-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	7440-23-5	case by case	4850000	3640000	99100	111000	89000	91900	116000	117000	222000	214000	2030000	1760000	106000	109000	824000	490000	507000	542000	8980000	4500000	35000	31800	374000
Thallium	7440-28-0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	7440-62-2	NS	5.22	1.39	12.8	7.24	ND	ND	1.30	ND	1.82	0.877	2.45	2.42	9.02	ND	ND	ND	0.829	ND	ND	ND	2.12	ND	2.00
Zinc	7440-66-6	5000	69.5	1.22	ND	ND	4.99	3.11	2.36	1.55	5.75	2.69	4.18	ND	14.9	ND	ND	ND	ND	ND	ND	ND	2.34	ND	1.56
General Analytical			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Hexavalent Chromium-ug/L	18540-29-9	100	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Cyanide, Total-ug/L	57-12-5	400	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

BOLD Conc Indicates a concentration that exceeds applicable criteria.

BOLD RL indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

~ = Sample not analyzed for

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224213 "Red Hook 3"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	LMW09D FILT	LMW10S	LMW10S FILT	LMW10D	LMW10D FILT	LMW11S	LMW11S FILT	LMW11D FILT	LMW11D	LMW12S	LMW12S FILT	LMW12D	LMW12D FILT	TMW-1	TMW-1 FILT	MW-1	MW-1 FILT	MW-3	MW-3 FILT
Field ID:																					
Lab ID:			04838-019	04862-002	04862-010	04862-003	04862-011	04838-008	04838-020	04838-021	04838-009	04838-010	04838-022	04862-004	04862-012	04838-001	04838-016	04862-001	04862-009	04838-002	04838-014
Date Sampled:			06/12/2017	06/13/2017	06/13/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017
Depth(ft):																					
	CAS																				
PCB's (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aroclor-1016	12674-11-2	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1221	11104-28-2	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1232	11141-16-5	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1242	53469-21-9	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1248	12672-29-6	see total PCBs	~	ND	~	ND	~	0.262	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1254	11097-69-1	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1260	11096-82-5	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1262	37324-23-5	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1268	11100-14-4	see total PCBs	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
PCBs	1336-36-3	0.09	~	ND	~	ND	~	0.262	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Pesticides (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
alpha-BHC	319-84-6	0.01	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
beta-BHC	319-85-7	0.04	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
gamma-BHC (Lindane)	58-89-9	0.05	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
delta-BHC	319-86-8	0.04	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Heptachlor	76-44-8	0.04	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Aldrin	309-00-2	ND	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Heptachlor epoxide	1024-57-3	0.03	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan I	959-98-8	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4,4'-DDE	72-55-9	0.2	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Dieldrin	60-57-1	0.004	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Endrin	72-20-8	ND	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan II	33213-65-9	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4,4'-DDD	72-54-8	0.3	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Endrin aldehyde	7421-93-4	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan sulfate	1031-07-8	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
4,4'-DDT	50-29-3	0.2	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Endrin ketone	53494-70-5	5	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Methoxychlor	72-43-5	35	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
alpha-Chlordane	5103-71-9	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
gamma-Chlordane	5103-74-2	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Toxaphene	8001-35-2	0.06	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan (I and II)	115-29-7	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Chlordane (alpha and gamma)	57-74-9	0.05	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Herbicides (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dalapon	75-99-0	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Dicamba	1918-00-9	0.44	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-D	94-75-7	50	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,5-TP (Silvex)	93-72-1	0.26	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,5-T	93-76-5	35	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-DB	94-82-6	NS	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Dinoseb	88-85-7	2	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	LMW09D FILT	LMW10S	LMW10S FILT	LMW10D	LMW10D FILT	LMW11S	LMW11S FILT	LMW11D FILT	LMW11D	LMW12S	LMW12S FILT	LMW12D	LMW12D FILT	TMW-1	TMW-1 FILT	MW-1	MW-1 FILT	MW-3	MW-3 FILT
Field ID:																					
Lab ID:			04838-019	04862-002	04862-010	04862-003	04862-011	04838-008	04838-020	04838-021	04838-009	04838-010	04838-022	04862-004	04862-012	04838-001	04838-016	04862-001	04862-009	04838-002	04838-014
Date Sampled:			06/12/2017	06/13/2017	06/13/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017	06/13/2017	06/13/2017	06/12/2017	06/12/2017
Depth(ft):																					
	CAS																				
Metals (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aluminum	7429-90-5	2000	16.2	324	4.79	31.6	5.67	605	113	10.9	25.7	46.5	ND	23.7	6.51	17.1	4.30	27.3	ND	107	ND
Antimony	7440-36-0	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	7440-38-2	50	9.65	30.5	30.6	6.66	ND	12.4	7.68	23.0	26.9	9.31	9.17	21.7	18.4	6.43	4.95	6.31	5.76	18.2	10.4
Barium	7440-39-3	2000	98.5	991	821	308	287	230	189	72.6	73.9	718	711	469	480	399	390	305	187	1260	886
Beryllium	7440-41-7	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	7440-43-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	7440-70-2	NS	6510	138000	137000	58200	54600	156000	102000	12700	13800	301000	283000	107000	113000	146000	154000	210000	212000	353000	339000
Chromium	7440-47-3	100	ND	ND	ND	ND	ND	4.68	ND	ND	ND	1.01	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	7440-48-4	NS	ND	ND	ND	4.24	4.16	1.49	ND	ND	ND	0.862	0.879	2.68	2.82	ND	ND	ND	ND	ND	ND
Copper	7440-50-8	1000	ND	8.10	6.04	12.7	4.42	14.8	ND	3.28	7.12	6.65	4.32	2.19	ND	4.00	ND	4.31	4.17	12.0	5.97
Iron	7439-89-6	600	117	37000	33900	197	78.1	4410	586	276	344	39000	34400	8330	9400	10400	6500	27100	15200	16700	6540
Lead	7439-92-1	50	ND	2.26	ND	ND	ND	1.98	ND	ND	ND	8.80	ND	ND	ND	ND	ND	26.9	ND	ND	ND
Magnesium	7439-95-4	35000	10600	13300	13300	159000	152000	20700	12500	44800	47100	198000	174000	60200	62500	18200	19000	44500	44600	559000	323000
Manganese	7439-96-5	600	325	693	649	631	579	1570	800	453	459	1810	1610	2180	2310	1820	1900	1530	1540	1120	793
Mercury	7439-97-6	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	7440-02-0	200	4.39	3.14	1.09	11.3	7.65	6.17	2.98	ND	1.64	1.46	ND	8.82	1.14	3.02	3.38	2.09	1.07	2.20	1.90
Potassium	7440-09-7'	NS	32900	10300	10600	89100	86800	26100	18100	34000	37700	34900	30900	26400	26000	6660	7240	18600	19100	153000	91200
Selenium	7782-49-2	20	ND	3.56	3.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.49	2.79	ND	ND	ND	ND
Silver	7440-22-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	7440-23-5	case by case	351000	221000	224000	450000	434000	365000	287000	427000	467000	2170000	2060000	580000	564000	99200	104000	409000	379000	5000000	2910000
Thallium	7440-28-0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	7440-62-2	NS	ND	0.925	ND	ND	ND	7.49	4.66	ND	1.33	ND	ND	1.44	ND	ND	ND	1.45	ND	ND	ND
Zinc	7440-66-6	5000	ND	4.80	2.90	7.17	ND	9.24	ND	ND	ND	ND	ND	4.41	1.43	15.0	1.86	6.79	1.33	ND	ND
General Analytical			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Hexavalent Chromium-ug/L	18540-29-9	100	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~
Cyanide, Total-ug/L	57-12-5	400	~	ND	~	ND	~	ND	~	~	ND	ND	~	ND	~	ND	~	ND	~	ND	~

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

BOLD Conc Indicates a concentration that exceeds applicable criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

~ = Sample not analyzed for

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

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Table 2A
Soil Sample Analytical Results Summary - VOCs
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB02 EB02_0-2 17B0275-01 2/7/2017 0-2		EB02 EB02_14-15 17B0165-01 2/3/2017 14-15		EB02 SO_DUP01_020317 17B0165-04 2/3/2017 14-15		EB02 EB02_21-22 17B0165-02 2/3/2017 21-22		EB03 EB03_0-2 17B0223-04 2/6/2017 0-2		EB03 EB03_7-8 17B0223-05 2/6/2017 7-8		EB03 EB03_9-10 17B0223-06 2/6/2017 9-10		EB06 EB06_5-7 17B0275-04 2/7/2017 5-7		EB06 SO_DUP02_020717 17B0275-05 2/7/2017 5-7		EB06 EB06_14-15 17B0275-03 2/7/2017 14-15	
Volatile Organic Compounds - VOCs (mg/kg)																						
1,2,4-Trimethylbenzene	3.6	190	0.0041	U	9.1	D	8.8	D	0.0048	U	0.004	J	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	0.0041	U	0.85	U	2.2	D	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
Acetone	0.05	500	0.032		1	JD	*1.7*	U	0.026		2	D	11	D	0.091		2.5	D	1.1	JD	0.07	
Carbon Disulfide	~	~	0.0041	U	0.85	U	0.85	U	0.0048	U	0.004	J	0.004	U	0.0041	U	0.006	U	0.0055	U	0.01	
Cyclohexane	~	~	0.0041	U	0.85	U	0.85	U	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
Cymene	~	~	0.0041	U	1200	D	3	D	0.59	D	0.056		780	D	14	D	0.006	U	0.0055	U	0.0051	U
Ethylbenzene	1	390	0.0041	U	5.4	D	5.7	D	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
Isopropylbenzene (Cumene)	~	~	0.0041	U	0.85	U	0.85	U	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
M,P-Xylene	~	~	0.0083	U	3.4	D	3.4	D	0.0095	U	0.014	U	0.0048	J	0.0081	U	0.012	U	0.011	U	0.01	U
Methyl Acetate	~	~	0.0041	U	0.85	U	0.85	U	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0032	J
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0059		*0.85*	U	*0.85*	U	0.004	J	0.015		0.058		0.0051		0.076		0.076		0.01	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	0.0041	U	0.85	U	0.85	U	0.0048	U	0.0068	U	0.014		0.0041	U	0.006	U	0.0055	U	0.0051	U
Methylcyclohexane	~	~	0.0041	U	0.85	U	0.85	U	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
Methylene Chloride	0.05	500	0.0083	U	*1.7*	U	*1.7*	U	0.0095	U	0.014	U	0.008	U	0.0048	J	0.012	U	0.011	U	0.01	U
N-Propylbenzene	3.9	500	0.0041	U	3.2	D	0.85	U	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
O-Xylene (1,2-Dimethylbenzene)	~	~	0.0041	U	1.6	D	1.7	D	0.0048	U	0.0068	U	0.01		0.0041	U	0.006	U	0.0055	U	0.0051	U
Sec-Butylbenzene	11	500	0.0041	U	13	D	0.99	D	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
T-Butylbenzene	5.9	500	0.0041	U	0.85	U	27	D	0.0091		0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
Tert-Butyl Alcohol	~	~	0.0041	U	1.7	U	1.7	U	0.0095	U	0.014	U	0.0057	J	0.0081	U	0.006	U	0.0055	U	0.0051	U
Tert-Butyl Methyl Ether	0.93	500	0.0041	U	0.85	U	0.85	U	0.0048	U	0.0068	U	0.004	U	0.0041	U	0.006	U	0.0055	U	0.0051	U
Toluene	0.7	500	0.0041	U	0.61	JD	0.61	JD	0.0048	U	0.0068	U	0.11		0.0073		0.006	U	0.0055	U	0.0051	U
Xylenes, Total	0.26	500	0.012	U	5	D	5.1	D	0.014	U	0.02	U	0.015		0.012	U	0.018	U	0.016	U	0.015	U

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs were not identified.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. mg/kg = milligrams per kilogram
8. ft. bgs = feet below grade surface
9. SO_DUP01_020317 is a duplicate sample of EB02_14-15 and SO_DUP02_020717 is a duplicate of sample EB06_5-7.
10. D = Result is from an analysis that required dilution.
11. E = The value is estimated. The value is estimated due to its behavior during calibration.
12. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 2A
Soil Sample Analytical Results Summary - VOCs
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB06 EB06_15-16 17B0275-02 2/7/2017 15-16		EB08 EB08_0-2 17B0060-01 2/1/2017 0-2		EB08 EB08_18.5-19.5 17B0060-03 2/1/2017 18.5-19.5		EB08 EB08_43-44 17B0060-04 2/1/2017 43-44		EB11 EB11_0-2 17B0223-01 2/6/2017 0-2		EB11 EB11_6-7 17B0223-02 2/6/2017 6-7		EB11 EB11_9-10 17B0223-03 2/6/2017 9-10		EB12 EB12_0-2 17B0119-01 2/2/2017 0-2		EB12 EB12_7-8 17B0119-03 2/2/2017 7-8		EB12 EB12_11-12 17B0119-04 2/2/2017 11-12	
Volatile Organic Compounds - VOCs (mg/kg)																						
1,2,4-Trimethylbenzene	3.6	190	0.0041	U	0.0044	U	86	D	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	0.0041	U	0.0044	U	27	DE	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Acetone	0.05	500	0.033		0.0087	U	*1.5*	U	0.0058	J	0.055		0.044		0.0077	J	0.0079	U	0.017		0.041	
Carbon Disulfide	~	~	0.0041	U	0.0044	U	0.76	U	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Cyclohexane	~	~	0.0041	U	0.0044	U	0.86	D	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Cymene	~	~	0.0041	U	0.0044	U	6.7	D	0.0047	U	0.0041	U	0.0056		0.0042	U	0.0039	U	0.0044	U	0.0053	U
Ethylbenzene	1	390	0.0041	U	0.0044	U	120	D	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Isopropylbenzene (Cumene)	~	~	0.0041	U	0.0044	U	19	D	0.0026	J	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
M,P-Xylene	~	~	0.0082	U	0.0087	U	140	D	0.0093	U	0.0083	U	0.0086	U	0.0084	U	0.0079	U	0.0049	J	0.011	U
Methyl Acetate	~	~	0.003	J	0.0044	U	0.76	U	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.015		0.0044	U	*0.76*	U	0.0047	U	0.0041	U	0.0063		0.0042	U	0.0039	U	0.0046		0.01	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	0.0041	U	0.0044	U	0.76	U	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Methylcyclohexane	~	~	0.0041	U	0.0044	U	4.7	D	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Methylene Chloride	0.05	500	0.0082	U	0.0087	U	*1.5*	U	0.0093	U	0.0083	U	0.005	J	0.0057	J	0.0079	U	0.0088	U	0.011	U
N-Propylbenzene	3.9	500	0.0041	U	0.0044	U	14	D	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
O-Xylene (1,2-Dimethylbenzene)	~	~	0.0041	U	0.0044	U	73	D	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0023	J	0.0053	U
Sec-Butylbenzene	11	500	0.0041	U	0.0044	U	1.3	D	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
T-Butylbenzene	5.9	500	0.0041	U	0.0044	U	0.76	U	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Tert-Butyl Alcohol	~	~	0.0041	U	0.0044	U	0.76	U	0.0047	U	0.0083	U	0.0086	U	0.0084	U	0.0079	U	0.0088	U	0.011	U
Tert-Butyl Methyl Ether	0.93	500	0.0041	U	0.0044	U	0.76	U	0.0076		0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Toluene	0.7	500	0.0041	U	0.0045		0.68	JD	0.0047	U	0.0041	U	0.0043	U	0.0042	U	0.0039	U	0.0044	U	0.0053	U
Xylenes, Total	0.26	500	0.012	U	0.013	U	210	D	0.014	U	0.012	U	0.013	U	0.013	U	0.012	U	0.0072	J	0.016	U

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs were not identified.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. mg/kg = milligrams per kilogram
8. ft. bgs = feet below grade surface
9. SO_DUP01_020317 is a duplicate sample of EB02_14-15 and SO_DUP02_020717 is a duplicate of sample EB06_5-7.
10. D = Result is from an analysis that required dilution.
11. E = The value is estimated. The value is estimated due to its behavior during calibration.
12. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

