SESI
CONSULTING
ENGINEERS

REMEDIAL ACTION WORKPLAN

For:

14 Le Count Standard Printing
Site #C360176

14 Le Count Place,
207, 209, and 211 North Avenue
455, 459, and 463 Main Street
New Rochelle, New York

Prepared for:

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CERTIFICATIONS

I, Fuad Dahan, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10)



Fuad Dahan	09/26/2019	
NYS Professional Engineer (# 090531)	Date	Signature

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AST	Aboveground Storage Tank
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	Below ground surface
CAMP	Community Air Monitoring Plan
C&D	Construction & Demolition Materials
COC	Contaminant of Concern
COPEC	Constituents of Potential Ecological Concern
cy	Cubic yard
DER	Division of Environmental Remediation
DER-10	NYSDEC Technical Guidance for Site Investigation & Remediation
DUSR	Data Usability Summary Report
ECs	Engineering Controls
ECL	Environmental Conservation Law
ESA	Environmental Site Assessment
FER	Final Engineering Report
FWRIA	Fish and Wildlife Resources Impact Analysis
gpm	gallons per minute
HHEA	Human Health Exposure Assessment
ICs	Institutional Controls
MW	Monitoring Well
NYSDEC	New York State Department of Environmental Conservation
PCB	Polychlorinated Biphenyls

Acronym	Definition
PHC	Petroleum Hydrocarbon
PID	Photoionization Detector
ppm	parts per million
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RASR	Remedial Action Selection Report
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RDD	Remedial Design Document
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objectives
SESI	SESI Consulting Engineers, DPC
SMP	Site Management Plan
SVOCs	Semi-Volatile Organic Compounds
S&W	S&W Redevelopment of North America, LLC.
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TOGS	Technical and Operations Guidance Series
USCO	Unrestricted Use Soil Cleanup Objectives
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

Site Description/Physical Setting/Site History

14 Le Count Place, LLC and WBLM Le Count Owner LLC (together herein referred to as the "Volunteer") entered into a September 19, 2018 Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) to investigate and remediate the 14 Le Count Standard Printing Site (herein referred to as the "Site") an approximately 0.93 acres Site located in the City of New Rochelle, Westchester County New York (Site # C360176). The proposed project for the Site will demolish the existing buildings to construct two new multi-story mixed use residential-commercial buildings.

The Site is a relatively level 0.93 acres bounded to the north by commercial buildings, to the south by Main Street and multiple commercial properties across Main Street, to the east by Le Count Place and multiple commercial properties across Le Count Place, and to the west by North Avenue and multiple commercial properties across North Avenue. The Site's approximate topographic elevation is 90 feet above mean sea level (ft-msl). The closest surface water body, the Echo Bay, is located approximately 0.55 miles east of the Site. The subsurface conditions consist of fill to depths ranging from approximately 0 to 14 feet below ground surface (ft-bgs). The fill consists of gray coarse gravel, little sand and trace silt and wood fibers. Native sand and gravel are present beneath the fill. The native sand and gravel layer extends vertically to the bedrock at depths ranging from 15 to 25 ft-bgs. The bedrock consists of metamorphic gneiss and schist. Groundwater is approximately 8 to 15 ft-bgs.

The Site has been impacted by historical operations associated with a former newspaper printing operation, discharges associated with underground storage tanks (USTs) and contaminated fill material.

This Remedial Action Work Plan (RAWP) includes an analysis of the remedial alternatives available to remediate the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed between January and March 2019, and then selects a preferred remedy: Track 1 Unrestricted Use

Summary of the Remedial Investigation

The Remedial Investigation Report (RIR) summarizes the results of prior investigations and the RI performed on the Site. The RI was conducted in accordance with the Remedial Investigation Work Plan (RIWP) for the Site, which was last revised January 28, 2019, and subsequently approved by the NYSDEC in February 1, 2019, and the NYSDEC's Technical Guidance for Site Investigation and Remediation (DER-10).

The RI consisted of collecting one hundred and thirteen (113) soil samples, ten (10) groundwater samples, and eight (8) soil vapor/sub-slab vapor samples. The soil sampling plan for the investigation of Recognized Environmental Concerns (RECs) was based on the multiple Phase I ESA Reports prepared by TMA and the Phase II investigation performed by SESI. Field observations identified suspect and confirmed heating oil tanks at 14 Le Count Place, 455, 459, and 463 Main Street, and 207, 209, and 211 North Avenue, and the former printing operations at 209 North Avenue.

Soil

Soil samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs – USEPA Method 8260), semi-volatile organic compounds (SVOCs – USEPA Method 8270), PCBs and pesticides (USEPA Methods 8081/8082) and target analyte list (TAL) metals (USEPA Methods 6010/7471), Duplicates were included each day sampling was conducted.

Based on the RI, the overall depth of polyaromatic hydrocarbons (PAHs) and metals contaminated soils at the Site extends down to 23 ft-bgs on the southern portion of the Site, and to 8 ft-bgs on the northern portion where the contamination is a bit shallower.

Groundwater

Groundwater investigations have resulted in SVOCs detects that exceeded the NYSDEC Technical Operation and Guidance Series 1.1.1 Class GA groundwater Ambient Water Quality Standards (AWQS) in permanent wells MW-3, and MW-4 and temporary well GW-2, which are located in the eastern section of the Site, and the temporary well GW-1, which is located in the northwest section of the Site. Temporary

well GW-3 resulted in exceedance of the Class GA AWQS for the pesticide heptachlor.

In addition. the Site's groundwater has been impacted with petroleum hydrocarbon (PHC) VOCs above the Class GA AWQS as result of the November 2018 (post-BCA) fuel oil spill at 207 North Avenue. Free product was identified in this area as well. All spill related impacts are being addressed in a separate Interim Remedial Measure (IRM).

IRMs

An IRM is being implemented during this RI phase of the Project, which included removal of above ground storage tanks (ASTs), and petroleum contaminated soil. The post-BCA spill resulting from the ASTs that were located in 207 North Avenue are being addressed separately under the IRM.

Soil Vapor

SESI collected seven soil vapor samples (SS-9 through SS-14 and SS-16), and one sub-slab vapor point (SS-15) in the basement of 459 Main Street. The soil vapor points were collected at a depth of 5 to 10 ft-bgs which is approximately 3 to 5 feet above the groundwater table. The samples were analyzed for VOCs in accordance with EPA Method TO-15. Six soil vapor samples exceeded the soil gas New York State Department of Health (NYSDOH) Guideline Values or the USEPA June 2015 Sub-slab Soil Vapor Technical Guidance concentration levels. The exceedances of the soil gas guidance values were for 1,1-dichloroethene, benzene, ethylbenzene, chloroform and trichloroethene (TCE).

1.0 INTRODUCTION

The NYSDEC has entered into a BCA for the property located at 14 Le Count Place, 207, 209, and 211 North Avenue, and 455, 459, and 463 Main Street in the Town of New Rochelle, New York (Figure 1.1) with 14 Le Count Place LLC and GSLM 14 Le Count Owner LLC as volunteers (Volunteers) now known as the 14 Le Count Standard Printing Site (BCP# C360176) ("Site") on September 19, 2018.

SESI Consulting Engineers DPC (SESI) has prepared this RAWP on behalf of the Volunteers. This RAWP includes an analysis of the remedial alternatives available to remediate the nature and extent of contamination as determined from data gathered during the RI, performed between January and March 2019, and then selects a preferred remedy.

The RI was completed in accordance with the NYSDEC DER-10, to provide a systematic assessment of environmental conditions on the Site. The RI defines the nature and extent of contamination on-site, identifying contaminant source areas, and producing data of sufficient quantity and quality to complete an on-site exposure assessment and a qualitative off-site exposure assessment for purposes of designing the remedial action for the Site.

The RI for this Site did not identify fish and wildlife resources. Per DER-10 Appendix 3C, no fish and wildlife impact analysis are needed since there are no fish or wildlife resources near the Site.

A formal Remedial Design document will not be prepared as the remedy for this Site entails principally a site-wide source removal effort in order to achieve a Track 1 Unrestricted Use remedy.

1.1 SITE LOCATION AND DESCRIPTION

The Site properties are identified on the Westchester County Clerk's as a portion of tax parcel map Section-Block-Lot number 1-228-0100 and 1-228-0200. The Site is located in an area of primarily commercial and mixed uses. The Site and nearby properties are generally level. The Site previously consisted of seven lots, which have

now been merged and re-subdivided into two lots as described in a June 27, 2018 letter to NYSDEC Project Manager Mathew King. The Site totals approximately 0.93-acres, which land has been historically used for a former printing operation and for other commercial and residential purposes.

The Site is bounded to the north by commercial buildings, to the south by Main Street and multiple commercial properties across Main Street, to the east by Le Count Place and multiple commercial properties across Le Count Place, and to the west by the North Avenue and multiple commercial properties across North Avenue. The Brownfields Site Boundary is shown on Figure 1.2.

1.2 PROPOSED REDEVELOPMENT PLAN

The Remedial Action to be performed under the RAWP is intended to make the Site protective of human health and the environment without the need for institutional or engineering controls. The proposed redevelopment plan includes a mix of residential and commercial uses. A sub-grade structure, which underlies the entire proposed building, includes a parking garage, storage, bike racks, utility room, locker room, and maintenance management facilities. The proposed site development plan is shown on Figure 1.3.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The surrounding properties consist of multiple commercial properties.

Direction	Adjacent Property
North	Commercial Buildings
South	Main Street and Commercial Buildings Across Main Street
East	LeCount Place and Multiple Commercial Properties Across LeCount Place
West	North Avenue and Multiple Commercial Properties Across North Avenue

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The Site was investigated in accordance with the scope of work presented in the NYSDEC-approved RI/IRMWP. The investigation was conducted between January and March 2019. The RI report is submitted to NYSDEC and New York State Department of Health (NYSDOH) with this submission in a separate report.

2.1 PREVIOUS INVESTIGATIONS

The following environmental reports are attached in Appendix H of the RIR:

A. Phase I Environmental Site Assessment, 463 Main Street Property by Tim Miller Associates, Inc. (TMA), July 5, 2017

B. Phase I Environmental Site Assessment, 459 Main Street Property by TMA, August 15, 2017

C. Phase I Environmental Site Assessment, 455 Main Street Property by TMA, December 5, 2017

D. Phase I Environmental Site Assessment, 211 North Avenue Property by TMA, March 20, 2017

E. Phase I Environmental Site Assessment, 209 North Avenue Property by TMA, July 24, 2017

F. Phase I Environmental Site Assessment, 207 North Avenue Property by TMA, August 16, 2017

G. Phase II Environmental Site Assessment Report, 14 Le Count Place, 207, 209, and 211 North Avenue, 455, 459, and 463 Main Street by SESI Consulting Engineers, March 22, 2018.

The following RECs were identified during the multiple Phase I ESA Reports prepared by TMA and SESI's review of the Site history and field observations:

- **REC 1: Former UST (455 Main Street)** - This area includes an abandoned-in-place fuel oil UST beneath the sidewalk in front of the building. According to the TMA Phase I ESA Report, dated December 5, 2017, the property contains a Historical Recognized

Environmental Condition (HREC) as a result of the abandoned-in-place UST. It was reported that trace VOCs were present in soil and groundwater at the Site. The contaminants of concern (COCs) in this area are a result of UST discharges. This UST will be removed in accordance with Section 3.2 of this report.

- **REC 2: Potential Former UST (211 North Avenue)** - This area includes a potential fuel oil UST beneath the sidewalk in front of the building. According to the TMA Phase I ESA Report, dated March 20, 2017, a REC exists at the Site as the result of a potentially out of service UST at the Site. Exploratory test pits were conducted during October 2018 and no tanks were located within the suspected location.

- **REC 3: Former Printing Operations (209 North Ave)** – Based on SESI's review of the available documentation, a former newspaper printing operation was present at the building located at 209 North Avenue. The Sanborn maps identified the Evening Standard, a local newspaper that occupied the building from approximately 1911 until approximately 1932. The building first appeared on the 1903 Sanborn Map. The identified use of the site was for printing. The building at 209 North Avenue contained a backdoor opening directly into 14 LeCount Place. The building on 14 Le Count Place was developed between 1911 and 1932. The COCs in this area are a result of the chemicals that were historically used in the printing process, including cobalt and other metals.

- **REC 4: Heating Oil UST (14 LeCount Place)** - This REC includes a heating oil UST immediately south of the building. According to the TMA Phase I ESA Report, dated December 12, 2016, the property contains a UST that failed a tank tightness test on December 9, 2016. It is unknown if the UST failed as a result of leaking fittings, lines, or holes in the UST shell. The UST was removed and the case closed for this discharge.

- **REC 5: Heating Oil UST (459 Main Street) -** This area includes a 1,000-gallon fuel oil UST that was discovered beneath the basement. This UST was uncovered and will be removed in accordance with the Section 3.2 of this report.

- **REC 6: Heating Oil UST (463 Main Street) -** One 275-gallon UST located in the basement has been moved from its original location and no impacts were observed. This UST will be removed in accordance with the Section 3.2 of this report.

- **REC 7: Heating Oil AST (207 North Avenue) –** This area includes two aboveground storage tanks (ASTs) that were removed from the basement of 207 North Avenue. A spill occurred on November 19, 2018 (Spill No.: 1808873) due to trespasser stealing the copper piping. The spill occurred over the basement slab. The spilled liquids were immediately vacuumed from the floor and the sump, in addition, any liquids left in the tanks were vacuumed. A total of 121 gallons of liquids were pumped by Northeast Environmental for off-site disposal. The ASTs were removed from the site. The impacted soils were excavated from the top of slab and the sump. The excavated soils were containerized into four (4) DOT drums and transported off-site by EWMI. The spill is the subject of an IRM that will be addressed under a separate report.

- **REC 8 - Heating Oil ASTs (455 Main Street)**

  This area includes two existing 275-gallon ASTs in the basement level of 455 Main Street. These ASTs are currently in use and will be properly closed prior to demolition of the buildings.

The locations of the above RECs are presented in **Figure 2.1**.

2.2 SUMMARY OF REMEDIAL INVESTIGATIONS RESULTS

2.2.1 SOIL/FILL CONTAMINATION

From February 6 to 19, 2019, thirty-four (34) soil borings (SESI-SB-1 through SESI-SB-34) were advanced utilizing direct-push and hollow stem augur drilling techniques. Specifically, twenty-two (22) soil probes/borings were advanced on the north side of the Site where buildings along Le Count Place and North Avenue have been demolished, and twelve (12) probes/borings were advanced within the basements of the existing structures along Main Street. Borings were advanced to the depths ranging from 12 to 25 ft-bgs. A total of 122 soil samples were collected utilizing marco-core or split–spoon samplers. The soil boring locations are shown on **Figure 2.3**. Soil samples were collected from each boring at the depth intervals which appear to be most contaminated based on visual observations, PID readings and olfactory observations. Soil samples were analyzed for full suite TCL/TAL + 30, which includes TCL VOCs, TCL SVOCs, TPHCs and TAL metals.

This soil sampling program was implemented to determine if a Track 1 Unrestricted Use remedy can be achieved. Boring logs documenting soil classifications, PID readings, and visual observations are included in **Appendix 1**.

In addition to the remedial investigation grab samples, composite samples were collected for waste characterization purposes. The waste characterization samples were collected at a frequency of 1 composite per 750 cubic yards (CY) of soils based on site grid of 50 foot-wide by 50 foot-long and 7 foot deep.

Based on analytical results, eight samples resulted in the PAHs benzo[a]anthracene, benzo[b]fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, phenanthrene and indeno(1,2,3-cd)pyrene exceeding the restricted residential soil clean-up objectives (SCOs).

Lead in soil was detected at 438 mg/kg, which exceeds the unrestricted use soil cleanup objective (USCO) for lead of 63 mg/kg and the restricted residential SCO (RRSCO) of 400 mg/kg from the sample collected from soil boring SESI-SB-2(3'). Copper was detected in two samples at levels ranging from 54.1 to 164 mg/kg, which exceed the USCO for copper level of 50 mg/kg but below the RRSCO of 270 mg/kg. Zinc was detected in two samples at concentrations above the USCO at concentrations of 119 mg/kg and 812 mg/kg but below the RRSCO of 1000 mg/kg. Mercury was detected above the USCO but below the RRSCO in four samples and above the restricted residential in one sample, SESI-SB-26(3') at 3.6 mg/kg. Arsenic was detected in one sample (SESI-SB-10(4') above the USCO at 15.4 mg/kg but below the RRSCO. Nickel was detected in one sample, SESI-SB-10(18'), above the USCO at 42.6 mg/kg but below the RRSCO. Barium was detected in one sample, SESI-SB-25(3'), above the RRSCO of 400 mg/kg at 705 mg/kg.

The pesticide 4,4'-DDT was detected above the USCO in three samples, SESI-SB-3(2') at 0.0052, SESI-SB-9(17') at 0.0049 mg/kg, and SESI-SB-29(12') at 0.0035 mg/kg exceeding its URSSCO of 0.0033 mg/kg, but below the RRSCO of 7.9 mg/kg.

No exceedances of VOCs or PCB SCOs resulted in any soil samples collected.

Sampling locations and concentrations of the USCO exceedances and RRSCO exceedances are identified in **Figure 2.3**. Analytical data is presented in **Tables 1A through 1E**.

2.2.2 On-Site Groundwater Contamination

On February 11 through 26, 2019 five temporary groundwater monitoring wells (GW-1 through GW-5) and five permanent monitoring wells (MW-2 through MW-6) were sampled for VOCs, SVOCs, Pesticides, PCBs, and metals in accordance with the RIWP. In addition, monitoring wells MW-2 and MW-4 were sampled for Per- and polyfluoroalkyl substances (PFAs). Prior to sampling the wells were developed and purged and geochemical parameters including pH, dissolved oxygen, turbidity, specific conductance and oxidation/reduction potential (ORP) were measured. **Appendix 2** includes the purge data for the groundwater monitoring wells.

SVOCs were detected in temporary monitoring wells GW-1 and GW-2 and permanent wells MW-3, MW-4 and MW-6 at levels that exceeded the Class GA AWQS. The exceeding SVOCs were predominantly PAHs. Benzo(a)anthracene and benzo(b)fluoranthene were detected in permanent monitoring wells MW-3 and MW-4 at concentrations exceeding their AWQS. Finally, 2,4-dimethylphenol and benzo(a)anthracene were detected in permanent monitoring well MW-6 exceeding their Class GA AWQS.

Unfiltered Metals were detected in all the wells above the Class GA AWQS. However, with the exception of iron, magnesium, manganese, selenium and sodium, all the exceedances were detected only in unfiltered samples indicating that the exceedances were the result of suspended solids. With the exception of selenium which was detected marginally above the Class GA AWQS, these metals are secondary metals and not contaminants of concern.

The pesticide heptachlor epoxide was detected above the Class GA AWQS in temporary well points GW-2 and GW-3. Since these samples were collected from temporary well points, the exceedance is likely due to suspended sediments.

Prior to sampling, the monitoring wells were gauged for depth to water and groundwater elevation data was calculated from the top of casing elevations. Light non-aqueous phase liquid (LNAPL) product was detected in MW6. Monitoring well MW-6 was also tested for Total petroleum hydrocarbons (TPH) diesel range organics (DRO) to confirm if the free product identified can be connected with the spill at 207 North Avenue. Groundwater sample from MW-6 resulted in exceedances of the VOCs benzene, ethylbenzene, isopropylbenzene, xylenes and toluene, which are PHC related VOCs. The PHC-VOCs detected in MW-6 are most likely the results of the spill because no other well on the Site resulted in PHC-VOC exceedences and the groundwater data collected during the Phase II did not result in PHC-VOCs.

The groundwater elevation data was used to construct a groundwater contour map (**Figure 2.2**).

PCBs were not detected in any of the groundwater samples collected.

Based on the groundwater results it was concluded that:

- PHC related VOCs and SVOCs were detected in the Site groundwater in monitoring well MW-6. The likely PHC source is from the post-BCA petroleum AST discharge, since well MW-6 is located in this area (REC -7). Monitoring well MW-6 also contained LNAPL as a result of the discharge. The LNAPL and dissolved phase detection in MW-6 are addressed under a separate IRM report.
- The pesticide Heptachlor is not known to have been used on-site and was not detected in any soil on-site. In addition, the concentrations of heptachlor in groundwater are low and may be the results of suspended sediments, therefore not a contaminant of concern.
- The presence of metals in unfiltered groundwater samples are the result of suspended sediments since the filtered samples showed no metal exceedances with the exception of secondary metals that are not contaminants of concern at the site and selenium marginally above the Class GA AWQS.

  Summary of groundwater analytical data is presented in Tables 2A through 2E.

Sampling locations and concentrations of the Class GA AWQS exceedances are identified **in Figure 2.4**.

2.2.3 Soil Vapor Contamination

A soil vapor investigation (SVI) was determined to be necessary in preparation for the planned development on the Site, which will include enclosed occupied basement level spaces. To evaluate the potential for future exposures in the future building, SESI designed an SVI plan in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion (Guidance) (October 2006).

On February 14, 2019, SESI collected eight soil vapor (SV) samples (SS-9 through SS-16). across the Site in the footprint of the proposed development. **Figure 1.3** presents the footprint of the proposed development subgrade improvements and **Figure 2.5** presents the SV sampling locations.

The soil vapor results are presented in **Figure 2.5** and listed in **Table 3**. The results were compared to the EPA June 2015 target sub-slab soil gas concentration values and the NYSDOH October 2006 air guideline values. The chlorinated VOC (CVOC) 1,1-dichloroethene was detected at levels that exceed the NYSDOH Sub-Slab Vapor Criteria of 6 ug/m3 in samples SS-11, SS-12, and SS-13 at concentrations ranging from 12 to 23 ug/m^3. Ethylbenzene was detected in two soil vapor samples (SS-9 and SS-13), outside the spill area, at concentrations that exceed the EPA value of 37 ug/m3 (39 ug/m^3 to 1,300 ug/m^3). The CVOC TCE was detected in five samples above both the NYSDOH criteria of 6 ug/m3 and the EPA value of 16 ug/m3 (6.6 ug/m3 to 200 ug/m3).

Two soil vapor samples were collected within or close to the post-BCA AST spill area: SS10 and SS12. SS-12 did not result in any PHC-VOC. SS-10 resulted benzene at 10 ug/m^3 and ethylbenzene at 310 ug/m^3.

The following conclusions can be made based on the above soil vapor results:

- The highest concentrations of CVOC in soil vapors were identified as TCE and were detected in SS-11 and SS-13 on the northeastern portion of the Site. The CVOC,

TCE is not known to have been used on the Site. In addition, TCE was not detected in the Site soil or groundwater and therefore may be attributable to an off-site source.

- The highest concentration of PHC-VOCs in soil vapors were identified ethylbenzene (SS-9) detected on the northern portion of the Site, which is far from the post BCA spill. The soil vapor detection at SS-9 may be attributed to an offsite source because of its location near the property line.

2.2.4 IRM Work Performed

SESI observed IRM activities including removal of two ASTs from the basement of 207 North Avenue and a fuel oil spill cleanup. In addition, SESI directed the removal of LNAPL from permanent monitoring well MW-6, and temporary monitoring piezometers TW-3 and TW-6. The remaining ASTs and USTs at 455, 459, 463 Main Street, will be removed when the buildings are demolished. The remediation of the post-BCA spill within 207 North Avenue is addressed under a separate IRM report. The removal of the other tanks will be addressed in another independent report, which can be shared with local agencies and the Westchester County Department of Health.

2.3 GEOLOGICAL CONDITIONS

The subsurface conditions consist of fill to depths ranging from approximately two to 14 ft-bgs. The fill consists of gray coarse gravel, little sand and trace silt and wood fibers. Native sand and gravel are present beneath the fill. Based on the boring logs the native layer is formed from glacial deposits, which consist of sand and gravel layer containing large boulders, and extends to the bedrock. Geoprobe refusals were encountered at depths ranging from 15 to 26 ft-bgs. Coring was conducted at some boring locations which indicated the refusals may have been caused by boulders. In some borings where coring was conducted, bedrock was not encountered to a depth of 50 ft-bgs. where the boring was terminated. Base on regional geological data, the bedrock consists of metamorphic gneiss and schist.

Groundwater was encountered at a depth of approximately 8 to 15 f -bgs. Based on gauged groundwater elevation of the on-site wells, the local groundwater flow direction beneath the Site is toward the east.

2.4 Conceptual Site Model of Contamination Transport

The soil and geotechnical investigation revealed that the entire Site is underlain with a thick contaminated fill layer that extends down as deep as 12 to 14 ft-bgs. Eight samples of the contaminated fill resulted in PAHs and metals (Lead, mercury, nickel and barium) exceedances of both the USCOs and RRSCO. In addition, metal impacts to soil exceeding the USCOs were identified at depth of up to 22 ft bgs at several isolated locations of the Site.

The applicable standards criteria and guidance (SCGs) for the Site groundwater are the NYSDEC Class GA AWQS (cf. Section 703.5). The Site groundwater was impacted by discharges from the fuel oil spill, which will be addressed under a separate IRM report. Petroleum hydrocarbons (e.g. BTEXs and PAHs) were detected in the dissolved phase on the western portion of the Site groundwater at levels that exceed the NYSDEC Class GA AWQS.

An IRM for LNAPL recovery has been implemented, and the remaining impacted source area soils and LNAPL will be removed as part of the planned remedial action. The detected PHC levels in groundwater are expected to decrease with time as a result of the ongoing IRM.

The site groundwater flow direction is to the east. The groundwater table is at 8-15 ft bgs. The range in groundwater depth is a result of the time of the year and the method (e.g. boring or permanent well) with which the groundwater depth was reported.

The pathway of the contaminated groundwater to human receptors is limited to the ingestion of the groundwater or direct exposure through excavation work. However, groundwater in this area of New Rochelle is not used for drinking. In addition, the impacted Site groundwater is not likely to have an ecological pathway.

Finally, the VOCs detected in soil vapor can result in soil vapor intrusion into the

future on-Site buildings. CVOCs were detected in the soil vapors at levels that exceed the NYSDOH guidance levels. The RI did not identify any potential source of CVOCs in soil or groundwater on Site. Therefore, the CVOCs in soil vapor appear to originate from an off-Site source.

2.5 Identification of Standards, Criteria and Guidance

The following standards and criteria typically will apply to Site Characterizations, Remedial Investigations, remedy selection, UST closures, remedial actions and Site management activities:

- DER-10 / Technical Guidance for Site Investigation and Remediation
- DER-13 / Strategy for Evaluating Soil Vapor Intrusion at Remedial Sites in New York New York State Department of Environmental Conservation
- 6 NYCRR Part 257 - Air Quality Standards
- 29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response
- TOGS 1.1.1 - Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations
- Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (October 1994)
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (draft October 2004 or subsequent final draft)
- DER Interim Strategy for Groundwater Remediation at Contaminated Sites in New York State
- 6 NYCRR Part 375 - Regulations Subparts 1, 3 and 6 applicable to the Brownfield Cleanup Program
- Citizen Participation in New York’s Hazardous Waste Site Remediation Program: A Guidebook (June 1998)
- USEPA Office of Solid Waste and Emergency Response Directive 9355.047FS Presumptive Remedies: Policy and Procedures (September 1993)
- USEPA Office of Solid Waste and Emergency Response Directive 9355.048FS Presumptive Remedies

- Site Characterization and Technology Selection for CERCLA sites with Volatile Organic Compounds in Soils (September 1993)
- 6 NYCRR Part 612 - Registration of Petroleum Storage Facilities (February 1992)
- 6 NYCRR Part 613 - Handling and Storage of Petroleum (February 1992)
- 6 NYCRR Part 614 - Standards for New and Substantially Modified Petroleum Storage Tanks (February 1992)
- 6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes (November 1998)
- 6 NYCRR Subpart 374-2 - Standards for the Management of Used Oil (November 1998)
- 6 NYCRR 375 Table 375-6.8(a) and Table 375-6.8(b)
- 6 NYCRR Parts 700-706 - Water Quality Standards (June 1998)
- 40 CFR Part 280 - Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks
- STARS #1 - Petroleum-Contaminated Soil Guidance Policy
- STARS #2 - Biocell and Biopile Designs for Small-Scale Petroleum-Contaminated Soil Projects
- SPOTS #14 - Site Assessments at Bulk Storage Facilities (August 1994)
- Spill Response Guidance Manual
- Permanent Closure of Petroleum Storage Tanks (July 1988)
- NYSDOH Environmental Health Manual CSFP-530 - “Individual Water Supplies - Activated Carbon Treatment Systems”
- 40 CFR Part 144 - Underground Injection Control Program
- 10 NYCRR Part 67 – Lead
- 12 NYCRR Part 56 - Industrial Code Rule 56 (Asbestos)
- 6 NYCRR Part 175 - Special Licenses and Permits--Definitions and Uniform Procedures
- 6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes (November 1998)

- 6 NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (November 1998)
- 6 NYCRR Subpart 374-1 - Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities (November 1998)
- 6 NYCRR Subpart 374-3 - Standards for Universal Waste (November 1998)
- 6 NYCRR Part 608 - Use and Protection of Waters
- TAGM 4013 - Emergency Hazardous Waste Drum Removal/ Surficial Cleanup Procedures (March 1996)
- TAGM 4059 - Making Changes to Selected Remedies (May 1998)
- Groundwater Effluent Limitations
- TOGS 1.3.8 - New Discharges to Publicly Owned Treatment Works
- TOGS 2.1.2 - Underground Injection/Recirculation (UIR) at Groundwater Remediation Sites
- OSWER Directive 9200.4-17 - Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites (November 1997)
- Groundwater Monitoring Well Decommissioning Procedures (May 1995)
- The activity is a component of a program selected by a process complying with the public participation requirements of section 1.10, to the extent applicable.

2.6 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS

2.6.1 Qualitative Human Health Exposure Assessment

There are potential exposure pathways related to the contamination if left unaddressed.

PAHs and metal exceedances of the RRSCOs in the Site soil that consist of contaminated fill from 0 to approximately 14 feet below grade pose a risk to human health. The exposure pathway to humans can be through direct dermal contact with the contaminate soils or incidental ingestion.

The pathway of the contaminated groundwater to human receptors is limited to the

direct ingestion of the groundwater or direct exposure through excavation work. However, groundwater in this area in New Rochelle is not used for drinking water. The groundwater will naturally attenuate with time and is not anticipated to be a pathway for human heath exposure.

The CVOC levels in the Site soil vapors were found to exceed the NYSDOH guidance values. In addition, the PHC VOCs exceed the EPA Target Sub Slab values for benzene, ethylbezene, butadiene, and 1,1-dichloroethene. The exposure route for soil vapor is through the inhalation of the contaminated soil vapor that may intrude into the enclosed spaces of any planned Site development.

2.6.2 Fish and Wildlife Impact Analysis

The Site does not contain any wildlife or fish ecologically sensitive resources and hence the Site contamination is not expected to have any impacts on any fish or wildlife ecological resources. The closest surface water body, the Echo Bay, is located approximately 0.55 miles east of the Site.

It is unlikely the contaminated groundwater from the Site will reach the surface water of the Echo Bay. The detected groundwater contaminant levels is expected to decrease as a result of natural attenuation. Per DER-10 Appendix 3C, no fish and wildlife impact analysis was needed.

2.6 SIGNIFICANT THREAT

The NYSDEC and NYSDOH are currently evaluating the RIR to discern if this Site does/does not pose a significant threat to human health and the environment. Notice of that determination will be provided for public review.

2.7 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) have been identified for this Site.

2.7.1 Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater containing contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer, to the extent practicable, to pre-disposal/pre-release conditions.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

2.7.2 Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.

2.7.3 RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.7.4 Soil Vapor RAOs

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from potential present and future soil vapor intrusion into buildings at the site.

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

3.1 EVALUATION OF REMEDIAL ALTERNATIVES

The objective of the remedy, as needed for a residential development with affordable units, is to achieve a cleanup that is the most protective of the human health and the environment and that does not rely on Engineering or Institutional Controls (ECs or ICs). This objective will most likely be accomplished under a Track 1 by achieving the USCOs

Track 1

A remedy pursuant to this track must achieve compliance with the USCOs set forth in 6 NYCRR Table 375-6.8(a). Institutional and engineering controls are allowed only for periods of less than five years except in the limited instance where a volunteer has conducted remedial activities resulting in a bulk reduction in groundwater contamination to asymptotic levels. This alternative would involve the complete removal and/or remediation of the fill material, which was encountered at up to 14 ft-bgs across the Site, and the targeted removal of exceedances of the USCO, which extended up to 22 ft-bgs. A feasible remedial technology that may be used to implement this alternative involves the excavation of the contaminated soil and transportation to an approved off-site facility for disposal.

Institutional and engineering controls may be implemented to address contamination in groundwater and soil vapor. The source of groundwater contamination has been removed during the remediation and IRM activities. Monitored natural attenuation (MNA) that consists of periodic monitoring of the contaminant levels in the Site groundwater wells will constitute an engineering and institutional control until the groundwater levels are below the standards or until they reach asymptotic levels that are accepted by the NYSDEC.

The proposed Site development is shown on Figure 1.3 and includes a sub grade structure that will be used as, parking garage, locker room, bike racks, utility rooms, and

building management facilities. The proposed garage ventilation system will act as ventilation for subsurface vapors, if any, and prevent vapor intrusion into the future project buildings. However, because the garage ventilation is part of the building design, and will be operated continuously as part of ordinary operations, that system is not considered an EC.

Track 2

Cleanups pursuant to this track may consider the intended future use in determining the appropriate cleanup levels for soil. This track requires the Volunteer implement a cleanup that achieves an SCO from tables in 6 NYCRR 375-6.7(b) that is consistent with the intended Site use for the top 15 feet of soil (or bedrock if less than 15 feet). Institutional and engineering controls are allowed for soil (for the top 15 feet of soil or bedrock if less than 15 feet) for less than five years (defined as short-term controls). The Site remediation pursuant to Track 2 would involve excavation and disposal of the contaminated soils to 15 feet to meet the RRSCOs since some exceedances of the Track 2 SCOs are possible at this depth because of cross contamination from the contaminated fill. It is also possible if this extent of remediation of the fill soils occurs, then it is possible the endpoint post-excavation samples results may meet the unrestricted Track 1 SCOs.

The way to meet Track 1 or 2 would be to perform complete excavation down to at least 15 feet since the fill material contained contaminants that exceeded the Track 2 SCOs down to this depth.

Institutional and engineering controls which limit Site use and on-Site groundwater use can be used without regard to duration. The groundwater remediation would be MNA under this track and it is expected to be finite for the petroleum hydrocarbon VOCs that resulted from the removed tanks discharge.

A Track 2 cleanup at a restricted residential use site requires a Site Management Plan to ensure that any institutional and engineering controls are maintained and material removed from the Site (post remedial action) is managed properly.

Track 3

The Track 3 cleanup is not applicable to this site. Because the contaminants on this Site are common and all listed in the SCOs in NYCRR 375-6.8(b) tables.

Track 4

A Track 4 remedy for a restricted residential use does not need to meet specific soil cleanup objectives but requires source removal and typically a Site-wide cover system where, as here, this is Site-wide surficial contamination.

Short and long-term institutional and engineering controls are allowed to achieve protection of public health and the environment. The remedy under Track 4 for this Site must provide a cover system over exposed residual soil contamination. Soils which are not otherwise covered by structures such as buildings, sidewalks or pavement must be covered with 18 inches of soil that complies with the unrestricted or restricted residential SCOs and clean unrestricted top soil in the top 6 inches.

Track 4 also includes a site management plan (SMP) as an institutional control to ensure that any institutional and engineering controls are maintained and material removed from the site (post remedial action) is managed properly. The SMP will include periodic (annual) monitoring and reporting of the cover system to ensure continued protection of the human health and the environment.

No Action Alternative

The no action alternative would leave existing sources of contamination in soil and groundwater and potentially soil vapor. The No action alternative is thus unacceptable and has not been compared to the factors below.

Protection of human health and the environment:

Although all tracks will provide adequate protection of human health and the environment, Track 1 would be more protective than the other cleanup tracks because it would remove all soil contamination, which also act as on-Site sources of groundwater contamination. Moreover, because a Track 1 remedy requires no ongoing institutional or

engineering controls to manage contamination indefinitely into the future, the cleanup does not rely on human intervention or mechanical equipment to remain effective in protecting human health and the environment. A Track 1 remedy also initially costs more and is less implementable than Track 2 and 4 remedies. However, if Track 1 can be implemented through the complete removal of all the contaminated soil, then groundwater should be able to naturally attenuate more rapidly than from the other remedies. Moreover, because a Track 1 remedy requires no long term institutional or engineering controls, it is potentially less costly and more implementable in the long run than remedies that rely on such controls for long-term effectiveness. A Track 4 remedy would also be protective of human health and the environment if the proper long-term engineering and institutional controls are put in place and managed in an SMP. However, groundwater may remain contaminated for a longer time.

Compliance with standards, criteria, and guidelines (SCGs):

All cleanup tracks will achieve applicable cleanup standards. However, obviously a Track 1 cleanup achieves a more stringent set of standards than a Track 2 or 4 cleanup.

Short-term effectiveness and impacts:

Generally, Track 1 provides the best short term effectiveness because it promptly removes the most contaminant mass from the Site. Track 2 also accomplishes this, but to a lesser extent. Track 4 is less effective in this regard. Tracks 1 and 2 are somewhat less favorable in terms of short-term impacts primarily because mass removal of the contaminated soils generates more trucks trips than a Track 4 limited removal remedy. A Track 4 approach also reduces the risk of construction worker exposure by reducing the volume of contaminated soil being managed, and has less potential to cause dust and traffic issues. Excavation may result in a greater potential for migration of impacts from the open excavation (e.g. wind erosion, storm water intrusion, etc.), however, air monitoring program and erosion and sediment controls will be implemented to minimize and control any migration.

Long-term effectiveness and Performance:

Because Tracks 1 & 2 would involve removal of the greatest amount of contaminated soil, they will provide the most long-term effectiveness. As already discussed above a Track 1 cleanup will allow the Site to be used for any purpose without restriction and without reliance on the long-term employment ICs or ECs (which can fail and require on-going monitoring and maintenance to remain effective over the long-term). A restricted residential Track 2 clean-up allows the Site to be used for almost all possible uses in an urban setting but has the same requirements for long-term ECs and ICs.

The long-term effectiveness of the Track 4 clean-up will be ensured with adherence to the SMP and recording of an Environmental Easement. Although contaminants are left in the on Site, a properly maintained cover system is effective at eliminating the risk of dermal exposure.

Reduction of toxicity, mobility, or volume of contaminated material:

Tracks 1 through 4 will reduce of toxicity and mobility. A Track 1 or 2 would result in more reduction in the volume of contaminated soils than in a Track 4 clean-up. While Track 4 provides a relatively smaller reduction in volume than the other tracks, it relies primarily on the decrease of contaminant mobility.

Constructability:

Tracks 1, 2 and 4 are all implementable given the location and the planned use for the Site.

While there are short term potential impacts from a Track 1 or 2 remedy, the Site is located in the middle an urban area, and, therefore disposal of the contaminated soils and truck access will not be a problem. Moreover, these short-term impacts will be avoided through implementation of the CAMP and HASP, which will employ truck washing and odor and dust control measures. Therefore, Track 1 or 2 are implementable remedies for this Site.

Cost effectiveness:

The preferred alternative should provide optimal suitability of the eight accompanying evaluation factors with minimal remedial cost. The contaminated fill layer extends from the surface to a depth of 14± ft bgs in addition metal exceedance of the USCO extended to 22 ft bgs in certain spots. Removal of the fill layer and metal exceedances of the USCO to achieve Track 1 or 2 Site wide will be costly. However, this mass removal results in long term savings by eliminating (or, in Track 2, significantly reducing) the need for indefinite cap monitoring and maintenance. Therefore, a Track 1 or 2 remedy for the Site is cost effective.

The MNA for Groundwater would be the most cost effective compared to active remediation of groundwater for all the remedies. This is especially so in Track 1 or 2 if the mass of contaminants that could be a source of groundwater contamination is removed from the Site.

Community Acceptance:

A community outreach program will be incorporated into all remedial alternatives, per NYSDEC Brownfield Program law and regulations. The Site development will include affordable housing and is part of an area wide redevelopment that includes a mix of modern residences and retail stores.

Land use:

All cleanup tracks would achieve remediation for the planned residential use of the Site, which is consistent with New Rochelle's proposed plans for the area. Developing the property will create short term construction impacts, but the creation of a new affordable housing project will provide significant community benefits.

Zoning: All of the proposed remedies under each track will facilitate the Site to be utilized for a proposed mixed commercial-residential development, which is consistent with applicable zoning laws and anticipated future use of the site.

Applicable comprehensive community master plans or land use plans: Implementation of all Tracks (with institutional controls) cleanup will facilitate the proposed

commercial-residential development, which is consistent with current local land use plan.

Surrounding property uses: Any cleanup approach is not expected to significantly impact land use of the surrounding properties as the truck traffic and access will be on public roads. There will be short term impacts from the remediation and construction project but these will result in long-term benefits of converting defunct, abandoned and contaminated property into new affordable housing and commercial uses.

Citizen Participation: Citizen Participation during implementation of a remedial program will proceed in accordance with the Citizen Participation Plan included as **Appendix 3** of this RAWP and as noted above will have minimal community impact. Any short term impacts will be addressed by the CAMP and HASP.

Environmental justice concerns: There are no known environmental justice concerns associated with this project.

Land use designations: A Track 1 remedy will not restrict any current or future land use designations. A restricted residential Track 2 will have very minimal restrictions on the future land use of the property. A Track 2 will have restrictions that will be managed in the SMP.

Population growth patterns: Any of the proposed remedy will not impact reasonably anticipated population growth patterns in the area other than to better accommodate growth by providing for new affordable housing.

Accessibility to existing infrastructure: Existing infrastructure is present in the surrounding area but the on-site infrastructure had to be demolished and removed as part of the building demolitions and more infrastructure will be removed during the remedy. However, new infrastructure will be installed as part of remediation/redevelopment.

Proximity to natural resources: The closest surface water body, the Echo Bay, is located approximately 0.55 miles east of the Site. Storm water drainage patterns are

generally consistent with the surrounding topography and primarily flow to the east towards Echo Bay.

Off-Site groundwater impacts: Off-Site potential groundwater impacts were identified during the RI activities. Measures to prevent any off-site groundwater impacts are proposed in this work plan.

Geography and geology of the Site: See Sections 2.2 and 2.3 above.

Current Institutional Controls: There are no current institutional controls associated with the Site. An institutional control may be required to address the long-term management of soil and possibly impacted groundwater remaining at the Site following remediation.

3.2 Selection of the Preferred Remedy

The remedial alternatives analysis determined that a Track 1 (if achievable) or 2 remedy will be the goal for the Site.

3.3 SUMMARY OF SELECTED REMEDIAL ACTIONS

A summary of the selected Track 1 or 2 remedial actions to address the impacts identified are discussed below:

1. Installation of sheeting and shoring along the side walls of the entire Site for structure stability of the excavation pit and to prevent impact to off-site structures. A sheet pile wall system will be installed to support the excavation of the on-site contaminated soil and contaminated historic fill.

2. Excavation to achieve a Track 1 cleanup by removing the remaining contaminated fill soil source to USCOs if possible or to a Track 2 cleanup if Track 1 cannot be achieved. If no more contaminated soil and fill are left after the planned excavation, which is documented by endpoint confirmatory sampling, then the remedy would achieve the unrestricted Track 1 for soils in the building area. If contaminated soil and/or fill is left un-excavated, which is documented by endpoint confirmatory sampling, the volunteer will try to

achieve the Track 2 restricted residential SCOs based on the contaminant levels in the remaining fill down to fifteen feet.

3. The groundwater will be monitored to determine the change of contaminants with time. The detected SVOC in the Site wells that are outside the spill area are expected to meet the groundwater Class GA AWQS by MNA alone because the contaminated fill material , which acts as the source, will be removed by excavation. The duration of the groundwater remedy will be determined with further monitoring. If the groundwater monitoring post excavation does not result in decreasing groundwater levels to below the Class GA AWQS concentrations or to asymptotic levels that are accepted by the NYSDEC, an active groundwater treatment will be proposed and designed based on the available monitoring data.

   The post-BCA spill that caused the PHC contamination of the groundwater is being remediated under the IRM.

4. Recording of an Environmental Easement for the entire Site if only track 2 (or Track 4) can be accomplished;

5. Preparation of a Site Management Plan, if needed for a track 2 or 4 clean-up, for long term management of residual contamination as required by the Environmental Easement, particularly as they pertain to future phases of construction, including plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) soil excavation and (4) reporting;

6. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;

7. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of the Track-specific SCOs;

8. Documentation of all appropriate off-site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;

9. Import of backfill materials and reuse of soil excavated during redevelopment construction activities, to be used for backfill and cover must be in compliance with: (1) chemical limits and other specifications included in NYCRR 375-6.8 (b) and DER-10 (2) all Federal, State, local rules and regulations and site-specific approvals for handling/reuse and transport of material;

10. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and local rules and regulations and overseen and certified by the SESI Remedial Engineer of Record described below.

Remedial activities will be performed at the Site in accordance with this NYSDEC-approved RAWP. All deviations from the RAWP will be promptly reported to NYSDEC for approval and fully explained in the FER. Figure 3.1 presents remediation area for a Track 1 cleanup.

4.0 REMEDIAL ACTION PROGRAM

4.1 GOVERNING DOCUMENTS

4.1.1 Site Specific Health & Safety Plan (HASP)

A copy of the SESI HASP is included as **Appendix 4**. All remedial work performed under this plan will be in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work, are completely responsible for the preparation of an appropriate HASP and for the appropriate performance of work according to that plan and applicable laws.

The HASP and requirements defined in this Remedial Action Work Plan pertain to all remedial and invasive work performed at the Site until the issuance of a Certificate of Completion.

4.1.2 Quality Assurance Project Plan (QAPP)

A copy of SESI QAPP is included as **Appendix 5**. All field sampling procedures and analytical methods will be implemented in accordance with this QAPP.

4.1.3 Soil/Materials Management Plan (SoMP)

The SoMP is included as Section 5.4 and includes detailed plans for managing all soils/materials that are disturbed at the Site, including excavation, handling, storage, transport and disposal. It also includes all of the controls that will be applied to these efforts to assure effective, nuisance-free performance in compliance with all applicable Federal, State and local laws and regulations.

4.1.4 Storm-Water Pollution Prevention Plan (SWPPP)

A SWPPP will be prepared prior to start of remediation or construction work. The SWPPP will address requirements of New York State Storm-Water Management

Regulations including physical methods to control and/or divert surface water flows and to limit the potential for erosion and migration of Site soils, via wind or water.

The erosion and sediment controls included in the SWPPP will be in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control and will be thoroughly analyzed during the SEQRA EIS process.

4.1.5 Community Air Monitoring Plan (CAMP)

A copy of the CAMP for the site is included as **Appendix 6**.

4.2 GENERAL REMEDIAL CONSTRUCTION INFORMATION

4.2.1 Project Organization

14 Le Count Place, LLC and WBLM Le Count Owner LLC are the BCP Volunteer and redeveloper of the Site. SESI is the environmental consultant for 14 Le Count Place, LLC and WBLM Le Count Owner LLC. A table summarizing the various personnel associated with the project is included as **Table 4.1** below.

Table 4.1 – Project Personnel

Name	Company	Project Position	Address	Phone Number
	14 Le Count Place, LLC and WBLM Le Count Owner LLC	Volunteer Contact	480 Bedford Road Chappaqua, NY 10514	
Fuad Dahan, PE	SESI Consulting Engineers, P.C.	Environmental Consultant's Project Manager	12A Maple Avenue Pine Brook, NJ 07058	(973) 808-9050
Fuad Dahan, PE	SESI Consulting Engineers, P.C.	Remedial Engineer	12A Maple Avenue Pine Brook, NJ 07058	(973) 808-9050
Matthew King	NYSDEC	Project Manager	625 Broadway Albany, NY 12233	

4.2.2 Remedial Engineer

The Remedial Engineer for this project will be Fuad Dahan, PE. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for the Le Count Standard Printing (Site No. C360176). The Remedial Engineer will certify the Final Engineering Report that the remedial activities were observed by qualified environmental professionals under his supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with that Plan. Other Remedial Engineer certification requirements are listed later in this RAWP.

The Remedial Engineer will review all pre-remedial plans submitted by contractors for compliance with this Remedial Action Work Plan and will certify compliance in the Final Remediation Report.

The Remedial Engineer will provide the certifications listed in the Final Engineering Report.

4.2.3 Remedial Action Construction Schedule

A remedial action construction schedule is included as **Table 4.2** below. The schedule includes estimates of time required to complete the activities associated with the remedial action. It is based on elapsed time from receipt of NYSDEC approval. Once NYSDEC approves this RAWP, an updated schedule showing actual dates will be provided to the NYSDEC as an addendum to this plan.

TABLE 4.2
Remedial Action Schedule

Activity	Date
NYSDEC approves RAWP and issues decision document	September 30, 2019
Start of remedial work (excavation and soil disposal)	September 30,2019
Start post excavation sampling	October 7,2019
complete excavation	October 31, 2019
Complete post excavation sampling	October 31, 2019
Draft final engineering report (FER), submit FER to NYSDEC	November 7, 2019
Certificate of Completion	December 1, 2019

4.2.4 Work Hours

The hours for operation of remedial construction will conform to the City of New Rochelle Department of Buildings construction code requirements or according to specific variances issued by that agency. NYSDEC will be notified by the Applicant of any variances issued by the Department of Buildings.

4.2.5 Site Security

A description of the proposed Site security measures will be included in the Site Operations Plan (see Section 4.1.7). The Site is secured with fences and locked gates. Access to Site will be controlled by the local police patrolling the area.

4.2.6 NYSDEC BCP Signage

A project sign will be erected at the main entrance to the Site if required by NYSDEC to indicate that the project is being performed under the New York State Brownfield Cleanup Program.

4.2.7 Pre-Construction Meeting with NYSDEC

A pre-construction meeting will be held with NYSDEC prior to the start of major remedial construction activities.

4.2.8 Emergency Contact Information

An emergency contact sheet with names and phone numbers is included in **Table 4.3** below. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

TABLE 4.3 - EMERGENCY AND CONTACT NUMBERS

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3-day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Fuad Dahan – Remedial Engineer (SESI Consulting Engineers)	(973) 808-9050
Director of Construction	TBD

* Note: Contact numbers subject to change and will be updated as necessary

TBD – To Be Determined

4.3 SITE PREPARATION

4.3.1 Mobilization

Mobilization tasks will include:

- Construction of temporary facilities and utilities;
- Set-up of construction equipment and facilities;
- Construction of fencing and barriers;
- Construction of erosion control measures; and
- Construction of decontamination and materials staging areas.

4.3.2 Erosion and Sedimentation Controls

Erosion and sediment control measures are outlined in the SWPPP (see Section 4.1.5).

4.3.3 Utility Marker and Easements Layout

The Volunteer and its contractors will be solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RAWP. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and its contractors will obtain any local, State or Federal permits or approvals pertinent to such work that may be required to perform work under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements.

4.3.4 Sheeting and Shoring

Sheet pile walls will be installed to support the excavation of the contaminated fill.

The Volunteer and its contractors will be solely responsible for safe execution of all invasive and other work performed under this Plan and the implementation of safety measures (Sheeting and Shoring) as necessary to maintain safe working environment. The Volunteer and its contractors will obtain any local, State or Federal permits or approvals that may be required to perform work under this Plan. Further, the Volunteer and its contractors are solely responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved Plan.

4.3.5 Dewatering

Dewatering is anticipated to be required as part of this remedy because groundwater was identified at 8 to 15 feet. If groundwater is encountered, it will be treated as contaminated groundwater. The groundwater will be pumped for temporary storage

frac-tanks, which will be disposed of at an off-site facility. The disposal of the groundwater will follow the requirements of disposal facility for sampling and characterization.

4.3.6 Equipment and Material Staging

Equipment and material staging areas are expected to be relocated throughout the Site during remedial construction.

4.3.7 Decontamination Area

The decontamination area construction and operational requirements are provided in the HASP. Truck tires must be washed before exiting the Site.

4.3.8 Site Fencing

A construction safety fence is installed around the entire perimeter of the site. Access through gates will be provided at various points as required by the Volunteer and its contractors. These gates will be locked during non-construction hours.

4.3.9 Demobilization

Demobilization will include the following:

- Restoration of areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management area[s], and access area);
- Removal of temporary access areas (whether on-Site or off-Site) and restoration of disturbed access areas to pre-remediation conditions;
- Removal of sediment and erosion control measures and disposal of materials in accordance with acceptable rules and regulations;
- Equipment decontamination; and
- General refuse disposal.

4.4 REPORTING

4.4.1 Weekly Reports

Weekly reports will be submitted to NYSDEC and NYSDOH Project Managers on Monday following the end of the week of the reporting period and will include:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e. tons of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable; and,
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.

4.4.2 Other Reporting

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital (JPEG) format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the Site prior to any Remedial Actions will be provided. Representative photos will be provided of each contaminant source, source area and Site structures before, during and after remediation. Photos will be submitted to NYSDEC on CD or other acceptable electronic media and will be sent to NYSDEC's Project Manager (2 copies) and to NYSDOH's Project Manager (1 copy). CD's will have a label and a general file inventory structure that separates photos into directories and sub-directories according to logical Remedial Action components. A photo log keyed to photo file ID numbers will be prepared to provide explanation for all representative photos.

Job-site record keeping for all remedial work will be appropriately documented. These records will be maintained on-site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

4.4.3 Complaint Management Plan

A public information board will be constructed at the perimeter of the Site. This information board will contain the phone number of the Volunteer where complaints may be directed. General information notices to the public will also be posted on this board for their benefit.

4.4.4 Deviations from the Remedial Action Work Plan

If there are any deviations from the RAWP, the following steps will be taken:

- Reasons for deviating from the approved RAWP will be identified and communicated directly to the NYSDEC Project Manager;
- All deviations will be communicated verbally and in writing (by letter or email) to the NYSDEC Project Manager;
- The deviations will be implemented based on verbal or written approval of the NYSDEC Project Manager. All verbal approvals will be followed-up in writing.
- The effect of the deviations on the overall remedy will be described/addressed in the Final Engineering Report.

5.0 REMEDIAL ACTION: MATERIAL REMOVAL FROM SITE

Removal of all contaminated soils under the Remedial Action for the Site will be implemented in accordance with the site-specific (QAPP) (**Appendix 5**).

A plan depicting the locations where the excavation activities will be carried out are included as **Figures 5.1**.

5.1 SOIL CLEANUP OBJECTIVES

The Soil Cleanup Objectives for this Site are the unrestricted SCOs as listed in **Appendix 7**.

Soil and materials management on-site will be conducted in accordance with the Soil Management Plan as described below (Section 5.4).

5.2 REMEDIAL PERFORMANCE EVALUATION

5.2.1 End-Point Sampling Frequency

For all excavations, post-excavation soil and groundwater samples will be collected in accordance with Section 5.4 of DER-10. Given that the area of the excavation is expected to be approximately 40,500 SF a reduced frequency will be requested from the DEC.

5.2.2 Methodology

Soil samples will be collected in accordance with the QAPP using disposable gloves/trowels or dedicated, decontaminated stainless steel spoons.

5.2.3 Reporting of Results

The samples will be submitted to a NYSDEC certified laboratory. The results will be reported in accordance with NYSDEC requirements for Category B data deliverables (as outlined in DER-10).

5.2.4 QA/QC

Collection of QA/QC samples to evaluate potential cross-contamination from sampling equipment and during shipment of samples and repeatability of laboratory analytical practices will be in accordance with the QAPP included as **Appendix 5**. Field blanks, trip blanks and duplicate samples associated with daily sampling activities will be collected as a part of the QA/QC practices.

5.2.5 DUSR

To ensure that the field sampling and laboratory analytical practices are acceptable, the data associated with all the samples will be validated by a third party (in accordance with requirements of DER-10). The validation approach and results will be presented in a DUSR to be included in the FER.

5.2.6 Reporting of End-Point Data in FER

The FER will include a table of end point data with highlights or a summary of exceedances of SCOs. A spider map showing all SCO exceedances will also be presented in the FER.

Chemical labs used for all end-point sample results and contingency sampling will be NYSDOH ELAP certified.

End point sampling, including bottom and side-wall sampling, will be performed in accordance with DER-10 sample frequency requirements. Side-wall samples will be collected a minimum of every 30 linear feet. Bottom samples will be collected at a rate of one for every 900 square feet. An alternate reduced sampling frequency will be requested for NYSDEC approval given that the excavation is 40,500 SF. The FER will provide a tabular and map summary of all end-point sample results and exceedances of SCOs.

5.3 ESTIMATED MATERIAL REMOVAL QUANTITIES

Source removal excavation activities will be implemented during the course of the redevelopment activities within the proposed building footprints and parking areas. Based on the RI, the depth of contaminated fill at the Site ranges to depths from 2-14 ft bgs. The

entire Site will be excavated to the depth of approximately 14 ft bgs in addition spot excavation will be conducted to remove all soil exceedances of the USCO. No backfilling is expected to be needed. Following the completion of the remedial excavation, end-point remedial performance sampling will be completed to ensure the Site meets USCOs or RRSCO before the Site development begins.

The estimated quantity of soil/fill to be removed from the Site is 25,000 to 35,000 CY. The actual excavated volume will be reported in the Final Engineering Report (FER) as a tally of the manifests and tickets of the soils disposed off-site.

5.4 SOIL/MATERIALS MANAGEMENT PLAN

Approximately 25,000 to 35,00 CY of material may be required to be excavated during construction activities. Any required fill will consist of imported clean fill.

5.4.1 Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (Residual Contamination Zone). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy and during development phase, such as excavations for foundations and utility work, prior to issuance of the Certificate of Completion.

All primary contaminant sources identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the Final Engineering Report.

Screening will be performed by qualified environmental professionals. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the Remedial Engineer) of invasive work for unknown contaminant sources during remediation and development work.

5.4.2 Stockpile Methods for Contaminated Soils

Stockpiles of contaminated materials, if needed, will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Soil stockpiles will be encircled with silt fences. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

5.4.3 Materials Excavation and Load Out

The Remediation Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The Applicant and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site has been investigated during the remedial investigation work. It has been determined that no risk or impediment to the planned work under this Remedial Action Work Plan is posed by utilities or easements on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash associated with construction activities will be operational during construction, only if deemed necessary by the remediation engineer and the NYSDEC. The Remediation Engineer will be responsible for ensuring that all outbound trucks are not causing any off-site tracking of the contaminated soils.

Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-Site sediment tracking.

The Remediation Engineer will ensure that all egress points for truck and equipment transported from the Site will be clean of dirt and other materials derived from

the Site during Site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

The Volunteer and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Remedial Engineer will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this Remedial Action Work Plan.

5.4.4 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Truck transport routes will be included in the SOP. All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes.

Proposed in-bound and out-bound truck routes to the Site will take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; (f) overall safety in transport; and (g) community input, which was sought and obtained during the SEQRA EIS process

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-Site in order to minimize off-Site disturbance. Off-Site queuing will be prohibited.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

A tracking pad will be installed at the Site egress to ensure clean-up of the soils from the truck tires. If needed, truck tires will be washed. Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

5.4.5 Materials Disposal Off-Site

Approval from appropriate disposal facilities will be received prior to start of work. The total quantity of material expected to be disposed off-site is 25,000-35,000 CY.

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site will not be undertaken without formal NYSDEC approval.

Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or Volunteer to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include

as an attachment a summary of all chemical data for the material being transported (including Site Characterization data); and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the FER.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2

Historical fill and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DSHM, special procedures will include, at a minimum, a letter to the C/D facility that provides a detailed explanation that the material is derived from a DER remediation Site, that the soil material is contaminated and that it must not be redirected to on-site or off-site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

The Final Engineering Report will include an accounting of the destination of all material removed from the Site during this Remedial Action, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the FER.

Bill of Lading system or equivalent will be used for off-site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Engineering Report.

Hazardous wastes, if any, derived from on-site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

Waste characterization will be performed for off-site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the FER. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

5.4.7 Fluids Management

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. If any liquids are to needed be discharged into the sewer system, then approval by local utility authority and NYSDEC will be sought prior to the discharge. Dewatered fluids will not be recharged back to the land surface or subsurface of the Site without DEC approval.

Water generated during remedial construction will not be discharged to surface waters (i.e. a local pond, stream or river) without a SPDES permit.

5.4.8 Demarcation

A land survey will be performed by a New York State licensed surveyor, of the Site if a track 2 clean-up has been selected after the completion of related construction activities. The survey will define the top elevation of residual contaminated soils. This survey will constitute the written record of the upper surface of the ‘Residuals Management Zone’ in the Site Management Plan. A map showing the survey results will be included in the Final Engineering Report and the Site Management Plan.

5.4.9 Backfill from Off-Site Sources

Backfilling is not expected. However, if necessary material imported to be used on-site as backfill will be sampled at a frequency of, one composite sample per 500 cubic yards of material from each off-site borrow area. If more than 1,000 cubic yards of soil are needed from the same source area and both samples of the first 1,000 cubic yards meet the USCOs, the sample frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the Unrestricted Use SCOs. The samples will be analyzed for target compound list (TCL) volatile organic compounds (VOCs), TCL Semi-Volatile Organic Compounds (SVOCs), pesticides, PCBs, and TAL metals, including cyanide. The soil may be used as cover material provided that all parameters meet the USCOs, per the NYSDEC regulatory requirements. The imported material, if needed, will be sampled in accordance with DER-10 Section 5.4 (e).

All materials proposed for import onto the Site, will meet the USCO, will be approved by the Remedial Engineer and will be in compliance with provisions in this RAWP prior to receipt at the Site. A “Soil Reuse/Import” form will be submitted to the NYSDEC for pre-approval prior to importing any soils on -Site. Bills of Lading or equivalent documentation will be obtained to track the amount soil arriving onto the Site and verify the source of soil being imported.

Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The Final Engineering Report will include the following certification by the Remedial Engineer: “I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan”.

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved Remedial Action Work Plan or its approval by NYSDEC will be construed as an approval for this purpose.

Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without

prior approval by NYSDEC. Nothing in this Remedial Action Work Plan will be construed as an approval for this purpose.

Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers.

5.4.10 Contingency Plan

If underground tanks or other previously unidentified contaminant sources are found during on-Site remedial excavation or development related construction, sampling will be performed on product, sediment and surrounding soils, etc. Chemical analytical work will be for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. These findings will be also included in daily and periodic electronic media reports.

5.4.11 Community Air Monitoring Plan

A copy of the CAMP for the Site is included as **Appendix 6.** Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily Report.

5.4.13 Odor, Dust and Nuisance Control Plan

Odor, dust and nuisance control will be in accordance with the site-specific Health and Safety Plan included as **Appendix 4**.

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology defined in the Remedial Action Work Plan."

Odor Control Plan

This odor control plan is designed to control emissions of nuisance odors off-Site. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Applicant's Remediation Engineer, who is responsible for certifying the Final Engineering Report.

All necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; (e) use of chemical deodorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved, as appropriate, by a combination of work stoppages, sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-Site work, will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-Site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.

- On-Site roads will be limited in total area to minimize the area required for water truck sprinkling.

Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work and will conform, at a minimum, to local noise control standards.

6.0 ENGINEERING CONTROLS

6.1 Monitored natural attenuation

6.1.2 Groundwater Monitoring System

A network of groundwater monitoring wells (see **Figure 6.1**) will be utilized to monitor the groundwater quality and to demonstrate the reduction in groundwater contamination to asymptotic levels. As the dissolved groundwater impacts detected during the remedial investigation are relatively low, long-term monitoring program with associated institutional controls will be a cost effective remedial alternative to address these impacts.

Specifically, the groundwater samples will be collected annually, in accordance with requirement outlined in DER-10. The groundwater samples will be analyzed for VOCs, SVOCs and metals.

This monitoring protocol will be described in the Site Management Plan.

6.1.3 Criteria for Completion of Remediation/Termination of Groundwater monitoring

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater COC concentrations are found to be consistently below NYSDEC standards or have become asymptotic at levels accepted by the NYSDEC over a period of time. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional treatment and/or control measures will be evaluated. These monitoring activities will be outlined in the Monitoring Plan of the SMP.

7.0 INSTITUTIONAL CONTROLS

After the remedy is complete, the Site may have groundwater residual contamination remaining in place.

7.1 ENVIRONMENTAL EASEMENT

An institutional control (IC) for Monitored Natural Attenuation will be incorporated into a Site Management Plan and will be enforceable through an Environmental Easement. An Environmental Easement, as defined in Article 71 Title 36 of the Environmental Conservation Law, is required when residual contamination is left on-Site after the Remedial Action is complete. Because groundwater is expected to reach calss GA AWQS or asymptotic levels within less than 5-years, this IC is allowed as part of a Track 1 remedy.

As part of this remedy, if required, an Environmental Easement approved by NYSDEC will be filed and recorded with the Westchester County Clerk. The Environmental Easement will be submitted as part of the Final Engineering Report.

The Environmental Easement renders the Site a Controlled Property. The Environmental Easement will be recorded with the Westchester County Clerk before the Certificate of Completion is issued by NYSDEC. Groundwater monitoring will be performed as defined in the SMP, but there are no other engineering controls anticipated.

7.2 SITE MANAGEMENT PLAN

Site Management is the last phase of remediation and begins with the approval of the Final Engineering Report and issuance of the Certificate of Completion for the Remedial Action. If an SMP is needed because of the residual groundwater contamination, it will be submitted as part of the FER but will be written in a manner that allows its removal and use as a complete and independent document. Site Management continues in perpetuity or until released in writing by NYSDEC. The property owner is responsible to ensure that all Site Management responsibilities defined in the Environmental Easement and the Site Management Plan are performed.

The SMP is intended to provide a detailed description of the procedures required to manage residual groundwater contamination left in place at the Site following completion of the Remedial Action in accordance with the BCA with the NYSDEC, particularly as they pertain to the future phases of development construction proposed for the Site. This includes: (1) development, implementation, and management of all

Engineering and Institutional Controls; (2) development and implementation of a Monitoring Plan; (3) submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of Site information to NYSDEC; and (4) defining criteria for termination of monitoring. The SMP for this Site, if needed, will not require the development of a plan to operate and maintain treatment, collection, containment, or recovery systems because the only proposed on-going remedy will be MNA by monitoring the wells.

To address these needs, this SMP will include four plans as applicable: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems; and (4) a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC. The SMP will be prepared in accordance with the requirements in NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation, dated December 2002, and the guidelines provided by NYSDEC.

Site management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be annually. The Site Management Plan will be based on a calendar year and will be due for submission to NYSDEC by March 1 of the year following the reporting period.

The Site Management Plan and the Final Remediation Report will include a monitoring plan for groundwater at the down-gradient Site perimeter to evaluate Site - wide performance of the remedy. Groundwater monitoring wells will be installed immediately down-gradient of all remediation areas to monitor the natural attenuation. If the contaminants in groundwater do not attenuate below the Class GA AWQS concentrations or reach an asymptotic level that is accepted by the NYSDEC, an active treatment (e.g. oxidant injection) will be proposed and designed based on the monitoring data.

No exclusions for handling of residual contaminated soils will be provided in the Site SMP. All handling of residual contaminated material will be subject to provisions contained in the SMP.

8.0 FINAL ENGINEERING REPORT

A Final Engineering Report (FER) and draft Certificate of Completion will be submitted to NYSDEC following implementation of the Remedial Action defined in this RAWP. The FER provides the documentation that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The FER will provide a comprehensive account of the locations and characteristics of all material removed from the Site including the surveyed map(s) of all sources. The Final Engineering Report will include as-built drawings for all constructed elements, certifications, manifests, bills of lading as well as the complete Site Management Plan. The FER will provide a description of the changes in the Remedial Action from the elements provided in the RAWP and associated design documents. The FER will provide a tabular summary of all performance evaluation sampling results and all material characterization results and other sampling and chemical analysis performed as part of the Remedial Action. The FER will provide test results demonstrating that all mitigation and remedial systems are functioning properly. The FER will be prepared in conformance with DER-10.

Where determined to be necessary by NYSDEC, a Financial Assurance Plan will be required to ensure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the Site Management Plan and Environmental Easement. This determination will be made by NYSDEC in the context of the Final Engineering Report review.

The Final Remediation Report will include written and photographic documentation of all remedial work performed under this remedy.

The FER will include an itemized tabular description of actual costs incurred during all aspects of the Remedial Action.

The FER will provide a thorough summary of all residual contamination left on the Site after the remedy is complete. Residual contamination includes all contamination that exceeds the Track 1 USCO in 6NYCRR Part 375-6. A table that shows exceedances from Track 1 USCOs for all soil/fill remaining at the Site after the Remedial Action and a map that shows the location and summarizes exceedances from Track 1 USCOs for all soil/fill remaining at the Site after the Remedial Action will be included in the FER.

The FER will provide a thorough summary of all residual contamination that exceeds the SCOs defined for the Site in the RAWP and must provide an explanation for

why the material was not removed as part of the Remedial Action. A table that shows residual contamination in excess of Site SCOs and a map that shows residual contamination in excess of Site SCOs will be included in the FER.

The Final Engineering Report will include an accounting of the destination of all material removed from the Site, including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the Site.

Before approval of a FER and issuance of a Certificate of Completion, all project reports must be submitted in digital form on electronic media (PDF).

8.1 CERTIFICATIONS

The following certification will appear in front of the Executive Summary of the Final Engineering Report. The certification will be signed by the Remedial Engineer Fuad Dahan who is a Professional Engineer registered in New York State. This certification will be appropriately signed and stamped. The certification will include the following statements:

I _____certify that I am currently a NYS registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Remedial Work Plan was implemented and that all construction activities were completed in substantial conformance with the DER-approved Remedial Work Plan.

I certify that all use restrictions, institutional controls, engineering controls and/or any operation and maintenance requirements applicable to the site are contained in an environmental easement created and recorded pursuant to ECL 71-3605 and that any affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of any engineering controls employed at the site including the proper maintenance of any remaining monitoring wells, and that such plan has been approved by DER.