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Table 2B
Soil Sample Analytical Results Summary - SVOCs
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB02 EB02_0-2 17B0275-01 2/7/2017 0-2		EB02 EB02_14-15 17B0165-01 2/3/2017 14-15		EB02 SO_DUP01_020317 17B0165-04 2/3/2017 14-15		EB02 EB02_21-22 17B0165-02 2/3/2017 21-22		EB03 EB03_0-2 17B0223-04 2/6/2017 0-2		EB03 EB03_7-8 17B0223-05 2/6/2017 7-8		EB03 EB03_9-10 17B0223-06 2/6/2017 9-10		EB06 EB06_5-7 17B0275-04 2/7/2017 5-7		EB06 SO_DUP02_020717 17B0275-05 2/7/2017 5-7		EB06 EB06_14-15 17B0275-03 2/7/2017 14-15	
Semivolatile Organic Compounds - SVOCs (mg/kg)																						
2,6-Dinitrotoluene	~	~	0.235	U	48.6	U	39.5	JD	0.102	U	0.481	U	0.468	U	0.093	U	0.104	U	0.0986	U	0.102	U
2-Methylnaphthalene	~	~	0.782	D	403	D	396	D	0.264	D	0.481	U	0.468	U	0.093	U	0.104	U	0.0986	U	0.102	U
Acenaphthene	20	500	1.08	D	335	D	331	D	0.202	D	0.481	U	0.468	U	0.093	U	0.0613	JD	0.0567	JD	0.102	U
Acenaphthylene	100	500	0.744	D	48.6	U	48	U	0.0643	JD	0.481	U	0.468	U	0.093	U	0.104	U	0.0575	JD	0.102	U
Anthracene	100	500	2.75	D	111	D	107	D	0.102	U	0.481	U	0.468	U	0.093	U	0.109	D	0.123	D	0.102	U
Benzo(a)Anthracene	1	5.6	**5.64**	D	*48.6*	U	**30.7**	JD	0.102	U	0.481	U	0.468	U	0.093	U	0.295	D	0.358	D	0.102	U
Benzo(a)Pyrene	1	1	**4.04**	D	*48.6*	U	*48*	U	0.102	U	0.481	U	0.468	U	0.093	U	0.186	D	0.202	D	0.102	U
Benzo(b)Fluoranthene	1	5.6	2.78	D	*48.6*	U	*48*	U	0.102	U	0.481	U	0.468	U	0.093	U	0.169	D	0.201	D	0.102	U
Benzo(g,h,i)Perylene	100	500	1.88	D	48.6	U	48	U	0.102	U	0.481	U	0.468	U	0.093	U	0.127	D	0.118	D	0.102	U
Benzo(k)Fluoranthene	0.8	56	3.57	D	*48.6*	U	*48*	U	0.102	U	0.481	U	0.468	U	0.093	U	0.13	D	0.269	D	0.102	U
Biphenyl (Diphenyl)	~	~	0.235	U	84.2	D	75.9	D	0.102	U	0.481	U	0.468	U	0.093	U	0.104	U	0.0986	U	0.102	U
Bis(2-Ethylhexyl)Phthalate	~	~	0.147	JD	48.6	U	48	U	0.102	U	0.481	U	0.468	U	0.093	U	0.0804	JD	0.163	D	0.102	U
Carbazole	~	~	0.167	JD	48.6	U	48	U	0.102	U	0.481	U	0.468	U	0.093	U	0.104	U	0.0986	U	0.102	U
Chrysene	1	56	5.58	D	*48.6*	U	28.8	JD	0.102	U	0.481	U	0.468	U	0.093	U	0.301	D	0.381	D	0.102	U
Dibenz(a,h)Anthracene	0.33	0.56	**1**	D	*48.6*	U	*48*	U	0.102	U	*0.481*	U	*0.468*	U	0.093	U	0.0588	JD	0.0741	JD	0.102	U
Dibenzofuran	7	350	0.35	D	226	D	227	D	0.149	D	0.481	U	0.468	U	0.093	U	0.104	U	0.0986	U	0.102	U
Fluoranthene	100	500	7.34	DE	115	D	110	D	0.0814	JD	0.481	U	0.325	JD	0.093	U	0.621	D	0.694	D	0.102	U
Fluorene	30	500	1.41	D	199	D	202	D	0.137	D	0.481	U	0.468	U	0.093	U	0.104	U	0.0575	JD	0.102	U
Indeno(1,2,3-C,D)Pyrene	0.5	5.6	1.63	D	*48.6*	U	*48*	U	0.102	U	0.481	U	0.468	U	0.093	U	0.114	D	0.11	D	0.102	U
Naphthalene	12	500	1.2	D	**797**	D	**809**	D	0.826	D	0.481	U	0.468	U	0.0863	JD	0.104	U	0.0986	U	0.102	U
Nitrobenzene	~	~	0.235	U	48.6	U	48	U	0.102	U	0.481	U	0.468	U	0.093	U	0.104	U	0.0986	U	0.102	U
Phenanthrene	100	500	6.84	DE	372	D	375	D	0.276	D	0.481	U	0.852	D	0.093	U	0.484	D	0.458	D	0.102	U
Phenol	0.33	500	0.235	U	*48.6*	U	*48*	U	0.102	U	*0.481*	U	*0.468*	U	0.093	U	0.104	U	0.197	D	0.102	U
Pyrene	100	500	9.81	DE	63.7	D	64.4	D	0.0781	JD	0.269	JD	0.468	U	0.093	U	0.517	D	0.615	D	0.102	U

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs are shaded and bolded.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. mg/kg = milligrams per kilogram
8. ft. bgs = feet below grade surface
9. SO_DUP01_020317 is a duplicate sample of EB02_14-15 and SO_DUP02_020717 is a duplicate of sample EB06_5-7.
10. D = Result is from an analysis that required dilution.
11. E = The value is estimated. The value is estimated due to its behavior during calibration.
12. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 2B
Soil Sample Analytical Results Summary - SVOCs
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB06 EB06_15-16 17B0275-02 2/7/2017 15-16		EB08 EB08_0-2 17B0060-01 2/1/2017 0-2		EB08 EB08_18.5-19.5 17B0060-03 2/1/2017 18.5-19.5		EB08 EB08_43-44 17B0060-04 2/1/2017 43-44		EB11 EB11_0-2 17B0223-01 2/6/2017 0-2		EB11 EB11_6-7 17B0223-02 2/6/2017 6-7		EB11 EB11_9-10 17B0223-03 2/6/2017 9-10		EB12 EB12_0-2 17B0119-01 2/2/2017 0-2		EB12 EB12_7-8 17B0119-03 2/2/2017 7-8		EB12 EB12_11-12 17B0119-04 2/2/2017 11-12	
Semivolatile Organic Compounds - SVOCs (mg/kg)																						
2,6-Dinitrotoluene	~	~	0.108	U	0.097	U	0.467	U	0.102	U	0.0881	U	0.0901	U	0.0965	U	0.0907	U	0.093	U	0.106	U
2-Methylnaphthalene	~	~	0.108	U	0.237	D	132	D	0.102	U	0.0881	U	0.0901	U	0.0965	U	0.0907	U	0.11	D	0.106	U
Acenaphthene	20	500	0.108	U	0.097	U	110	D	0.102	U	0.184	D	0.0901	U	0.0965	U	0.0907	U	0.0543	JD	0.585	D
Acenaphthylene	100	500	0.108	U	0.359	D	8.74	D	0.102	U	0.0881	U	0.0901	U	0.0965	U	0.0907	U	0.093	U	0.106	U
Anthracene	100	500	0.108	U	0.33	D	52.2	D	0.102	U	0.385	D	0.0901	U	0.0965	U	0.118	D	0.0989	D	0.106	U
Benzo(a)Anthracene	1	5.6	0.108	U	0.732	D	**21.6**	D	0.102	U	0.761	D	0.0901	U	0.0965	U	0.412	D	0.147	D	0.106	U
Benzo(a)Pyrene	1	1	0.108	U	0.869	D	**13**	D	0.102	U	0.541	D	0.0901	U	0.0965	U	0.314	D	0.093	U	0.106	U
Benzo(b)Fluoranthene	1	5.6	0.108	U	1.39	D	**8.94**	D	0.102	U	0.583	D	0.0901	U	0.0965	U	0.368	D	0.093	U	0.106	U
Benzo(g,h,i)Perylene	100	500	0.108	U	1.66	D	5.32	D	0.102	U	0.125	D	0.0901	U	0.0965	U	0.228	D	0.093	U	0.106	U
Benzo(k)Fluoranthene	0.8	56	0.108	U	1.1	D	7.31	D	0.102	U	0.547	D	0.0901	U	0.0965	U	0.43	D	0.093	U	0.106	U
Biphenyl (Diphenyl)	~	~	0.108	U	0.097	U	0.467	U	0.102	U	0.0881	U	0.0901	U	0.0965	U	0.0907	U	0.093	U	0.106	U
Bis(2-Ethylhexyl)Phthalate	~	~	0.108	U	0.097	U	0.261	JD	0.102	U	0.0881	U	0.0901	U	0.0965	U	0.0907	U	0.093	U	0.106	U
Carbazole	~	~	0.108	U	0.069	JD	2.18	D	0.102	U	0.181	D	0.0901	U	0.0965	U	0.0667	JD	0.093	U	0.106	U
Chrysene	1	56	0.108	U	1.18	D	21	D	0.102	U	0.848	D	0.0901	U	0.0965	U	0.483	D	0.296	D	0.106	U
Dibenz(a,h)Anthracene	0.33	0.56	0.108	U	**0.779**	D	**1.61**	D	0.102	U	0.16	D	0.0901	U	0.0965	U	0.126	D	0.093	U	0.106	U
Dibenzofuran	7	350	0.108	U	0.097	U	0.467	U	0.102	U	0.0753	JD	0.0901	U	0.0965	U	0.0907	U	0.093	U	0.106	U
Fluoranthene	100	500	0.108	U	1.12	D	47.4	D	0.102	U	1.84	D	0.0901	U	0.0965	U	0.737	D	0.305	D	0.106	U
Fluorene	30	500	0.108	U	0.0621	JD	67.7	D	0.102	U	0.148	D	0.0901	U	0.0965	U	0.0907	U	0.0565	JD	0.106	U
Indeno(1,2,3-C,D)Pyrene	0.5	5.6	0.108	U	1.29	D	3.88	D	0.102	U	0.24	D	0.0901	U	0.0965	U	0.185	D	0.093	U	0.106	U
Naphthalene	12	500	0.108	U	0.201	D	355	D	0.0728	JD	0.0881	U	0.0901	U	0.0771	JD	0.0907	U	0.146	D	0.106	U
Nitrobenzene	~	~	0.108	U	0.097	U	0.62	D	0.102	U	0.0881	U	0.0901	U	0.0965	U	0.0907	U	0.093	U	0.106	U
Phenanthrene	100	500	0.108	U	0.486	D	192	D	0.09	JD	1.51	D	0.0901	U	0.0965	U	0.382	D	0.326	D	0.106	U
Phenol	0.33	500	0.108	U	0.097	U	*0.467*	U	0.102	U	0.0881	U	0.0901	U	0.0965	U	0.0907	U	0.093	U	0.106	U
Pyrene	100	500	0.108	U	1.52	D	64.5	D	0.102	U	1.36	D	0.0901	U	0.0965	U	0.648	D	0.27	D	0.106	U

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs are shaded and bolded.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. mg/kg = milligrams per kilogram
8. ft. bgs = feet below grade surface
9. SO_DUP01_020317 is a duplicate sample of EB02_14-15 and SO_DUP02_020717 is a duplicate of sample EB06_5-7.
10. D = Result is from an analysis that required dilution.
11. E = The value is estimated. The value is estimated due to its behavior during calibration.
12. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

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Table 2C
Soil Sample Analytical Results Summary - Inorganics, PCBs, Pesticides, and Herbicides
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB02 EB02_0-2 17B0275-01 2/7/2017 0-2	EB02 EB02_14-15 17B0165-01 2/3/2017 14-15	EB02 SO_DUP01_020317 17B0165-04 2/3/2017 14-15	EB02 EB02_21-22 17B0165-02 2/3/2017 21-22	EB03 EB03_0-2 17B0223-04 2/6/2017 0-2	EB03 EB03_7-8 17B0223-05 2/6/2017 7-8	EB03 EB03_9-10 17B0223-06 2/6/2017 9-10	EB06 EB06_5-7 17B0275-04 2/7/2017 5-7	EB06 SO_DUP02_020717 17B0275-05 2/7/2017 5-7	EB06 EB06_14-15 17B0275-03 2/7/2017 14-15
Inorganics (mg/kg)												
Aluminum	~	~	7120	3370 B	3230 B	3630 B	1040	5570	6250	5570	4720	4390
Antimony	~	~	0.564 U	0.582 U	0.575 U	0.61 U	0.577 U	0.561 U	0.558 U	0.621 U	0.591 U	0.613 U
Arsenic	13	16	1.13 U	1.65	1.53	1.22 U	2	11.3	2.76	4.32	3.43	1.26
Barium	350	400	41	26.6	26.9	235	19.3	28.7	32.5	85.8	72.5	28.8
Beryllium	7.2	590	0.113 U	0.116 U	0.115 U	0.122 U	0.115 U	0.467	0.323	0.458	0.379	0.229
Cadmium	2.5	9.3	0.338 U	0.349 U	0.345 U	0.366 U	0.346 U	0.336 U	0.335 U	0.4	0.404	0.368 U
Calcium	~	~	5200	4230	4360	1140	884	21900	6540	25600	20000	1180
Chromium III	30	1500	14.9	18	8.84	9.01	3.91	12	13.4	15.8	11	5.96
Chromium, Hexavalent	1	400	0.564 U	1.54	1.66	0.61 U	0.577 U	0.561 U	0.558 U	0.621 U	0.591 U	1.96
Chromium, Total	~	~	14.9	19.5	10.5	9.01	3.91	12	13.4	15.8	11	7.92
Cobalt	~	~	6.75	6.33	5.52	3.83	3.45	6.49	7.25	4.66	3.82	5.41
Copper	50	270	16.2	9.17	8.07	8.73	32.2	25.4	20.4	21.7	17.8	8.82
Iron	~	~	15600	9460	9820	6750	3500	12200	15400	7600	5400	10800
Lead	63	1000	34.6	52	14.9	3.95	74.2	19.6	29.7	114	73.1	15
Magnesium	~	~	2000	7070	6180	2810	456	4320	2930	2290	1890	2190
Manganese	1600	10000	386	124	126	598	19.7	122	313	95	85.9	110
Mercury	0.18	2.8	0.0391	0.0349 U	0.0345 U	0.0366 U	0.0965	0.0353	0.0336	0.11	0.126	0.0468
Nickel	30	310	14.2	75.9	58.1	27.4	8.62	25.4	14.9	13.8	11.2	15
Potassium	~	~	876	914	1050	909	210	1420	740	1170	913	874
Selenium	3.9	1500	1.65	1.22	1.25	1.22 U	1.15 U	1.12 U	1.41	1.35	1.18 U	1.23 U
Sodium	~	~	112	153	173	137	111	217	114	307	235	285
Vanadium	~	~	23.4	13.7	12.8	12	6.02	17.9	16.3	32.1	26.9	10.2
Zinc	109	10000	37.8	26	21.8	19.3	51.6	34.8	41.2	70.3	55.8	28.2
Polychlorinated Biphenyls - PCBs (mg/kg)												
Total PCBs	0.1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pesticides (mg/kg)												
4,4'-DDT	0.0033	47	0.00186 U	0.00192 U	0.0019 U	0.00201 U	0.0019 U	0.00185 U	0.00184 U	0.00205 U	0.00195 U	0.00202 U
Alpha Chlordane	0.094	24	0.00186 U	0.00192 U	0.0019 U	0.00201 U	0.0019 U	0.00185 U	0.00184 U	0.00205 U	0.00587 D	0.00202 U
Chlordane	~	~	0.0372 U	0.0384 U	0.038 U	0.0403 U	0.0381 U	0.037 U	0.0368 U	0.041 U	0.0394 D	0.0404 U
Dieldrin	0.005	1.4	0.00186 U	0.00192 U	0.0019 U	0.00201 U	0.0019 U	0.00185 U	0.00184 U	0.0548 D	0.0104 D	0.00202 U
Gamma-Chlordane	~	~	0.00186 U	0.00192 U	0.0019 U	0.00201 U	0.0019 U	0.00185 U	0.00184 U	0.00205 U	0.00581 DP	0.00202 U
Herbicides (mg/kg)												
Silvex (2,4,5-Tp)	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Chemistry (%)												
Solids, Percent	~	~	88.7	85.9	86.9	81.9	86.6	89.2	89.6	80.5	84.6	81.6

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
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5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. mg/kg = milligrams per kilogram
8. ft. bgs = feet below grade surface
9. SO_DUP01_020317 is a duplicate sample of EB02_14-15 and SO_DUP02_020717 is a duplicate of sample EB06_5-7.
10. D = Result is from an analysis that required dilution.
11. B = Analyte is found in the associated analysis batch blank.
12. P= This flag is used for pesticide and PCB (Aroclor) target compounds when there is a % difference for detected concentrations that exceed method dictated limits between the two GC columns used for analysis.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 2C
Soil Sample Analytical Results Summary - Inorganics, PCBs, Pesticides, and Herbicides
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB06		EB08		EB08		EB08		EB11		EB11		EB11		EB12		EB12		EB12	
Sample ID			EB06_15-16		EB08_0-2		EB08_18.5-19.5		EB08_43-44		EB11_0-2		EB11_6-7		EB11_9-10		EB12_0-2		EB12_7-8		EB12_11-12	
Lab ID			17B0275-02		17B0060-01		17B0060-03		17B0060-04		17B0223-01		17B0223-02		17B0223-03		17B0119-01		17B0119-03		17B0119-04	
Sample Date			2/7/2017		2/1/2017		2/1/2017		2/1/2017		2/6/2017		2/6/2017		2/6/2017		2/2/2017		2/2/2017		2/2/2017	
Sample Interval (ft bgs)			15-16		0-2		18.5-19.5		43-44		0-2		6-7		9-10		0-2		7-8		11-12	
Inorganics (mg/kg)																						
Aluminum	~	~	4070		5820	B	2420	B	2630	B	4760		7040		5860		3660	B	3030		6650	
Antimony	~	~	0.648	U	1.68		0.56	U	0.613	U	0.528	U	0.54	U	0.578	U	0.544	U	0.558	U	0.636	U
Arsenic	13	16	1.32		6.8		1.12	U	1.23	U	3.03		1.08	U	1.16	U	3.16		2.36		4.41	
Barium	350	400	24.5		93.7		15.7		13.4		**674**		275		54.4		39.4		32.8		38.4	
Beryllium	7.2	590	0.261		0.203		0.112	U	0.123	U	0.106	U	0.108	U	0.246		0.109	U	0.163		0.367	
Cadmium	2.5	9.3	0.389	U	0.349	U	0.336	U	0.368	U	0.317	U	0.324	U	0.347	U	0.326	U	0.335	U	0.381	U
Calcium	~	~	719		3370		806		6470		14300		9360		9010		40900	B	19900		1200	
Chromium III	30	1500	8.14		13.2		4.93		6.51		18.5		28.5		12.5		35.8		12.5		14	
Chromium, Hexavalent	1	400	0.648	U	0.582	U	0.56	U	0.613	U	0.528	U	0.54	U	0.578	U	0.739		0.558	U	0.636	U
Chromium, Total	~	~	8.14		13.2		4.93		6.51		18.5		28.5		12.5		36.5		12.5		14	
Cobalt	~	~	4.76		5.61		2.89		3.79		8.82		9.28		5.85		4.31		4.12		8.46	
Copper	50	270	6.41		82.5		5.53		6.31		71.3		51.9		11.7		24.9		22.7		10.8	
Iron	~	~	10300		13300		5120		6230		29200		17600		11800		11700	B	8830		15300	
Lead	63	1000	6.03		279		2.14		1.7		516		99.1		6.57		177		411		12	
Magnesium	~	~	1930		1720		1530		3780		5680		6830		4080		13000		4500		2730	
Manganese	1600	10000	112		233		143		145		273		293		320		243		126		146	
Mercury	0.18	2.8	0.0419		0.721		0.0336	U	0.0368	U	0.4		0.0324	U	0.0347	U	0.251		0.229		0.0381	U
Nickel	30	310	12.8		15.6		13.1		19.2		27.1		40.8		14.4		18.9		14.9		21.3	
Potassium	~	~	842		714	B	658	B	606	B	1080		1990		1780		765		684		1250	
Selenium	3.9	1500	1.3	U	1.16	U	1.12	U	1.23	U	2.32		1.61		1.16	U	1.09	U	1.12	U	1.72	
Sodium	~	~	437		186		237		342		548		474		408		423		347		867	
Vanadium	~	~	11		21		6.56		9.45		26		37.4		18		28.7		18.6		18.9	
Zinc	109	10000	25.4		131		17.8		14.9		141		64.1		25.7		48.1	B	82.6		37.2	
Polychlorinated Biphenyls - PCBs (mg/kg)																						
Total PCBs	0.1	1	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Pesticides (mg/kg)																						
4,4'-DDT	0.0033	47	0.00214	U	0.00192	U	0.00776	D	0.00202	U	0.00174	U	0.00178	U	0.00191	U	0.00179	U	0.00184	U	0.0021	U
Alpha Chlordane	0.094	24	0.00214	U	0.00192	U	0.00185	U	0.00202	U	0.00174	U	0.00178	U	0.00191	U	0.00179	U	0.00184	U	0.0021	U
Chlordane	~	~	0.0428	U	0.0384	U	0.037	U	0.0405	U	0.0349	U	0.0356	U	0.0382	U	0.0359	U	0.0368	U	0.042	U
Dieldrin	0.005	1.4	0.00214	U	0.00192	U	0.00185	U	0.00202	U	0.00174	U	0.00178	U	0.00191	U	0.00179	U	0.00184	U	0.0021	U
Gamma-Chlordane	~	~	0.00214	U	0.00192	U	0.00185	U	0.00202	U	0.00174	U	0.00178	U	0.00191	U	0.00179	U	0.00184	U	0.0021	U
Herbicides (mg/kg)																						
Silvex (2,4,5-Tp)	~	~	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
General Chemistry (%)																						
Solids, Percent	~	~	77.1		85.9		89.3		81.5		94.7		92.6		86.4		92		89.6		78.7	