TABLES

Table 1A
Summary of Soil Sampling Results
Volatile Organic Compounds (8260)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174772-1 SESI-SB-1(3') 2/6/2019 11:00 AM	460-174772-2 SESI-SB-1(8') 2/6/2019 11:30 AM	460-174859-1 SESI-SB-1(12') 2/7/2019 9:00 AM	460-174859-2 SESI-SB-1(15') 2/7/2019 9:05 AM	460-174859-3 SESI-SB-2(3') 2/7/2019 10:30 AM	460-174772-3 SESI-SB-2(5') 2/6/2019 1:00 PM	460-174859-4 SESI-SB-2(15') 2/7/2019 11:00 AM	460-174859-5 SESI-SB-3(2') 2/7/2019 8:00 AM	460-174859-6 SESI-SB-3(7') 2/7/2019 8:05 AM	460-174859-7 SESI-SB-3(13') 2/7/2019 8:10 AM	460-174859-22 SESI-SB-3(15-17') 2/7/2019 1:45 PM	460-174677-1 SESI-SB-4(5-7') 2/5/2019 9:00 AM	460-174677-2 SESI-SB-4(10-12') 2/5/2019 9:30 AM	460-174677-3 SESI-SB-4(15-17') 2/5/2019 10:30 AM	460-174772-4 SESI-SB-5(5') 2/6/2019 3:00 PM	460-175121-1 SESI-SB-5(8') 2/11/2019 11:40 AM	460-175121-2 SESI-SB-5(12') 2/11/2019 11:50 AM
SOIL BY 8260C																				
1,1,1-Trichloroethane	mg/Kg	0.68	100	0.00021 U	0.00020 U	0.00027 U	0.00022 U	0.00024 U	0.00019 U	0.00019 U	0.00022 U	0.00020 U	0.00023 U	0.00020 U	0.00019 U	0.00020 U	0.00018 U	0.00022 U	0.00023 U	0.00026 U
1,1,2,2-Tetrachloroethane	mg/Kg			0.00020 U	0.00018 U	0.00024 U	0.00020 U	0.00022 U	0.00018 U	0.00017 U	0.00020 U	0.00018 U	0.00021 U	0.00018 U	0.00017 U	0.00018 U	0.00016 U	0.00020 U	0.00021 U	0.00024 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg			0.00027 U	0.00026 U	0.00034 U	0.00028 U	0.00031 U	0.00025 U	0.00024 U	0.00028 U	0.00026 U	0.00029 U	0.00026 U	0.00024 U	0.00026 U	0.00023 U	0.00028 U	0.00030 U	0.00033 U
1,1,2-Trichloroethane	mg/Kg			0.00016 U	0.00015 U	0.00020 U	0.00016 U	0.00019 U	0.00015 U	0.00014 U	0.00017 U	0.00015 U	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00014 U	0.00016 U	0.00018 U	0.00020 U
1,1-Dichloroethane	mg/Kg	0.27	26	0.00019 U	0.00018 U	0.00023 U	0.00019 U	0.00021 U	0.00017 U	0.00017 U	0.00020 U	0.00018 U	0.00020 U	0.00018 U	0.00017 U	0.00018 U	0.00016 U	0.00019 U	0.00020 U	0.00023 U
1,1-Dichloroethene	mg/Kg	0.33	100	0.00021 U	0.00019 U	0.00026 U	0.00021 U	0.00023 U	0.00019 U	0.00018 U	0.00021 U	0.00019 U	0.00022 U	0.00019 U	0.00018 U	0.00019 U	0.00017 U	0.00021 U	0.00022 U	0.00025 U
1,2,3-Trichlorobenzene	mg/Kg			0.00017 U	0.00016 U	0.00021 U	0.00017 U	0.00019 U	0.00015 U	0.00015 U	0.00017 U	0.00016 U	0.00018 U	0.00016 U	0.00015 U	0.00016 U	0.00014 U	0.00017 U	0.00018 U	0.00020 U
1,2,4-Trichlorobenzene	mg/Kg			0.000084 U	0.000079 U	0.00010 U	0.000085 U	0.000096 U	0.000076 U	0.000074 U	0.000087 U	0.000079 U	0.000089 U	0.000079 U	0.000074 U	0.000079 U	0.000071 U	0.000085 U	0.000091 U	0.00010 U
1,2-Dibromo-3-Chloropropane	mg/Kg			0.00042 U	0.00040 U	0.00052 U	0.00043 U	0.00048 U	0.00038 U	0.00037 U	0.00044 U	0.00039 U	0.00045 U	0.00040 U	0.00037 U	0.00039 U	0.00035 U	0.00043 U	0.00045 U	0.00051 U
1,2-Dichlorobenzene	mg/Kg	1.1	100	0.00013 U	0.00012 U	0.00016 U	0.00013 U	0.00015 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U	0.00014 U	0.00012 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00014 U	0.00016 U
1,2-Dichloroethane	mg/Kg	0.02	3.1	0.00027 U	0.00025 U	0.00034 U	0.00027 U	0.00031 U	0.00025 U	0.00024 U	0.00028 U	0.00025 U	0.00029 U	0.00026 U	0.00024 U	0.00025 U	0.00023 U	0.00027 U	0.00029 U	0.00033 U
1,2-Dichloropropane	mg/Kg			0.00039 U	0.00036 U	0.00048 U	0.00039 U	0.00044 U	0.00035 U	0.00034 U	0.00040 U	0.00036 U	0.00041 U	0.00036 U	0.00034 U	0.00036 U	0.00032 U	0.00039 U	0.00042 U	0.00047 U
1,3-Dichlorobenzene	mg/Kg	2.4	49	0.00015 U	0.00014 U	0.00018 U	0.00015 U	0.00017 U	0.00013 U	0.00013 U	0.00015 U	0.00014 U	0.00015 U	0.00014 U	0.00013 U	0.00014 U	0.00012 U	0.00015 U	0.00016 U	0.00018 U
1,4-Dichlorobenzene	mg/Kg	1.8	13	0.000091 U	0.000086 U	0.00011 U	0.000092 U	0.00010 U	0.000083 U	0.000080 U	0.000095 U	0.000086 U	0.000097 U	0.000086 U	0.000080 U	0.000086 U	0.000077 U	0.000092 U	0.000099 U	0.00011 U
1,4-Dioxane	mg/Kg	0.1	13	0.0084 U	0.0079 U	0.010 U	0.0085 U	0.0095 U	0.0076 U	0.0074 U	0.0087 U	0.0079 U	0.0089 U	0.0079 U	0.0074 U	0.0079 U	0.0070 U	0.0085 U	0.0090 U	0.010 U
2-Butanone (MEK)	mg/Kg	0.12	100	**0.0013 J**	0.00095 U	0.0013 U	0.0010 U	0.0012 U	0.00092 U	0.00089 U	0.0011 U	0.00095 U	0.0011 U	0.00096 U	0.00089 U	0.00095 U	0.00085 U	0.0010 U	**0.0012 J**	0.0012 U
2-Hexanone	mg/Kg			0.00071 U	0.00067 U	0.00089 U	0.00072 U	0.00081 U	0.00065 U	0.00063 U	0.00074 U	0.00067 U	0.00076 U	0.00067 U	0.00063 U	0.00067 U	0.00060 U	0.00072 U	0.00077 U	0.00086 U
4-Methyl-2-pentanone (MIBK)	mg/Kg			0.00061 U	0.00057 U	0.00076 U	0.00061 U	0.00069 U	0.00055 U	0.00053 U	0.00063 U	0.00057 U	0.00064 U	0.00057 U	0.00053 U	0.00057 U	0.00051 U	0.00061 U	0.00065 U	0.00073 U
Acetone	mg/Kg	0.05	100	**0.028 B**	**0.026 B**	**0.0068 B**	**0.0046 B**	**0.0055 B**	**0.010 B**	**0.0071 B**	**0.0045 J B**	**0.0071 B**	**0.0056 B**	0.0033 U	**0.014 B**	**0.020 B**	**0.016 B**	**0.0039 J B**	**0.016**	0.0042 U
Benzene	mg/Kg	0.06	4.8	**0.0012**	0.00022 U	0.00029 U	0.00024 U	0.00027 U	0.00021 U	0.00021 U	0.00024 U	0.00022 U	0.00025 U	0.00022 U	0.00021 U	**0.00097**	0.00020 U	0.00024 U	0.00025 U	0.00029 U
Bromoform	mg/Kg			0.00039 U	0.00037 U	0.00048 U	0.00039 U	0.00044 U	0.00035 U	0.00034 U	0.00040 U	0.00036 U	0.00041 U	0.00037 U	0.00034 U	0.00036 U	0.00033 U	0.00039 U	0.00042 U	0.00047 U
Bromomethane	mg/Kg			0.00043 U	0.00041 U	0.00054 U	0.00044 U	0.00049 U	0.00039 U	0.00038 U	0.00045 U	0.00041 U	0.00046 U	0.00041 U	0.00038 U	0.00041 U	0.00036 U	0.00044 U	0.00047 U	0.00052 U
Carbon disulfide	mg/Kg			0.00024 U	0.00023 U	0.00030 U	0.00025 U	0.00028 U	0.00022 U	0.00021 U	0.00025 U	0.00023 U	0.00026 U	0.00023 U	0.00021 U	0.00023 U	0.00020 U	0.00025 U	**0.00054 J**	0.00029 U
Carbon tetrachloride	mg/Kg	0.76	2.4	0.00017 U	0.00016 U	0.00021 U	0.00017 U	0.00019 U	0.00015 U	0.00015 U	0.00017 U	0.00016 U	0.00018 U	0.00016 U	0.00015 U	0.00016 U	0.00014 U	0.00017 U	0.00018 U	0.00020 U
Chlorobenzene	mg/Kg	1.1	100	0.00016 U	0.00015 U	0.00020 U	0.00016 U	0.00018 U	0.00015 U	0.00014 U	0.00017 U	0.00015 U	0.00017 U	0.00015 U	0.00014 U	0.00015 U	0.00014 U	0.00016 U	0.00017 U	0.00020 U
Chlorobromomethane	mg/Kg			0.00026 U	0.00024 U	0.00032 U	0.00026 U	0.00029 U	0.00023 U	0.00023 U	0.00027 U	0.00024 U	0.00027 U	0.00024 U	0.00023 U	0.00024 U	0.00022 U	0.00026 U	0.00028 U	0.00031 U
Chlorodibromomethane	mg/Kg			0.00018 U	0.00017 U	0.00022 U	0.00018 U	0.00020 U	0.00016 U	0.00016 U	0.00018 U	0.00017 U	0.00019 U	0.00017 U	0.00016 U	0.00017 U	0.00015 U	0.00018 U	0.00019 U	0.00021 U
Chloroethane	mg/Kg			0.00048 U	0.00045 U	0.00059 U	0.00048 U	0.00054 U	0.00043 U	0.00042 U	0.00049 U	0.00045 U	0.00051 U	0.00045 U	0.00042 U	0.00045 U	0.00040 U	0.00048 U	0.00051 U	0.00058 U
Chloroform	mg/Kg	0.37	49	0.00029 U	0.00027 U	0.00036 U	0.00030 U	0.00033 U	0.00026 U	0.00026 U	0.00030 U	0.00027 U	0.00031 U	0.00028 U	0.00026 U	0.00027 U	0.00024 U	0.00030 U	0.00031 U	0.00035 U
Chloromethane	mg/Kg			0.00040 U	0.00037 U	0.00050 U	0.00040 U	0.00045 U	0.00036 U	0.00035 U	0.00041 U	0.00037 U	0.00042 U	0.00038 U	0.00035 U	0.00037 U	0.00033 U	0.00040 U	0.00043 U	0.00048 U
cis-1,2-Dichloroethene	mg/Kg	0.25	100	0.00014 U	0.00013 U	0.00017 U	0.00014 U	0.00016 U	0.00013 U	0.00012 U	0.00014 U	0.00013 U	0.00015 U	0.00013 U	0.00012 U	0.00013 U	0.00012 U	0.00014 U	0.00015 U	0.00017 U
cis-1,3-Dichloropropene	mg/Kg			0.00025 U	0.00023 U	0.00031 U	0.00025 U	0.00028 U	0.00023 U	0.00022 U	0.00026 U	0.00023 U	0.00027 U	0.00024 U	0.00022 U	0.00023 U	0.00021 U	0.00025 U	0.00027 U	0.00030 U
Cyclohexane	mg/Kg			0.00020 U	0.00019 U	0.00025 U	0.00020 U	0.00023 U	0.00018 U	0.00018 U	0.00021 U	0.00019 U	0.00021 U	0.00019 U	0.00018 U	0.00019 U	0.00017 U	0.00020 U	0.00022 U	0.00024 U
Dichlorobromomethane	mg/Kg			0.00023 U	0.00022 U	0.00029 U	0.00024 U	0.00027 U	0.00021 U	0.00021 U	0.00024 U	0.00022 U	0.00025 U	0.00022 U	0.00021 U	0.00022 U	0.00020 U	0.00024 U	0.00025 U	0.00028 U
Dichlorodifluoromethane	mg/Kg			0.00031 U	0.00029 U	0.00039 U	0.00031 U	0.00035 U	0.00028 U	0.00027 U	0.00032 U	0.00029 U	0.00033 U	0.00029 U	0.00027 U	0.00029 U	0.00026 U	0.00031 U	0.00033 U	0.00037 U
Ethylbenzene	mg/Kg	1	41	0.00018 U	0.00017 U	0.00023 U	0.00018 U	0.00021 U	0.00016 U	0.00016 U	0.00019 U	0.00017 U	0.00019 U	0.00017 U	0.00016 U	0.00017 U	0.00015 U	0.00018 U	**0.0023**	0.00022 U
Ethylene Dibromide	mg/Kg			0.00016 U	0.00015 U	0.00021 U	0.00017 U	0.00019 U	0.00015 U	0.00014 U	0.00017 U	0.00015 U	0.00017 U	0.00016 U	0.00014 U	0.00015 U	0.00014 U	0.00017 U	0.00018 U	0.00020 U
Isopropylbenzene	mg/Kg			0.00011 U	0.00011 U	0.00014 U	0.00012 U	0.00013 U	0.00010 U	0.00010 U	0.00012 U	0.00011 U	0.00012 U	0.00011 U	0.00010 U	0.00011 U	0.000097 U	0.00012 U	**0.0016**	0.00014 U
Methyl acetate	mg/Kg			0.0039 U	0.0037 U	0.0049 U	0.0040 U	0.0045 U	0.0036 U	0.0035 U	0.0041 U	0.0037 U	0.0042 U	0.0037 U	0.0035 U	0.0037 U	0.0033 U	0.0040 U	0.0042 U	0.0048 U
Methyl tert-butyl ether	mg/Kg	0.93	100	0.00011 U	0.00011 U	0.00014 U	0.00012 U	0.00013 U	0.00010 U	0.00010 U	0.00012 U	0.00011 U	0.00012 U	0.00011 U	0.00010 U	0.00011 U	0.000096 U	0.00012 U	0.00012 U	0.00014 U
Methylcyclohexane	mg/Kg			0.00015 U	0.00014 U	0.00018 U	0.00015 U	0.00017 U	0.00013 U	0.00013 U	0.00015 U	0.00014 U	0.00016 U	0.00014 U	0.00013 U	0.00014 U	0.00012 U	0.00015 U	0.00016 U	0.00018 U
Methylene Chloride	mg/Kg	0.05	100	**0.00062 J**	**0.00076 J**	0.00019 U	0.00015 U	0.00017 U	**0.00083**	0.00013 U	0.00015 U	0.00014 U	0.00016 U	0.00014 U	**0.0011 B**	**0.0012 B**	**0.00096 B**	**0.00020 J**	0.00016 U	0.00018 U
m-Xylene & p-Xylene	mg/Kg			0.00016 U	0.00015 U	0.00020 U	0.00016 U	0.00018 U	0.00014 U	0.00014 U	0.00016 U	0.00015 U	0.00017 U	0.00015 U	0.00014 U	0.00015 U	**0.00014 J**	0.00016 U	**0.019**	0.00019 U
o-Xylene	mg/Kg			0.000087 U	0.000082 U	0.00011 U	0.000088 U	0.000099 U	0.000079 U	0.000076 U	0.000090 U	0.000082 U	0.000092 U	0.000082 U	0.000076 U	0.000082 U	**0.000073 J**	0.000088 U	**0.028**	0.00011 U
Styrene	mg/Kg			0.00011 U	0.00011 U	0.00014 U	0.00011 U	0.00013 U	0.00010 U	0.000099 U	0.00012 U	0.00011 U	0.00012 U	0.00011 U	0.000099 U	0.00011 U	0.000094 U	0.00011 U	0.00012 U	0.00014 U
Tentatively Identified Compound	mg/Kg			None	None	None	None	None	None	None	None	**0.0050 J**	None	**0.017 J**	None	None	**0.024 J N**	None	**0.068 J N**	None
Tetrachloroethene	mg/Kg	1.3	19	0.00013 U	0.00012 U	0.00016 U	0.00013 U	0.00015 U	0.00012 U	0.00011 U	0.00014 U	0.00012 U	0.00014 U	0.00012 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00014 U	0.00016 U
Toluene	mg/Kg	0.7	100	**0.0062**	0.00054 U	0.00071 U	0.00058 U	0.00065 U	0.00052 U	0.00050 U	0.00059 U	0.00054 U	0.00061 U	0.00054 U	0.00050 U	**0.0049**	0.00048 U	**0.00077 J B**	0.00062 U	0.00069 U
trans-1,2-Dichloroethene	mg/Kg	0.19	100	0.00022 U	0.00021 U	0.00028 U	0.00023 U	0.00026 U	0.00020 U	0.00020 U	0.00023 U	0.00021 U	0.00024 U	0.00021 U	0.00020 U	0.00021 U	0.00019 U	0.00023 U	0.00024 U	0.00027 U
trans-1,3-Dichloropropene	mg/Kg			0.00024 U	0.00023 U	0.00030 U	0.00025 U	0.00028 U	0.00022 U	0.00021 U	0.00025 U	0.00023 U	0.00026 U	0.00023 U	0.00021 U	0.00023 U	0.00020 U	0.00025 U	0.00026 U	0.00029 U
Trichloroethene	mg/Kg	0.47	21	0.00013 U	0.00012 U	0.00016 U	0.00013 U	0.00015 U	0.00012 U	0.00012 U	0.00014 U	0.00012 U	0.00014 U	0.00012 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00014 U	0.00016 U
Trichlorofluoromethane	mg/Kg			0.00037 U	0.00035 U	0.00046 U	0.00038 U	0.00042 U	0.00034 U	0.00033 U	0.00038 U	0.00035 U	0.00039 U	0.00035 U	0.00033 U	0.00035 U	0.00031 U	0.00038 U	0.00040 U	0.00045 U
Vinyl chloride	mg/Kg	0.02	0.9	0.00050 U	0.00047 U	0.00062 U	0.00051 U	0.00057 U	0.00045 U	0.00044 U	0.00052 U	0.00047 U	0.00053 U	0.00047 U	0.00044 U	0.00047 U	0.00042 U	0.00051 U	0.00054 U	0.00060 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 1A
Summary of Soil Sampling Results
Volatile Organic Compounds (8260)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174859-8 SESI-SB-6(2') 2/7/2019 11:45 AM	460-174859-9 SESI-SB-6(8') 2/7/2019 11:50 AM	460-174859-10 SESI-SB-6(12') 2/7/2019 12:00 PM	460-174859-11 SESI-SB-6(16') 2/7/2019 12:05 PM	460-174986-1 SESI-SB-6(20-22') 2/8/2019 11:00 AM	460-174986-2 SESI-SB-7(3') 2/8/2019 9:20 AM	460-174986-3 SESI-SB-7(8') 2/8/2019 9:30 AM	460-174986-4 SESI-SB-7(13') 2/8/2019 9:40 AM	460-175449-1 SESI-SB-7(15'-17') 2/15/2019 10:30 AM	460-174772-5 SESI-SB-8(4') 2/6/2019 8:30 AM	460-174772-6 SESI-SB-8(9') 2/6/2019 9:00 AM	460-174859-12 SESI-SB-8(14') 2/7/2019 10:20 AM	460-174859-13 SESI-SB-8(18') 2/7/2019 10:30 AM	460-174859-14 SESI-SB-9(3') 2/7/2019 12:50 PM	460-174859-15 SESI-SB-9(8') 2/7/2019 12:55 PM	460-174859-16 SESI-SB-9(13') 2/7/2019 1:00 PM	460-174859-17 SESI-SB-9(17') 2/7/2019 1:05 PM
SOIL BY 8260C																				
1,1,1-Trichloroethane	mg/Kg	0.68	100	0.00022 U	0.00022 U	0.00024 U	0.00021 U	0.00026 U	0.00047 U	0.00024 U	0.00023 U	0.00021 U	0.00029 U	0.00023 U	0.00022 U	0.00020 U	0.00026 U	0.00025 U	0.00020 U	0.00020 U
1,1,2,2-Tetrachloroethane	mg/Kg			0.00020 U	0.00020 U	0.00022 U	0.00019 U	0.00024 U	0.00043 U	0.00022 U	0.00021 U	0.00019 U	0.00026 U	0.00021 U	0.00021 U	0.00018 U	0.00024 U	0.00023 U	0.00018 U	0.00019 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg			0.00028 U	0.00028 U	0.00031 U	0.00027 U	0.00034 U	0.00061 U	0.00030 U	0.00030 U	0.00027 U	0.00037 U	0.00030 U	0.00029 U	0.00026 U	0.00034 U	0.00032 U	0.00026 U	0.00026 U
1,1,2-Trichloroethane	mg/Kg			0.00017 U	0.00017 U	0.00019 U	0.00016 U	0.00020 U	0.00036 U	0.00018 U	0.00018 U	0.00016 U	0.00022 U	0.00018 U	0.00017 U	0.00015 U	0.00020 U	0.00019 U	0.00015 U	0.00016 U
1,1-Dichloroethane	mg/Kg	0.27	26	0.00019 U	0.00019 U	0.00021 U	0.00019 U	0.00023 U	0.00042 U	0.00021 U	0.00021 U	0.00019 U	0.00025 U	0.00020 U	0.00020 U	0.00018 U	0.00023 U	0.00022 U	0.00017 U	0.00018 U
1,1-Dichloroethene	mg/Kg	0.33	100	0.00021 U	0.00021 U	0.00023 U	0.00020 U	0.00025 U	0.00046 U	0.00023 U	0.00023 U	0.00020 U	0.00028 U	0.00022 U	0.00022 U	0.00019 U	0.00025 U	0.00024 U	0.00019 U	0.00020 U
1,2,3-Trichlorobenzene	mg/Kg			0.00017 U	0.00017 U	0.00019 U	0.00016 U	0.00020 U	0.00037 U	0.00018 U	0.00018 U	0.00016 U	0.00022 U	0.00018 U	0.00017 U	0.00015 U	0.00020 U	0.00019 U	0.00015 U	0.00016 U
1,2,4-Trichlorobenzene	mg/Kg			0.000086 U	0.000087 U	0.000096 U	0.000083 U	0.00010 U	0.00019 U	0.000093 U	0.000092 U	0.000083 U	0.00011 U	0.000091 U	0.000089 U	0.000079 U	0.00010 U	0.000098 U	0.000078 U	0.000081 U
1,2-Dibromo-3-Chloropropane	mg/Kg			0.00043 U	0.00043 U	0.00048 U	0.00042 U	0.00052 U	0.00093 U	0.00047 U	0.00046 U	0.00041 U	0.00057 U	0.00046 U	0.00044 U	0.00039 U	0.00051 U	0.00049 U	0.00039 U	0.00040 U
1,2-Dichlorobenzene	mg/Kg	1.1	100	0.00013 U	0.00014 U	0.00015 U	0.00013 U	0.00016 U	0.00029 U	0.00015 U	0.00014 U	0.00013 U	0.00018 U	0.00014 U	0.00014 U	0.00012 U	0.00016 U	0.00015 U	0.00012 U	0.00013 U
1,2-Dichloroethane	mg/Kg	0.02	3.1	0.00028 U	0.00028 U	0.00031 U	0.00027 U	0.00033 U	0.00060 U	0.00030 U	0.00030 U	0.00027 U	0.00036 U	0.00029 U	0.00028 U	0.00025 U	0.00033 U	0.00032 U	0.00025 U	0.00026 U
1,2-Dichloropropane	mg/Kg			0.00040 U	0.00040 U	0.00044 U	0.00038 U	0.00047 U	0.00086 U	0.00043 U	0.00042 U	0.00038 U	0.00052 U	0.00042 U	0.00041 U	0.00036 U	0.00047 U	0.00045 U	0.00036 U	0.00037 U
1,3-Dichlorobenzene	mg/Kg	2.4	49	0.00015 U	0.00015 U	0.00017 U	0.00014 U	0.00018 U	0.00032 U	0.00016 U	0.00016 U	0.00014 U	0.00020 U	0.00016 U	0.00015 U	0.00014 U	0.00018 U	0.00017 U	0.00013 U	0.00014 U
1,4-Dichlorobenzene	mg/Kg	1.8	13	0.000094 U	0.000094 U	0.00010 U	0.000090 U	0.00011 U	0.00020 U	0.00010 U	0.00010 U	0.000090 U	0.00012 U	0.000099 U	0.000096 U	0.000085 U	0.00011 U	0.00011 U	0.000085 U	0.000088 U
1,4-Dioxane	mg/Kg	0.1	13	0.0086 U	0.0087 U	0.0096 U	0.0083 U	0.010 U	0.019 U	0.0093 U	0.0092 U	0.0083 U	0.011 U	0.0091 U	0.0088 U	0.0078 U	0.010 U	0.0098 U	0.0078 U	0.0080 U
2-Butanone (MEK)	mg/Kg	0.12	100	0.0010 U	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0022 U	0.0011 U	0.0011 U	**0.0014 J B**	0.0014 U	0.0011 U	0.0011 U	0.00095 U	0.0012 U	0.0012 U	0.00094 U	0.00097 U
2-Hexanone	mg/Kg			0.00073 U	0.00074 U	0.00081 U	0.00070 U	0.00087 U	0.0016 U	0.00079 U	0.00078 U	0.00070 U	0.00096 U	0.00077 U	0.00075 U	0.00067 U	0.00087 U	0.00083 U	0.00066 U	0.00068 U
4-Methyl-2-pentanone (MIBK)	mg/Kg			0.00062 U	0.00063 U	0.00069 U	0.00060 U	0.00074 U	0.0013 U	0.00067 U	0.00066 U	0.00060 U	0.00082 U	0.00066 U	0.00064 U	0.00057 U	0.00074 U	0.00071 U	0.00056 U	0.00058 U
Acetone	mg/Kg	0.05	100	**0.0041 J B**	**0.0046 J B**	**0.0057 B**	**0.0050 B**	**0.0052 J B**	**0.0092 J B**	**0.0043 J B**	**0.0044 J B**	0.0034 U	**0.046 B**	**0.026 B**	**0.0064 B**	**0.0049 B**	**0.0046 J B**	0.0041 U	0.0032 U	0.0033 U
Benzene	mg/Kg	0.06	4.8	0.00024 U	0.00024 U	0.00027 U	0.00023 U	0.00029 U	0.00052 U	0.00026 U	0.00026 U	0.00023 U	0.00032 U	0.00026 U	0.00025 U	0.00022 U	0.00029 U	0.00028 U	0.00022 U	0.00023 U
Bromoform	mg/Kg			0.00040 U	0.00040 U	0.00044 U	0.00038 U	0.00048 U	0.00086 U	0.00043 U	0.00043 U	0.00038 U	0.00052 U	0.00042 U	0.00041 U	0.00036 U	0.00047 U	0.00045 U	0.00036 U	0.00037 U
Bromomethane	mg/Kg			0.00044 U	0.00045 U	0.00049 U	0.00043 U	0.00053 U	0.00096 U	0.00048 U	0.00047 U	0.00043 U	0.00058 U	0.00047 U	0.00046 U	0.00040 U	0.00053 U	0.00051 U	0.00040 U	0.00042 U
Carbon disulfide	mg/Kg			0.00025 U	0.00025 U	0.00028 U	0.00024 U	0.00030 U	0.00054 U	0.00027 U	**0.00042 J**	0.00024 U	0.00033 U	0.00026 U	0.00026 U	0.00023 U	0.00030 U	0.00028 U	0.00023 U	0.00023 U
Carbon tetrachloride	mg/Kg	0.76	2.4	0.00017 U	0.00017 U	0.00019 U	0.00016 U	0.00020 U	0.00037 U	0.00018 U	0.00018 U	0.00016 U	0.00022 U	0.00018 U	0.00017 U	0.00015 U	0.00020 U	0.00019 U	0.00015 U	0.00016 U
Chlorobenzene	mg/Kg	1.1	100	0.00017 U	0.00017 U	0.00018 U	0.00016 U	0.00020 U	0.00036 U	0.00018 U	0.00018 U	0.00016 U	0.00022 U	0.00018 U	0.00017 U	0.00015 U	0.00020 U	0.00019 U	0.00015 U	0.00016 U
Chlorobromomethane	mg/Kg			0.00026 U	0.00027 U	0.00029 U	0.00025 U	0.00031 U	0.00057 U	0.00028 U	0.00028 U	0.00025 U	0.00035 U	0.00028 U	0.00027 U	0.00024 U	0.00031 U	0.00030 U	0.00024 U	0.00025 U
Chlorodibromomethane	mg/Kg			0.00018 U	0.00018 U	0.00020 U	0.00018 U	0.00022 U	0.00039 U	0.00020 U	0.00019 U	0.00017 U	0.00024 U	0.00019 U	0.00019 U	0.00017 U	0.00022 U	0.00021 U	0.00016 U	0.00017 U
Chloroethane	mg/Kg			0.00049 U	0.00049 U	0.00054 U	0.00047 U	0.00058 U	0.0011 U	0.00053 U	0.00052 U	0.00047 U	0.00064 U	0.00052 U	0.00050 U	0.00045 U	0.00058 U	0.00056 U	0.00044 U	0.00046 U
Chloroform	mg/Kg	0.37	49	0.00030 U	0.00030 U	0.00033 U	0.00029 U	0.00036 U	0.00065 U	0.00032 U	0.00032 U	0.00029 U	0.00039 U	0.00032 U	0.00031 U	0.00027 U	0.00036 U	0.00034 U	0.00027 U	0.00028 U
Chloromethane	mg/Kg			0.00041 U	0.00041 U	0.00045 U	0.00039 U	0.00049 U	0.00088 U	0.00044 U	0.00044 U	0.00039 U	0.00053 U	0.00043 U	0.00042 U	0.00037 U	0.00049 U	0.00046 U	0.00037 U	0.00038 U
cis-1,2-Dichloroethene	mg/Kg	0.25	100	0.00014 U	0.00014 U	0.00016 U	0.00014 U	0.00017 U	0.00031 U	0.00015 U	0.00015 U	0.00014 U	0.00019 U	0.00015 U	0.00015 U	0.00013 U	0.00017 U	0.00016 U	0.00013 U	0.00013 U
cis-1,3-Dichloropropene	mg/Kg			0.00026 U	0.00026 U	0.00028 U	0.00025 U	0.00031 U	0.00055 U	0.00028 U	0.00027 U	0.00025 U	0.00034 U	0.00027 U	0.00026 U	0.00023 U	0.00030 U	0.00029 U	0.00023 U	0.00024 U
Cyclohexane	mg/Kg			0.00021 U	0.00021 U	0.00023 U	0.00020 U	0.00025 U	0.00045 U	0.00022 U	0.00022 U	0.00020 U	0.00027 U	0.00022 U	0.00021 U	0.00019 U	0.00025 U	0.00024 U	0.00019 U	0.00019 U
Dichlorobromomethane	mg/Kg			0.00024 U	0.00024 U	0.00027 U	0.00023 U	0.00029 U	0.00052 U	0.00026 U	0.00026 U	0.00023 U	0.00032 U	0.00025 U	0.00025 U	0.00022 U	0.00029 U	0.00027 U	0.00022 U	0.00023 U
Dichlorodifluoromethane	mg/Kg			0.00032 U	0.00032 U	0.00035 U	0.00030 U	0.00038 U	0.00068 U	0.00034 U	0.00034 U	0.00030 U	0.00042 U	0.00033 U	0.00033 U	0.00029 U	0.00038 U	0.00036 U	0.00029 U	0.00030 U
Ethylbenzene	mg/Kg	1	41	0.00019 U	0.00019 U	0.00021 U	0.00018 U	0.00022 U	0.00040 U	0.00020 U	0.00020 U	0.00018 U	0.00024 U	0.00020 U	0.00019 U	0.00017 U	0.00022 U	0.00021 U	0.00017 U	0.00017 U
Ethylene Dibromide	mg/Kg			0.00017 U	0.00017 U	0.00019 U	0.00016 U	0.00020 U	0.00036 U	0.00018 U	0.00018 U	0.00016 U	0.00022 U	0.00018 U	0.00017 U	0.00015 U	0.00020 U	0.00019 U	0.00015 U	0.00016 U
Isopropylbenzene	mg/Kg			0.00012 U	0.00012 U	0.00013 U	0.00011 U	0.00014 U	0.00025 U	0.00013 U	0.00013 U	0.00011 U	0.00015 U	0.00012 U	0.00012 U	0.00011 U	0.00014 U	0.00013 U	0.00011 U	0.00011 U
Methyl acetate	mg/Kg			0.0040 U	0.0041 U	0.0045 U	0.0039 U	0.0048 U	0.0087 U	0.0044 U	0.0043 U	0.0039 U	0.0053 U	0.0043 U	0.0041 U	0.0037 U	0.0048 U	0.0046 U	0.0036 U	0.0038 U
Methyl tert-butyl ether	mg/Kg	0.93	100	0.00012 U	0.00012 U	0.00013 U	0.00011 U	0.00014 U	0.00025 U	0.00013 U	0.00013 U	0.00011 U *	0.00015 U	0.00012 U	0.00012 U	0.00011 U	0.00014 U	0.00013 U	0.00011 U	0.00011 U
Methylcyclohexane	mg/Kg			0.00015 U	0.00015 U	0.00017 U	0.00014 U	0.00018 U	0.00032 U	0.00016 U	0.00016 U	0.00014 U	0.00020 U	0.00016 U	0.00015 U	0.00014 U	0.00018 U	0.00017 U	0.00014 U	0.00014 U
Methylene Chloride	mg/Kg	0.05	100	0.00015 U	0.00015 U	0.00017 U	0.00015 U	0.00018 U	0.00033 U	0.00017 U	**0.00027 J**	0.00015 U	**0.0018**	**0.00032 J**	0.00016 U	**0.00023 J**	0.00018 U	0.00017 U	0.00014 U	0.00014 U
m-Xylene & p-Xylene	mg/Kg			0.00016 U	0.00016 U	0.00018 U	0.00016 U	0.00019 U	0.00035 U	0.00018 U	0.00017 U	0.00016 U	0.00021 U	0.00017 U	0.00017 U	0.00015 U	0.00019 U	0.00019 U	0.00015 U	0.00015 U
o-Xylene	mg/Kg			0.000089 U	0.000090 U	0.000099 U	0.000086 U	0.00011 U	0.00019 U	0.000096 U	0.000095 U	0.000086 U	0.00012 U	0.000094 U	0.000091 U	0.000081 U	0.00011 U	0.00010 U	0.000081 U	0.000083 U
Styrene	mg/Kg			0.00012 U	0.00012 U	0.00013 U	0.00011 U	0.00014 U	0.00025 U	0.00012 U	0.00012 U	0.00011 U	0.00015 U	0.00012 U	0.00012 U	0.00011 U	0.00014 U	0.00013 U	0.00010 U	0.00011 U
Tentatively Identified Compound	mg/Kg			None	None	None	None	**0.0076 J N**	None	None	None	**0.0071 J N**	None	None	None	None	None	None	None	None
Tetrachloroethene	mg/Kg	1.3	19	0.00013 U	0.00014 U	0.00015 U	0.00013 U	0.00016 U	0.00029 U	0.00014 U	0.00014 U	0.00013 U	0.00018 U	0.00014 U	0.00014 U	0.00012 U	0.00016 U	0.00015 U	0.00012 U	0.00013 U
Toluene	mg/Kg	0.7	100	0.00059 U	0.00059 U	0.00065 U	0.00056 U	0.00070 U	0.0013 U	0.00063 U	0.00063 U	0.00056 U	0.00077 U	0.00062 U	0.00060 U	0.00053 U	0.00070 U	0.00067 U	0.00053 U	0.00055 U
trans-1,2-Dichloroethene	mg/Kg	0.19	100	0.00023 U	0.00023 U	0.00026 U	0.00022 U	0.00028 U	0.00050 U	0.00025 U	0.00025 U	0.00022 U	0.00030 U	0.00024 U	0.00024 U	0.00021 U	0.00027 U	0.00026 U	0.00021 U	0.00022 U
trans-1,3-Dichloropropene	mg/Kg			0.00025 U	0.00025 U	0.00028 U	0.00024 U	0.00030 U	0.00054 U	0.00027 U	0.00027 U	0.00024 U	0.00033 U	0.00026 U	0.00026 U	0.00023 U	0.00030 U	0.00028 U	0.00023 U	0.00023 U
Trichloroethene	mg/Kg	0.47	21	0.00013 U	0.00014 U	0.00015 U	0.00013 U	0.00016 U	0.00029 U	0.00015 U	0.00014 U	0.00013 U	0.00018 U	0.00014 U	0.00014 U	0.00012 U	0.00016 U	0.00015 U	0.00012 U	0.00013 U
Trichlorofluoromethane	mg/Kg			0.00038 U	0.00038 U	0.00042 U	0.00037 U	0.00045 U	0.00082 U	0.00041 U	0.00041 U	0.00037 U	0.00050 U	0.00040 U	0.00039 U	0.00035 U	0.00045 U	0.00043 U	0.00034 U	0.00036 U
Vinyl chloride	mg/Kg	0.02	0.9	0.00051 U	0.00052 U	0.00057 U	0.00049 U	0.00061 U	0.0011 U	0.00055 U	0.00055 U	0.00049 U	0.00067 U	0.00054 U	0.00053 U	0.00047 U	0.00061 U	0.00058 U	0.00046 U	0.00048 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1A
Summary of Soil Sampling Results
Volatile Organic Compounds (8260)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174986-5 SESI-SB-10(4') 2/8/2019 11:10 AM	460-174986-6 SESI-SB-10(9') 2/8/2019 11:20 AM	460-174986-7 SESI-SB-10(11') 2/8/2019 11:30 AM	460-174986-8 SESI-SB-10(18') 2/8/2019 11:40 AM	460-174859-18 SESI-SB-11(4') 2/7/2019 1:50 PM	460-174859-19 SESI-SB-11(9') 2/7/2019 2:00 PM	460-174859-20 SESI-SB-11(14') 2/7/2019 2:05 PM	460-174859-21 SESI-SB-11(18') 2/7/2019 2:10 PM	460-175342-1 SESI-SB-12 (4') 2/14/2019 1:10 PM	460-175342-2 SESI-SB-12 (6') 2/14/2019 1:15 PM	460-175638-1 SESI-SB-13(3') 2/18/2019 1:30 PM	460-175638-2 SESI-SB-13(7') 2/18/2019 1:35 PM	460-175449-2 SESI-SB-14(2') 2/15/2019 11:00 AM	460-175449-3 SESI-SB-14(6') 2/15/2019 11:05 AM	460-174986-9 SESI-SB-15(3') 2/8/2019 12:30 PM	460-174986-10 SESI-SB-15(8') 2/8/2019 12:35 PM	460-174986-11 SESI-SB-15(14') 2/8/2019 12:40 PM
SOIL BY 8260C																					
1,1,1-Trichloroethane	mg/Kg	0.68	100	0.00021 U	0.00026 U	0.00021 U	0.00026 U	0.00024 U	0.00020 U	0.00021 U	0.00022 U	0.025 U	0.024 U	0.00025 U	0.00021 U	0.00022 U	0.00022 U	0.00022 U	0.00024 U	0.00023 U
1,1,2,2-Tetrachloroethane	mg/Kg			0.00019 U	0.00024 U	0.00019 U	0.00024 U	0.00022 U	0.00019 U	0.00019 U	0.00020 U	0.017 U	0.016 U	0.00023 U	0.00019 U	0.00020 U	0.00020 U	0.00021 U	0.00022 U	0.00021 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg			0.00027 U	0.00034 U	0.00027 U	0.00033 U	0.00031 U	0.00026 U	0.00027 U	0.00028 U	0.031 U	0.029 U	0.00032 U	0.00027 U	0.00029 U	0.00028 U	0.00029 U	0.00032 U	0.00030 U
1,1,2-Trichloroethane	mg/Kg			0.00016 U	0.00020 U	0.00016 U	0.00020 U	0.00018 U	0.00016 U	0.00016 U	0.00017 U	0.0073 U	0.0069 U	0.00019 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00019 U	0.00018 U
1,1-Dichloroethane	mg/Kg	0.27	26	0.00019 U	0.00023 U	0.00019 U	0.00023 U	0.00021 U	0.00018 U	0.00018 U	0.00019 U	0.022 U	0.021 U	0.00022 U	0.00019 U	0.00020 U	0.00019 U	0.00020 U	0.00022 U	0.00020 U
1,1-Dichloroethene	mg/Kg	0.33	100	0.00020 U	0.00025 U	0.00020 U	0.00025 U	0.00023 U	0.00020 U	0.00020 U	0.00021 U	0.031 U	0.029 U	0.00024 U	0.00020 U	0.00021 U	0.00021 U	0.00022 U	0.00024 U	0.00022 U
1,2,3-Trichlorobenzene	mg/Kg			0.00016 U	0.00020 U	0.00016 U	0.00020 U	0.00019 U	0.00016 U	0.00016 U	0.00017 U	0.032 U	0.030 U	0.00019 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00019 U	0.00018 U
1,2,4-Trichlorobenzene	mg/Kg			0.000084 U	0.00010 U	0.000083 U	0.00010 U	0.000094 U	0.000081 U	0.000082 U	0.000086 U	0.025 U	0.023 U	0.000099 U	0.000083 U	0.000088 U	0.000086 U	0.000089 U	0.000097 U	0.000091 U
1,2-Dibromo-3-Chloropropane	mg/Kg			0.00042 U	0.00051 U	0.00042 U	0.00051 U	0.00047 U	0.00040 U	0.00041 U	0.00043 U	0.021 U	0.020 U	0.00049 U	0.00042 U	0.00044 U	0.00043 U	0.00044 U	0.00048 U	0.00045 U
1,2-Dichlorobenzene	mg/Kg	1.1	100	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00013 U	0.00013 U	0.00013 U	0.020 U	0.019 U	0.00015 U	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.00015 U	0.00014 U
1,2-Dichloroethane	mg/Kg	0.02	3.1	0.00027 U	0.00033 U	0.00027 U	0.00033 U	0.00030 U	0.00026 U	0.00026 U	0.00028 U	0.023 U	0.022 U	0.00032 U	0.00027 U					
1,2-Dichloropropane	mg/Kg			0.00038 U	0.00047 U	0.00038 U	0.00046 U	0.00043 U	0.00037 U	0.00038 U	0.00039 U	0.016 U	0.015 U	0.00046 U	0.00038 U	0.00028 U	0.00028 U	0.00029 U	0.00031 U	0.00029 U
1,3-Dichlorobenzene	mg/Kg	2.4	49	0.00014 U	0.00018 U	0.00014 U	0.00017 U	0.00016 U	0.00014 U	0.00014 U	0.00015 U	0.030 U	0.028 U	0.00017 U	0.00014 U	0.00040 U	0.00040 U	0.00041 U	0.00044 U	0.00042 U
1,4-Dichlorobenzene	mg/Kg	1.8	13	0.000091 U	0.00011 U	0.000091 U	0.00011 U	0.00010 U	0.000088 U	0.000089 U	0.000093 U	0.030 U	0.028 U	0.00011 U	0.000091 U	0.00015 U	0.00015 U	0.00015 U	0.00017 U	0.00016 U
1,4-Dioxane	mg/Kg	0.1	13	0.0083 U	0.010 U	0.0083 U	0.010 U	0.0094 U	0.0081 U	0.0082 U	0.0085 U	0.79 U	0.75 U	0.0099 U	0.0083 U	0.000095 U	0.000094 U	0.000096 U	0.00010 U	0.000099 U
2-Butanone (MEK)	mg/Kg	0.12	100	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0011 U	0.00097 U	0.00099 U	0.0010 U	0.20 U	0.19 U	**0.0012 J B**	**0.0015 J B**	0.0087 U	0.0086 U	0.0089 U	0.0096 U	0.0091 U
2-Hexanone	mg/Kg			0.00071 U	0.00087 U	0.00071 U	0.00086 U	0.00080 U	0.00069 U	0.00070 U	0.00073 U	0.066 U	0.062 U	0.00084 U	0.00071 U	0.0011 U	**0.0019 J B**	0.0011 U	0.0012 U	0.0011 U
4-Methyl-2-pentanone (MIBK)	mg/Kg			0.00060 U	0.00074 U	0.00060 U	0.00073 U	0.00068 U	0.00058 U	0.00059 U	0.00062 U	0.057 U	0.054 U	0.00071 U	0.00060 U	0.00074 U	0.00073 U	0.00075 U	0.00082 U	0.00077 U
Acetone	mg/Kg	0.05	100	0.0034 U	0.0042 U	**0.0036 J B**	**0.0051 J B**	0.0039 U	0.0033 U	0.0034 U	0.0035 U	0.097 U	0.092 U	0.0041 U	0.0034 U	0.00063 U	0.00062 U	0.00064 U	0.00070 U	0.00065 U
Benzene	mg/Kg	0.06	4.8	0.00023 U	0.00029 U	0.00023 U	0.00028 U	0.00026 U	0.00023 U	0.00023 U	0.00024 U	0.017 U	0.016 U	0.00028 U	0.00023 U	0.0036 U	0.0036 U	0.0037 U	**0.0045 J B**	0.0037 U
Bromoform	mg/Kg			0.00039 U	0.00047 U	0.00039 U	0.00047 U	0.00044 U	0.00037 U	0.00038 U	0.00040 U	0.016 U	0.015 U	0.00046 U	0.00038 U	0.00025 U	0.00024 U	0.00025 U	0.00027 U	0.00025 U
Bromomethane	mg/Kg			0.00043 U	0.00053 U	0.00043 U	0.00052 U	0.00049 U	0.00042 U	0.00042 U	0.00044 U	0.016 U	0.015 U	0.00051 U	0.00043 U	0.00040 U	0.00040 U	0.00041 U	0.00045 U	0.00042 U
Carbon disulfide	mg/Kg			0.00024 U	0.00030 U	0.00024 U	0.00029 U	0.00027 U	0.00023 U	0.00024 U	0.00025 U	0.020 U	0.019 U	0.00029 U	0.00024 U	0.00045 U	0.00045 U	0.00046 U	0.00050 U	0.00047 U
Carbon tetrachloride	mg/Kg	0.76	2.4	0.00016 U	0.00020 U	0.00016 U	0.00020 U	0.00019 U	0.00016 U	0.00016 U	0.00017 U	0.030 U	0.028 U	0.00019 U	0.00016 U	0.00025 U	**0.00029 J**	0.00026 U	0.00028 U	0.00026 U
Chlorobenzene	mg/Kg	1.1	100	0.00016 U	0.00020 U	0.00016 U	0.00019 U	0.00018 U	0.00016 U	0.00016 U	0.00016 U	0.022 U	0.021 U	0.00019 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00019 U	0.00018 U
Chlorobromomethane	mg/Kg			0.00026 U	0.00031 U	0.00025 U	0.00031 U	0.00029 U	0.00025 U	0.00025 U	0.00026 U	0.027 U	0.026 U	0.00030 U	0.00025 U	0.00017 U	0.00017 U	0.00017 U	0.00019 U	0.00017 U
Chlorodibromomethane	mg/Kg			0.00018 U	0.00022 U	0.00018 U	0.00021 U	0.00020 U	0.00017 U	0.00017 U	0.00018 U	0.020 U	0.019 U	0.00021 U	0.00018 U	0.00027 U	0.00026 U	0.00027 U	0.00029 U	0.00028 U
Chloroethane	mg/Kg			0.00047 U	0.00058 U	0.00047 U	0.00057 U	0.00054 U	0.00046 U	0.00047 U	0.00049 U	0.034 U	0.032 U	0.00056 U	0.00047 U	0.00018 U	0.00018 U	0.00019 U	0.00020 U	0.00019 U
Chloroform	mg/Kg	0.37	49	0.00029 U	0.00036 U	0.00029 U	0.00035 U	0.00033 U	0.00028 U	0.00029 U	0.00030 U	0.020 U	0.019 U	0.00034 U	0.00029 U	0.00050 U	0.00049 U	0.00050 U	0.00055 U	0.00051 U
Chloromethane	mg/Kg			0.00040 U	0.00048 U	0.00039 U	0.00048 U	0.00045 U	0.00038 U	0.00039 U	0.00040 U	0.020 U	0.019 U	0.00047 U	0.00039 U	0.00030 U	0.00030 U	0.00031 U	0.00033 U	0.00031 U
cis-1,2-Dichloroethene	mg/Kg	0.25	100	0.00014 U	0.00017 U	0.00014 U	0.00017 U	0.00016 U	0.00013 U	0.00014 U	0.00014 U	0.024 U	0.022 U	0.00016 U	0.00014 U	0.00041 U	0.00041 U	0.00042 U	0.00046 U	0.00043 U
cis-1,3-Dichloropropene	mg/Kg			0.00025 U	0.00030 U	0.00025 U	0.00030 U	0.00028 U	0.00024 U	0.00024 U	0.00025 U	0.015 U	0.014 U	0.00029 U	0.00025 U	0.00014 U	0.00014 U	0.00015 U	0.00016 U	0.00015 U
Cyclohexane	mg/Kg			0.00020 U	0.00025 U	0.00020 U	0.00024 U	0.00023 U	0.00019 U	0.00020 U	0.00021 U	0.024 U	0.022 U	0.00024 U	0.00020 U	0.00026 U	0.00026 U	0.00026 U	0.00029 U	0.00027 U
Dichlorobromomethane	mg/Kg			0.00023 U	0.00029 U	0.00023 U	0.00028 U	0.00026 U	0.00023 U	0.00023 U	0.00024 U	0.014 U	0.013 U	0.00028 U	0.00023 U	0.00021 U	0.00021 U	0.00021 U	0.00023 U	0.00022 U
Dichlorodifluoromethane	mg/Kg			0.00031 U	0.00038 U	0.00031 U	0.00037 U	0.00035 U	0.00030 U	0.00030 U	0.00031 U	0.013 U	0.012 U	0.00036 U	0.00031 U	0.00024 U	0.00024 U	0.00025 U	0.00027 U	0.00025 U
Ethylbenzene	mg/Kg	1	41	0.00018 U	0.00022 U	0.00018 U	0.00022 U	0.00020 U	0.00017 U	0.00018 U	0.00018 U	**0.030 J**	**0.24**	0.00021 U	0.00018 U	0.00032 U	0.00032 U	0.00033 U	0.00035 U	0.00033 U
Ethylene Dibromide	mg/Kg			0.00016 U	0.00020 U	0.00016 U	0.00020 U	0.00018 U	0.00016 U	0.00016 U	0.00017 U	0.017 U	0.016 U	0.00019 U	0.00016 U	0.00019 U	0.00019 U	0.00019 U	0.00021 U	0.00020 U
Isopropylbenzene	mg/Kg			0.00011 U	0.00014 U	0.00011 U	0.00014 U	0.00013 U	0.00011 U	0.00011 U	0.00012 U	**0.092**	**0.46**	0.00014 U	0.00011 U	0.00017 U	0.00017 U	0.00017 U	0.00019 U	0.00018 U
Methyl acetate	mg/Kg			0.0039 U	0.0048 U	0.0039 U	0.0047 U	0.0044 U	0.0038 U	0.0038 U	0.0040 U	0.053 U	0.050 U	0.0046 U	0.0039 U	0.00012 U	0.00012 U	0.00012 U	0.00013 U	0.00012 U
Methyl tert-butyl ether	mg/Kg	0.93	100	0.00011 U	0.00014 U	0.00011 U	0.00014 U	0.00013 U	0.00011 U	0.00011 U	0.00012 U	0.012 U	0.011 U	0.00013 U *	0.00011 U *	0.0041 U	0.0040 U	0.0041 U	0.0045 U	0.0042 U
Methylcyclohexane	mg/Kg			0.00015 U	0.00018 U	0.00015 U	0.00018 U	0.00016 U	0.00014 U	0.00014 U	0.00015 U	**0.036 J**	**0.086**	0.00017 U	0.00014 U	0.00012 U *	0.00012 U *	0.00012 U	0.00013 U	0.00012 U
Methylene Chloride	mg/Kg	0.05	100	0.00015 U	0.00018 U	0.00015 U	0.00018 U	0.00017 U	0.00014 U	0.00015 U	0.00015 U	0.019 U	0.018 U	**0.00023 J B**	**0.00024 J B**	0.00015 U	0.00015 U	0.00015 U	0.00017 U	0.00016 U
m-Xylene & p-Xylene	mg/Kg			0.00016 U	0.00019 U	0.00016 U	0.00019 U	0.00018 U	0.00015 U	0.00016 U	0.00016 U	0.025 U	**0.22**	0.00019 U	0.00016 U	0.00016 U	**0.00017 J B**	0.00016 U	0.00017 U	0.00016 U
o-Xylene	mg/Kg			0.000086 U	0.00011 U	0.000086 U	0.00010 U	0.000098 U	0.000083 U	0.000085 U	0.000088 U	0.029 U	0.028 U	0.00010 U	0.000086 U	0.00017 U	0.00016 U	0.00017 U	0.00018 U	0.00017 U
Styrene	mg/Kg			0.00011 U	0.00014 U	0.00011 U	0.00014 U	0.00013 U	0.00011 U	0.00011 U	0.00011 U	0.015 U	0.015 U	0.00013 U	0.00011 U	0.000091 U	0.000089 U	0.000092 U	0.00010 U	0.000094 U
Tentatively Identified Compound	mg/Kg			None	None	None	None	None	None	**0.0046 J**	**0.0060 J**	**7.8 J N**	**21 J N**	None	None	0.00012 U	0.00012 U	0.00012 U	0.00013 U	0.00012 U
Tetrachloroethene	mg/Kg	1.3	19	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00013 U	0.00013 U	0.00013 U	0.033 U	0.031 U	0.00015 U	0.00013 U	None	**0.0069 J N**	None	None	None
Toluene	mg/Kg	0.7	100	0.00057 U	0.00070 U	0.00057 U	0.00069 U	0.00064 U	0.00055 U	0.00056 U	0.00058 U	0.023 U	0.022 U	0.00067 U	0.00057 U	0.00014 U	0.00013 U	0.00014 U	0.00015 U	0.00014 U
trans-1,2-Dichloroethene	mg/Kg	0.19	100	0.00022 U	0.00027 U	0.00022 U	0.00027 U	0.00025 U	0.00022 U	0.00022 U	0.00023 U	0.016 U *	0.015 U *	0.00026 U	0.00022 U	0.00060 U	0.00059 U	0.00060 U	0.00066 U	0.00062 U
trans-1,3-Dichloropropene	mg/Kg			0.00024 U	0.00030 U	0.00024 U	0.00029 U	0.00027 U	0.00023 U	0.00024 U	0.00025 U	0.017 U	0.016 U	0.00029 U	0.00024 U	0.00023 U	0.00023 U	0.00024 U	0.00026 U	0.00024 U
Trichloroethene	mg/Kg	0.47	21	0.00013 U	0.00016 U	0.00013 U	0.00016 U	0.00015 U	0.00013 U	0.00013 U	0.00013 U	0.020 U	0.019 U	0.00015 U	0.00013 U	0.00025 U	0.00025 U	0.00026 U	0.00028 U	0.00026 U
Trichlorofluoromethane	mg/Kg			0.00037 U	0.00045 U	0.00037 U	0.00045 U	0.00042 U	0.00036 U	0.00036 U	0.00038 U	0.014 U	0.013 U	0.00044 U	0.00037 U	0.00014 U	0.00014 U	0.00014 U	0.00015 U	0.00014 U
Vinyl chloride	mg/Kg	0.02	0.9	0.00050 U	0.00061 U	0.00050 U	0.00060 U	0.00056 U	0.00048 U	0.00049 U	0.00051 U	0.018 U	0.017 U	0.00059 U	0.00049 U	0.00039 U	0.00038 U	0.00039 U	0.00043 U	0.00040 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1A
Summary of Soil Sampling Results
Volatile Organic Compounds (8260)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175247-3 SESI-SB-15 (15'-17') 2/13/2019 10:00 AM	460-174986-12 SESI-SB-16(3') 2/8/2019 2:00 PM	460-174986-13 SESI-SB-16(8') 2/8/2019 2:05 PM	460-174986-14 SESI-SB-16(13') 2/8/2019 2:10 PM	460-175121-3 SESI-SB-17(4') 2/11/2019 8:10 AM	460-175121-4 SESI-SB-17(8') 2/11/2019 8:15 AM	460-175121-5 SESI-SB-17(14') 2/11/2019 8:20 AM	460-175342-3 SESI-SB-17 (15'-17') 2/14/2019 9:30 AM	460-175121-6 SESI-SB-18(3') 2/11/2019 9:15 AM	460-175121-7 SESI-SB-18(7') 2/11/2019 9:25 AM	460-175121-8 SESI-SB-18(13') 2/11/2019 9:35 AM	460-175342-4 SESI-SB-18 (15'-17') 2/14/2019 1:30 PM	460-175121-9 SESI-SB-19(3') 2/11/2019 10:10 AM	460-175121-10 SESI-SB-19(9') 2/11/2019 10:20 AM	460-175121-11 SESI-SB-19(12') 2/11/2019 10:30 AM	460-175121-12 SESI-SB-19(18') 2/11/2019 10:40 AM	460-175121-13 SESI-SB-19(23') 2/11/2019 10:50 AM
SOIL BY 8260C																				
1,1,1-Trichloroethane	mg/Kg	0.68	100	0.00020 U	0.00024 U	0.00019 U	0.00021 U	0.00026 U	0.00020 U	0.00022 U	0.00020 U	0.00023 U	0.00028 U	0.00022 U	0.00025 U	0.00026 U	0.00023 U	0.00021 U	0.00021 U	0.00022 U
1,1,2,2-Tetrachloroethane	mg/Kg			0.00019 U	0.00022 U	0.00017 U	0.00020 U	0.00024 U	0.00018 U	0.00020 U	0.00018 U	0.00021 U	0.00025 U	0.00021 U	0.00023 U	0.00024 U	0.00021 U	0.00019 U	0.00019 U	0.00020 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg			0.00026 U	0.00032 U	0.00024 U	0.00028 U	0.00034 U	0.00026 U	0.00028 U	0.00025 U	0.00029 U	0.00036 U	0.00029 U	0.00033 U	0.00034 U	0.00030 U	0.00027 U	0.00027 U	0.00028 U
1,1,2-Trichloroethane	mg/Kg			0.00015 U	0.00019 U	0.00014 U	0.00016 U	0.00020 U	0.00015 U	0.00016 U	0.00015 U	0.00017 U	0.00021 U	0.00017 U	0.00019 U	0.00020 U	0.00018 U	0.00016 U	0.00016 U	0.00017 U
1,1-Dichloroethane	mg/Kg	0.27	26	0.00018 U	0.00022 U	0.00017 U	0.00019 U	0.00023 U	0.00018 U	0.00019 U	0.00017 U	0.00020 U	0.00024 U	0.00020 U	0.00022 U	0.00023 U	0.00020 U	0.00018 U	0.00019 U	0.00019 U
1,1-Dichloroethene	mg/Kg	0.33	100	0.00019 U	0.00024 U	0.00018 U	0.00021 U	0.00025 U	0.00019 U	0.00021 U	0.00019 U	0.00022 U	0.00027 U	0.00022 U	0.00024 U	0.00025 U	0.00022 U	0.00020 U	0.00020 U	0.00021 U
1,2,3-Trichlorobenzene	mg/Kg			0.00016 U	0.00019 U	0.00015 U	0.00017 U	0.00020 U	0.00016 U	0.00017 U	0.00015 U	0.00018 U	0.00022 U	0.00017 U	0.00020 U	0.00020 U	0.00018 U	0.00016 U	0.00016 U	0.00017 U
1,2,4-Trichlorobenzene	mg/Kg			0.000080 U	0.000096 U	0.000074 U	0.000084 U	0.00010 U	0.000079 U	0.000085 U	0.000077 U	0.000089 U	0.00011 U	0.000088 U	0.000099 U	0.00010 U	0.000091 U	0.000082 U	0.000084 U	0.000086 U
1,2-Dibromo-3-Chloropropane	mg/Kg			0.00040 U	0.00048 U	0.00037 U	0.00042 U	0.00052 U	0.00039 U	0.00043 U	0.00039 U	0.00045 U	0.00055 U	0.00044 U	0.00050 U	0.00052 U	0.00045 U	0.00041 U	0.00042 U	0.00043 U
1,2-Dichlorobenzene	mg/Kg	1.1	100	0.00012 U	0.00015 U	0.00012 U	0.00013 U	0.00016 U	0.00012 U	0.00013 U	0.00012 U	0.00014 U	0.00017 U	0.00014 U	0.00016 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00014 U
1,2-Dichloroethane	mg/Kg	0.02	3.1																	
1,2-Dichloropropane	mg/Kg			0.00026 U	0.00031 U	0.00024 U	0.00027 U	0.00033 U	0.00025 U	0.00027 U	0.00025 U	0.00029 U	0.00035 U	0.00028 U	0.00032 U	0.00033 U	0.00029 U	0.00026 U	0.00027 U	0.00028 U
1,3-Dichlorobenzene	mg/Kg	2.4	49	0.00037 U	0.00044 U	0.00034 U	0.00039 U	0.00048 U	0.00036 U	0.00039 U	0.00036 U	0.00041 U	0.00050 U	0.00041 U	0.00046 U	0.00047 U	0.00042 U	0.00038 U	0.00038 U	0.00040 U
1,4-Dichlorobenzene	mg/Kg	1.8	13	0.00014 U	0.00017 U	0.00013 U	0.00015 U	0.00018 U	0.00014 U	0.00015 U	0.00013 U	0.00015 U	0.00019 U	0.00015 U	0.00017 U	0.00018 U	0.00016 U	0.00014 U	0.00014 U	0.00015 U
1,4-Dioxane	mg/Kg	0.1	13	0.000087 U	0.00010 U	0.000081 U	0.000091 U	0.00011 U	0.000086 U	0.000093 U	0.000084 U	0.000097 U	0.00012 U	0.000096 U	0.00011 U	0.00011 U	0.000099 U	0.000089 U	0.000091 U	0.000094 U
2-Butanone (MEK)	mg/Kg	0.12	100	0.0079 U	0.0096 U	0.0074 U	0.0084 U	0.010 U	0.0079 U	0.0085 U	0.0077 U	0.0089 U	0.011 U	0.0088 U	0.0099 U	0.010 U	0.0091 U	0.0081 U	0.0083 U	0.0086 U
2-Hexanone	mg/Kg			0.00096 U	0.0012 U	0.00090 U	0.0010 U	0.0013 U	0.00095 U	0.0010 U	0.00093 U	0.0011 U	0.0013 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.00099 U	0.0010 U	0.0010 U
4-Methyl-2-pentanone (MIBK)	mg/Kg			0.00068 U	0.00082 U	0.00063 U	0.00071 U	0.00088 U	0.00067 U	0.00072 U	0.00066 U	0.00075 U	0.00093 U	0.00075 U	0.00084 U	0.00087 U	0.00077 U	0.00069 U	0.00071 U	0.00073 U
Acetone	mg/Kg	0.05	100	0.00058 U	0.00070 U	0.00054 U	0.00061 U	0.00075 U	0.00057 U	0.00061 U	0.00056 U	0.00064 U	0.00079 U	0.00064 U	0.00072 U	0.00074 U	0.00065 U	0.00059 U	0.00060 U	0.00062 U
Benzene	mg/Kg	0.06	4.8	**0.0041 J B**	0.0040 U	**0.0039 J B**	**0.0037 J B**	0.0043 U	0.0032 U	0.0035 U	0.0032 U	0.0037 U	0.0045 U	0.0036 U	**0.0058**	0.0042 U	0.0037 U	0.0034 U	0.0034 U	0.0036 U
Bromoform	mg/Kg			0.00022 U	0.00027 U	0.00021 U	0.00024 U	0.00029 U	0.00022 U	0.00024 U	0.00022 U	0.00025 U	0.00031 U	0.00025 U	0.00028 U	0.00029 U	0.00025 U	0.00023 U	0.00023 U	0.00024 U
Bromomethane	mg/Kg			0.00037 U	0.00045 U	0.00034 U	0.00039 U	0.00048 U	0.00036 U	0.00039 U	0.00036 U	0.00041 U	0.00051 U	0.00041 U	0.00046 U	0.00048 U	0.00042 U	0.00038 U	0.00039 U	0.00040 U
Carbon disulfide	mg/Kg			0.00041 U	0.00050 U	0.00038 U	0.00043 U	0.00054 U	0.00041 U	0.00044 U	0.00040 U	0.00046 U	0.00056 U	0.00046 U	0.00051 U	0.00053 U	0.00047 U	0.00042 U	0.00043 U	0.00045 U
Carbon tetrachloride	mg/Kg	0.76	2.4	**0.00034 J**	0.00028 U	0.00022 U	0.00024 U	0.00030 U	0.00023 U	0.00025 U	0.00022 U	0.00026 U	0.00032 U	0.00026 U	0.00029 U	0.00030 U	0.00026 U	0.00024 U	0.00024 U	0.00025 U
Chlorobenzene	mg/Kg	1.1	100	0.00016 U	0.00019 U	0.00015 U	0.00017 U	0.00020 U	0.00016 U	0.00017 U	0.00015 U	0.00018 U	0.00022 U	0.00017 U	0.00020 U	0.00020 U	0.00018 U	0.00016 U	0.00016 U	0.00017 U
Chlorobromomethane	mg/Kg			0.00015 U	0.00019 U	0.00014 U	0.00016 U	0.00020 U	0.00015 U	0.00016 U	0.00015 U	0.00017 U	0.00021 U	0.00017 U	0.00019 U	0.00020 U	0.00017 U	0.00016 U	0.00016 U	0.00017 U
Chlorodibromomethane	mg/Kg			0.00024 U	0.00029 U	0.00023 U	0.00026 U	0.00032 U	0.00024 U	0.00026 U	0.00024 U	0.00027 U	0.00033 U	0.00027 U	0.00030 U	0.00031 U	0.00028 U	0.00025 U	0.00026 U	0.00026 U
Chloroethane	mg/Kg			0.00017 U	0.00020 U	0.00016 U	0.00018 U	0.00022 U	0.00017 U	0.00018 U	0.00016 U	0.00019 U	0.00023 U	0.00019 U	0.00021 U	0.00022 U	0.00019 U	0.00017 U	0.00018 U	0.00018 U
Chloroform	mg/Kg	0.37	49	0.00045 U	0.00055 U	0.00042 U	0.00048 U	0.00059 U	0.00045 U	0.00048 U	0.00044 U	0.00051 U	0.00062 U	0.00050 U	0.00056 U	0.00058 U	0.00051 U	0.00046 U	0.00047 U	0.00049 U
Chloromethane	mg/Kg			0.00028 U	0.00033 U	0.00026 U	0.00029 U	0.00036 U	0.00027 U	0.00030 U	0.00027 U	0.00031 U	0.00038 U	0.00031 U	0.00034 U	0.00036 U	0.00031 U	0.00028 U	0.00029 U	0.00030 U
cis-1,2-Dichloroethene	mg/Kg	0.25	100	0.00038 U	0.00046 U	0.00035 U	0.00040 U	0.00049 U	0.00037 U	0.00040 U	0.00037 U	0.00042 U	0.00052 U	0.00042 U	0.00047 U	0.00049 U	0.00043 U	0.00039 U	0.00040 U	0.00041 U
cis-1,3-Dichloropropene	mg/Kg			0.00013 U	0.00016 U	0.00012 U	0.00014 U	0.00017 U	0.00013 U	0.00013 U	0.00013 U	0.00015 U	0.00018 U	0.00015 U	0.00016 U	0.00017 U	0.00015 U	0.00013 U	0.00014 U	0.00014 U
Cyclohexane	mg/Kg			0.00024 U	0.00029 U	0.00022 U	0.00025 U	0.00031 U	0.00023 U	0.00025 U	0.00023 U	0.00026 U	0.00032 U	0.00026 U	0.00029 U	0.00031 U	0.00027 U	0.00024 U	0.00025 U	0.00026 U
Dichlorobromomethane	mg/Kg			0.00019 U	0.00023 U	0.00018 U	0.00020 U	0.00025 U	0.00019 U	0.00020 U	0.00019 U	0.00021 U	0.00026 U	0.00021 U	0.00024 U	0.00025 U	0.00022 U	0.00020 U	0.00020 U	0.00021 U
Dichlorodifluoromethane	mg/Kg			0.00022 U	0.00027 U	0.00021 U	0.00023 U	0.00029 U	0.00022 U	0.00024 U	0.00022 U	0.00025 U	0.00031 U	0.00025 U	0.00028 U	0.00029 U	0.00025 U	0.00023 U	0.00023 U	0.00024 U
Ethylbenzene	mg/Kg	1	41	0.00029 U	0.00035 U	0.00027 U	0.00031 U	0.00038 U	0.00029 U	0.00031 U	0.00028 U	0.00033 U	0.00040 U	0.00032 U	0.00037 U	0.00038 U	0.00033 U	0.00030 U	0.00031 U	0.00032 U
Ethylene Dibromide	mg/Kg			0.00017 U	0.00021 U	0.00016 U	0.00018 U	0.00022 U	0.00017 U	0.00018 U	0.00017 U	0.00019 U	0.00024 U	0.00019 U	0.00021 U	0.00022 U	0.00020 U	0.00018 U	0.00018 U	0.00019 U
Isopropylbenzene	mg/Kg			0.00016 U	0.00019 U	0.00015 U	0.00016 U	0.00020 U	0.00015 U	0.00017 U	0.00015 U	0.00017 U	0.00021 U	0.00017 U	0.00019 U	0.00020 U	0.00018 U	0.00016 U	0.00016 U	0.00017 U
Methyl acetate	mg/Kg			0.00011 U	0.00013 U	0.00010 U	0.00012 U	0.00014 U	0.00011 U	0.00012 U	0.00011 U	0.00012 U	0.00015 U	0.00012 U	0.00014 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U	0.00012 U
Methyl tert-butyl ether	mg/Kg	0.93	100	0.0037 U	0.0045 U	0.0035 U	0.0039 U	0.0049 U	0.0037 U	0.0040 U	0.0036 U	0.0042 U	0.0051 U	0.0041 U	0.0046 U	0.0048 U	0.0042 U	0.0038 U	0.0039 U	0.0040 U
Methylcyclohexane	mg/Kg			0.00011 U	0.00013 U	0.00010 U	0.00011 U	0.00014 U	0.00011 U	0.00012 U	0.00010 U	0.00012 U	0.00015 U	0.00012 U	0.00013 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U	0.00012 U
Methylene Chloride	mg/Kg	0.05	100	0.00014 U	0.00017 U	0.00013 U	0.00015 U	0.00018 U	0.00014 U	0.00015 U	0.00013 U	0.00015 U	0.00019 U	0.00015 U	0.00017 U	0.00018 U	0.00016 U	0.00014 U	0.00015 U	0.00015 U
m-Xylene & p-Xylene	mg/Kg			0.00014 U	0.00017 U	**0.00014 J**	0.00015 U	0.00018 U	0.00014 U	0.00015 U	0.00014 U	0.00016 U	0.00019 U	0.00016 U	**0.00021 J**	0.00018 U	0.00016 U	0.00014 U	**0.00021 J B**	0.00015 U
o-Xylene	mg/Kg			**0.00017 J**	0.00018 U	0.00014 U	0.00016 U	0.00020 U	0.00015 U	0.00016 U	0.00015 U	0.00017 U	0.00021 U	0.00017 U	0.00019 U	0.00019 U	0.00017 U	0.00015 U	0.00016 U	0.00016 U
Styrene	mg/Kg			0.000082 U	0.00010 U	0.000077 U	0.000087 U	0.00011 U	0.000081 U	0.000088 U	0.000080 U	0.000092 U	0.00011 U	0.000091 U	0.00010 U	0.00011 U	0.000094 U	0.000084 U	0.000086 U	0.000089 U
Tentatively Identified Compound	mg/Kg			0.00011 U	0.00013 U	0.000099 U	0.00011 U	0.00014 U	0.00011 U	0.00011 U	0.00010 U	0.00012 U	0.00015 U	0.00012 U	0.00013 U	0.00014 U	0.00012 U	0.00011 U	0.00011 U	0.00012 U
Tetrachloroethene	mg/Kg	1.3	19	**0.0052 J N**	None	None	None	None	None	None	None	None	None	None	**0.015 J N**	None	None	None	None	None
Toluene	mg/Kg	0.7	100	0.00012 U	0.00015 U	0.00012 U	0.00013 U	0.00016 U	0.00012 U	0.00013 U	0.00012 U	0.00014 U	0.00017 U	0.00014 U	0.00015 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00013 U
trans-1,2-Dichloroethene	mg/Kg	0.19	100	0.00054 U	0.00066 U	0.00051 U	0.00057 U	0.00071 U	0.00054 U	0.00058 U	0.00052 U	0.00060 U	0.00074 U	0.00060 U	0.00067 U	0.00070 U	0.00062 U	0.00055 U	0.00057 U	0.00059 U
trans-1,3-Dichloropropene	mg/Kg			0.00021 U	0.00026 U	0.00020 U	0.00022 U	0.00028 U	0.00021 U	0.00023 U	0.00021 U	0.00024 U	0.00029 U	0.00024 U	0.00027 U	0.00028 U	0.00024 U	0.00022 U	0.00022 U	0.00023 U
Trichloroethene	mg/Kg	0.47	21	0.00023 U	0.00028 U	0.00022 U	0.00024 U	0.00030 U	0.00023 U	0.00025 U	0.00022 U	0.00026 U	0.00032 U	0.00026 U	0.00029 U	0.00030 U	0.00026 U	0.00024 U	0.00024 U	0.00025 U
Trichlorofluoromethane	mg/Kg			0.00012 U	0.00015 U	0.00012 U	0.00013 U	0.00016 U	0.00012 U	0.00013 U	0.00012 U	0.00014 U	0.00017 U	0.00014 U	0.00016 U	0.00016 U	0.00014 U	0.00013 U	0.00013 U	0.00014 U
Vinyl chloride	mg/Kg	0.02	0.9	0.00035 U	0.00043 U	0.00033 U	0.00037 U	0.00046 U	0.00035 U	0.00038 U	0.00034 U	0.00039 U	0.00048 U	0.00039 U	0.00044 U	0.00045 U	0.00040 U	0.00036 U	0.00037 U	0.00038 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1A
Summary of Soil Sampling Results
Volatile Organic Compounds (8260)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175121-14 SESI-SB-20(5') 2/11/2019 12:00 PM	460-175121-15 SESI-SB-20(6') 2/11/2019 12:05 PM	460-175121-16 SESI-SB-20(9') 2/11/2019 12:10 PM	460-175121-17 SESI-SB-20(14') 2/11/2019 12:15 PM	460-175449-4 SESI-SB-21(3') 2/15/2019 12:40 PM	460-175449-5 SESI-SB-21(8') 2/15/2019 12:45 PM	460-175449-6 SESI-SB-22(5') 2/15/2019 9:20 AM	460-175449-7 SESI-SB-22(7') 2/15/2019 9:25 AM	460-175449-8 SESI-SB-22(22') 2/15/2019 9:30 AM	460-174986-15 SESI-SB-23(4') 2/8/2019 10:00 AM	460-174986-16 SESI-SB-23(7') 2/8/2019 10:05 AM	460-174986-17 SESI-SB-23(11') 2/8/2019 10:10 AM	460-174986-18 SESI-SB-23(16') 2/8/2019 10:15 AM	460-175342-5 SESI-SB-24 (1') 2/14/2019 12:40 PM	460-175342-6 SESI-SB-24 (6') 2/14/2019 12:45 PM	460-175638-3 SESI-SB-25(3') 2/18/2019 10:45 AM	460-175638-4 SESI-SB-25(8') 2/18/2019 11:00 AM
SOIL BY 8260C																					
1,1,1-Trichloroethane	mg/Kg	0.68	100	0.00027 U	0.00021 U	0.00022 U	0.00021 U	0.00021 U	0.00023 U	0.024 U	0.025 U	0.00021 U	0.00023 U	0.00023 U	0.00023 U	0.00019 U	0.027 U	0.024 U	0.00027 U	0.00023 U
1,1,2,2-Tetrachloroethane	mg/Kg			0.00025 U	0.00020 U	0.00021 U	0.00019 U	0.00019 U	0.00021 U	0.016 U	0.017 U	0.00020 U	0.00021 U	0.00021 U	0.00021 U	0.00017 U	0.018 U	0.016 U	0.00025 U	0.00021 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg			0.00036 U	0.00028 U	0.00029 U	0.00027 U	0.00027 U	0.00029 U	0.029 U	0.030 U	0.00028 U	0.00030 U	0.00029 U	0.00029 U	0.00025 U	0.033 U	0.029 U	0.00035 U	0.00029 U
1,1,2-Trichloroethane	mg/Kg			0.00021 U	0.00016 U	0.00017 U	0.00016 U	0.00016 U	0.00017 U	0.0069 U	0.0071 U	0.00016 U	0.00018 U	0.00017 U	0.00017 U	0.00015 U	0.0077 U	0.0069 U	0.00021 U	0.00017 U
1,1-Dichloroethane	mg/Kg	0.27	26	0.00024 U	0.00019 U	0.00020 U	0.00018 U	0.00018 U	0.00020 U	0.021 U	0.021 U	0.00019 U	0.00020 U	0.00020 U	0.00020 U	0.00017 U	0.023 U	0.021 U	0.00024 U	0.00020 U
1,1-Dichloroethene	mg/Kg	0.33	100	0.00027 U	0.00021 U	0.00022 U	0.00020 U	0.00020 U	0.00022 U	0.029 U	0.030 U	0.00021 U	0.00022 U	0.00022 U	0.00022 U	0.00018 U	0.033 U	0.029 U	0.00026 U	0.00022 U
1,2,3-Trichlorobenzene	mg/Kg			0.00021 U	0.00017 U	0.00017 U	0.00016 U	0.00016 U	0.00018 U	0.030 U	0.031 U	0.00017 U	0.00018 U	0.00018 U	0.00018 U	0.00015 U	0.034 U	0.030 U	0.00021 U	0.00018 U
1,2,4-Trichlorobenzene	mg/Kg			0.00011 U	0.000085 U	0.000088 U	0.000082 U	0.000081 U	0.000090 U	0.023 U	0.024 U	0.000085 U	0.000091 U	0.000090 U	0.000089 U	0.000075 U	0.026 U	0.023 U	0.00011 U	0.000089 U
1,2-Dibromo-3-Chloropropane	mg/Kg			0.00054 U	0.00042 U	0.00044 U	0.00041 U	0.00041 U	0.00045 U	0.020 U	0.020 U	0.00042 U	0.00045 U	0.00045 U	0.00045 U	0.00038 U	0.022 U	0.020 U	0.00053 U	0.00045 U
1,2-Dichlorobenzene	mg/Kg	1.1	100	0.00017 U	0.00013 U	0.00014 U	0.00013 U	0.00013 U	0.00014 U	0.019 U	0.019 U	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.00012 U	0.021 U	0.019 U	0.00017 U	0.00014 U
1,2-Dichloroethane	mg/Kg	0.02	3.1																0.00034 U	0.00029 U
1,2-Dichloropropane	mg/Kg			0.00035 U	0.00027 U	0.00028 U	0.00026 U	0.00026 U	0.00029 U	0.022 U	0.022 U	0.00027 U	0.00029 U	0.00029 U	0.00029 U	0.00024 U	0.024 U	0.021 U	0.00049 U	0.00041 U
1,3-Dichlorobenzene	mg/Kg	2.4	49	0.00050 U	0.00039 U	0.00041 U	0.00038 U	0.00037 U	0.00041 U	0.016 U	0.016 U	0.00039 U	0.00042 U	0.00041 U	0.00041 U	0.00035 U	0.017 U	0.015 U	0.00018 U	0.00015 U
1,4-Dichlorobenzene	mg/Kg	1.8	13	0.00019 U	0.00015 U	0.00015 U	0.00014 U	0.00014 U	0.00015 U	0.028 U	0.029 U	0.00015 U	0.00016 U	0.00016 U	0.00015 U	0.00013 U	0.032 U	0.028 U	0.00012 U	0.000097 U
1,4-Dioxane	mg/Kg	0.1	13	0.00012 U	0.000092 U	0.000096 U	0.000089 U	0.000088 U	0.000097 U	0.028 U	0.029 U	0.000092 U	0.000098 U	0.000098 U	0.000097 U	0.000082 U	0.032 U	0.028 U	0.011 U	0.0089 U
2-Butanone (MEK)	mg/Kg	0.12	100	0.011 U	0.0085 U	0.0088 U	0.0081 U	0.0081 U	0.0089 U	0.75 U	0.77 U	0.0084 U	0.0090 U	0.0090 U	0.0089 U	0.0075 U	0.84 U	0.75 U	**0.0013 J B**	**0.0014 J B**
2-Hexanone	mg/Kg			0.0013 U	0.0010 U	**0.0012 J**	0.00099 U	**0.0014 J B**	**0.0016 J B**	0.19 U	0.19 U	**0.0019 J B**	0.0011 U	0.0011 U	0.0011 U	0.00091 U	0.21 U	0.19 U	0.00090 U	0.00076 U
4-Methyl-2-pentanone (MIBK)	mg/Kg			0.00092 U	0.00072 U	**0.0032 J**	0.00069 U	0.00069 U	0.00076 U	0.062 U	0.063 U	0.00072 U	0.00077 U	0.00076 U	0.00076 U	0.00064 U	0.070 U	0.062 U	0.00077 U	0.00064 U
Acetone	mg/Kg	0.05	100	0.00078 U	0.00061 U	0.00064 U	0.00059 U	0.00059 U	0.00065 U	0.054 U	0.056 U	0.00061 U	0.00065 U	0.00065 U	0.00065 U	0.00054 U	0.061 U	0.054 U	0.0044 U	0.0037 U
Benzene	mg/Kg	0.06	4.8	**0.0048 J**	**0.0049**	**0.0074**	0.0034 U	0.0033 U	0.0037 U	0.092 U *	0.094 U *	0.0035 U	0.0037 U	0.0037 U	0.0037 U	0.0031 U	0.10 U	0.092 U	0.00030 U	0.00025 U
Bromoform	mg/Kg			0.00030 U	0.00024 U	0.00025 U	**0.00054 J**	0.00023 U	0.00025 U	0.016 U	0.017 U	0.00024 U	0.00025 U	0.00025 U	0.00025 U	0.00021 U	0.018 U	0.016 U	0.00049 U	0.00041 U
Bromomethane	mg/Kg			0.00050 U	0.00039 U	0.00041 U	0.00038 U	0.00038 U	0.00041 U	0.016 U	0.016 U	0.00039 U	0.00042 U	0.00041 U	0.00041 U	0.00035 U	0.017 U	0.015 U	0.00055 U	0.00046 U
Carbon disulfide	mg/Kg			0.00056 U	0.00044 U	0.00046 U	0.00042 U	0.00042 U	0.00046 U	0.016 U	0.016 U	0.00044 U	0.00047 U	0.00046 U	0.00046 U	0.00039 U	0.017 U	0.015 U	0.00031 U	0.00026 U
Carbon tetrachloride	mg/Kg	0.76	2.4	0.00031 U	0.00025 U	0.00026 U	0.00024 U	0.00023 U	0.00026 U	0.019 U	0.019 U	0.00024 U	0.00026 U	0.00026 U	0.00026 U	0.00022 U	0.021 U	0.019 U	0.00021 U	0.00018 U
Chlorobenzene	mg/Kg	1.1	100	0.00021 U	0.00017 U	0.00017 U	0.00016 U	0.00016 U	0.00018 U	0.028 U	0.029 U	0.00017 U	0.00018 U	0.00018 U	0.00018 U	0.00015 U	0.032 U	0.028 U	0.00020 U	0.00017 U
Chlorobromomethane	mg/Kg			0.00021 U	0.00016 U	0.00017 U	0.00016 U	0.00016 U	0.00017 U	0.021 U	0.021 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00014 U	0.023 U	0.021 U	0.00033 U	0.00027 U
Chlorodibromomethane	mg/Kg			0.00033 U	0.00026 U	0.00027 U	0.00025 U	0.00025 U	0.00027 U	0.026 U	0.026 U	0.00026 U	0.00028 U	0.00027 U	0.00027 U	0.00023 U	0.029 U	0.026 U	0.00022 U	0.00019 U
Chloroethane	mg/Kg			0.00023 U	0.00018 U	0.00019 U	0.00017 U	0.00017 U	0.00019 U	0.019 U	0.019 U	0.00018 U	0.00019 U	0.00019 U	0.00019 U	0.00016 U	0.021 U	0.019 U	0.00060 U	0.00051 U
Chloroform	mg/Kg	0.37	49	0.00062 U	0.00048 U	0.00050 U	0.00046 U	0.00046 U	0.00051 U	0.032 U	0.033 U	0.00048 U	0.00051 U	0.00051 U	0.00051 U	0.00043 U	0.036 U	0.032 U	0.00037 U	0.00031 U
Chloromethane	mg/Kg			0.00038 U	0.00029 U	0.00031 U	0.00028 U	0.00028 U	0.00031 U	0.019 U	0.019 U	0.00029 U	0.00031 U	0.00031 U	0.00031 U	0.00026 U	0.021 U	0.019 U	0.00050 U	0.00042 U
cis-1,2-Dichloroethene	mg/Kg	0.25	100	0.00051 U	0.00040 U	0.00042 U	0.00039 U	0.00038 U	0.00042 U	0.019 U	0.019 U	0.00040 U	0.00043 U	0.00042 U	0.00042 U	0.00036 U	0.021 U	0.019 U	0.00018 U	0.00015 U
cis-1,3-Dichloropropene	mg/Kg			0.00018 U	0.00014 U	0.00015 U	0.00013 U	0.00013 U	0.00015 U	0.022 U	0.023 U	0.00014 U	0.00015 U	0.00015 U	0.00015 U	0.00012 U	0.025 U	0.022 U	0.00032 U	0.00027 U
Cyclohexane	mg/Kg			0.00032 U	0.00025 U	0.00026 U	0.00024 U	0.00024 U	0.00027 U	0.014 U	0.014 U	0.00025 U	0.00027 U	0.00027 U	0.00027 U	0.00022 U	0.015 U	0.014 U	0.00026 U	0.00021 U
Dichlorobromomethane	mg/Kg			0.00026 U	**0.037**	0.00021 U	0.00020 U	0.00020 U	0.00022 U	**0.099**	**0.056 J**	0.00020 U	0.00022 U	0.00022 U	0.00021 U	0.00018 U	**0.12**	**0.097**	0.00030 U	0.00025 U
Dichlorodifluoromethane	mg/Kg			0.00030 U	0.00024 U	0.00025 U	0.00023 U	0.00023 U	0.00025 U	0.013 U	0.013 U	0.00024 U	0.00025 U	0.00025 U	0.00025 U	0.00021 U	0.015 U	0.013 U	0.00039 U	0.00033 U
Ethylbenzene	mg/Kg	1	41	0.00040 U	0.00031 U	0.00033 U	0.00030 U	0.00030 U	0.00033 U	0.012 U	0.012 U	0.00031 U	0.00033 U	0.00033 U	0.00033 U	0.00028 U	0.014 U	0.012 U	0.00023 U	0.00019 U
Ethylene Dibromide	mg/Kg			0.00023 U	**0.00084 J**	0.00019 U	**0.00089**	0.00018 U	0.00019 U	0.026 U	0.026 U	0.00018 U	0.00020 U	0.00019 U	0.00019 U	0.00016 U	**0.078 J**	**0.79**	0.00021 U	0.00017 U
Isopropylbenzene	mg/Kg			0.00021 U	0.00017 U	0.00017 U	0.00016 U	0.00016 U	0.00018 U	0.016 U	0.017 U	0.00017 U	0.00018 U	0.00018 U	0.00017 U	0.00015 U	0.018 U	0.016 U	0.00015 U	0.00012 U
Methyl acetate	mg/Kg			0.00015 U	**0.017**	**0.00012 J**	**0.00016 J**	0.00011 U	0.00012 U	**1.0**	**0.24**	**0.00073 J**	0.00012 U	0.00012 U	0.00012 U	0.00010 U	**0.28**	**0.52**	0.0050 U	0.0042 U
Methyl tert-butyl ether	mg/Kg	0.93	100	0.0051 U	0.0040 U	0.0041 U	0.0038 U	0.0038 U	0.0042 U	0.050 U	0.051 U	0.0040 U	0.0042 U	0.0042 U	0.0042 U	0.0035 U	0.056 U	0.050 U	0.00014 U *	0.00012 U *
Methylcyclohexane	mg/Kg			0.00015 U	0.00012 U	0.00012 U	0.00011 U	0.00011 U *	0.00012 U *	0.011 U	0.011 U	0.00011 U *	0.00012 U	0.00012 U	0.00012 U	0.00010 U	0.013 U	0.011 U	0.00019 U	0.00016 U
Methylene Chloride	mg/Kg	0.05	100	0.00019 U	**0.15**	**0.00041 J**	0.00014 U	0.00014 U	0.00016 U	**2.1**	**0.65**	**0.00095**	0.00016 U	0.00016 U	0.00016 U	0.00013 U	**0.91**	**0.95**	0.00019 U	**0.00023 J B**
m-Xylene & p-Xylene	mg/Kg			0.00019 U	**0.00048 J B**	0.00016 U	**0.00022 J B**	**0.00015 J B**	0.00016 U	**0.030 J**	0.019 U	0.00015 U	0.00016 U	0.00016 U	0.00016 U	0.00013 U	0.020 U	0.018 U	0.00020 U	0.00017 U
o-Xylene	mg/Kg			0.00021 U	**0.074**	**0.0015**	**0.0014**	0.00015 U	0.00017 U	0.024 U	0.025 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00014 U	0.027 U	**1.6**	0.00011 U	0.000092 U
Styrene	mg/Kg			0.00011 U	**0.038**	**0.0016**	**0.0020**	0.000084 U	0.000093 U	0.028 U	0.028 U	0.000087 U	0.000094 U	0.000093 U	0.000092 U	0.000078 U	0.031 U	**1.1**	0.00014 U	0.00012 U
Tentatively Identified Compound	mg/Kg			0.00015 U	0.00011 U	0.00012 U	0.00011 U	0.00011 U	0.00012 U	0.015 U	0.015 U	0.00011 U	0.00012 U	0.00012 U	0.00012 U	0.00010 U	0.016 U	0.015 U	**0.0097 J N**	None
Tetrachloroethene	mg/Kg	1.3	19	None	**0.82 J N**	**0.031 J N**	None	None	None	**6.0 J N**	**2.6 J N**	**0.012 J**	None	None	None	None	**8.2 J N**	**10 J N**	0.00017 U	0.00014 U
Toluene	mg/Kg	0.7	100	0.00017 U	0.00013 U	0.00014 U	0.00013 U	0.00013 U	0.00014 U	0.031 U	0.032 U	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.00012 U	0.035 U	0.031 U	0.00072 U	0.00061 U
trans-1,2-Dichloroethene	mg/Kg	0.19	100	0.00074 U	0.00058 U	0.00060 U	0.00055 U	0.00055 U	0.00061 U	0.022 U	0.022 U	0.00057 U	0.00062 U	0.00061 U	0.00061 U	0.00051 U	0.024 U	0.021 U	0.00028 U	0.00024 U
trans-1,3-Dichloropropene	mg/Kg			0.00029 U	0.00023 U	0.00024 U	0.00022 U	0.00022 U	0.00024 U	0.016 U	0.016 U	0.00023 U	0.00024 U	0.00024 U	0.00024 U	0.00020 U	0.017 U *	0.015 U *	0.00031 U	0.00026 U
Trichloroethene	mg/Kg	0.47	21	0.00031 U	0.00025 U	0.00026 U	0.00024 U	0.00023 U	0.00026 U	0.016 U	0.017 U	0.00024 U	0.00026 U	0.00026 U	0.00026 U	0.00022 U	0.018 U	0.016 U	0.00017 U	0.00014 U
Trichlorofluoromethane	mg/Kg			0.00017 U	0.00013 U	0.00014 U	0.00013 U	0.00013 U	0.00014 U	0.019 U	0.019 U	0.00013 U	0.00014 U	0.00014 U	0.00014 U	0.00012 U	0.021 U	0.019 U	0.00047 U	0.00039 U
Vinyl chloride	mg/Kg	0.02	0.9	0.00048 U	0.00037 U	0.00039 U	0.00036 U	0.00036 U	0.00040 U	0.013 U	0.013 U	0.00037 U	0.00040 U	0.00040 U	0.00039 U	0.00033 U	0.015 U	0.013 U	0.00063 U	0.00053 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1A
Summary of Soil Sampling Results
Volatile Organic Compounds (8260)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175667-1 SESI-SB-25(10-12') 2/19/2019 12:00 PM	460-175667-2 SESI-SB-25(15-17') 2/19/2019 12:10 PM	460-175667-3 SESI-SB-25(20-22') 2/19/2019 12:20 PM	460-175638-5 SESI-SB-26(3') 2/18/2019 9:30 AM	460-175638-6 SESI-SB-26(7') 2/18/2019 9:35 AM	460-175638-7 SESI-SB-26(12') 2/18/2019 10:15 AM	460-175667-4 SESI-SB-26(15-17') 2/19/2019 8:30 AM	460-175638-8 SESI-SB-27(4') 2/18/2019 7:45 AM	460-175638-9 SESI-SB-27(7') 2/18/2019 8:00 AM	460-175638-10 SESI-SB-27(11') 2/18/2019 8:15 AM	460-175247-4 SESI-SB-28 (6') 2/13/2019 11:00 AM	460-175247-5 SESI-SB-28 (10') 2/13/2019 11:05 AM	460-175247-6 SESI-SB-28 (15') 2/13/2019 11:10 AM	460-175247-7 SESI-SB-29 (9') 2/13/2019 9:40 AM	460-175247-8 SESI-SB-29 (12') 2/13/2019 9:45 AM	460-175247-9 SESI-SB-29 (14') 2/13/2019 9:50 AM	460-175247-10 SESI-SB-30 (10') 2/13/2019 9:10 AM
SOIL BY 8260C																				
1,1,1-Trichloroethane	mg/Kg	0.68	100	0.00020 U	0.00018 U	0.00022 U	0.027 U	0.00022 U	0.00021 U	0.00021 U	0.027 U	0.00023 U	0.025 U	0.00021 U	0.00022 U	0.00022 U	0.00021 U	0.00024 U	0.00022 U	0.028 U
1,1,2,2-Tetrachloroethane	mg/Kg			0.00018 U	0.00017 U	0.00020 U	0.018 U	0.00020 U	0.00020 U	0.00019 U	0.018 U	0.00021 U *	0.017 U	0.00019 U	0.00020 U	0.00020 U	0.00020 U	0.00022 U	0.00020 U	0.019 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg			0.00026 U	0.00024 U	0.00028 U	0.032 U	0.00028 U	0.00028 U	0.00027 U	0.032 U	0.00029 U	0.030 U	0.00027 U	0.00028 U	0.00029 U	0.00028 U	0.00031 U	0.00028 U	0.033 U
1,1,2-Trichloroethane	mg/Kg			0.00015 U	0.00014 U	0.00017 U	0.0076 U	0.00017 U	0.00016 U	0.00016 U	0.0076 U	0.00017 U	0.0071 U	0.00016 U	0.00017 U	0.00017 U	0.00016 U	0.00018 U	0.00017 U	0.0079 U
1,1-Dichloroethane	mg/Kg	0.27	26	0.00018 U	0.00016 U	0.00019 U	0.023 U	0.00019 U	0.00019 U	0.00018 U	0.023 U	0.00020 U	0.021 U	0.00018 U	0.00019 U	0.00020 U	0.00019 U	0.00021 U	0.00019 U	0.024 U
1,1-Dichloroethene	mg/Kg	0.33	100	0.00019 U	0.00018 U	0.00021 U	0.032 U	0.00021 U	0.00021 U	0.00020 U	0.032 U	0.00022 U	0.030 U	0.00020 U	0.00021 U	0.00021 U	0.00021 U	0.00023 U	0.00021 U	0.033 U
1,2,3-Trichlorobenzene	mg/Kg			0.00016 U	0.00014 U	0.00017 U	0.033 U	0.00017 U	0.00017 U	0.00016 U	0.033 U	0.00018 U *	0.031 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00018 U	0.00017 U	0.034 U
1,2,4-Trichlorobenzene	mg/Kg			0.000079 U	0.000072 U	0.000087 U	0.026 U	0.000087 U	0.000085 U	0.000082 U	0.026 U	0.000090 U *	0.024 U	0.000082 U	0.000087 U	0.000088 U	0.000085 U	0.000093 U	0.000086 U	0.027 U
1,2-Dibromo-3-Chloropropane	mg/Kg			0.00040 U	0.00036 U	0.00044 U	0.022 U	0.00044 U	0.00042 U	0.00041 U	0.022 U	0.00045 U *	0.020 U	0.00041 U	0.00043 U	0.00044 U	0.00042 U	0.00047 U	0.00043 U	0.023 U
1,2-Dichlorobenzene	mg/Kg	1.1	100	0.00012 U	0.00011 U	0.00014 U	0.021 U	0.00014 U	0.00013 U	0.00013 U	0.021 U	0.00014 U *	0.019 U	0.00013 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00013 U	0.022 U
1,2-Dichloroethane	mg/Kg	0.02	3.1	0.00025 U	0.00023 U	0.00028 U	0.024 U	0.00028 U	0.00027 U	0.00026 U	0.024 U	0.00029 U	0.022 U	0.00027 U	0.00028 U	0.00028 U	0.00027 U	0.00030 U	0.00028 U	0.025 U
1,2-Dichloropropane	mg/Kg			0.00036 U	0.00033 U	0.00040 U	0.017 U	0.00040 U	0.00039 U	0.00037 U	0.017 U	0.00041 U	0.016 U	0.00038 U	0.00040 U	0.00040 U	0.00039 U	0.00043 U	0.00039 U	0.018 U
1,3-Dichlorobenzene	mg/Kg	2.4	49	0.00014 U	0.00013 U	0.00015 U	0.032 U	0.00015 U	0.00015 U	0.00014 U	0.031 U	0.00015 U *	0.029 U	0.00014 U	0.00015 U	0.00015 U	0.00015 U	0.00016 U	0.00015 U	0.033 U
1,4-Dichlorobenzene	mg/Kg	1.8	13	0.000086 U	0.000079 U	0.000095 U	0.032 U	0.000095 U	0.000092 U	0.000089 U	0.031 U	0.000097 U *	0.029 U	0.000090 U	0.000094 U	0.000095 U	0.000092 U	0.00010 U	0.000093 U	0.033 U
1,4-Dioxane	mg/Kg	0.1	13	0.0079 U	0.0072 U	0.0087 U	0.83 U	0.0087 U	0.0084 U	0.0081 U	0.83 U	0.0089 U	0.77 U	0.0082 U	0.0086 U	0.0087 U	0.0084 U	0.0093 U	0.0086 U	0.86 U
2-Butanone (MEK)	mg/Kg	0.12	100	0.00096 U	0.00087 U	0.0010 U	0.21 U	**0.0013 J B**	**0.0014 J B**	**0.0011 J B**	0.21 U	0.0011 U	0.19 U	0.00099 U	0.0010 U	0.0011 U	0.0010 U	0.0011 U	0.0010 U	0.22 U
2-Hexanone	mg/Kg			0.00067 U	0.00061 U	0.00074 U	0.069 U	0.00074 U	0.00072 U	0.00069 U	0.069 U	0.00076 U	0.064 U	0.00070 U *	0.00073 U *	0.00074 U *	0.00072 U *	0.00079 U	0.00073 U	0.071 U
4-Methyl-2-pentanone (MIBK)	mg/Kg			0.00057 U	0.00052 U	0.00063 U	0.060 U	0.00063 U	0.00061 U	0.00059 U	0.060 U	0.00065 U	0.056 U	0.00059 U	0.00062 U	0.00063 U	0.00061 U	0.00067 U	0.00062 U	0.062 U
Acetone	mg/Kg	0.05	100	0.0033 U	0.0030 U	0.0036 U	0.10 U	0.0036 U	0.0035 U	0.0034 U	0.10 U	**0.015**	0.095 U *	**0.0034 J B**	**0.0055 B**	**0.0053 B**	**0.021 B**	**0.0087 B**	**0.0050 B**	0.11 U
Benzene	mg/Kg	0.06	4.8	0.00022 U	0.00020 U	0.00024 U	0.018 U	0.00024 U	0.00024 U	0.00023 U	0.018 U	0.00025 U	0.017 U	0.00023 U	0.00024 U	0.00025 U	**0.00028 J**	0.00026 U	0.00024 U	**0.086 J**
Bromoform	mg/Kg			0.00037 U	0.00033 U	0.00040 U	0.017 U	0.00040 U	0.00039 U	0.00038 U	0.017 U	0.00041 U	0.016 U	0.00038 U	0.00040 U	0.00041 U	0.00039 U	0.00043 U	0.00040 U	0.018 U
Bromomethane	mg/Kg			0.00041 U	0.00037 U	0.00045 U	0.017 U	0.00045 U	0.00044 U	0.00042 U	0.017 U	0.00046 U	0.016 U	0.00042 U	0.00045 U	0.00045 U	0.00044 U	0.00048 U	0.00044 U	0.018 U
Carbon disulfide	mg/Kg			0.00023 U	0.00021 U	0.00025 U	0.021 U	0.00025 U	0.00024 U	0.00024 U	0.021 U	0.00026 U	0.019 U	0.00024 U	0.00025 U	0.00025 U	**0.00034 J**	0.00027 U	0.00025 U	0.022 U
Carbon tetrachloride	mg/Kg	0.76	2.4	0.00016 U	0.00014 U	0.00017 U	0.032 U	0.00017 U	0.00017 U	0.00016 U	0.031 U	0.00018 U	0.029 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00018 U	0.00017 U	0.033 U
Chlorobenzene	mg/Kg	1.1	100	0.00015 U	0.00014 U	0.00017 U	0.023 U	0.00017 U	0.00016 U	0.00016 U	0.023 U	0.00017 U	0.021 U	0.00016 U	0.00017 U	0.00017 U	0.00016 U	0.00018 U	0.00017 U	0.024 U
Chlorobromomethane	mg/Kg			0.00024 U	0.00022 U	0.00027 U	0.029 U	0.00027 U	0.00026 U	0.00025 U	0.029 U	0.00027 U	0.027 U	0.00025 U	0.00026 U	0.00027 U	0.00026 U	0.00028 U	0.00026 U	0.030 U
Chlorodibromomethane	mg/Kg			0.00017 U	0.00015 U	0.00018 U	0.021 U	0.00018 U	0.00018 U	0.00017 U	0.021 U	0.00019 U	0.019 U	0.00017 U	0.00018 U	0.00018 U	0.00018 U	0.00020 U	0.00018 U	0.022 U
Chloroethane	mg/Kg			0.00045 U	0.00041 U	0.00049 U	0.035 U	0.00049 U	0.00048 U	0.00046 U	0.035 U	0.00051 U	0.033 U	0.00047 U	0.00049 U	0.00050 U	0.00048 U	0.00053 U	0.00049 U	0.036 U
Chloroform	mg/Kg	0.37	49	0.00027 U	0.00025 U	0.00030 U	0.021 U	0.00030 U	0.00029 U	**0.00046 J**	0.021 U	0.00031 U	0.019 U	0.00029 U	0.00030 U	0.00030 U	0.00029 U	0.00032 U	0.00030 U	0.022 U
Chloromethane	mg/Kg			0.00037 U	0.00034 U	0.00041 U	0.021 U	0.00041 U	0.00040 U	0.00039 U	0.021 U	0.00042 U	0.019 U	0.00039 U	0.00041 U	0.00041 U	0.00040 U	0.00044 U	0.00041 U	0.022 U
cis-1,2-Dichloroethene	mg/Kg	0.25	100	0.00013 U	0.00012 U	0.00014 U	0.025 U	0.00014 U	0.00014 U	0.00013 U	0.025 U	0.00015 U	0.023 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00015 U	0.00014 U	0.026 U
cis-1,3-Dichloropropene	mg/Kg			0.00024 U	0.00021 U	0.00026 U	0.015 U	0.00026 U	0.00025 U	0.00024 U	0.015 U	0.00027 U	0.014 U	0.00024 U	0.00026 U	0.00026 U	0.00025 U	0.00028 U	0.00025 U	0.016 U
Cyclohexane	mg/Kg			0.00019 U	0.00017 U	0.00021 U	**0.16**	0.00021 U	0.00020 U	0.00020 U	0.025 U	**0.37**	0.023 U	0.00020 U	0.00021 U	0.00021 U	**0.055**	0.00022 U	0.00021 U	**2.1**
Dichlorobromomethane	mg/Kg			0.00022 U	0.00020 U	0.00024 U	0.014 U	0.00024 U	0.00024 U	0.00023 U	0.014 U	0.00025 U	0.013 U	0.00023 U	0.00024 U	0.00024 U	0.00024 U	0.00026 U	0.00024 U	0.015 U
Dichlorodifluoromethane	mg/Kg			0.00029 U	0.00027 U	0.00032 U	0.013 U	0.00032 U	0.00031 U	0.00030 U	0.013 U	0.00033 U	0.012 U	0.00030 U	0.00032 U	0.00032 U	0.00031 U	0.00034 U	0.00032 U	0.014 U
Ethylbenzene	mg/Kg	1	41	0.00017 U	0.00016 U	0.00019 U	0.029 U	0.00019 U	0.00018 U	0.00018 U	0.029 U	**0.011**	0.027 U	0.00018 U	0.00019 U	0.00019 U	**0.19**	0.00020 U	**0.00045 J**	**5.5**
Ethylene Dibromide	mg/Kg			0.00016 U	0.00014 U	0.00017 U	0.018 U	0.00017 U	0.00017 U	0.00016 U	0.018 U	0.00018 U	0.017 U	0.00016 U	0.00017 U	0.00017 U	0.00017 U	0.00018 U	0.00017 U	0.019 U
Isopropylbenzene	mg/Kg			0.00011 U	0.000099 U	0.00012 U	**0.60**	0.00012 U	0.00012 U	0.00011 U	**1.0**	**0.53 E**	**0.034 J D**	0.00011 U	0.00012 U	0.00012 U	**0.21**	0.00013 U	**0.00040 J**	**2.2**
Methyl acetate	mg/Kg			0.0037 U	0.0034 U	0.0041 U	0.055 U	0.0041 U	0.0040 U	0.0038 U	0.055 U	0.0042 U	0.051 U	0.0039 U	0.0040 U	0.0041 U	0.0039 U	0.0044 U	0.0040 U	0.057 U
Methyl tert-butyl ether	mg/Kg	0.93	100	0.00011 U *	0.000098 U *	0.00012 U *	0.012 U	0.00012 U *	0.00012 U *	0.00011 U *	0.012 U	0.00012 U	0.012 U	0.00011 U	0.00012 U	0.00012 U	0.00011 U	0.00013 U	0.00012 U	0.013 U
Methylcyclohexane	mg/Kg			0.00014 U	0.00013 U	0.00015 U	**1.6**	0.00015 U	0.00015 U	0.00014 U	**0.49**	**3.2 E**	**0.076 J D**	0.00014 U	0.00015 U	0.00015 U	**0.50 E**	0.00016 U	**0.00021 J**	**9.6**
Methylene Chloride	mg/Kg	0.05	100	**0.00020 J B**	**0.00015 J B**	**0.00028 J B**	0.020 U	**0.00027 J B**	**0.00026 J B**	**0.00017 J B**	0.020 U	0.00016 U	0.019 U	0.00015 U	0.00015 U	0.00016 U	0.00015 U	0.00017 U	0.00015 U	0.021 U
m-Xylene & p-Xylene	mg/Kg			0.00015 U	0.00014 U	0.00016 U	0.027 U	0.00016 U	0.00016 U	0.00015 U	0.027 U	**0.0065**	0.025 U	0.00016 U	0.00016 U	0.00017 U	**0.26**	0.00018 U	**0.00041 J**	**17**
o-Xylene	mg/Kg			0.000082 U	0.000075 U	0.000090 U	0.031 U	0.000090 U	0.000087 U	0.000084 U	**0.082 J**	**0.025**	0.028 U	0.000085 U	0.000089 U	0.000091 U	**0.076**	0.000096 U	**0.00027 J**	**8.6**
Styrene	mg/Kg			0.00011 U	0.000097 U	0.00012 U	0.016 U	0.00012 U	0.00011 U	0.00011 U	0.016 U	0.00012 U	0.015 U	0.00011 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00011 U	0.017 U
Tentatively Identified Compound	mg/Kg			None	**0.0043 J**	**0.013 J**	**6.0 J N**	None	None	None	**11 J N**	**1.5 J N**	**0.96 D J N**	None	None	None	**1.5 J N**	None	**0.016 J**	**15 J N**
Tetrachloroethene	mg/Kg	1.3	19	0.00012 U	0.00011 U	0.00014 U	0.034 U	0.00014 U	0.00013 U	0.00013 U	0.034 U	0.00014 U	0.032 U	0.00013 U	0.00013 U	0.00014 U	0.00013 U	0.00014 U	0.00013 U	0.035 U
Toluene	mg/Kg	0.7	100	0.00054 U	0.00049 U	0.00059 U	0.024 U	0.00059 U	0.00058 U	0.00055 U	0.024 U	**0.0058**	0.022 U	0.00056 U	0.00059 U	0.00060 U	**0.0048**	0.00063 U	0.00058 U	**4.1**
trans-1,2-Dichloroethene	mg/Kg	0.19	100	0.00021 U	0.00019 U	0.00023 U	0.017 U	0.00023 U	0.00023 U	0.00022 U	0.017 U	0.00024 U	0.016 U	0.00022 U	0.00023 U	0.00023 U	0.00023 U	0.00025 U	0.00023 U	0.018 U *
trans-1,3-Dichloropropene	mg/Kg			0.00023 U	0.00021 U	0.00025 U	0.018 U	0.00025 U	0.00024 U	0.00024 U	0.018 U	0.00026 U	0.017 U	0.00024 U	0.00025 U	0.00025 U	0.00024 U	0.00027 U	0.00025 U	0.019 U
Trichloroethene	mg/Kg	0.47	21	0.00012 U	0.00011 U	0.00014 U	0.021 U	0.00014 U	0.00013 U	0.00013 U	0.021 U	0.00014 U	0.019 U	0.00013 U	0.00014 U	0.00014 U	0.00013 U	0.00015 U	0.00013 U	0.022 U
Trichlorofluoromethane	mg/Kg			0.00035 U	0.00032 U	0.00038 U	0.014 U	0.00038 U	0.00037 U	0.00036 U	0.014 U	0.00040 U	0.013 U	0.00036 U	0.00038 U	0.00039 U	0.00037 U	0.00041 U	0.00038 U	0.015 U
Vinyl chloride	mg/Kg	0.02	0.9	0.00047 U	0.00043 U	0.00052 U	0.019 U	0.00052 U	0.00050 U	0.00048 U	0.019 U	0.00053 U	0.018 U	0.00049 U	0.00051 U	0.00052 U	0.00050 U	0.00055 U	0.00051 U	0.020 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1A
Summary of Soil Sampling Results
Volatile Organic Compounds (8260)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175247-11 SESI-SB-30 (12') 2/13/2019 9:15 AM	460-175247-12 SESI-SB-30 (14') 2/13/2019 9:20 AM	460-175247-13 SESI-SB-31 (9') 2/13/2019 8:30 AM	460-175247-14 SESI-SB-31 (11') 2/13/2019 8:35 AM	460-175247-15 SESI-SB-31 (14') 2/13/2019 8:40 AM	460-175449-9 SESI-SB-32(4') 2/15/2019 9:50 AM	460-175449-10 SESI-SB-32(7') 2/15/2019 9:55 AM	460-175638-11 SESI-SB-33(4') 2/18/2019 9:00 AM	460-175638-12 SESI-SB-33(6') 2/18/2019 9:05 AM	460-175638-13 SESI-SB-34(2') 2/18/2019 12:15 PM	460-175638-14 SESI-SB-34(6') 2/18/2019 12:20 PM
SOIL BY 8260C														
1,1,1-Trichloroethane	mg/Kg	0.68	100	0.00024 U	0.00023 U	0.030 U	0.00021 U	0.027 U	0.026 U	0.025 U	0.00026 U	0.024 U	0.00024 U	0.00023 U
1,1,2,2-Tetrachloroethane	mg/Kg			0.00022 U	0.00021 U	0.020 U	0.00019 U	0.019 U	0.018 U	0.017 U	0.00024 U	0.016 U	0.00022 U	0.00021 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/Kg			0.00031 U	0.00029 U	0.037 U	0.00026 U	0.033 U	0.031 U	0.030 U	0.00033 U	0.029 U	0.00032 U	0.00029 U
1,1,2-Trichloroethane	mg/Kg			0.00019 U	0.00017 U	0.0086 U	0.00016 U	0.0078 U	0.0074 U	0.0070 U	0.00020 U	0.0068 U	0.00019 U	0.00017 U
1,1-Dichloroethane	mg/Kg	0.27	26	0.00022 U	0.00020 U	0.026 U	0.00018 U	0.023 U	0.022 U	0.021 U	0.00023 U	0.021 U	0.00022 U	0.00020 U
1,1-Dichloroethene	mg/Kg	0.33	100	0.00024 U	0.00022 U	0.037 U	0.00020 U	0.033 U	0.031 U	0.030 U	0.00025 U	0.029 U	0.00024 U	0.00022 U
1,2,3-Trichlorobenzene	mg/Kg			0.00019 U	0.00018 U	0.038 U	0.00016 U	0.034 U	0.032 U	0.031 U	0.00020 U	0.030 U	0.00019 U	0.00018 U
1,2,4-Trichlorobenzene	mg/Kg			0.000096 U	0.000089 U	0.029 U	0.000081 U	0.026 U	0.025 U	0.024 U	0.00010 U	0.023 U	0.000096 U	0.000089 U
1,2-Dibromo-3-Chloropropane	mg/Kg			0.00048 U	0.00045 U	0.025 U	0.00040 U	0.022 U	0.021 U	0.020 U	0.00051 U	0.020 U	0.00048 U	0.00045 U
1,2-Dichlorobenzene	mg/Kg	1.1	100	0.00015 U	0.00014 U	0.024 U	0.00013 U	0.021 U	0.020 U	0.019 U	0.00016 U	0.019 U	0.00015 U	0.00014 U
1,2-Dichloroethane	mg/Kg	0.02	3.1	0.00031 U	0.00029 U	0.027 U	0.00026 U	0.024 U	0.023 U	0.022 U	0.00033 U	0.021 U	0.00031 U	0.00041 U
1,2-Dichloropropane	mg/Kg			0.00044 U	0.00041 U	0.019 U	0.00037 U	0.018 U	0.017 U	0.016 U	0.00047 U	0.015 U	0.00044 U	0.00015 U
1,3-Dichlorobenzene	mg/Kg	2.4	49	0.00017 U	0.00015 U	0.035 U	0.00014 U	0.032 U	0.030 U	0.029 U	0.00018 U	0.028 U	0.00017 U	0.000097 U
1,4-Dichlorobenzene	mg/Kg	1.8	13	0.00010 U	0.000097 U	0.035 U	0.000088 U	0.032 U	0.030 U	0.029 U	0.00011 U	0.028 U	0.00010 U	0.0089 U
1,4-Dioxane	mg/Kg	0.1	13	0.0096 U	0.0089 U	0.93 U	0.0081 U	0.85 U	0.80 U	0.77 U	0.010 U	0.74 U	0.0096 U	0.0011 U
2-Butanone (MEK)	mg/Kg	0.12	100	0.0012 U	0.0011 U	0.24 U	0.00098 U	0.21 U	0.20 U	0.19 U	0.0012 U	0.19 U	0.0012 U	0.00076 U
2-Hexanone	mg/Kg			0.00082 U	0.00076 U	0.077 U	0.00069 U	0.070 U	0.066 U	0.063 U	0.00086 U	0.062 U	0.00082 U	0.00064 U
4-Methyl-2-pentanone (MIBK)	mg/Kg			0.00069 U	0.00065 U	0.068 U	0.00058 U	0.061 U	0.058 U	0.055 U	0.00073 U	0.054 U	0.00070 U	0.0037 U
Acetone	mg/Kg	0.05	100	**0.0045 J B**	**0.0045 J B**	0.11 U	0.0033 U	0.10 U	0.099 U *	0.094 U *	**0.013**	0.092 U	0.0040 U	0.00025 U
Benzene	mg/Kg	0.06	4.8	**0.00099 J**	0.00025 U	0.020 U	0.00023 U	0.019 U	0.018 U	0.017 U	0.00029 U	0.016 U	0.00027 U	0.00041 U
Bromoform	mg/Kg			0.00044 U	0.00041 U	0.019 U	0.00037 U	0.018 U	0.017 U	0.016 U	0.00047 U	0.015 U	0.00045 U	0.00046 U
Bromomethane	mg/Kg			0.00050 U	0.00046 U	0.019 U	0.00042 U	0.018 U	0.017 U	0.016 U	0.00052 U	0.015 U	0.00050 U	0.00026 U
Carbon disulfide	mg/Kg			0.00028 U	0.00026 U	0.024 U	0.00023 U	0.021 U	0.020 U	0.019 U	**0.00070 J**	0.019 U	0.00028 U	0.00018 U
Carbon tetrachloride	mg/Kg	0.76	2.4	0.00019 U	0.00018 U	0.035 U	0.00016 U	0.032 U	0.030 U	0.029 U	0.00020 U	0.028 U	0.00019 U	0.00017 U
Chlorobenzene	mg/Kg	1.1	100	0.00019 U	0.00017 U	0.026 U	0.00016 U	0.023 U	0.022 U	0.021 U	0.00020 U	0.021 U	0.00019 U	0.00027 U
Chlorobromomethane	mg/Kg			0.00029 U	0.00027 U	0.032 U	0.00025 U	0.029 U	0.028 U	0.026 U	0.00031 U	0.026 U	0.00029 U	0.00019 U
Chlorodibromomethane	mg/Kg			0.00020 U	0.00019 U	0.024 U	0.00017 U	0.021 U	0.020 U	0.019 U	0.00021 U	0.019 U	0.00020 U	0.00051 U
Chloroethane	mg/Kg			0.00055 U	0.00051 U	0.040 U	0.00046 U	0.036 U	0.034 U	0.033 U	0.00058 U	0.032 U	0.00055 U	0.00026 U
Chloroform	mg/Kg	0.37	49	0.00033 U	0.00031 U	0.024 U	0.00028 U	0.021 U	0.020 U	0.019 U	0.00035 U	0.019 U	0.00033 U	0.00031 U
Chloromethane	mg/Kg			0.00045 U	0.00042 U	0.024 U	0.00038 U	0.021 U	0.020 U	0.019 U	0.00048 U	0.019 U	0.00046 U	0.00042 U
cis-1,2-Dichloroethene	mg/Kg	0.25	100	0.00016 U	0.00015 U	0.028 U	0.00013 U	0.025 U	0.024 U	0.023 U	0.00017 U	0.022 U	0.00016 U	0.00021 U
cis-1,3-Dichloropropene	mg/Kg			0.00029 U	0.00027 U	0.017 U	0.00024 U	0.016 U	0.015 U	0.014 U	0.00030 U	0.014 U	0.00029 U	0.00025 U
Cyclohexane	mg/Kg			**0.00057 J**	0.00021 U	**0.31**	0.00019 U	**0.061 J**	**0.26**	0.023 U	0.00024 U	**0.21**	0.00023 U	0.00033 U
Dichlorobromomethane	mg/Kg			0.00027 U	0.00025 U	0.016 U	0.00023 U	0.015 U	0.014 U	0.013 U	0.00028 U	0.013 U	0.00027 U	0.00015 U
Dichlorodifluoromethane	mg/Kg			0.00035 U	0.00033 U	0.015 U	0.00030 U	0.014 U	0.013 U	0.012 U	0.00037 U	0.012 U	0.00035 U	0.00017 U
Ethylbenzene	mg/Kg	1	41	**0.0016**	0.00019 U	**0.38**	0.00018 U	**0.29**	0.028 U	0.026 U	0.00022 U	0.026 U	0.00021 U	0.00012 U
Ethylene Dibromide	mg/Kg			0.00019 U	0.00018 U	0.020 U	0.00016 U	0.019 U	0.018 U	0.017 U	0.00020 U	0.016 U	0.00019 U	0.00019 U
Isopropylbenzene	mg/Kg			**0.00045 J**	0.00012 U	**1.3**	0.00011 U	**0.14**	**0.81**	**0.16**	0.00014 U	**1.5**	0.00013 U	0.0042 U
Methyl acetate	mg/Kg			0.0045 U	0.0042 U	0.062 U	0.0038 U	0.057 U	0.053 U	0.051 U	0.0048 U	0.050 U	0.0045 U	0.00012 U
Methyl tert-butyl ether	mg/Kg	0.93	100	0.00013 U	0.00012 U	0.014 U	0.00011 U	0.013 U	0.012 U	0.011 U	0.00014 U	0.011 U	0.00013 U	0.00016 U
Methylcyclohexane	mg/Kg			**0.00064 J**	0.00016 U	**3.7**	0.00014 U	**0.31**	**2.7**	**0.30**	0.00018 U	**3.6**	0.00017 U	**0.00021 J B**
Methylene Chloride	mg/Kg	0.05	100	0.00017 U	0.00016 U	**0.043 J**	0.00014 U	0.020 U	**0.032 J**	0.018 U	0.00018 U	**0.030 J**	**0.00052 J B**	0.00017 U
m-Xylene & p-Xylene	mg/Kg			**0.0053**	0.00017 U	**1.4**	0.00015 U	**0.86**	0.026 U	0.025 U	0.00019 U	**0.045 J**	0.00018 U	0.000092 U
o-Xylene	mg/Kg			**0.0039**	0.000092 U	**5.5**	**0.00054 J**	**0.49**	0.029 U	0.028 U	0.00010 U	**0.055 J**	0.00010 U	0.00012 U
Styrene	mg/Kg			0.00013 U	0.00012 U	0.018 U	0.00011 U	0.017 U	0.016 U	0.015 U	0.00014 U	0.015 U	0.00013 U	None
Tentatively Identified Compound	mg/Kg			**0.0055 J N**	None	**15 J N**	**0.0057 J N**	**2.1 J N**	**5.1 J N**	**2.7 J N**	**0.12 J**	**9.3 J N**	None	0.00014 U
Tetrachloroethene	mg/Kg	1.3	19	0.00015 U	0.00014 U	0.039 U	0.00013 U	0.035 U	0.033 U	0.032 U	0.00016 U	0.031 U	0.00015 U	0.00061 U
Toluene	mg/Kg	0.7	100	**0.0018**	0.00061 U	**0.099 J**	0.00055 U	**0.072 J**	0.023 U	0.022 U	0.00069 U	0.021 U	0.00066 U	0.00024 U
trans-1,2-Dichloroethene	mg/Kg	0.19	100	0.00026 U	0.00024 U	0.019 U *	0.00022 U	0.018 U *	0.017 U	0.016 U	0.00027 U	0.015 U	0.00026 U	0.00026 U
trans-1,3-Dichloropropene	mg/Kg			0.00028 U	0.00026 U	0.020 U	0.00023 U	0.019 U	0.018 U	0.017 U	0.00029 U	0.016 U	0.00028 U	0.00014 U
Trichloroethene	mg/Kg	0.47	21	0.00015 U	0.00014 U	0.024 U	0.00013 U	0.021 U	0.020 U	0.019 U	0.00016 U	0.019 U	0.00015 U	0.00039 U
Trichlorofluoromethane	mg/Kg			0.00042 U	0.00039 U	0.016 U	0.00036 U	0.015 U	0.014 U	0.013 U	0.00045 U	0.013 U	0.00043 U	0.00053 U
Vinyl chloride	mg/Kg	0.02	0.9	0.00057 U	0.00053 U	0.021 U	0.00048 U	0.019 U	0.018 U	0.018 U	0.00060 U	0.017 U	0.00057 U	0.00029 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1B
Summary of Soil Sampling Results
Semi-Volatile Organic Compounds (8270)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174772-1 SESI-SB-1(3') 2/6/2019 11:00 AM	460-174772-2 SESI-SB-1(8') 2/6/2019 11:30 AM	460-174859-1 SESI-SB-1(12') 2/7/2019 9:00 AM	460-174859-2 SESI-SB-1(15') 2/7/2019 9:05 AM	460-174859-3 SESI-SB-2(3') 2/7/2019 10:30 AM	460-174772-3 SESI-SB-2(5') 2/6/2019 1:00 PM	460-174859-4 SESI-SB-2(15') 2/7/2019 11:00 AM	460-174859-5 SESI-SB-3(2') 2/7/2019 8:00 AM	460-174859-6 SESI-SB-3(7') 2/7/2019 8:05 AM	460-174859-7 SESI-SB-3(13') 2/7/2019 8:10 AM	460-174859-22 SESI-SB-3(15-17') 2/7/2019 1:45 PM	460-174677-1 SESI-SB-4(5-7') 2/5/2019 9:00 AM	460-174677-2 SESI-SB-4(10-12') 2/5/2019 9:30 AM	460-174677-3 SESI-SB-4(15-17') 2/5/2019 10:30 AM	460-174772-4 SESI-SB-5(5') 2/6/2019 3:00 PM	460-175121-1 SESI-SB-5(8') 2/11/2019 11:40 AM	460-175121-2 SESI-SB-5(12') 2/11/2019 11:50 AM	460-174859-8 SESI-SB-6(2') 2/7/2019 11:45 AM
SOIL BY 8270D (MG/KG)																					
1,1'-Biphenyl	mg/Kg			0.0054 U	0.0048 U	0.0046 U	0.0050 U	0.0052 U	0.0050 U	0.0049 U	0.0051 U	0.0047 U	0.0048 U	0.0051 U	0.0049 U	0.0048 U	0.0055 U	0.0049 U	**0.025 J**	0.0056 U	0.0052 U
1,2,4,5-Tetrachlorobenzene	mg/Kg			0.0053 U	0.0047 U	0.0045 U	0.0049 U	0.0051 U	0.0050 U	0.0048 U	0.0050 U	0.0046 U	0.0047 U	0.0050 U	0.0049 U	0.0047 U	0.0054 U	0.0048 U	0.0047 U	0.0055 U	0.0051 U
2,2'-oxybis[1-chloropropane]	mg/Kg			0.0074 U	0.0065 U	0.0063 U	0.0068 U	0.0070 U	0.0068 U	0.0066 U	0.0069 U	0.0064 U	0.0065 U	0.0069 U	0.0067 U	0.0065 U	0.0075 U	0.0066 U	0.0064 U	0.0076 U	0.0071 U
2,3,4,6-Tetrachlorophenol	mg/Kg			0.028 U	0.024 U	0.023 U	0.025 U	0.026 U	0.026 U	0.025 U	0.026 U	0.024 U	0.024 U	0.026 U *	0.025 U	0.024 U	0.028 U	0.025 U	0.024 U	0.029 U	0.026 U
2,4,5-Trichlorophenol	mg/Kg			0.013 U	0.012 U	0.011 U	0.012 U	0.013 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.014 U	0.013 U
2,4,6-Trichlorophenol	mg/Kg			0.021 U	0.018 U	0.017 U	0.019 U	0.020 U	0.019 U	0.018 U	0.019 U	0.018 U	0.018 U	0.019 U	0.019 U	0.018 U	0.021 U	0.018 U	0.018 U	0.021 U	0.020 U
2,4-Dichlorophenol	mg/Kg			0.0086 U	0.0076 U	0.0073 U	0.0079 U	0.0082 U	0.0080 U	0.0077 U	0.0080 U	0.0074 U	0.0076 U	0.0081 U *	0.0079 U	0.0076 U	0.0087 U	0.0077 U	0.0075 U	0.0089 U	0.0082 U
2,4-Dimethylphenol	mg/Kg			0.018 U	0.016 U	0.015 U	0.017 U	0.017 U	0.017 U	0.016 U	0.017 U	0.015 U	0.016 U	0.017 U	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.019 U	0.017 U
2,4-Dinitrophenol	mg/Kg			0.20 U	0.18 U	0.17 U F1	0.18 U	0.19 U	0.19 U	0.18 U	0.19 U	0.17 U	0.18 U	0.19 U	0.18 U F1 F2	0.18 U	0.20 U	0.18 U	0.18 U	0.21 U	0.19 U
2,4-Dinitrotoluene	mg/Kg			0.021 U	0.018 U	0.017 U	0.019 U	0.020 U	0.019 U	0.019 U	0.019 U	0.018 U	0.018 U	0.019 U	0.019 U	0.018 U	0.021 U	0.019 U	0.018 U	0.021 U	0.020 U
2,6-Dinitrotoluene	mg/Kg			0.013 U	0.012 U	0.011 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.014 U	0.013 U
2-Chloronaphthalene	mg/Kg			0.019 U	0.017 U	0.016 U	0.017 U	0.018 U	0.018 U	0.017 U	0.018 U	0.016 U	0.017 U	0.018 U	0.017 U	0.017 U	0.019 U	0.017 U	0.016 U	0.020 U	0.018 U
2-Chlorophenol	mg/Kg			0.0057 U	0.0051 U	0.0048 U	0.0053 U	0.0054 U	0.0053 U	0.0051 U	0.0053 U	0.0049 U	0.0050 U	0.0054 U	0.0052 U	0.0051 U	0.0058 U	0.0051 U	0.0050 U	0.0059 U	0.0055 U
2-Methylnaphthalene	mg/Kg			0.0051 U	0.0045 U	0.0043 U	0.0047 U	0.0048 U	**0.010 J**	**0.035 J**	0.0048 U	0.0044 U	0.0045 U	0.0048 U	0.0046 U	0.0045 U	0.0051 U	0.0046 U	**0.35 J**	0.0053 U	0.0049 U
2-Methylphenol	mg/Kg	0.33	100	0.0066 U	0.0058 U	0.0056 U	0.0061 U	0.0063 U	0.0061 U	0.0059 U	0.0061 U	0.0057 U	0.0058 U	0.0062 U	0.0060 U	0.0058 U	0.0067 U	0.0059 U	0.0057 U	0.0068 U	0.0063 U
2-Nitroaniline	mg/Kg			0.015 U	0.014 U	0.013 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.015 U	0.014 U	0.013 U *	0.016 U *	0.015 U
2-Nitrophenol	mg/Kg			0.013 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.011 U	0.014 U	0.013 U
3,3'-Dichlorobenzidine	mg/Kg			0.061 U	0.055 U	0.052 U	0.057 U	0.059 U	0.057 U	0.055 U	0.057 U	0.053 U	0.054 U	0.058 U *	0.056 U	0.055 U	0.062 U	0.055 U	0.054 U	0.064 U	0.059 U
3-Nitroaniline	mg/Kg			0.022 U	0.020 U	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.021 U	0.019 U	0.020 U	0.021 U	0.020 U	0.020 U	0.022 U	0.020 U	0.019 U	0.023 U	0.021 U
4,6-Dinitro-2-methylphenol	mg/Kg			0.066 U	0.059 U	0.056 U F1	0.061 U	0.063 U	0.061 U	0.059 U	0.062 U	0.057 U	0.058 U	0.062 U	0.060 U F1 F2	0.059 U	0.067 U	0.059 U	0.058 U	0.068 U	0.063 U
4-Bromophenyl phenyl ether	mg/Kg			0.0053 U	0.0047 U	0.0045 U	0.0049 U	0.0050 U	0.0049 U	0.0047 U	0.0049 U	0.0045 U	0.0047 U	0.0050 U	0.0048 U	0.0047 U	0.0053 U	0.0047 U	0.0046 U	0.0055 U	0.0050 U
4-Chloro-3-methylphenol	mg/Kg			0.0068 U	0.0060 U	0.0057 U	0.0062 U	0.0065 U	0.0063 U	0.0061 U	0.0063 U	0.0058 U	0.0060 U	0.0064 U	0.0062 U	0.0060 U	0.0069 U	0.0061 U	0.0059 U	0.0070 U	0.0065 U
4-Chloroaniline	mg/Kg			0.028 U	0.025 U	0.024 U	0.026 U	0.027 U	0.026 U	0.026 U	0.027 U	0.025 U	0.025 U	0.027 U	0.026 U	0.025 U	0.029 U	0.026 U	0.025 U	0.030 U	0.027 U
4-Chlorophenyl phenyl ether	mg/Kg			0.0064 U	0.0057 U	0.0055 U	0.0059 U	0.0061 U	0.0060 U	0.0058 U	0.0060 U	0.0055 U	0.0057 U	0.0061 U	0.0059 U	0.0057 U	0.0065 U	0.0058 U	0.0056 U	0.0066 U	0.0062 U
4-Methylphenol	mg/Kg	0.33	100	0.0069 U	0.0062 U	0.0059 U	0.0064 U	0.0066 U	0.0064 U	0.0062 U	0.0065 U	0.0060 U	0.0061 U	0.0065 U	0.0063 U	0.0061 U	0.0070 U	0.0062 U	0.0061 U	0.0072 U	0.0066 U
4-Nitroaniline	mg/Kg			0.015 U	0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.015 U	0.014 U	0.013 U	0.016 U	0.015 U
4-Nitrophenol	mg/Kg			0.066 U	0.059 U	0.056 U	0.061 U	0.063 U	0.062 U	0.060 U	0.062 U	0.057 U	0.059 U	0.063 U	0.061 U	0.059 U	0.067 U	0.060 U	0.058 U	0.069 U	0.064 U
Acenaphthene	mg/Kg	20	100	0.030 U	**0.10 J**	0.025 U F1	0.027 U	0.028 U	**0.17 J**	0.027 U	0.028 U	0.026 U	0.026 U	0.028 U	0.027 U	**0.050 J**	0.030 U	0.027 U	**0.53**	0.031 U	0.028 U
Acenaphthylene	mg/Kg	100	100	0.0042 U	0.0037 U	0.0036 U	0.0039 U	0.0040 U	0.0039 U	0.0038 U	0.0039 U	0.0036 U	0.0037 U	0.0040 U	0.0038 U	0.0037 U	0.0043 U	0.0038 U	**0.022 J**	0.0044 U	0.0040 U
Acetophenone	mg/Kg			0.0066 U	0.0058 U	0.0056 U	0.0061 U	0.0063 U	0.0061 U	0.0059 U	0.0061 U	0.0057 U	0.0058 U	0.0062 U	0.0060 U	0.0058 U	0.0067 U	0.0059 U	0.0057 U	0.0068 U	0.0063 U
Anthracene	mg/Kg	100	100	0.0046 U	**0.19 J**	**0.014 J**	0.0042 U	**0.024 J**	**0.34 J**	**0.027 J**	0.0043 U	0.0039 U	0.0040 U	0.0043 U	0.0042 U	**0.10 J**	0.0046 U	0.0041 U	**0.81**	0.0047 U	0.0044 U
Atrazine	mg/Kg			0.010 U *	0.0091 U *	0.0087 U F1	0.0095 U	0.0098 U	0.0095 U *	0.0092 U	0.0096 U	0.0089 U	0.0091 U	0.0097 U	0.0094 U F1	0.0091 U	0.010 U	0.0092 U *	0.0090 U	0.011 U	0.0098 U
Benzaldehyde	mg/Kg			0.018 U	0.016 U	0.015 U	0.016 U	0.017 U	0.016 U	0.016 U	0.017 U	0.015 U	0.016 U	0.017 U	0.016 U	0.016 U	0.018 U	0.016 U	0.016 U	0.018 U	0.017 U
Benzo[a]anthracene	mg/Kg	1	1	0.014 U	**0.90**	0.012 U	0.013 U	**0.13**	**0.83**	**0.090**	0.013 U	0.012 U	0.013 U	0.013 U	**0.051**	**0.35**	**0.025 J**	**0.044**	2.0	0.015 U	0.014 U
Benzo[a]pyrene	mg/Kg	1	1	0.011 U	**0.95**	**0.030 J**	0.010 U	**0.13**	**0.71**	**0.094**	**0.017 J**	**0.0097 J**	0.0096 U	0.010 U	**0.027 J**	**0.34**	**0.013 J**	**0.030 J**	1.7	0.011 U	0.010 U
Benzo[b]fluoranthene	mg/Kg	1	1	0.011 U	1.6	**0.049**	0.0097 U	**0.18**	1.2	**0.16**	**0.031 J**	**0.019 J**	0.0093 U	0.0099 U	**0.064**	**0.55**	**0.021 J**	**0.059**	3.4	0.011 U	**0.020 J**
Benzo[g,h,i]perylene	mg/Kg	100	100	0.012 U	**0.75**	**0.017 J**	0.011 U	0.011 U	**0.51**	**0.058 J**	**0.011 J**	0.010 U	0.011 U	0.011 U	**0.028 J**	**0.24 J**	0.012 U	**0.027 J**	**0.69**	0.012 U	0.012 U
Benzo[k]fluoranthene	mg/Kg	0.8	3.9	0.0080 U	**0.56**	0.0068 U	0.0074 U	**0.087**	**0.40**	**0.076**	**0.012 J**	**0.0069 J**	0.0071 U	0.0075 U	**0.025 J**	**0.21**	**0.0097 J**	**0.022 J**	**1.1**	0.0083 U	0.0077 U
Bis(2-chloroethoxy)methane	mg/Kg			0.014 U	0.012 U	0.012 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.014 U	0.013 U	0.012 U	0.014 U	0.013 U
Bis(2-chloroethyl)ether	mg/Kg			0.0049 U	0.0044 U	0.0042 U	0.0045 U	0.0047 U	0.0046 U	0.0044 U	0.0046 U	0.0042 U	0.0044 U	0.0046 U	0.0045 U F1	0.0044 U	0.0050 U	0.0044 U	0.0043 U	0.0051 U	0.0047 U
Bis(2-ethylhexyl) phthalate	mg/Kg			0.022 U	0.019 U	0.018 U	**0.18 J**	0.021 U	0.020 U	0.019 U	0.020 U	0.019 U	0.019 U	0.020 U	0.020 U	**0.060 J**	**0.068 J**	0.019 U	**1.3**	0.022 U	0.021 U
Butyl benzyl phthalate	mg/Kg			0.019 U	0.017 U	0.016 U	0.018 U	0.018 U	0.018 U	0.017 U	0.018 U	0.016 U	0.017 U	0.018 U	0.017 U F1	0.017 U	0.019 U	0.017 U	0.017 U	0.020 U	0.018 U
Caprolactam	mg/Kg			0.024 U	0.022 U	0.021 U	0.022 U	0.023 U	0.023 U	0.022 U	0.023 U	0.021 U	0.022 U	0.023 U	0.022 U	0.022 U	0.025 U	0.022 U	0.021 U	0.025 U	0.023 U
Carbazole	mg/Kg			0.0048 U	**0.21 J**	**0.012 J**	0.0044 U	0.0045 U	**0.35 J**	0.0043 U	0.0045 U	0.0041 U	0.0042 U	0.0045 U	0.0044 U	**0.073 J**	0.0048 U	0.0043 U	**0.52**	0.0049 U	0.0046 U
Chrysene	mg/Kg	1	3.9	0.0069 U	**1.2**	**0.052 J**	**0.016 J**	**0.16 J**	**0.98**	**0.12 J**	0.0064 U	0.0059 U	0.0061 U	0.0065 U	**0.050 J**	**0.42**	**0.015 J**	**0.048 J**	**2.4**	0.0071 U	0.0066 U
Dibenz(a,h)anthracene	mg/Kg	0.33	0.33	0.018 U	**0.22**	0.015 U	0.016 U	**0.020 J**	**0.12**	0.016 U	0.016 U	0.015 U	0.016 U	0.017 U	0.016 U	**0.047**	0.018 U	0.016 U	**0.21**	0.018 U	0.017 U
Dibenzofuran	mg/Kg	7	59	0.0057 U	**0.049 J**	0.0049 U	0.0053 U	0.0055 U	**0.093 J**	0.0051 U	0.0053 U	0.0049 U	0.0051 U	0.0054 U	0.0052 U	**0.019 J**	0.0058 U	0.0051 U	**0.35 J**	0.0059 U	0.0055 U
Diethyl phthalate	mg/Kg			0.0059 U	0.0052 U	0.0050 U	0.0054 U	0.0056 U	0.0055 U	0.0053 U	0.0055 U	0.0051 U	0.0052 U	0.0056 U	0.0054 U	0.0052 U	0.0060 U	0.0053 U	0.0052 U	0.0061 U	0.0057 U
Dimethyl phthalate	mg/Kg			0.0049 U	0.0044 U	0.0042 U	0.0045 U	0.0047 U	0.0046 U	0.0044 U	0.0046 U	0.0042 U	0.0043 U	0.0046 U	0.0045 U	0.0044 U	0.0050 U	0.0044 U	0.0043 U	0.0051 U	0.0047 U
Di-n-butyl phthalate	mg/Kg			0.072 U	0.064 U	0.061 U	0.066 U	0.068 U	0.067 U	0.065 U	0.067 U	0.062 U	0.064 U	0.068 U	0.066 U	0.064 U	0.073 U	0.065 U	0.063 U	0.074 U	0.069 U
Di-n-octyl phthalate	mg/Kg			0.022 U	0.019 U	0.018 U	0.020 U	0.021 U	0.020 U	0.019 U	0.020 U	0.019 U	0.019 U	0.020 U	0.020 U	0.019 U	0.022 U	0.019 U	0.019 U	0.022 U	0.021 U
Fluoranthene	mg/Kg	100	100	0.0053 U	**2.7**	**0.12 J**	**0.044 J**	**0.27 J**	**2.8**	**0.25 J**	**0.032 J**	**0.046 J**	0.0047 U	0.0050 U	**0.13 J**	**1.0**	**0.054 J**	**0.12 J**	**6.1**	0.0055 U	0.0051 U
Fluorene	mg/Kg	30	100	0.0055 U	**0.086 J**	0.0047 U	0.0051 U	0.0053 U	**0.18 J**	**0.015 J**	0.0052 U	0.0048 U	0.0049 U	0.0052 U	0.0051 U	**0.046 J**	0.0056 U	0.0050 U	**0.75**	0.0057 U	0.0053 U
Hexachlorobenzene	mg/Kg	0.33	1.2	0.0060 U	0.0053 U	0.0051 U	0.0055 U	0.0057 U	0.0055 U	0.0054 U	0.0056 U	0.0051 U	0.0053 U	0.0056 U	0.0055 U	0.0053 U	0.0060 U	0.0054 U	0.0052 U	0.0062 U	0.0057 U
Hexachlorobutadiene	mg/Kg			0.0087 U	0.0077 U	0.0074 U	0.0080 U	0.0083 U	0.0081 U	0.0078 U	0.0081 U	0.0075 U	0.0077 U	0.0082 U	0.0079 U	0.0077 U	0.0088 U	0.0078 U	0.0076 U	0.0090 U	0.0083 U
Hexachlorocyclopentadiene	mg/Kg			0.036 U	0.032 U	0.030 U	0.033 U	0.034 U	0.033 U	0.032 U	0.033 U	0.031 U	0.032 U	0.034 U	0.033 U F1	0.032 U	0.036 U	0.032 U	0.031 U	0.037 U	0.034 U
Hexachloroethane	mg/Kg			0.0063 U	0.0056 U	0.0053 U	0.0058 U	0.0060 U	0.0058 U	0.0057 U	0.0059 U	0.0054 U	0.0056 U	0.0059 U	0.0057 U F1	0.0056 U	0.0064 U	0.0056 U	0.0055 U	0.0065 U	0.0060 U
Indeno[1,2,3-cd]pyrene	mg/Kg	0.5	0.5	0.016 U	0.97	**0.019 J**	0.015 U	**0.089**	0.67	**0.067**	0.015 U	0.014 U	0.014 U	0.015 U	**0.038**	**0.34**	0.016 U	**0.036 J**	0.81	0.016 U	0.015 U
Isophorone	mg/Kg			0.011 U	0.0095 U	0.0091 U	0.0099 U	0.010 U	0.010 U	0.0096 U	0.010 U	0.0092 U	0.0095 U	0.010 U	0.0098 U	0.0095 U	0.011 U	0.0096 U	0.0094 U	0.011 U	0.010 U
Naphthalene	mg/Kg	12	100	0.0070 U	0.0062 U	0.0060 U	0.0065 U	0.0067 U	0.0065 U	0.0063 U	0.0066 U	0.0061 U	0.0062 U	0.0066 U	0.0064 U	0.0062 U	0.0071 U	0.0063 U	**0.25 J**	0.0073 U	0.0067 U
Nitrobenzene	mg/Kg			0.0098 U	0.0087 U	0.0083 U	0.0090 U	0.0093 U	0.0091 U	0.0088 U	0.0091 U	0.0084 U	0.0087 U	0.0092 U	0.0089 U	0.0087 U	0.0099 U	0.0088 U	0.0086 U	0.010 U	0.0094 U
N-Nitrosodi-n-propylamine	mg/Kg			0.0065 U	0.0058 U	0.0055 U	0.0060 U	0.0062 U	0.0060 U	0.0058 U	0.0061 U	0.0056 U	0.0057 U	0.0061 U	0.0059 U	0.0057 U	0.0066 U	0.0058 U	0.0057 U	0.0067 U	0.0062 U
N-Nitrosodiphenylamine	mg/Kg			0.0078 U	0.0069 U	0.0066 U	0.0072 U	0.0074 U	0.0072 U	0.0070 U	0.0073 U	0.0067 U	0.0069 U	0.0073 U	0.0071 U	0.0069 U	0.0079 U	0.0070 U	0.0068 U	0.0081 U	0.0075 U
Pentachlorophenol	mg/Kg	0.8	6.7	0.083 U	0.074 U	0.071 U	0.077 U	0.080 U	0.078 U	0.075 U	0.078 U	0.072 U	0.074 U	0.079 U *	0.076 U *	0.074 U *	0.085 U *	0.075 U	0.073 U	0.086 U	0.080 U
Phenanthrene	mg/Kg	100	100	0.0072 U	**1.3**	**0.10 J**	**0.035 J**	**0.15 J**	**2.2**	**0.15 J**	0.0067 U	**0.042 J**	0.0063 U	0.0067 U	**0.075 J**	**0.62**	**0.032 J**	**0.099 J**	**4.3**	0.0074 U	0.0069 U
Phenol	mg/Kg	0.33	100	0.0060 U	0.0054 U	0.0051 U	0.0056 U	0.0058 U	0.0056 U	0.0054 U	0.0056 U	0.0052 U	0.0053 U	0.0057 U	0.0055 U	0.0053 U	0.0061 U	0.0054 U	0.0053 U	0.0062 U	0.0058 U
Pyrene	mg/Kg	100	100	0.010 U	**2.0**	**0.080 J**	**0.025 J**	**0.24 J**	**1.8**	**0.16 J**	**0.029 J**	**0.030 J**	0.0090 U	0.0095 U	**0.091 J**	**0.77**	**0.035 J**	**0.088 J**	**3.4**	0.010 U	**0.014 J**