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs are shaded and bolded.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. mg/kg = milligrams per kilogram
8. ft. bgs = feet below grade surface
9. SO_DUP01_020317 is a duplicate sample of EB02_14-15 and SO_DUP02_020717 is a duplicate of sample EB06_5-7.
10. D = Result is from an analysis that required dilution.
11. B = Analyte is found in the associated analysis batch blank.
12. P= This flag is used for pesticide and PCB (Aroclor) target compounds when there is a % difference for detected concentrations that exceed method dictated limits between the two GC columns used for analysis.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

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Table 3A
Groundwater Sample Analytical Results Summary - VOCs and SVOCs
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location	NYSDEC AWQS	LMW02		MW2		LMW03		MW3		LMW06		LMW08		LMW11		LMW12	
Sample ID		MW02_020817		MW2_021017		MW03_020817		MW3_021017		MW06_021017		MW08_021417		MW11_020717		MW12_021417	
Lab ID		17B0361-03		17B0418-03		17B0361-04		17B0418-02		17B0418-01		17B0519-02		17B0278-01		17B0519-01	
Sample Date		2/8/2017		2/10/2017		2/8/2017		2/10/2017		2/10/2017		2/14/2017		2/7/2017		2/14/2017	
Volatile Organic Compounds - VOCs (µg/L)																	
1,2,4-Trimethylbenzene	5	42	D	0.8		1	U	0.6		0.5	U	2.7		0.5	U	0.5	U
1,3,5-Trimethylbenzene (Mesitylene)	5	12	JD	0.5	U	1	U	0.5	U	0.5	U	0.49	J	0.5	U	0.5	U
Acetone	50	100	BD	1.1	JB	11	BD	1	JB	2.4	B	1.1	JB	3		2	U
Benzene	1	*25*	U	19		1	U	0.5	U	0.5	U	0.35	J	0.5	U	0.73	
Bromodichloromethane	50	25	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	0.73		0.5	U
Bromomethane	5	*25*	U	0.5	U	1	U	0.5	U	0.5	U	0.4	JB	0.5	U	0.5	U
Carbon Disulfide	60	25	U	0.5	U	1	U	0.5	U	0.24	J	0.5	U	0.2	J	0.5	U
Chloroform	7	*25*	U	0.5	U	1	U	0.5	U	0.5	U	0.46	J	1.4		2.1	
Cis-1,2-Dichloroethylene	5	*25*	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	0.5	U	0.24	J
Cyclohexane	~	25	U	0.5	U	1	U	0.86		0.5	U	0.23	J	0.5	U	0.5	U
Cymene	5	3500	D	3.2		58	D	1.1		2.4		0.62		0.49	J	0.5	U
Dibromochloromethane	50	25	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	0.67		0.5	U
Ethylbenzene	5	100	D	2.5		1	U	7.6		0.5	U	1.2		0.5	U	0.24	J
Isopropylbenzene (Cumene)	5	14	JD	2.1		1	U	11		0.5	U	2.3		0.5	U	0.5	U
M,P-Xylene	5	57	D	0.68	J	2	U	0.77	J	1	U	0.87	J	1	U	0.51	J
Methylcyclohexane	~	25	U	0.5	U	1	U	1.2		0.5	U	0.24	J	0.5	U	0.5	U
N-Butylbenzene	5	*25*	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Propylbenzene	5	12	JD	0.67		1	U	1.8		0.5	U	0.51		0.5	U	0.5	U
O-Xylene (1,2-Dimethylbenzene)	5	31	D	1.3		1	U	1		0.5	U	0.74		0.5	U	0.27	J
Sec-Butylbenzene	5	*25*	U	0.5	U	1	U	1		0.5	U	0.5	U	0.5	U	0.5	U
Styrene	5	*25*	U	0.5	U	1	U	0.5	U	0.5	U	0.22	J	0.5	U	0.4	J
T-Butylbenzene	5	*25*	U	0.5	U	1	U	0.5	U	0.5	U	0.62		0.5	U	0.5	U
Tert-Butyl Alcohol	~	50	U	1	U	2	U	1.5		0.92	J	2	U	3.3		0.84	J
Tert-Butyl Methyl Ether	10	*25*	U	0.5	U	1	U	0.5	U	0.5	U	4.4		0.5	U	0.62	
Toluene	5	38	D	0.22	J	0.84	JD	0.5	U	0.5	U	0.5		0.5	U	1.7	
Xylenes, Total	5	88	D	1.9		3	U	1.8		1.5	U	1.6		1.5	U	0.78	J
Semivolatile Organic Compounds - SVOCs (µg/L)																	
2,4-Dimethylphenol	1	208	D	*4.81*	U	*4.81*	U	0.962	U	0.962	U	0.962	U	0.962	U	0.962	U
2-Methylnaphthalene	~	492	JD	19.2	U	19.2	U	3.85	U	3.85	U	10.4		3.85	U	3.85	U
3- And 4- Methylphenol (Total)	~	40.9	D	4.81	U	4.81	U	0.962	U	0.962	U	0.962	U	0.962	U	0.962	U
Acenaphthene	20	*769*	U	76.8	D	19.2	U	45.9	D	2.63		3.86		3.9		0.692	
Acenaphthylene	~	38.5	U	19.2	U	19.2	U	1.11		0.0385		0.585		0.0462		0.823	
Anthracene	50	43.6	D	14.3	JD	19.2	U	2.56		0.685		1.25		0.423		0.354	
Benzo(a)Anthracene	0.002	*38.5*	U	*19.2*	U	*19.2*	U	0.231		0.0769		0.115		*0.0385*	U	0.1	
Benzo(a)Pyrene	0	*38.5*	U	*19.2*	U	*19.2*	U	0.0846		*0.0385*	U	0.0692		*0.0385*	U	0.0385	
Benzo(b)Fluoranthene	0.002	*38.5*	U	*19.2*	U	*19.2*	U	0.0538		*0.0385*	U	0.0462		*0.0385*	U	*0.0385*	U
Benzo(g,h,i)Perylene	~	38.5	U	19.2	U	19.2	U	0.0385		0.0385	U	0.0385	U	0.0385	U	0.0385	U
Benzo(k)Fluoranthene	0.002	*38.5*	U	*19.2*	U	*19.2*	U	0.0385		*0.0385*	U	0.0462		*0.0385*	U	*0.0385*	U
Biphenyl (Diphenyl)	5	117	D	*19.2*	U	*19.2*	U	3.85	U	3.85	U	3.85	U	3.85	U	3.85	U
Bis(2-Ethylhexyl)Phthalate	5	*38.5*	U	*19.2*	U	*19.2*	U	0.385	U	0.385	U	0.385	U	0.385	U	0.538	
Carbazole	~	83.3	D	19.2	U	19.2	U	3.85	U	3.85	U	3.85	U	3.85	U	3.85	U
Chrysene	0.002	*38.5*	U	*19.2*	U	*19.2*	U	0.231		0.0846		0.123		*0.0385*	U	0.0769	
Dibenzofuran	~	226	D	19.2	U	19.2	U	3.85	U	3.85	U	3.85	U	3.85	U	3.85	U
Fluoranthene	50	34.7	JD	14.4	JD	19.2	U	3.99		0.854		0.554		0.3		0.215	
Fluorene	50	164	D	33.7	D	19.2	U	2.2		0.946		3.07		2.16		0.723	
Naphthalene	10	3250	BD	*19.2*	U	20.6	BD	6.49		0.169		19.4	B	1.98	B	6.15	B
Phenanthrene	50	196	D	54.3	D	19.2	U	3.03		2.05		4.52		2.98		1.43	
Pyrene	50	24.9	JD	20.2	D	19.2	U	3.97		0.738		0.631		0.215		0.3	

Notes and Qualifiers:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values for Class GA - Drinking Water.
2. Only detected compounds are shown in the table.
3. Concentrations above the NYSDEC TOGS AWQS criteria are shaded.
4. Reporting limits (RL) above the NYSDEC TOGS AWQS criteria are italicized.
5. µg/L = micrograms per liter
6. ~ = Criterion does not exist
7. B = Analyte found in the analysis batch blank
8. D = Result is from an analysis that required a dilution.
9. J = Analyte detected at or above the method detection limit but below the RL; therefore data is estimated.
10. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 3B
Groundwater Sample Analytical Results Summary - Metals, PCBs, Pesticides, and Herbicides
Remedial Investigation Report

Red Hook 3 Properties
Brooklyn, New York
Langan Project Number: 170195102

Location Sample ID Lab ID Sample Date	NYSDEC AWQS	LMW02 MW02_020817 17B0361-03 2/8/2017		MW2 MW2_021017 17B0418-03 2/10/2017		LMW03 MW03_020817 17B0361-04 2/8/2017		MW3 MW3_021017 17B0418-02 2/10/2017		LMW06 MW06_021017 17B0418-01 2/10/2017		LMW08 MW08_021417 17B0519-02 2/14/2017		LMW11 MW11_020717 17B0278-01 2/7/2017		LMW12 MW12_021417 17B0519-01 2/14/2017	
Total Metals (µg/L)																	
Aluminum	~	1460		2730		513		783		697		3210		4920		1460	
Antimony	3	2.22	U	2.22	U	2.22	U	2.22	U	2.87	D	2	U	2.22	U	2	U
Arsenic	25	11.6	D	2.76	D	5.47	D	42.8	D	18.5	D	56.2	D	14.4	D	27.3	D
Barium	1000	281		305		153		796		156		138		93.5		97.7	
Calcium	~	118000		176000		120000		338000		155000		167000		12000		14600	
Chromium III	~	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chromium, Hexavalent	50	10	U	82		10	U	315		14		40	B	10	U	66	B
Chromium, Total	50	5.56	U	9.41		5.56	U	5.56	U	5.56	U	13.1		7.41		5.56	U
Copper	200	6.77		62.5		3.8		19.5		19		18.4		8.5		6.17	
Iron	300	24800		15800		27000		10900		1700		3750		4820		1400	
Lead	25	3.33	U	192		3.33	U	4.98		16.2		3.33	U	3.86		3.33	U
Magnesium	35000	21800		25500		8810		231000		142000		482000		10100		10700	
Manganese	300	643		212		709		935		265		3950		355		313	
Molybdenum	~	2.22	U	2.6	D	4.89	D	2.22	U	22.3	D	5.61	D	10.4	D	8.99	D
Nickel	100	10		10.9		7.55		5.56	U	5.56	U	11		27.4		13.8	
Potassium	~	21900		12600		17200		85800		93200		136000		11600		19500	B
Sodium	20000	53500		110000		40200		1830000		842000		4890000		53700		370000	B
Vanadium	~	11.1	U	88		11.1	U	11.1	U	11.1	U	11.1	U	14.3		11.1	U
Zinc	2000	21.6		204		16.9		29.5		41		25.4		22.4		15.2	
Dissolved Metals (µg/L)																	
Antimony	3	2.22	U	2.22	U	2.22	U	2.22	U	2.87	D	2	U	2.22	U	2	U
Arsenic	25	5.24	D	2.76	D	4.73	D	42.8	D	18.5	D	56.2	D	19.9	D	27.3	D
Barium	1000	373		216		205		867		133		115		35.5		66.9	
Beryllium	3	1.11	U	1.11	U	1.11	U	1.11	U	1.11	U	1.11	U	0.867	D	1.11	U
Calcium	~	162000		158000		164000		312000		140000		160000		9870		12100	
Copper	200	7.92		12.4		5.2		20.2		18.9		8.56		3.33	U	3.33	U
Iron	300	32500		1430		37300		9150		783		646		40.6		22.2	U
Lead	25	3.33	U	3.8		3.33	U	4.49		6.4		3.33	U	3.33	U	3.33	U
Magnesium	35000	30100		22700		11500		249000		131000		461000		8680		9460	
Manganese	300	822		131		964		901		238		3730		150		66.4	
Molybdenum	~	2.22	U	2.6	D	4.16	D	2.22	U	22.3	D	5.61	D	15.9	D	8.99	D
Nickel	100	5.56	U	5.56	U	5.56	U	5.56	U	5.56	U	5.56	U	8.96		13.8	
Potassium	~	29000		11100		23600		92000		85100		179000		11500		18100	
Selenium	10	*11.1*	U	*11.1*	U	*11.1*	U	*11.1*	U	*11.1*	U	*11.1*	U	5.62	D	*11.1*	U
Sodium	20000	75400		97700		54900		2410000		1140000		5290000		53500		341000	
Vanadium	~	11.1	U	25.7		11.1	U	11.1	U	11.1	U	11.1	U	11.1	U	11.1	U
Zinc	2000	25.6		34.3		21.1		29.4		39		17.4		14.6		13.5	
Polychlorinated Biphenyls (µg/L)																	
Total PCBs	0.09	ND		ND		ND		ND		ND		ND		ND		ND	
Pesticides (µg/L)																	
Total Pesticides	~	ND		ND		ND		ND		ND		ND		ND		ND	
Herbicides (µg/L)																	
Silvex (2,4,5-Tp)	~	ND		ND		ND		ND		ND		ND		ND		ND	

Notes and Qualifiers:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values for Class GA - Drinking Water.
2. Only detected compounds are shown in the table.
3. Concentrations above the NYSDEC TOGS AWQS criteria are shaded.
4. Reporting limits (RL) above the NYSDEC TOGS AWQS criteria are italicized.
5. µg/L = micrograms per liter
6. ~ = Criterion doesn't exist
7. ND = Not Detected
8. B = Analyte found in the analysis batch blank
9. D = Result is from an analysis that required a dilution.
10. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