Notes:
Bold cells are detections above the MDL
Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 1B
Summary of Soil Sampling Results
Semi-Volatile Organic Compounds (8270)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174859-9 SESI-SB-6(8') 2/7/2019 11:50 AM	460-174859-10 SESI-SB-6(12') 2/7/2019 12:00 PM	460-174859-11 SESI-SB-6(16') 2/7/2019 12:05 PM	460-174986-1 SESI-SB-6(20-22') 2/8/2019 11:00 AM	460-174986-2 SESI-SB-7(3') 2/8/2019 9:20 AM	460-174986-3 SESI-SB-7(8') 2/8/2019 9:30 AM	460-174986-4 SESI-SB-7(13') 2/8/2019 9:40 AM	460-175449-1 SESI-SB-7(15'-17') 2/15/2019 10:30 AM	460-174772-5 SESI-SB-8(4') 2/6/2019 8:30 AM	460-174772-6 SESI-SB-8(9') 2/6/2019 9:00 AM	460-174859-12 SESI-SB-8(14') 2/7/2019 10:20 AM	460-174859-13 SESI-SB-8(18') 2/7/2019 10:30 AM	460-174859-14 SESI-SB-9(3') 2/7/2019 12:50 PM	460-174859-15 SESI-SB-9(8') 2/7/2019 12:55 PM	460-174859-16 SESI-SB-9(13') 2/7/2019 1:00 PM	460-174859-17 SESI-SB-9(17') 2/7/2019 1:05 PM	460-174986-5 SESI-SB-10(4') 2/8/2019 11:10 AM	460-174986-6 SESI-SB-10(9') 2/8/2019 11:20 AM
SOIL BY 8270D (MG/KG)																					
1,1'-Biphenyl	mg/Kg			0.0047 U	0.0049 U	0.0047 U	0.0057 U	**0.034 J**	0.0050 U	0.0050 U	0.0051 U	0.0049 U	0.0051 U	0.0048 U	0.0050 U	0.0055 U	0.0053 U	0.0048 U	0.0050 U	0.0049 U	0.0048 U
1,2,4,5-Tetrachlorobenzene	mg/Kg			0.0047 U	0.0049 U	0.0046 U	0.0056 U	0.0049 U	0.0049 U	0.0049 U	0.0050 U	0.0049 U	0.0050 U	0.0048 U	0.0049 U	0.0055 U	0.0052 U	0.0048 U	0.0049 U	0.0048 U	0.0048 U
2,2'-oxybis[1-chloropropane]	mg/Kg			0.0064 U	0.0067 U	0.0064 U	0.0078 U	0.0067 U	0.0067 U	0.0068 U	0.0069 U	0.0067 U	0.0070 U	0.0066 U	0.0068 U	0.0075 U	0.0072 U	0.0066 U	0.0068 U	0.0067 U	0.0066 U
2,3,4,6-Tetrachlorophenol	mg/Kg			0.024 U	0.025 U	0.024 U	0.029 U	0.025 U	0.025 U	0.025 U	0.026 U	0.025 U	0.026 U	0.025 U	0.025 U	0.028 U	0.027 U	0.025 U	0.025 U	0.025 U	0.025 U
2,4,5-Trichlorophenol	mg/Kg			0.012 U	0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.014 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U
2,4,6-Trichlorophenol	mg/Kg			0.018 U	0.019 U	0.018 U	0.022 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U	0.021 U	0.020 U	0.018 U	0.019 U	0.019 U	0.018 U
2,4-Dichlorophenol	mg/Kg			0.0075 U	0.0078 U	0.0075 U	0.0091 U	0.0079 U	0.0079 U	0.0079 U	0.0081 U	0.0078 U	0.0081 U	0.0077 U	0.0079 U	0.0088 U	0.0085 U	0.0077 U	0.0079 U	0.0078 U	0.0077 U
2,4-Dimethylphenol	mg/Kg			0.016 U	0.016 U	0.016 U	0.019 U	0.016 U	0.016 U	0.016 U	0.017 U	0.016 U	0.017 U	0.016 U	0.017 U	0.018 U	0.018 U	0.016 U	0.016 U	0.016 U	0.016 U
2,4-Dinitrophenol	mg/Kg			0.17 U	0.18 U	0.17 U	0.21 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.19 U	0.18 U	0.18 U	0.20 U	0.20 U	0.18 U	0.18 U	0.18 U	0.18 U
2,4-Dinitrotoluene	mg/Kg			0.018 U	0.019 U	0.018 U	0.022 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U	0.021 U	0.020 U	0.018 U	0.019 U	0.019 U	0.018 U
2,6-Dinitrotoluene	mg/Kg			0.012 U	0.012 U	0.011 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U
2-Chloronaphthalene	mg/Kg			0.016 U	0.017 U	0.016 U	0.020 U	0.017 U	0.017 U	0.017 U	0.018 U	0.017 U	0.018 U	0.017 U	0.017 U	0.019 U	0.019 U	0.017 U	0.017 U	0.017 U	0.017 U
2-Chlorophenol	mg/Kg			0.0050 U	0.0052 U	0.0050 U	0.0060 U	0.0052 U	0.0052 U	0.0053 U	0.0054 U	0.0052 U	0.0054 U	0.0051 U	0.0053 U	0.0058 U	0.0056 U	0.0051 U	0.0052 U	0.0052 U	0.0051 U
2-Methylnaphthalene	mg/Kg			0.0044 U	**0.016 J**	0.0044 U	0.0054 U	**0.082 J**	0.0047 U	0.0047 U	0.0048 U	**0.029 J**	**0.071 J**	0.0045 U	0.0047 U	0.0052 U	0.0050 U	0.0046 U	**0.062 J**	**0.031 J**	**0.0093 J**
2-Methylphenol	mg/Kg	0.33	100	0.0057 U	0.0060 U	0.0057 U	0.0069 U	0.0060 U	0.0060 U	0.0061 U	0.0062 U	0.0060 U	0.0062 U	0.0059 U	0.0061 U	0.0067 U	0.0065 U	0.0059 U	0.0060 U	0.0060 U	0.0059 U
2-Nitroaniline	mg/Kg			0.013 U	0.014 U	0.013 U	0.016 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U
2-Nitrophenol	mg/Kg			0.011 U	0.012 U	0.011 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U
3,3'-Dichlorobenzidine	mg/Kg			0.054 U	0.056 U	0.053 U	0.065 U	0.056 U	0.056 U	0.057 U	0.058 U	0.056 U	0.058 U	0.055 U	0.057 U	0.063 U	0.061 U	0.055 U	0.057 U	0.056 U	0.055 U
3-Nitroaniline	mg/Kg			0.019 U	0.020 U	0.019 U	0.023 U	0.020 U	0.020 U	0.020 U	0.021 U	0.020 U	0.021 U	0.020 U	0.020 U	0.023 U	0.022 U	0.020 U	0.020 U	0.020 U	**0.028 J**
4,6-Dinitro-2-methylphenol	mg/Kg			0.058 U	0.060 U	0.057 U	0.070 U	0.061 U	0.061 U	0.061 U	0.062 U	0.060 U	0.062 U	0.059 U	0.061 U	0.068 U	0.065 U	0.059 U	0.061 U	0.060 U	0.059 U
4-Bromophenyl phenyl ether	mg/Kg			0.0046 U	0.0048 U	0.0046 U	0.0055 U	0.0048 U	0.0048 U	0.0049 U	0.0049 U	0.0048 U	0.0050 U	0.0047 U	0.0049 U	0.0054 U	0.0052 U	0.0047 U	0.0048 U	0.0048 U	0.0047 U
4-Chloro-3-methylphenol	mg/Kg			0.0059 U	0.0062 U	0.0059 U	0.0071 U	0.0062 U	0.0062 U	0.0062 U	0.0064 U	0.0062 U	0.0064 U	0.0060 U	0.0062 U	0.0069 U	0.0067 U	0.0061 U	0.0062 U	0.0061 U	0.0060 U
4-Chloroaniline	mg/Kg			0.025 U	0.026 U	0.025 U	0.030 U	0.026 U	0.026 U	0.026 U	0.027 U	0.026 U	0.027 U	0.025 U	0.026 U	0.029 U	0.028 U	0.026 U	0.026 U	0.026 U	0.025 U
4-Chlorophenyl phenyl ether	mg/Kg			0.0056 U	0.0059 U	0.0056 U	0.0068 U	0.0059 U	0.0059 U	0.0059 U	0.0060 U	0.0059 U	0.0061 U	0.0057 U	0.0059 U	0.0066 U	0.0063 U	0.0058 U	0.0059 U	0.0058 U	0.0057 U
4-Methylphenol	mg/Kg	0.33	100	0.0061 U	0.0063 U	0.0060 U	0.0073 U	0.0064 U	0.0064 U	0.0064 U	0.0065 U	0.0063 U	0.0066 U	0.0062 U	0.0064 U	0.0071 U	0.0068 U	0.0062 U	0.0064 U	0.0063 U	0.0062 U
4-Nitroaniline	mg/Kg			0.013 U	0.014 U	0.013 U	0.016 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U
4-Nitrophenol	mg/Kg			0.058 U	0.060 U	0.058 U	0.070 U	0.061 U	0.061 U	0.061 U	**0.13 J**	0.060 U	0.063 U	0.059 U	0.061 U	0.068 U	0.065 U	0.059 U	0.061 U	0.060 U	0.059 U
Acenaphthene	mg/Kg	20	100	0.026 U	0.027 U	0.026 U	0.031 U	**0.44**	0.027 U	0.027 U	0.028 U	**0.14 J**	0.028 U	0.026 U	0.027 U	0.030 U	0.029 U	0.027 U	0.027 U	**0.027 J**	0.026 U
Acenaphthylene	mg/Kg	100	100	0.0037 U	0.0038 U	0.0037 U	0.0044 U	**0.022 J**	0.0039 U	0.0039 U	0.0040 U	**0.020 J**	0.0040 U	0.0038 U	0.0039 U	0.0043 U	0.0041 U	0.0038 U	0.0039 U	**0.042 J**	0.0038 U
Acetophenone	mg/Kg			0.0057 U	0.0060 U	0.0057 U	0.0069 U	0.0060 U	0.0060 U	0.0060 U	0.0062 U	0.0060 U	0.0062 U	0.0059 U	0.0061 U	0.0067 U	0.0065 U	0.0059 U	0.0060 U	0.0059 U	0.0059 U
Anthracene	mg/Kg	100	100	0.0040 U	0.0041 U	0.0040 U	0.0048 U	**0.42**	0.0042 U	0.0042 U	0.0043 U	**0.25 J**	0.0043 U	0.0041 U	0.0042 U	0.0047 U	0.0045 U	0.0041 U	**0.031 J**	**0.051 J**	0.0041 U
Atrazine	mg/Kg			0.0090 U	0.0094 U	0.0089 U	0.011 U *	0.0094 U *	0.0094 U *	0.0095 U *	0.0097 U *	0.0094 U *	0.0097 U *	0.0092 U	0.0095 U	0.011 U	0.010 U	0.0092 U	0.0094 U	0.0093 U *	0.0092 U *
Benzaldehyde	mg/Kg			0.016 U	0.016 U	0.015 U	0.019 U	0.016 U	0.016 U	0.016 U	0.017 U	0.016 U	0.017 U	0.016 U	0.016 U	0.018 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U
Benzo[a]anthracene	mg/Kg	1	1	0.012 U	0.013 U	0.012 U	0.015 U	1.3	0.013 U	0.013 U	0.013 U	**0.86**	**0.018 J**	0.013 U	0.013 U	0.015 U	0.014 U	0.013 U	**0.079**	**0.35**	**0.32**
Benzo[a]pyrene	mg/Kg	1	1	0.0095 U	0.0099 U	0.0094 U	**0.015 J**	1.3	**0.019 J**	**0.024 J**	0.010 U	**0.93**	0.010 U	0.0097 U	0.010 U	0.011 U	0.011 U	0.0097 U	**0.081**	**0.52**	**0.44**
Benzo[b]fluoranthene	mg/Kg	1	1	0.0092 U	0.0096 U	0.0092 U	**0.025 J**	2.2	**0.027 J**	**0.031 J**	0.0099 U	1.4	**0.021 J**	0.0094 U	0.0097 U	0.011 U	0.010 U	0.0094 U	**0.13**	**0.93**	**0.69**
Benzo[g,h,i]perylene	mg/Kg	100	100	0.010 U	0.011 U	0.010 U	**0.013 J**	**0.88**	**0.026 J**	0.011 U	0.011 U	**0.64**	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	**0.083 J**	**0.44**	**0.39**
Benzo[k]fluoranthene	mg/Kg	0.8	3.9	0.0070 U	0.0073 U	0.0069 U	0.0084 U	**0.65**	0.0073 U	**0.016 J**	0.0075 U	**0.48**	0.0075 U	0.0071 U	0.0074 U	0.0082 U	0.0079 U	0.0072 U	**0.041**	**0.29**	**0.25**
Bis(2-chloroethoxy)methane	mg/Kg			0.012 U	0.013 U	0.012 U	0.015 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.012 U	0.013 U	0.014 U	0.014 U	0.013 U	0.013 U	0.013 U	0.012 U
Bis(2-chloroethyl)ether	mg/Kg			0.0043 U	0.0045 U	0.0043 U	0.0052 U	0.0045 U	0.0045 U	0.0045 U	0.0046 U	0.0045 U	0.0046 U	0.0044 U	0.0045 U	0.0050 U	0.0048 U	0.0044 U	0.0045 U	0.0045 U	0.0044 U
Bis(2-ethylhexyl) phthalate	mg/Kg			0.019 U	0.020 U	0.019 U	**0.29 J**	**0.37**	0.020 U	0.020 U	0.020 U	**0.074 J**	0.020 U	0.019 U	0.020 U	**0.27 J**	0.021 U	0.019 U	**0.41**	0.020 U	**0.13 J**
Butyl benzyl phthalate	mg/Kg			0.017 U	0.017 U	0.017 U	0.020 U	**0.043 J**	0.017 U	0.018 U	0.018 U	0.017 U	0.018 U	0.017 U	0.018 U	0.020 U	0.019 U	0.017 U	0.018 U	0.017 U	0.017 U
Caprolactam	mg/Kg			0.021 U	0.022 U	0.021 U	0.026 U	0.022 U	0.022 U	0.022 U	0.023 U	0.022 U	0.023 U	0.022 U	0.023 U	0.025 U	0.024 U	0.022 U	0.022 U	0.022 U	0.022 U
Carbazole	mg/Kg			0.0042 U	0.0043 U	0.0041 U	0.0050 U	**0.35 J**	0.0044 U	0.0044 U	0.0045 U	**0.24 J**	0.0045 U	0.0043 U	0.0044 U	0.0049 U	0.0047 U	0.0043 U	**0.013 J**	**0.077 J**	**0.050 J**
Chrysene	mg/Kg	1	3.9	0.0060 U	0.0063 U	0.0060 U	**0.019 J**	1.6	**0.021 J**	**0.028 J**	0.0065 U	1.1	**0.017 J**	**0.012 J**	0.0064 U	0.0070 U	0.0068 U	0.0062 U	**0.11 J**	**0.68**	**0.51**
Dibenz(a,h)anthracene	mg/Kg	0.33	0.33	0.015 U	0.016 U	0.015 U	0.019 U	**0.28**	0.016 U	0.016 U	0.017 U	**0.15**	0.017 U	0.016 U	0.016 U	0.018 U	0.017 U	0.016 U	**0.018 J**	**0.10**	**0.098**
Dibenzofuran	mg/Kg	7	59	0.0050 U	0.0052 U	0.0050 U	0.0060 U	**0.31 J**	0.0052 U	0.0053 U	0.0054 U	**0.083 J**	**0.015 J**	0.0051 U	0.0053 U	0.0058 U	0.0056 U	0.0051 U	**0.027 J**	**0.020 J**	**0.015 J**
Diethyl phthalate	mg/Kg			0.0052 U	0.0054 U	0.0051 U	0.0062 U	0.0054 U	0.0054 U	0.0054 U	0.0055 U	0.0054 U	0.0056 U	0.0053 U	0.0054 U	0.0060 U	0.0058 U	0.0053 U	0.0054 U	0.0053 U	0.0053 U
Dimethyl phthalate	mg/Kg			0.0043 U	0.0045 U	0.0043 U	0.0052 U	0.0045 U	0.0045 U	0.0045 U	0.0046 U	0.0045 U	0.0046 U	0.0044 U	0.0045 U	0.0050 U	0.0048 U	0.0044 U	0.0045 U	0.0045 U	0.0044 U
Di-n-butyl phthalate	mg/Kg			0.063 U	0.065 U	0.062 U	0.076 U	**0.074 J**	0.066 U	0.066 U	0.067 U	0.065 U	0.068 U	0.064 U	0.066 U	0.073 U	0.071 U	0.064 U	0.066 U	0.065 U	0.064 U
Di-n-octyl phthalate	mg/Kg			0.019 U	0.020 U	0.019 U	0.023 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.019 U	0.020 U	0.022 U	0.021 U	0.019 U	0.020 U	0.020 U	0.019 U
Fluoranthene	mg/Kg	100	100	0.0046 U	0.0048 U	0.0046 U	**0.041 J**	3.7	**0.029 J**	0.0049 U	0.0050 U	2.6	**0.026 J**	**0.020 J**	0.0049 U	0.0054 U	0.0052 U	0.0047 U	**0.22 J**	1.2	**0.87**
Fluorene	mg/Kg	30	100	0.0048 U	0.0050 U	0.0048 U	0.0058 U	**0.40**	0.0051 U	0.0051 U	0.0052 U	**0.15 J**	0.0052 U	0.0049 U	0.0051 U	0.0056 U	0.0054 U	0.0050 U	**0.039 J**	**0.034 J**	**0.026 J**
Hexachlorobenzene	mg/Kg	0.33	1.2	0.0052 U	0.0054 U	0.0052 U	0.0063 U	0.0055 U	0.0055 U	0.0055 U	0.0056 U	0.0054 U	0.0056 U	0.0053 U	0.0055 U	0.0061 U	0.0059 U	0.0053 U	0.0055 U	0.0054 U	0.0053 U
Hexachlorobutadiene	mg/Kg			0.0076 U	0.0079 U	0.0075 U	0.0091 U	0.0079 U	0.0079 U	0.0080 U	0.0081 U	0.0079 U	0.0082 U	0.0077 U	0.0080 U	0.0089 U	0.0085 U	0.0078 U	0.0080 U	0.0079 U	0.0077 U
Hexachlorocyclopentadiene	mg/Kg			0.031 U	0.033 U	0.031 U	0.038 U	0.033 U	0.033 U	0.033 U	0.034 U	0.033 U	0.034 U	0.032 U	0.033 U	0.037 U	0.035 U	0.032 U	0.033 U	0.032 U	0.032 U
Hexachloroethane	mg/Kg			0.0055 U	0.0057 U	0.0055 U	0.0066 U	0.0058 U	0.0058 U	0.0058 U	0.0059 U	0.0057 U	0.0059 U	0.0056 U	0.0058 U	0.0064 U	0.0062 U	0.0056 U	0.0058 U	0.0057 U	0.0056 U
Indeno[1,2,3-cd]pyrene	mg/Kg	0.5	0.5	0.014 U	0.014 U	0.014 U	0.017 U	1.1	**0.019 J**	**0.015 J**	0.015 U	0.83	0.015 U	0.014 U	0.015 U	0.016 U	0.016 U	0.014 U	**0.071**	0.57	**0.42**
Isophorone	mg/Kg			0.0094 U	0.0098 U	0.0093 U	0.011 U	0.0098 U	0.0098 U	0.0099 U	0.010 U	0.0098 U	0.010 U	0.0096 U	0.0099 U	0.011 U	0.011 U	0.0096 U	0.0098 U	0.0097 U	0.0096 U
Naphthalene	mg/Kg	12	100	0.0062 U	0.0064 U	0.0061 U	0.0074 U	**0.13 J**	0.0064 U	0.0065 U	0.0066 U	**0.074 J**	**0.041 J**	0.0063 U	0.0065 U	0.0072 U	0.0069 U	0.0063 U	**0.050 J**	**0.12 J**	**0.014 J**
Nitrobenzene	mg/Kg			0.0085 U	0.0089 U	0.0085 U	0.010 U	0.0090 U	0.0090 U	0.0090 U	0.0092 U	0.0089 U	0.0092 U	0.0087 U	0.0090 U	0.010 U	0.0096 U	0.0088 U	0.0090 U	0.0089 U	0.0087 U
N-Nitrosodi-n-propylamine	mg/Kg			0.0057 U	0.0059 U	0.0056 U	0.0068 U	0.0059 U	0.0059 U	0.0060 U	0.0061 U	0.0059 U	0.0061 U	0.0058 U	0.0060 U	0.0066 U	0.0064 U	0.0058 U	0.0060 U	0.0059 U	0.0058 U
N-Nitrosodiphenylamine	mg/Kg			0.0068 U	0.0071 U	0.0068 U	0.0082 U	0.0071 U	0.0071 U	0.0072 U	0.0073 U	0.0071 U	0.0074 U	0.0070 U	0.0072 U	0.0080 U	0.0077 U	0.0070 U	0.0072 U	0.0071 U	0.0070 U
Pentachlorophenol	mg/Kg	0.8	6.7	0.073 U	0.076 U	0.072 U	0.088 U	0.076 U	0.076 U	0.077 U	0.078 U	0.076 U	0.079 U	0.075 U	0.077 U	0.085 U	0.082 U	0.075 U	0.077 U	0.076 U	0.075 U
Phenanthrene	mg/Kg	100	100	0.0063 U	0.0065 U	0.0062 U	**0.025 J**	**2.7**	**0.016 J**	0.0066 U	0.0067 U	**1.7**	**0.047 J**	**0.016 J**	0.0066 U	0.0073 U	0.0070 U	0.0064 U	**0.20 J**	**0.55**	**0.42**
Phenol	mg/Kg	0.33	100	0.0053 U	0.0055 U	0.0052 U	0.0064 U	0.0055 U	0.0055 U	0.0056 U	0.0057 U	0.0055 U	0.0057 U	0.0054 U	0.0056 U	0.0062 U	0.0059 U	0.0054 U	0.0055 U	0.0055 U	0.0054 U
Pyrene	mg/Kg	100	100	0.0089 U	0.0092 U	0.0088 U	**0.034 J**	**2.8**	**0.029 J**	0.0093 U	0.0095 U	**1.9**	**0.018 J**	**0.016 J**	0.0093 U	0.010 U	0.010 U	0.0091 U	**0.18 J**	**0.88**	**0.80**

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an

U : Indicates the analyte was analyzed for but not detected.

Table 1B
Summary of Soil Sampling Results
Semi-Volatile Organic Compounds (8270)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174986-7 SESI-SB-10(11') 2/8/2019 11:30 AM	460-174986-8 SESI-SB-10(18') 2/8/2019 11:40 AM	460-174859-18 SESI-SB-11(4') 2/7/2019 1:50 PM	460-174859-19 SESI-SB-11(9') 2/7/2019 2:00 PM	460-174859-20 SESI-SB-11(14') 2/7/2019 2:05 PM	460-174859-21 SESI-SB-11(18') 2/7/2019 2:10 PM	460-175342-1 SESI-SB-12 (4') 2/14/2019 1:10 PM	460-175342-2 SESI-SB-12 (6') 2/14/2019 1:15 PM	460-175638-1 SESI-SB-13(3') 2/18/2019 1:30 PM	460-175638-2 SESI-SB-13(7') 2/18/2019 1:35 PM	460-175449-2 SESI-SB-14(2') 2/15/2019 11:00 AM	460-175449-3 SESI-SB-14(6') 2/15/2019 11:05 AM	460-174986-9 SESI-SB-15(3') 2/8/2019 12:30 PM	460-174986-10 SESI-SB-15(8') 2/8/2019 12:35 PM	460-174986-11 SESI-SB-15(14') 2/8/2019 12:40 PM	460-175247-3 SESI-SB-15 (15'-17') 2/13/2019 10:00 AM	460-174986-12 SESI-SB-16(3') 2/8/2019 2:00 PM	460-174986-13 SESI-SB-16(8') 2/8/2019 2:05 PM
SOIL BY 8270D (MG/KG)																					
1,1'-Biphenyl	mg/Kg			0.0050 U	0.0055 U	0.0054 U	0.0047 U	0.0049 U	0.0048 U	0.0047 U	**0.73**	0.0054 U	0.0050 U	0.0047 U	0.0049 U	0.0053 U	0.0046 U	0.0050 U	0.0051 U	0.0051 U	0.0048 U
1,2,4,5-Tetrachlorobenzene	mg/Kg			0.0050 U	0.0054 U	0.0053 U	0.0046 U	0.0048 U	0.0047 U	0.0046 U	0.0046 U	0.0053 U	0.0049 U	0.0046 U	0.0048 U	0.0052 U	0.0045 U	0.0050 U	0.0050 U	0.0051 U	0.0047 U
2,2'-oxybis[1-chloropropane]	mg/Kg			0.0069 U	0.0075 U	0.0073 U	0.0064 U	0.0066 U	0.0065 U	0.0064 U	0.0064 U	0.0074 U	0.0068 U	0.0064 U	0.0067 U	0.0072 U	0.0062 U	0.0069 U	0.0069 U	0.0070 U	0.0065 U
2,3,4,6-Tetrachlorophenol	mg/Kg			0.026 U	0.028 U	0.027 U	0.024 U	0.025 U	0.024 U *	0.024 U	0.024 U	0.028 U	0.025 U	0.024 U	0.025 U	0.027 U	0.023 U	0.026 U	0.026 U	0.026 U F1	0.024 U
2,4,5-Trichlorophenol	mg/Kg			0.013 U	0.014 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.011 U	0.013 U	0.013 U	0.013 U	0.012 U
2,4,6-Trichlorophenol	mg/Kg			0.019 U	0.021 U	0.020 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.021 U	0.019 U	0.018 U	0.019 U	0.020 U	0.017 U	0.019 U	0.019 U	0.020 U	0.018 U
2,4-Dichlorophenol	mg/Kg			0.0080 U	0.0087 U	0.0085 U	0.0074 U	0.0077 U	0.0076 U *	0.0075 U	0.0075 U	0.0086 U	0.0079 U	0.0074 U	0.0078 U	0.0084 U	0.0073 U	0.0080 U	0.0081 U	0.0082 U	0.0076 U
2,4-Dimethylphenol	mg/Kg			0.017 U	0.018 U	0.018 U	0.015 U	0.016 U	0.016 U	0.016 U	0.016 U	0.018 U	0.016 U	0.015 U	0.016 U	0.018 U	0.015 U	0.017 U	0.017 U	0.017 U F1	0.016 U
2,4-Dinitrophenol	mg/Kg			0.19 U	0.20 U	0.20 U	0.17 U	0.18 U	0.18 U	0.17 U	0.17 U	0.20 U	0.18 U	0.17 U	0.18 U	0.20 U	0.17 U	0.19 U	0.19 U	0.19 U F1	0.18 U
2,4-Dinitrotoluene	mg/Kg			0.019 U	0.021 U	0.020 U	0.018 U	0.019 U	0.018 U	0.018 U	0.018 U	0.021 U	0.019 U	0.018 U	0.019 U	0.020 U	0.017 U	0.019 U	0.019 U	0.020 U F1	0.018 U
2,6-Dinitrotoluene	mg/Kg			0.012 U	0.013 U	0.013 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U	0.012 U	0.013 U F1	0.012 U
2-Chloronaphthalene	mg/Kg			0.018 U	0.019 U	0.019 U	0.016 U	0.017 U	0.017 U	0.016 U	0.016 U	0.019 U	0.017 U	0.016 U	0.017 U	0.018 U	0.016 U	0.018 U	0.018 U	0.018 U	0.017 U
2-Chlorophenol	mg/Kg			0.0053 U	0.0058 U	0.0057 U	0.0049 U	0.0051 U	0.0050 U	0.0050 U	0.0049 U	0.0057 U	0.0052 U	0.0049 U	0.0052 U	0.0056 U	0.0048 U	0.0053 U	0.0054 U	0.0054 U	0.0050 U
2-Methylnaphthalene	mg/Kg			0.0047 U	0.0051 U	0.0050 U	0.0044 U	0.0046 U	0.0045 U	**0.50**	**7.4**	**0.025 J**	0.0047 U	0.0044 U	0.0046 U	0.0050 U	0.0043 U	0.0047 U	0.0048 U	0.0048 U F1	0.0045 U
2-Methylphenol	mg/Kg	0.33	100	0.0061 U	0.0067 U	0.0065 U	0.0057 U	0.0059 U	0.0058 U	0.0057 U	0.0057 U	0.0066 U	0.0060 U	0.0057 U	0.0059 U	0.0064 U	0.0056 U	0.0061 U	0.0062 U	0.0062 U F1 F2	0.0058 U
2-Nitroaniline	mg/Kg			0.014 U	0.015 U	0.015 U	0.013 U	0.014 U	0.013 U	0.013 U F1	0.013 U	0.015 U	0.014 U	0.013 U	0.014 U	0.015 U	0.013 U	0.014 U	0.014 U	0.014 U	0.013 U
2-Nitrophenol	mg/Kg			0.012 U	0.013 U	0.013 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U	0.013 U	0.012 U	0.011 U	0.012 U	0.013 U	0.011 U	0.012 U	0.012 U	0.012 U F1	0.012 U
3,3'-Dichlorobenzidine	mg/Kg			0.057 U	0.062 U	0.061 U	0.053 U	0.055 U	0.054 U *	0.054 U	0.053 U	0.062 U *	0.057 U *	0.053 U	0.056 U	0.060 U	0.052 U	0.057 U	0.058 U	0.059 U	0.054 U
3-Nitroaniline	mg/Kg			0.021 U	0.022 U	0.022 U	0.019 U	0.020 U	0.019 U	0.019 U *	0.019 U *	0.022 U *	0.020 U *	0.019 U	0.020 U	0.022 U	0.019 U	0.021 U	0.021 U	0.021 U	0.019 U
4,6-Dinitro-2-methylphenol	mg/Kg			0.062 U	0.067 U	0.066 U	0.057 U	0.059 U	0.058 U	0.058 U	0.057 U	0.066 U	0.061 U	0.057 U	0.060 U	0.065 U	0.056 U	0.062 U	0.062 U	0.063 U F1	0.058 U
4-Bromophenyl phenyl ether	mg/Kg			0.0049 U	0.0053 U	0.0052 U	0.0045 U	0.0047 U	0.0046 U	0.0046 U	0.0046 U	0.0053 U	0.0048 U	0.0046 U	0.0048 U	0.0052 U	0.0045 U	0.0049 U	0.0050 U	0.0050 U	0.0046 U
4-Chloro-3-methylphenol	mg/Kg			0.0063 U	0.0069 U	0.0067 U	0.0058 U	0.0061 U	0.0060 U	0.0059 U	0.0059 U	0.0068 U	0.0062 U	0.0059 U	0.0061 U	0.0066 U	0.0057 U	0.0063 U	0.0064 U	0.0064 U	0.0060 U
4-Chloroaniline	mg/Kg			0.027 U	0.029 U	0.028 U	0.025 U	0.026 U	0.025 U	0.025 U *	0.025 U *	0.029 U *	0.026 U *	0.025 U	0.026 U	0.028 U	0.024 U	0.027 U	0.027 U	0.027 U	0.025 U
4-Chlorophenyl phenyl ether	mg/Kg			0.0060 U	0.0065 U	0.0064 U	0.0055 U	0.0058 U	0.0057 U	0.0056 U	0.0056 U	0.0064 U	0.0059 U	0.0056 U	0.0058 U	0.0063 U	0.0054 U	0.0060 U	0.0060 U	0.0061 U F1	0.0057 U
4-Methylphenol	mg/Kg	0.33	100	0.0065 U	0.0070 U	0.0069 U	0.0060 U	0.0062 U	0.0061 U	0.0060 U	0.0060 U	0.0070 U	0.0064 U	0.0060 U	0.0063 U	0.0068 U	0.0059 U	0.0065 U	0.0065 U	0.0066 U	0.0061 U
4-Nitroaniline	mg/Kg			0.014 U	0.015 U	0.015 U	0.013 U	0.014 U	0.013 U	0.013 U	0.013 U	0.015 U *	0.014 U *	0.013 U	0.014 U	0.015 U	0.013 U	0.014 U	0.014 U	0.014 U	0.013 U
4-Nitrophenol	mg/Kg			0.062 U	0.067 U	0.066 U	0.057 U	0.060 U	0.059 U	0.058 U	0.058 U	0.067 U	0.061 U	0.057 U	0.060 U	0.065 U	0.056 U	0.062 U	0.062 U	0.063 U	0.059 U
Acenaphthene	mg/Kg	20	100	0.028 U	0.030 U	0.029 U	0.026 U	0.027 U	0.026 U	**0.11 J**	**0.65**	0.030 U	0.027 U	0.026 U	0.027 U	0.029 U	0.025 U	0.028 U	0.028 U	0.028 U	0.026 U
Acenaphthylene	mg/Kg	100	100	0.0039 U	0.0043 U	0.0042 U	0.0036 U	0.0038 U	0.0037 U	0.0037 U	**0.25 J**	0.0042 U	0.0039 U	0.0036 U	0.0038 U	0.0041 U	0.0036 U	0.0039 U	0.0040 U	0.0040 U F1	0.0037 U
Acetophenone	mg/Kg			0.0061 U	0.0066 U	0.0065 U	0.0057 U	0.0059 U	0.0058 U	0.0057 U	**0.24 J**	0.0066 U	0.0060 U	0.0057 U	0.0059 U	0.0064 U	0.0056 U	0.0061 U	0.0062 U	0.0062 U	0.0058 U
Anthracene	mg/Kg	100	100	0.0042 U	0.0046 U	0.0045 U	0.0039 U	0.0041 U	0.0040 U	**0.070 J**	**0.34 J**	0.0046 U	0.0042 U	0.0039 U	0.0041 U	0.0045 U	0.0039 U	0.0042 U	0.0043 U	0.0043 U F1	0.0040 U
Atrazine	mg/Kg			0.0096 U *	0.010 U *	0.010 U	0.0089 U	0.0092 U	0.0091 U	0.0090 U * F1	0.0089 U *	0.010 U	0.0095 U	0.0089 U *	0.0093 U *	0.010 U *	0.0087 U *	0.0096 U *	0.0097 U *	0.0098 U F1 *	0.0091 U *
Benzaldehyde	mg/Kg			0.017 U	0.018 U	0.018 U	0.015 U	0.016 U	0.016 U	0.015 U *	0.015 U *	0.018 U	0.016 U	0.015 U	0.016 U	0.017 U	0.015 U	0.017 U	0.017 U	0.017 U	0.016 U
Benzo[a]anthracene	mg/Kg	1	1	**0.030 J**	0.014 U	0.014 U	0.012 U	0.013 U	0.013 U	0.012 U	**0.043**	0.014 U	0.013 U	0.012 U	0.013 U	0.014 U	0.012 U	0.013 U	0.013 U	0.014 U F1	0.013 U
Benzo[a]pyrene	mg/Kg	1	1	**0.034 J**	0.011 U	0.011 U	0.0094 U	0.0097 U	0.0096 U	0.0095 U	0.0094 U	0.011 U	0.010 U	0.0094 U	0.0098 U	0.011 U	0.0092 U	0.010 U	0.010 U	0.010 U F1	0.0096 U
Benzo[b]fluoranthene	mg/Kg	1	1	**0.058**	0.011 U	0.010 U	0.0091 U	0.0095 U	0.0093 U	0.0092 U	0.0091 U	0.011 U	0.0097 U	0.0091 U	0.0095 U	0.010 U	0.0089 U	0.0098 U	0.0099 U	0.010 U F1	0.0093 U
Benzo[g,h,i]perylene	mg/Kg	100	100	**0.032 J**	0.012 U	0.012 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.012 U	0.011 U	0.010 U	0.011 U	0.012 U	0.010 U	0.011 U	0.011 U	0.011 U	0.011 U
Benzo[k]fluoranthene	mg/Kg	0.8	3.9	**0.018 J**	0.0081 U	0.0079 U	0.0069 U	0.0072 U	0.0070 U	0.0070 U	0.0069 U	0.0080 U	0.0073 U	0.0069 U	0.0072 U	0.0078 U	0.0068 U	0.0074 U	0.0075 U	0.0076 U F1	0.0070 U
Bis(2-chloroethoxy)methane	mg/Kg			0.013 U	0.014 U	0.014 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.014 U	0.013 U	0.012 U	0.013 U	0.014 U	0.012 U	0.013 U	0.013 U	0.013 U F1	0.012 U
Bis(2-chloroethyl)ether	mg/Kg			0.0046 U	0.0050 U	0.0049 U	0.0042 U	0.0044 U	0.0043 U	0.0043 U	0.0043 U	0.0049 U	0.0045 U	0.0043 U	0.0044 U	0.0048 U	0.0042 U	0.0046 U	0.0046 U	0.0047 U F2	0.0043 U
Bis(2-ethylhexyl) phthalate	mg/Kg			**0.076 J**	**0.11 J**	0.021 U	0.019 U	0.019 U	**0.13 J**	0.019 U	0.019 U	0.022 U	0.020 U	0.019 U	0.019 U	**0.038 J**	**0.21 J**	**0.066 J**	0.020 U	0.020 U F1	0.019 U
Butyl benzyl phthalate	mg/Kg			0.018 U	0.019 U	0.019 U	0.016 U	0.017 U	0.017 U	0.017 U	0.017 U	0.019 U	0.018 U	0.017 U	0.017 U	0.019 U	0.016 U	0.018 U	0.018 U	0.018 U F1	0.017 U
Caprolactam	mg/Kg			0.023 U	0.025 U	0.024 U	0.021 U	0.022 U	0.022 U	0.021 U	0.021 U	0.024 U	0.022 U	0.021 U	0.022 U	0.024 U	0.021 U	0.023 U	0.023 U	0.023 U F1	0.022 U
Carbazole	mg/Kg			0.0044 U	0.0048 U	0.0047 U	0.0041 U	0.0043 U	0.0042 U	**0.016 J**	**0.15 J**	0.0048 U	0.0044 U	0.0041 U	0.0043 U	0.0047 U	0.0040 U	0.0044 U	0.0045 U	0.0045 U F1	0.0042 U
Chrysene	mg/Kg	1	3.9	**0.040 J**	0.0070 U	0.0068 U	0.0059 U	0.0062 U	0.0061 U	0.0060 U	**0.037 J**	0.0069 U	0.0063 U	0.0060 U	0.0062 U	0.0068 U	0.0058 U	0.0064 U	0.0065 U	0.0065 U F1	0.0061 U
Dibenz(a,h)anthracene	mg/Kg	0.33	0.33	0.016 U	0.018 U	0.018 U	0.015 U	0.016 U	0.016 U	0.015 U	0.015 U	0.018 U	0.016 U	0.015 U	0.016 U	0.017 U	0.015 U	0.016 U	0.017 U	0.017 U	0.016 U
Dibenzofuran	mg/Kg	7	59	0.0053 U	0.0058 U	0.0057 U	0.0049 U	0.0051 U	0.0050 U	**0.12 J**	**0.70**	0.0057 U	0.0053 U	0.0050 U	0.0052 U	0.0056 U	0.0048 U	0.0053 U	0.0054 U	0.0054 U F1	0.0050 U
Diethyl phthalate	mg/Kg			0.0055 U	0.0060 U	0.0059 U	0.0051 U	0.0053 U	0.0052 U	0.0051 U	0.0051 U	0.0059 U	0.0054 U	0.0051 U	0.0053 U	0.0058 U	0.0050 U	0.0055 U	0.0055 U	0.0056 U F1	0.0052 U
Dimethyl phthalate	mg/Kg			0.0046 U	0.0050 U	0.0049 U	0.0042 U	0.0044 U	0.0043 U	0.0043 U	0.0043 U	0.0049 U	0.0045 U	0.0043 U	0.0044 U	0.0048 U	0.0042 U	0.0046 U	0.0046 U	0.0047 U F1	0.0043 U
Di-n-butyl phthalate	mg/Kg			0.067 U	0.073 U	0.071 U	0.062 U	0.065 U	0.063 U	0.063 U	0.062 U	0.072 U	0.066 U	0.062 U	0.065 U	0.070 U	0.061 U	0.067 U	0.068 U	0.068 U F1	0.063 U
Di-n-octyl phthalate	mg/Kg			0.020 U	0.022 U	0.021 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.022 U	0.020 U	0.019 U	0.019 U	0.021 U	0.018 U	0.020 U	0.020 U	0.021 U	0.019 U
Fluoranthene	mg/Kg	100	100	**0.060 J**	0.0054 U	0.0053 U	0.0046 U	0.0048 U	0.0047 U	**0.018 J**	**0.090 J**	0.0053 U	0.0049 U	0.0046 U	0.0048 U	0.0052 U	0.0045 U	0.0049 U	0.0050 U	0.0050 U F1	0.0047 U
Fluorene	mg/Kg	30	100	0.0052 U	0.0056 U	0.0055 U	0.0048 U	0.0050 U	0.0049 U	**0.27 J**	**1.5**	0.0055 U	0.0051 U	0.0048 U	0.0050 U	0.0054 U	0.0047 U	0.0051 U	0.0052 U	0.0053 U	0.0049 U
Hexachlorobenzene	mg/Kg	0.33	1.2	0.0056 U	0.0060 U	0.0059 U	0.0051 U	0.0054 U	0.0053 U	0.0052 U	0.0052 U	0.0060 U	0.0055 U	0.0052 U	0.0054 U	0.0059 U	0.0051 U	0.0056 U	0.0056 U	0.0057 U	0.0053 U
Hexachlorobutadiene	mg/Kg			0.0081 U	0.0088 U	0.0086 U	0.0075 U	0.0078 U	0.0076 U	0.0076 U	0.0075 U	0.0087 U	0.0080 U	0.0075 U	0.0078 U	0.0085 U	0.0073 U	0.0081 U	0.0081 U	0.0082 U F1	0.0076 U
Hexachlorocyclopentadiene	mg/Kg			0.033 U	0.036 U	0.035 U	0.031 U	0.032 U	0.032 U	0.031 U	0.031 U	0.036 U	0.033 U	0.031 U	0.032 U	0.035 U	0.030 U	0.033 U	0.034 U	0.034 U	0.032 U
Hexachloroethane	mg/Kg			0.0059 U	0.0064 U	0.0062 U	0.0054 U	0.0056 U	0.0055 U	0.0055 U	0.0054 U	0.0063 U	0.0058 U	0.0054 U	0.0057 U	0.0062 U	0.0053 U	0.0058 U	0.0059 U	0.0060 U F1	0.0055 U
Indeno[1,2,3-cd]pyrene	mg/Kg	0.5	0.5	**0.026 J**	0.016 U	0.016 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.016 U	0.015 U	0.014 U	0.014 U	0.016 U	0.013 U	0.015 U	0.015 U	0.015 U	0.014 U
Isophorone	mg/Kg			0.010 U	0.011 U	0.011 U	0.0092 U	0.0096 U	0.0095 U	0.0093 U	0.0093 U	0.011 U	0.0099 U	0.0093 U	0.0097 U	0.011 U	0.0091 U	0.010 U	0.010 U	0.010 U F1	0.0095 U
Naphthalene	mg/Kg	12	100	0.0066 U	0.0071 U	0.0070 U	0.0061 U	0.0063 U	0.0062 U	**0.052 J**	**1.2**	0.0071 U	0.0065 U	0.0061 U	0.0064 U	**0.021 J**	0.0060 U	0.0066 U	0.0066 U	0.0067 U F1	0.0062 U
Nitrobenzene	mg/Kg			0.0091 U	0.0099 U	0.0097 U	0.0084 U	0.0088 U	0.0086 U	0.0085 U	0.0085 U	0.0098 U	0.0090 U	0.0085 U	0.0088 U	0.0096 U	0.0083 U	0.0091 U	0.0092 U	0.0093 U F1	0.0086 U
N-Nitrosodi-n-propylamine	mg/Kg			0.0061 U	0.0066 U	0.0064 U	0.0056 U	0.0058 U	0.0057 U	0.0057 U	0.0056 U	0.0065 U	0.0060 U	0.0056 U	0.0059 U	0.0064 U	0.0055 U	0.0060 U	0.0061 U	0.0062 U F1	0.0057 U
N-Nitrosodiphenylamine	mg/Kg			0.0073 U	0.0079 U	0.0077 U	0.0067 U	0.0070 U	0.0069 U	**0.37**	**2.1**	0.0078 U	0.0072 U	0.0067 U	0.0070 U	0.0076 U	0.0066 U	0.0073 U	0.0073 U	0.0074 U F1	0.0069 U
Pentachlorophenol	mg/Kg	0.8	6.7	0.078 U	0.085 U	0.083 U	0.072 U	0.075 U	0.074 U *	0.073 U	0.072 U	0.084 U	0.077 U	0.072 U	0.075 U	0.082 U	0.071 U	0.078 U	0.078 U	0.079 U	0.074 U
Phenanthrene	mg/Kg	100	100	**0.028 J**	0.0072 U	0.0071 U	0.0062 U	0.0064 U	0.0063 U	**0.77**	**4.3**	0.0072 U	0.0066 U	0.0062 U	**0.027 J**	0.0070 U	0.0061 U	0.0067 U	0.0067 U	0.0068 U F1	0.0063 U
Phenol	mg/Kg	0.33	100	0.0056 U	0.0061 U	0.0060 U	0.0052 U	0.0054 U	0.0053 U	0.0053 U	0.0052 U	0.0060 U	0.0056 U	0.0052 U	0.0054 U	0.0059 U	0.0051 U	0.0056 U	0.0057 U	0.0057 U	0.0053 U
Pyrene	mg/Kg	100	100	**0.054 J**	0.010 U	0.010 U	0.0087 U	0.0091 U	0.0089 U	**0.11 J**	**0.60**	0.010 U	0.0093 U	0.0088 U	0.0091 U	0.0099 U	0.0086 U	0.0094 U	0.0095 U	0.0096 U	0.0089 U

Notes:
Bold cells are detections above the MDL
Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an

U : Indicates the analyte was analyzed for but not detected.

Table 1B
Summary of Soil Sampling Results
Semi-Volatile Organic Compounds (8270)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174986-14 SESI-SB-16(13') 2/8/2019 2:10 PM	460-175121-3 SESI-SB-17(4') 2/11/2019 8:10 AM	460-175121-4 SESI-SB-17(8') 2/11/2019 8:15 AM	460-175121-5 SESI-SB-17(14') 2/11/2019 8:20 AM	460-175342-3 SESI-SB-17 (15'-17') 2/14/2019 9:30 AM	460-175121-6 SESI-SB-18(3') 2/11/2019 9:15 AM	460-175121-7 SESI-SB-18(7') 2/11/2019 9:25 AM	460-175121-8 SESI-SB-18(13') 2/11/2019 9:35 AM	460-175342-4 SESI-SB-18 (15'-17') 2/14/2019 1:30 PM	460-175121-9 SESI-SB-19(3') 2/11/2019 10:10 AM	460-175121-10 SESI-SB-19(9') 2/11/2019 10:20 AM	460-175121-11 SESI-SB-19(12') 2/11/2019 10:30 AM	460-175121-12 SESI-SB-19(18') 2/11/2019 10:40 AM	460-175121-13 SESI-SB-19(23') 2/11/2019 10:50 AM	460-175121-14 SESI-SB-20(5') 2/11/2019 12:00 PM	460-175121-15 SESI-SB-20(6') 2/11/2019 12:05 PM	460-175121-16 SESI-SB-20(9') 2/11/2019 12:10 PM	460-175121-17 SESI-SB-20(14') 2/11/2019 12:15 PM
SOIL BY 8270D (MG/KG)																						
1,1'-Biphenyl	mg/Kg			0.0049 U	0.0049 U	0.0047 U	0.0048 U	0.0051 U	0.0050 U	0.0048 U	0.0050 U	0.0055 U	0.0055 U	0.0046 U	0.0047 U	0.0049 U	0.0051 U	0.0052 U	**0.29 J**	0.0047 U	0.0050 U
1,2,4,5-Tetrachlorobenzene	mg/Kg			0.0048 U	0.0048 U	0.0047 U	0.0048 U	0.0051 U	0.0049 U	0.0048 U	0.0049 U	0.0054 U	0.0054 U	0.0046 U	0.0046 U	0.0049 U	0.0050 U	0.0051 U	0.0097 U	0.0047 U	0.0049 U
2,2'-oxybis[1-chloropropane]	mg/Kg			0.0067 U	0.0066 U	0.0065 U	0.0066 U	0.0070 U	0.0068 U	0.0066 U	0.0068 U	0.0075 U	0.0074 U	0.0063 U	0.0064 U	0.0067 U	0.0070 U	0.0070 U	0.013 U	0.0064 U	0.0068 U
2,3,4,6-Tetrachlorophenol	mg/Kg			0.025 U	0.025 U	0.024 U	0.025 U	0.026 U	0.025 U	0.025 U	0.026 U	0.028 U	0.028 U	0.024 U	0.024 U	0.025 U	0.026 U	0.026 U	0.050 U	0.024 U	0.025 U
2,4,5-Trichlorophenol	mg/Kg			0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.014 U	0.014 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.024 U	0.012 U	0.012 U
2,4,6-Trichlorophenol	mg/Kg			0.019 U	0.018 U	0.018 U	0.018 U	0.020 U	0.019 U	0.018 U	0.019 U	0.021 U	0.021 U	0.018 U	0.018 U	0.019 U	0.019 U	0.020 U	0.037 U	0.018 U	0.019 U
2,4-Dichlorophenol	mg/Kg			0.0078 U	0.0077 U	0.0076 U	0.0077 U	0.0082 U	0.0079 U	0.0077 U	0.0080 U	0.0088 U	0.0087 U	0.0074 U	0.0074 U	0.0078 U	0.0081 U	0.0082 U	0.016 U	0.0075 U	0.0079 U
2,4-Dimethylphenol	mg/Kg			0.016 U	0.016 U	0.016 U	0.016 U	0.017 U	0.017 U	0.016 U	0.017 U	0.018 U	0.018 U	0.015 U	0.015 U	0.016 U	0.017 U	0.017 U	0.033 U	0.016 U	0.017 U
2,4-Dinitrophenol	mg/Kg			0.18 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.20 U	0.20 U F1	0.17 U	0.17 U	0.18 U	0.19 U	0.19 U	0.36 U	0.17 U	0.18 U
2,4-Dinitrotoluene	mg/Kg			0.019 U	0.019 U	0.018 U	0.018 U	0.020 U	0.019 U	0.018 U	0.019 U	0.021 U	0.021 U	0.018 U	0.018 U	0.019 U	0.019 U	0.020 U	0.037 U	0.018 U	0.019 U
2,6-Dinitrotoluene	mg/Kg			0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.011 U	0.011 U	0.012 U	0.012 U	0.013 U	0.024 U	0.012 U	0.012 U
2-Chloronaphthalene	mg/Kg			0.017 U	0.017 U	0.017 U	0.017 U	0.018 U	0.017 U	0.017 U	0.017 U	0.019 U	0.019 U	0.016 U	0.016 U	0.017 U	0.018 U	0.018 U	0.034 U	0.016 U	0.017 U
2-Chlorophenol	mg/Kg			0.0052 U	0.0051 U	0.0050 U	0.0051 U	0.0054 U	0.0053 U	0.0051 U	0.0053 U	0.0058 U	0.0058 U	0.0049 U	0.0049 U	0.0052 U	0.0054 U	0.0055 U	0.010 U	0.0050 U	0.0053 U
2-Methylnaphthalene	mg/Kg			0.0046 U	0.0046 U	0.0045 U	0.0045 U	0.0048 U	0.0047 U	0.0045 U	0.0047 U	0.0052 U	0.0051 U	0.0044 U	0.0044 U	0.0046 U	0.0048 U	**0.046 J**	**0.58 J**	0.0044 U	0.0047 U
2-Methylphenol	mg/Kg	0.33	100	0.0060 U	0.0059 U	0.0058 U	0.0059 U	0.0063 U	0.0061 U	0.0059 U	0.0061 U	0.0067 U	0.0066 U	0.0056 U	0.0057 U	0.0060 U	0.0062 U	0.0063 U	0.012 U	0.0057 U	0.0061 U
2-Nitroaniline	mg/Kg			0.014 U	0.014 U *	0.013 U *	0.014 U *	0.014 U	0.014 U *	0.014 U *	0.014 U *	0.015 U	0.015 U *	0.013 U *	0.013 U *	0.014 U *	0.014 U *	0.015 U *	0.028 U *	0.013 U *	0.014 U *
2-Nitrophenol	mg/Kg			0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.013 U	0.011 U	0.011 U	0.012 U	0.012 U	0.012 U	0.024 U	0.011 U	0.012 U
3,3'-Dichlorobenzidine	mg/Kg			0.056 U	0.055 U	0.054 U	0.055 U	0.059 U	0.057 U	0.055 U	0.057 U	0.063 U	0.062 U	0.053 U	0.053 U	0.056 U	0.058 U	0.059 U	0.11 U	0.054 U	0.057 U
3-Nitroaniline	mg/Kg			0.020 U	0.020 U	0.019 U	0.020 U	0.021 U *	0.020 U	0.020 U	0.020 U	0.022 U *	0.022 U	0.019 U	0.019 U	0.020 U	0.021 U	0.021 U	0.040 U	0.019 U	0.020 U
4,6-Dinitro-2-methylphenol	mg/Kg			0.060 U	0.059 U	0.058 U	0.059 U	0.063 U	0.061 U	0.059 U	0.061 U	0.067 U	0.067 U F1	0.057 U	0.057 U	0.060 U	0.062 U	0.063 U	0.12 U	0.058 U	0.061 U
4-Bromophenyl phenyl ether	mg/Kg			0.0048 U	0.0047 U	0.0046 U	0.0047 U	0.0050 U	0.0049 U	0.0047 U	0.0049 U	0.0054 U	0.0053 U	0.0045 U	0.0045 U	0.0048 U	0.0050 U	0.0050 U	0.0096 U	0.0046 U	0.0049 U
4-Chloro-3-methylphenol	mg/Kg			0.0062 U	0.0061 U	0.0059 U	0.0060 U	0.0064 U	0.0063 U	0.0060 U	0.0063 U	0.0069 U	0.0068 U	0.0058 U	0.0058 U	0.0062 U	0.0064 U	0.0065 U	0.012 U	0.0059 U	0.0062 U
4-Chloroaniline	mg/Kg			0.026 U	0.026 U	0.025 U	0.025 U	0.027 U *	0.026 U	0.025 U	0.026 U	0.029 U *	0.029 U	0.024 U	0.025 U	0.026 U	0.027 U	0.027 U	0.052 U	0.025 U	0.026 U
4-Chlorophenyl phenyl ether	mg/Kg			0.0058 U	0.0058 U	0.0056 U	0.0057 U	0.0061 U	0.0059 U	0.0057 U	0.0060 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U	0.0059 U	0.0061 U	0.0061 U	0.012 U	0.0056 U	0.0059 U
4-Methylphenol	mg/Kg	0.33	100	0.0063 U	0.0062 U	0.0061 U	0.0062 U	0.0066 U	0.0064 U	0.0062 U	0.0064 U	0.0071 U	0.0070 U	0.0060 U	0.0060 U	0.0063 U	0.0066 U	0.0066 U	0.013 U	0.0061 U	0.0064 U
4-Nitroaniline	mg/Kg			0.014 U	0.014 U	0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.015 U	0.013 U	0.013 U	0.014 U	0.014 U	0.014 U	0.028 U	0.013 U	0.014 U
4-Nitrophenol	mg/Kg			0.060 U	0.060 U	0.058 U	0.059 U	0.063 U	0.061 U	0.059 U	0.062 U	0.068 U	0.067 U	0.057 U	0.057 U	0.060 U	0.063 U	0.063 U	0.12 U	0.058 U	0.061 U
Acenaphthene	mg/Kg	20	100	0.027 U	0.027 U	0.026 U	0.026 U	0.028 U	0.027 U	0.026 U	0.027 U	0.030 U	0.030 U	0.025 U	0.026 U	0.027 U	0.028 U	0.028 U	0.054 U	0.026 U	0.027 U
Acenaphthylene	mg/Kg	100	100	0.0038 U	0.0038 U	0.0037 U	0.0038 U	0.0040 U	0.0039 U	0.0038 U	0.0039 U	0.0043 U	0.0043 U	0.0036 U	0.0036 U	0.0038 U	0.0040 U	**0.044 J**	0.0077 U	0.0037 U	0.0039 U
Acetophenone	mg/Kg			0.0060 U	0.0059 U	0.0058 U	0.0059 U	0.0063 U	0.0061 U	0.0059 U	0.0061 U	0.0067 U	0.0066 U	0.0056 U	0.0057 U	0.0060 U	0.0062 U	0.0063 U	**0.071 J**	0.0057 U	0.0061 U
Anthracene	mg/Kg	100	100	0.0041 U	0.0041 U	0.0040 U	0.0041 U	0.0043 U	0.0042 U	0.0041 U	0.0042 U	0.0046 U	0.0046 U	0.0039 U	0.0039 U	0.0041 U	0.0043 U	**0.096 J**	0.0083 U	0.0040 U	0.0042 U
Atrazine	mg/Kg			0.0093 U *	0.0092 U	0.0090 U	0.0092 U	0.0098 U *	0.0095 U	0.0092 U	0.0095 U	0.010 U *	0.010 U F1	0.0088 U	0.0089 U	0.0094 U	0.0097 U	0.0098 U	0.019 U	0.0090 U	0.0095 U
Benzaldehyde	mg/Kg			0.016 U	0.016 U	0.016 U	0.016 U	0.017 U *	0.016 U	0.016 U	0.016 U	0.018 U *	0.018 U	0.015 U	0.015 U	0.016 U	0.017 U	0.017 U	0.032 U	0.015 U	0.016 U
Benzo[a]anthracene	mg/Kg	1	1	0.013 U	0.013 U	0.012 U	0.013 U	0.014 U	0.013 U	0.013 U	0.013 U	**0.017 J**	0.014 U	0.012 U	0.012 U	0.013 U	0.013 U	**0.36**	0.026 U	0.012 U	0.013 U
Benzo[a]pyrene	mg/Kg	1	1	0.0099 U	0.0098 U	0.0095 U	0.0097 U	0.010 U	0.010 U	0.0097 U	0.010 U	0.011 U	0.011 U	0.0093 U	0.0094 U	0.0099 U	0.010 U	**0.26**	0.020 U	0.0095 U	0.010 U
Benzo[b]fluoranthene	mg/Kg	1	1	0.0096 U	0.0095 U	0.0092 U	0.0094 U	0.010 U	0.0097 U	0.0094 U	0.0098 U	0.011 U	0.011 U	0.0090 U	0.0091 U	0.0096 U	0.0099 U	**0.36**	0.019 U	0.0092 U	0.0097 U
Benzo[g,h,i]perylene	mg/Kg	100	100	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.012 U	0.012 U	0.010 U	0.010 U	0.011 U	0.011 U	**0.16 J**	0.022 U	0.010 U	0.011 U
Benzo[k]fluoranthene	mg/Kg	0.8	3.9	0.0073 U	0.0072 U	0.0070 U	0.0071 U	0.0076 U	0.0074 U	0.0071 U	0.0074 U	0.0081 U	0.0081 U	0.0069 U	0.0069 U	0.0073 U	0.0075 U	**0.14**	0.015 U	0.0070 U	0.0074 U
Bis(2-chloroethoxy)methane	mg/Kg			0.013 U	0.013 U	0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.013 U	0.014 U	0.014 U	0.012 U	0.012 U	0.013 U	0.013 U	0.013 U	0.025 U	0.012 U	0.013 U
Bis(2-chloroethyl)ether	mg/Kg			0.0045 U	0.0044 U	0.0043 U	0.0044 U	0.0047 U	0.0045 U	0.0044 U	0.0046 U	0.0050 U	0.0050 U	0.0042 U	0.0042 U	0.0045 U	0.0046 U	0.0047 U	0.0090 U	0.0043 U	0.0045 U
Bis(2-ethylhexyl) phthalate	mg/Kg			0.020 U	0.019 U	0.019 U	0.019 U	0.020 U	0.020 U	0.019 U	0.020 U	**0.26 J**	0.022 U	0.018 U	0.019 U	0.020 U	0.020 U	**0.32 J**	0.039 U	0.019 U	0.020 U
Butyl benzyl phthalate	mg/Kg			0.017 U	0.017 U	0.017 U	0.017 U	0.018 U	0.018 U	0.017 U	0.018 U	0.019 U	0.019 U F1	0.016 U	0.016 U	0.017 U	0.018 U	**0.49**	0.035 U	0.017 U	0.018 U
Caprolactam	mg/Kg			0.022 U	0.022 U	0.021 U	0.022 U	0.023 U	0.023 U	0.022 U	0.023 U	0.025 U	0.025 U F1	0.021 U	0.021 U	0.022 U	0.023 U	0.023 U	0.044 U	0.021 U	0.022 U
Carbazole	mg/Kg			0.0043 U	0.0043 U	0.0042 U	0.0043 U	0.0045 U	0.0044 U	0.0042 U	0.0044 U	0.0049 U	0.0048 U	0.0041 U	0.0041 U	0.0043 U	0.0045 U	**0.066 J**	0.0087 U	0.0042 U	0.0044 U
Chrysene	mg/Kg	1	3.9	0.0063 U	0.0062 U	0.0060 U	0.0061 U	0.0066 U	0.0064 U	0.0061 U	0.0064 U	0.0070 U	0.0070 U	0.0059 U	0.0059 U	0.0063 U	0.0065 U	**0.45**	0.013 U	0.0060 U	0.0063 U
Dibenz(a,h)anthracene	mg/Kg	0.33	0.33	0.016 U	0.016 U	0.015 U	0.016 U	0.017 U	0.016 U	0.016 U	0.016 U	0.018 U	0.018 U	0.015 U	0.015 U	0.016 U	0.017 U	**0.048**	0.032 U	0.015 U	0.016 U
Dibenzofuran	mg/Kg	7	59	0.0052 U	0.0051 U	0.0050 U	0.0051 U	0.0054 U	0.0053 U	0.0051 U	0.0053 U	0.0058 U	0.0058 U	0.0049 U	0.0049 U	0.0052 U	0.0054 U	**0.062 J**	0.010 U	0.0050 U	0.0053 U
Diethyl phthalate	mg/Kg			0.0054 U	0.0053 U	0.0052 U	0.0053 U	0.0056 U	0.0055 U	0.0053 U	0.0055 U	0.0060 U	0.0060 U	0.0051 U	0.0051 U	0.0054 U	0.0056 U	0.0056 U	0.011 U	0.0052 U	0.0054 U
Dimethyl phthalate	mg/Kg			0.0045 U	0.0044 U	0.0043 U	0.0044 U	0.0047 U	0.0045 U	0.0044 U	0.0046 U	0.0050 U	0.0050 U	0.0042 U	0.0042 U	0.0045 U	0.0046 U	0.0047 U	0.0089 U	0.0043 U	0.0045 U
Di-n-butyl phthalate	mg/Kg			0.065 U	0.065 U	0.063 U	0.064 U	0.068 U	0.066 U	0.064 U	0.067 U	0.073 U	0.073 U	0.062 U	0.062 U	0.065 U	0.068 U	**0.11 J**	0.13 U	0.063 U	0.066 U
Di-n-octyl phthalate	mg/Kg			0.020 U	0.019 U	0.019 U	0.019 U	**0.035 J**	0.020 U	0.019 U	0.020 U	0.022 U	0.022 U	0.019 U	0.019 U	0.020 U	0.020 U	0.021 U	0.039 U	0.019 U	0.020 U
Fluoranthene	mg/Kg	100	100	0.0048 U	0.0048 U	0.0046 U	0.0047 U	0.0050 U	0.0049 U	0.0047 U	0.0049 U	**0.026 J**	0.0053 U	0.0045 U	0.0046 U	0.0048 U	0.0050 U	**0.90**	0.0096 U	0.0046 U	0.0049 U
Fluorene	mg/Kg	30	100	0.0050 U	0.0050 U	0.0048 U	0.0049 U	0.0053 U	0.0051 U	0.0049 U	0.0051 U	0.0056 U	0.0056 U	0.0047 U	0.0048 U	0.0050 U	0.0052 U	**0.049 J**	0.010 U	0.0048 U	0.0051 U
Hexachlorobenzene	mg/Kg	0.33	1.2	0.0054 U	0.0054 U	0.0052 U	0.0053 U	0.0057 U	0.0055 U	0.0053 U	0.0055 U	0.0061 U	0.0060 U	0.0051 U	0.0052 U	0.0054 U	0.0056 U	0.0057 U	0.011 U	0.0052 U	0.0055 U
Hexachlorobutadiene	mg/Kg			0.0079 U	0.0078 U	0.0076 U	0.0077 U	0.0082 U	0.0080 U	0.0077 U	0.0080 U	0.0088 U	0.0088 U	0.0074 U	0.0075 U	0.0079 U	0.0082 U	0.0083 U	0.016 U	0.0076 U	0.0080 U
Hexachlorocyclopentadiene	mg/Kg			0.032 U	0.032 U	0.031 U	0.032 U	0.034 U	0.033 U	0.032 U	0.033 U	0.036 U	0.036 U	0.031 U	0.031 U	0.033 U	0.034 U	0.034 U	0.065 U	0.031 U	0.033 U
Hexachloroethane	mg/Kg			0.0057 U	0.0056 U	0.0055 U	0.0056 U	0.0060 U	0.0058 U	0.0056 U	0.0058 U	0.0064 U	0.0063 U	0.0054 U	0.0054 U	0.0057 U	0.0059 U	0.0060 U	0.011 U	0.0055 U	0.0058 U
Indeno[1,2,3-cd]pyrene	mg/Kg	0.5	0.5	0.014 U	0.014 U	0.014 U	0.014 U	0.015 U	0.015 U	0.014 U	0.015 U	0.016 U	0.016 U	0.014 U	0.014 U	0.014 U	0.015 U	**0.15**	0.029 U	0.014 U	0.015 U
Isophorone	mg/Kg			0.0097 U	0.0096 U	0.0094 U	0.0096 U	0.010 U	0.0099 U	0.0096 U	0.0099 U	0.011 U	0.011 U	0.0092 U	0.0092 U	0.0098 U	0.010 U	0.010 U	0.019 U	0.0093 U	0.0099 U
Naphthalene	mg/Kg	12	100	0.0064 U	0.0063 U	0.0062 U	0.0063 U	**0.050 J**	0.0065 U	**0.023 J**	0.0065 U	0.0072 U	0.0071 U	0.0060 U	0.0061 U	0.0064 U	0.0066 U	**0.075 J**	**0.087 J**	0.0061 U	0.0065 U
Nitrobenzene	mg/Kg			0.0089 U	0.0088 U	0.0086 U	0.0087 U	0.0093 U	0.0090 U	0.0087 U	0.0091 U	0.010 U	0.0099 U	0.0084 U	0.0084 U	0.0089 U	0.0092 U	0.0093 U	0.018 U	0.0085 U	0.0090 U
N-Nitrosodi-n-propylamine	mg/Kg			0.0059 U	0.0058 U	0.0057 U	0.0058 U	0.0062 U	0.0060 U	0.0058 U	0.0060 U	0.0066 U	0.0065 U	0.0056 U	0.0056 U	0.0059 U	0.0061 U	0.0062 U	0.012 U	0.0057 U	0.0060 U
N-Nitrosodiphenylamine	mg/Kg			0.0071 U	0.0070 U	0.0068 U	0.0070 U	0.0074 U	0.0072 U	0.0069 U	0.0072 U	0.0079 U	0.0079 U	0.0067 U	0.0067 U	0.0071 U	0.0074 U	**0.018 J**	0.014 U	0.0068 U	0.0072 U
Pentachlorophenol	mg/Kg	0.8	6.7	0.076 U	0.075 U	0.073 U	0.074 U	0.079 U	0.077 U	0.074 U	0.077 U	0.085 U	0.084 U	0.072 U	0.072 U	0.076 U	0.079 U	0.080 U	0.15 U	0.073 U	0.077 U
Phenanthrene	mg/Kg	100	100	0.0065 U	0.0064 U	0.0063 U	0.0064 U	0.0068 U	0.0066 U	0.0064 U	0.0066 U	**0.019 J**	0.0072 U	0.0061 U	0.0062 U	0.0065 U	0.0068 U	**0.72**	**0.14 J**	0.0062 U	0.0066 U
Phenol	mg/Kg	0.33	100	0.0055 U	0.0054 U	0.0053 U	0.0054 U	0.0057 U	0.0056 U	0.0054 U	0.0056 U	0.0061 U	0.0061 U	0.0052 U	0.0052 U	0.0055 U	0.0057 U	0.0058 U	0.011 U	0.0053 U	0.0056 U
Pyrene	mg/Kg	100	100	0.0092 U	0.0091 U	0.0089 U	0.0090 U	0.0096 U	0.0094 U	0.0090 U	0.0094 U	0.010 U	0.010 U	0.0087 U	0.0087 U	0.0092 U	0.0096 U	**0.66**	**0.25 J**	0.0088 U	0.0093 U

Notes:
Bold cells are detections above the MDL
Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an

U : Indicates the analyte was analyzed for but not detected.

Table 1B
Summary of Soil Sampling Results
Semi-Volatile Organic Compounds (8270)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175449-4 SESI-SB-21(3') 2/15/2019 12:40 PM	460-175449-5 SESI-SB-21(8') 2/15/2019 12:45 PM	460-175449-6 SESI-SB-22(5') 2/15/2019 9:20 AM	460-175449-7 SESI-SB-22(7') 2/15/2019 9:25 AM	460-175449-8 SESI-SB-22(22') 2/15/2019 9:30 AM	460-174986-15 SESI-SB-23(4') 2/8/2019 10:00 AM	460-174986-16 SESI-SB-23(7') 2/8/2019 10:05 AM	460-174986-17 SESI-SB-23(11') 2/8/2019 10:10 AM	460-174986-18 SESI-SB-23(16') 2/8/2019 10:15 AM	460-175342-5 SESI-SB-24 (1') 2/14/2019 12:40 PM	460-175342-6 SESI-SB-24 (6') 2/14/2019 12:45 PM	460-175638-3 SESI-SB-25(3') 2/18/2019 10:45 AM	460-175638-4 SESI-SB-25(8') 2/18/2019 11:00 AM	460-175667-1 SESI-SB-25(10-12') 2/19/2019 12:00 PM	460-175667-2 SESI-SB-25(15-17') 2/19/2019 12:10 PM	460-175667-3 SESI-SB-25(20-22') 2/19/2019 12:20 PM	460-175638-5 SESI-SB-26(3') 2/18/2019 9:30 AM	460-175638-6 SESI-SB-26(7') 2/18/2019 9:35 AM
SOIL BY 8270D (MG/KG)																						
1,1'-Biphenyl	mg/Kg			0.0047 U	0.0048 U	0.0051 U	0.0051 U	0.0049 U	0.0050 U	0.0051 U	0.0048 U	0.0049 U	**0.20 J**	**0.87**	0.28 U	0.0049 U	0.0048 U	0.0051 U	0.0057 U	0.0052 U	0.0048 U
1,2,4,5-Tetrachlorobenzene	mg/Kg			0.0046 U	0.0048 U	0.0050 U	0.0050 U	0.0049 U	0.0049 U	0.0050 U	0.0048 U	0.0048 U	0.0098 U	0.0094 U	0.28 U	0.0048 U	0.0048 U	0.0050 U	0.0057 U	0.0051 U	0.0048 U
2,2'-oxybis[1-chloropropane]	mg/Kg			0.0064 U	0.0066 U	0.0070 U	0.0070 U	0.0067 U	0.0068 U	0.0070 U	0.0066 U	0.0067 U	0.014 U	0.013 U	0.38 U	0.0066 U	0.0066 U	0.0070 U	0.0078 U	0.0070 U	0.0066 U
2,3,4,6-Tetrachlorophenol	mg/Kg			0.024 U	0.025 U	0.026 U	0.026 U	0.025 U	0.025 U	0.026 U	0.025 U	0.025 U	0.051 U	0.049 U	1.4 U	0.025 U	0.025 U	0.026 U	0.029 U	0.026 U	0.025 U
2,4,5-Trichlorophenol	mg/Kg			0.012 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.025 U	0.024 U	0.70 U	0.012 U	0.012 U	0.013 U	0.014 U	0.013 U	0.012 U
2,4,6-Trichlorophenol	mg/Kg			0.018 U	0.018 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U	0.038 U	0.036 U	1.1 U	0.018 U	0.018 U	0.019 U	0.022 U	0.020 U	0.018 U
2,4-Dichlorophenol	mg/Kg			0.0075 U	0.0077 U	0.0081 U	0.0081 U	0.0079 U	0.0080 U	0.0081 U	0.0077 U	0.0078 U	0.016 U	0.015 U	0.45 U	0.0077 U	0.0077 U	0.0081 U	0.0091 U	0.0082 U	0.0077 U
2,4-Dimethylphenol	mg/Kg			0.016 U	0.016 U	0.017 U	0.017 U	0.016 U	0.017 U	0.017 U	0.016 U	0.016 U	0.033 U	0.032 U	0.93 U	0.016 U	0.016 U	0.017 U	0.019 U	0.017 U	0.016 U
2,4-Dinitrophenol	mg/Kg			0.17 U	0.18 U	0.19 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.37 U	0.35 U	10 U	0.18 U	0.18 U	0.19 U	0.21 U	0.19 U	0.18 U
2,4-Dinitrotoluene	mg/Kg			0.018 U	0.018 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U	0.038 U	0.036 U	1.1 U	0.019 U	0.018 U	0.019 U	0.022 U	0.020 U	0.018 U
2,6-Dinitrotoluene	mg/Kg			0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.024 U	0.023 U	0.68 U	0.012 U	0.012 U	0.012 U	0.014 U	0.013 U	0.012 U
2-Chloronaphthalene	mg/Kg			0.016 U	0.017 U	0.018 U	0.018 U	0.017 U	0.017 U	**0.039 J**	0.017 U	0.017 U	0.035 U	0.033 U	0.98 U	0.017 U	0.017 U	0.018 U	0.020 U	0.018 U	0.017 U
2-Chlorophenol	mg/Kg			0.0050 U	0.0051 U	0.0054 U	0.0054 U	0.0052 U	0.0053 U	0.0054 U	0.0051 U	0.0052 U	0.010 U	0.010 U	0.30 U	0.0051 U	0.0051 U	0.0054 U	0.0061 U	0.0054 U	0.0051 U
2-Methylnaphthalene	mg/Kg			0.0044 U	0.0045 U	**2.1**	**1.7**	**6.6**	0.0047 U	**0.047 J**	0.0045 U	0.0046 U	**11**	**6.8**	**4.1 J**	**0.082 J**	0.0046 U	0.0048 U	0.0054 U	**6.1**	**0.061 J**
2-Methylphenol	mg/Kg	0.33	100	0.0057 U	0.0059 U	0.0062 U	0.0062 U	0.0060 U	0.0061 U	0.0062 U	0.0059 U	0.0060 U	0.012 U	0.012 U	0.34 U	0.0059 U	0.0059 U	0.0062 U	0.0070 U	0.0063 U	0.0059 U
2-Nitroaniline	mg/Kg			0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.028 U	0.027 U	0.79 U	0.014 U	0.014 U	0.014 U	0.016 U	0.015 U	0.014 U
2-Nitrophenol	mg/Kg			0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.024 U	0.023 U	0.68 U	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U	0.012 U
3,3'-Dichlorobenzidine	mg/Kg			0.054 U	0.055 U	0.058 U	0.058 U	0.056 U	0.057 U	0.058 U	0.055 U	0.056 U	0.11 U	0.11 U	3.2 U *	0.055 U *	0.055 U *	0.058 U *	0.065 U *	0.059 U *	0.055 U *
3-Nitroaniline	mg/Kg			0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.020 U	0.021 U	0.020 U	0.020 U	0.041 U *	0.039 U *	1.1 U *	0.020 U *	0.020 U *	0.021 U *	0.023 U *	0.021 U *	0.020 U *
4,6-Dinitro-2-methylphenol	mg/Kg			0.058 U	0.059 U	0.062 U	0.062 U	0.060 U	0.061 U	0.063 U	0.059 U	0.060 U	0.12 U	0.12 U	3.4 U	0.059 U	0.059 U	0.063 U	0.070 U	0.063 U	0.059 U
4-Bromophenyl phenyl ether	mg/Kg			0.0046 U	0.0047 U	0.0050 U	0.0050 U	0.0048 U	0.0049 U	0.0050 U	0.0047 U	0.0048 U	0.0097 U	0.0093 U	0.27 U	0.0047 U	0.0047 U	0.0050 U	0.0056 U	0.0050 U	0.0047 U
4-Chloro-3-methylphenol	mg/Kg			0.0059 U	0.0061 U	0.0064 U	0.0064 U	0.0062 U	0.0063 U	0.0064 U	0.0061 U	0.0061 U	0.012 U	0.012 U	0.35 U	0.0061 U	0.0061 U	0.0064 U	0.0072 U	0.0065 U	0.0060 U
4-Chloroaniline	mg/Kg			0.025 U	0.025 U	0.027 U	0.027 U	0.026 U	0.026 U	0.027 U	0.025 U	0.026 U	0.052 U *	0.050 U *	1.5 U *	0.026 U *	0.026 U *	0.027 U *	0.030 U *	0.027 U *	0.025 U *
4-Chlorophenyl phenyl ether	mg/Kg			0.0056 U	0.0057 U	0.0061 U	0.0061 U	0.0059 U	0.0059 U	0.0061 U	0.0057 U	0.0058 U	0.012 U	0.011 U	0.33 U	0.0058 U	0.0058 U	0.0061 U	0.0068 U	0.0061 U	0.0057 U
4-Methylphenol	mg/Kg	0.33	100	0.0060 U	0.0062 U	0.0066 U	0.0065 U	0.0063 U	0.0064 U	0.0066 U	0.0062 U	0.0063 U	0.013 U	0.012 U	0.36 U	0.0062 U	0.0062 U	0.0066 U	0.0074 U	0.0066 U	0.0062 U
4-Nitroaniline	mg/Kg			0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.028 U	0.027 U	0.79 U *	0.014 U *	0.014 U *	0.014 U *	0.016 U *	0.014 U *	0.014 U *
4-Nitrophenol	mg/Kg			0.058 U	0.059 U	0.063 U	0.063 U	0.061 U	0.061 U	0.063 U	0.059 U	0.060 U	0.12 U	0.12 U	3.4 U	0.060 U	0.059 U	0.063 U	0.071 U	0.063 U	0.059 U
Acenaphthene	mg/Kg	20	100	0.026 U	0.027 U	0.028 U	0.028 U	0.027 U	0.027 U	**0.045 J**	0.027 U	0.027 U	**0.92**	**0.51 J**	**9.6 J**	0.027 U	0.027 U	0.028 U	0.031 U	**0.90**	0.026 U
Acenaphthylene	mg/Kg	100	100	0.0037 U	0.0038 U	0.0040 U	0.0040 U	0.0038 U	0.0039 U	**0.074 J**	0.0038 U	0.0038 U	**0.39 J**	**0.20 J**	**1.6 J**	0.0038 U	0.0038 U	0.0040 U	0.0045 U	**0.24 J**	0.0038 U
Acetophenone	mg/Kg			0.0057 U	0.0059 U	0.0062 U	0.0062 U	0.0060 U	0.0061 U	0.0062 U	0.0059 U	0.0060 U	0.012 U	**0.13 J**	0.34 U	0.0059 U	0.0059 U	0.0062 U	0.0070 U	0.0063 U	0.0059 U
Anthracene	mg/Kg	100	100	0.0040 U	0.0041 U	**0.49**	**0.14 J**	**0.39**	0.0042 U	**0.11 J**	0.0041 U	0.0041 U	**0.46 J**	**0.21 J**	**21**	0.0041 U	0.0041 U	0.0043 U	0.0048 U	**0.83**	0.0041 U
Atrazine	mg/Kg			0.0090 U *	0.0092 U *	0.0097 U *	0.0097 U *	0.0094 U *	0.0095 U *	0.0097 U *	0.0092 U *	0.0093 U *	0.019 U *	0.018 U *	0.53 U	0.0092 U	0.0092 U	0.0097 U	0.011 U	0.0098 U	0.0092 U
Benzaldehyde	mg/Kg			0.015 U	0.016 U	0.017 U	0.017 U	0.016 U	0.016 U	0.017 U	0.016 U	0.016 U	0.033 U *	0.031 U *	0.92 U	0.016 U	0.016 U	0.017 U	0.019 U	0.017 U	0.016 U
Benzo[a]anthracene	mg/Kg	1	1	0.012 U	0.013 U	0.013 U	0.013 U	**0.020 J**	0.013 U	**0.53**	0.013 U	0.013 U	**0.042 J**	0.025 U	**58**	0.013 U	0.013 U	0.013 U	0.015 U	**2.0**	0.013 U
Benzo[a]pyrene	mg/Kg	1	1	0.0095 U	0.0097 U	0.010 U	0.010 U	0.0099 U	**0.061**	**0.51**	0.0097 U	0.0098 U	0.020 U	0.019 U	**49**	0.0097 U	0.0097 U	0.010 U	0.012 U	**1.9**	0.0097 U
Benzo[b]fluoranthene	mg/Kg	1	1	0.0092 U	0.0094 U	**0.015 J**	0.0099 U	0.0096 U	**0.089**	**0.80**	0.0094 U	0.0096 U	0.019 U	0.019 U	**72**	0.0095 U	0.0094 U	0.010 U	0.011 U	**2.8**	0.0094 U
Benzo[g,h,i]perylene	mg/Kg	100	100	0.010 U	0.011 U	0.011 U	0.011 U	0.011 U	**0.048 J**	**0.42**	0.011 U	0.011 U	0.022 U	0.021 U	**30**	0.011 U	0.011 U	0.011 U	0.013 U	**1.3**	0.011 U
Benzo[k]fluoranthene	mg/Kg	0.8	3.9	0.0070 U	0.0071 U	0.0075 U	0.0075 U	0.0073 U	**0.038**	**0.28**	0.0071 U	0.0072 U	0.015 U	0.014 U	**24**	0.0072 U	0.0072 U	0.0076 U	0.0085 U	**1.0**	0.0071 U
Bis(2-chloroethoxy)methane	mg/Kg			0.012 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.026 U	0.025 U	0.73 U	0.013 U	0.013 U	0.013 U	0.015 U	0.013 U	0.012 U
Bis(2-chloroethyl)ether	mg/Kg			0.0043 U	0.0044 U	0.0047 U	0.0046 U	0.0045 U	0.0045 U	0.0047 U	0.0044 U	0.0045 U	0.0090 U	0.0087 U	0.26 U	0.0044 U	0.0044 U	0.0047 U	0.0052 U	0.0047 U	0.0044 U
Bis(2-ethylhexyl) phthalate	mg/Kg			0.019 U	0.019 U	0.020 U	0.020 U	0.020 U	**0.064 J**	**0.89**	0.019 U	**0.061 J**	**0.16 J**	0.038 U	1.1 U	0.019 U	0.019 U	**0.028 J**	**0.024 J**	0.021 U	0.019 U
Butyl benzyl phthalate	mg/Kg			0.017 U	0.017 U	0.018 U	0.018 U	0.017 U	0.018 U	0.018 U	0.017 U	0.017 U	0.035 U	0.034 U	0.99 U	0.017 U	0.017 U	0.018 U	0.020 U	0.018 U	0.017 U
Caprolactam	mg/Kg			0.021 U	0.022 U	0.023 U	0.023 U	0.022 U	0.023 U	0.023 U	0.022 U	0.022 U	0.045 U	0.043 U	1.3 U	0.022 U	0.022 U	0.023 U	0.026 U	0.023 U	0.022 U
Carbazole	mg/Kg			0.0042 U	0.0043 U	0.0045 U	0.0045 U	0.0044 U	0.0044 U	**0.089 J**	0.0043 U	0.0043 U	**0.11 J**	0.0084 U	**15 J**	0.0043 U	0.0043 U	0.0045 U	0.0051 U	**0.56**	0.0043 U
Chrysene	mg/Kg	1	3.9	0.0060 U	0.0062 U	**0.036 J**	0.0065 U	**0.012 J**	**0.065 J**	**0.70**	0.0062 U	0.0062 U	**0.21 J**	0.012 U	**57**	0.0062 U	0.0062 U	0.0065 U	0.0073 U	**1.9**	0.0061 U
Dibenz(a,h)anthracene	mg/Kg	0.33	0.33	0.015 U	0.016 U	0.017 U	0.017 U	0.016 U	0.016 U	**0.13**	0.016 U	0.016 U	0.032 U	0.031 U	**8.0**	0.016 U	0.016 U	0.017 U	0.019 U	**0.28**	0.016 U
Dibenzofuran	mg/Kg	7	59	0.0050 U	0.0051 U	0.0054 U	0.0054 U	0.0052 U	0.0053 U	**0.032 J**	0.0051 U	0.0052 U	**0.68 J**	**0.39 J**	**9.4 J**	0.0051 U	0.0051 U	0.0054 U	0.0061 U	**0.62**	0.0051 U
Diethyl phthalate	mg/Kg			0.0051 U	0.0053 U	0.0056 U	0.0056 U	0.0054 U	0.0055 U	0.0056 U	0.0053 U	0.0054 U	0.011 U	0.010 U	0.31 U	0.0053 U	0.0053 U	0.0056 U	0.0063 U	0.0056 U	0.0053 U
Dimethyl phthalate	mg/Kg			0.0043 U	0.0044 U	0.0046 U	0.0046 U	0.0045 U	0.0045 U	0.0047 U	0.0044 U	0.0045 U	0.0090 U	0.0087 U	0.26 U	0.0044 U	0.0044 U	0.0046 U	0.0052 U	0.0047 U	0.0044 U
Di-n-butyl phthalate	mg/Kg			0.063 U	0.064 U	0.068 U	0.068 U	0.066 U	0.066 U	0.068 U	0.064 U	0.065 U	0.13 U	0.13 U	3.7 U	0.065 U	0.064 U	0.068 U	0.076 U	0.068 U	0.064 U
Di-n-octyl phthalate	mg/Kg			0.019 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.019 U	0.020 U	0.040 U	0.038 U	1.1 U	0.019 U	0.019 U	0.020 U	0.023 U	0.021 U	0.019 U
Fluoranthene	mg/Kg	100	100	0.0046 U	0.0047 U	**0.15 J**	**0.033 J**	**0.093 J**	**0.11 J**	**1.3**	0.0047 U	0.0048 U	**0.11 J**	0.0094 U	**130**	0.0048 U	0.0047 U	0.0050 U	0.0056 U	**4.9**	0.0047 U
Fluorene	mg/Kg	30	100	0.0048 U	0.0049 U	**2.4**	**0.37 J**	**1.2**	0.0051 U	**0.071 J**	0.0049 U	0.0050 U	**2.1**	**0.83**	**12 J**	0.0050 U	0.0049 U	0.0052 U	0.0059 U	**1.3**	0.0049 U
Hexachlorobenzene	mg/Kg	0.33	1.2	0.0052 U	0.0053 U	0.0056 U	0.0056 U	0.0055 U	0.0055 U	0.0056 U	0.0053 U	0.0054 U	0.011 U	0.011 U	0.31 U	0.0054 U	0.0053 U	0.0056 U	0.0063 U	0.0057 U	0.0053 U
Hexachlorobutadiene	mg/Kg			0.0076 U	0.0078 U	0.0082 U	0.0082 U	0.0079 U	0.0080 U	0.0082 U	0.0078 U	0.0079 U	0.016 U	0.015 U	0.45 U	0.0078 U	0.0078 U	0.0082 U	0.0092 U	0.0083 U	0.0077 U
Hexachlorocyclopentadiene	mg/Kg			0.031 U	0.032 U	0.034 U	0.034 U	0.033 U	0.033 U	0.034 U	0.032 U	0.032 U	0.066 U	0.063 U	1.9 U	0.032 U	0.032 U	0.034 U	0.038 U	0.034 U	0.032 U
Hexachloroethane	mg/Kg			0.0055 U	0.0056 U	0.0059 U	0.0059 U	0.0057 U	0.0058 U	0.0059 U	0.0056 U	0.0057 U	0.012 U	0.011 U	0.33 U	0.0056 U	0.0056 U	0.0059 U	0.0067 U	0.0060 U	0.0056 U
Indeno[1,2,3-cd]pyrene	mg/Kg	0.5	0.5	0.014 U	0.014 U	0.015 U	0.015 U	0.015 U	**0.050**	**0.42**	0.014 U	0.014 U	0.029 U	0.028 U	**41**	0.014 U	0.014 U	0.015 U	0.017 U	**1.6**	0.014 U
Isophorone	mg/Kg			0.0093 U	0.0096 U	0.010 U	0.010 U	0.0098 U	0.0099 U	0.010 U	0.0096 U	0.0097 U	0.020 U	0.019 U	0.56 U	0.0096 U	0.0096 U	0.010 U	0.011 U	0.010 U	0.0096 U
Naphthalene	mg/Kg	12	100	0.0061 U	0.0063 U	0.0067 U	0.0066 U	0.0064 U	0.0065 U	**0.22 J**	0.0063 U	0.0064 U	**0.76**	**1.1**	**11 J**	0.0063 U	0.0063 U	0.0067 U	0.0075 U	**0.41**	0.0063 U
Nitrobenzene	mg/Kg			0.0085 U	0.0087 U	0.0092 U	0.0092 U	0.0089 U	0.0090 U	0.0093 U	0.0088 U	0.0089 U	0.018 U	0.017 U	0.51 U	0.0088 U	0.0088 U	0.0092 U	0.010 U	0.0093 U	0.0087 U
N-Nitrosodi-n-propylamine	mg/Kg			0.0057 U	0.0058 U	0.0061 U	0.0061 U	0.0059 U	0.0060 U	0.0061 U	0.0058 U	0.0059 U	0.012 U	0.011 U	0.34 U	0.0058 U	0.0058 U	0.0061 U	0.0069 U	0.0062 U	0.0058 U
N-Nitrosodiphenylamine	mg/Kg			0.0068 U	0.0070 U	0.0074 U	0.0074 U	0.0071 U	0.0072 U	0.0074 U	0.0070 U	0.0071 U	**2.8**	**1.3**	0.40 U	0.0070 U	0.0070 U	0.0074 U	0.0083 U	0.0074 U	0.0070 U
Pentachlorophenol	mg/Kg	0.8	6.7	0.073 U	0.075 U	0.079 U	0.079 U	0.076 U	0.077 U	0.079 U	0.075 U	0.076 U	0.15 U	0.15 U	4.3 U	0.075 U	0.075 U	0.079 U	0.089 U	0.080 U	0.074 U
Phenanthrene	mg/Kg	100	100	0.0062 U	0.0064 U	**7.4**	**0.97**	**3.2**	**0.043 J**	**0.84**	0.0064 U	0.0065 U	**5.3**	**2.6**	**130**	0.0064 U	0.0064 U	0.0068 U	0.0076 U	**6.3**	0.0064 U
Phenol	mg/Kg	0.33	100	0.0053 U	0.0054 U	0.0057 U	0.0057 U	0.0055 U	0.0056 U	0.0057 U	0.0054 U	0.0055 U	0.011 U	0.011 U	0.31 U	0.0054 U	0.0054 U	0.0057 U	0.0064 U	0.0058 U	0.0054 U
Pyrene	mg/Kg	100	100	0.0088 U	0.0091 U	**0.47**	**0.089 J**	**0.25 J**	**0.11 J**	**1.3**	0.0091 U	0.0092 U	**0.75**	**0.41 J**	**99**	0.0091 U	0.0091 U	0.0096 U	0.011 U	**3.8**	0.0090 U

Notes:
Bold cells are detections above the MDL
Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an

U : Indicates the analyte was analyzed for but not detected.

Table 1B
Summary of Soil Sampling Results
Semi-Volatile Organic Compounds (8270)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175638-7 SESI-SB-26(12') 2/18/2019 10:15 AM	460-175667-4 SESI-SB-26(15-17') 2/19/2019 8:30 AM	460-175638-8 SESI-SB-27(4') 2/18/2019 7:45 AM	460-175638-9 SESI-SB-27(7') 2/18/2019 8:00 AM	460-175638-10 SESI-SB-27(11') 2/18/2019 8:15 AM	460-175247-4 SESI-SB-28 (6') 2/13/2019 11:00 AM	460-175247-5 SESI-SB-28 (10') 2/13/2019 11:05 AM	460-175247-6 SESI-SB-28 (15') 2/13/2019 11:10 AM	460-175247-7 SESI-SB-29 (9') 2/13/2019 9:40 AM	460-175247-8 SESI-SB-29 (12') 2/13/2019 9:45 AM	460-175247-9 SESI-SB-29 (14') 2/13/2019 9:50 AM	460-175247-10 SESI-SB-30 (10') 2/13/2019 9:10 AM	460-175247-11 SESI-SB-30 (12') 2/13/2019 9:15 AM	460-175247-12 SESI-SB-30 (14') 2/13/2019 9:20 AM	460-175247-13 SESI-SB-31 (9') 2/13/2019 8:30 AM	460-175247-14 SESI-SB-31 (11') 2/13/2019 8:35 AM	460-175247-15 SESI-SB-31 (14') 2/13/2019 8:40 AM	460-175449-9 SESI-SB-32(4') 2/15/2019 9:50 AM
SOIL BY 8270D (MG/KG)																					
1,1'-Biphenyl	mg/Kg			0.0047 U	0.0052 U	0.0048 U	0.024 U	0.0099 U	0.0049 U	0.0050 U	0.0054 U	**0.18 J**	**0.23 J**	0.0050 U	**0.50**	0.0050 U	0.0049 U	**0.77**	0.0047 U	**0.25 J**	0.026 U
1,2,4,5-Tetrachlorobenzene	mg/Kg			0.0046 U	0.0051 U	0.0047 U	0.024 U	0.0098 U	0.0048 U	0.0049 U	0.0053 U	0.0045 U	0.0051 U	0.0050 U	0.0048 U	0.0049 U	0.0048 U	0.0047 U	0.0046 U	0.0049 U	0.026 U
2,2'-oxybis[1-chloropropane]	mg/Kg			0.0064 U	0.0071 U	0.0065 U	0.033 U	0.013 U	0.0066 U	0.0068 U	0.0074 U	0.0062 U	0.0070 U	0.0069 U	0.0067 U	0.0068 U	0.0067 U	0.0065 U	0.0064 U	0.0067 U	0.036 U
2,3,4,6-Tetrachlorophenol	mg/Kg			0.024 U	0.027 U	0.024 U	0.12 U	0.050 U	0.025 U	0.025 U	0.028 U	0.023 U	0.026 U	0.026 U	0.025 U	0.025 U	0.025 U	0.024 U	0.024 U	0.025 U F1	0.13 U
2,4,5-Trichlorophenol	mg/Kg			0.012 U	0.013 U	0.012 U	0.060 U	0.025 U	0.012 U	0.012 U	0.013 U	0.011 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.065 U
2,4,6-Trichlorophenol	mg/Kg			0.018 U	0.020 U	0.018 U	0.092 U	0.038 U	0.018 U	0.019 U	0.021 U	0.017 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.018 U	0.019 U	0.099 U
2,4-Dichlorophenol	mg/Kg			0.0075 U	0.0083 U	0.0076 U	0.039 U	0.016 U	0.0077 U	0.0079 U	0.0086 U	0.0073 U	0.0082 U	0.0080 U	0.0078 U	0.0079 U	0.0078 U	0.0076 U	0.0075 U	0.0079 U	0.042 U
2,4-Dimethylphenol	mg/Kg			0.016 U	0.017 U	0.016 U	0.080 U	0.033 U	0.016 U	0.016 U	0.018 U	0.015 U	0.017 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U F1	0.087 U
2,4-Dinitrophenol	mg/Kg			0.17 U	0.19 U	0.18 U	0.90 U	**0.39 J**	0.18 U	0.18 U	0.20 U	0.17 U	0.19 U	0.19 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.18 U F1	0.97 U
2,4-Dinitrotoluene	mg/Kg			0.018 U	0.020 U	0.018 U	0.092 U	0.038 U	0.019 U	0.019 U	0.021 U	0.017 U	0.020 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.018 U	0.019 U	0.10 U
2,6-Dinitrotoluene	mg/Kg			0.011 U	0.013 U	0.012 U	0.059 U	0.024 U	0.012 U	0.012 U	0.013 U	0.011 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.064 U
2-Chloronaphthalene	mg/Kg			0.016 U	0.018 U	0.017 U	0.084 U	0.034 U	0.017 U	0.017 U	0.019 U	0.016 U	0.018 U	0.018 U	0.017 U	0.017 U	0.017 U	0.017 U	0.016 U	0.017 U F1	0.091 U
2-Chlorophenol	mg/Kg			0.0050 U	0.0055 U	0.0051 U	0.026 U	0.010 U	0.0051 U	0.0052 U	0.0057 U	0.0048 U	0.0054 U	0.0053 U	0.0052 U	0.0052 U	0.0052 U	0.0050 U	0.0050 U	0.0052 U F1	0.028 U
2-Methylnaphthalene	mg/Kg			**0.067 J**	0.0049 U	**2.4**	**32**	**11**	0.0046 U	0.0047 U	0.0051 U	**2.8**	**2.8**	**0.014 J**	**1.6**	0.0047 U	0.0046 U	**1.6**	0.0044 U	**0.64**	**19**
2-Methylphenol	mg/Kg	0.33	100	0.0057 U	0.0063 U	0.0058 U	0.029 U	0.012 U	0.0059 U	0.0060 U	0.0066 U	0.0056 U	0.0062 U	0.0061 U	0.0059 U	0.0060 U	0.0059 U	0.0058 U	0.0057 U	0.0060 U F1	0.032 U
2-Nitroaniline	mg/Kg			0.013 U	0.015 U	0.014 U	0.068 U	0.028 U	0.014 U	0.014 U	0.015 U	0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U	0.074 U
2-Nitrophenol	mg/Kg			0.011 U	0.013 U	0.012 U	0.059 U	0.024 U	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U F1	0.063 U
3,3'-Dichlorobenzidine	mg/Kg			0.054 U *	0.059 U *	0.055 U *	0.28 U *	0.11 U *	0.055 U	0.056 U	0.062 U	0.052 U	0.058 U	0.057 U	0.056 U	0.057 U	0.056 U	0.054 U	0.054 U	0.056 U	0.30 U
3-Nitroaniline	mg/Kg			0.019 U *	0.021 U *	0.020 U *	**0.68 J ***	0.040 U *	0.020 U	0.020 U	0.022 U	0.019 U	0.021 U	0.021 U	0.020 U	0.020 U	0.020 U	0.019 U	0.019 U	0.020 U	0.11 U
4,6-Dinitro-2-methylphenol	mg/Kg			0.058 U	0.064 U	0.059 U	0.30 U	0.12 U	0.060 U	0.061 U	0.066 U	0.056 U	0.063 U	0.062 U	0.060 U	0.061 U	0.060 U	0.058 U	0.058 U	0.060 U F1	0.32 U
4-Bromophenyl phenyl ether	mg/Kg			0.0046 U	0.0051 U	0.0047 U	0.024 U	0.0096 U	0.0047 U	0.0048 U	0.0053 U	0.0045 U	0.0050 U	0.0049 U	0.0048 U	0.0048 U	0.0048 U	0.0046 U	0.0046 U	0.0048 U	0.025 U
4-Chloro-3-methylphenol	mg/Kg			0.0059 U	0.0065 U	0.0060 U	0.030 U	**0.068 J**	0.0061 U	0.0062 U	0.0068 U	0.0057 U	0.0064 U	0.0063 U	0.0061 U	0.0062 U	0.0061 U	0.0060 U	0.0059 U	0.0062 U	0.033 U
4-Chloroaniline	mg/Kg			0.025 U *	0.027 U *	0.025 U *	0.13 U *	0.052 U *	0.026 U	0.026 U	0.028 U	0.024 U	0.027 U	0.027 U	0.026 U	0.026 U	0.026 U	0.025 U	0.025 U	0.026 U	0.14 U
4-Chlorophenyl phenyl ether	mg/Kg			0.0056 U	0.0062 U	0.0057 U	0.029 U	0.012 U	0.0058 U	0.0059 U	0.0064 U	0.0054 U	0.0061 U	0.0060 U	0.0058 U	0.0059 U	0.0058 U	0.0057 U	0.0056 U	0.0059 U F1	0.031 U
4-Methylphenol	mg/Kg	0.33	100	0.0060 U	0.0067 U	0.0062 U	0.031 U	0.013 U	0.0062 U	0.0064 U	0.0069 U	0.0059 U	0.0066 U	0.0065 U	0.0063 U	0.0064 U	0.0063 U	0.0061 U	0.0061 U	0.0063 U F1	0.034 U
4-Nitroaniline	mg/Kg			0.013 U *	0.015 U *	0.013 U *	0.068 U *	0.028 U *	0.014 U	0.014 U	0.015 U	0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U	0.073 U
4-Nitrophenol	mg/Kg			0.058 U	0.064 U	0.059 U	0.30 U	0.12 U	0.060 U	0.061 U	0.066 U	0.056 U	0.063 U	0.062 U	0.060 U	0.061 U	0.060 U	0.058 U	0.058 U	0.061 U	0.32 U
Acenaphthene	mg/Kg	20	100	0.026 U	0.029 U	**0.72**	**2.3**	**1.1**	0.027 U	0.027 U	0.030 U	**0.15 J**	**0.19 J**	0.028 U	0.027 U	0.027 U	0.027 U	**0.38**	0.026 U	0.027 U F1	0.14 U
Acenaphthylene	mg/Kg	100	100	0.0037 U	0.0041 U	0.0037 U	**0.92 J**	0.0077 U	0.0038 U	0.0039 U	0.0042 U	**0.076 J**	0.0040 U	0.0039 U	0.0038 U	0.0039 U	0.0038 U	0.0037 U	0.0037 U	0.0038 U F1	0.020 U
Acetophenone	mg/Kg			0.0057 U	0.0063 U	0.0058 U	0.029 U	0.012 U	0.0059 U	0.0060 U	0.0066 U	0.0056 U	0.0062 U	0.0061 U	0.0059 U	0.0060 U	0.0059 U	0.0058 U	0.0057 U	0.0060 U	0.032 U
Anthracene	mg/Kg	100	100	0.0040 U	0.0044 U	**0.43**	**1.0 J**	**0.49 J**	0.0041 U	0.0042 U	0.0046 U	**0.12 J**	**0.17 J**	0.0042 U	**0.043 J**	0.0042 U	0.0041 U	**0.048 J**	0.0040 U	0.0042 U F1	**0.80 J**
Atrazine	mg/Kg			**0.067 J**	0.0099 U	0.0091 U	0.046 U	0.019 U	0.0092 U *	0.0094 U *	0.010 U *	0.0087 U *	0.0097 U *	0.0096 U *	0.0093 U *	0.0094 U *	0.0093 U *	0.0090 U *	0.0090 U *	0.0094 U F1 *	0.050 U *
Benzaldehyde	mg/Kg			0.015 U	0.017 U	0.016 U	0.080 U	0.032 U	0.016 U	0.016 U	0.018 U	0.015 U	0.017 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.015 U	0.016 U F1	0.086 U
Benzo[a]anthracene	mg/Kg	1	1	0.012 U	0.014 U	0.013 U	0.064 U	0.026 U	**0.013 J**	0.013 U	**0.024 J**	0.012 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.012 U	0.013 U F1	0.069 U
Benzo[a]pyrene	mg/Kg	1	1	0.0095 U	0.010 U	0.0096 U	0.049 U	0.020 U	0.0098 U	0.0099 U	**0.013 J**	0.0092 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.0098 U	0.0096 U	0.0095 U	0.0099 U F1	0.052 U
Benzo[b]fluoranthene	mg/Kg	1	1	0.0092 U	0.010 U	0.0093 U	0.047 U	0.019 U	**0.015 J**	0.0097 U	**0.022 J**	0.0089 U	0.010 U	0.0098 U	0.0095 U	0.0097 U	0.0095 U	0.0093 U	**0.011 J**	0.0096 U F1	0.051 U
Benzo[g,h,i]perylene	mg/Kg	100	100	0.010 U	0.012 U	0.011 U	0.054 U	0.022 U	0.011 U	0.011 U	0.012 U	0.010 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.011 U	0.058 U
Benzo[k]fluoranthene	mg/Kg	0.8	3.9	0.0070 U	0.0077 U	0.0071 U	0.036 U	0.015 U	0.0072 U	0.0073 U	0.0080 U	0.0068 U	0.0076 U	0.0074 U	0.0072 U	0.0073 U	0.0072 U	0.0070 U	0.0070 U	0.0073 U F1	0.039 U
Bis(2-chloroethoxy)methane	mg/Kg			0.012 U	0.013 U	0.012 U	0.063 U	0.026 U	0.013 U	0.013 U	0.014 U	0.012 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.012 U	0.012 U	0.013 U F1	0.068 U
Bis(2-chloroethyl)ether	mg/Kg			0.0043 U	0.0047 U	0.0044 U	0.022 U	0.0090 U	0.0044 U	0.0045 U	0.0049 U	0.0042 U	0.0047 U	0.0046 U	0.0044 U	0.0045 U	0.0045 U	0.0043 U	0.0043 U	0.0045 U F1	0.024 U
Bis(2-ethylhexyl) phthalate	mg/Kg			0.019 U	0.021 U	0.019 U	0.097 U	0.039 U	0.019 U	0.020 U	**0.065 J**	0.018 U	0.020 U	**0.030 J**	**0.035 J**	0.020 U	0.019 U	**0.039 J**	0.019 U	**0.094 J F1**	0.10 U
Butyl benzyl phthalate	mg/Kg			0.017 U	0.018 U	0.017 U	0.086 U	0.035 U	0.017 U	0.017 U	**0.38 J**	0.016 U	0.018 U	0.018 U	0.017 U	0.018 U	0.017 U	0.017 U	0.017 U	0.017 U	0.092 U
Caprolactam	mg/Kg			0.021 U	0.023 U	0.022 U	0.11 U	0.045 U	0.022 U	0.022 U	0.024 U	0.021 U	0.023 U	0.023 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U	0.022 U F1 F2	0.12 U
Carbazole	mg/Kg			0.0042 U	0.0046 U	0.0042 U	0.021 U	0.0087 U	0.0043 U	0.0044 U	0.0048 U	0.0040 U	**0.081 J**	0.0044 U	0.0043 U	0.0044 U	0.0043 U	0.0042 U	0.0042 U	0.0043 U	0.023 U
Chrysene	mg/Kg	1	3.9	0.0060 U	0.0066 U	0.0061 U	0.031 U	0.013 U	**0.014 J**	0.0063 U	**0.018 J**	0.0058 U	0.0065 U	0.0064 U	0.0062 U	0.0063 U	0.0062 U	0.0061 U	0.0060 U	0.0063 U F1	0.033 U
Dibenz(a,h)anthracene	mg/Kg	0.33	0.33	0.015 U	0.017 U	0.016 U	0.079 U	0.032 U	0.016 U	0.016 U	0.018 U	0.015 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.015 U	0.016 U	0.085 U
Dibenzofuran	mg/Kg	7	59	0.0050 U	0.0055 U	**0.86**	**2.5**	**1.1**	0.0051 U	0.0052 U	0.0057 U	**0.18 J**	**0.23 J**	0.0053 U	0.0052 U	0.0053 U	0.0052 U	0.0050 U	0.0050 U	0.0052 U F1	0.028 U
Diethyl phthalate	mg/Kg			0.0051 U	0.0057 U	0.0052 U	0.026 U	0.011 U	0.0053 U	0.0054 U	0.0059 U	0.0050 U	0.0056 U	0.0055 U	0.0053 U	0.0054 U	0.0053 U	0.0052 U	0.0051 U	0.0054 U	0.029 U
Dimethyl phthalate	mg/Kg			0.0043 U	0.0047 U	0.0044 U	0.022 U	0.0090 U	0.0044 U	0.0045 U	0.0049 U	0.0042 U	0.0047 U	0.0046 U	0.0044 U	0.0045 U	0.0044 U	0.0043 U	0.0043 U	0.0045 U F1	0.024 U
Di-n-butyl phthalate	mg/Kg			0.063 U	0.069 U	0.064 U	0.32 U	0.13 U	0.065 U	0.066 U	0.072 U	0.061 U	0.068 U	0.067 U	0.065 U	0.066 U	0.065 U	0.063 U	0.063 U	0.066 U F1	0.35 U
Di-n-octyl phthalate	mg/Kg			0.019 U	0.021 U	0.019 U	0.097 U	0.039 U	0.019 U	0.020 U	0.022 U	0.018 U	0.020 U	0.020 U	0.019 U	0.020 U	0.020 U	0.019 U	0.019 U	0.020 U	0.10 U
Fluoranthene	mg/Kg	100	100	0.0046 U	0.0051 U	**0.075 J**	**0.29 J**	0.0097 U	**0.026 J**	0.0048 U	**0.030 J**	**0.015 J**	**0.021 J**	0.0049 U	0.0048 U	0.0049 U	0.0048 U	0.0047 U	0.0046 U	0.0048 U F1	**0.25 J**
Fluorene	mg/Kg	30	100	0.0048 U	0.0053 U	**2.0**	**5.8**	**2.7**	0.0050 U	0.0051 U	0.0055 U	**0.50**	**0.64**	**0.0085 J**	**0.15 J**	0.0051 U	0.0050 U	0.0049 U	0.0048 U	**0.088 J**	**3.3**
Hexachlorobenzene	mg/Kg	0.33	1.2	0.0052 U	0.0057 U	0.0053 U	0.027 U	0.011 U	0.0054 U	0.0055 U	0.0060 U	0.0051 U	0.0057 U	0.0056 U	0.0054 U	0.0055 U	0.0054 U	0.0053 U	0.0052 U	0.0054 U	0.029 U
Hexachlorobutadiene	mg/Kg			0.0075 U	0.0083 U	0.0077 U	0.039 U	0.016 U	0.0078 U	0.0079 U	0.0087 U	0.0073 U	0.0082 U	0.0081 U	0.0078 U	0.0080 U	0.0078 U	0.0076 U	0.0076 U	0.0079 U F1	0.042 U
Hexachlorocyclopentadiene	mg/Kg			0.031 U	0.034 U	0.032 U	0.16 U	0.065 U	0.032 U	0.033 U	0.036 U	0.030 U	0.034 U	0.033 U	0.032 U	0.033 U	0.032 U	0.031 U	0.031 U	0.033 U F1	0.17 U
Hexachloroethane	mg/Kg			0.0055 U	0.0060 U	0.0056 U	0.028 U	0.011 U	0.0057 U	0.0058 U	0.0063 U	0.0053 U	0.0060 U	0.0059 U	0.0057 U	0.0058 U	0.0057 U	0.0055 U	0.0055 U	0.0057 U F1	0.030 U
Indeno[1,2,3-cd]pyrene	mg/Kg	0.5	0.5	0.014 U	0.015 U	0.014 U	0.071 U	0.029 U	0.014 U	0.015 U	0.016 U	0.013 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.015 U	0.077 U
Isophorone	mg/Kg			0.0093 U	0.010 U	0.0095 U	0.048 U	0.020 U	0.0096 U	0.0098 U	0.011 U	0.0091 U	0.010 U	0.010 U	0.0097 U	0.0098 U	0.0097 U	0.0094 U	0.0093 U	0.0098 U F1	0.052 U
Naphthalene	mg/Kg	12	100	0.0061 U	0.0068 U	0.0062 U	0.032 U	0.013 U	0.0063 U	0.0064 U	0.0070 U	**0.13 J**	**0.10 J**	0.0066 U	**0.70**	0.0065 U	0.0064 U	**0.57**	0.0061 U	**0.19 J**	0.034 U
Nitrobenzene	mg/Kg			0.0085 U	0.0094 U	0.0087 U	0.044 U	0.018 U	0.0088 U	0.0090 U	0.0098 U	0.0083 U	0.0093 U	0.0091 U	0.0088 U	0.0090 U	0.0088 U	0.0086 U	0.0085 U	0.0089 U F1	0.047 U
N-Nitrosodi-n-propylamine	mg/Kg			0.0056 U	0.0062 U	0.0058 U	0.029 U	0.012 U	0.0058 U	0.0059 U	0.0065 U	0.0055 U	0.0062 U	0.0060 U	0.0059 U	0.0060 U	0.0059 U	0.0057 U	0.0057 U	0.0059 U F1	0.031 U
N-Nitrosodiphenylamine	mg/Kg			0.0068 U	0.0075 U	0.0069 U	0.035 U	0.014 U	0.0070 U	0.0071 U	0.0078 U	0.0066 U	0.0074 U	0.0073 U	0.0070 U	0.0072 U	0.0070 U	0.0069 U	0.0068 U	0.0071 U	0.038 U
Pentachlorophenol	mg/Kg	0.8	6.7	0.073 U	0.080 U	0.074 U	0.37 U	0.15 U	0.075 U	0.076 U	0.083 U	0.071 U	0.079 U	0.078 U	0.075 U	0.077 U	0.075 U	0.073 U	0.073 U	0.076 U	0.40 U
Phenanthrene	mg/Kg	100	100	0.0062 U	0.0069 U	**6.7**	**16**	**6.4**	**0.028 J**	0.0066 U	**0.029 J**	**1.5**	**2.1**	**0.046 J**	**0.19 J**	0.0066 U	0.0065 U	**0.36**	0.0062 U	**0.11 J F1**	**7.5**
Phenol	mg/Kg	0.33	100	0.0053 U	0.0058 U	0.0054 U	0.027 U	0.011 U	0.0054 U	0.0055 U	0.0060 U	0.0051 U	0.0057 U	0.0056 U	0.0054 U	0.0055 U	0.0055 U	0.0053 U	0.0053 U	0.0055 U	0.029 U
Pyrene	mg/Kg	100	100	0.0088 U	0.0097 U	**0.35 J**	**0.84 J**	**0.36 J**	**0.025 J**	0.0093 U	**0.034 J**	**0.030 J**	**0.039 J**	0.0094 U	**0.34 J**	0.0093 U	0.0092 U	**0.60**	0.0088 U	**0.18 J**	**0.76 J**

Notes:
Bold cells are detections above the MDL
Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an

U : Indicates the analyte was analyzed for but not detected.

Table 1B
Summary of Soil Sampling Results
Semi-Volatile Organic Compounds (8270)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175449-10 SESI-SB-32(7') 2/15/2019 9:55 AM	460-175638-11 SESI-SB-33(4') 2/18/2019 9:00 AM	460-175638-12 SESI-SB-33(6') 2/18/2019 9:05 AM	460-175638-13 SESI-SB-34(2') 2/18/2019 12:15 PM	460-175638-14 SESI-SB-34(6') 2/18/2019 12:20 PM
SOIL BY 8270D (MG/KG)								
1,1'-Biphenyl	mg/Kg			0.0051 U	0.0048 U	0.024 U	0.0047 U	0.0048 U
1,2,4,5-Tetrachlorobenzene	mg/Kg			0.0050 U	0.0047 U	0.024 U	0.0046 U	0.0048 U
2,2'-oxybis[1-chloropropane]	mg/Kg			0.0069 U	0.0065 U	0.033 U	0.0063 U	0.0066 U
2,3,4,6-Tetrachlorophenol	mg/Kg			0.026 U	0.024 U	0.12 U	0.024 U	0.025 U
2,4,5-Trichlorophenol	mg/Kg			0.013 U	0.012 U	0.061 U	0.012 U	0.012 U
2,4,6-Trichlorophenol	mg/Kg			0.019 U	0.018 U	0.093 U	0.018 U	0.018 U
2,4-Dichlorophenol	mg/Kg			0.0081 U	0.0076 U	0.039 U	0.0074 U	0.0077 U
2,4-Dimethylphenol	mg/Kg			0.017 U	0.016 U	0.081 U	0.015 U	0.016 U
2,4-Dinitrophenol	mg/Kg			0.19 U	0.18 U	0.90 U	0.17 U	0.18 U
2,4-Dinitrotoluene	mg/Kg			0.019 U	0.018 U F1	0.093 U	0.018 U	0.018 U
2,6-Dinitrotoluene	mg/Kg			0.012 U	0.012 U F1	0.060 U	0.011 U	0.012 U
2-Chloronaphthalene	mg/Kg			0.018 U	0.017 U	0.085 U	0.016 U	0.017 U
2-Chlorophenol	mg/Kg			0.0054 U	0.0050 U	0.026 U	0.0049 U	0.0051 U
2-Methylnaphthalene	mg/Kg			**4.8**	**1.5 F1**	**18**	**0.078 J**	**0.033 J**
2-Methylphenol	mg/Kg	0.33	100	0.0062 U	0.0058 U	0.030 U	0.0057 U	0.0059 U
2-Nitroaniline	mg/Kg			0.014 U	0.013 U F1	0.069 U	0.013 U	0.014 U
2-Nitrophenol	mg/Kg			0.012 U	0.012 U	0.059 U	0.011 U	0.012 U
3,3'-Dichlorobenzidine	mg/Kg			0.058 U	0.054 U *	0.28 U *	0.053 U *	0.055 U *
3-Nitroaniline	mg/Kg			0.021 U	0.019 U *	0.10 U *	0.019 U *	0.020 U *
4,6-Dinitro-2-methylphenol	mg/Kg			0.062 U	0.058 U	0.30 U	0.057 U	0.059 U
4-Bromophenyl phenyl ether	mg/Kg			0.0049 U	0.0046 U	0.024 U	0.0045 U	0.0047 U
4-Chloro-3-methylphenol	mg/Kg			0.0063 U	0.0060 U	0.031 U	0.0058 U	0.0061 U
4-Chloroaniline	mg/Kg			0.027 U	0.025 U *	0.13 U *	0.025 U *	0.025 U *
4-Chlorophenyl phenyl ether	mg/Kg			0.0060 U	0.0057 U	0.029 U	0.0055 U	0.0057 U
4-Methylphenol	mg/Kg	0.33	100	0.0065 U	0.0061 U	0.031 U	0.0060 U	0.0062 U
4-Nitroaniline	mg/Kg			0.014 U	0.013 U *	0.069 U *	0.013 U *	0.014 U *
4-Nitrophenol	mg/Kg			0.062 U	0.058 U	0.30 U	0.057 U	0.059 U
Acenaphthene	mg/Kg	20	100	0.028 U	0.026 U F1	**1.3 J**	0.026 U	0.027 U
Acenaphthylene	mg/Kg	100	100	0.0039 U	0.0037 U	0.019 U	0.0036 U	0.0038 U
Acetophenone	mg/Kg			0.0062 U	0.0058 U	0.030 U	0.0057 U	0.0059 U
Anthracene	mg/Kg	100	100	**0.28 J**	**0.18 J**	**0.61 J**	0.0039 U	0.0041 U
Atrazine	mg/Kg			0.0096 U *	0.0090 U	0.046 U	0.0088 U	0.0092 U
Benzaldehyde	mg/Kg			0.017 U	0.016 U	0.080 U	0.015 U	0.016 U
Benzo[a]anthracene	mg/Kg	1	1	0.013 U	0.013 U	0.064 U	0.012 U	0.013 U
Benzo[a]pyrene	mg/Kg	1	1	0.010 U	0.0096 U	0.049 U	0.0093 U	0.0097 U
Benzo[b]fluoranthene	mg/Kg	1	1	0.0099 U	0.0093 U	0.048 U	0.0091 U	0.0094 U
Benzo[g,h,i]perylene	mg/Kg	100	100	0.011 U	0.011 U	0.054 U	0.010 U	0.011 U
Benzo[k]fluoranthene	mg/Kg	0.8	3.9	0.0075 U	0.0070 U	0.036 U	0.0069 U	0.0071 U
Bis(2-chloroethoxy)methane	mg/Kg			0.013 U	0.012 U	0.063 U	0.012 U	0.013 U
Bis(2-chloroethyl)ether	mg/Kg			0.0046 U	0.0043 U	0.022 U	0.0042 U	0.0044 U
Bis(2-ethylhexyl) phthalate	mg/Kg			0.020 U	0.019 U	0.097 U	0.019 U	0.019 U
Butyl benzyl phthalate	mg/Kg			0.018 U	0.017 U	0.086 U	0.016 U	0.017 U
Caprolactam	mg/Kg			0.023 U	0.021 U	0.11 U	0.021 U	0.022 U
Carbazole	mg/Kg			0.0045 U	0.0042 U	0.022 U	0.0041 U	0.0043 U
Chrysene	mg/Kg	1	3.9	0.0065 U	0.0061 U	0.031 U	0.0059 U	0.0062 U
Dibenz(a,h)anthracene	mg/Kg	0.33	0.33	0.017 U	0.016 U	0.080 U	0.015 U	0.016 U
Dibenzofuran	mg/Kg	7	59	0.0054 U	0.0050 U F1	**1.4 J**	0.0049 U	0.0051 U
Diethyl phthalate	mg/Kg			0.0055 U	0.0052 U	0.027 U	0.0051 U	0.0053 U
Dimethyl phthalate	mg/Kg			0.0046 U	0.0043 U	0.022 U	0.0042 U	0.0044 U
Di-n-butyl phthalate	mg/Kg			0.067 U	0.063 U	0.32 U	0.062 U	0.064 U
Di-n-octyl phthalate	mg/Kg			0.020 U	0.019 U	0.098 U	0.019 U	0.019 U
Fluoranthene	mg/Kg	100	100	**0.13 J**	0.0047 U	0.024 U	0.0046 U	0.0047 U
Fluorene	mg/Kg	30	100	**1.6**	**0.90 F1**	**3.2**	0.0048 U	0.0049 U
Hexachlorobenzene	mg/Kg	0.33	1.2	0.0056 U	0.0053 U	0.027 U	0.0051 U	0.0053 U
Hexachlorobutadiene	mg/Kg			0.0081 U	0.0076 U	0.039 U	0.0075 U	0.0078 U
Hexachlorocyclopentadiene	mg/Kg			0.034 U	0.031 U	0.16 U	0.031 U	0.032 U
Hexachloroethane	mg/Kg			0.0059 U	0.0055 U	0.028 U	0.0054 U	0.0056 U
Indeno[1,2,3-cd]pyrene	mg/Kg	0.5	0.5	0.015 U	0.014 U	0.072 U	0.014 U	0.014 U
Isophorone	mg/Kg			0.010 U	0.0094 U	0.048 U	0.0092 U	0.0096 U
Naphthalene	mg/Kg	12	100	0.0066 U	0.0062 U	0.032 U	0.0061 U	0.0063 U
Nitrobenzene	mg/Kg			0.0092 U	0.0086 U	0.044 U	0.0084 U	0.0087 U
N-Nitrosodi-n-propylamine	mg/Kg			0.0061 U	0.0057 U	0.029 U	0.0056 U	0.0058 U
N-Nitrosodiphenylamine	mg/Kg			0.0073 U	0.0069 U F1	**4.7**	0.0067 U	0.0070 U
Pentachlorophenol	mg/Kg	0.8	6.7	0.078 U	0.074 U	0.38 U	0.072 U	0.075 U
Phenanthrene	mg/Kg	100	100	**3.8**	**2.0 F1**	**8.4**	0.0062 U	0.0064 U
Phenol	mg/Kg	0.33	100	0.0057 U	0.0053 U	0.027 U	0.0052 U	0.0054 U
Pyrene	mg/Kg	100	100	**0.36 J**	**0.28 J**	**0.51 J**	0.0087 U	0.0091 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an

U : Indicates the analyte was analyzed for but not detected.

Table 1C
Summary of Soil Sampling Results
Metals (9012,7471,6010))
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174772-1 SESI-SB-1(3') 2/6/2019 11:00 AM	460-174772-2 SESI-SB-1(8') 2/6/2019 11:30 AM	460-174859-1 SESI-SB-1(12') 2/7/2019 9:00 AM	460-174859-2 SESI-SB-1(15') 2/7/2019 9:05 AM	460-174859-3 SESI-SB-2(3') 2/7/2019 10:30 AM	460-174772-3 SESI-SB-2(5') 2/6/2019 1:00 PM	460-174859-4 SESI-SB-2(15') 2/7/2019 11:00 AM	460-174859-5 SESI-SB-3(2') 2/7/2019 8:00 AM	460-174859-6 SESI-SB-3(7') 2/7/2019 8:05 AM	460-174859-7 SESI-SB-3(13') 2/7/2019 8:10 AM	460-174859-22 SESI-SB-3(15-17') 2/7/2019 1:45 PM	460-174677-1 SESI-SB-4(5-7') 2/5/2019 9:00 AM	460-174677-2 SESI-SB-4(10-12') 2/5/2019 9:30 AM	460-174677-3 SESI-SB-4(15-17') 2/5/2019 10:30 AM	460-174772-4 SESI-SB-5(5') 2/6/2019 3:00 PM	460-175121-1 SESI-SB-5(8') 2/11/2019 11:40 AM
SOIL BY 9012B																			
Cyanide, Total	mg/Kg	27	27	0.11 U	0.12 U	0.10 U F1	0.12 U	**0.32**	0.12 U	0.11 U	0.12 U	0.099 U	0.11 U	0.12 U	0.12 U	0.11 U	0.13 U	0.10 U	0.10 U
SOIL BY 7471B(MG/KG)																			
Mercury	mg/Kg	0.18	0.81	**0.21**	0.010 U	0.010 U	0.011 U	**0.13**	**0.012 J**	**0.079**	0.011 U	0.011 U	0.010 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.010 U
SOIL BY 6010D(MG/KG)																			
Aluminum	mg/Kg			**13500**	**9910**	**5660**	**19800**	**7220**	**10900**	**9410**	**13000**	**5570**	**5690**	**9580**	**10700**	**6910**	**9590**	**11100**	**7100**
Antimony	mg/Kg			1.2 U F1	1.1 U	0.89 U F1	0.96 U	0.95 U	1.2 U	0.89 U	0.97 U	0.87 U	0.90 U	0.98 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U
Arsenic	mg/Kg	13	16	**2.5 J**	**1.9 J**	0.98 U	1.1 U	**3.2**	**2.6 J**	**1.1 J**	**3.4**	0.96 U	0.99 U	1.1 U	**1.9 J**	**1.2 J**	**1.4 J**	**1.7 J**	**2.3 J**
Barium	mg/Kg	350	400	**83.0**	**100**	**65.5**	**230**	**146**	**110**	**117**	**110**	**59.7**	**79.0**	**111**	**89.5**	**88.0**	**140**	**107**	**72.1**
Beryllium	mg/Kg	7.2	72	**0.61**	**0.66**	**0.28 J**	**0.81**	**0.29 J**	**0.77**	**0.37**	**0.57**	**0.25 J**	**0.23 J**	**0.24 J**	**0.61**	**0.42**	**0.60**	**0.73**	**0.45**
Cadmium	mg/Kg	2.5	4.3	0.16 U	0.14 U	0.11 U	0.12 U	**1.9**	0.16 U	0.11 U	0.12 U	0.11 U	0.11 U	0.13 U	0.15 U	0.14 U	0.16 U	0.14 U	0.14 U
Calcium	mg/Kg			**1010 J**	**6370**	**1220**	**1520**	**30300**	**15800**	**3540**	**6470**	**1650**	**1170**	**1620**	**1430**	**3290**	**1710**	**5270**	**45400**
Chromium	mg/Kg			**20.2**	**21.9**	**14.6**	**48.8**	**26.0**	**24.2**	**23.6**	**20.5**	**13.9**	**15.9**	**21.1**	**24.0**	**19.6**	**24.2**	**25.9**	**20.3**
Cobalt	mg/Kg			**4.6 J**	**6.9 J**	**5.9 J**	**16.9**	**5.3 J**	**6.8 J**	**8.9**	**6.9 J**	**5.1 J**	**5.8 J**	**9.4**	**5.6 J**	**6.8 J**	**7.3 J**	**7.2 J**	**5.6 J**
Copper	mg/Kg	50	270	**11.4**	**28.2**	**12.6**	**34.6**	**54.1**	**18.8**	**21.1**	**21.9**	**12.2**	**20.4**	**16.2**	**21.1**	**22.9**	**20.1**	**18.1**	**20.4**
Iron	mg/Kg			**13900**	**16200**	**11700**	**38300**	**13500**	**19100**	**21400**	**17300**	**10800**	**14200**	**18200**	**16800**	**14500**	**18400**	**17300**	**15200**
Lead	mg/Kg	63	400	**44.8**	**9.7**	**2.3**	**7.0**	**438**	**12.9**	**34.8**	**181**	**2.6**	**2.7**	**3.6**	**5.9**	**5.1**	**5.4**	**9.1**	**17.7**
Magnesium	mg/Kg			**2090**	**4800**	**2670**	**8680**	**6030**	**8410**	**5540**	**5440**	**2350**	**2860**	**4720**	**3160**	**3540**	**3830**	**4700**	**15400**
Manganese	mg/Kg	1600	2000	**88.2**	**266**	**319**	**682**	**278**	**338**	**290**	**263**	**207**	**229**	**245**	**227**	**147**	**188**	**308**	**261**
Nickel	mg/Kg	30	310	**11.8**	**18.1**	**15.7**	**46.0**	**28.5**	**18.0**	**19.9**	**14.8**	**13.2**	**13.6**	**20.0**	**17.2**	**17.4**	**21.8**	**20.0**	**14.0**
Potassium	mg/Kg			**1100 J**	**2700**	**2810**	**10900**	**1210**	**2340**	**6120**	**1180**	**2290**	**3390**	**6040**	**3210**	**3710**	**4770**	**2850**	**2050**
Selenium	mg/Kg	3.9	180	2.8 U	2.4 U	2.0 U	2.2 U	2.1 U	2.7 U	2.0 U	2.2 U	2.0 U	2.0 U	2.2 U	2.6 U	2.4 U	2.8 U	2.5 U	2.5 U
Silver	mg/Kg	2	180	**0.39 J**	**0.24 J**	0.16 U	0.17 U	0.17 U	**0.37 J**	0.16 U	0.17 U	0.16 U	**0.27 J**	0.17 U	0.20 U	0.19 U	0.22 U	**0.36 J**	0.19 U
Sodium	mg/Kg			**1350**	**907 J**	**192 J**	**808 J**	**148 J**	**328 J**	**183 J**	**592 J**	**217 J**	**95.9 J**	**88.8 J**	**496 J**	**256 J**	**421 J**	**867 J**	**601 J**
Thallium	mg/Kg			0.73 U	0.65 U	0.53 U	0.58 U	0.57 U	0.73 U	0.54 U	0.58 U	0.53 U	0.54 U	0.59 U	0.68 U	0.65 U	0.75 U	0.68 U	0.66 U
Vanadium	mg/Kg			**27.6**	**32.1**	**17.8**	**59.3**	**19.5**	**36.2**	**32.1**	**29.6**	**18.0**	**20.6**	**30.0**	**30.6**	**24.2**	**27.9**	**30.4**	**31.1**
Zinc	mg/Kg	109	10000	**32.1**	**34.0**	**21.0**	**76.1**	**791**	**33.6**	**47.8**	**114**	**19.9**	**27.0**	**44.3**	**30.0**	**30.7**	**34.2**	**44.6**	**43.7**

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

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U : Indicates the analyte was analyzed for but not detected.