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Table 4

Ambient Air, Indoor Air, and Soil Vapor Sample Analytical Results Summary

Remedial Investigation

Red Hook 3 Properties

Brooklyn, New York

Langan Project Number: 170195102

Location	AA01		IA04		SV04		IA05		SV05		IA06		SV06		IA07		SV07		SV07		IA12		SV12	
Sample ID	AA01_020817		IA04_020817		SV04_020817		IA05_020817		SV05_020817		IA06_020817		SV06_020817		IA07_020817		SV07_020817		DUP01_020817		IA12_020817		SV12_020817	
Lab ID	17B0363-11		17B0363-08		17B0363-07		17B0363-02		17B0363-01		17B0363-04		17B0363-03		17B0363-06		17B0363-05		17B0363-12		17B0363-10		17B0363-09	
Sample Date	2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017	
Matrix	AA		IA		SV		IA		SV		IA		SV		IA		SV		SV		IA		SV	
Volatile Organic Compounds (ug/m^3)																								
1,1,2,2-Tetrachloroethane	0.87	U	0.69	U	14	U	0.83	U	15	D	0.69	U	13	U	0.75	U	14	U	13	U	0.71	U	13	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.97	U	0.77	U	16	U	0.93	D	13	D	0.77	U	15	U	0.83	U	16	U	15	U	1	D	14	U
1,2,4-Trichlorobenzene	0.94	U	0.74	U	15	U	8.4	D	110	D	0.74	U	14	U	0.81	U	16	U	14	U	0.76	U	14	U
1,2,4-Trimethylbenzene	0.62	U	21		10	U	6.4	D	13	D	12		9.5	U	0.75	D	10	U	9.5	U	6.9	D	9.3	U
1,2-Dichlorobenzene	0.76	U	0.6	U	12	U	0.95	D	17	D	0.6	U	12	U	0.65	U	13	U	12	U	0.62	U	11	U
1,2-Dichlorotetrafluoroethane	0.89	U	0.7	U	14	U	0.85	U	13	D	0.7	U	13	U	0.76	U	15	U	13	U	0.72	U	13	U
1,3,5-Trimethylbenzene (Mesitylene)	0.62	U	7.5		10	U	2.4	D	9.9	D	4.2		9.5	U	0.53	U	10	U	9.5	U	2.1	D	9.3	U
1,3-Butadiene	0.84	U	0.66	U	14	U	0.8	D	11	U	0.66	U	13	U	0.72	U	14	U	13	U	0.68	U	13	U
1,3-Dichlorobenzene	0.76	U	0.6	U	12	U	0.73	D	13	D	0.6	U	12	U	0.65	U	13	U	12	U	0.62	U	11	U
1,4-Dichlorobenzene	0.76	U	0.6	U	12	U	0.87	D	11	D	0.6	U	12	U	0.65	U	13	U	12	U	0.62	U	11	U
4-Ethyltoluene	0.62	U	23		10	U	7	D	13	D	13		9.5	U	0.91	D	10	U	9.5	U	6.6	D	9.3	U
Acetone	8.3	D	18		15	D	13	D	45	D	23		44	D	17	D	19	D	14	D	37	D	16	D
Benzene	0.41	U	2		6.6	U	2.1	D	5.4	U	1.9		6.2	U	0.83	D	6.7	U	6.2	U	2	D	6	U
Carbon Disulfide	0.39	U	0.44		6.5	U	0.38	U	6.8	D	0.87		6	U	1.1	D	6.6	U	6	U	0.32	U	5.9	U
Carbon Tetrachloride	0.4	D	0.31		3.3	U	0.69	D	8.5	D	0.38		3	U	0.34	D	3.3	U	3	U	0.78	D	3	U
Chlorobenzene	0.58	U	0.46	U	9.5	U	0.56	U	7.7	D	0.46	U	8.9	U	0.5	U	9.7	U	8.9	U	0.47	U	8.7	U
Chloromethane	1.4	D	1.2		4.3	U	1.4	D	3.5	U	1.3		4	U	1.3	D	4.4	U	4	U	2.5	D	3.9	U
Cyclohexane	0.44	U	0.55		7.1	U	0.46	D	5.8	U	0.65		6.6	U	0.37	U	7.3	U	6.6	U	0.46	D	6.5	U
Dichlorodifluoromethane	2.3	D	1.9		10	U	2.3	D	10	D	2.1		9.5	U	1.9	D	10	U	9.5	U	3.5	D	9.3	U
Ethyl Acetate	0.91	U	1.8		15	U	1.5	D	12	U	2.7		14	U	0.82	D	15	U	14	U	13	D	14	U
Ethylbenzene	0.55	U	5.7		9	U	2.4	D	7.3	D	4.1		8.4	U	0.71	D	9.2	U	8.4	U	4.7	D	8.2	U
Hexachlorobutadiene	1.4	U	1.1	U	22	U	2.7	D	65	D	1.1	U	21	U	1.2	U	22	U	21	U	1.1	U	20	U
Isopropanol	0.62	U	3.5		10	U	3.2	D	8.3	U	3.7		9.5	U	0.53	U	10	U	9.5	U	2.5	D	9.3	U
M,P-Xylene	1.1	U	21		18	U	9.1	D	25	D	20		17	U	2.9	D	18	U	17	U	17	D	25	D
Methyl Ethyl Ketone (2-Butanone)	0.82	D	5		6.1	U	2.4	D	22	D	3.5		13	D	13	D	36	D	23	D	6.2	D	21	D
Methylene Chloride	0.88	U	2.2		14	U	1	D	12	U	1.9		13	U	0.76	U	15	U	13	U	1.6	D	13	U
N-Heptane	0.52	U	1.4		8.5	U	1.1	D	6.9	U	1.4		7.9	U	0.45	D	8.6	U	7.9	U	1.2	D	7.7	U
N-Hexane	0.45	U	1.6		7.3	U	1.4	D	5.9	U	1.6		6.8	U	2.6	D	7.4	U	6.8	U	2.5	D	6.7	U
O-Xylene (1,2-Dimethylbenzene)	0.55	U	7		9	U	3.3	D	7.3	U	6.6		8.4	U	0.99	D	9.2	U	8.4	U	5.6	D	8.2	U
Propylene	0.22	U	0.17	U	3.6	U	0.21	U	24	D	0.17	U	3.3	U	0.19	U	3.6	U	3.3	U	0.18	U	3.2	U
Styrene	0.54	U	0.43	U	8.8	U	0.52	U	7.2	U	0.43	U	8.2	U	0.93	D	9	U	8.2	U	0.44	U	8	U
Tetrachloroethylene(PCE)	0.22	U	0.34		3.5	U	0.57	D	10	D	0.41		3.3	U	3.8	D	3.6	U	3.3	U	1.1	D	3.8	D
Tetrahydrofuran	0.75	U	0.59	U	12	U	0.71	U	9.9	U	0.59	U	11	U	0.64	U	12	U	11	U	2	D	11	U
Toluene	0.48	U	15		7.8	U	11	D	9.5	D	36		7.3	U	2.3	D	7.9	U	7.3	U	12	D	7.1	D
Trichloroethylene (TCE)	0.17	U	0.13	U	2.8	U	0.26	D	5.4	D	0.13	U	2.6	U	0.15	U	2.8	U	2.6	U	0.28	D	2.5	U
Trichlorofluoromethane	1.6	D	1.7		12	U	2.2	D	12	D	1.8		11	U	1.7	D	12	U	11	U	3.2	D	11	U

Notes and Qualifiers:

1. Only analytes with detections are shown in the table.
2. µg/m3= microgram per cubic meter
3. AA = Ambient Air
4. IA = Indoor Air
5 SV = Soil Vapor
6. DUP01_020817 is a duplicate sample of SV07_020817.
7. Data presented in this table has not been validated. Revised tables will be generated once validation is complete.
8. D = Result is from an analysis that required dilution.
9. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

APPENDIX B

Forensic Assessment

ARCADIS Design & Consultancy for natural and built assets

RED HOOK FORENSIC ASSESSMENT

December 8, 2017

Revised July 3, 2018

Summary of Forensic Evaluation

ARCADIS Design & Consultancy for natural and built assets

- Select RH3 and RH4 samples submitted for forensic analyses
  - RH3 soil – 9 samples
  - RH4 soil – 2 samples (extracts)
  - RH4 LNAPL – 1 sample
  - RH4 DNAPL – 1 sample
- Samples submitted for the following analyses
  - C8-C40 Full Scan – chromatograms of several hydrocarbon classes
  - C3-C10 PIANO – concentrations for ~120 gasoline–range compounds
  - Alkylated PAH – concentrations for ~70 PAHs, Total PAH (TPAH)
  - Total Extractable Hydrocarbons – TPH concentrations

Summary of Forensic Evaluation

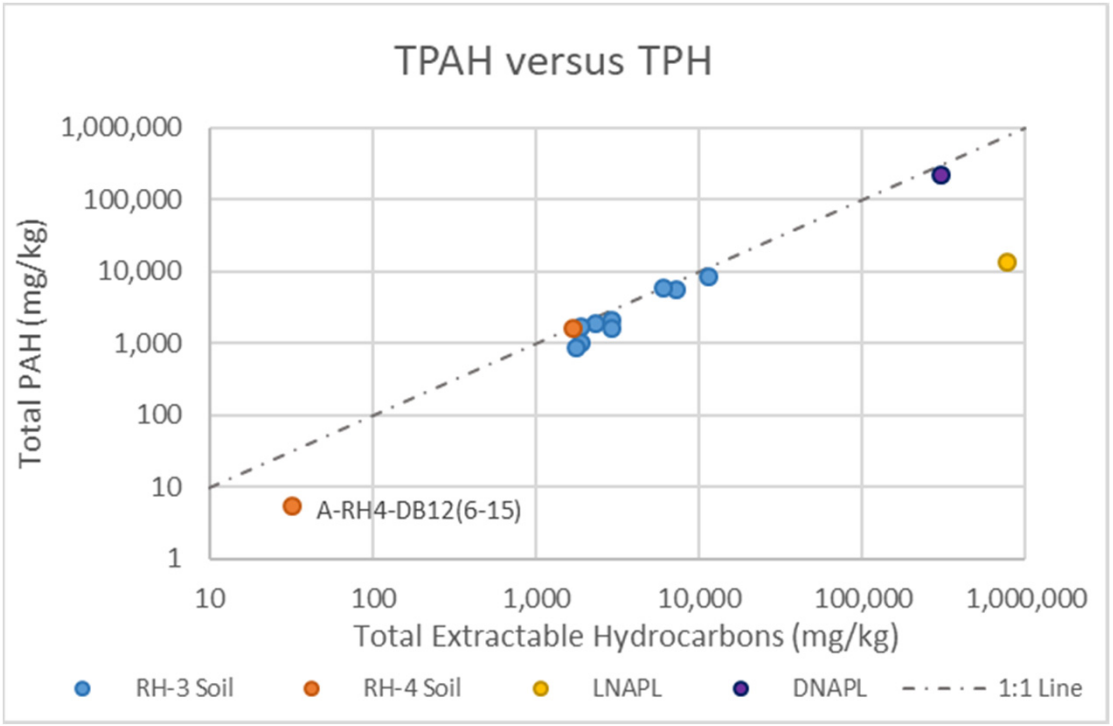
ARCADIS Design & Consultancy for natural and built assets

- LNAPL sample appears to be a petroleum product with a composition consistent with weathered crude oil or Bunker C oil. TPAH ~15,000 mg/kg and TPH 730,000 mg/kg – TPAH 2% of TPH
- DNAPL sample appears to be a tar and may be a petroleum tar based on high abundance of naphthalenes and presence of biomarkers commonly found in petroleum compounds. TPAH ~244,000 mg/kg and TPH 290,000 mg/kg – TPAH 84% of TPH, primarily PAH
- All RH3 soil samples and the RH4-DB15(42-46) soil sample (extract) consist primarily of PAHs (TPAH 57% to 100% TPH) and most closely resemble the DNAPL sample
- RH4-DB12(6-15) has low TPH (31 mg/kg) and TPAH (6 mg/kg) concentrations and resembles mineral oil (transformer oil) or weathered diesel. The petroleum hydrocarbons in this sample appear to be different from the LNAPL. The PAHs appeared to be weathered DNAPL

TPH versus TPAH

TPH and TPAH concentrations for most soil samples are similar indicating that detected hydrocarbons are primarily PAHs (TPAH 57% to 100% TPH), similar to DNAPL (TPAH 84% of TPH)

TPH concentrations for the LNAPL sample and soil sample A-RH4-DB12(6-15) are primarily petroleum hydrocarbons with substantially smaller contributions from PAHs compared with DNAPL and other soil samples

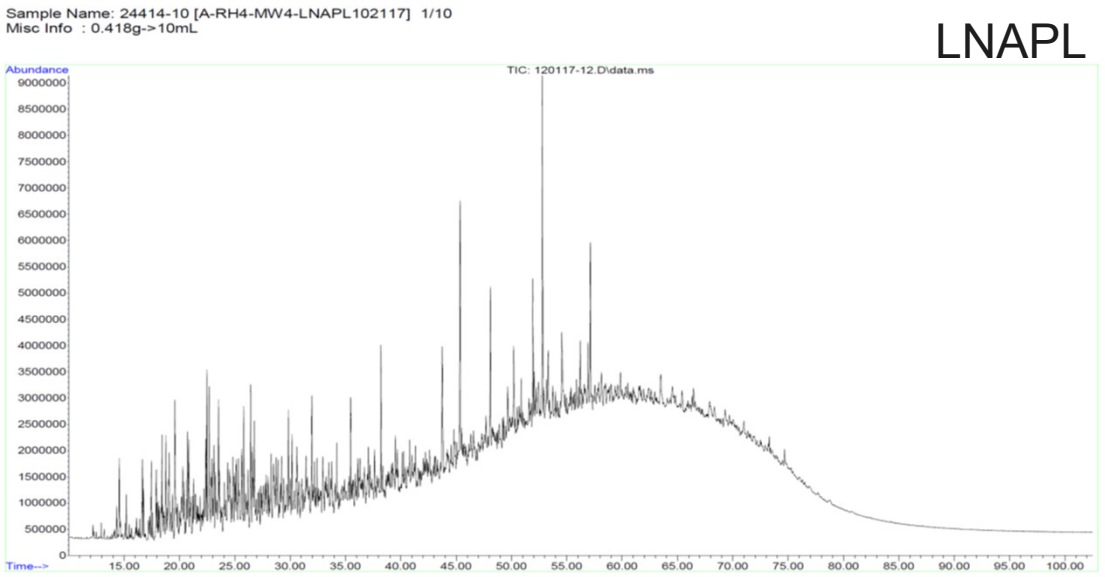


C8-C40 Full Scan – Total Ion Chromatogram

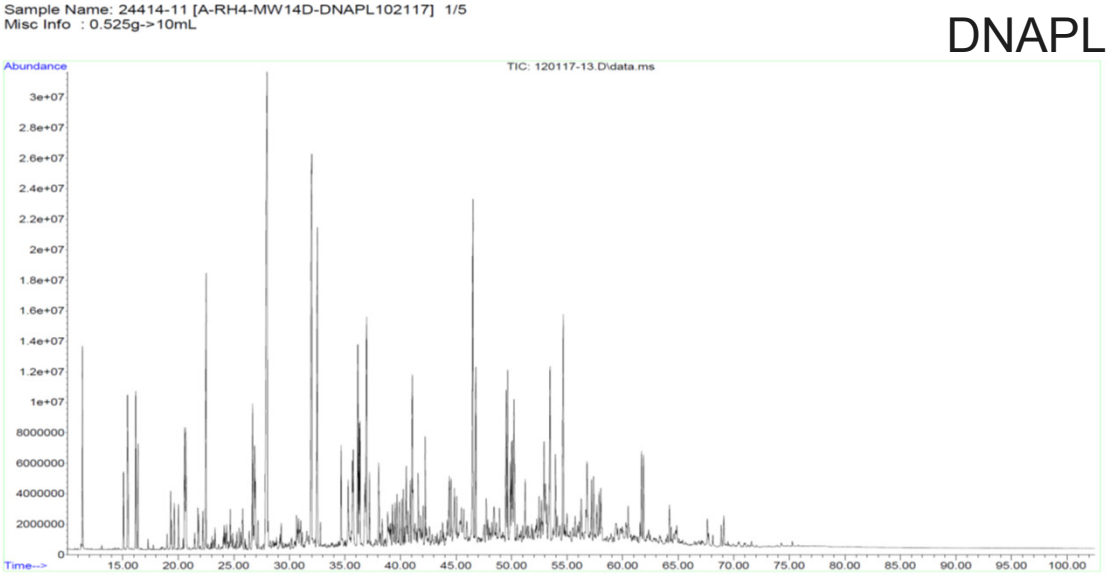
LNAPL sample is primarily a petroleum hydrocarbon similar in appearance to weathered crude oil or weathered Bunker C

DNAPL sample is consistent with a tar-like material, possibly petroleum tar

LNAPL

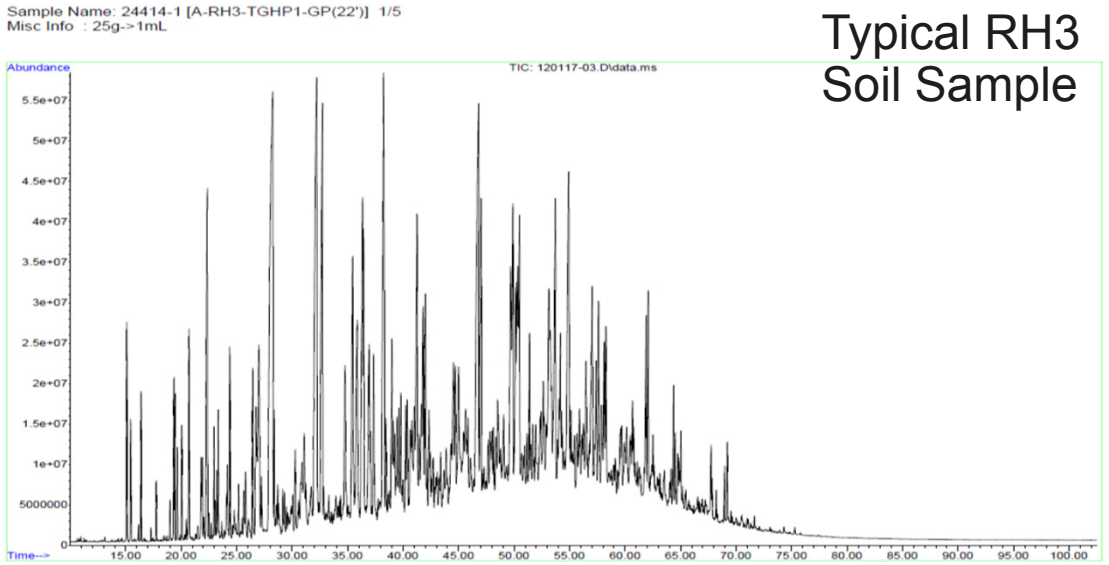


DNAPL

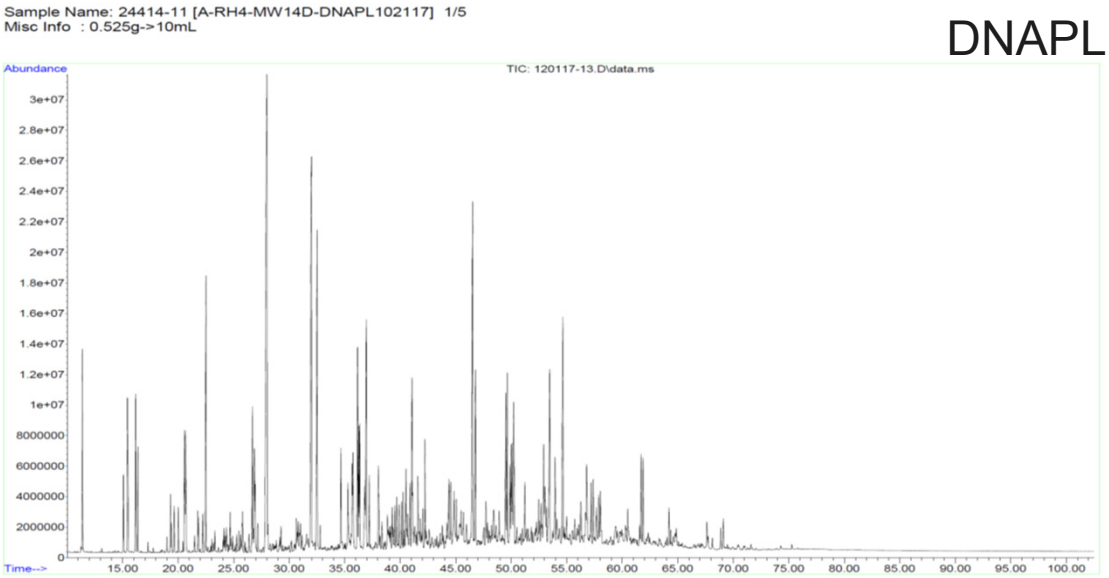


C8-C40 Full Scan – Total Ion Chromatogram

RH3 soil samples more closely resemble the DNAPL sample than the LNAPL sample



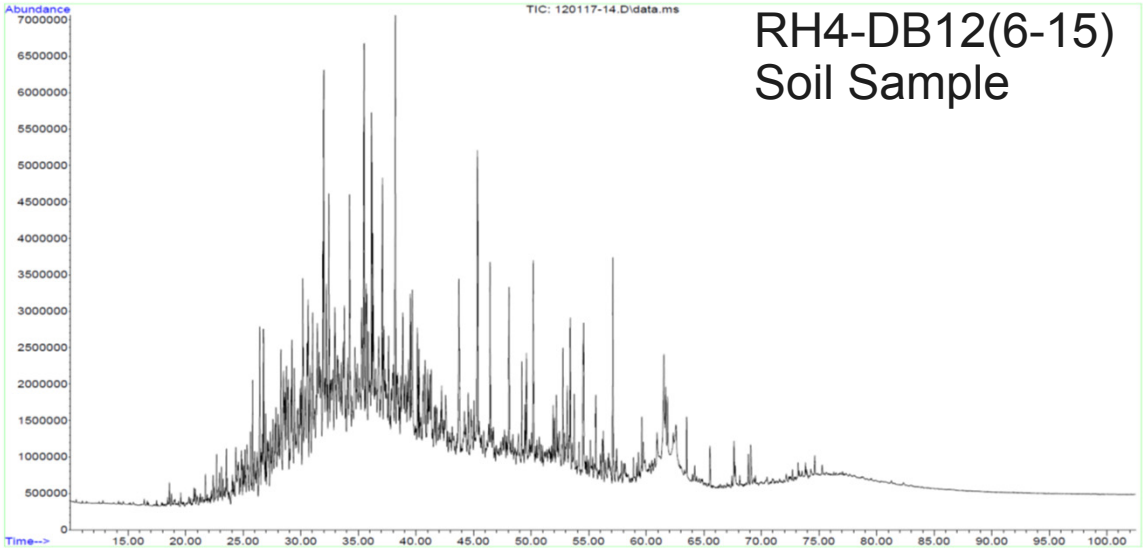
Typical RH3 Soil Sample



DNAPL

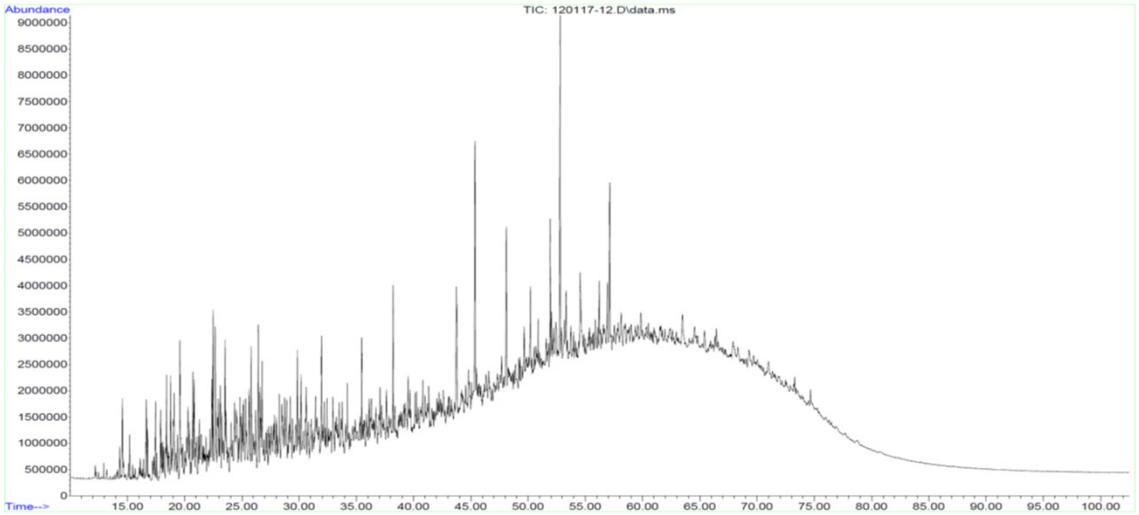
C8-C40 Full Scan – Total Ion Chromatogram

RH4-DB12(6-15) soil sample contains petroleum hydrocarbons that most closely resemble mineral oil (transformer oil) or weathered diesel. The numerous peaks are likely PAHs. This soil sample is different from the LNAPL sample and may be a mixed source sample.



RH4-DB12(6-15) Soil Sample

Sample Name: 24414-10 [A-RH4-MW4-LNAPL102117] 1/10
Misc Info : 0.418g->10mL

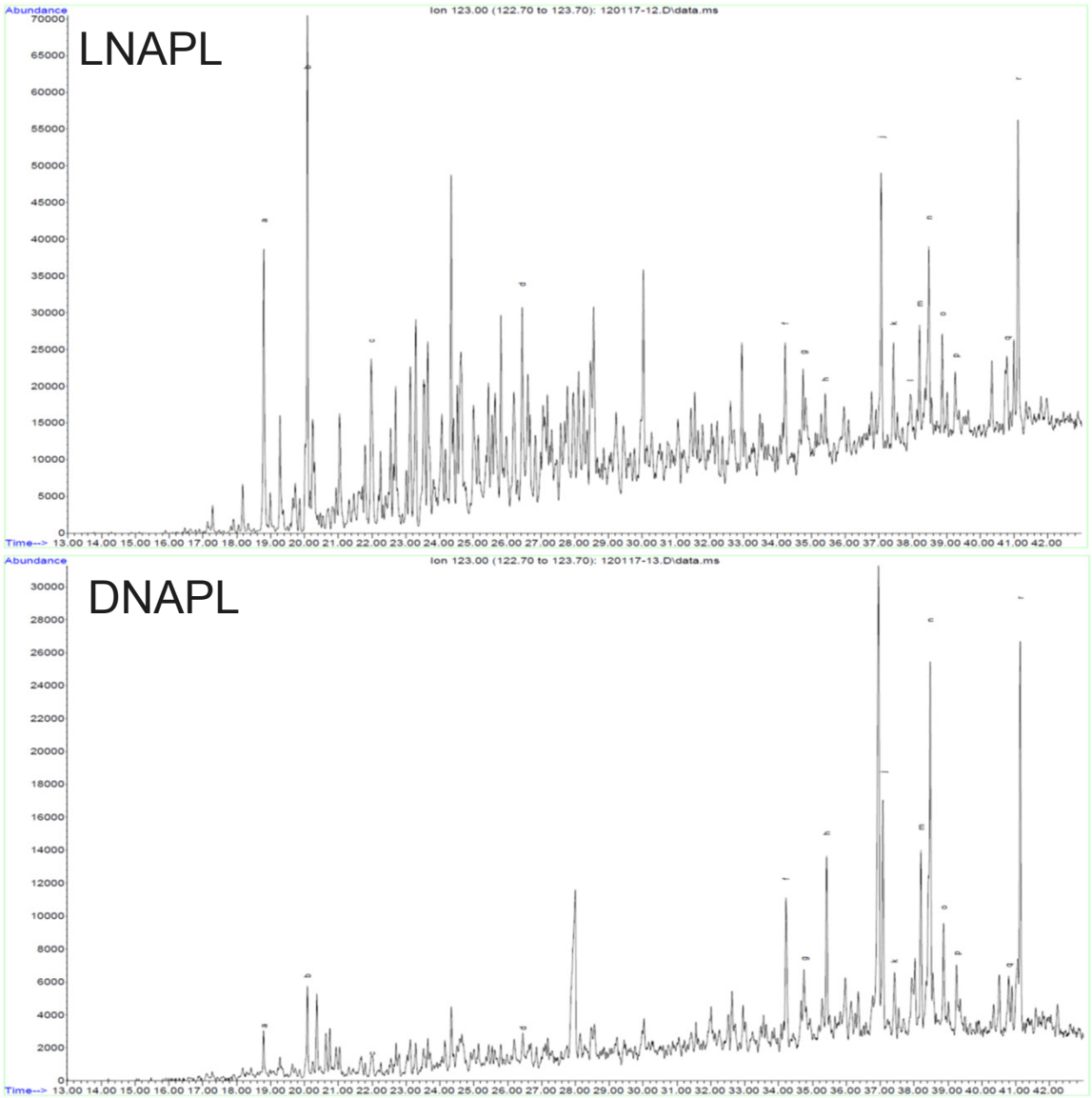


LNAPL

C8-C40 Full Scan – m/z 123 Bicyclanes

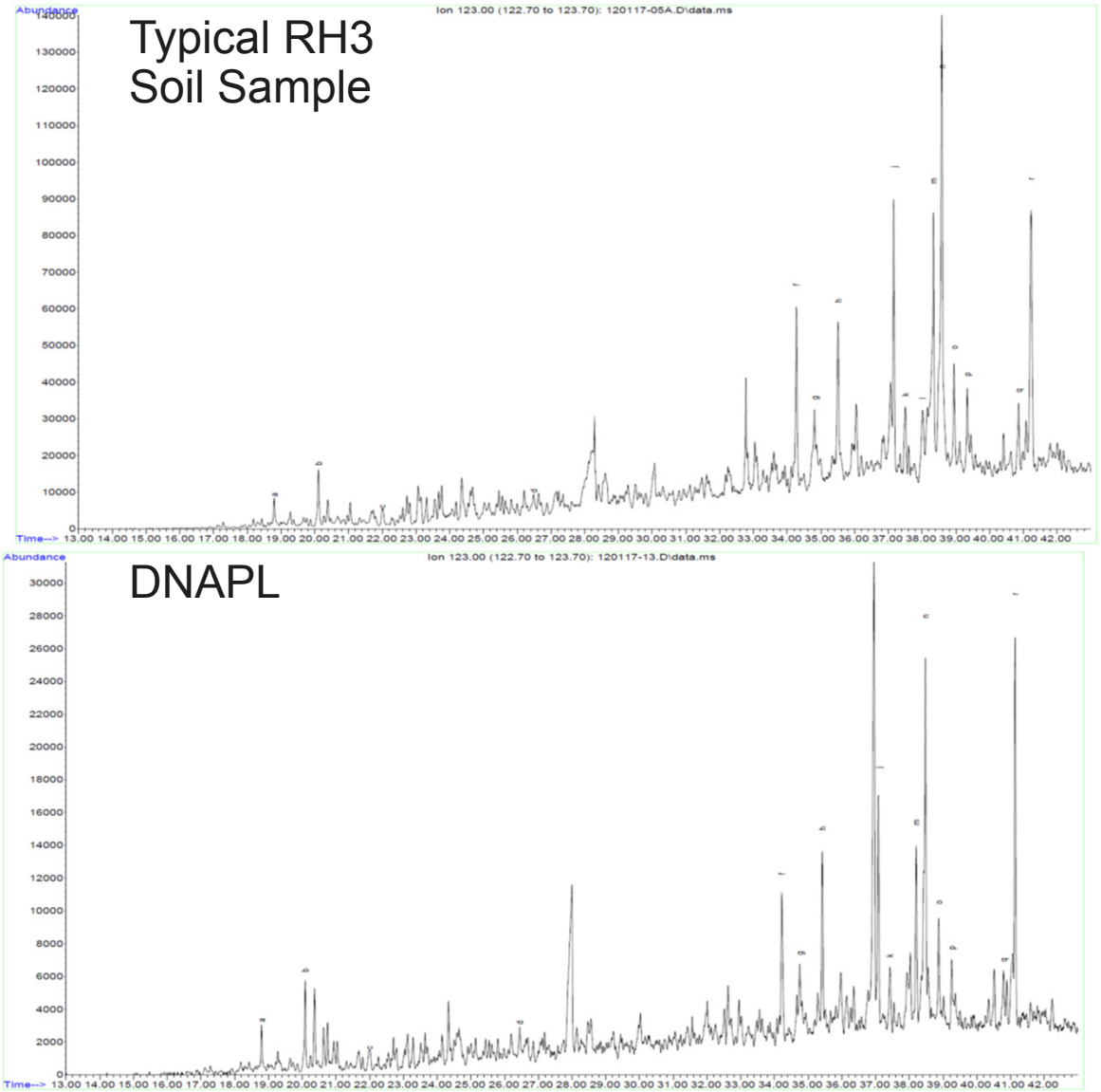
ARCADIS Design & Consultancy for natural and built assets

LNAPL sample has a broader range and different distribution of the bicyclanes biomarkers compared with the DNAPL sample



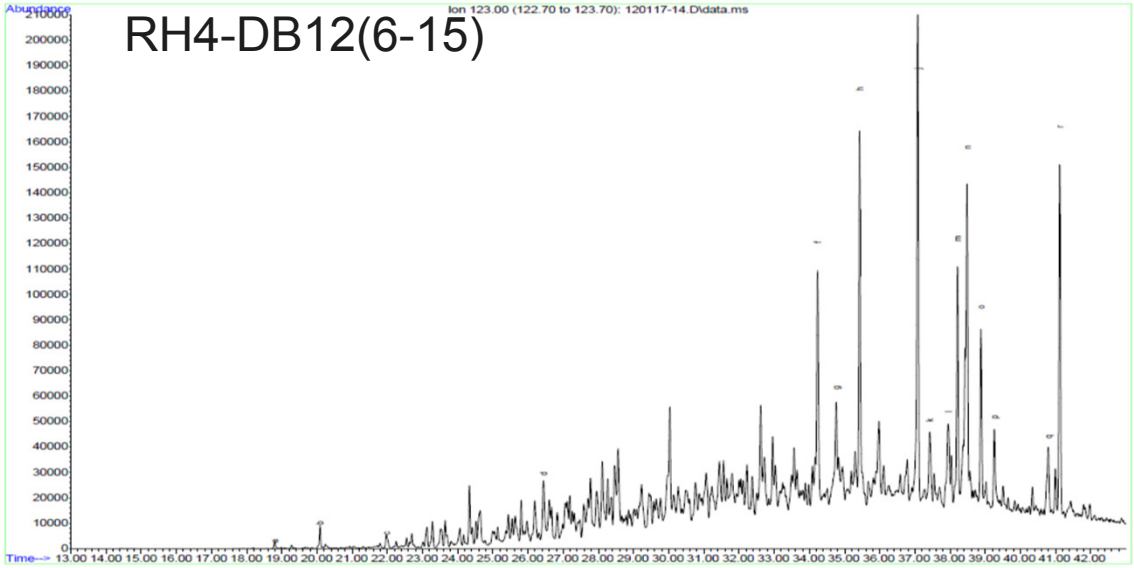
C8-C40 Full Scan – m/z 123 Bicylcanes

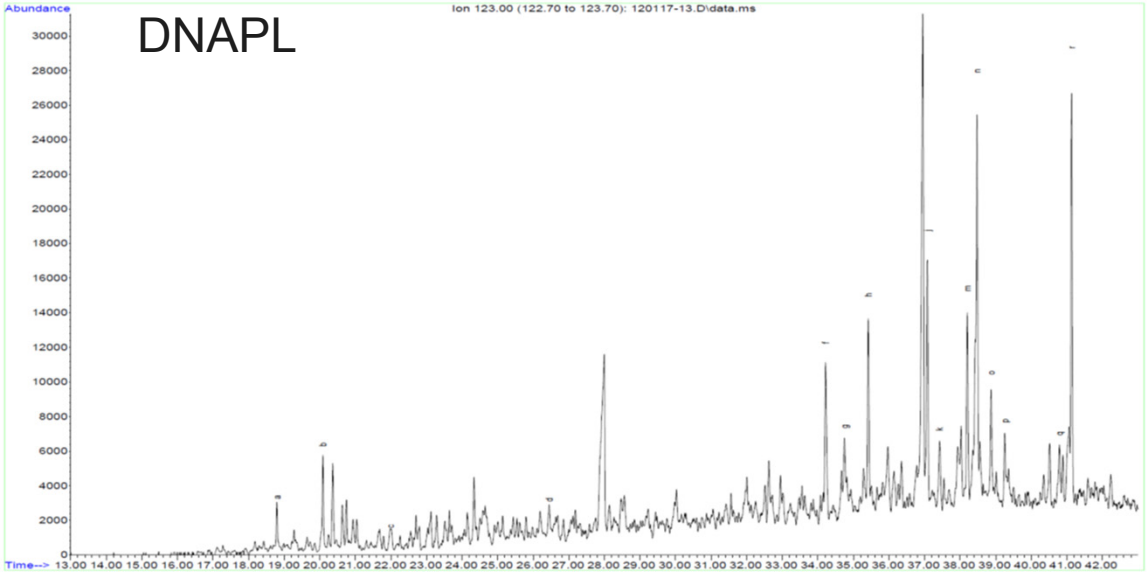
RH3 soil samples more closely resemble the DNAPL sample than the LNAPL sample