Table 1C
Summary of Soil Sampling Results
Metals (9012,7471,6010))
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175121-2 SESI-SB-5(12') 2/11/2019 11:50 AM	460-174859-8 SESI-SB-6(2') 2/7/2019 11:45 AM	460-174859-9 SESI-SB-6(8') 2/7/2019 11:50 AM	460-174859-10 SESI-SB-6(12') 2/7/2019 12:00 PM	460-174859-11 SESI-SB-6(16') 2/7/2019 12:05 PM	460-174986-1 SESI-SB-6(20-22') 2/8/2019 11:00 AM	460-174986-2 SESI-SB-7(3') 2/8/2019 9:20 AM	460-174986-3 SESI-SB-7(8') 2/8/2019 9:30 AM	460-174986-4 SESI-SB-7(13') 2/8/2019 9:40 AM	460-175449-1 SESI-SB-7(15'-17') 2/15/2019 10:30 AM	460-174772-5 SESI-SB-8(4') 2/6/2019 8:30 AM	460-174772-6 SESI-SB-8(9') 2/6/2019 9:00 AM	460-174859-12 SESI-SB-8(14') 2/7/2019 10:20 AM	460-174859-13 SESI-SB-8(18') 2/7/2019 10:30 AM	460-174859-14 SESI-SB-9(3') 2/7/2019 12:50 PM	460-174859-15 SESI-SB-9(8') 2/7/2019 12:55 PM	460-174859-16 SESI-SB-9(13') 2/7/2019 1:00 PM
SOIL BY 9012B																				
Cyanide, Total	mg/Kg	27	27	0.13 U	0.13 U	0.11 U	0.12 U	0.10 U	0.14 U	0.12 U	0.12 U	0.13 U	0.13 U	0.12 U	0.11 U	0.11 U F1	0.12 U	0.14 U	0.11 U	0.12 U
SOIL BY 7471B(MG/KG)																				
Mercury	mg/Kg	0.18	0.81	0.013 U	**0.12**	0.011 U	0.011 U	0.011 U	0.013 U	**0.031**	**0.11**	0.010 U	0.010 U	**0.097**	0.012 U	0.011 U	0.011 U	**0.046**	0.012 U	0.011 U
SOIL BY 6010D(MG/KG)																				
Aluminum	mg/Kg			**8810**	**13700**	**6080**	**11700**	**11500**	**15000**	**12000**	**8530**	**12300**	**18300**	**9810**	**8890**	**7880**	**19900**	**13600**	**10500**	**10700**
Antimony	mg/Kg			1.3 U	1.0 U	0.85 U	0.92 U	0.91 U	1.1 U	0.93 U	0.96 U	0.98 U F1	1.2 U	1.2 U	1.2 U	0.90 U	0.98 U	1.1 U	1.0 U	0.93 U
Arsenic	mg/Kg	13	16	1.4 U	**2.4 J**	**1.1 J**	1.0 U	1.0 U	**1.4 J**	**6.7**	**3.5**	**1.1 J**	1.3 U	**5.2**	**4.4**	1.0 U	1.1 U	**2.0 J**	**5.3**	1.0 U
Barium	mg/Kg	350	400	**103**	**76.9**	**63.7**	**136**	**137**	**104**	**103**	**88.2**	**148**	**220**	**132**	**92.7**	**87.5**	**277**	**81.9**	**82.2**	**144**
Beryllium	mg/Kg	7.2	72	**0.53**	**0.54**	**0.27 J**	**0.44**	**0.45**	**0.34 J**	**0.45**	**0.37**	**0.39**	**0.24 J**	**0.47**	**0.59**	**0.37**	**0.60**	**0.58**	**0.65**	**0.44**
Cadmium	mg/Kg	2.5	4.3	0.16 U	0.13 U	0.11 U	0.12 U	0.12 U	0.14 U	0.12 U	0.12 U	0.13 U	0.15 U	0.15 U	0.15 U	0.12 U	0.13 U	0.14 U	0.13 U	0.12 U
Calcium	mg/Kg			**1090 J**	**994**	**1150**	**1150**	**1400**	**2460**	**37400**	**1510**	**1080**	**2230**	**58200**	**34400**	**1660**	**1380**	**482 J**	**2460**	**1190**
Chromium	mg/Kg			**25.1**	**21.1**	**16.5**	**25.4**	**32.9**	**81.7**	**7.6**	**24.1**	**30.7**	**40.4**	**8.3**	**19.2**	**24.1**	**51.5**	**20.6**	**26.1**	**24.4**
Cobalt	mg/Kg			**8.9 J**	**5.8 J**	**4.8 J**	**10.3**	**11.3**	**13.6**	**1.8 J**	**7.4 J**	**11.7**	**12.7**	**2.0 J**	**6.6 J**	**8.2 J**	**15.2**	**5.6 J**	**5.7 J**	**11.3**
Copper	mg/Kg	50	270	**20.9**	**16.6**	**12.8**	**19.6**	**21.6**	**9.4**	**15.4**	**26.7**	**23.9**	**23.0**	**13.0**	**37.0**	**15.8**	**164**	**10.3**	**25.0**	**20.6**
Iron	mg/Kg			**22600**	**16900**	**10900**	**24300**	**25800**	**26800**	**6560**	**29800**	**30800**	**33600**	**6510**	**21700**	**22700**	**41000**	**17500**	**21800**	**24900**
Lead	mg/Kg	63	400	**3.4**	**89.6**	**3.0**	**4.6**	**3.8**	**4.1**	**38.6**	**23.1**	**4.8**	**6.3**	**127**	**24.6**	**6.1**	**6.5**	**31.9**	**10.1**	**5.0**
Magnesium	mg/Kg			**4060**	**2550**	**2350**	**5490**	**5600**	**12700**	**3960**	**3130**	**5700**	**7460**	**6540**	**6020**	**3590**	**9150**	**2090**	**3890**	**5060**
Manganese	mg/Kg	1600	2000	**196**	**266**	**164**	**367**	**379**	**407**	**165**	**394**	**448**	**785**	**188**	**418**	**322**	**490**	**220**	**98.0**	**740**
Nickel	mg/Kg	30	310	**19.5**	**14.2**	**13.8**	**22.6**	**26.5**	**44.0**	**4.3 J**	**16.9**	**26.4**	**30.7**	**5.8 J**	**17.5**	**20.4**	**36.2**	**13.9**	**20.4**	**25.0**
Potassium	mg/Kg			**5230**	**1070**	**2410**	**7210**	**6930**	**8710**	**990**	**3290**	**7780**	**10200**	**922 J**	**2210**	**4540**	**13800**	**692 J**	**1460**	**6540**
Selenium	mg/Kg	3.9	180	2.9 U	2.3 U	1.9 U	2.1 U	2.1 U	2.5 U	2.1 U	2.2 U	2.2 U	2.7 U	2.7 U	2.6 U	2.0 U	2.2 U	2.4 U	2.3 U	2.1 U
Silver	mg/Kg	2	180	0.23 U	0.18 U	**0.15 J**	0.16 U	0.16 U	0.19 U	0.17 U	**0.37 J**	**0.31 J**	0.21 U	0.21 U	**0.61 J**	0.16 U	**0.26 J**	0.19 U	0.18 U	0.17 U
Sodium	mg/Kg			**250 J**	**887 J**	**322 J**	**426 J**	**228 J**	**358 J**	**1670**	**197 J**	**225 J**	**378 J**	**1370**	**349 J**	68.6 U	**103 J**	**309 J**	**384 J**	**159 J**
Thallium	mg/Kg			0.77 U	0.61 U	0.51 U	0.55 U	0.55 U	0.65 U	0.56 U	0.58 U	0.59 U	0.72 U	0.71 U	0.71 U	0.54 U	0.59 U	0.65 U	0.60 U	0.56 U
Vanadium	mg/Kg			**29.0**	**27.9**	**19.7**	**36.5**	**41.7**	**57.3**	**18.2**	**28.3**	**39.5**	**52.0**	**21.2**	**21.5**	**28.5**	**66.7**	**26.9**	**42.8**	**33.7**
Zinc	mg/Kg	109	10000	**39.8**	**38.9**	**22.0**	**52.3**	**51.1**	**50.2**	**57.0**	**65.3**	**59.3**	**70.4**	**72.2**	**156**	**38.0**	**88.2**	**39.3**	**50.6**	**61.5**

Notes:

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Table 1C
Summary of Soil Sampling Results
Metals (9012,7471,6010))
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174859-17 SESI-SB-9(17') 2/7/2019 1:05 PM	460-174986-5 SESI-SB-10(4') 2/8/2019 11:10 AM	460-174986-6 SESI-SB-10(9') 2/8/2019 11:20 AM	460-174986-7 SESI-SB-10(11') 2/8/2019 11:30 AM	460-174986-8 SESI-SB-10(18') 2/8/2019 11:40 AM	460-174859-18 SESI-SB-11(4') 2/7/2019 1:50 PM	460-174859-19 SESI-SB-11(9') 2/7/2019 2:00 PM	460-174859-20 SESI-SB-11(14') 2/7/2019 2:05 PM	460-174859-21 SESI-SB-11(18') 2/7/2019 2:10 PM	460-175342-1 SESI-SB-12 (4') 2/14/2019 1:10 PM	460-175342-2 SESI-SB-12 (6') 2/14/2019 1:15 PM	460-175638-1 SESI-SB-13(3') 2/18/2019 1:30 PM	460-175638-2 SESI-SB-13(7') 2/18/2019 1:35 PM	460-175449-2 SESI-SB-14(2') 2/15/2019 11:00 AM	460-175449-3 SESI-SB-14(6') 2/15/2019 11:05 AM	460-174986-9 SESI-SB-15(3') 2/8/2019 12:30 PM	460-174986-10 SESI-SB-15(8') 2/8/2019 12:35 PM
SOIL BY 9012B																					
Cyanide, Total	mg/Kg	27	27	0.12 U	0.12 U	0.12 U	0.11 U	0.13 U	0.11 U	0.099 U	0.10 U	0.10 U F1	0.12 U F1	0.10 U	0.13 U	0.12 U	0.10 U	0.11 U	0.13 U	0.11 U
SOIL BY 7471B(MG/KG)																					
Mercury	mg/Kg	0.18	0.81	0.011 U	**0.077**	0.011 U	0.011 U	0.012 U	**0.054**	0.010 U	0.011 U	0.011 U	0.0096 U	0.010 U	**0.29**	0.011 U	0.010 U	0.011 U	**0.035**	0.0099 U
SOIL BY 6010D(MG/KG)																					
Aluminum	mg/Kg			**6700**	**5430**	**7870**	**6250**	**20600**	**12900**	**5470**	**12700**	**7740**	**5650**	**6890**	**10700**	**9920**	**5720**	**8270**	**13100**	**6310**
Antimony	mg/Kg			0.94 U	0.89 U	0.87 U	0.91 U	1.0 U	1.0 U	0.85 U	0.91 U	0.87 U	1.1 U	1.1 U	1.3 U	1.2 U	1.1 U	1.1 U	0.92 U	0.90 U
Arsenic	mg/Kg	13	16	1.0 U	**15.4**	**7.9**	**2.0 J**	**1.4 J**	**2.4 J**	0.94 U	1.0 U	0.96 U	1.3 U	1.2 U	**3.8**	**1.6 J**	1.2 U	1.2 U	**6.9**	0.99 U
Barium	mg/Kg	350	400	**80.7**	**53.7**	**116**	**57.7**	**288**	**84.7**	**55.5**	**144**	**77.4**	**68.2**	**79.3**	**111**	**84.3**	**73.6**	**100**	**193**	**108**
Beryllium	mg/Kg	7.2	72	**0.22 J**	**0.40**	**0.43**	**0.30 J**	**0.71**	**0.44**	**0.21 J**	**0.44**	**0.22 J**	**0.40 J**	**0.47**	**0.55**	**0.47**	**0.12 J**	**0.10 J**	**0.76**	**0.22 J**
Cadmium	mg/Kg	2.5	4.3	0.12 U	0.11 U	0.11 U	0.12 U	0.13 U	0.13 U	0.11 U	0.12 U	0.11 U	0.15 U	0.14 U	0.16 U	0.15 U	0.14 U	0.15 U	0.12 U	0.12 U
Calcium	mg/Kg			**7300**	**23000**	**70500**	**3310**	**1700**	**1390**	**1090**	**1110**	**1130**	**1860**	**2210**	**6140**	**1470**	**1150**	**2650**	**2680**	**2380**
Chromium	mg/Kg			**23.0**	**10.4**	**11.8**	**39.6**	**53.1**	**23.7**	**13.7**	**35.3**	**22.7**	**15.0**	**29.8**	**18.2**	**22.1**	**31.6**	**30.2**	**25.0**	**18.1**
Cobalt	mg/Kg			**6.6 J**	**4.0 J**	**7.3 J**	**6.8 J**	**17.9**	**2.4 J**	**5.3 J**	**15.3**	**8.2**	**5.6 J**	**6.5 J**	**5.1 J**	**9.3 J**	**6.6 J**	**7.6 J**	**13.2**	**6.7 J**
Copper	mg/Kg	50	270	**19.7**	**17.5**	**13.8**	**11.7**	**27.8**	**6.5**	**13.5**	**21.6**	**34.8**	**13.6**	**16.2**	**19.0**	**15.4**	**13.6**	**17.8**	**17.1**	**17.6**
Iron	mg/Kg			**14100**	**9930**	**15900**	**19900**	**42800**	**11800**	**11400**	**31700**	**17400**	**12300**	**15200**	**13200**	**14400**	**12000**	**16400**	**25300**	**13100**
Lead	mg/Kg	63	400	**5.1**	**37.4**	**11.5**	**4.5**	**6.6**	**9.4**	**2.5**	**6.1**	**3.2**	**2.7**	**3.7**	**127**	**4.6**	**2.4**	**4.2**	**12.2**	**3.3**
Magnesium	mg/Kg			**4200**	**2310**	**4730**	**2450**	**9940**	**1540**	**2260**	**5950**	**3650**	**2950**	**4070**	**3390**	**3020**	**3380**	**4080**	**3700**	**3190**
Manganese	mg/Kg	1600	2000	**256**	**98.7**	**233**	**239**	**602**	**33.7**	**131**	**536**	**303**	**144**	**239**	**231**	**291**	**216**	**279**	**773**	**1180**
Nickel	mg/Kg	30	310	**15.1**	**10.1**	**17.2**	**16.3**	**42.6**	**9.5**	**13.1**	**31.2**	**19.1**	**14.1**	**23.7**	**14.2**	**18.6**	**28.0**	**25.5**	**25.0**	**18.2**
Potassium	mg/Kg			**3540**	**1620**	**1230**	**2580**	**14300**	**410 J**	**2710**	**7590**	**4460**	**3090**	**4000**	**1020 J**	**2960**	**2630**	**4740**	**659 J**	**2610**
Selenium	mg/Kg	3.9	180	2.1 U	2.0 U	2.0 U	2.1 U	2.3 U	2.3 U	1.9 U	2.1 U	2.0 U	2.6 U	2.5 U	2.9 U	2.6 U	2.5 U	2.6 U	2.1 U	2.0 U
Silver	mg/Kg	2	180	0.17 U	0.16 U	0.16 U	**0.19 J**	**0.33 J**	0.18 U	0.15 U	**0.22 J**	0.15 U	0.20 U	0.19 U	0.23 U	0.21 U	0.20 U	0.20 U	**0.27 J**	**0.22 J**
Sodium	mg/Kg			**182 J**	**261 J**	**167 J**	69.0 U	**230 J**	**432 J**	64.7 U	**133 J**	**117 J**	**105 J**	**126 J**	**152 J**	**163 J**	**198 J**	**243 J**	**133 J**	**145 J**
Thallium	mg/Kg			0.56 U	0.54 U	0.52 U	0.55 U	0.63 U	0.61 U	0.51 U	0.55 U	0.52 U	0.69 U	0.66 U	0.77 U	0.70 U	0.66 U	0.68 U	0.55 U	0.54 U
Vanadium	mg/Kg			**27.6**	**14.0**	**14.5**	**19.8**	**63.3**	**23.1**	**17.4**	**40.6**	**26.1**	**19.1**	**21.9**	**25.3**	**25.4**	**20.4**	**27.7**	**47.4**	**19.0**
Zinc	mg/Kg	109	10000	**29.0**	**25.4**	**44.8**	**32.1**	**92.8**	**22.0**	**21.4**	**60.2**	**35.2**	**23.9**	**28.3**	**47.5**	**31.4**	**19.8**	**36.0**	**47.7**	**25.2**

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Metals (9012,7471,6010))
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174986-11 SESI-SB-15(14') 2/8/2019 12:40 PM	460-175247-3 SESI-SB-15 (15'-17') 2/13/2019 10:00 AM	460-174986-12 SESI-SB-16(3') 2/8/2019 2:00 PM	460-174986-13 SESI-SB-16(8') 2/8/2019 2:05 PM	460-174986-14 SESI-SB-16(13') 2/8/2019 2:10 PM	460-175121-3 SESI-SB-17(4') 2/11/2019 8:10 AM	460-175121-4 SESI-SB-17(8') 2/11/2019 8:15 AM	460-175121-5 SESI-SB-17(14') 2/11/2019 8:20 AM	460-175342-3 SESI-SB-17 (15'-17') 2/14/2019 9:30 AM	460-175121-6 SESI-SB-18(3') 2/11/2019 9:15 AM	460-175121-7 SESI-SB-18(7') 2/11/2019 9:25 AM	460-175121-8 SESI-SB-18(13') 2/11/2019 9:35 AM	460-175342-4 SESI-SB-18 (15'-17') 2/14/2019 1:30 PM	460-175121-9 SESI-SB-19(3') 2/11/2019 10:10 AM	460-175121-10 SESI-SB-19(9') 2/11/2019 10:20 AM	460-175121-11 SESI-SB-19(12') 2/11/2019 10:30 AM
SOIL BY 9012B																				
Cyanide, Total	mg/Kg	27	27	0.13 U F1	0.12 U	0.13 U	0.11 U	0.13 U	0.11 U F1	0.11 U	0.12 U	0.12 U	0.13 U	0.11 U	0.11 U	0.13 U	0.12 U	0.099 U F1	0.099 U
SOIL BY 7471B(MG/KG)																				
Mercury	mg/Kg	0.18	0.81	0.011 U	0.011 U	**0.035**	0.0098 U	0.011 U	**0.023**	0.011 U	0.011 U	0.012 U	**0.012 J**	0.010 U	0.011 U	0.012 U	**0.018 J**	0.0098 U	0.0097 U
SOIL BY 6010D(MG/KG)																				
Aluminum	mg/Kg			**14500**	**14700**	**17500**	**6870**	**11000**	**13400**	**6940**	**9690**	**11100**	**8520**	**6500**	**14900**	**11900**	**13700**	**15000**	**4530**
Antimony	mg/Kg			0.88 U	1.1 U	0.90 U	0.85 U	0.93 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.3 U F1	1.1 U	1.1 U
Arsenic	mg/Kg	13	16	**1.2 J**	1.3 U	**2.7**	**1.0 J**	**1.0 J**	1.2 U	1.2 U	**1.6 J**	1.3 U	**2.7 J**	1.3 U	1.3 U	1.3 U	**3.3 J**	1.2 U	1.2 U
Barium	mg/Kg	350	400	**187**	**188**	**162**	**72.3**	**125**	**114**	**74.8**	**112**	**129**	**74.0**	**67.2**	**192**	**164**	**105**	**218**	**47.2**
Beryllium	mg/Kg	7.2	72	**0.42**	**0.94**	**0.55**	**0.27 J**	**0.28 J**	**0.76**	**0.37 J**	**0.53**	**0.69**	**0.73**	**0.39 J**	**0.80**	**0.67**	**0.58**	**0.73**	**0.26 J**
Cadmium	mg/Kg	2.5	4.3	0.11 U	0.15 U	0.12 U	0.11 U	0.12 U	0.14 U	0.14 U	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.16 U	0.14 U	0.14 U
Calcium	mg/Kg			**1190**	**1280**	**1840**	**2540**	**1980**	**2940**	**1530**	**1210**	**2220**	**2730**	**3000**	**1600**	**2650**	**2050**	**1230**	**851 J**
Chromium	mg/Kg			**31.9**	**31.0**	**26.0**	**16.1**	**26.1**	**23.1**	**18.4**	**26.2**	**25.2**	**18.1**	**14.8**	**36.5**	**51.2**	**24.6**	**30.5**	**10.5**
Cobalt	mg/Kg			**13.1**	**13.5**	**5.2 J**	**5.7 J**	**9.4**	**6.0 J**	**5.4 J**	**9.3 J**	**9.5 J**	**9.5 J**	**4.9 J**	**13.3**	**9.0 J**	**3.8 J**	**12.5**	**4.3 J**
Copper	mg/Kg	50	270	**25.4**	**22.2**	**3.0 J**	**14.4**	**23.1**	**14.7**	**14.1**	**17.5**	**20.2**	**23.1**	**12.8**	**28.7**	**13.0**	**11.7**	**4.6 J**	**8.5**
Iron	mg/Kg			**27900**	**29300**	**31300**	**13100**	**20200**	**25300**	**13300**	**23800**	**20300**	**20400**	**12100**	**30700**	**19700**	**19000**	**26600**	**10900**
Lead	mg/Kg	63	400	**3.7**	**4.0**	**9.2**	**3.3**	**3.0**	**4.8**	**2.4**	**2.9**	**3.5**	**5.6**	**3.3**	**4.8**	**3.1**	**10.4**	**2.0 J**	**1.7 J**
Magnesium	mg/Kg			**7420**	**7360**	**2370**	**3340**	**5650**	**6050**	**2910**	**4660**	**5170**	**3160**	**2870**	**7250**	**7470**	**2090**	**7910**	**2350**
Manganese	mg/Kg	1600	2000	**352**	**356**	**235**	**249**	**286**	**255**	**252**	**233**	**259**	**284**	**174**	**474**	**282**	**55.9**	**357**	**141**
Nickel	mg/Kg	30	310	**28.1**	**30.0**	**13.5**	**15.0**	**21.9**	**11.4**	**14.2**	**20.0**	**22.9**	**19.4**	**12.5**	**30.9**	**26.6**	**11.2**	**25.2**	**10.9**
Potassium	mg/Kg			**10000**	**10500**	**506 J**	**2990**	**7000**	**3810**	**3410**	**6200**	**6500**	**1430**	**2960**	**10000**	**6210**	**643 J**	**11400**	**2720**
Selenium	mg/Kg	3.9	180	2.0 U	2.6 U	2.0 U	1.9 U	2.1 U	2.5 U	2.5 U	2.6 U	2.6 U	2.5 U	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.4 U
Silver	mg/Kg	2	180	**0.21 J**	0.20 U	**0.33 J**	0.15 U	**0.17 J**	0.20 U	0.19 U	0.21 U	0.21 U	0.20 U	0.20 U	0.20 U	0.21 U	0.23 U	0.19 U	0.19 U
Sodium	mg/Kg			**112 J**	**155 J**	**146 J**	**138 J**	**255 J**	85.6 U	**144 J**	87.5 U	**196 J**	84.7 U	**144 J**	**139 J**	**449 J**	96.2 U	**92.0 J**	82.2 U
Thallium	mg/Kg			0.53 U	0.69 U	0.54 U	0.51 U	0.56 U	0.68 U	0.66 U	0.69 U	0.71 U	0.67 U	0.69 U	0.69 U	0.70 U	0.76 U	0.65 U	0.65 U
Vanadium	mg/Kg			**44.9**	**46.4**	**23.9**	**20.2**	**33.7**	**35.4**	**21.6**	**31.1**	**33.1**	**41.9**	**18.4**	**46.6**	**45.4**	**31.5**	**47.2**	**14.4**
Zinc	mg/Kg	109	10000	**68.5**	**69.5**	**51.2**	**25.9**	**46.8**	**44.2**	**24.3**	**44.3**	**44.2**	**34.5**	**24.5**	**66.2**	**37.1**	**36.8**	**71.2**	**20.2**

Notes:

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Summary of Soil Sampling Results
Metals (9012,7471,6010))
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175121-12 SESI-SB-19(18') 2/11/2019 10:40 AM	460-175121-13 SESI-SB-19(23') 2/11/2019 10:50 AM	460-175121-14 SESI-SB-20(5') 2/11/2019 12:00 PM	460-175121-15 SESI-SB-20(6') 2/11/2019 12:05 PM	460-175121-16 SESI-SB-20(9') 2/11/2019 12:10 PM	460-175121-17 SESI-SB-20(14') 2/11/2019 12:15 PM	460-175449-4 SESI-SB-21(3') 2/15/2019 12:40 PM	460-175449-5 SESI-SB-21(8') 2/15/2019 12:45 PM	460-175449-6 SESI-SB-22(5') 2/15/2019 9:20 AM	460-175449-7 SESI-SB-22(7') 2/15/2019 9:25 AM	460-175449-8 SESI-SB-22(11') 2/15/2019 9:30 AM	460-174986-15 SESI-SB-23(4') 2/8/2019 10:00 AM	460-174986-16 SESI-SB-23(7') 2/8/2019 10:05 AM	460-174986-17 SESI-SB-23(11') 2/8/2019 10:10 AM	460-174986-18 SESI-SB-23(16') 2/8/2019 10:15 AM	460-175342-5 SESI-SB-24 (1') 2/14/2019 12:40 PM	460-175342-6 SESI-SB-24 (6') 2/14/2019 12:45 PM
SOIL BY 9012B																					
Cyanide, Total	mg/Kg	27	27	0.11 U	0.12 U	**0.20 J**	**0.19 J**	0.10 U	0.11 U	0.11 U	0.12 U	0.13 U	0.13 U	0.12 U	0.12 U	0.12 U	0.11 U	0.12 U	0.11 U	0.12 U
SOIL BY 7471B(MG/KG)																					
Mercury	mg/Kg	0.18	0.81	0.010 U	0.011 U	**0.20**	**0.021**	0.0099 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
SOIL BY 6010D(MG/KG)																					
Aluminum	mg/Kg			**6840**	**14700**	**8790**	**11800**	**6000**	**10300**	**5750**	**35100**	**10900**	**6630**	**11800**	**11200**	**9100**	**11700**	**10100**	**6330**	**11400**
Antimony	mg/Kg			1.1 U	1.2 U	1.2 U	1.2 U	1.0 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	0.90 U	0.91 U	0.87 U	0.97 U	1.2 U	1.1 U
Arsenic	mg/Kg	13	16	1.2 U	1.3 U	**3.6**	1.3 U	1.2 U	1.3 U	**1.3 J**	1.2 U	1.3 U	1.3 U	1.3 U	**1.8 J**	**3.9**	0.96 U	**1.1 J**	1.3 U	1.3 U
Barium	mg/Kg	350	400	**82.9**	**173**	**107**	**163**	**70.6**	**124**	**69.3**	**329**	**141**	**85.0**	**146**	**66.1**	**99.3**	**126**	**103**	**74.2**	**127**
Beryllium	mg/Kg	7.2	72	**0.49**	**0.87**	**0.49**	**0.64**	**0.37 J**	**0.56**	0.094 U	0.094 U	0.10 U	0.098 U	**0.12 J**	**0.41**	**0.36**	**0.39**	**0.36 J**	**0.49**	**0.80**
Cadmium	mg/Kg	2.5	4.3	0.14 U	0.15 U	0.16 U	0.15 U	0.13 U	0.15 U	0.14 U	**0.43 J**	0.15 U	0.15 U	0.15 U	0.11 U	0.12 U	0.11 U	0.12 U	0.15 U	0.15 U
Calcium	mg/Kg			**10700**	**1490**	**27800**	**8490**	**1240**	**1100**	**916 J**	**1550**	**1100 J**	**950 J**	**1190**	**1760**	**7050**	**1370**	**1270**	**3210**	**9210**
Chromium	mg/Kg			**18.6**	**36.4**	**19.0**	**37.2**	**16.4**	**24.6**	**14.5**	**248**	**26.5**	**17.0**	**35.9**	**24.9**	**19.8**	**19.3**	**32.5**	**17.5**	**40.6**
Cobalt	mg/Kg			**6.3 J**	**12.2**	**6.1 J**	**10.1 J**	**5.5 J**	**9.8 J**	**5.9 J**	**23.8**	**10.9 J**	**7.3 J**	**10.8 J**	**11.8**	**9.6**	**11.3**	**8.7 J**	**6.5 J**	**10.3 J**
Copper	mg/Kg	50	270	**14.1**	**19.0**	**21.8**	**14.3**	**12.6**	**19.4**	**11.2**	**11.6**	**16.6**	**14.9**	**21.8**	**18.0**	**58.3**	**40.2**	**17.4**	**11.1**	**27.1**
Iron	mg/Kg			**19700**	**31600**	**20100**	**21400**	**15500**	**21600**	**12400**	**56900**	**20600**	**13300**	**23200**	**23700**	**22100**	**21600**	**21700**	**17600**	**29600**
Lead	mg/Kg	63	400	**2.9**	**3.8**	**91.2**	**31.4**	**2.4**	**2.6**	**2.9**	**6.0**	**3.0**	**2.6**	**4.3**	**7.7**	**31.1**	**3.9**	**3.4**	**4.3**	**7.0**
Magnesium	mg/Kg			**8700**	**7010**	**8840**	**6670**	**2880**	**4920**	**2400**	**22900**	**4990**	**3020**	**5370**	**3040**	**5050**	**5530**	**5200**	**2950**	**6570**
Manganese	mg/Kg	1600	2000	**284**	**483**	**248**	**327**	**209**	**310**	**171**	**991**	**251**	**165**	**330**	**625**	**347**	**405**	**223**	**595**	**449**
Nickel	mg/Kg	30	310	**15.2**	**30.2**	**17.3**	**23.9**	**15.2**	**21.6**	**14.4**	**219**	**26.1**	**17.3**	**32.5**	**16.5**	**18.5**	**18.0**	**25.0**	**17.1**	**27.0**
Potassium	mg/Kg			**4130**	**9630**	**2920**	**8130**	**3680**	**6590**	**3180**	**24300**	**6650**	**4010**	**6820**	**2270**	**3980**	**8210**	**5720**	**3400**	**6510**
Selenium	mg/Kg	3.9	180	2.5 U	2.7 U	2.8 U	2.7 U	2.4 U	2.6 U	2.5 U	**2.5 J**	2.7 U	2.6 U	2.6 U	2.0 U	2.0 U	2.0 U	2.2 U	2.7 U	2.6 U
Silver	mg/Kg	2	180	0.20 U	0.21 U	**0.23 J**	**0.28 J**	0.19 U	0.21 U	0.20 U	0.20 U	0.21 U	0.21 U	0.21 U	**0.21 J**	**0.19 J**	0.16 U	0.17 U	0.21 U	0.20 U
Sodium	mg/Kg			**132 J**	**270 J**	**365 J**	**167 J**	**148 J**	**352 J**	85.2 U	**289 J**	**141 J**	**110 J**	**176 J**	**153 J**	**358 J**	**230 J**	**252 J**	**107 J**	**206 J**
Thallium	mg/Kg			0.66 U	0.72 U	0.74 U	0.71 U	0.63 U	0.70 U	0.68 U	0.68 U	0.72 U	0.71 U	0.70 U	0.54 U	0.55 U	0.52 U	0.58 U	0.72 U	0.69 U
Vanadium	mg/Kg			**23.3**	**47.1**	**24.9**	**35.4**	**20.6**	**32.9**	**19.9**	**92.0**	**36.7**	**22.9**	**38.7**	**29.1**	**37.3**	**34.9**	**32.8**	**21.4**	**37.7**
Zinc	mg/Kg	109	10000	**30.4**	**60.9**	**110**	**60.7**	**26.1**	**46.7**	**25.0**	**139**	**48.9**	**31.2**	**51.9**	**33.4**	**66.6**	**56.3**	**42.6**	**29.5**	**50.5**

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Metals (9012,7471,6010))
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175638-3 SESI-SB-25(3') 2/18/2019 10:45 AM	460-175638-4 SESI-SB-25(8') 2/18/2019 11:00 AM	460-175667-1 SESI-SB-25(10-12') 2/19/2019 12:00 PM	460-175667-2 SESI-SB-25(15-17') 2/19/2019 12:10 PM	460-175667-3 SESI-SB-25(20-22') 2/19/2019 12:20 PM	460-175638-5 SESI-SB-26(3') 2/18/2019 9:30 AM	460-175638-6 SESI-SB-26(7') 2/18/2019 9:35 AM	460-175638-7 SESI-SB-26(12') 2/18/2019 10:15 AM	460-175667-4 SESI-SB-26(15-17') 2/19/2019 8:30 AM	460-175638-8 SESI-SB-27(4') 2/18/2019 7:45 AM	460-175638-9 SESI-SB-27(7') 2/18/2019 8:00 AM	460-175638-10 SESI-SB-27(11') 2/18/2019 8:15 AM	460-175247-4 SESI-SB-28 (6') 2/13/2019 11:00 AM	460-175247-5 SESI-SB-28 (10') 2/13/2019 11:05 AM	460-175247-6 SESI-SB-28 (15') 2/13/2019 11:10 AM	460-175247-7 SESI-SB-29 (9') 2/13/2019 9:40 AM
SOIL BY 9012B																				
Cyanide, Total	mg/Kg	27	27	**0.28 J**	0.11 U	0.11 U F1	0.11 U	0.14 U	0.11 U	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U		0.12 U	0.12 U	0.14 U	0.12 U
SOIL BY 7471B(MG/KG)																				
Mercury	mg/Kg	0.18	0.81	**0.55**	0.011 U	0.010 U	0.012 U	0.012 U	**3.6**	0.010 U	0.0095 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.011 U	0.011 U	0.0095 U
SOIL BY 6010D(MG/KG)																				
Aluminum	mg/Kg			**17500**	**9800**	**4440**	**9370**	**21800**	**10800**	**8750**	**7840**	**13400**	**6310**	**4780**	**5250**	**9380**	**16300**	**22900**	**10500**
Antimony	mg/Kg			**2.0 J**	**1.2 J**	1.1 U	1.2 U	**1.4 J**	1.2 U	**0.95 J**	**1.2 J**	**1.2 J**	1.2 U	1.1 U	1.0 U	1.1 U	1.2 U	1.2 U	1.0 U
Arsenic	mg/Kg	13	16	**14.9**	**1.2 J**	1.2 U	1.3 U	1.5 U	**6.0**	**1.5 J**	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.3 U	1.3 U	1.4 U	1.1 U
Barium	mg/Kg	350	400	**705**	**113**	**53.4**	**114**	**283**	**231**	**75.5**	**90.3**	**164**	**76.2**	**70.9**	**67.9**	**76.1**	**175**	**280**	**125**
Beryllium	mg/Kg	7.2	72	**1.7**	**0.46**	**0.35 J**	**0.66**	**1.6**	**0.58**	**0.38**	**0.39 J**	**0.95**	**0.32 J**	**0.28 J**	**0.25 J**	**0.53**	**0.86**	**1.4**	**0.67**
Cadmium	mg/Kg	2.5	4.3	**1.8**	0.14 U	0.14 U	0.16 U	0.17 U	0.15 U	0.12 U	0.14 U	0.16 U	0.15 U	0.14 U	0.13 U	0.15 U	0.15 U	0.16 U	0.13 U
Calcium	mg/Kg			**37000**	**1090**	**1300**	**3460**	**4310**	**3200**	**1430**	**986 J**	**1930**	**995 J**	**726 J**	**874 J**	**1960**	**1690**	**2190**	**1110**
Chromium	mg/Kg			**26.3**	**24.7**	**13.5**	**23.1**	**99.5**	**19.9**	**23.8**	**20.5**	**33.4**	**19.2**	**13.1**	**12.8**	**27.8**	**49.0**	**49.8**	**24.3**
Cobalt	mg/Kg			**5.2 J**	**9.1 J**	**4.7 J**	**9.4 J**	**16.8**	**6.2 J**	**7.8 J**	**9.1 J**	**11.0 J**	**6.7 J**	**5.3 J**	**5.9 J**	**7.3 J**	**13.3**	**20.5**	**7.9 J**
Copper	mg/Kg	50	270	**118**	**13.9**	**10.7**	**10.8**	**26.3**	**31.1**	**34.5**	**16.4**	**24.2**	**12.8**	**10.2**	**6.3**	**52.2**	**39.4**	**37.2**	**75.2**
Iron	mg/Kg			**22200**	**21100**	**10800**	**20100**	**47500**	**19300**	**16100**	**17300**	**28700**	**14100**	**11200**	**11100**	**15200**	**26600**	**40300**	**22800**
Lead	mg/Kg	63	400	**1560**	**4.8**	**2.5**	**4.2**	**7.9**	**528**	**3.8**	**4.4**	**4.9**	**2.7**	**2.5**	**2.0**	**3.6**	**3.6**	**5.8**	**2.8**
Magnesium	mg/Kg			**9740**	**4010**	**2150**	**6310**	**13700**	**1830**	**3590**	**3290**	**6420**	**2760**	**2030**	**2200**	**5760**	**9370**	**12000**	**4690**
Manganese	mg/Kg	1600	2000	**915**	**304**	**176**	**327**	**599**	**234**	**510**	**373**	**355**	**294**	**112**	**220**	**340**	**729**	**568**	**371**
Nickel	mg/Kg	30	310	**17.5**	**21.3**	**11.7**	**22.1**	**66.0**	**16.0**	**19.3**	**22.9**	**24.9**	**17.0**	**13.2**	**13.1**	**20.3**	**35.3**	**47.7**	**19.4**
Potassium	mg/Kg			**1940**	**5300**	**2350**	**5970**	**12600**	**1410**	**2400**	**4440**	**8830**	**3910**	**2670**	**3400**	**4150**	**9970**	**16500**	**7300**
Selenium	mg/Kg	3.9	180	3.0 U	2.5 U	2.5 U	2.7 U	3.1 U	2.6 U	2.1 U	2.5 U	2.7 U	2.6 U	2.4 U	2.4 U	2.6 U	2.7 U	2.8 U	2.3 U
Silver	mg/Kg	2	180	**1.3 J**	0.20 U	0.19 U	0.22 U	0.24 U	0.21 U	0.16 U	0.20 U	0.22 U	0.21 U	0.19 U	0.19 U	0.20 U	0.21 U	0.22 U	0.18 U
Sodium	mg/Kg			**458 J**	84.8 U	**99.5 J**	**96.5 J**	**784 J**	**200 J**	**71.0 J**	84.6 U	**205 J**	**88.5 J**	82.3 U	79.5 U	**198 J**	**319 J**	**460 J**	**146 J**
Thallium	mg/Kg			0.81 U	0.67 U	0.66 U	0.73 U	0.82 U	0.69 U	0.55 U	0.67 U	0.73 U	0.70 U	0.65 U	0.63 U	0.69 U	0.72 U	0.74 U	0.61 U
Vanadium	mg/Kg			**61.7**	**31.4**	**14.9**	**30.8**	**67.2**	**27.1**	**23.8**	**24.4**	**45.8**	**21.1**	**15.8**	**17.8**	**25.0**	**48.1**	**68.3**	**30.9**
Zinc	mg/Kg	109	10000	**812**	**38.8**	**20.0**	**44.2**	**75.8**	**119**	**27.1**	**33.5**	**60.0**	**27.0**	**20.5**	**23.1**	**37.6**	**73.3**	**107**	**50.1**

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Metals (9012,7471,6010))
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175247-8 SESI-SB-29 (12') 2/13/2019 9:45 AM	460-175247-9 SESI-SB-29 (14') 2/13/2019 9:50 AM	460-175247-10 SESI-SB-30 (10') 2/13/2019 9:10 AM	460-175247-11 SESI-SB-30 (12') 2/13/2019 9:15 AM	460-175247-12 SESI-SB-30 (14') 2/13/2019 9:20 AM	460-175247-13 SESI-SB-31 (9') 2/13/2019 8:30 AM	460-175247-14 SESI-SB-31 (11') 2/13/2019 8:35 AM	460-175247-15 SESI-SB-31 (14') 2/13/2019 8:40 AM	460-175449-9 SESI-SB-32(4') 2/15/2019 9:50 AM	460-175449-10 SESI-SB-32(7') 2/15/2019 9:55 AM	460-175638-11 SESI-SB-33(4') 2/18/2019 9:00 AM	460-175638-12 SESI-SB-33(6') 2/18/2019 9:05 AM	460-175638-13 SESI-SB-34(2') 2/18/2019 12:15 PM	460-175638-14 SESI-SB-34(6') 2/18/2019 12:20 PM
SOIL BY 9012B																	
Cyanide, Total	mg/Kg	27	27	0.13 U	0.12 U	0.13 U	0.12 U	0.13 U	0.11 U	0.12 U	0.13 U	0.13 U	0.12 U				0.12 U F1
SOIL BY 7471B(MG/KG)																	
Mercury	mg/Kg	0.18	0.81	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.0097 U	0.0098 U	0.0099 U	0.010 U
SOIL BY 6010D(MG/KG)																	
Aluminum	mg/Kg			**15800**	**14100**	**10000**	**8920**	**13300**	**10100**	**7830**	**12300**	**8160**	**5700**	**6690**	**5080**	**5250**	**16900**
Antimony	mg/Kg			1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.0 U	1.1 U	1.2 U	1.2 U	1.1 U	**1.2 J**	1.1 U F1	**2.2 J**
Arsenic	mg/Kg	13	16	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U	**2.1 J**	1.2 U	**1.3 J**
Barium	mg/Kg	350	400	**198**	**170**	**122**	**111**	**168**	**123**	**94.9**	**126**	**112**	**78.5**	**74.9**	**61.2**	**52.0**	**209**
Beryllium	mg/Kg	7.2	72	**0.96**	**0.90**	**0.58**	**0.53**	**0.89**	**0.61**	**0.51**	**0.86**	0.10 U	0.10 U	**0.35 J**	**0.28 J**	**0.30 J**	**0.82**
Cadmium	mg/Kg	2.5	4.3	0.15 U	0.16 U	0.15 U	0.15 U	0.14 U	0.15 U	0.13 U	0.15 U	0.16 U	0.16 U	0.15 U	0.15 U	0.14 U	0.13 U
Calcium	mg/Kg			**1690**	**1980**	**1210**	**910 J**	**1050**	**982 J**	**1020**	**1750**	**1220**	**823 J**	**1070**	**909 J**	**1050 J**	**1400**
Chromium	mg/Kg			**31.8**	**32.3**	**20.9**	**21.6**	**33.7**	**20.7**	**18.6**	**56.2**	**21.6**	**15.0**	**16.9**	**12.1**	**13.4**	**46.5**
Cobalt	mg/Kg			**14.6**	**12.2**	**9.3 J**	**8.5 J**	**11.9**	**9.7 J**	**6.4 J**	**13.9**	**9.5 J**	**6.4 J**	**7.1 J**	**6.0 J**	**5.3 J**	**13.1**
Copper	mg/Kg	50	270	**24.7**	**20.7**	**22.2**	**12.4**	**23.8**	**24.0**	**12.2**	**15.8**	**17.2**	**11.0**	**15.3**	**11.7**	**12.6**	**18.6**
Iron	mg/Kg			**28200**	**25600**	**20300**	**18700**	**26200**	**19800**	**16400**	**21500**	**19500**	**14700**	**16700**	**12500**	**11000**	**35500**
Lead	mg/Kg	63	400	**3.8**	**4.4**	**3.1**	**2.6**	**3.8**	**3.4**	**3.6**	**4.4**	**3.9**	**2.6**	**3.5**	**3.9**	**2.6**	**5.9**
Magnesium	mg/Kg			**8080**	**7040**	**5200**	**4500**	**6710**	**5230**	**3470**	**6740**	**3520**	**2540**	**2770**	**2300**	**1800**	**7580**
Manganese	mg/Kg	1600	2000	**422**	**375**	**315**	**261**	**415**	**269**	**264**	**365**	**224**	**151**	**261**	**150**	**193**	**612**
Nickel	mg/Kg	30	310	**32.1**	**28.5**	**20.4**	**19.8**	**27.8**	**20.9**	**16.1**	**30.8**	**20.5**	**14.5**	**15.7**	**12.9**	**14.4**	**39.3**
Potassium	mg/Kg			**11500**	**9280**	**6900**	**6280**	**8950**	**7210**	**4730**	**7690**	**4870**	**3350**	**3950**	**2930**	**2420**	**11500**
Selenium	mg/Kg	3.9	180	2.6 U	2.7 U	2.6 U	2.6 U	2.5 U	2.6 U	2.4 U	2.6 U	2.7 U	2.7 U	2.6 U	2.6 U	2.5 U	2.4 U
Silver	mg/Kg	2	180	0.20 U	0.22 U	0.21 U	0.20 U	0.20 U	0.20 U	0.19 U	0.20 U	0.22 U	0.22 U	0.20 U	0.20 U	0.20 U	0.19 U
Sodium	mg/Kg			**343 J**	**311 J**	**154 J**	**151 J**	**331 J**	**162 J**	**275 J**	**330 J**	**104 J**	91.7 U	86.4 U	87.0 U	**149 J**	**327 J**
Thallium	mg/Kg			0.68 U	0.73 U	0.70 U	0.68 U	0.67 U	0.69 U	0.63 U	0.68 U	0.73 U	0.73 U	0.69 U	0.69 U	0.68 U	0.63 U
Vanadium	mg/Kg			**48.0**	**41.7**	**31.7**	**29.4**	**40.9**	**31.6**	**23.9**	**41.1**	**31.7**	**24.4**	**23.4**	**18.0**	**15.4**	**51.7**
Zinc	mg/Kg	109	10000	**75.0**	**62.0**	**48.3**	**42.4**	**61.5**	**48.2**	**34.6**	**48.4**	**37.6**	**26.9**	**28.1**	**26.2**	**17.6**	**69.7**

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

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U : Indicates the analyte was analyzed for but not detected.

Table 1D
Summary of Soil Sampling Results
Pesticides (8081)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174772-1 SESI-SB-1(3') 2/6/2019 11:00 AM	460-174772-2 SESI-SB-1(8') 2/6/2019 11:30 AM	460-174859-1 SESI-SB-1(12') 2/7/2019 9:00 AM	460-174859-2 SESI-SB-1(15') 2/7/2019 9:05 AM	460-174859-3 SESI-SB-2(3') 2/7/2019 10:30 AM	460-174772-3 SESI-SB-2(5') 2/6/2019 1:00 PM	460-174859-4 SESI-SB-2(15') 2/7/2019 11:00 AM	460-174859-5 SESI-SB-3(2') 2/7/2019 8:00 AM	460-174859-6 SESI-SB-3(7') 2/7/2019 8:05 AM	460-174859-7 SESI-SB-3(13') 2/7/2019 8:10 AM	460-174859-22 SESI-SB-3(15-17') 2/7/2019 1:45 PM	460-174677-1 SESI-SB-4(5-7') 2/5/2019 9:00 AM	460-174677-2 SESI-SB-4(10-12') 2/5/2019 9:30 AM	460-174677-3 SESI-SB-4(15-17') 2/5/2019 10:30 AM	460-174772-4 SESI-SB-5(5') 2/6/2019 3:00 PM	460-175121-1 SESI-SB-5(8') 2/11/2019 11:40 AM
SOIL BY 8081B																			
4,4'-DDD	mg/Kg	0.0033	13	0.0014 U	0.0012 U	0.0012 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0012 U	0.0013 U	0.0013 U * F1	0.0012 U *	0.0014 U *	0.0013 U	0.0012 U
4,4'-DDE	mg/Kg	0.0033	8.9	0.00097 U	0.00086 U	0.00083 U	0.00089 U	0.00093 U	0.00090 U	0.00088 U	0.00091 U	0.00084 U	0.00086 U	0.00092 U F1	0.00089 U	0.00086 U	0.00098 U	0.00087 U	0.00085 U
4,4'-DDT	mg/Kg	0.0033	7.9	0.0015 U	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	**0.0052 J**	0.0013 U	0.0013 U	0.0014 U F1	0.0014 U	0.0013 U	0.0015 U	0.0014 U	0.0013 U
Aldrin	mg/Kg	0.005	0.097	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0013 U	0.0011 U	0.0011 U
alpha-BHC	mg/Kg	0.02	0.48	0.00084 U	0.00074 U	0.00071 U	0.00077 U	0.00080 U	0.00078 U	0.00075 U	0.00078 U	0.00072 U	0.00074 U	0.00079 U	0.00076 U	0.00074 U	0.00085 U	0.00075 U	0.00073 U
beta-BHC	mg/Kg	0.036	0.36	0.00092 U	0.00082 U	0.00078 U	0.00085 U	0.00088 U	0.00086 U	0.00083 U	0.00086 U	0.00080 U	0.00082 U	0.00087 U	0.00084 U	0.00082 U	0.00093 U	0.00083 U	0.00081 U
Chlordane	mg/Kg			0.020 U	0.018 U	0.017 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.017 U	0.018 U	0.019 U	0.018 U	0.018 U	0.020 U	0.018 U	0.017 U
Chlordane (n.o.s.)	mg/Kg			0.020 U	0.018 U	0.017 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.017 U	0.018 U	0.019 U	0.018 U	0.018 U	0.020 U	0.018 U	0.017 U
cis-Chlordane	mg/Kg	0.094	4.2	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U
delta-BHC	mg/Kg	0.04	100	0.00050 U	0.00045 U	0.00043 U	0.00046 U	0.00048 U	0.00047 U	0.00045 U	0.00047 U	0.00044 U	0.00045 U	0.00048 U	0.00046 U	0.00045 U	0.00051 U	0.00045 U	0.00044 U
Dieldrin	mg/Kg	0.005	0.2	0.0011 U	0.00095 U	0.00091 U	0.00098 U	0.0010 U	0.00099 U	0.00096 U	0.0010 U	0.00092 U	0.00095 U	0.0010 U	0.00098 U	0.00095 U	0.0011 U	0.00096 U	0.00094 U
Endosulfan I	mg/Kg	2.4	24	0.0013 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0013 U	0.0011 U	0.0011 U
Endosulfan II	mg/Kg	2.4	24	0.0021 U	0.0019 U	0.0018 U	0.0019 U	0.0020 U	0.0020 U	0.0019 U	0.0020 U	0.0018 U	0.0019 U	0.0020 U	0.0019 U	0.0019 U	0.0021 U	0.0019 U	0.0019 U
Endosulfan sulfate	mg/Kg	2.4	24	0.0010 U	0.00092 U	0.00088 U	0.00095 U	0.00098 U	0.00096 U	0.00093 U	0.00097 U	0.00089 U	0.00091 U	0.00097 U F1	0.00094 U	0.00091 U	0.0010 U	0.00093 U	0.00090 U
Endosulfan, Total	ug/Kg			1.3 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.3 U	1.1 U	1.1 U
Endrin	mg/Kg	0.014	11	0.0012 U	0.0010 U	0.0010 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0010 U	0.0010 U	0.0011 U F1	0.0011 U	0.0010 U	0.0012 U	0.0011 U	0.0010 U
Endrin aldehyde	mg/Kg			0.0019 U	0.0017 U	0.0017 U	0.0018 U	0.0019 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0020 U	0.0017 U	0.0017 U
Endrin ketone	mg/Kg			0.0016 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0014 U	0.0016 U	0.0014 U	0.0014 U
gamma-BHC (Lindane)	mg/Kg	0.1	1.3	0.00076 U	0.00068 U	0.00065 U	0.00070 U	0.00073 U	0.00071 U	0.00069 U	0.00071 U	0.00066 U	0.00067 U	0.00072 U	0.00070 U	0.00068 U	0.00077 U	0.00069 U	0.00067 U
Heptachlor	mg/Kg	0.042	2.1	0.00097 U	0.00086 U	0.00083 U	0.00089 U	0.00093 U	0.00090 U	0.00088 U	0.00091 U	0.00084 U	0.00086 U	0.00092 U	0.00089 U	0.00086 U	0.00098 U	0.00087 U	0.00085 U
Heptachlor epoxide	mg/Kg			0.0012 U	0.0011 U	0.0010 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U
Methoxychlor	mg/Kg			0.0019 U	0.0017 U	0.0016 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0016 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U	0.0019 U	0.0017 U	0.0016 U
Toxaphene	mg/Kg			0.030 U	0.026 U	0.025 U	0.027 U	0.028 U	0.028 U	0.027 U	0.028 U	0.026 U	0.026 U	0.028 U	0.027 U	0.026 U	0.030 U	0.027 U	0.026 U
trans-Chlordane	mg/Kg			0.0015 U	0.0013 U	0.0012 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0015 U	0.0013 U	0.0013 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

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Pesticides (8081)
14 Le Count Standard Printing

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SOIL BY 8081B																				
4,4'-DDD	mg/Kg	0.0033	13	0.0015 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0015 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U
4,4'-DDE	mg/Kg	0.0033	8.9	0.0010 U	0.00093 U	0.00085 U	0.00089 U	0.00084 U	0.0010 U	0.00089 U	0.00089 U	0.00089 U	0.00091 U	0.00088 U	0.00092 U	0.00087 U	0.00090 U	0.00099 U	0.00096 U	0.00087 U
4,4'-DDT	mg/Kg	0.0033	7.9	0.0016 U	0.0014 U	0.0013 U	0.0014 U	0.0013 U	0.0016 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0014 U
Aldrin	mg/Kg	0.005	0.097	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U
alpha-BHC	mg/Kg	0.02	0.48	0.00087 U	0.00080 U	0.00073 U	0.00076 U	0.00073 U	0.00088 U	0.00077 U	0.00077 U	0.00077 U	0.00079 U	0.00076 U	0.00079 U	0.00075 U	0.00077 U	0.00085 U	0.00082 U	0.00075 U
beta-BHC	mg/Kg	0.036	0.36	0.00096 U	0.00088 U	0.00081 U	0.00084 U	0.00080 U	0.00097 U	0.00085 U	0.00084 U	0.00085 U	0.00087 U	0.00084 U	0.00087 U	0.00083 U	0.00085 U	0.00094 U	0.00091 U	0.00083 U
Chlordane	mg/Kg			0.021 U	0.019 U	0.017 U	0.018 U	0.017 U	0.021 U	0.018 U	0.018 U	0.018 U	0.019 U	0.018 U	0.019 U	0.018 U	0.018 U	0.020 U	0.020 U	0.018 U
Chlordane (n.o.s.)	mg/Kg			0.021 U	0.019 U	0.017 U	0.018 U	0.017 U	0.021 U	0.018 U	0.018 U	0.018 U	0.019 U	0.018 U	0.019 U	0.018 U	0.018 U	0.020 U	0.020 U	0.018 U
cis-Chlordane	mg/Kg	0.094	4.2	0.0014 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0014 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0013 U	0.0012 U
delta-BHC	mg/Kg	0.04	100	0.00052 U	0.00048 U	0.00044 U	0.00046 U	0.00044 U	0.00053 U	0.00046 U	0.00046 U	0.00046 U	0.00047 U	0.00046 U	0.00048 U	0.00045 U	0.00047 U	0.00051 U	0.00050 U	0.00045 U
Dieldrin	mg/Kg	0.005	0.2	0.0011 U	0.0010 U	0.00094 U	0.00098 U	0.00093 U	0.0011 U	**0.0039**	0.00098 U	0.00098 U	0.0010 U	0.00097 U	0.0010 U	0.00096 U	0.00099 U	0.0011 U	0.0011 U	0.00096 U
Endosulfan I	mg/Kg	2.4	24	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U
Endosulfan II	mg/Kg	2.4	24	0.0022 U	0.0020 U	0.0019 U	0.0019 U	0.0018 U	0.0022 U	0.0019 U	0.0019 U	0.0019 U	0.0020 U	0.0019 U	0.0020 U	0.0019 U	0.0020 U	0.0022 U	0.0021 U	0.0019 U
Endosulfan sulfate	mg/Kg	2.4	24	0.0011 U	0.00099 U	0.00090 U	0.00094 U	0.00090 U	0.0011 U	0.00095 U	0.00095 U	0.00095 U	0.00097 U	0.00094 U	0.00098 U	0.00092 U	0.00095 U	0.0011 U	0.0010 U	0.00093 U
Endosulfan, Total	ug/Kg			1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1.3 U	1.2 U	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	1.2 U	1.3 U	1.2 U	1.1 U
Endrin	mg/Kg	0.014	11	0.0012 U	0.0011 U	0.0010 U	0.0011 U	0.0010 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U
Endrin aldehyde	mg/Kg			0.0020 U	0.0019 U	0.0017 U	0.0018 U	0.0017 U	0.0020 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0020 U	0.0019 U	0.0017 U
Endrin ketone	mg/Kg			0.0017 U	0.0015 U	0.0014 U	0.0015 U	0.0014 U	0.0017 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0015 U	0.0016 U	0.0016 U	0.0014 U
gamma-BHC (Lindane)	mg/Kg	0.1	1.3	0.00079 U	0.00073 U	0.00067 U	0.00070 U	0.00066 U	0.00080 U	0.00070 U	0.00070 U	0.00070 U	0.00072 U	0.00069 U	0.00072 U	0.00068 U	0.00070 U	0.00078 U	0.00075 U	0.00068 U
Heptachlor	mg/Kg	0.042	2.1	0.0010 U	0.00093 U	0.00085 U	0.00089 U	0.00084 U	0.0010 U	0.00089 U	0.00089 U	0.00089 U	0.00091 U	0.00088 U	0.00092 U	0.00087 U	0.00090 U	0.00099 U	0.00096 U	0.00087 U
Heptachlor epoxide	mg/Kg			0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U
Methoxychlor	mg/Kg			0.0020 U	0.0018 U	0.0016 U	0.0017 U	0.0016 U	0.0020 U	0.0017 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U	0.0019 U	0.0019 U	0.0017 U
Toxaphene	mg/Kg			0.031 U	0.028 U	0.026 U	0.027 U	0.026 U	0.031 U	0.027 U	0.027 U	0.027 U	0.028 U	0.027 U	0.028 U	0.027 U	0.027 U	0.030 U	0.029 U	0.027 U
trans-Chlordane	mg/Kg			0.0015 U	0.0014 U	0.0013 U	0.0013 U	0.0013 U	0.0015 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0015 U	0.0014 U	0.0013 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1D
Summary of Soil Sampling Results
Pesticides (8081)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174859-17 SESI-SB-9(17') 2/7/2019 1:05 PM	460-174986-5 SESI-SB-10(4') 2/8/2019 11:10 AM	460-174986-6 SESI-SB-10(9') 2/8/2019 11:20 AM	460-174986-7 SESI-SB-10(11') 2/8/2019 11:30 AM	460-174986-8 SESI-SB-10(18') 2/8/2019 11:40 AM	460-174859-18 SESI-SB-11(4') 2/7/2019 1:50 PM	460-174859-19 SESI-SB-11(9') 2/7/2019 2:00 PM	460-174859-20 SESI-SB-11(14') 2/7/2019 2:05 PM	460-174859-21 SESI-SB-11(18') 2/7/2019 2:10 PM	460-175342-1 SESI-SB-12 (4') 2/14/2019 1:10 PM	460-175342-2 SESI-SB-12 (6') 2/14/2019 1:15 PM	460-175638-1 SESI-SB-13(3') 2/18/2019 1:30 PM	460-175638-2 SESI-SB-13(7') 2/18/2019 1:35 PM	460-175449-2 SESI-SB-14(2') 2/15/2019 11:00 AM	460-175449-3 SESI-SB-14(6') 2/15/2019 11:05 AM	460-174986-9 SESI-SB-15(3') 2/8/2019 12:30 PM	460-174986-10 SESI-SB-15(8') 2/8/2019 12:35 PM
SOIL BY 8081B																					
4,4'-DDD	mg/Kg	0.0033	13	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U F1	0.0012 U	0.0014 U	0.0013 U	0.0012 U	0.0013 U	0.0014 U	0.0012 U
4,4'-DDE	mg/Kg	0.0033	8.9	0.00089 U	0.00088 U	0.00087 U	0.00091 U	0.00099 U	0.00097 U	0.00084 U	0.00087 U	0.00086 U	0.00085 U F1	0.00084 U	0.00097 U	0.00090 U	0.00084 U	0.00088 U	0.00095 U	0.00082 U
4,4'-DDT	mg/Kg	0.0033	7.9	**0.0049 J**	0.0014 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U F1	0.0013 U	0.0015 U	0.0014 U	0.0013 U	0.0014 U	0.0015 U	0.0013 U
Aldrin	mg/Kg	0.005	0.097	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
alpha-BHC	mg/Kg	0.02	0.48	0.00077 U	0.00076 U	0.00075 U	0.00078 U	0.00085 U	0.00083 U	0.00072 U	0.00075 U	0.00074 U	0.00073 U	0.00073 U	0.00084 U	0.00077 U	0.00072 U	0.00075 U	0.00082 U	0.00071 U
beta-BHC	mg/Kg	0.036	0.36	0.00085 U	0.00084 U	0.00083 U	0.00086 U	0.00094 U	0.00092 U	0.00080 U	0.00083 U	0.00081 U	0.00080 U	0.00080 U	0.00093 U	0.00085 U	0.00080 U	0.00083 U	0.00091 U	0.00078 U
Chlordane	mg/Kg			0.018 U	0.018 U	0.018 U	0.019 U	0.020 U	0.020 U	0.017 U	0.018 U	0.018 U	0.017 U	0.017 U	0.020 U	0.018 U	0.017 U	0.018 U	0.020 U	0.017 U
Chlordane (n.o.s.)	mg/Kg			0.018 U	0.018 U	0.018 U	0.019 U	0.020 U	0.020 U	0.017 U	0.018 U	0.018 U	0.017 U	0.017 U	0.020 U	0.018 U	0.017 U	0.018 U	0.020 U	0.017 U
cis-Chlordane	mg/Kg	0.094	4.2	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0013 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0013 U	0.0011 U
delta-BHC	mg/Kg	0.04	100	0.00046 U	0.00046 U	0.00045 U	0.00047 U	0.00051 U	0.00050 U	0.00044 U	0.00045 U	0.00044 U	0.00044 U	0.00044 U	0.00051 U	0.00046 U	0.00044 U	0.00045 U	0.00049 U	0.00043 U
Dieldrin	mg/Kg	0.005	0.2	0.00098 U	0.00097 U	0.00096 U	0.0010 U	0.0011 U	0.0011 U	0.00092 U	0.00096 U	0.00094 U	0.00093 U	0.00093 U	0.0011 U	0.00099 U	0.00092 U	0.00097 U	0.0011 U	0.00091 U
Endosulfan I	mg/Kg	2.4	24	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Endosulfan II	mg/Kg	2.4	24	0.0019 U	0.0019 U	0.0019 U	0.0020 U	0.0021 U	0.0021 U	0.0018 U	0.0019 U	0.0019 U	0.0018 U F1	0.0018 U	0.0021 U	0.0019 U	0.0018 U	0.0019 U	0.0021 U	0.0018 U
Endosulfan sulfate	mg/Kg	2.4	24	0.00095 U	0.00094 U	0.00093 U	0.00097 U	0.0010 U	0.0010 U	0.00089 U	0.00093 U	0.00091 U	0.00090 U F1	0.00090 U	0.0010 U F1 *	0.00095 U *	0.00089 U	0.00093 U	0.0010 U	0.00088 U
Endosulfan, Total	ug/Kg			1.2 U	1.1 U	1.1 U	1.2 U	1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.0013 U	0.0012 U	1.1 U	1.1 U	1.2 U	1.1 U
Endrin	mg/Kg	0.014	11	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0010 U	0.0011 U	0.0010 U	0.0010 U F1	0.0010 U	0.0012 U	0.0011 U	0.0010 U	0.0011 U	0.0012 U	0.0010 U
Endrin aldehyde	mg/Kg			0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0020 U	0.0019 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0019 U	0.0018 U	0.0017 U	0.0018 U	0.0019 U	0.0016 U
Endrin ketone	mg/Kg			0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0016 U	0.0016 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0016 U	0.0015 U	0.0014 U	0.0014 U	0.0016 U	0.0014 U
gamma-BHC (Lindane)	mg/Kg	0.1	1.3	0.00070 U	0.00069 U	0.00068 U	0.00071 U	0.00077 U	0.00076 U	0.00066 U	0.00068 U	0.00067 U	0.00067 U	0.00066 U	0.00076 U	0.00070 U	0.00066 U	0.00069 U	0.00075 U	0.00065 U
Heptachlor	mg/Kg	0.042	2.1	0.00089 U	0.00088 U	0.00087 U	0.00091 U	0.00099 U	0.00097 U	0.00084 U	0.00087 U	0.00086 U	0.00085 U	0.00084 U	0.00097 U	0.00090 U	0.00084 U	0.00088 U	0.00095 U	0.00082 U
Heptachlor epoxide	mg/Kg			0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U
Methoxychlor	mg/Kg			0.0017 U	0.0017 U	0.0017 U	0.0018 U	0.0019 U	0.0019 U	0.0016 U	0.0017 U	0.0017 U	0.0016 U	0.0016 U	0.0019 U	0.0017 U	0.0016 U	0.0017 U	0.0018 U	0.0016 U
Toxaphene	mg/Kg			0.027 U	0.027 U	0.027 U	0.028 U	0.030 U	0.030 U	0.026 U	0.027 U	0.026 U	0.026 U	0.026 U	0.030 U	0.027 U	0.026 U	0.027 U	0.029 U	0.025 U
trans-Chlordane	mg/Kg			0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0015 U	0.0014 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0015 U	0.0013 U	0.0013 U	0.0013 U		

Notes:

Bold cells are detections above the MDL

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Table 1D
Summary of Soil Sampling Results
Pesticides (8081)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174986-11 SESI-SB-15(14') 2/8/2019 12:40 PM	SESI-SB-15 (15'-17') 2/13/2019 10:00 AM	460-174986-12 SESI-SB-16(3') 2/8/2019 2:00 PM	460-174986-13 SESI-SB-16(8') 2/8/2019 2:05 PM	460-174986-14 SESI-SB-16(13') 2/8/2019 2:10 PM	460-175121-3 SESI-SB-17(4') 2/11/2019 8:10 AM	460-175121-4 SESI-SB-17(8') 2/11/2019 8:15 AM	460-175121-5 SESI-SB-17(14') 2/11/2019 8:20 AM	SESI-SB-17 (15'-17') 2/14/2019 9:30 AM	460-175121-6 SESI-SB-18(3') 2/11/2019 9:15 AM	460-175121-7 SESI-SB-18(7') 2/11/2019 9:25 AM	460-175121-8 SESI-SB-18(13') 2/11/2019 9:35 AM	SESI-SB-18 (15'-17') 2/14/2019 1:30 PM	460-175121-9 SESI-SB-19(3') 2/11/2019 10:10 AM	460-175121-10 SESI-SB-19(9') 2/11/2019 10:20 AM	460-175121-11 SESI-SB-19(12') 2/11/2019 10:30 AM	460-175121-12 SESI-SB-19(18') 2/11/2019 10:40 AM
SOIL BY 8081B																				
4,4'-DDD	mg/Kg	0.0033	13	0.0013 U	0.0013 U F1	0.0013 U	0.0012 U	0.0013 U	0.0013 U	0.0012 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0012 U	0.0012 U	0.0013 U
4,4'-DDE	mg/Kg	0.0033	8.9	0.00090 U	0.00092 U F1	0.00092 U	0.00086 U	0.00088 U	0.00088 U	0.00085 U	0.00087 U	0.00093 U	0.00090 U	0.00087 U	0.00090 U	0.00099 U	0.00098 U	0.00084 U	0.00084 U	0.00089 U
4,4'-DDT	mg/Kg	0.0033	7.9	0.0014 U	0.0014 U F1	0.0014 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0013 U	0.0013 U	0.0014 U
Aldrin	mg/Kg	0.005	0.097	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0013 U	0.0011 U	0.0011 U	0.0011 U
alpha-BHC	mg/Kg	0.02	0.48	0.00078 U	0.00079 U	0.00079 U	0.00074 U	0.00076 U	0.00075 U	0.00074 U	0.00075 U	0.00080 U	0.00077 U	0.00075 U	0.00078 U	0.00085 U	0.00085 U	0.00072 U	0.00072 U	0.00076 U
beta-BHC	mg/Kg	0.036	0.36	0.00086 U	0.00087 U	0.00088 U	0.00081 U	0.00084 U	0.00083 U	0.00081 U	0.00082 U	0.00088 U	0.00085 U	0.00082 U	0.00086 U	0.00094 U	0.00093 U	0.00079 U	0.00080 U	0.00084 U
Chlordane	mg/Kg			0.019 U	0.019 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.018 U	0.018 U	0.019 U	0.020 U	0.020 U	0.017 U	0.017 U	0.018 U
Chlordane (n.o.s.)	mg/Kg			0.019 U	0.019 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.018 U	0.018 U	0.019 U	0.020 U	0.020 U	0.017 U	0.017 U	0.018 U
cis-Chlordane	mg/Kg	0.094	4.2	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0013 U	0.0011 U	0.0011 U	0.0012 U
delta-BHC	mg/Kg	0.04	100	0.00047 U	0.00048 U	0.00048 U	0.00044 U	0.00046 U	0.00045 U	0.00044 U	0.00045 U	0.00048 U	0.00047 U	0.00045 U	0.00047 U	0.00051 U	0.00051 U	0.00043 U	0.00044 U	0.00046 U
Dieldrin	mg/Kg	0.005	0.2	0.00099 U	0.0010 U	0.0010 U	0.00094 U	0.00097 U	0.00096 U	0.00094 U	0.00095 U	0.0010 U	0.00099 U	0.00096 U	0.0010 U	0.0011 U	0.0011 U	0.00092 U	0.00093 U	0.00098 U
Endosulfan I	mg/Kg	2.4	24	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0013 U	0.0013 U	0.0011 U	0.0011 U	0.0011 U
Endosulfan II	mg/Kg	2.4	24	0.0020 U	0.0020 U F1	0.0020 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0020 U	0.0020 U	0.0019 U	0.0020 U	0.0022 U	0.0021 U	0.0018 U	0.0018 U	0.0019 U
Endosulfan sulfate	mg/Kg	2.4	24	0.00096 U	0.00097 U F1	0.00098 U	0.00091 U	0.00094 U	0.00093 U	0.00091 U	0.00092 U	0.00098 U	0.00095 U	0.00092 U	0.00096 U	0.0011 U	0.0010 U	0.00089 U	0.00089 U	0.00094 U
Endosulfan, Total	ug/Kg			1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.3 U	1.3 U	1.1 U	1.1 U	1.1 U
Endrin	mg/Kg	0.014	11	0.0011 U	0.0011 U F1	0.0011 U	0.0010 U	0.0011 U	0.0011 U	0.0010 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0010 U	0.0010 U	0.0011 U
Endrin aldehyde	mg/Kg			0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0019 U	0.0018 U	0.0017 U	0.0018 U	0.0020 U	0.0020 U	0.0017 U	0.0017 U	0.0018 U
Endrin ketone	mg/Kg			0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0014 U	0.0015 U	0.0016 U	0.0016 U	0.0014 U	0.0014 U	0.0015 U
gamma-BHC (Lindane)	mg/Kg	0.1	1.3	0.00071 U	0.00072 U	0.00072 U	0.00067 U	0.00069 U	0.00069 U	0.00067 U	0.00068 U	0.00073 U	0.00070 U	0.00068 U	0.00071 U	0.00078 U	0.00077 U	0.00066 U	0.00066 U	0.00070 U
Heptachlor	mg/Kg	0.042	2.1	0.00090 U	0.00092 U	0.00092 U	0.00086 U	0.00088 U	0.00088 U	0.00085 U	0.00087 U	0.00093 U	0.00090 U	0.00087 U	0.00090 U	0.00099 U	0.00098 U	0.00084 U	0.00084 U	0.00089 U
Heptachlor epoxide	mg/Kg			0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Methoxychlor	mg/Kg			0.0017 U	0.0018 U F1	0.0018 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0019 U	0.0019 U	0.0016 U	0.0016 U	0.0017 U
Toxaphene	mg/Kg			0.028 U	0.028 U	0.028 U	0.026 U	0.027 U	0.027 U	0.026 U	0.027 U	0.028 U	0.028 U	0.027 U	0.028 U	0.030 U	0.030 U	0.026 U	0.026 U	0.027 U
trans-Chlordane	mg/Kg				0.0014 U	0.0014 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0014 U	0.0015 U	0.0015 U	0.0012 U	0.0013 U	0.0013 U

Notes:

Bold cells are detections above the MDL

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Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

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Pesticides (8081)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175121-13 SESI-SB-19(23') 2/11/2019 10:50 AM	460-175121-14 SESI-SB-20(5') 2/11/2019 12:00 PM	460-175121-15 SESI-SB-20(6') 2/11/2019 12:05 PM	460-175121-16 SESI-SB-20(9') 2/11/2019 12:10 PM	460-175121-17 SESI-SB-20(14') 2/11/2019 12:15 PM	460-175449-4 SESI-SB-21(3') 2/15/2019 12:40 PM	460-175449-5 SESI-SB-21(8') 2/15/2019 12:45 PM	460-175449-6 SESI-SB-22(5') 2/15/2019 9:20 AM	460-175449-7 SESI-SB-22(7') 2/15/2019 9:25 AM	460-175449-8 SESI-SB-22(22') 2/15/2019 9:30 AM	460-174986-15 SESI-SB-23(4') 2/8/2019 10:00 AM	460-174986-16 SESI-SB-23(7') 2/8/2019 10:05 AM	460-174986-17 SESI-SB-23(11') 2/8/2019 10:10 AM	460-174986-18 SESI-SB-23(16') 2/8/2019 10:15 AM	460-175342-5 SESI-SB-24 (1') 2/14/2019 12:40 PM	460-175342-6 SESI-SB-24 (6') 2/14/2019 12:45 PM	460-175638-3 SESI-SB-25(3') 2/18/2019 10:45 AM
SOIL BY 8081B																				
4,4'-DDD	mg/Kg	0.0033	13	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0015 U
4,4'-DDE	mg/Kg	0.0033	8.9	0.00092 U	0.00093 U	0.00088 U	0.00085 U	0.00090 U	0.00084 U	0.00087 U	0.00092 U	0.00092 U	0.00089 U	0.00090 U	0.00092 U	0.00087 U	0.00088 U	0.00089 U	0.00086 U	0.0010 U
4,4'-DDT	mg/Kg	0.0033	7.9	0.0014 U	**0.010**	**0.0029 J**	0.0013 U	0.0014 U	0.0013 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0013 U	**0.0055 J**
Aldrin	mg/Kg	0.005	0.097	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U
alpha-BHC	mg/Kg	0.02	0.48	0.00079 U	0.00080 U	0.00076 U	0.00073 U	0.00077 U	0.00073 U	0.00075 U	0.00079 U	0.00079 U	0.00076 U	0.00077 U	0.00079 U	0.00075 U	0.00076 U	0.00077 U	0.00074 U	0.00087 U
beta-BHC	mg/Kg	0.036	0.36	0.00087 U	0.00088 U	0.00084 U	0.00081 U	0.00085 U	0.00080 U	0.00083 U	0.00087 U	0.00087 U	0.00084 U	0.00085 U	0.00087 U	0.00083 U	0.00084 U	0.00085 U	0.00082 U	0.00096 U
Chlordane	mg/Kg			0.019 U	0.019 U	0.018 U	0.017 U	0.018 U	0.017 U	0.018 U	0.019 U	0.019 U	0.018 U	0.018 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U	0.021 U
Chlordane (n.o.s.)	mg/Kg			0.019 U	0.019 U	0.018 U	0.017 U	0.018 U	0.017 U	0.018 U	0.019 U	0.019 U	0.018 U	0.018 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U	0.021 U
cis-Chlordane	mg/Kg	0.094	4.2	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0014 U
delta-BHC	mg/Kg	0.04	100	0.00048 U	0.00048 U	0.00046 U	0.00044 U	0.00047 U	0.00044 U	0.00045 U	0.00048 U	0.00048 U	0.00046 U	0.00047 U	0.00048 U	0.00045 U	0.00046 U	0.00046 U	0.00045 U	0.00052 U
Dieldrin	mg/Kg	0.005	0.2	0.0010 U	0.0010 U	0.00097 U	0.00093 U	0.00099 U	0.00093 U	0.00096 U	0.0010 U	0.0010 U	0.00098 U	0.00099 U	0.0010 U	0.00096 U	0.00097 U	0.00098 U	0.00095 U	0.0011 U
Endosulfan I	mg/Kg	2.4	24	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0013 U
Endosulfan II	mg/Kg	2.4	24	0.0020 U	0.0020 U	0.0019 U	0.0018 U	0.0020 U	0.0018 U	0.0019 U	0.0020 U	0.0020 U	0.0019 U	0.0020 U	0.0020 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0022 U
Endosulfan sulfate	mg/Kg	2.4	24	0.00098 U	0.00099 U	0.00094 U	0.00090 U	0.00095 U	0.00090 U	0.00093 U	0.00097 U	0.00098 U	0.00094 U	0.00096 U	0.00098 U	0.00092 U	0.00094 U	0.00095 U	0.00092 U	0.0011 U *
Endosulfan, Total	ug/Kg			1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	0.0013 U
Endrin	mg/Kg	0.014	11	0.0011 U	0.0011 U	0.0011 U	0.0010 U	0.0011 U	0.0010 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0010 U	0.0012 U
Endrin aldehyde	mg/Kg			0.0018 U	0.0019 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0020 U
Endrin ketone	mg/Kg			0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0014 U	0.0017 U
gamma-BHC (Lindane)	mg/Kg	0.1	1.3	0.00072 U	0.00073 U	0.00069 U	0.00067 U	0.00070 U	0.00066 U	0.00068 U	0.00072 U	0.00072 U	0.00070 U	0.00071 U	0.00072 U	0.00068 U	0.00069 U	0.00070 U	0.00068 U	0.00079 U
Heptachlor	mg/Kg	0.042	2.1	0.00092 U	0.00093 U	0.00088 U	0.00085 U	0.00090 U	0.00084 U	0.00087 U	0.00092 U	0.00092 U	0.00089 U	0.00090 U	0.00092 U	0.00087 U	0.00088 U	0.00089 U	0.00086 U	0.0010 U
Heptachlor epoxide	mg/Kg			0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0013 U
Methoxychlor	mg/Kg			0.0018 U	0.0018 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0020 U
Toxaphene	mg/Kg			0.028 U	0.029 U	0.027 U	0.026 U	0.028 U	0.026 U	0.027 U	0.028 U	0.028 U	0.027 U	0.028 U	0.028 U	0.027 U	0.027 U	0.027 U	0.026 U	0.031 U
trans-Chlordane	mg/Kg			0.0014 U	0.0014 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0015 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1D
Summary of Soil Sampling Results
Pesticides (8081)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175638-4 SESI-SB-25(8') 2/18/2019 11:00 AM	SESI-SB-25(10-12') 2/19/2019 12:00 PM	SESI-SB-25(15-17') 2/19/2019 12:10 PM	SESI-SB-25(20-22') 2/19/2019 12:20 PM	460-175638-5 SESI-SB-26(3') 2/18/2019 9:30 AM	460-175638-6 SESI-SB-26(7') 2/18/2019 9:35 AM	460-175638-7 SESI-SB-26(12') 2/18/2019 10:15 AM	SESI-SB-26(15-17') 2/19/2019 8:30 AM	460-175638-8 SESI-SB-27(4') 2/18/2019 7:45 AM	460-175638-9 SESI-SB-27(7') 2/18/2019 8:00 AM	460-175638-10 SESI-SB-27(11') 2/18/2019 8:15 AM	460-175247-4 SESI-SB-28 (6') 2/13/2019 11:00 AM	460-175247-5 SESI-SB-28 (10') 2/13/2019 11:05 AM	460-175247-6 SESI-SB-28 (15') 2/13/2019 11:10 AM	460-175247-7 SESI-SB-29 (9') 2/13/2019 9:40 AM	460-175247-8 SESI-SB-29 (12') 2/13/2019 9:45 AM	460-175247-9 SESI-SB-29 (14') 2/13/2019 9:50 AM
SOIL BY 8081B																				
4,4'-DDD	mg/Kg	0.0033	13	0.0013 U	0.0013 U	0.0013 U	0.0015 U	0.0013 U	0.0012 U	0.0012 U	0.0014 U	0.0012 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0012 U	**0.0017 J p**	0.0013 U
4,4'-DDE	mg/Kg	0.0033	8.9	0.00087 U	0.00087 U	0.00092 U	0.0010 U	0.00093 U	0.00087 U	0.00085 U	0.00094 U	0.00086 U	0.00087 U	0.00089 U	0.00088 U	0.00089 U	0.00097 U	0.00082 U	0.00092 U	0.00091 U
4,4'-DDT	mg/Kg	0.0033	7.9	0.0014 U	0.0014 U	0.0014 U	0.0016 U	0.0014 U	0.0013 U	0.0013 U	0.0015 U	0.0013 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0015 U	0.0013 U	**0.0035 J p**	0.0014 U
Aldrin	mg/Kg	0.005	0.097	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U
alpha-BHC	mg/Kg	0.02	0.48	0.00075 U	0.00075 U	0.00079 U	0.00089 U	0.00080 U	0.00075 U	0.00073 U	0.00081 U	0.00074 U	0.00075 U	0.00077 U	0.00076 U	0.00077 U	0.00084 U	0.00071 U	0.00079 U	0.00078 U
beta-BHC	mg/Kg	0.036	0.36	0.00083 U	0.00083 U	0.00087 U	0.00098 U	0.00088 U	0.00082 U	0.00080 U	0.00089 U	0.00082 U	0.00083 U	0.00084 U	0.00083 U	0.00085 U	0.00092 U	0.00078 U	0.00088 U	0.00086 U
Chlordane	mg/Kg			0.018 U	0.018 U	0.019 U	0.021 U	0.019 U	0.018 U	0.017 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.020 U	0.017 U	0.019 U	0.019 U
Chlordane (n.o.s.)	mg/Kg			0.018 U	0.018 U	0.019 U	0.021 U	0.019 U	0.018 U	0.017 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.020 U	0.017 U	0.019 U	0.019 U
cis-Chlordane	mg/Kg	0.094	4.2	0.0012 U	0.0012 U	0.0012 U	0.0014 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0011 U	0.0012 U	0.0012 U
delta-BHC	mg/Kg	0.04	100	0.00045 U	0.00045 U	0.00048 U	0.00054 U	0.00048 U	0.00045 U	0.00044 U	0.00049 U	0.00045 U	0.00045 U	0.00046 U	0.00046 U	0.00046 U	0.00050 U	0.00043 U	0.00048 U	0.00047 U
Dieldrin	mg/Kg	0.005	0.2	0.00096 U	0.00096 U	0.0010 U	0.0011 U	0.0010 U	0.00095 U	0.00093 U	0.0010 U	0.00095 U	0.00096 U	0.00098 U	0.00097 U	0.00098 U	0.0011 U	0.00091 U	0.0010 U	0.0010 U
Endosulfan I	mg/Kg	2.4	24	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0011 U	0.0012 U	0.0012 U
Endosulfan II	mg/Kg	2.4	24	0.0019 U	0.0019 U	0.0020 U	0.0022 U	0.0020 U	0.0019 U	0.0018 U	0.0020 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0021 U	0.0018 U	0.0020 U	0.0020 U
Endosulfan sulfate	mg/Kg	2.4	24	0.00093 U *	0.00092 U *	0.00098 U *	0.0011 U *	0.00098 U *	0.00092 U *	0.00090 U *	0.0010 U *	0.00092 U *	0.00093 U *	0.00095 U *	0.00093 U	0.00095 U	0.0010 U	0.00088 U	0.00098 U	0.00096 U
Endosulfan, Total	ug/Kg			0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	1.1 U	1.2 U	1.3 U	1.1 U	1.2 U	1.2 U
Endrin	mg/Kg	0.014	11	0.0011 U	0.0011 U	0.0011 U	0.0013 U	0.0011 U	0.0011 U	0.0010 U	0.0011 U	0.0010 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U
Endrin aldehyde	mg/Kg			0.0017 U	0.0017 U	0.0018 U	0.0021 U	0.0019 U	0.0017 U	0.0017 U	0.0019 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0019 U	0.0016 U	0.0018 U	0.0018 U
Endrin ketone	mg/Kg			0.0014 U	0.0014 U	0.0015 U	0.0017 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0014 U	0.0015 U	0.0016 U	0.0014 U	0.0015 U	0.0015 U
gamma-BHC (Lindane)	mg/Kg	0.1	1.3	0.00069 U	0.00068 U	0.00072 U	0.00081 U	0.00073 U	0.00068 U	0.00066 U	0.00073 U	0.00068 U	0.00068 U	0.00070 U	0.00069 U	0.00070 U	0.00076 U	0.00065 U	0.00072 U	0.00071 U
Heptachlor	mg/Kg	0.042	2.1	0.00087 U	0.00087 U	0.00092 U	0.0010 U	0.00093 U	0.00087 U	0.00085 U	0.00094 U	0.00086 U	0.00087 U	0.00089 U	0.00088 U	0.00089 U	0.00097 U	0.00082 U	0.00092 U	0.00091 U
Heptachlor epoxide	mg/Kg			0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0012 U	0.0011 U
Methoxychlor	mg/Kg			0.0017 U	0.0017 U	0.0018 U	0.0020 U	0.0018 U	0.0017 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0019 U	0.0016 U	0.0018 U	0.0018 U
Toxaphene	mg/Kg			0.027 U	0.027 U	0.028 U	0.032 U	0.028 U	0.027 U	0.026 U	0.029 U	0.026 U	0.027 U	0.027 U	0.027 U	0.027 U	0.030 U	0.025 U	0.028 U	0.028 U
trans-Chlordane	mg/Kg			0.0013 U	0.0013 U	0.0014 U	0.0015 U	0.0014 U	0.0013 U	0.0013 U	0.0014 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0015 U	0.0012 U	0.0014 U	0.0014 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approxima

U : Indicates the analyte was analyzed for but not detected.