C8-C40 Full Scan – m/z 123 Bicylcanes

RH4-DB12(6-15) soil samples more closely resemble the DNAPL sample than the LNAPL sample

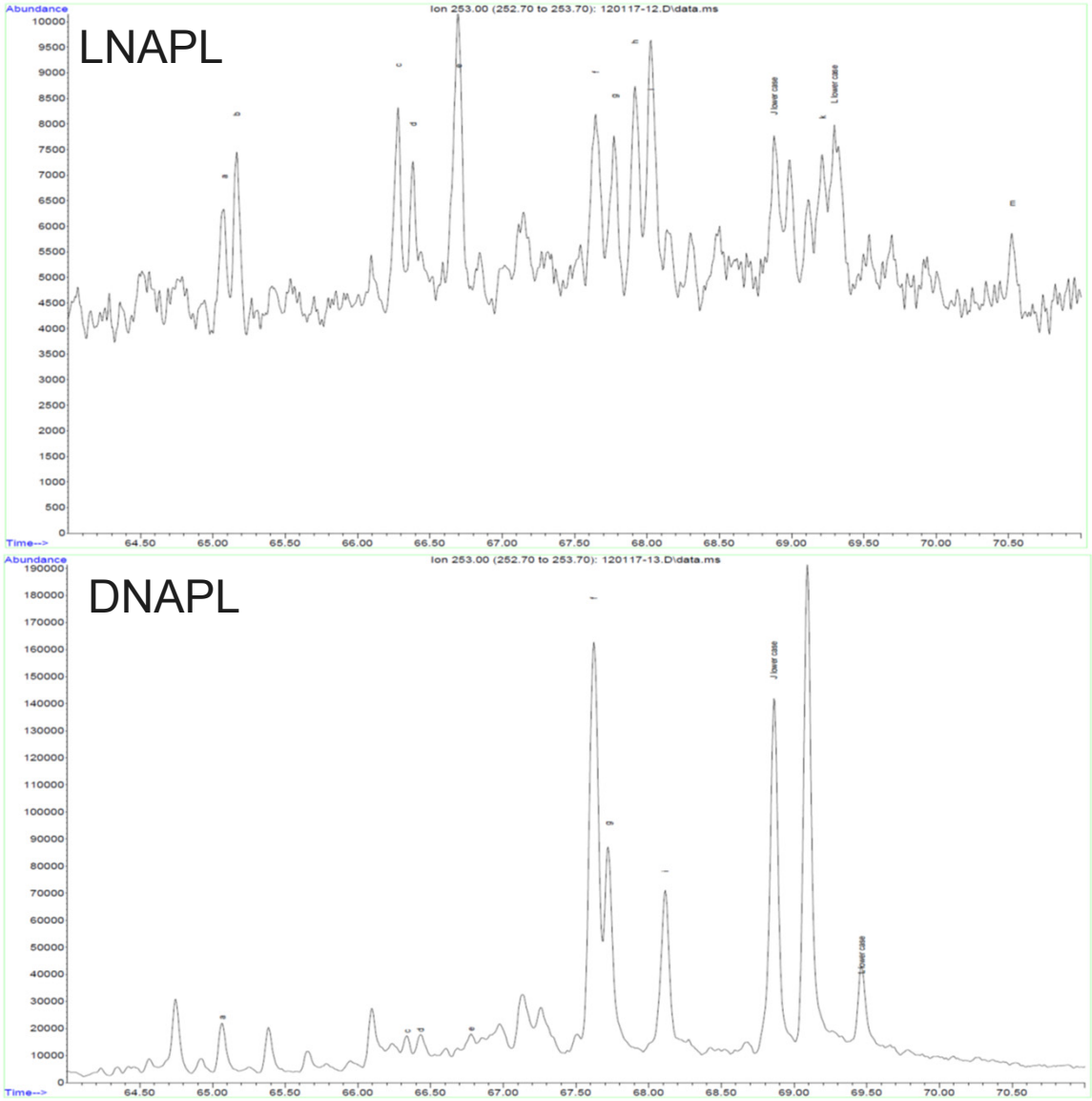




C8-C40 Full Scan – m/z 253 Steranes

ARCADIS Design & Consultancy for natural and built assets

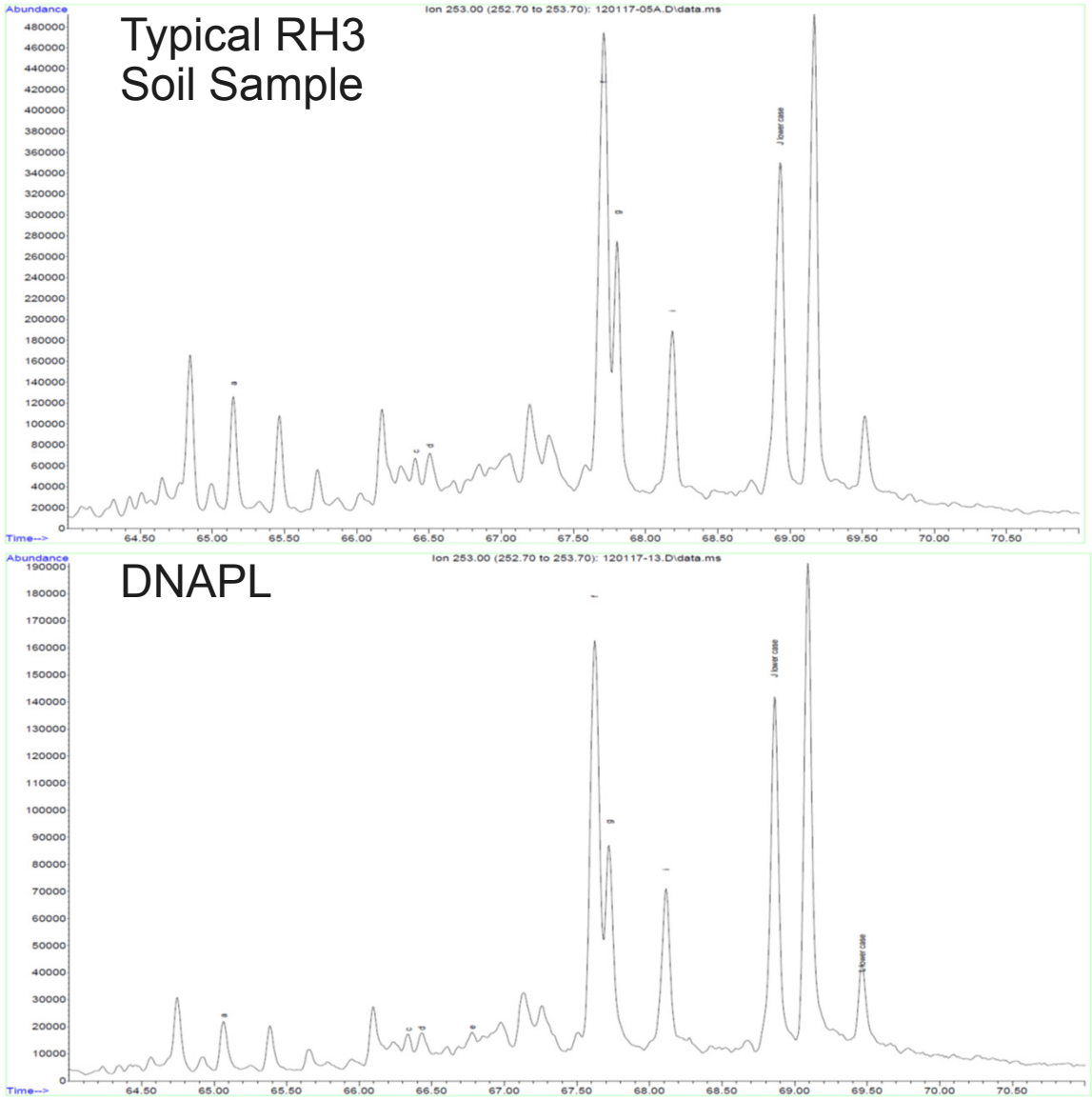
LNAPL sample has a broader range and different distribution of the sterane biomarkers compared with the DNAPL sample



C8-C40 Full Scan – m/z 253 Steranes

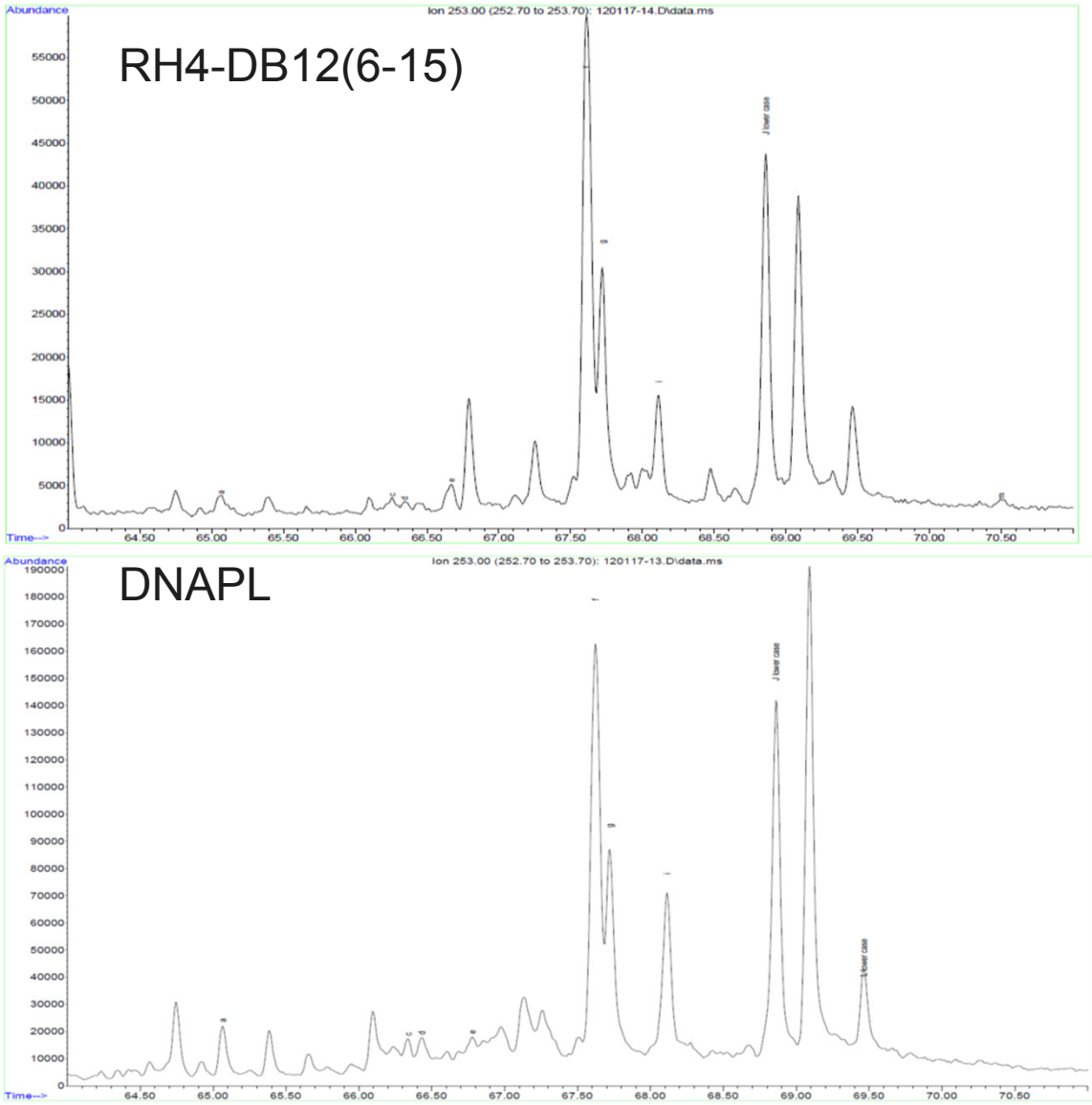
ARCADIS Design & Consultancy for natural and built assets

RH3 soil samples more closely resemble the DNAPL sample than the LNAPL sample



C8-C40 Full Scan – m/z 253 Steranes

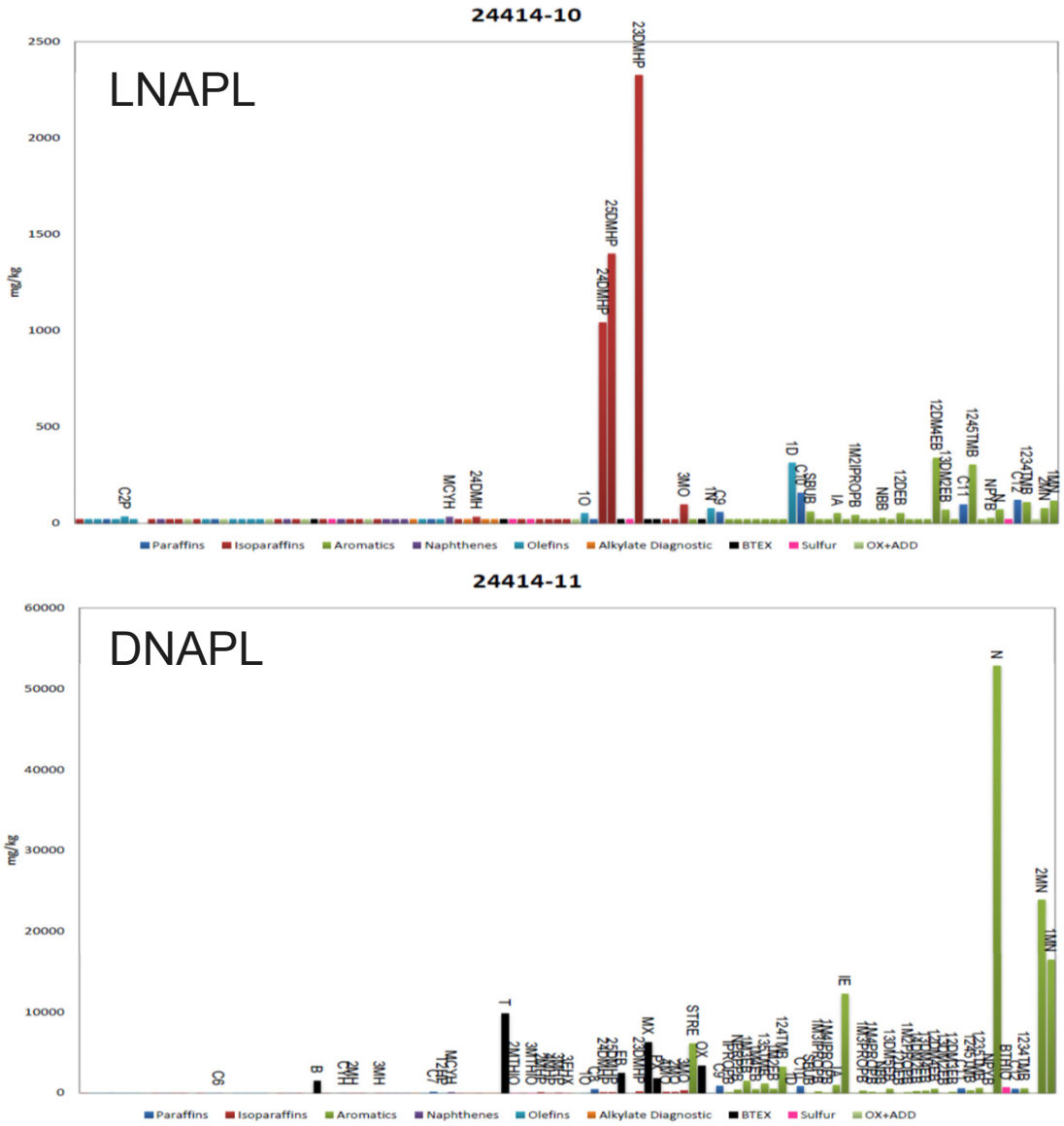
RH4-DB12(6-15) soil samples more closely resemble the DNAPL sample than the LNAPL sample



PIANO Bar Charts – Gasoline Range Hydrocarbon Compounds

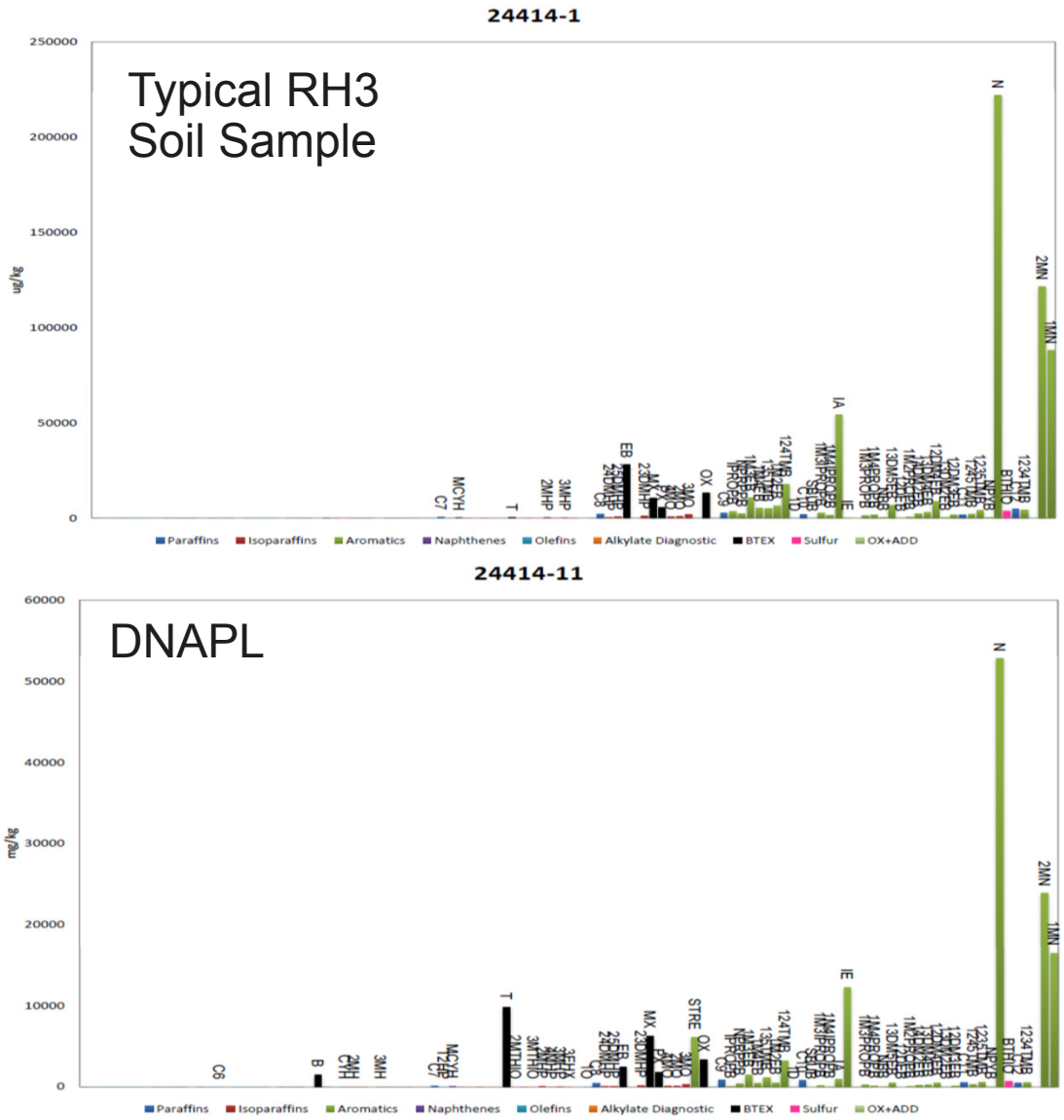
ARCADIS Design & Consultancy for natural and built assets

PIANO distributions for LNAPL and DNAPL differ



PIANO Bar Charts – Gasoline Range Hydrocarbon Compounds

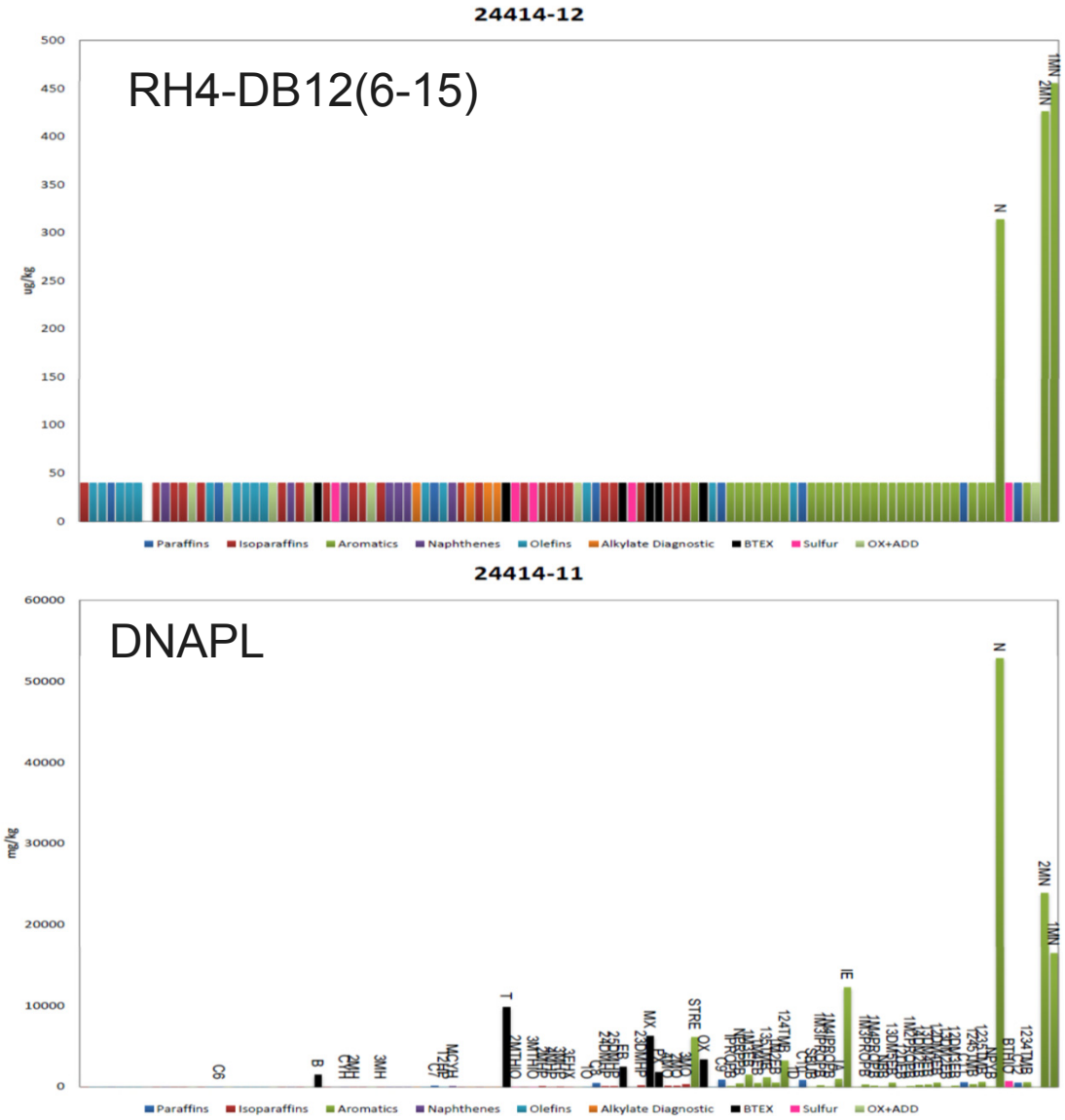
PIANO distributions for RH3 soil samples and DNAPL are similar



PIANO Bar Charts – Gasoline Range Hydrocarbon Compounds

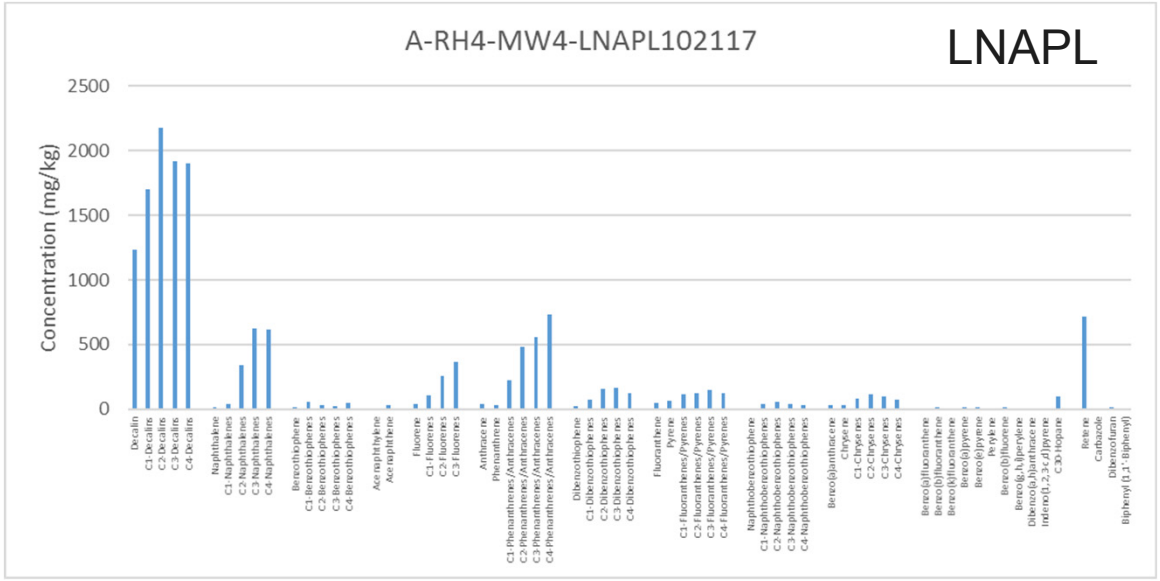
ARCADIS Design & Consultancy for natural and built assets

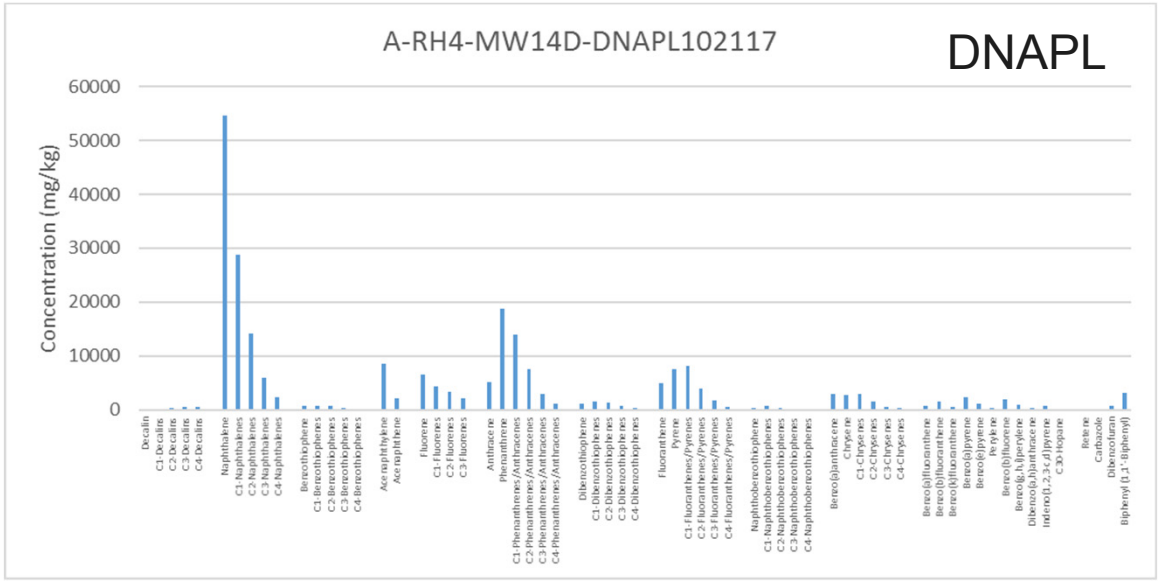
RH4-DB12(6-15) soil samples more closely resemble the DNAPL sample than the LNAPL sample



PAH Bar Charts

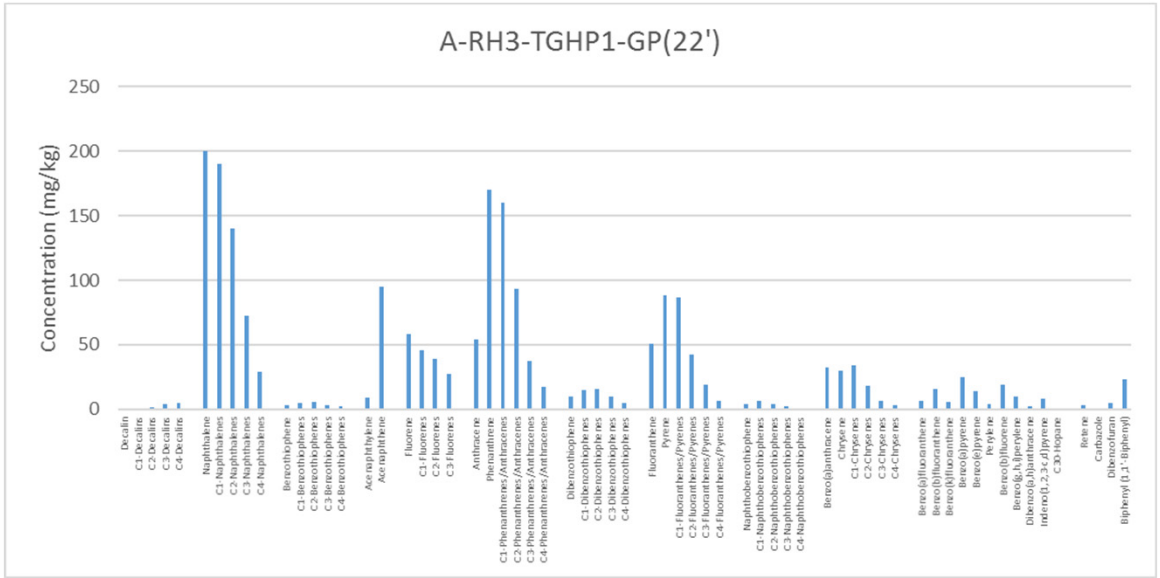
- PAH distributions for LNAPL and DNAPL differ
- LNAPL has prevalence of decalins and “bell curve” patterns for homolog groups
- DNAPL has prevalence of naphthalenes and parent and “ski slope” patterns for homolog groups

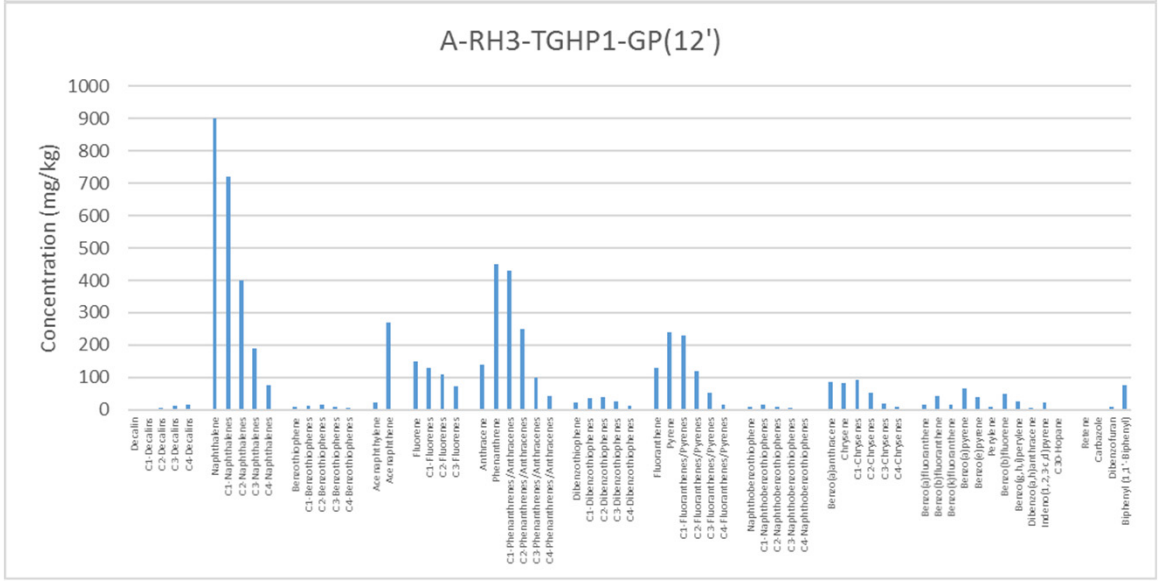




PAH Bar Charts

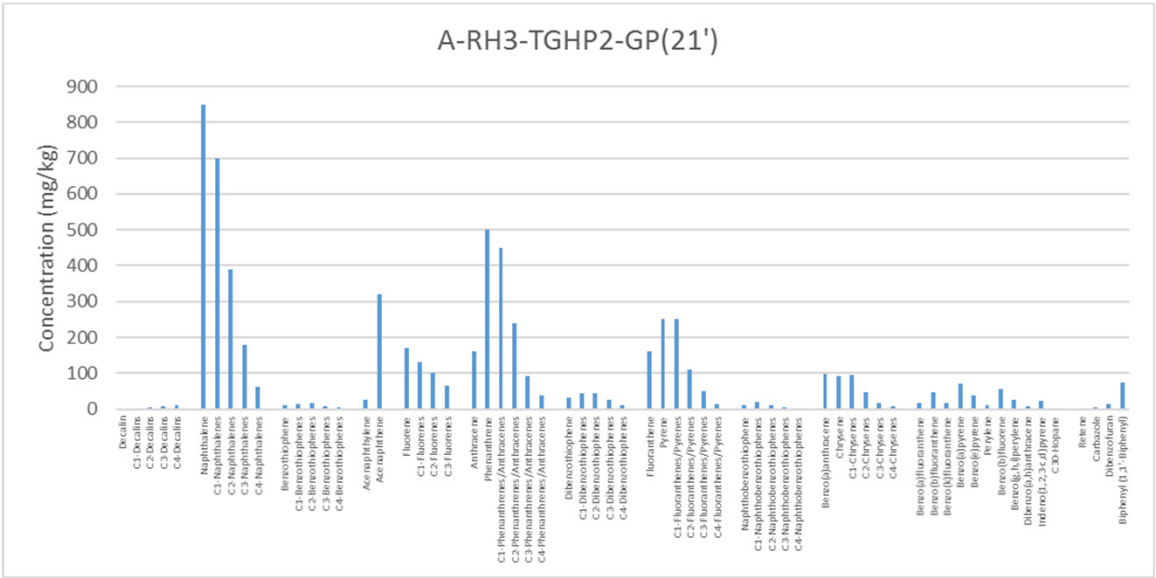
RH3 soil sample PAHs more closely resemble the DNAPL sample