Table 1D
Summary of Soil Sampling Results
Pesticides (8081)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175247-10 SESI-SB-30 (10') 2/13/2019 9:10 AM	460-175247-11 SESI-SB-30 (12') 2/13/2019 9:15 AM	460-175247-12 SESI-SB-30 (14') 2/13/2019 9:20 AM	460-175247-13 SESI-SB-31 (9') 2/13/2019 8:30 AM	460-175247-14 SESI-SB-31 (11') 2/13/2019 8:35 AM	460-175247-15 SESI-SB-31 (14') 2/13/2019 8:40 AM	460-175449-9 SESI-SB-32(4') 2/15/2019 9:50 AM	460-175449-10 SESI-SB-32(7') 2/15/2019 9:55 AM	460-175638-11 SESI-SB-33(4') 2/18/2019 9:00 AM	460-175638-12 SESI-SB-33(6') 2/18/2019 9:05 AM	460-175638-13 SESI-SB-34(2') 2/18/2019 12:15 PM	460-175638-14 SESI-SB-34(6') 2/18/2019 12:20 PM
SOIL BY 8081B															
4,4'-DDD	mg/Kg	0.0033	13	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0012 U	0.0013 U	0.0014 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U
4,4'-DDE	mg/Kg	0.0033	8.9	0.00088 U	0.00090 U	0.00088 U	0.00086 U	0.00085 U	0.00089 U	0.00094 U	0.00091 U	0.00086 U	0.00088 U	0.00084 U	0.00087 U
4,4'-DDT	mg/Kg	0.0033	7.9	0.0014 U	0.0014 U	0.0014 U	0.0013 U	0.0013 U	0.0014 U	0.0015 U	0.0014 U	0.0013 U	0.0014 U	0.0013 U	0.0014 U
Aldrin	mg/Kg	0.005	0.097	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
alpha-BHC	mg/Kg	0.02	0.48	0.00076 U	0.00077 U	0.00076 U	0.00074 U	0.00073 U	0.00077 U	0.00081 U	0.00078 U	0.00074 U	0.00076 U	0.00072 U	0.00075 U
beta-BHC	mg/Kg	0.036	0.36	0.00083 U	0.00085 U	0.00084 U	0.00081 U	0.00081 U	0.00084 U	0.00089 U	0.00086 U	0.00081 U	0.00083 U	0.00079 U	0.00083 U
Chlordane	mg/Kg			0.018 U	0.018 U	0.018 U	0.018 U	0.017 U	0.018 U	0.019 U	0.019 U	0.018 U	0.018 U	0.017 U	0.018 U
Chlordane (n.o.s.)	mg/Kg			0.018 U	0.018 U	0.018 U	0.018 U	0.017 U	0.018 U	0.019 U	0.019 U	0.018 U	0.018 U	0.017 U	0.018 U
cis-Chlordane	mg/Kg	0.094	4.2	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U
delta-BHC	mg/Kg	0.04	100	0.00046 U	0.00046 U	0.00046 U	0.00044 U	0.00044 U	0.00046 U	0.00049 U	0.00047 U	0.00044 U	0.00046 U	0.00043 U	0.00045 U
Dieldrin	mg/Kg	0.005	0.2	0.00097 U	0.00099 U	0.00097 U	0.00094 U	0.00093 U	0.00098 U	0.0010 U	0.0010 U	0.00094 U	0.00097 U	0.00092 U	0.00096 U
Endosulfan I	mg/Kg	2.4	24	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
Endosulfan II	mg/Kg	2.4	24	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0018 U	0.0019 U	0.0020 U	0.0020 U	0.0019 U	0.0019 U	0.0018 U	0.0019 U
Endosulfan sulfate	mg/Kg	2.4	24	0.00093 U	0.00095 U	0.00094 U	0.00091 U	0.00090 U	0.00095 U	0.0010 U	0.00097 U	0.00091 U *	0.00093 U *	0.00089 U *	0.00092 U *
Endosulfan, Total	ug/Kg			1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	0.011 U	0.011 U	0.011 U	0.011 U
Endrin	mg/Kg	0.014	11	0.0011 U	0.0011 U	0.0011 U	0.0010 U	0.0010 U	0.0011 U	0.0011 U	0.0011 U	0.0010 U	0.0011 U	0.0010 U	0.0011 U
Endrin aldehyde	mg/Kg			0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0019 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U
Endrin ketone	mg/Kg			0.0014 U	0.0015 U	0.0015 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0015 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U
gamma-BHC (Lindane)	mg/Kg	0.1	1.3	0.00069 U	0.00070 U	0.00069 U	0.00067 U	0.00067 U	0.00070 U	0.00073 U	0.00071 U	0.00067 U	0.00069 U	0.00066 U	0.00068 U
Heptachlor	mg/Kg	0.042	2.1	0.00088 U	0.00090 U	0.00088 U	0.00086 U	0.00085 U	0.00089 U	0.00094 U	0.00091 U	0.00086 U	0.00088 U	0.00084 U	0.00087 U
Heptachlor epoxide	mg/Kg			0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
Methoxychlor	mg/Kg			0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0016 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0016 U	0.0017 U
Toxaphene	mg/Kg			0.027 U	0.027 U	0.027 U	0.026 U	0.026 U	0.027 U	0.029 U	0.028 U	0.026 U	0.027 U	0.026 U	0.027 U
trans-Chlordane	mg/Kg			0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0014 U	0.0014 U	0.0013 U	0.0013 U	0.0012 U	0.0013 U

Notes:

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Table 1E
Summary of Soil Sampling Results
PCBs (8082)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174772-1 SESI-SB-1(3') 2/6/2019 11:00 AM	460-174772-2 SESI-SB-1(8') 2/6/2019 11:30 AM	460-174859-1 SESI-SB-1(12') 2/7/2019 9:00 AM	460-174859-2 SESI-SB-1(15') 2/7/2019 9:05 AM	460-174859-3 SESI-SB-2(3') 2/7/2019 10:30 AM	460-174772-3 SESI-SB-2(5') 2/6/2019 1:00 PM	460-174859-4 SESI-SB-2(15') 2/7/2019 11:00 AM	460-174859-5 SESI-SB-3(2') 2/7/2019 8:00 AM	460-174859-6 SESI-SB-3(7') 2/7/2019 8:05 AM	460-174859-7 SESI-SB-3(13') 2/7/2019 8:10 AM	SESI-SB-3(15-17') 2/7/2019 1:45 PM	460-174677-1 SESI-SB-4(5-7') 2/5/2019 9:00 AM	SESI-SB-4(10-12') 2/5/2019 9:30 AM	SESI-SB-4(15-17') 2/5/2019 10:30 AM	460-174772-4 SESI-SB-5(5') 2/6/2019 3:00 PM	460-175121-1 SESI-SB-5(8') 2/11/2019 11:40 AM	460-175121-2 SESI-SB-5(12') 2/11/2019 11:50 AM
SOIL BY 8082A																				
Aroclor 1016	mg/Kg			0.011 U	0.0097 U	0.0093 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.0094 U	0.0097 U	0.010 U	0.010 U	0.0097 U	0.011 U	0.0098 U	0.0096 U	0.011 U
Aroclor 1221	mg/Kg			0.011 U	0.0097 U	0.0093 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.0094 U	0.0097 U	0.010 U	0.010 U	0.0097 U	0.011 U	0.0098 U	0.0096 U	0.011 U
Aroclor 1232	mg/Kg			0.011 U	0.0097 U	0.0093 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.0094 U	0.0097 U	0.010 U	0.010 U	0.0097 U	0.011 U	0.0098 U	0.0096 U	0.011 U
Aroclor 1242	mg/Kg			0.011 U	0.0097 U	0.0093 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.0094 U	0.0097 U	0.010 U	0.010 U	0.0097 U	0.011 U	0.0098 U	0.0096 U	0.011 U
Aroclor 1248	mg/Kg			0.011 U	0.0097 U	0.0093 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.0094 U	0.0097 U	0.010 U	0.010 U	0.0097 U	0.011 U	0.0098 U	0.0096 U	0.011 U
Aroclor 1254	mg/Kg			0.011 U	0.010 U	0.0096 U	0.010 U	0.011 U	0.011 U	0.010 U	0.011 U	0.0098 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.012 U
Aroclor 1260	mg/Kg			0.011 U	0.010 U	0.0096 U	0.010 U	0.011 U	0.011 U	0.010 U	0.011 U	0.0098 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.012 U
Aroclor 1262	mg/Kg			0.011 U	0.010 U	0.0096 U	0.010 U	0.011 U	0.011 U	0.010 U	0.011 U	0.0098 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.012 U
Aroclor 1268	mg/Kg			0.011 U	0.010 U	0.0096 U	0.010 U	0.011 U	0.011 U	0.010 U	0.011 U	0.0098 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.012 U
Polychlorinated biphenyls, Total	mg/Kg	0.1	1	0.011 U	0.010 U	0.0096 U	0.010 U	0.011 U	0.011 U	0.010 U	0.011 U	0.0098 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.0099 U	0.012 U

Notes:

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Table 1E
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PCBs (8082)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-174859-8 SESI-SB-6(2') 2/7/2019 11:45 AM	460-174859-9 SESI-SB-6(8') 2/7/2019 11:50 AM	460-174859-10 SESI-SB-6(12') 2/7/2019 12:00 PM	460-174859-11 SESI-SB-6(16') 2/7/2019 12:05 PM	SESI-SB-6(20-22') 2/8/2019 11:00 AM	460-174986-2 SESI-SB-7(3') 2/8/2019 9:20 AM	460-174986-3 SESI-SB-7(8') 2/8/2019 9:30 AM	460-174986-4 SESI-SB-7(13') 2/8/2019 9:40 AM	SESI-SB-7(15'-17') 2/15/2019 10:30 AM	460-174772-5 SESI-SB-8(4') 2/6/2019 8:30 AM	460-174772-6 SESI-SB-8(9') 2/6/2019 9:00 AM	460-174859-12 SESI-SB-8(14') 2/7/2019 10:20 AM	460-174859-13 SESI-SB-8(18') 2/7/2019 10:30 AM	460-174859-14 SESI-SB-9(3') 2/7/2019 12:50 PM	460-174859-15 SESI-SB-9(8') 2/7/2019 12:55 PM	460-174859-16 SESI-SB-9(13') 2/7/2019 1:00 PM	460-174859-17 SESI-SB-9(17') 2/7/2019 1:05 PM
SOIL BY 8082A																				
Aroclor 1016	mg/Kg			0.010 U	0.0096 U	0.010 U	0.0095 U	0.012 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0098 U	0.010 U
Aroclor 1221	mg/Kg			0.010 U	0.0096 U	0.010 U	0.0095 U	0.012 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0098 U	0.010 U
Aroclor 1232	mg/Kg			0.010 U	0.0096 U	0.010 U	0.0095 U	0.012 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0098 U	0.010 U
Aroclor 1242	mg/Kg			0.010 U	0.0096 U	0.010 U	0.0095 U	0.012 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0098 U	0.010 U
Aroclor 1248	mg/Kg			0.010 U	0.0096 U	0.010 U	0.0095 U	0.012 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0098 U	0.010 U
Aroclor 1254	mg/Kg			0.011 U	0.0099 U	0.010 U	0.0098 U	0.012 U	0.010 U	0.010 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.012 U	0.011 U	0.010 U	0.010 U
Aroclor 1260	mg/Kg			0.011 U	0.0099 U	0.010 U	0.0098 U	0.012 U	0.010 U	0.010 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.012 U	0.011 U	0.010 U	**0.065 J**
Aroclor 1262	mg/Kg			0.011 U	0.0099 U	0.010 U	0.0098 U	0.012 U	0.010 U	0.010 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.012 U	0.011 U	0.010 U	0.010 U
Aroclor 1268	mg/Kg			0.011 U	0.0099 U	0.010 U	0.0098 U	0.012 U	0.010 U	0.010 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.012 U	0.011 U	0.010 U	0.010 U
Polychlorinated biphenyls, Total	mg/Kg	0.1	1	0.011 U	0.0099 U	0.010 U	0.0098 U	0.012 U	0.010 U	0.010 U	0.010 U	0.011 U	0.010 U	0.011 U	0.010 U	0.010 U	0.012 U	0.011 U	0.010 U	**0.065 J**

Notes:

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PCBs (8082)
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SOIL BY 8082A																				
Aroclor 1016	mg/Kg			0.0099 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0095 U	0.0098 U	0.0097 U	0.0095 U F1	0.0095 U	0.011 U	0.010 U	0.0095 U	0.0099 U	0.011 U	0.0093 U	0.010 U
Aroclor 1221	mg/Kg			0.0099 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0095 U	0.0098 U	0.0097 U	0.0095 U	0.0095 U	0.011 U	0.010 U	0.0095 U	0.0099 U	0.011 U	0.0093 U	0.010 U
Aroclor 1232	mg/Kg			0.0099 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0095 U	0.0098 U	0.0097 U	0.0095 U	0.0095 U	0.011 U	0.010 U	0.0095 U	0.0099 U	0.011 U	0.0093 U	0.010 U
Aroclor 1242	mg/Kg			0.0099 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0095 U	0.0098 U	0.0097 U	0.0095 U	0.0095 U	0.011 U	0.010 U	0.0095 U	0.0099 U	0.011 U	0.0093 U	0.010 U
Aroclor 1248	mg/Kg			0.0099 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0095 U	0.0098 U	0.0097 U	0.0095 U	0.0095 U	0.011 U	0.010 U	0.0095 U	0.0099 U	0.011 U	0.0093 U	0.010 U
Aroclor 1254	mg/Kg			0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.010 U	0.010 U	0.0099 U	0.0098 U	0.011 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.0096 U	0.011 U
Aroclor 1260	mg/Kg			0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.010 U	0.010 U	0.0099 U F1	0.0098 U	0.011 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.0096 U	0.011 U
Aroclor 1262	mg/Kg			0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.010 U	0.010 U	0.0099 U	0.0098 U	0.011 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.0096 U	0.011 U
Aroclor 1268	mg/Kg			0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.010 U	0.010 U	0.0099 U	0.0098 U	0.011 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.0096 U	0.011 U
Polychlorinated biphenyls, Total	mg/Kg	0.1	1	0.010 U	0.010 U	0.011 U	0.011 U	0.011 U	0.0098 U	0.010 U	0.010 U	0.0099 U	0.0098 U	0.011 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.0096 U	0.011 U

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Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	SESI-SB-15 (15'-17') 2/13/2019 10:00 AM	460-174986-12 SESI-SB-16(3') 2/8/2019 2:00 PM	460-174986-13 SESI-SB-16(8') 2/8/2019 2:05 PM	460-174986-14 SESI-SB-16(13') 2/8/2019 2:10 PM	460-175121-3 SESI-SB-17(4') 2/11/2019 8:10 AM	460-175121-4 SESI-SB-17(8') 2/11/2019 8:15 AM	460-175121-5 SESI-SB-17(14') 2/11/2019 8:20 AM	SESI-SB-17 (15'-17') 2/14/2019 9:30 AM	460-175121-6 SESI-SB-18(3') 2/11/2019 9:15 AM	460-175121-7 SESI-SB-18(7') 2/11/2019 9:25 AM	460-175121-8 SESI-SB-18(13') 2/11/2019 9:35 AM	SESI-SB-18 (15'-17') 2/14/2019 1:30 PM	460-175121-9 SESI-SB-19(3') 2/11/2019 10:10 AM	460-175121-10 SESI-SB-19(9') 2/11/2019 10:20 AM	460-175121-11 SESI-SB-19(12') 2/11/2019 10:30 AM	460-175121-12 SESI-SB-19(18') 2/11/2019 10:40 AM	460-175121-13 SESI-SB-19(23') 2/11/2019 10:50 AM
SOIL BY 8082A																				
Aroclor 1016	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0099 U	0.0096 U	0.0098 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0094 U	0.0095 U	0.010 U	0.010 U
Aroclor 1221	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0099 U	0.0096 U	0.0098 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0094 U	0.0095 U	0.010 U	0.010 U
Aroclor 1232	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0099 U	0.0096 U	0.0098 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0094 U	0.0095 U	0.010 U	0.010 U
Aroclor 1242	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0099 U	0.0096 U	0.0098 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0094 U	0.0095 U	0.010 U	0.010 U
Aroclor 1248	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0099 U	0.0096 U	0.0098 U	0.010 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.0094 U	0.0095 U	0.010 U	0.010 U
Aroclor 1254	mg/Kg			0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.012 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.011 U
Aroclor 1260	mg/Kg			0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.012 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.011 U
Aroclor 1262	mg/Kg			0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.012 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.011 U
Aroclor 1268	mg/Kg			0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.012 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.011 U
Polychlorinated biphenyls, Total	mg/Kg	0.1	1	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.010 U	0.010 U	0.011 U	0.012 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.011 U

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SOIL BY 8082A																					
Aroclor 1016	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0095 U	0.0098 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.0099 U	0.010 U	0.0097 U	0.011 U	0.0098 U
Aroclor 1221	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0095 U	0.0098 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.0099 U	0.010 U	0.0097 U	0.011 U	0.0098 U
Aroclor 1232	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0095 U	0.0098 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.0099 U	0.010 U	0.0097 U	0.011 U	0.0098 U
Aroclor 1242	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0095 U	0.0098 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.0099 U	0.010 U	0.0097 U	0.011 U	0.0098 U
Aroclor 1248	mg/Kg			0.010 U	0.010 U	0.0096 U	0.010 U	0.0095 U	0.0098 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.0098 U	0.0099 U	0.010 U	0.0097 U	0.011 U	0.0098 U
Aroclor 1254	mg/Kg			0.011 U	0.010 U	0.0099 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.012 U	0.010 U
Aroclor 1260	mg/Kg			0.011 U	0.010 U	0.0099 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.012 U	0.010 U
Aroclor 1262	mg/Kg			0.011 U	0.010 U	0.0099 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.012 U	0.010 U
Aroclor 1268	mg/Kg			0.011 U	0.010 U	0.0099 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.012 U	0.010 U
Polychlorinated biphenyls, Total	mg/Kg	0.1	1	0.011 U	0.010 U	0.0099 U	0.010 U	0.0098 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.012 U	0.010 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an appr

U : Indicates the analyte was analyzed for but not detected.

Table 1E
Summary of Soil Sampling Results
PCBs (8082)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	SESI-SB-25(10-12') 2/19/2019 12:00 PM	SESI-SB-25(15-17') 2/19/2019 12:10 PM	SESI-SB-25(20-22') 2/19/2019 12:20 PM	460-175638-5 SESI-SB-26(3') 2/18/2019 9:30 AM	460-175638-6 SESI-SB-26(7') 2/18/2019 9:35 AM	460-175638-7 SESI-SB-26(12') 2/18/2019 10:15 AM	SESI-SB-26(15-17') 2/19/2019 8:30 AM	460-175638-8 SESI-SB-27(4') 2/18/2019 7:45 AM	460-175638-9 SESI-SB-27(7') 2/18/2019 8:00 AM	460-175638-10 SESI-SB-27(11') 2/18/2019 8:15 AM	460-175247-4 SESI-SB-28 (6') 2/13/2019 11:00 AM	460-175247-5 SESI-SB-28 (10') 2/13/2019 11:05 AM	460-175247-6 SESI-SB-28 (15') 2/13/2019 11:10 AM	460-175247-7 SESI-SB-29 (9') 2/13/2019 9:40 AM	460-175247-8 SESI-SB-29 (12') 2/13/2019 9:45 AM	460-175247-9 SESI-SB-29 (14') 2/13/2019 9:50 AM	460-175247-10 SESI-SB-30 (10') 2/13/2019 9:10 AM
SOIL BY 8082A																				
Aroclor 1016	mg/Kg			0.0098 U	0.010 U	0.012 U	0.010 U	0.0098 U	0.0095 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.0093 U	0.010 U	0.010 U	0.0099 U
Aroclor 1221	mg/Kg			0.0098 U	0.010 U	0.012 U	0.010 U	0.0098 U	0.0095 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.0093 U	0.010 U	0.010 U	0.0099 U
Aroclor 1232	mg/Kg			0.0098 U	0.010 U	0.012 U	0.010 U	0.0098 U	0.0095 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.0093 U	0.010 U	0.010 U	0.0099 U
Aroclor 1242	mg/Kg			0.0098 U	0.010 U	0.012 U	0.010 U	0.0098 U	0.0095 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.0093 U	0.010 U	0.010 U	0.0099 U
Aroclor 1248	mg/Kg			0.0098 U	0.010 U	0.012 U	0.010 U	0.0098 U	0.0095 U	0.011 U	0.0097 U	0.0098 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.0093 U	0.010 U	0.010 U	0.0099 U
Aroclor 1254	mg/Kg			0.010 U	0.011 U	0.012 U	0.011 U	0.010 U	0.0099 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.010 U
Aroclor 1260	mg/Kg			0.010 U	0.011 U	0.012 U	0.011 U	0.010 U	0.0099 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.010 U
Aroclor 1262	mg/Kg			0.010 U	0.011 U	0.012 U	0.011 U	0.010 U	0.0099 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.010 U
Aroclor 1268	mg/Kg			0.010 U	0.011 U	0.012 U	0.011 U	0.010 U	0.0099 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.010 U
Polychlorinated biphenyls, Total	mg/Kg	0.1	1	0.010 U	0.011 U	0.012 U	0.011 U	0.010 U	0.0099 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.011 U	0.0096 U	0.011 U	0.011 U	0.010 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an appr

U : Indicates the analyte was analyzed for but not detected.

Table 1E
Summary of Soil Sampling Results
PCBs (8082)
14 Le Count Standard Printing

Analyte	Units	Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives	Part 375-6.8(b) Restricted Residential Soil Cleanup Objectives	460-175247-11 SESI-SB-30 (12') 2/13/2019 9:15 AM	460-175247-12 SESI-SB-30 (14') 2/13/2019 9:20 AM	460-175247-13 SESI-SB-31 (9') 2/13/2019 8:30 AM	460-175247-14 SESI-SB-31 (11') 2/13/2019 8:35 AM	460-175247-15 SESI-SB-31 (14') 2/13/2019 8:40 AM	460-175449-9 SESI-SB-32(4') 2/15/2019 9:50 AM	460-175449-10 SESI-SB-32(7') 2/15/2019 9:55 AM	460-175638-11 SESI-SB-33(4') 2/18/2019 9:00 AM	460-175638-12 SESI-SB-33(6') 2/18/2019 9:05 AM	460-175638-13 SESI-SB-34(2') 2/18/2019 12:15 PM	460-175638-14 SESI-SB-34(6') 2/18/2019 12:20 PM
SOIL BY 8082A														
Aroclor 1016	mg/Kg			0.010 U	0.0099 U	0.0096 U	0.0096 U	0.010 U	0.011 U	0.010 U	0.0097 U	0.0099 U	0.0094 U	0.0098 U
Aroclor 1221	mg/Kg			0.010 U	0.0099 U	0.0096 U	0.0096 U	0.010 U	0.011 U	0.010 U	0.0097 U	0.0099 U	0.0094 U	0.0098 U
Aroclor 1232	mg/Kg			0.010 U	0.0099 U	0.0096 U	0.0096 U	0.010 U	0.011 U	0.010 U	0.0097 U	0.0099 U	0.0094 U	0.0098 U
Aroclor 1242	mg/Kg			0.010 U	0.0099 U	0.0096 U	0.0096 U	0.010 U	0.011 U	0.010 U	0.0097 U	0.0099 U	0.0094 U	0.0098 U
Aroclor 1248	mg/Kg			0.010 U	0.0099 U	0.0096 U	0.0096 U	0.010 U	0.011 U	0.010 U	0.0097 U	0.0099 U	0.0094 U	0.0098 U
Aroclor 1254	mg/Kg			0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.0097 U	0.010 U
Aroclor 1260	mg/Kg			0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.0097 U	0.010 U
Aroclor 1262	mg/Kg			0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.0097 U	0.010 U
Aroclor 1268	mg/Kg			0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.0097 U	0.010 U
Polychlorinated biphenyls, Total	mg/Kg	0.1	1	0.010 U	0.010 U	0.010 U	0.0099 U	0.010 U	0.011 U	0.011 U	0.010 U	0.010 U	0.0097 U	0.010 U

Notes:

Bold cells are detections above the MDL

Highlighted yellow cells are detections above the Unrestricted Use Soil Cleanup Objectives

Red Lettering are detections above the Restricted Residential Soil Cleanup Objective

* : LCS or LCSD is outside acceptance limits.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an appr

U : Indicates the analyte was analyzed for but not detected.

Table 2A
Summary of Groundwater sample Results
Volatile Organic Compounds
14 Le Count Standard Printing

Analyte	CAS Number	Units	NYSDEC AWQS	460-175249-1 GW-1 2/13/2019 10:00 AM	460-175249-2 GW-2 2/11/2019 3:00 PM	460-175249-3 GW-3 2/13/2019 11:00 AM	460-175249-4 GW-4 2/11/2019 1:35 PM	460-175673-1 GW-5 2/19/2019 2:00 PM	460-176249-1 MW-3 2/25/2019 10:00 AM	460-176249-2 MW-4 2/25/2019 12:40 PM	460-176249-3 MW-5 2/25/2019 3:15 PM	460-176249-4 FB-1 2/25/2019 3:45 PM	460-176249-5 MW-2 2/26/2019 1:30 PM	460-176249-6 MW-6 2/26/2019 3:55 PM
1,1,1-Trichloroethane	71-55-6	ug/L	5	0.24 U	0.24 U	0.24 U	0.24 U	0.26 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	5	0.37 U	0.37 U	0.37 U	0.37 U	0.12 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U *
1,1,2-Trichloroethane	79-00-5	ug/L	1	0.43 U	0.43 U	0.43 U	0.43 U	0.36 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
1,1-Dichloroethane	75-34-3	ug/L	5	0.26 U	0.26 U	0.26 U	0.26 U	0.37 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
1,1-Dichloroethene	75-35-4	ug/L	5	0.12 U	0.12 U	0.12 U	0.12 U	0.38 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
1,2,3-Trichlorobenzene	87-61-6	ug/L	5	0.36 U	0.36 U	0.36 U	0.36 U	0.50 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	5	0.37 U	0.37 U	0.37 U	0.37 U	0.43 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2-Dibromo-3-Chloropropane	96-12-8	ug/L	0.04	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.24 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0080 U
1,2-Dibromoethane	106-93-4	ug/L	0.0006"	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.43 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0020 U
1,2-Dichlorobenzene	95-50-1	ug/L	3	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
1,2-Dichloroethane	107-06-2	ug/L	0.6	0.43 U	0.43 U	0.43 U	0.43 U	0.35 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
1,2-Dichloropropane	78-87-5	ug/L	5	0.35 U	0.35 U	0.35 U	0.35 U	0.34 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,3-Dichlorobenzene	541-73-1	ug/L	3	0.34 U	0.34 U	0.34 U	0.34 U	0.76 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,4-Dichlorobenzene	106-46-7	ug/L	3	0.76 U	0.76 U	0.76 U	0.76 U	28 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U
1,4-Dioxane	123-91-1	ug/L		0.20 U	0.20 U	0.20 U	0.20 U	0.37 U	0.20 U	**0.74**	0.20 U	0.20 U	0.20 U	0.40 U
2-Butanone	78-93-3	ug/L	50	**8.0**	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Hexanone	591-78-6	ug/L	50	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U
4-Methyl-2-pentanone	108-10-1	ug/L		2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Acetone	67-64-1	ug/L	50	**25**	**12**	**9.2**	5.0 U	**8.4**	**7.5**	5.0 U	5.0 U	**5.3**	**5.4**	**17**
Benzene	71-43-2	ug/L	1	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	**110**
Bromochloromethane	74-97-5	ug/L	5	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Bromodichloromethane	75-27-4	ug/L	50	0.34 U	**1.3**	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
Bromoform	75-25-2	ug/L	50	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
Bromomethane	74-83-9	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	75-15-0	ug/L	60	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	56-23-5	ug/L	5	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Chlorobenzene	108-90-7	ug/L	5	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
Chloroethane	75-00-3	ug/L	5	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U *
Chloroform	67-66-3	ug/L	7	0.33 U	**2.3**	**2.0**	0.33 U	0.33 U	0.33 U	**0.93 J**	**0.50 J**	0.33 U	**0.49 J**	0.33 U
Chloromethane	74-87-3	ug/L	5	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	**1.7**
cis-1,2-Dichloroethene	156-59-2	ug/L	5	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
cis-1,3-Dichloropropene	10061-01-5	ug/L		0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
Cyclohexane	110-82-7	ug/L		0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	**22**
Dibromochloromethane	124-48-1	ug/L	50	0.28 U	**1.2**	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Dichlorodifluoromethane	75-71-8	ug/L	5	0.12 U *	0.12 U *	0.12 U *	0.12 U *	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Ethylbenzene	100-41-4	ug/L	5	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	**130**
Freon TF	76-13-1	ug/L	5	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Isopropylbenzene	98-82-8	ug/L	5	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	**20**
m&p-Xylene	179601-23-1	ug/L	5	0.30 U	**0.33 J**	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	**0.55 J**	**450**
Methyl acetate	79-20-9	ug/L		0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Methylcyclohexane	108-87-2	ug/L		0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	**21**
Methylene Chloride	75-09-2	ug/L	5	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
MTBE	1634-04-4	ug/L	10	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
o-Xylene	95-47-6	ug/L	5	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	**270**
Styrene	100-42-5	ug/L	5	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Tetrachloroethene	127-18-4	ug/L	5	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Toluene	108-88-3	ug/L	5	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	**0.56 J**	**240**
trans-1,2-Dichloroethene	156-60-5	ug/L	5	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
trans-1,3-Dichloropropene	10061-02-6	ug/L		0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
Trichloroethene	79-01-6	ug/L	5	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Trichlorofluoromethane	75-69-4	ug/L	5	0.14 U *	0.14 U *	0.14 U *	0.14 U *	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Vinyl chloride	75-01-4	ug/L	2	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U

Notes:

Highlighted Concentrations shown in bold type face exceed limits

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 2B
Summary of Groundwater Sampling Results
Semi Volatile organic Compounds
14 Le Count Standrad Printing

Analyte	CAS Number	Units	NYSDEC AWQS	460-175249-1 GW-1 2/13/2019 10:00 AM	460-175249-2 GW-2 2/11/2019 3:00 PM	460-175249-3 GW-3 2/13/2019 11:00 AM	460-175249-4 GW-4 2/11/2019 1:35 PM	460-175673-1 GW-5 2/19/2019 2:00 PM	460-176249-1 MW-3 2/25/2019 10:00 AM	460-176249-2 MW-4 2/25/2019 12:40 PM	460-176249-3 MW-5 2/25/2019 3:15 PM	460-176249-5 MW-2 2/26/2019 1:30 PM	460-176249-6 MW-6 2/26/2019 3:55 PM
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	5	1.4 U	1.4 U	1.4 U	1.4 U	1.2 U	1.4 U	1.2 U	1.4 U	1.4 U	1.2 U
1,4-Dioxane	123-91-1	ug/L		0.20 U	0.20 U	0.20 U	0.20 U			**0.51**		0.19 U	
2,2'-oxybis[1-chloropropane]	108-60-1	ug/L	5	0.68 U	0.68 U	0.68 U	0.68 U	0.63 U	0.68 U	0.63 U	0.68 U	0.68 U	0.63 U
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L		0.81 U	0.81 U	0.81 U	0.81 U	0.75 U	0.81 U	0.75 U	0.81 U	0.81 U	0.75 U *
2,3,7,8-TCDD	1746-01-6	ug/L	7E-07"	1.1 U	1.1 U	1.1 U	1.1 U	1.0 U	1.1 U	1.0 U	1.1 U	1.1 U	1.0 U
2,4,5-Trichlorophenol	95-95-4	ug/L		0.30 U	0.30 U	0.30 U	0.30 U	0.28 U	0.30 U	0.28 U	0.30 U	0.30 U	0.28 U
2,4,6-Trichlorophenol	88-06-2	ug/L		0.33 U	0.33 U	0.33 U	0.33 U	0.30 U	0.33 U	0.30 U	0.33 U	0.33 U	0.30 U
2,4-Dichlorophenol	120-83-2	ug/L	5	0.46 U	0.46 U	0.46 U	0.46 U	0.42 U	0.46 U *	0.42 U	0.46 U *	0.46 U *	0.42 U
2,4-Dimethylphenol	105-67-9	ug/L	1	0.26 U	0.26 U	0.26 U	0.26 U	0.24 U	0.26 U	0.24 U	0.26 U	0.26 U	**6.7 J**
2,4-Dinitrophenol	51-28-5	ug/L	1	16 U	16 U	16 U	16 U	14 U	16 U	14 U *	16 U	16 U	14 U *
2,4-Dinitrotoluene	121-14-2	ug/L	5	1.1 U	1.1 U	1.1 U	1.1 U	1.0 U	1.1 U	1.0 U	1.1 U	1.1 U	1.0 U
2,6-Dinitrotoluene	606-20-2	ug/L	5	0.42 U	0.42 U	0.42 U	0.42 U	0.39 U	0.42 U	0.39 U	0.42 U	0.42 U	0.39 U
2-Chloronaphthalene	91-58-7	ug/L	10	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U	**4.1 J**
2-Chlorophenol	95-57-8	ug/L		0.41 U	0.41 U	0.41 U	0.41 U	0.38 U	0.41 U	0.38 U	0.41 U	0.41 U	0.38 U
2-Methylnaphthalene	91-57-6	ug/L		1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	1.2 U	1.2 U	**1.8 J**
2-Methylphenol	95-48-7	ug/L		0.28 U	0.28 U	0.28 U	0.28 U	0.26 U	0.28 U	0.26 U	0.28 U	0.28 U	**5.3 J**
2-Nitroaniline	88-74-4	ug/L	5	0.52 U	0.52 U	0.52 U	0.52 U	0.47 U	0.52 U	0.47 U	0.52 U	0.52 U	0.47 U
2-Nitrophenol	88-75-5	ug/L		0.81 U	0.81 U	0.81 U	0.81 U	0.75 U	0.81 U *	0.75 U	0.81 U *	0.81 U *	0.75 U *
3,3'-Dichlorobenzidine	91-94-1	ug/L	5	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U	1.6 U	1.4 U	1.6 U	1.6 U	1.4 U
3-Nitroaniline	99-09-2	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	0.96 U	1.0 U	0.96 U *	1.0 U	1.0 U	0.96 U
4,6-Dinitro-2-methylphenol	534-52-1	ug/L		0.41 U *	0.41 U *	0.41 U *	0.41 U *	13 U	0.41 U	0.41 U	0.41 U	0.41 U	0.38 U *
4-Bromophenyl phenyl ether	101-55-3	ug/L		0.81 U	0.81 U	0.81 U	0.81 U	0.75 U	0.81 U	0.75 U	0.81 U	0.81 U	0.75 U
4-Chloro-3-methylphenol	59-50-7	ug/L		0.63 U	0.63 U	0.63 U	0.63 U	0.58 U	0.63 U	0.58 U	0.63 U	0.63 U	0.58 U
4-Chloroaniline	106-47-8	ug/L	5	2.0 U	2.0 U	2.0 U	2.0 U	1.9 U	2.0 U	1.9 U *	2.0 U	2.0 U	1.9 U
4-Chlorophenyl phenyl ether	7005-72-3	ug/L		1.4 U	1.4 U	1.4 U	1.4 U	1.3 U	1.4 U	1.3 U	1.4 U	1.4 U	1.3 U
4-Methylphenol	106-44-5	ug/L		0.26 U	0.26 U	0.26 U	0.26 U	0.24 U	0.26 U	0.24 U	0.26 U	0.26 U	**1.4 J**
4-Nitroaniline	100-01-6	ug/L	5	0.59 U	0.59 U	0.59 U	0.59 U	0.54 U	0.59 U	0.54 U	0.59 U	0.59 U	0.54 U
4-Nitrophenol	100-02-7	ug/L		0.75 U	0.75 U	0.75 U	0.75 U	0.69 U	0.75 U	0.69 U	0.75 U	0.75 U	0.69 U
Acenaphthene	83-32-9	ug/L	20	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	1.2 U	1.2 U	1.1 U
Acenaphthylene	208-96-8	ug/L		0.89 U	0.89 U	0.89 U	0.89 U	0.82 U	0.89 U	0.82 U	0.89 U	0.89 U	0.82 U
Acetophenone	98-86-2	ug/L		0.86 U	0.86 U	0.86 U	0.86 U	0.79 U	0.86 U	0.79 U	0.86 U	0.86 U	**33**
Anthracene	120-12-7	ug/L	50	0.69 U	0.69 U	0.69 U	0.69 U	0.63 U	0.69 U	0.63 U	0.69 U	0.69 U	0.63 U
Atrazine	1912-24-9	ug/L	7.5	1.5 U	1.5 U	1.5 U	1.5 U	1.3 U	1.5 U *	1.3 U	1.5 U *	1.5 U *	1.3 U *
Benzaldehyde	100-52-7	ug/L		0.64 U *	0.64 U *	0.64 U *	0.64 U *	0.59 U	0.64 U *	0.59 U	0.64 U *	0.64 U *	0.59 U
Benzo[a]anthracene	56-55-3	ug/L	0.002	**0.25**	**0.090**	0.017 U	0.017 U	0.59 U	**0.043 J**	**0.027 J**	0.017 U	0.017 U	**0.016 J**
Benzo[a]pyrene	50-32-8	ug/L		**0.37**	**0.057**	0.023 U	0.023 U	0.41 U	0.023 U	**0.023 J**	0.023 U	0.023 U	0.022 U
Benzo[b]fluoranthene	205-99-2	ug/L	0.002	**0.66**	**0.10**	0.026 U	0.026 U	1.1 U	**0.039 J**	**0.037 J**	0.026 U	0.026 U	0.024 U
Benzo[g,h,i]perylene	191-24-2	ug/L		1.6 U	1.6 U	1.6 U	1.6 U	1.4 U	1.6 U	1.4 U	1.6 U	1.6 U	1.4 U *
Benzo[k]fluoranthene	207-08-9	ug/L	0.002"	**0.26**	**0.035 J**	0.030 U	0.030 U	0.67 U	0.030 U	0.030 U	0.030 U	0.030 U	0.028 U
Bis(2-chloroethoxy)methane	111-91-1	ug/L	5	0.26 U	0.26 U	0.26 U	0.26 U	0.24 U	0.26 U	0.24 U	0.26 U	0.26 U	0.24 U
Bis(2-chloroethyl)ether	111-44-4	ug/L	1	0.028 U	0.028 U	0.028 U	0.028 U	0.30 U	0.028 U *	0.028 U *	0.028 U *	0.028 U *	0.026 U
Bis(2-ethylhexyl) phthalate	117-81-7	ug/L	5	1.8 U	**2.0 J**	1.8 U	1.8 U	**3.5**	1.8 U	1.7 U	1.8 U	1.8 U	1.7 U
Butyl benzyl phthalate	85-68-7	ug/L	50	0.93 U	0.93 U	0.93 U	0.93 U	0.85 U	0.93 U	0.85 U	0.93 U	0.93 U	0.85 U
Caprolactam	105-60-2	ug/L		0.74 U	0.74 U	0.74 U	0.74 U	0.68 U	0.74 U	0.68 U	0.74 U	0.74 U	0.68 U *
Carbazole	86-74-8	ug/L		0.74 U	0.74 U	0.74 U	0.74 U	0.68 U	0.74 U	0.68 U	0.74 U	0.74 U	0.68 U
Chrysene	218-01-9	ug/L	0.002"	0.99 U	0.99 U	0.99 U	0.99 U	0.91 U	0.99 U	0.91 U	0.99 U	0.99 U	0.91 U
Dibenz(a,h)anthracene	53-70-3	ug/L		**0.084 ***	**0.047 J ***	0.012 U *	0.012 U *	0.72 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dibenzofuran	132-64-9	ug/L		1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	1.2 U	1.2 U	1.1 U
Diethyl phthalate	84-66-2	ug/L	50	1.1 U	1.1 U	1.1 U	1.1 U	0.98 U	1.1 U	0.98 U	1.1 U	1.1 U	0.98 U
Dimethyl phthalate	131-11-3	ug/L	50	0.83 U	0.83 U	0.83 U	0.83 U	0.77 U	0.83 U	0.77 U	0.83 U	0.83 U	0.77 U
Di-n-butyl phthalate	84-74-2	ug/L	50	0.91 U	0.91 U	0.91 U	0.91 U	0.84 U	0.91 U	0.84 U	0.91 U	0.91 U	0.84 U
Di-n-octyl phthalate	117-84-0	ug/L	50	5.2 U	5.2 U	5.2 U	5.2 U	4.8 U	5.2 U	4.8 U	5.2 U	5.2 U	4.8 U
Diphenyl	92-52-4	ug/L	5	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U	1.2 U
Fluoranthene	206-44-0	ug/L		0.92 U	0.92 U	0.92 U	0.92 U	0.84 U	0.92 U	0.84 U	0.92 U	0.92 U	0.84 U
Fluorene	86-73-7	ug/L	50	0.99 U	0.99 U	0.99 U	0.99 U	0.91 U	0.99 U	0.91 U	0.99 U	0.99 U	0.91 U
Hexachlorobenzene	118-74-1	ug/L	0.04	0.014 U	0.014 U	0.014 U	0.014 U	0.40 U	0.014 U	0.014 U	0.014 U	0.014 U	0.013 U
Hexachlorobutadiene	87-68-3	ug/L	0.5"	0.85 U	0.85 U	0.85 U	0.85 U	0.78 U	0.85 U	0.78 U	0.85 U	0.85 U	0.78 U
Hexachlorocyclopentadiene	77-47-4	ug/L	5	1.9 U	1.9 U	1.9 U	1.9 U	1.7 U	1.9 U	1.7 U	1.9 U	1.9 U	1.7 U
Hexachloroethane	67-72-1	ug/L	5	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U	1.3 U	1.2 U
Indeno[1,2,3-cd]pyrene	193-39-5	ug/L	0.002	**0.28 ***	**0.086 ***	0.039 U *	0.039 U *	1.3 U	0.039 U	0.039 U	0.039 U	0.039 U	0.036 U
Isophorone	78-59-1	ug/L		0.87 U	0.87 U	0.87 U	0.87 U	0.80 U	0.87 U	0.80 U	0.87 U	0.87 U	0.80 U
Naphthalene	91-20-3	ug/L	10	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U	1.2 U	1.2 U	**2.4 J**
Nitrobenzene	98-95-3	ug/L	0.4"	0.62 U	0.62 U	0.62 U	0.62 U	0.57 U	0.62 U	0.57 U	0.62 U	0.62 U	0.57 U
N-Nitrosodimethylamine	62-75-9	ug/L		0.13 U	0.13 U	0.13 U	0.13 U	0.89 U	0.13 U	0.13 U	0.13 U	0.13 U	0.12 U *
N-Nitrosodi-n-propylamine	621-64-7	ug/L		0.47 U	0.47 U	0.47 U	0.47 U	0.43 U	0.47 U	0.43 U	0.47 U	0.47 U	0.43 U
N-Nitrosodiphenylamine	86-30-6	ug/L	50	0.97 U	0.97 U	0.97 U	0.97 U	0.89 U	0.97 U	0.89 U	0.97 U	0.97 U	0.89 U
Pentachlorophenol	87-86-5	ug/L	1	0.17 U *	0.17 U *	0.17 U *	0.17 U *	1.4 U	0.17 U *	0.17 U *	0.17 U *	0.17 U *	0.15 U
Phenanthrene	85-01-8	ug/L	50	0.63 U	**0.87 J**	0.63 U	0.63 U	0.58 U	0.63 U	0.58 U	0.63 U	0.63 U	0.58 U
Phenol	108-95-2	ug/L		0.32 U	0.32 U	0.32 U	0.32 U	0.29 U	0.32 U	0.29 U	0.32 U	0.32 U	**9.2 J**
Pyrene	129-00-0	ug/L	50	1.8 U	1.8 U	1.8 U	1.8 U	1.6 U	1.8 U	1.6 U	1.8 U	1.8 U	1.6 U
Tentatively Identified Compound	N/A	ug/L		**11 J N**	**160 J N**	**17 J N**	None	**74 J N**	None	None	None	**9.4 J N**	**180 J**

Notes:

Highlighted Concentrations shown in bold type face exceed limits

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 2C
Summary of Groundwater Sample Results
Metals
14 Le Count Standard Printing

Analyte	CAS Number	Units	Basis	NYSDEC AWQS	460-175249-1 GW-1 2/13/2019 10:00 AM	460-175249-2 GW-2 2/11/2019 3:00 PM	460-175249-3 GW-3 2/13/2019 11:00 AM	460-175249-4 GW-4 2/11/2019 1:35 PM	460-175673-1 GW-5 2/19/2019 2:00 PM	460-176249-1 MW-3 2/25/2019 10:00 AM	460-176249-2 MW-4 2/25/2019 12:40 PM	460-176249-3 MW-5 2/25/2019 3:15 PM	460-176249-5 MW-2 2/26/2019 1:30 PM	460-176249-6 MW-6 2/26/2019 3:55 PM
Cyanide, Total	57-12-5	mg/L	Total	0.2	0.0040 U	0.0040 U	**0.0091 J**	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	**0.014**
Mercury	7439-97-6	ug/L	Total	0.7	**0.16 J**	**0.44**	**0.27**	**0.41**	**5.0**	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
			Dissolved	0.7					0.23 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Aluminum	7429-90-5	ug/L	Total		**21300**	**328000**	**43200**	**242000**	**873000**	**701**	**274**	**31.0 J**	**182**	**682**
			Dissolved						**2440**	18.8 U	18.8 U	18.8 U	18.8 U	18.8 U
Antimony	7440-36-0	ug/L	Total	3	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	**1.2 J**	**0.97 J**	**0.56 J**	**1.1 J**	**2.1**
			Dissolved	3					2.0 U	**0.57 J**	0.40 U	0.40 U	0.40 U	**1.4 J**
Arsenic	7440-38-2	ug/L	Total	25	**2.0**	**28.1**	**5.3**	**15.1 J**	**16.5**	0.73 U	**0.88 J**	0.73 U	0.73 U	**0.97 J**
			Dissolved	25					3.7 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
Barium	7440-39-3	ug/L	Total	1000	**364**	**4460**	**448**	**3790**	**16800**	**24.9**	**136**	**63.7**	**191**	**115**
			Dissolved	1000					**31.9**	**19.6**	**139**	**64.1**	**207**	**109**
Beryllium	7440-41-7	ug/L	Total	3	**0.65 J**	**10.7**	**3.5**	**5.4**	**13.2**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
			Dissolved	3					1.2 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Cadmium	7440-43-9	ug/L	Total	5	0.81 U	**1.2 J**	0.81 U	**0.82 J**	**2.2**	0.81 U	0.81 U	0.81 U	0.81 U	0.81 U
			Dissolved	5					4.0 U	0.81 U	0.81 U	0.81 U	0.81 U	0.81 U
Calcium	7440-70-2	ug/L	Total		**101000**	**85300**	**31500**	**150000**	**125000**	**27700**	**250000**	**84500**	**127000**	**414000**
			Dissolved						**6110**	**31800**	**269000**	**88700**	**143000**	**395000**
Chromium	7440-47-3	ug/L	Total	50	**73.3**	**606**	**198**	**886**	**2250**	**8.1**	**4.9**	2.3 U	2.3 U	**3.2 J**
			Dissolved	50					11.5 U	**5.3**	**3.8 J**	2.3 U	2.3 U	2.3 U
Cobalt	7440-48-4	ug/L	Total		**27.0**	**284**	**43.7**	**274**	**891**	1.6 U	**3.1 J**	1.6 U	**3.6 J**	**42.9**
			Dissolved						8.0 U	1.6 U	**2.9 J**	1.6 U	**3.4 J**	**40.5**
Copper	7440-50-8	ug/L	Total	200	**72.6**	**2070**	**294**	**725**	**1580**	**14.6**	**9.6**	2.0 U	**7.5**	**13.7**
			Dissolved	200					10 U	**5.2**	**7.8**	2.0 U	**6.6**	**11.3**
Iron	7439-89-6	ug/L	Total	300	**41700**	**550000**	**57100**	**473000**	**1440000**	**1280**	**348**	51.1 U	**196**	**1290**
			Dissolved	300					**1900**	51.1 U	51.1 U	51.1 U	51.1 U	51.1 U
Lead	7439-92-1	ug/L	Total	25	**113**	**251**	**65.7**	**111**	**455**	**1.3**	**0.59 J**	0.55 U	0.55 U	0.55 U
			Dissolved	25					2.8 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U
Magnesium	7439-95-4	ug/L	Total	35000	**39100**	**132000**	**25200**	**160000**	**398000**	**8760**	**57200**	**28200**	**38800**	**84300**
			Dissolved	35000					**2580**	**9100**	**64500**	**30400**	**43500**	**92900**
Manganese	7439-96-5	ug/L	Total	300	**2900**	**11100**	**1610**	**14600**	**25000**	**218**	**742**	**143**	**775**	**5700**
			Dissolved	300					**99.1**	**171**	**774**	**148**	**847**	**5310**
Nickel	7440-02-0	ug/L	Total	100	**67.7**	**632**	**177**	**590**	**1530**	**5.3**	**15.9**	2.4 U	**4.6**	**46.0**
			Dissolved	100					11.8 U	**4.0**	**15.0**	2.4 U	**4.4**	**43.8**
Potassium	7440-09-7	ug/L	Total		**29900**	**186000**	**19600**	**169000**	**629000**	**7970**	**11500**	**6760**	**9900**	**12200**
			Dissolved						**15800**	**8690**	**12100**	**7250**	**10900**	**12100**
Selenium	7782-49-2	ug/L	Total	10"	5.4 U	53.5 U	5.4 U	53.5 U	5.4 U	5.4 U	5.4 U	**14.9**	5.4 U	**17.6**
			Dissolved	10					26.8 U	5.4 U	5.4 U	**15.2**	5.4 U	**17.9**
Silver	7440-22-4	ug/L	Total	50	0.59 U	**1.0 J**	0.59 U	**2.0**	**1.6 J**	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
			Dissolved	50					3.0 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U
Sodium	7440-23-5	ug/L	Total	20000	**125000**	**85700**	**78600**	**21500**	**63400**	**108000**	**195000**	**45800**	**561000**	**872000**
			Dissolved	20000					**60200**	**123000**	**207000**	**49200**	**632000**	**855000**
Thallium	7440-28-0	ug/L	Total	0.5	**0.52 J**	**6.0**	**0.61 J**	**6.0**	**24.8**	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
			Dissolved	0.5					0.79 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Vanadium	7440-62-2	ug/L	Total		**69.0**	**749**	**73.1**	**756**	**2410**	**2.4 J**	**1.4 J**	1.1 U	1.1 U	**3.1 J**
			Dissolved						5.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Zinc	7440-66-6	ug/L	Total	2000	**123**	**1530**	**291**	**1130**	55.5 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
			Dissolved						55.5 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U

Notes:

Highlighted Concentrations shown in bold type face exceed limits

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 2D
Summary of Groundwater Sample Results
Pesticides
14 Le Count Standard Printing

Analyte	CAS Number	Units	NYSDEC AWQS	460-175249-1 GW-1 2/13/2019 10:00 AM	460-175249-2 GW-2 2/11/2019 3:00 PM	460-175249-3 GW-3 2/13/2019 11:00 AM	460-175249-4 GW-4 2/11/2019 1:35 PM	460-175673-1 GW-5 2/19/2019 2:00 PM	460-176249-1 MW-3 2/25/2019 10:00 AM	460-176249-2 MW-4 2/25/2019 12:40 PM	460-176249-3 MW-5 2/25/2019 3:15 PM	460-176249-5 MW-2 2/26/2019 1:30 PM	460-176249-6 MW-6 2/26/2019 3:55 PM
4,4'-DDD	72-54-8	ug/L	0.3	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
4,4'-DDE	72-55-9	ug/L	0.2	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
4,4'-DDT	50-29-3	ug/L	0.2	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Aldrin	309-00-2	ug/L		0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
alpha-BHC	319-84-6	ug/L	0.01	0.0070 U	0.0070 U	0.0070 U	0.0070 U	0.0070 U	0.0070 U	0.0070 U	0.0070 U	0.0070 U	0.0070 U
beta-BHC	319-85-7	ug/L	0.04	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Chlordane (n.o.s.)	57-74-9	ug/L		0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U
cis-Chlordane	5103-71-9	ug/L		0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
delta-BHC	319-86-8	ug/L	0.04	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Dieldrin	60-57-1	ug/L	0.004	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Endosulfan I	959-98-8	ug/L		0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
Endosulfan II	33213-65-9	ug/L		0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Endosulfan sulfate	1031-07-8	ug/L		0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U
Endosulfan, Total	115-29-7	ug/L		0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
Endrin	72-20-8	ug/L		0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Endrin aldehyde	7421-93-4	ug/L	5	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U
Endrin ketone	53494-70-5	ug/L	5	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U	0.0080 U
gamma-BHC (Lindane)	58-89-9	ug/L	0.05	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Heptachlor	76-44-8	ug/L	0.04	0.0030 U	**0.074**	**0.051**	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Heptachlor epoxide	1024-57-3	ug/L	0.03	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Methoxychlor	72-43-5	ug/L	35	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Toxaphene	8001-35-2	ug/L	0.06[a]	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
trans-Chlordane	5103-74-2	ug/L		0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U

Notes:

Highlighted Concentrations shown in bold type face exceed limits

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 2E
Summary of Groundwater Sample Results
PCBs
14 Le Count Standard Printing

Analyte	CAS Number	Units	NYSDEC AWQS	460-175249-1 GW-1 2/13/2019 10:00 AM	460-175249-2 GW-2 2/11/2019 3:00 PM	460-175249-3 GW-3 2/13/2019 11:00 AM	460-175249-4 GW-4 2/11/2019 1:35 PM	460-175673-1 GW-5 2/19/2019 2:00 PM	460-176249-1 MW-3 2/25/2019 10:00 AM	460-176249-2 MW-4 2/25/2019 12:40 PM	460-176249-3 MW-5 2/25/2019 3:15 PM	460-176249-5 MW-2 2/26/2019 1:30 PM	460-176249-6 MW-6 2/26/2019 3:55 PM
Aroclor 1016	12674-11-2	ug/L		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Aroclor 1221	11104-28-2	ug/L		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Aroclor 1232	11141-16-5	ug/L		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Aroclor 1242	53469-21-9	ug/L		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Aroclor 1248	12672-29-6	ug/L		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Aroclor 1254	11097-69-1	ug/L		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Aroclor 1260	11096-82-5	ug/L		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Aroclor 1268	11100-14-4	ug/L		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Aroclor-1262	37324-23-5	ug/L		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Polychlorinated biphenyls, Total	1336-36-3	ug/L	0.09[a]	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U

Notes:

Highlighted Concentrations shown in bold type face exceed limits

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

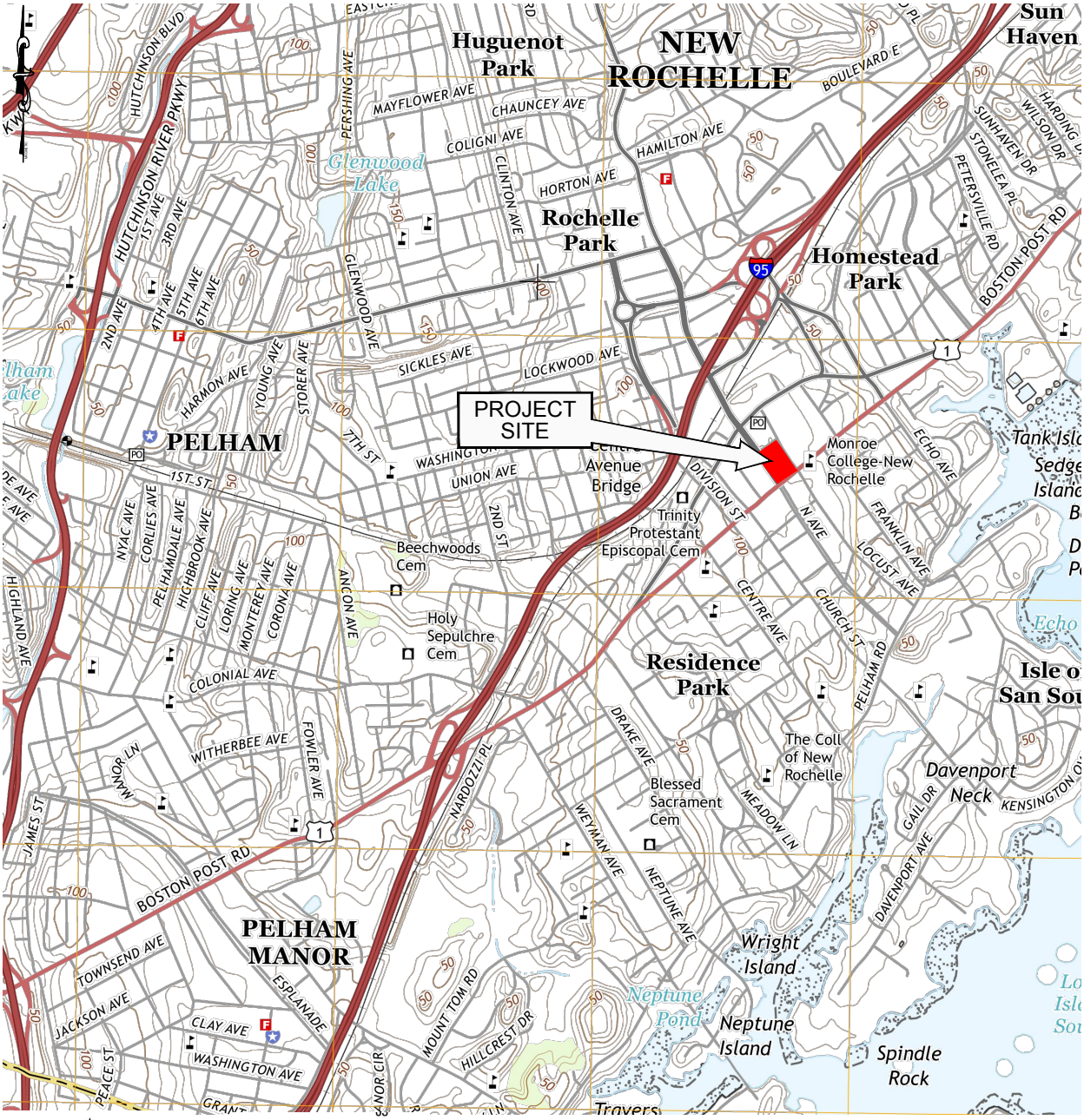
U : Indicates the analyte was analyzed for but not detected.