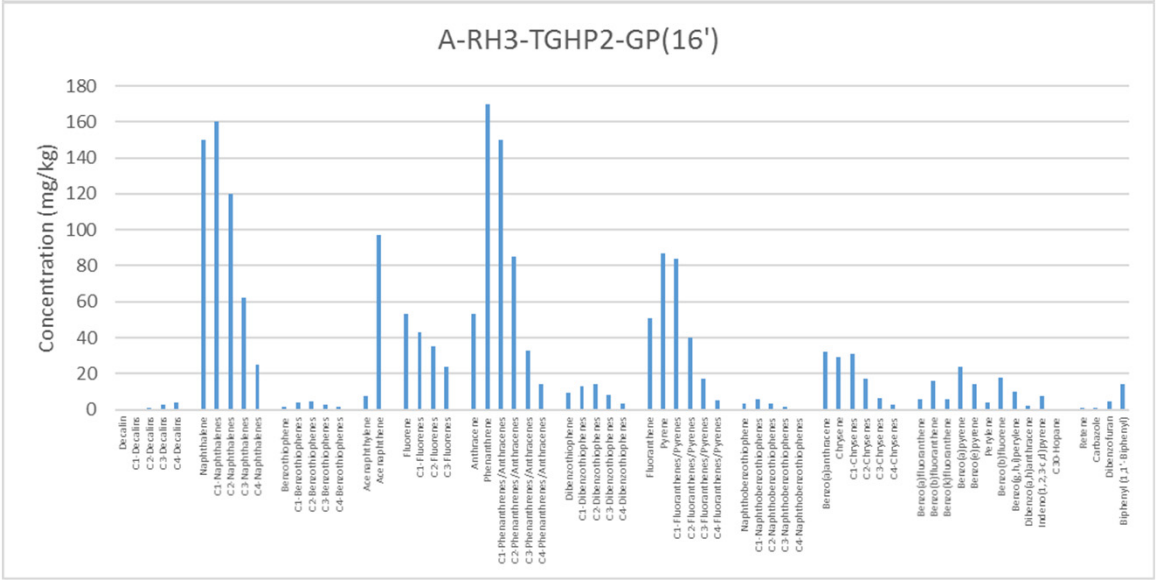




PAH Bar Charts

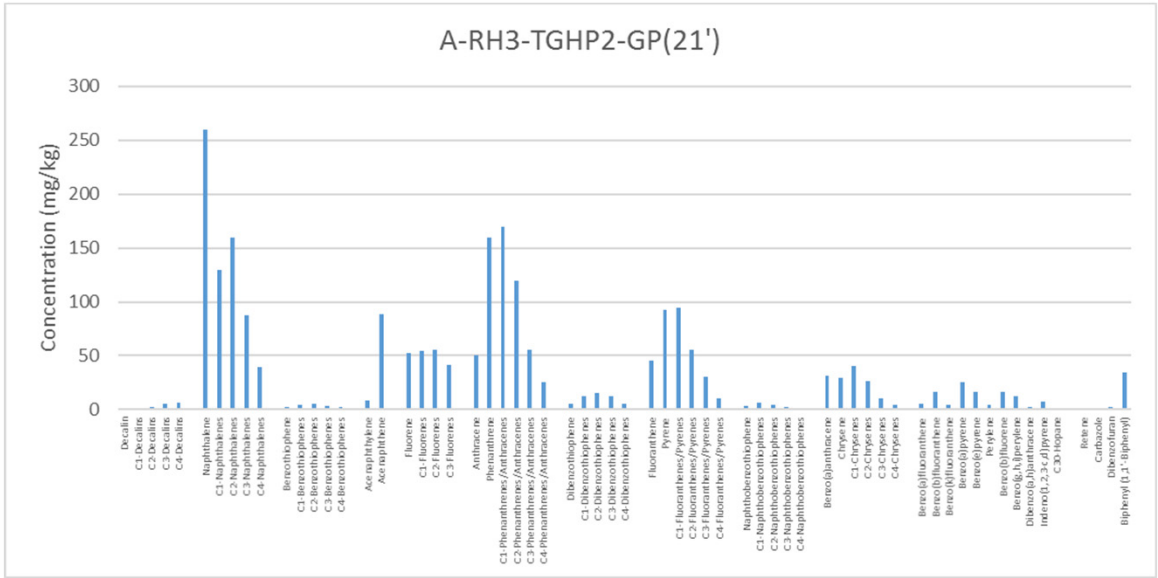
RH3 soil sample PAHs more closely resemble the DNAPL sample

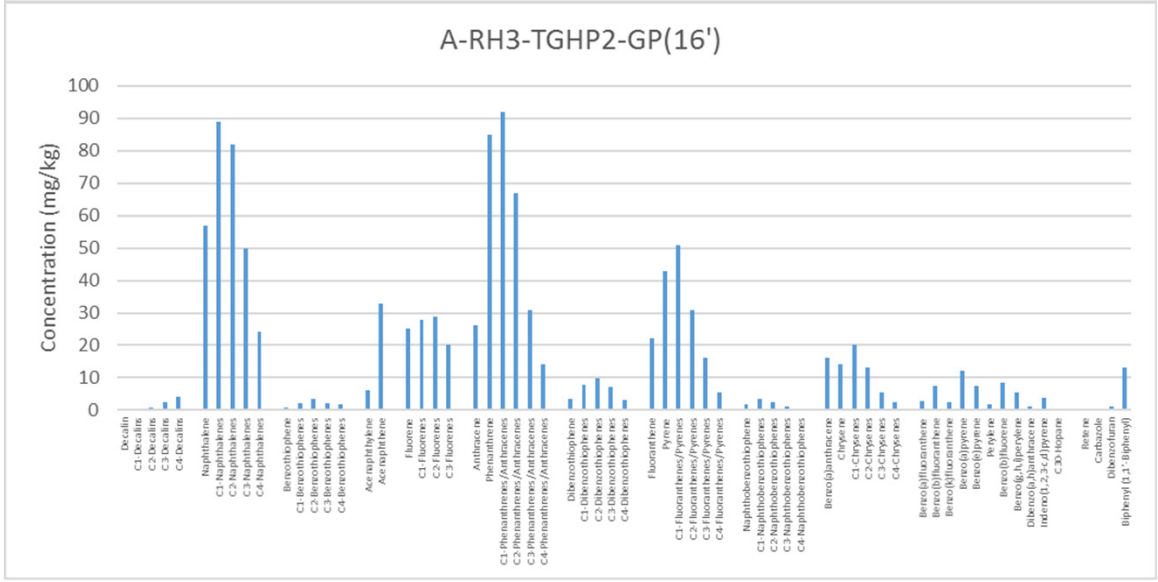




PAH Bar Charts

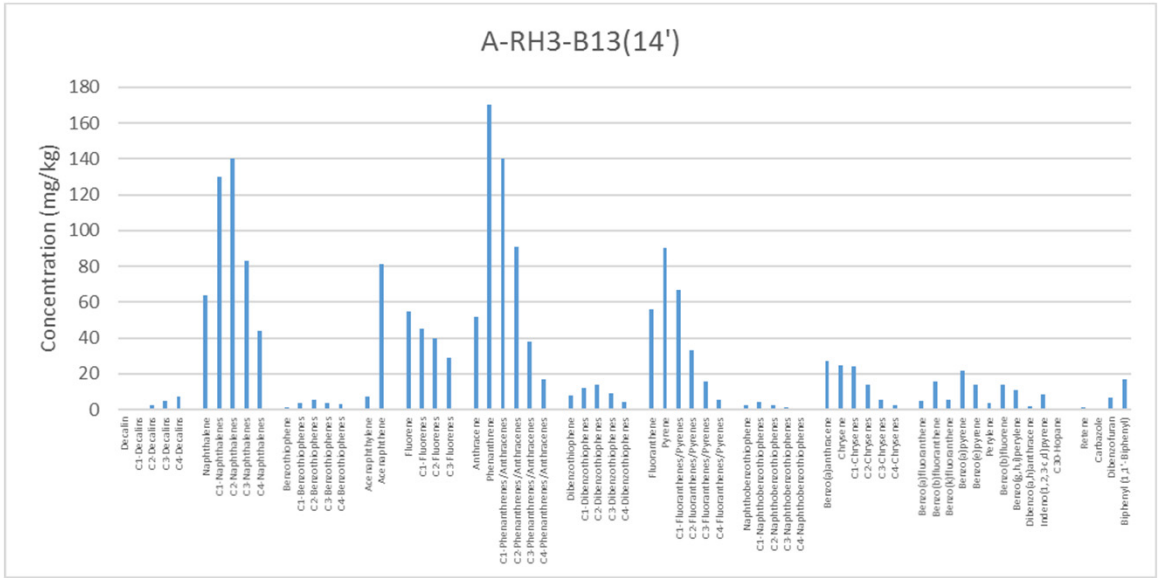
RH3 soil sample PAHs more closely resemble the DNAPL sample

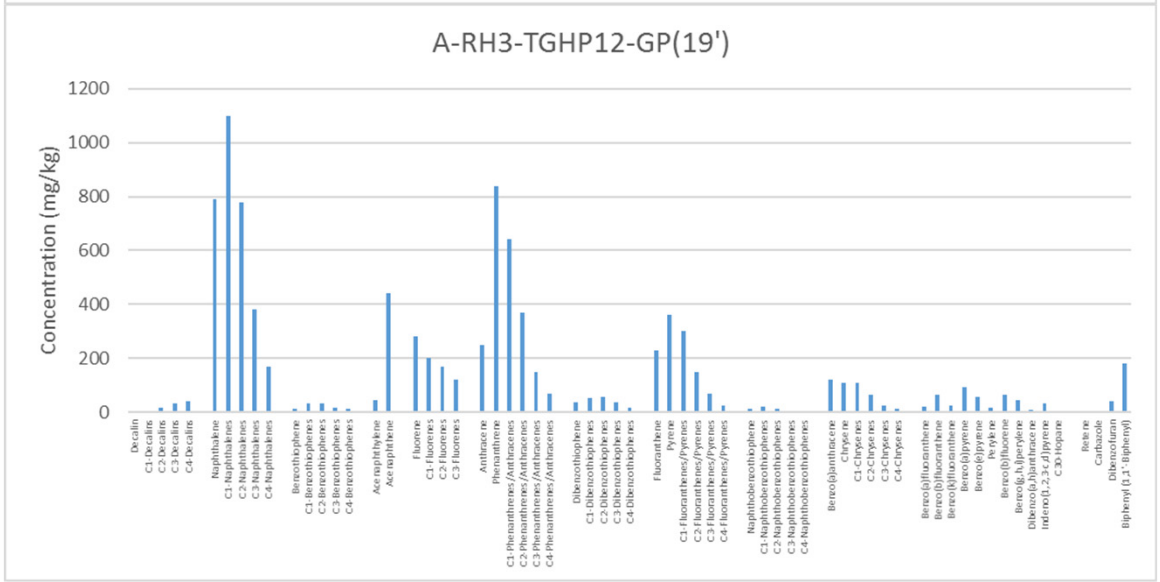




PAH Bar Charts

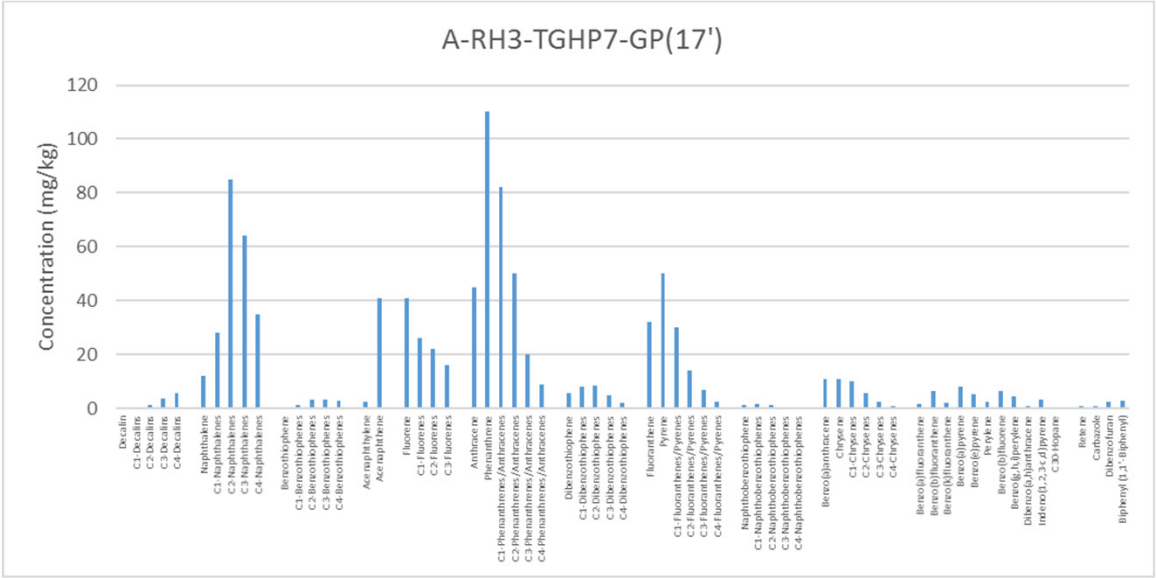
RH3 soil sample PAHs more closely resemble the DNAPL sample





PAH Bar Charts

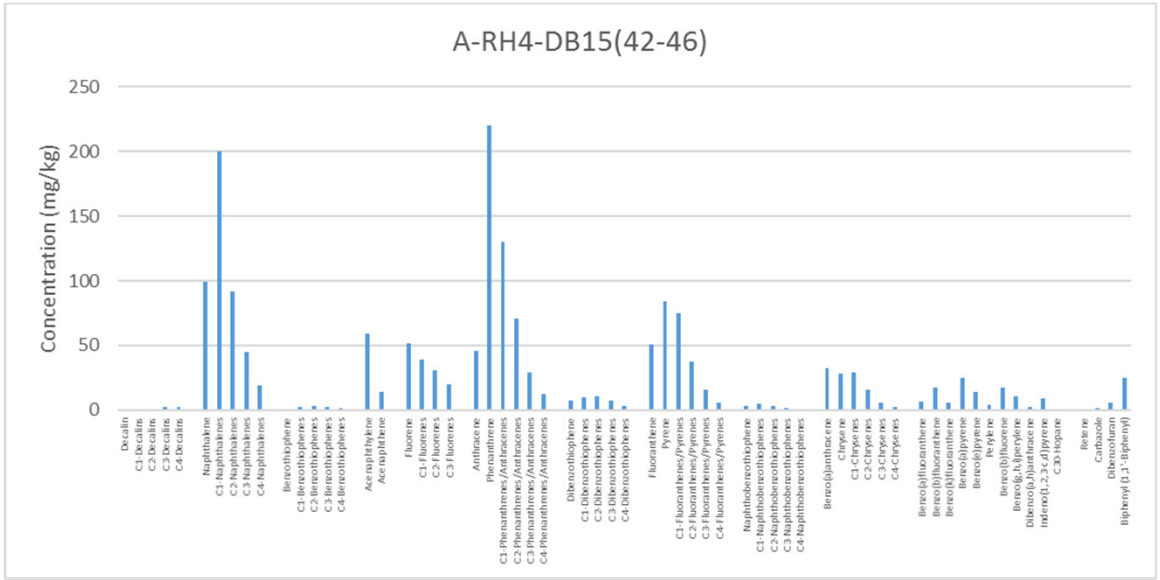
RH3 soil sample PAHs more closely resemble the DNAPL sample

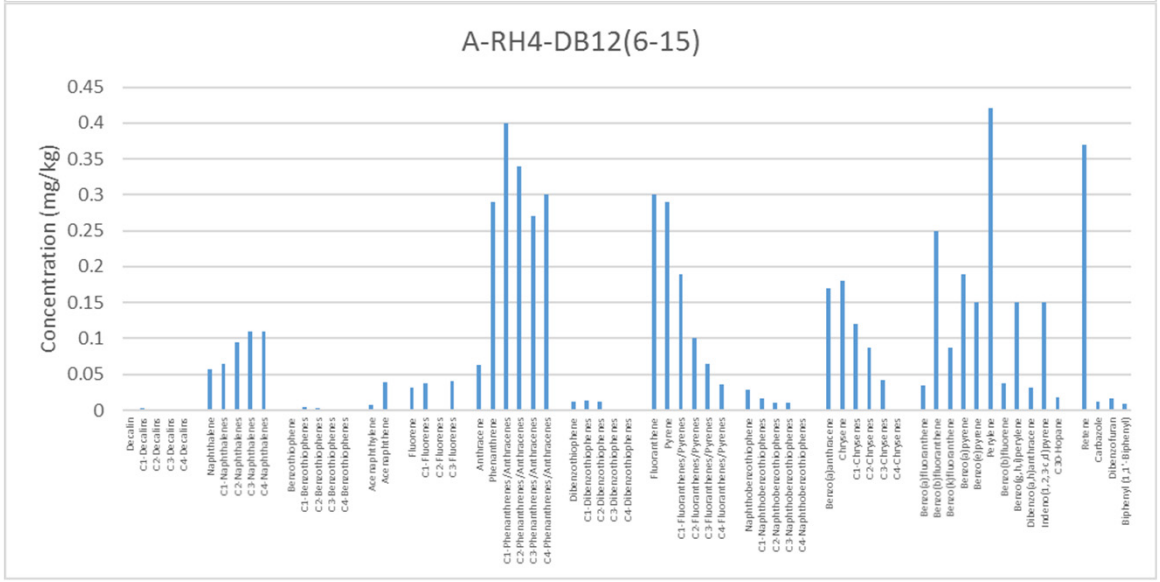


PAH Bar Charts

RH4-DB15(42-46) soil sample PAHs more closely resemble the DNAPL sample

RH4-DB12(6-15) soil sample PAH distributions shows characteristics of both the LNAPL and DNAPL samples, but more closely resembles the DNAPL. The RH-4-DB12(6-15 sample appears to be highly weathered





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