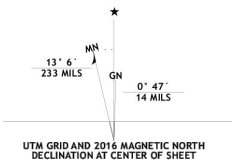
Table 3
Summary of Soil Vapor Data
Volatile Organic Compounds
14 Le Count Standard Printing

Analyte	CAS Number	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47427-1 SS-9 2/14/2019 11:07 AM	200-47427-2 SS-10 2/14/2019 10:46 AM	200-47427-3 SS-11 2/14/2019 10:08 AM	200-47427-4 SS-12 2/14/2019 11:32 AM	200-47427-5 SS-13 2/14/2019 9:34 AM	200-47427-6 SS-14 2/14/2019 9:04 AM	200-47501-1 SS-15 2/19/2019 9:58 AM	200-47501-2 SS-16 2/19/2019 9:38 AM
1,1,1-Trichloroethane	71-55-6	ug/m3	100	170000	7.4 U	3.7 U	3.7 U	**43**	3.7 U	3.7 U	3.7 U	3.7 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/m3		1.6	10 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/m3		170000	4.8 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
1,1,2-Trichloroethane	79-00-5	ug/m3		5.9	8.5 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
1,1-Dichloroethane	75-34-3	ug/m3		59	2.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,1-Dichloroethene	75-35-4	ug/m3	6	7000	2.7 U	1.3 U	**23**	**12**	**23**	1.3 U	1.3 U	1.3 U
1,2,4-Trichlorobenzene	120-82-1	ug/m3		70	36 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
1,2,4-Trimethylbenzene	95-63-6	ug/m3		2100	**54**	**6.5 J**	**6.4 J**	**17**	**7.8 J**	**4.2 J**	**11**	**13**
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	ug/m3		NA	9.5 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
1,2-Dichlorobenzene	95-50-1	ug/m3		7000	8.5 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
1,2-Dichloroethane	107-06-2	ug/m3		3.6	5.1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	78-87-5	ug/m3		25	11 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U *	5.5 U *
1,3,5-Trimethylbenzene	108-67-8	ug/m3			**27**	2.9 U	2.9 U	**7.3 J**	**2.8 J**	2.9 U	**3.7 J**	**3.9 J**
1,3-Dichlorobenzene	541-73-1	ug/m3			9.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U
1,4-Dichlorobenzene	106-46-7	ug/m3		8.5	7.8 U	3.9U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U
1,4-Dioxane	123-91-1	ug/m3		19	94 U	47 U	47 U	47 U	47 U	47 U	47 U	47 U
2-Butanone (MEK)	78-93-3	ug/m3			**100**	**93**	**56**	**55**	**70**	**9.8 J**	**46**	**98**
2-Chlorotoluene	95-49-8	ug/m3		NA	7.4 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
2-Methyl-2-propanol	75-65-0	ug/m3			91 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
3-Chloro-1-propene	107-05-1	ug/m3		NA	17 U	8.5 U	8.5 U	8.5 U	8.5U	8.5 U	8.5 U	8.5 U
4-Ethyltoluene	622-96-8	ug/m3			**33**	3.4 U	3.4 U	**6.4 J**	**3.4 J**	3.4 U	**4.1 J**	**4.7 J**
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/m3			29 U	15 U	15 U	15 U	15 U	15 U	15 U *	15 U *
Acetone	67-64-1	ug/m3		1100000	120 U	62 U	62 U	62 U	62 U	62 U	62 U	62 U
Benzene	71-43-2	ug/m3		12	**7.2 J**	**18**	**4.6 J**	2.3 U	**3.6 J**	2.3 U	**3.5 J**	**2.8 J**
Bromoform	75-25-2	ug/m3		85	18 U	8.9 U	8.9 U	8.9 U	8.9 U	8.9 U	8.9 U	8.9 U
Bromomethane	74-83-9	ug/m3			4.8 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
Butadiene	106-99-0	ug/m3		3.1	**10**	**110**	**4.6**	1.4 U	**4.6**	1.4 U	1.4 U	1.4 U
Carbon disulfide	75-15-0	ug/m3		24000	**16 J**	**19**	**64**	3.7 U	**37**	3.7 U	**15 J**	3.7 U
Carbon tetrachloride	56-23-5	ug/m3	6	16	3.0 U	1.5 U	1.5 U	**1.6 J**	1.5 U	1.5 U	1.5 U	1.5 U
Chlorobenzene	108-90-7	ug/m3		1700	3.7 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Chlorodibromomethane	124-48-1	ug/m3		NA	12 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Chloroethane	75-00-3	ug/m3		NA	11 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
Chloroform	67-66-3	ug/m3		4.1	5.1 U	**2.8 J**	2.5 U	**11**	**4.4 J**	2.5 U	**5.7 J**	2.5 U
Chloromethane	74-87-3	ug/m3		3100	10 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
cis-1,2-Dichloroethene	156-59-2	ug/m3	6	NA	2.9 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
cis-1,3-Dichloropropene	10061-01-5	ug/m3		NA	8.9 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
Cyclohexane	110-82-7	ug/m3		35000	4.3 U	**6.0 J**	2.2 U	**11**	2.2 U	2.2 U	2.2 U	2.2 U
Dichlorobromomethane	75-27-4	ug/m3		NA	13 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U
Dichlorodifluoromethane	75-71-8	ug/m3		3500	20 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	**61**	9.9 U
Ethanol	64-17-5	ug/m3		NA	45 U	23 U	23 U	**180**	23 U	23 U	**29 J**	**23 J**
Ethylbenzene	100-41-4	ug/m3		37	**1300**	**310**	**16**	**10**	**39**	**28**	**15**	**21**
Ethylene Dibromide	106-93-4	ug/m3		NA	11 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U
Hexachlorobutadiene	87-68-3	ug/m3		4.3	17 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U
Hexane	110-54-3	ug/m3		24000	**13 J**	**94**	**7.8**	5.6 U	**7.4**	5.6 U	5.6 U	5.6 U
Isooctane	540-84-1	ug/m3		NA	8.2 U	**4.9 J**	4.1 U	4.1 U	**12**	4.1 U	**15**	**16**
Isopropyl alcohol	67-63-0	ug/m3		7000	88 U	44 U	44 U	44 U	44 U	44 U	44 U	44 U
Methyl methacrylate	80-62-6	ug/m3		24000	18 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U	9.0 U
Methyl tert-butyl ether	1634-04-4	ug/m3		360	4.4 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Methylene Chloride	75-09-2	ug/m3	100	3400	14 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U
m-Xylene & p-Xylene	179601-23-1	ug/m3		NA	**4000**	**410**	**66**	**46**	**140**	**100**	**64**	**87**
Naphthalene	91-20-3	ug/m3		2.8	33 U *	16 U *	16 U *	16 U *	16 U *	16 U *	16 U	16U
n-Heptane	142-82-5	ug/m3		14000	**12 J**	**55**	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U
o-Xylene	95-47-6	ug/m3		3500	**1000**	**95**	**22**	**14**	**43**	**30**	**24**	**30**
Styrene	100-42-5	ug/m3		35000	7.3 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
Tetrachloroethene	127-18-4	ug/m3	100	360	3.9 U	**3.6 J**	**2.6 J**	**3.0 J**	**6.3 J**	2.0 U	2.0 U	2.0 U
Tetrahydrofuran	109-99-9	ug/m3		70000	150 U	77 U	77 U	77 U	77 U	77 U	77 U	77 U
Toluene	108-88-3	ug/m3		170000	**19**	**33**	**8.7**	**3.6 J**	**7.4**	2.6 U	**25**	**25**
trans-1,2-Dichloroethene	156-60-5	ug/m3		NA	5.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U
trans-1,3-Dichloropropene	10061-02-6	ug/m3		NA	11 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
Trichloroethene	79-01-6	ug/m3	6	16	**22**	**9.7 J**	**160**	**76**	**200**	**6.6 J**	1.6 U	1.6 U
Trichlorofluoromethane	75-69-4	ug/m3		NA	7.0 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Vinyl bromide	593-60-2	ug/m3		2.9	4.9 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
Vinyl chloride	75-01-4	ug/m3	6	5.6	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

ug/m3 = micrograms per meter cubed

FIGURES





UTM GRID AND 2016 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



QUADRANGLE LOCATION

U.S. National Grid
100,000-m Square ID
WL XL
Grid Zone Designation 18T

1	2	3
4		5
6	7	8

1 Nyack
2 White Plains
3 Glenville
4 Yonkers
5 Mamaroneck
6 Central Park
7 Flushing
8 Sea Cliff

ADJOINING QUADRANGLES

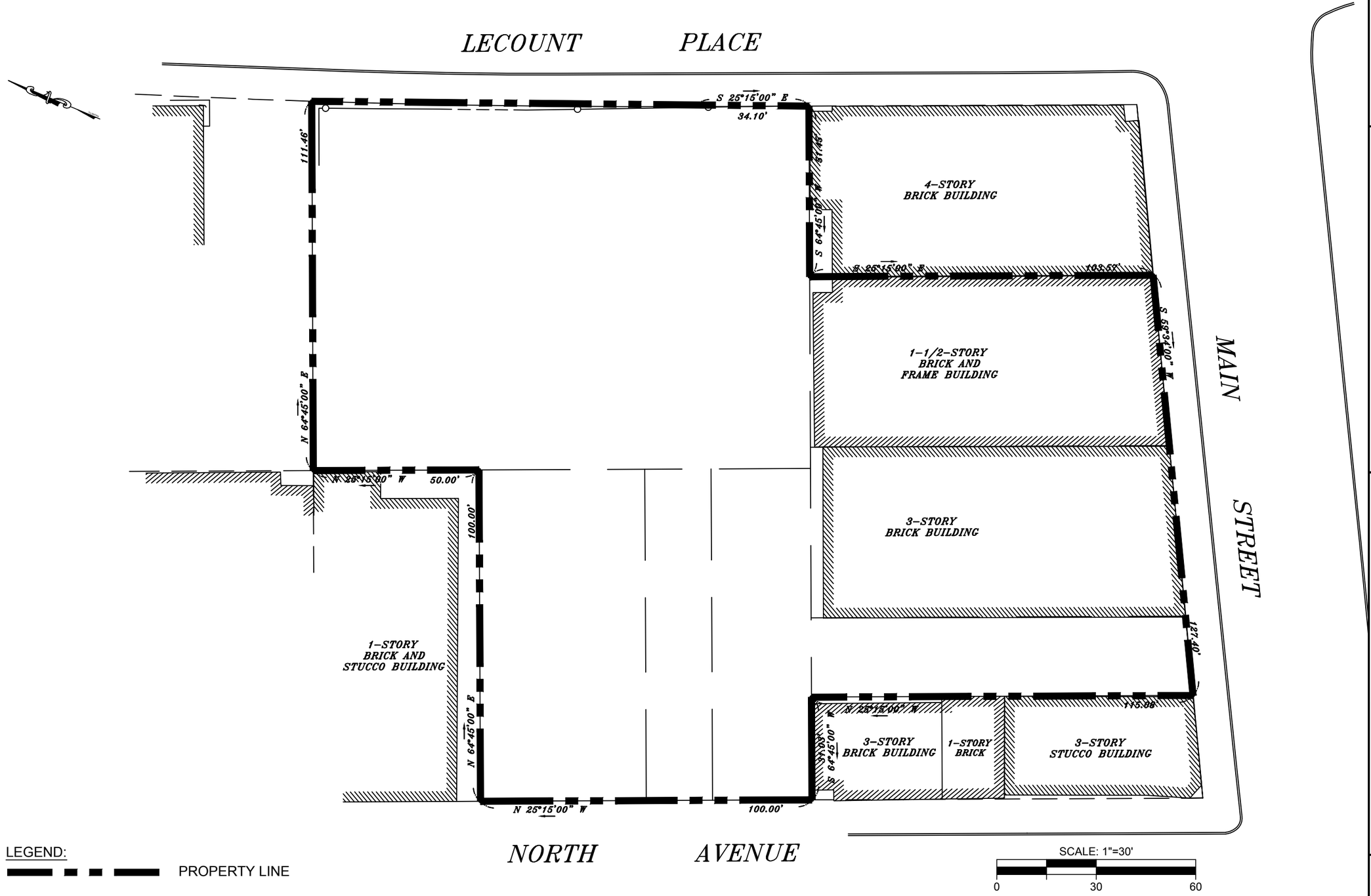
LECOUNT PLACE
NEW ROCHELLE, N.Y.

SITE LOCATION MAP

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

FIG-1.1

DRAWN BY: yy
CHECKED BY: SG
SCALE: N.T.S.
DATE: 03/20/19
JOB NO.: 10100



LEGEND:

PROPERTY LINE

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REFERENCE
EXIST CONDITIONS & BOUNDARY ARE TAKEN FROM "WORKSHEET" PREPARED BY CONTRACTORS' LINE & GRADE SOUTH, LLC. DATED MARCH 19, 2019.

NOTE:
THIS PLAN IS FOR REFERENCE ONLY. OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

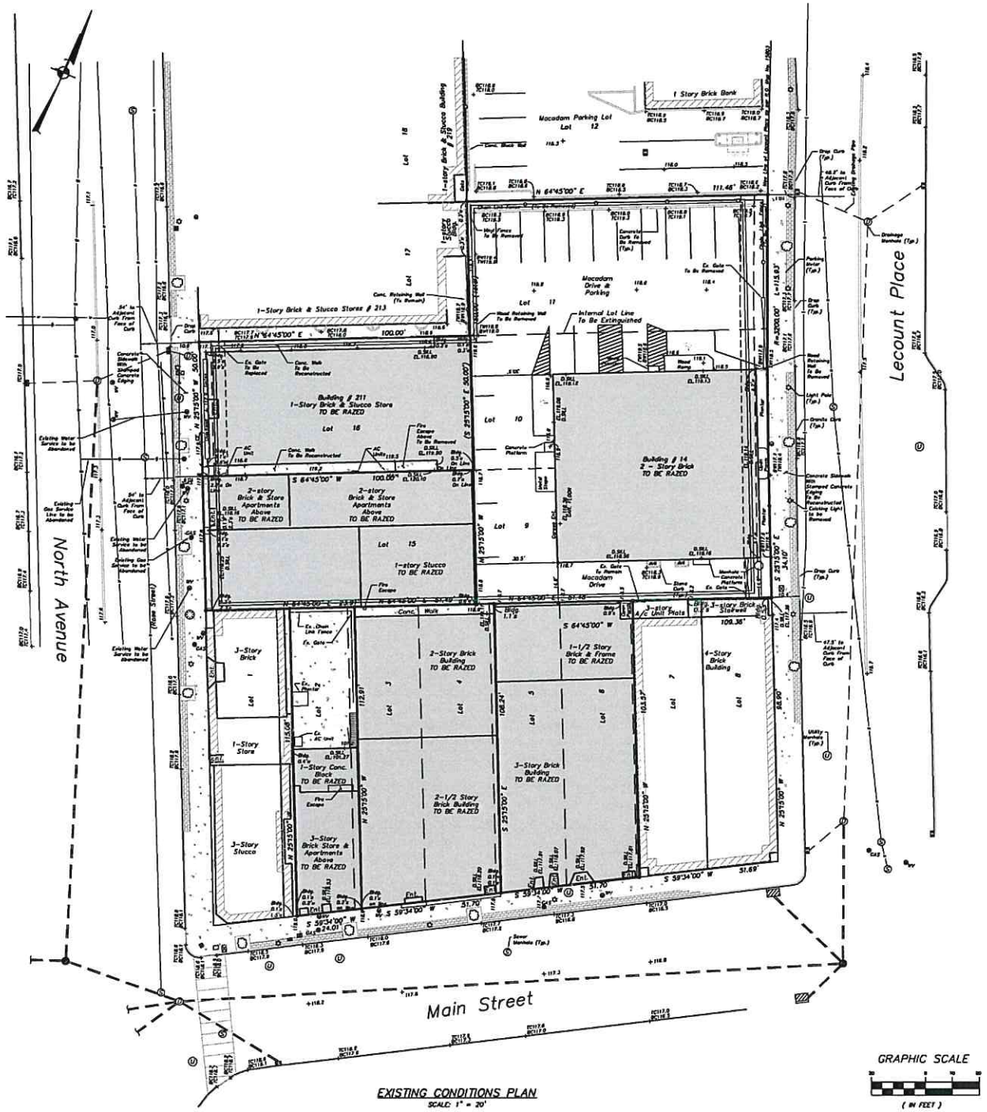
dwg by: EW
chk by: SG
scale: 1"=30'
date: 03/20/2019

project: LECOUNT PLACE
NEW ROCHELLE, N.Y.

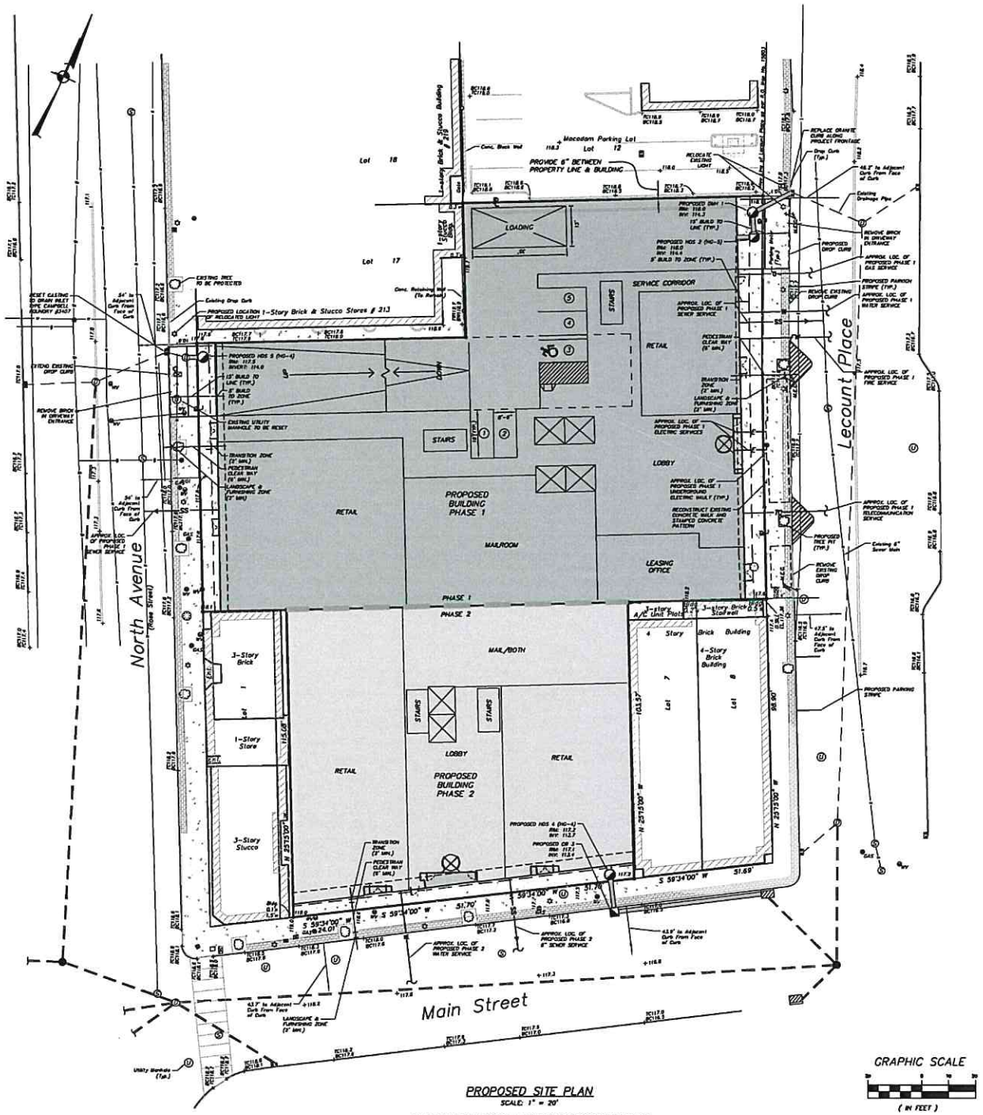
drawing title: BROWNFIELD SITE BOUNDARY MAP

job no: 10100
drawing no: FIG 1.2

N:\ACAD\10100\CAD\RAWP\10100 FIG-1.2 AND 2.1.DWG 03/22/19 10:31:40AM, jenny, LAYOUT:FIG 1.2



EXISTING CONDITIONS PLAN
SCALE: 1" = 20'



PROPOSED SITE PLAN
SCALE: 1" = 20'

NOTE: THE BUILDING FOOTPRINT SHOWN HEREON CORRESPOND TO THE GROUND FLOOR LEVEL AS SHOWN ON DRAWINGS PREPARED BY BEYER BLINDER BELLE ARCHITECTS & PLANNERS LLP

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NO.	DATE	REVISION	BY
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3	8-22-17	REVISED FOR RESUBMISSION TO CITY	CTQ
2	6-1-17	REVISED FOR RESUBMISSION TO CITY	CTQ
1	4-18-17	REVISED FOR RESUBMISSION TO CITY	CTQ

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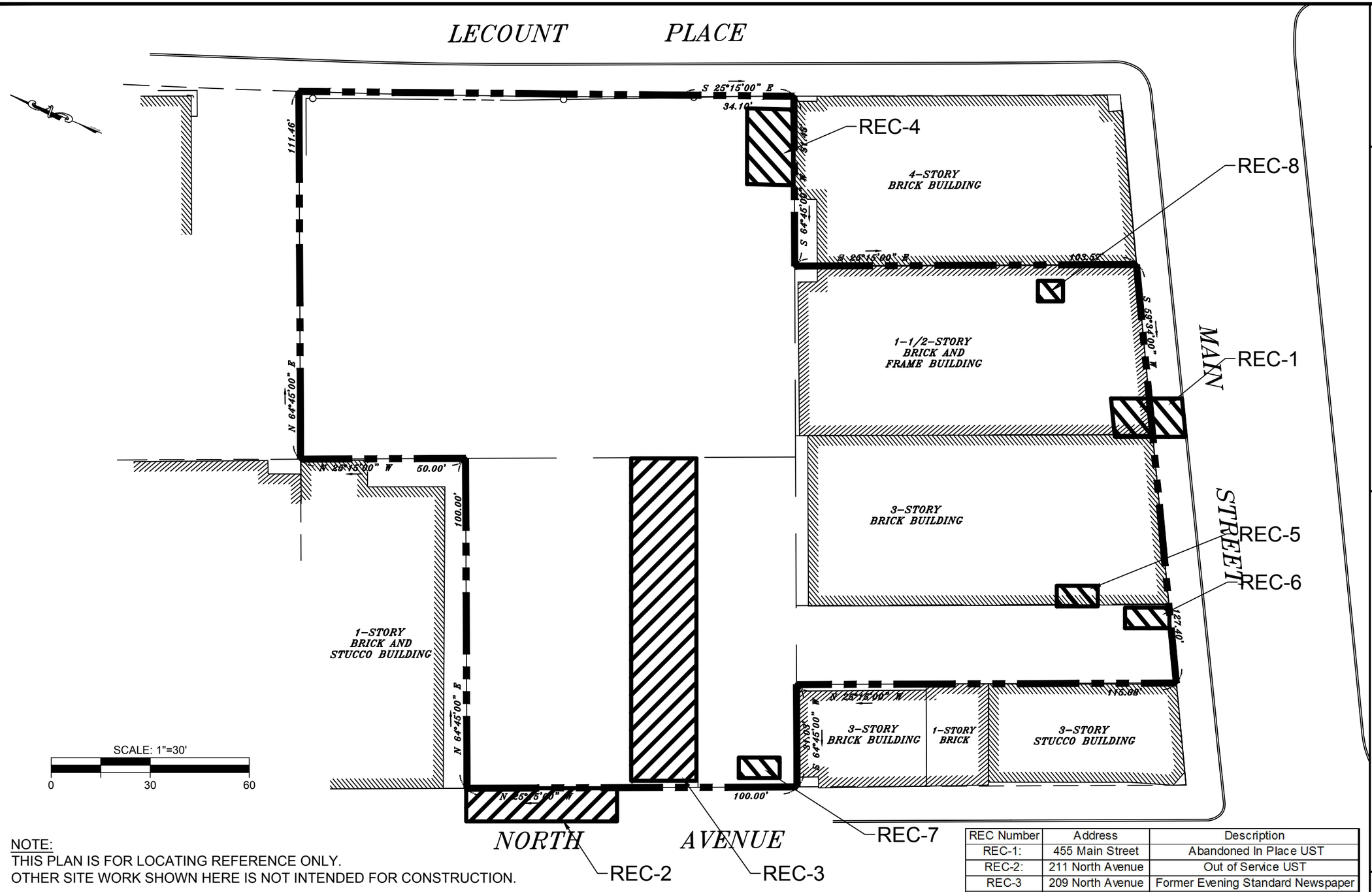
PROJECT:
14 LECOUNT PLACE
14 LECOUNT PLACE / 211 NORTH AVENUE, NEW ROCHELLE, WESTCHESTER COUNTY, NEW YORK

DRAWING:
EXISTING CONDITIONS AND PROPOSED SITE PLAN

PROJECT NUMBER	17140.100	PROJECT MANAGER	J.J.C.
DATE	04-06-17	DRAWN BY	C.T.Q.
SCALE	AS SHOWN	CHECKED BY	R.D.W.

DRAWING NO. C-002
SHEET 2/4

Figure 1.3
Proposed Development Plan



NOTE:
THIS PLAN IS FOR LOCATING REFERENCE ONLY.
OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

REC Number	Address	Description
REC-1:	455 Main Street	Abandoned In Place UST
REC-2:	211 North Avenue	Out of Service UST
REC-3	209 North Avenue	Former Evening Standard Newspaper
REC-4	14 Le Count Place	Removed UST
REC-5:	459 Main Street	1,000 Gallon UST
REC-6:	463 Main Street	275 Gallon UST
REC-7	207 North Avenue	(2) 275 Gallon ASTS
REC-8	455 Main Street	(2) 275 Gallon ASTS

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REFERENCE
EXIST CONDITIONS & BOUNDARY ARE TAKEN FROM "WORKSHEET" PREPARED BY CONTRACTORS' LINE & GRADE SOUTH, LLC. DATED MARCH 19, 2019.

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SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
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dwg by: EW
chk by: SG
scale: 1"=30'
date: 03/20/2019

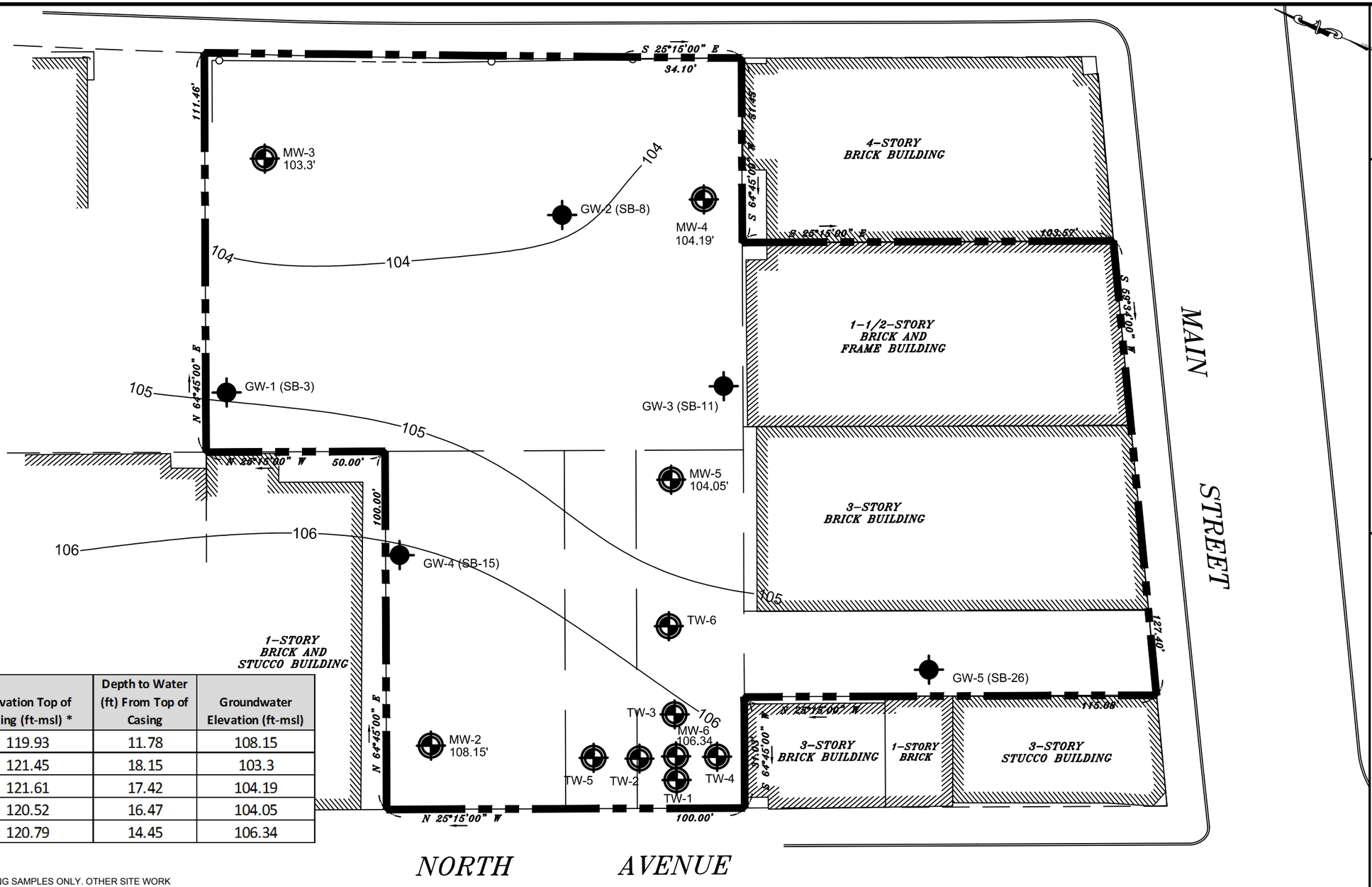
project: LECOUNT PLACE
NEW ROCHELLE, N.Y.

drawing title: REC PLAN

job no: 10100
drawing no:

FIG 2.1

N:\ACAD\10100\CAD\RAWP\10100 FIG-1.2 AND 2.1.DWG 03/22/19 10:35:50AM, jenny, LAYOUT:FIG 2.1



Well No.	Elevation Top of Casing (ft-msl) *	Depth to Water (ft) From Top of Casing	Groundwater Elevation (ft-msl)
MW-2	119.93	11.78	108.15
MW-3	121.45	18.15	103.3
MW-4	121.61	17.42	104.19
MW-5	120.52	16.47	104.05
MW-6	120.79	14.45	106.34

NOTE:
1. THIS PLAN IS FOR LOCATING SAMPLES ONLY. OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

LEGEND:

GW-1 — GROUNDWATER NUMBER & APPROX. LOCATION

MW-1 — MONITORING WELL NUMBER & APPROX. LOCATION

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SCALE: 1"=30'
0 30 60

dwg by: EW/JK
chk by: SG
scale: 1"=30'
date: 3/20/19

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SITE DESIGN
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12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

project: LECOUNT PLACE
NEW ROCHELLE, N.Y.

drawing title: GROUNDWATER CONTOUR MAP

job no: 10100
drawing no: FIG 2.2

N:\ACAD\10100\CAD\RAWP\10100 FIG-2.2 GW CONTOUR MAP.DWG 03/22/19 10:38:18AM, jenny, LAYOUT: FIG 2.2

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-1	SESI-SB-1
Sample Depth (feet)			3	8
Metals (MG/KG)				
	0.18	0.81	0.21	0.010 U
SVOCs(MG/KG)				
Benzo[b]fluoranthene	1	1	0.011 U	1.6
Chrysene	1	3.9	0.0069 U	1.2
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.016 U	0.97

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-7	SESI-SB-7
Sample Depth (feet)			3	15-17
SOIL BY 6010D(MG/KG)				
Nickel	30	310	4.3 J	30.7
SOIL BY 8081B				
Dieldrin	0.005	0.2	0.0039	0.0010 U
SOIL BY 8270D				
Benzo[a]anthracene	1	1	1.3	0.013 U
Benzo[a]pyrene	1	1	1.3	0.010 U
Benzo[b]fluoranthene	1	1	2.2	0.0099 U
Chrysene	1	3.9	1.6	0.0065 U
Indeno[1,2,3-cd]pyrene	0.5	0.5	1.1	0.015 U

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-2	SESI-SB-2
Sample Depth (feet)			3	5
SOIL BY 6010D (MG/KG)				
Copper	50	270	54.1	18.8
Lead	63	400	438	12.9
Zinc	109	10000	791	33.6
SOIL BY 8270D (MG/KG)				
Benzo[b]fluoranthene	1	1	0.18	1.2
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.089	0.67

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-3
Sample Depth (feet)			2
SOIL BY 6010D(MG/KG)			
Lead	63	400	181
Zinc	109	10000	114
SOIL BY 8081B			
4,4'-DDT	0.0033	7.9	0.0052 J

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-5
Sample Depth (feet)			8
SOIL BY 8270D			
Benzo[a]anthracene	1	1	2.0
Benzo[a]pyrene	1	1	1.7
Benzo[b]fluoranthene	1	1	3.4
Benzo[k]fluoranthene	0.8	3.9	1.1
Chrysene	1	3.9	2.4
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.81

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-6	SESI-SB-6
Sample Depth (feet)			2	20-22
SOIL BY 6010D(MG/KG)				
Lead	63	400	89.6	4.1
Nickel	30	310	14.2	44.0

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-15
Sample Depth (feet)			15-17
SOIL BY 6010D(MG/KG)			
Nickel	30	310	30.0

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-28	SESI-SB-28 2	SESI-SB-28 3
Sample Depth (feet)			6	10	15
SOIL BY 6010D(MG/KG)					
Copper	50	270	52.2	39.4	37.2
Nickel	30	310	20.3	35.3	47.7

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-9
Sample Depth (feet)			17
SOIL BY 8081B			
4,4'-DDT	0.0033	7.9	0.0049 J

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-29	SESI-SB-29
Sample Depth (feet)			9	12
SOIL BY 6010D(MG/KG)				
Copper	50	270	75.2	24.7
Nickel	30	310	19.4	32.1
SOIL BY 8081B (MG/KG)				
4,4'-DDT	0.0033	7.9	0.0013 U	0.0035 J p

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-18
Sample Depth (feet)			13
SOIL BY 6010D(MG/KG)			
Nickel	30	310	30.9

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-23
Sample Depth (feet)			7
SOIL BY 6010D(MG/KG)			
Copper	50	270	58.3

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-8	SESI-SB-8	SESI-SB-82
Sample Depth (feet)			4	9	18
SOIL BY 6010D(MG/KG)					
Copper	50	270	13.0	37.0	164
Lead	63	400	127	24.6	6.5
Nickel	30	310	5.8 J	17.5	36.2
Zinc	109	10000	72.2	156	88.2
SOIL BY 8270D (MG/KG)					
Benzo[b]fluoranthene	1	1	1.4	0.021 J	0.0097 U
Chrysene	1	3.9	1.1	0.017 J	0.0064 U
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.83	0.015 U	0.015 U

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-10	SESI-SB-10
Sample Depth (feet)			4	18
SOIL BY 6010D(MG/KG)				
Nickel	30	310	10.1	42.6
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.57	0.016 U

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-11
Sample Depth (feet)			14
SOIL BY 6010D(MG/KG)			
Nickel	30	310	31.2

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-13
Sample Depth			
SOIL BY 7471B(MG/KG)			
Mercury	0.18	0.81	0.29
SOIL BY 6010D(MG/KG)			
Lead	63	400	127

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-34
Sample Depth (feet)			6
SOIL BY 6010D(MG/KG)			
Nickel	30	310	39.3

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-19
Sample Depth (feet)			23
SOIL BY 6010D(MG/KG)			
Nickel	30	310	30.2

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-21
Sample Depth (feet)			8
SOIL BY 6010D(MG/KG)			
Nickel	30	310	219
Zinc	109	10000	139

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-22
Sample Depth (feet)			22
SOIL BY 6010D(MG/KG)			
Nickel	30	310	32.5

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-20	SESI-SB-20
Sample Depth (feet)			5	6
SOIL BY 7471B(MG/KG)				
Mercury	0.18	0.81	0.20	0.021
SOIL BY 6010D(MG/KG)				
Lead	63	400	91.2	31.4
Zinc	109	10000	110	60.7

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-31
Sample Depth (feet)			14
SOIL BY 6010D(MG/KG)			
Nickel	30	310	30.8

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-30
Sample Depth (feet)			10
SOIL BY 8260C (MG/KG)			
Benzene	0.06	4.8	0.086 J
Ethylbenzene	1	41	5.5
Toluene	0.7	100	4.1

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-25
Sample Depth (feet)			3
SOIL BY 7471B(MG/KG)			
Mercury	0.18	0.81	0.55
SOIL BY 6010D(MG/KG)			
Arsenic	13	16	14.9
Barium	350	400	705
Copper	50	270	118
Lead	63	400	1560
Zinc	109		812
SOIL BY 8081B (MG/KG)			
4,4'-DDT	0.0033	7.9	0.0055 J
SOIL BY 8270D (MG/KG)			
Benzo[a]anthracene	1	1	58
Benzo[a]pyrene	1	1	49
Benzo[b]fluoranthene	1	1	72
Benzo[g,h,i]perylene	100	100	30
Benzo[k]fluoranthene	0.8	3.9	24
Chrysene	1	3.9	57
Dibenz(a,h)anthracene	0.33	0.33	8.0
Dibenzofuran	7	59	9.4 J
Fluoranthene	100	100	130
Indeno[1,2,3-cd]pyrene	0.5	0.5	41
Phenanthrene	100	100	130

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-26
Sample Depth (feet)			3
SOIL BY 6010D (MG/KG)			
Mercury	0.18	0.81	3.6
Lead	63	400	528
SOIL BY 8270D (MG/KG)			
Benzo[a]anthracene	1	1	2.0
Benzo[a]pyrene	1	1	1.9
Benzo[b]fluoranthene	1	1	2.8
Indeno[1,2,3-cd]pyrene	0.5	0.5	1.6

NOTE:
1. THIS PLAN IS FOR LOCATING SAMPLES ONLY. OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.
2. RESULTS ARE SHOWN ON SAMPLES WITH EXCEEDANES ONLY.

LEGEND:

SESI-SB-1 — PROPOSED SOIL BORING NUMBER & APPROX. LOCATION

2.0 — EXCEED RESTRICTED RESIDENTIAL

1.1 — EXCEED UNRESTRICTED USE

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SCALE: 1"=30'
0 30 60

N:\ACAD\10100\CAD\RAWF\10100 FIG-2.3 SOIL BORING LOCATION.DWG 03/22/19 10:40:35AM, jenny, LAYOUT:FIG 2.3

dwg by: EW/JK
chk by: SG
scale: 1"=30'
date: 3/20/19

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SITE DESIGN
ENVIRONMENTAL
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project: LECOUNT PLACE NEW ROCHELLE, N.Y.

drawing title: SOIL SAMPLE LOCATIONS AND RESULTS

job no: 10100
drawing no: FIG 2.3

Analyte	Units	NYSDEC AWQS	MW-3
SVOCs (8270)			
Benzo[a]anthracene	ug/L	0.002	**0.043 J**
Benzo[b]fluoranthene	ug/L	0.002	**0.039 J**

Analyte	Units	NYSDEC AWQS	GW-1
SVOC (8270)			
Benzo[a]anthracene	ug/L	0.002	**0.25**
Benzo[b]fluoranthene	ug/L	0.002	**0.66**
Benzo[k]fluoranthene	ug/L	0.002	**0.26**
Indeno[1,2,3-cd]pyrene	ug/L	0.002	**0.28**
Metals (6010)			
Chromium (Total)	ug/L	50	**73.3**
Chromium (Dissolved)		50	2.3 U
Iron (Total)	ug/L	300	**41700**
Iron (Dissolved)		300	51.1 U
Lead (Total)	ug/L	25	**113**
Lead (Dissolved)		25	0.55 U
Magnesium (Total)	ug/L	35000	**39100**
Magnesium (Dissolved)		35000	**27300**
Manganese (Total)	ug/L	300	**2900**
Manganese (Dissolved)		300	**2120**
Nickel (total)	ug/L	100	**67.7**
Nickel (Dissolved)		100	**15.6**
Sodium (total)	ug/L	20000	**125000**
Sodium (Dissolved)		20000	**114000**
Thallium (Total)	ug/L	0.5	**0.52 J**
Thallium (Dissolved)		0.5	0.16 U

Analyte	Units	NYSDEC AWQS	GW-4
Metals (6010)			
Barium (Total)	ug/L	1000	**3790**
Barium (Dissolved)		1000	**81.6**
Beryllium (Total)	ug/L	3	**5.4**
Beryllium (Dissolved)		3	0.25 U
Chromium (Total)	ug/L	50	**886**
Chromium (Dissolved)		50	2.3 U
Copper (Total)	ug/L	200	**725**
Copper (Dissolved)		200	2.0 U
Iron (total)	ug/L	300	**47300**
Iron (Dissolved)		300	51.1 U
Lead (Total)	ug/L	25	**111**
Lead (Dissolved)		25	0.55 U
Magnesium (Total)	ug/L	35000	**160000**
Magnesium (Dissolved)		35000	**40500**
Manganese (Total)	ug/L	300	**14600**
Manganese (Dissolved)		300	**2620**
Nickel (Total)	ug/L	100	**590**
Nickel (Dissolved)		100	**12.4**
Sodium (Total)	ug/L	20000	**21500**
Sodium (Dissolved)		20000	**19600**
Thallium (Total)	ug/L	0.5	**6.0**
Thallium (Dissolved)		0.5	0.16 U

Analyte	Units	NYSDEC AWQS	MW-2
Metals (6010)			
Magnesium (Total)	ug/L	35000	**38800**
Magnesium (Dissolved)		35000	**43500**
Manganese (Total)	ug/L	300	**775**
Manganese (Dissolved)		300	**647**
Sodium (Total)	ug/L	20000	**561000**
Sodium (Dissolved)		20000	**632000**

Analyte	Units	NYSDEC AWQS	MW-4
SVOCs (8270)			
Benzo[a]anthracene	ug/L	0.002	**0.027 J**
Benzo[b]fluoranthene	ug/L	0.002	**0.037 J**
Metals (6010)			
Iron (Total)	ug/L	300	**348**
Iron (Dissolved)		300	51.1 U
Magnesium (Total)	ug/L	35000	**57200**
Magnesium (Dissolved)		35000	**64500**
Manganese (total)	ug/L	300	**742**
Manganese (Dissolved)		300	**774**
Sodium (Total)	ug/L	20000	**195000**
Sodium (Dissolved)		20000	**207000**

Analyte	Units	NYSDEC AWQS	MW-5
Metals (6010)			
Selenium (Total)	ug/L	10	**14.9**
Selenium (Dissolved)		10	**15.2**
Sodium (Total)	ug/L	20000	**45800**
Sodium (Dissolved)		20000	**49200**

Analyte	Units	NYSDEC AWQS	GW-2
SVOC (8270)			
Benzo[a]anthracene	ug/L	0.002	**0.090**
Benzo[b]fluoranthene	ug/L	0.002	**0.10**
Benzo[k]fluoranthene	ug/L	0.002	**0.035 J**
Indeno[1,2,3-cd]pyrene	ug/L	0.002	**0.086**
Metals (6010)			
Arsenic (Dissolved)	ug/L	25	**28.1**
Arsenic (Total)		25	0.73 U
Barium (Total)	ug/L	1000	**4460**
Barium (Dissolved)		1000	**6.0**
Beryllium (total)	ug/L	3	**10.7**
Beryllium (Dissolved)		3	0.25 U
Chromium (Total)	ug/L	50	**606**
Chromium (Dissolved)		50	**3.2 J**
Copper (total)	ug/L	200	**2070**
Copper (Dissolved)		200	**9.1**
Iron (Total)	ug/L	300	**550000**
Iron (Dissolved)		300	**359**
Lead (Total)	ug/L	25	**251**
Lead (Dissolved)		25	0.55 U
Magnesium (Total)	ug/L	35000	**132000**
Magnesium (Dissolved)		35000	**775**
Manganese (Total)	ug/L	300	**11100**
Manganese (Dissolved)		300	**23.6**
Nickel (Total)	ug/L	100	**632**
Nickel (Dissolved)		100	**3.6 J**
Sodium (Total)	ug/L	20000	**85700**
Sodium (Dissolved)		20000	**72500**
Thallium (Total)	ug/L	0.5	**6.0**
Thallium (Dissolved)		0.5	0.16 U
Pesticides (8081)			
Heptachlor	ug/L	0.04	**0.074**

Analyte	Units	NYSDEC AWQS	MW-1
VOCs (8260)			
cis-1,2-Dichloroethene	ug/L	5	**9.3**
Isopropylbenzene	ug/L	5	**8.0**
Metals (6010)			
Iron	ug/L	300	**6270**
Magnesium	ug/L	35000	**41400**
Manganese	ug/L	300	**1180**
Sodium	ug/L	20000	**316000**

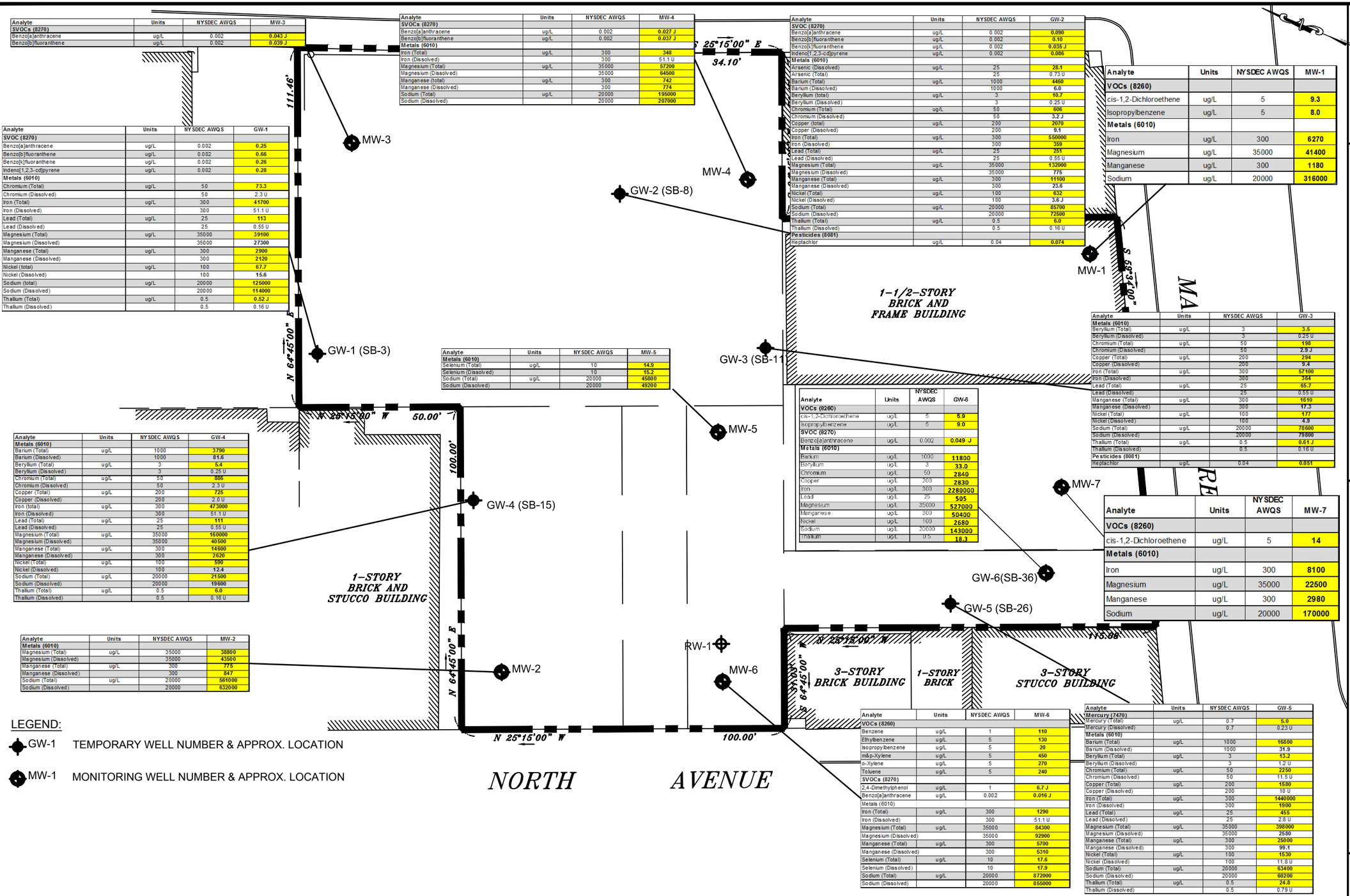
Analyte	Units	NYSDEC AWQS	GW-6
VOCs (8260)			
cis-1,2-Dichloroethene	ug/L	5	**5.9**
Isopropylbenzene	ug/L	5	**9.0**
SVOC (8270)			
Benzo[a]anthracene	ug/L	0.002	**0.049 J**
Metals (6010)			
Barium	ug/L	1000	**11800**
Beryllium	ug/L	3	**33.0**
Chromium	ug/L	50	**2840**
Copper	ug/L	200	**2830**
Iron	ug/L	300	**2280000**
Lead	ug/L	25	**505**
Magnesium	ug/L	35000	**527000**
Manganese	ug/L	300	**50400**
Nickel	ug/L	100	**2680**
Sodium	ug/L	20000	**143000**
Thallium	ug/L	0.5	**18.3**

Analyte	Units	NYSDEC AWQS	GW-3
Metals (6010)			
Beryllium (Total)	ug/L	3	**3.5**
Beryllium (Dissolved)		3	0.25 U
Chromium (Total)	ug/L	50	**198**
Chromium (Dissolved)		50	**2.3 J**
Copper (Total)	ug/L	200	**294**
Copper (Dissolved)		200	**9.4**
Iron (Total)	ug/L	300	**57100**
Iron (Dissolved)		300	**354**
Lead (Total)	ug/L	25	**65.7**
Lead (Dissolved)		25	0.55 U
Manganese (Total)	ug/L	300	**1610**
Manganese (Dissolved)		300	**17.3**
Nickel (Total)	ug/L	100	**177**
Nickel (Dissolved)		100	**4.6**
Sodium (Total)	ug/L	20000	**78600**
Sodium (Dissolved)		20000	**79800**
Thallium (Total)	ug/L	0.5	**0.61 J**
Thallium (Dissolved)		0.5	0.16 U
Pesticides (8081)			
Heptachlor	ug/L	0.04	**0.051**

Analyte	Units	NYSDEC AWQS	MW-7
VOCs (8260)			
cis-1,2-Dichloroethene	ug/L	5	**14**
Metals (6010)			
Iron	ug/L	300	**8100**
Magnesium	ug/L	35000	**22500**
Manganese	ug/L	300	**2980**
Sodium	ug/L	20000	**170000**

Analyte	Units	NYSDEC AWQS	GW-5
Mercury (7470)			
Mercury (Total)	ug/L	0.7	**5.0**
Mercury (Dissolved)		0.7	0.23 U
Metals (6010)			
Barium (Total)	ug/L	1000	**16800**
Barium (Dissolved)		1000	**31.9**
Beryllium (Total)	ug/L	3	**13.2**
Beryllium (Dissolved)		3	1.2 U
Chromium (Total)	ug/L	50	**2250**
Chromium (Dissolved)		50	11.5 U
Copper (Total)	ug/L	200	**1580**
Copper (Dissolved)		200	10 U
Iron (Total)	ug/L	300	**1440000**
Iron (Dissolved)		300	**1900**
Lead (Total)	ug/L	25	**455**
Lead (Dissolved)		25	2.8 U
Magnesium (Total)	ug/L	35000	**398000**
Magnesium (Dissolved)		35000	**2580**
Manganese (Total)	ug/L	300	**25000**
Manganese (Dissolved)		300	**99.1**
Nickel (Total)	ug/L	100	**1530**
Nickel (Dissolved)		100	11.8 U
Sodium (Total)	ug/L	20000	**63400**
Sodium (Dissolved)		20000	**60200**
Thallium (Total)	ug/L	0.5	**24.8**
Thallium (Dissolved)		0.5	0.79 U

Analyte	Units	NYSDEC AWQS	MW-6
VOCs (8260)			
Benzene	ug/L	1	**110**
Ethylbenzene	ug/L	5	**130**
Isopropylbenzene	ug/L	5	**20**
m&p-Xylene	ug/L	5	**450**
o-Xylene	ug/L	5	**270**
Toluene	ug/L	5	**240**
SVOCs (8270)			
2,4-Dimethylphenol	ug/L	1	**6.7 J**
Benzo[a]anthracene	ug/L	0.002	**0.016 J**
Metals (6010)			
Iron (Total)	ug/L	300	**1290**
Iron (Dissolved)		300	51.1 U
Magnesium (Total)	ug/L	35000	**84300**
Magnesium (Dissolved)		35000	**92900**
Manganese (Total)	ug/L	300	**5700**
Manganese (Dissolved)		300	**5310**
Selenium (Total)	ug/L	10	**17.6**
Selenium (Dissolved)		10	**17.9**
Sodium (Total)	ug/L	20000	**872000**
Sodium (Dissolved)		20000	**855000**



LEGEND:

GW-1 TEMPORARY WELL NUMBER & APPROX. LOCATION

MW-1 MONITORING WELL NUMBER & APPROX. LOCATION

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NOTE:
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SCALE: 1"=30'
0 30 60

dwg by: EW/JK
chk by: SG
scale: 1"=30'
date: 06/06/19

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SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

project: LECOUNT PLACE NEW ROCHELLE, N.Y.

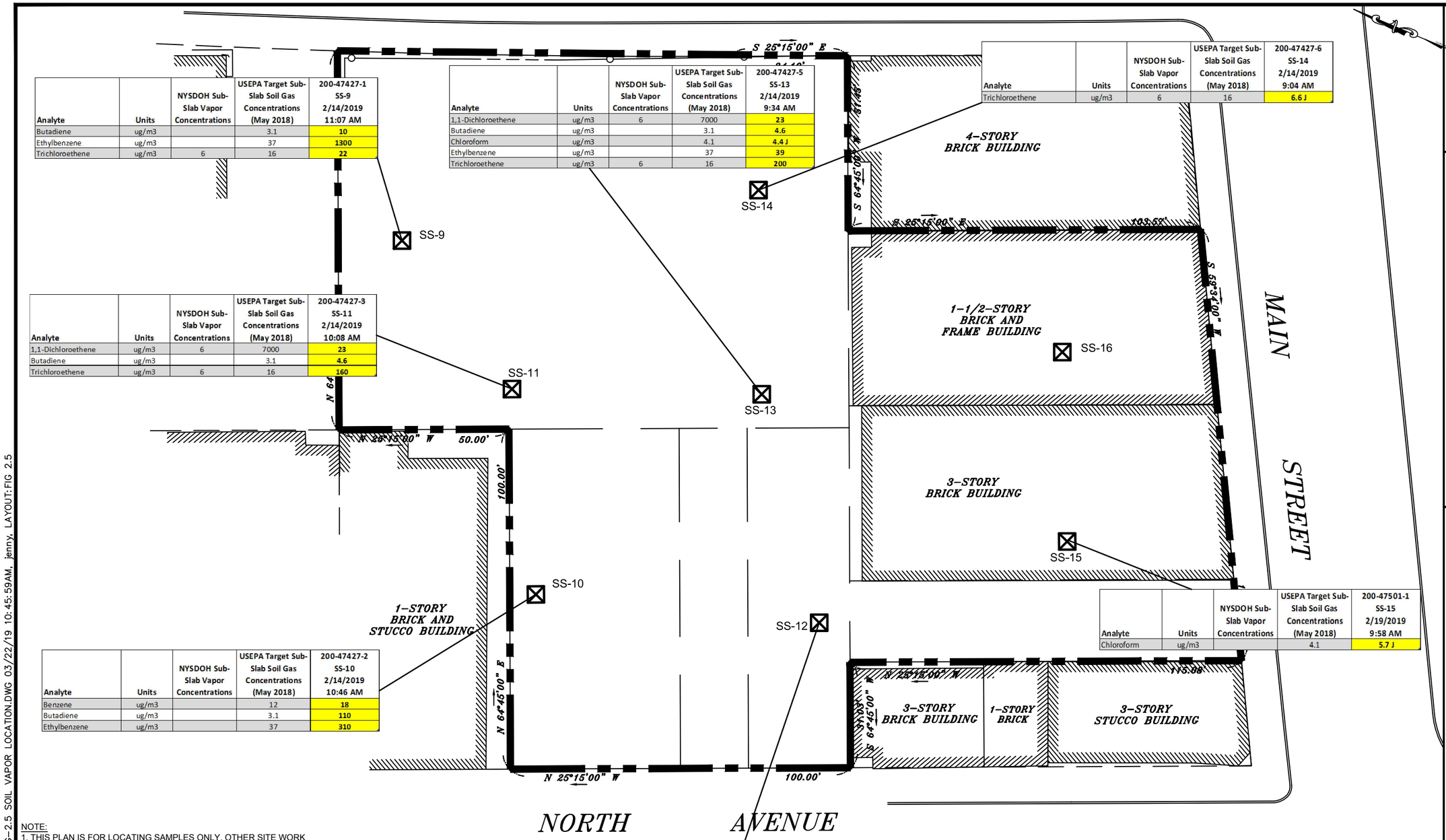
drawing title: GROUNDWATER SAMPLE LOCATION AND CONTAMINANTS

job no: 10100
drawing no:

FIG 2.4

N:\ACAD\10100\CAD\RAR FINAL\10100 FIG-4.2 GW SAMPLE LOCATION.dwg, FIG 4.2, 6/12/2019 8:08:51 AM, 1:1

N:\ACAD\10100\CAD\RAR FINAL\10100 FIG-4.2 GW SAMPLE LOCATION.DWG 06/12/19 08:08:51AM, fl, LAYOUT:FIG 4.2



Analyte	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47427-1 SS-9 2/14/2019 11:07 AM
Butadiene	ug/m3		3.1	10
Ethylbenzene	ug/m3		37	1300
Trichloroethene	ug/m3	6	16	22

Analyte	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47427-5 SS-13 2/14/2019 9:34 AM
1,1-Dichloroethene	ug/m3	6	7000	23
Butadiene	ug/m3		3.1	4.6
Chloroform	ug/m3		4.1	4.4 J
Ethylbenzene	ug/m3		37	39
Trichloroethene	ug/m3	6	16	200

Analyte	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47427-6 SS-14 2/14/2019 9:04 AM
Trichloroethene	ug/m3	6	16	6.6 J

Analyte	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47427-3 SS-11 2/14/2019 10:08 AM
1,1-Dichloroethene	ug/m3	6	7000	23
Butadiene	ug/m3		3.1	4.6
Trichloroethene	ug/m3	6	16	160

Analyte	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47501-1 SS-15 2/19/2019 9:58 AM
Chloroform	ug/m3		4.1	5.7 J

Analyte	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47427-2 SS-10 2/14/2019 10:46 AM
Benzene	ug/m3		12	18
Butadiene	ug/m3		3.1	110
Ethylbenzene	ug/m3		37	310

Analyte	Units	NYSDOH Sub-Slab Vapor Concentrations	USEPA Target Sub-Slab Soil Gas Concentrations (May 2018)	200-47427-4 SS-12 2/14/2019 11:32 AM
1,1-Dichloroethene	ug/m3	6	7000	12
Chloroform	ug/m3		4.1	11
Trichloroethene	ug/m3	6	16	76

NOTE:
1. THIS PLAN IS FOR LOCATING SAMPLES ONLY. OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

LEGEND:

SS-2 — SOIL GAS NUMBER & APPROX. LOCATION

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SCALE: 1"=30'
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dwg by: EW/JK
chk by: SG
scale: 1"=30'
date: 3/20/19

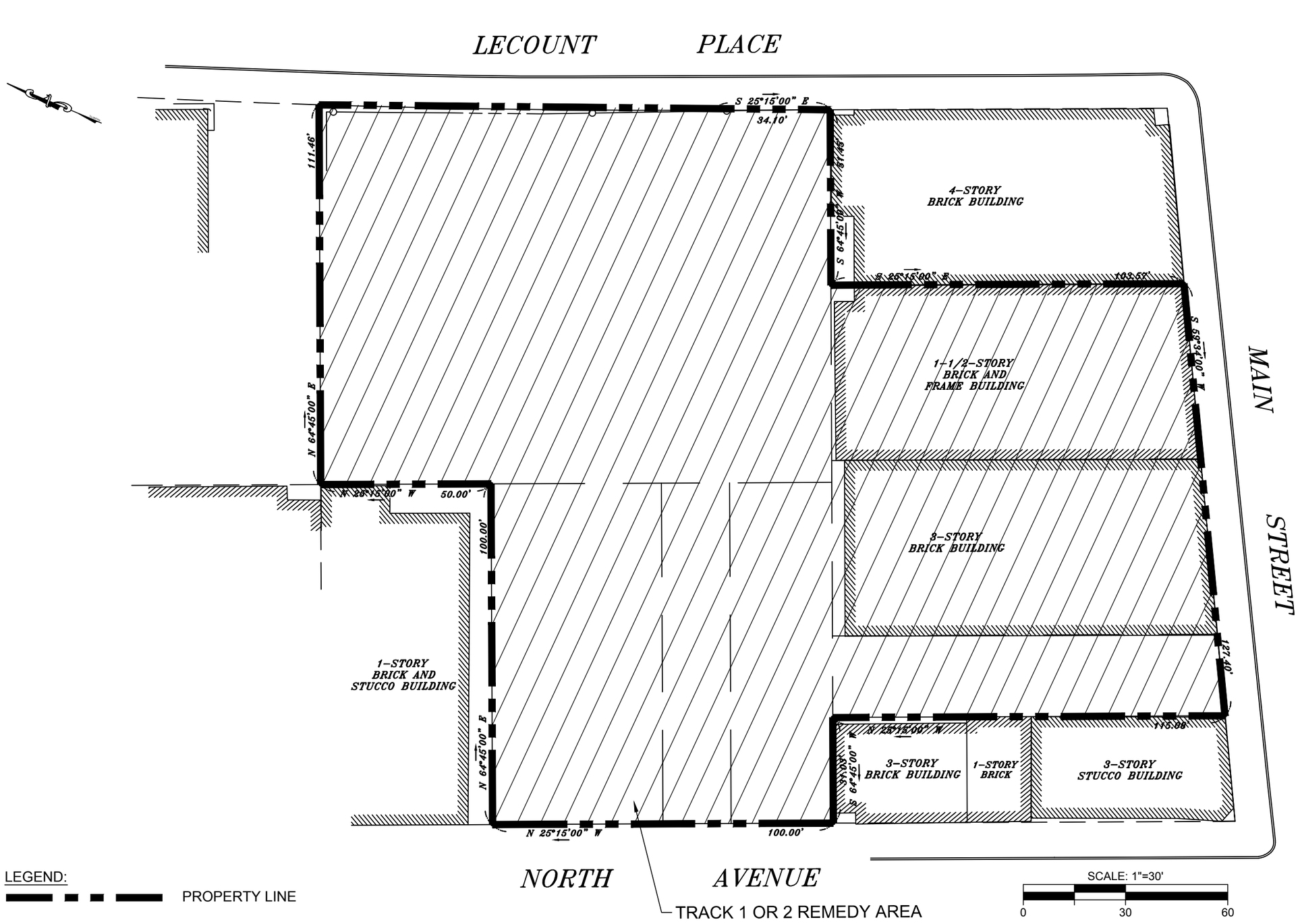
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project: LECOUNT PLACE NEW ROCHELLE, N.Y.

drawing title: SOIL VAPOR SAMPLE LOCATIONS AND RESULTS

job no: 10100
drawing no: FIG 2.5

N:\ACAD\10100\CAD\RAWP\10100 FIG-2.5 SOIL VAPOR LOCATION.DWG 03/22/19 10:45:59AM, jenny, LAYOUT:FIG 2.5



LEGEND:

PROPERTY LINE

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dwg by: EW
chk by: SG
scale: 1"=30'
date: 03/20/2019

project:
LECOUNT PLACE
NEW ROCHELLE, N.Y.

drawing title:
SELECTED REMEDIES PLAN

job no: 10100
drawing no:

FIG-3.1

N:\ACAD\10100\CAD\RAWP\10100 FIG-3.1 REMEDIES PLAN.DWG 03/22/19 10:57:17AM, jenny, LAYOUT:FIG-3.1

POST EXCAVATION CONFIRMATIONS SAMPLES			
AREA ID	AREAS	BOTTOM SAMPLES	SIDEWALL SAMPLES
A	2,143 S.F.	3	7
B	1,399 S.F.	2	3
C	2,250 S.F.	3	8
D	705 S.F.	1	5
E	1,440 S.F.	2	2
F	1,582 S.F.	2	7
G	1,502 S.F.	2	3
MAIN	30,915 S.F.	N/A	N/A

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-1	SESI-SB-1
Sample Depth (feet)			3	8
Metals (MG/KG)				
Mercury	0.18	0.81	0.21	0.010 U
SVOCs (MG/KG)				
Benzo[b]fluoranthene	1	1	0.011 U	**1.5**
Chrysene	1	3.9	0.0069 U	**1.2**
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.016 U	**0.97**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-5
Sample Depth (feet)			8
SOIL BY 8270D			
Benzo(a)anthracene	1	1	**2.0**
Benzo(a)pyrene	1	1	**1.7**
Benzo(b)fluoranthene	1	1	**2.4**
Benzo(b)fluoranthene	0.8	3.9	**1.1**
Chrysene	1	3.9	**2.4**
Indeno(1,2,3-cd)pyrene	0.5	0.5	**0.91**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-2	SESI-SB-2
Sample Depth (feet)			3	5
SOIL BY 6010D (M G/KG)				
Copper	50	270	**54.1**	**18.8**
Lead	63	400	**445**	**12.9**
Zinc	109	10000	**791**	**33.6**
SOIL BY 8270D (M G/KG)				
Benzo[b]fluoranthene	1	1	**0.18**	**1.2**
Indeno[1,2,3-cd]pyrene	0.5	0.5	**0.089**	**0.67**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-9
Sample Depth (feet)			**17**
SOIL BY 8081B			
4,4'-DDT	0.0033	7.9	**0.0049 J**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-3
Sample Depth (feet)			2
SOIL BY 6010D(M G/KG)			
Lead	63	400	**181**
Zinc	109	10000	**114**
SOIL BY 8081B			
4,4'-DDT	0.0033	7.9	**0.0052 J**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-6	SESI-SB-6
Sample Depth (feet)			**2**	20-22
SOIL BY 6010D(M G/KG)				
Lead	63	400	**89.6**	**4.1**
Nickel	30	310	**14.2**	**44.0**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-15
Sample Depth (feet)			15-17
SOIL BY 6010D(M G/KG)			
Nickel	30	310	**30.0**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-28	SESI-SB-28 2	SESI-SB-28 3
Sample Depth (feet)			**6**	**10**	**15**
SOIL BY 6010D(M G/KG)					
Copper	50	270	**52.2**	**39.4**	**37.2**
Nickel	30	310	**20.3**	**35.3**	**47.7**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-29	SESI-SB-29
Sample Depth (feet)			**9**	**12**
SOIL BY 6010D(M G/KG)				
Copper	50	270	**75.2**	**24.7**
Nickel	30	310	**19.4**	**32.1**
SOIL BY 8081B (M G/KG)				
4,4'-DDT	0.0033	7.9	0.0013 U	**0.0035 J p**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-7	SESI-SB-7
Sample Depth (feet)			3	15-17
SOIL BY 6010D(M G/KG)				
Nickel	30	310	**4.3 J**	**30.7**
SOIL BY 8270D				
Benzo(a)anthracene	1	1	**1.3**	0.013 U
Benzo(a)pyrene	1	1	**1.3**	**0.010 U**
Benzo(b)fluoranthene	1	1	**2.2**	0.0099 U
Chrysene	1	3.9	**1.6**	**0.0065 U**
Indeno(1,2,3-cd)pyrene	0.5	0.5	**1.1**	0.015 U

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-18
Sample Depth (feet)			13
SOIL BY 6010D(M G/KG)			
Nickel	30	310	**30.9**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-30
Sample Depth (feet)			10
SOIL BY 8260C (M G/KG)			
Benzene	0.06	4.8	**0.086 J**
Ethylbenzene	1	41	**5.5**
Toluene	0.7	100	**4.1**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-31
Sample Depth (feet)			14
SOIL BY 6010D(M G/KG)			
Nickel	30	310	**30.8**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-20	SESI-SB-20
Sample Depth (feet)			**5**	**6**
SOIL BY 7471B(M G/KG)				
Mercury	0.18	0.81	**0.20**	**0.021**
SOIL BY 6010D(M G/KG)				
Lead	63	400	**91.2**	**31.4**
Zinc	109	10000	**110**	**60.7**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-23
Sample Depth (feet)			7
SOIL BY 6010D(M G/KG)			
Copper	50	270	**58.3**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-8	SESI-SB-8	SESI-SB-8
Sample Depth (feet)			4	9	18
SOIL BY 6010D(M G/KG)					
Copper	50	270	**13.0**	**37.0**	**164**
Lead	63	400	**127**	**24.6**	**6.5**
Nickel	30	310	**5.8 J**	**17.5**	**36.2**
Zinc	109	10000	**72.2**	**166**	**88.2**
SOIL BY 8270D (M G/KG)					
Benzo(b)fluoranthene	1	1	**1.4**	**0.021 J**	0.0097 U
Chrysene	1	3.9	**1.1**	**0.017 J**	0.0064 U
Indeno(1,2,3-cd)pyrene	0.5	0.5	**0.83**	0.015 U	0.015 U

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-10	SESI-SB-10
Sample Depth (feet)			**4**	18
SOIL BY 6010D(M G/KG)				
Arsenic	13	16	**15.4**	**1.4 J**
Nickel	30	310	**10.1**	**42.6**
SOIL BY 8270D				
Indeno(1,2,3-cd)pyrene	0.5	0.5	**0.67**	0.016 U

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-11
Sample Depth (feet)			14
SOIL BY 6010D(M G/KG)			
Nickel	30	310	**31.2**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-13
Sample Depth			
SOIL BY 7471B(M G/KG)			
Mercury	0.18	0.81	**0.29**
SOIL BY 6010D(M G/KG)			
Lead	63	400	**127**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-34
Sample Depth (feet)			**6**
SOIL BY 6010D(MG/KG)			
Nickel	30	310	**39.3**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-19
Sample Depth (feet)			**23**
SOIL BY 6010D(MG/KG)			
Nickel	30	310	**30.2**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-21
Sample Depth (feet)			**8**
SOIL BY 6010D(M G/KG)			
Nickel	30	310	**219**
Zinc	109	10000	**139**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-22
Sample Depth (feet)			**22**
SOIL BY 6010D(M G/KG)			
Nickel	30	310	**32.5**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-26
Sample Depth (feet)			3
SOIL BY 6010D (M G/KG)			
Mercury	0.18	0.81	**3.6**
Lead	63	400	**628**
SOIL BY 8270D (M G/KG)			
Benzo(a)anthracene	1	1	**2.0**
Benzo(a)pyrene	1	1	**1.9**
Benzo(b)fluoranthene	1	1	**2.9**
Indeno(1,2,3-cd)pyrene	0.5	0.5	**1.6**

Analyte	Unrestricted Use	Restricted Residential	SESI-SB-25
Sample Depth (feet)			**3**
SOIL BY 7471B(M G/KG)			
Mercury	0.18	0.81	**0.55**
SOIL BY 6010D(M G/KG)			
Arsenic	13	16	**14.9**
Barium	350	400	**705**
Copper	50	270	**118**
Lead	63	400	**1565**
Zinc	109		**812**
SOIL BY 8081B (M G/KG)			
4,4'-DDT	0.0033	7.9	**0.0085 J**
SOIL BY 8270D (M G/KG)			
Benzo[a]anthracene	1	1	**58**
Benzo[a]pyrene	1	1	**45**
Benzo[b]fluoranthene	1	1	**72**
Benzo[g,h,i]perylene	100	100	**30**
Benzo[k]fluoranthene	0.8	3.9	**24**
Chrysene	1	3.9	**67**
Dibenz(a,h)anthracene	0.33	0.33	**8.0**
Dibenzofuran	7	59	**9.4 J**
Fluoranthene	100	100	**130**
Indeno[1,2,3-cd]pyrene	0.5	0.5	**41**
Phenanthrene	100	100	**110**

ENTIRE SITE TO BE EXCAVATION TO 15' DEEP

LECOUNT PLACE

NORTH AVENUE

MAIN STREET

4–STORY BRICK BUILDING

1–1/2–STORY BRICK AND FRAME BUILDING

1–STORY BRICK AND STUCCO BUILDING

3–STORY BRICK BUILDING

1–STORY BRICK

3–STORY STUCCO BUILDING

17' DEEP EXCAVATION

18' DEEP EXCAVATION

22' DEEP EXCAVATION

23' DEEP EXCAVATION

LEGEND:

- PROPERTY LINE
- SESI-SB-1 - SOIL BORING NUMBER & APPROX. LOCATION
- ADDITIONAL EXCAVATION DEPTH REQUIRED AS NOTED ON PLAN
- SIDE WALL SAMPLE LOCATION
- EXCEED RESTRICTED RESIDENTIAL
- EXCEED UNRESTRICTED USE

POST EXCAVATION SAMPLING:
1. ONE BOTTOM SAMPLE PER 900 SQUARE FEET.
2. ONE SIDEWALL SAMPLE PER 30 LINEAR FEET OF SIDEWALL. A MINIMUM OF ONE SAMPLE PER SIDEWALL.

NOTE:
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REFERENCE
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Scale: 1"= 20'
0 10 20 40 60 80

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rev	date	description	by

dwg by: yy
chk by: CH
scale: 1" = 20'
date: 8/23/19

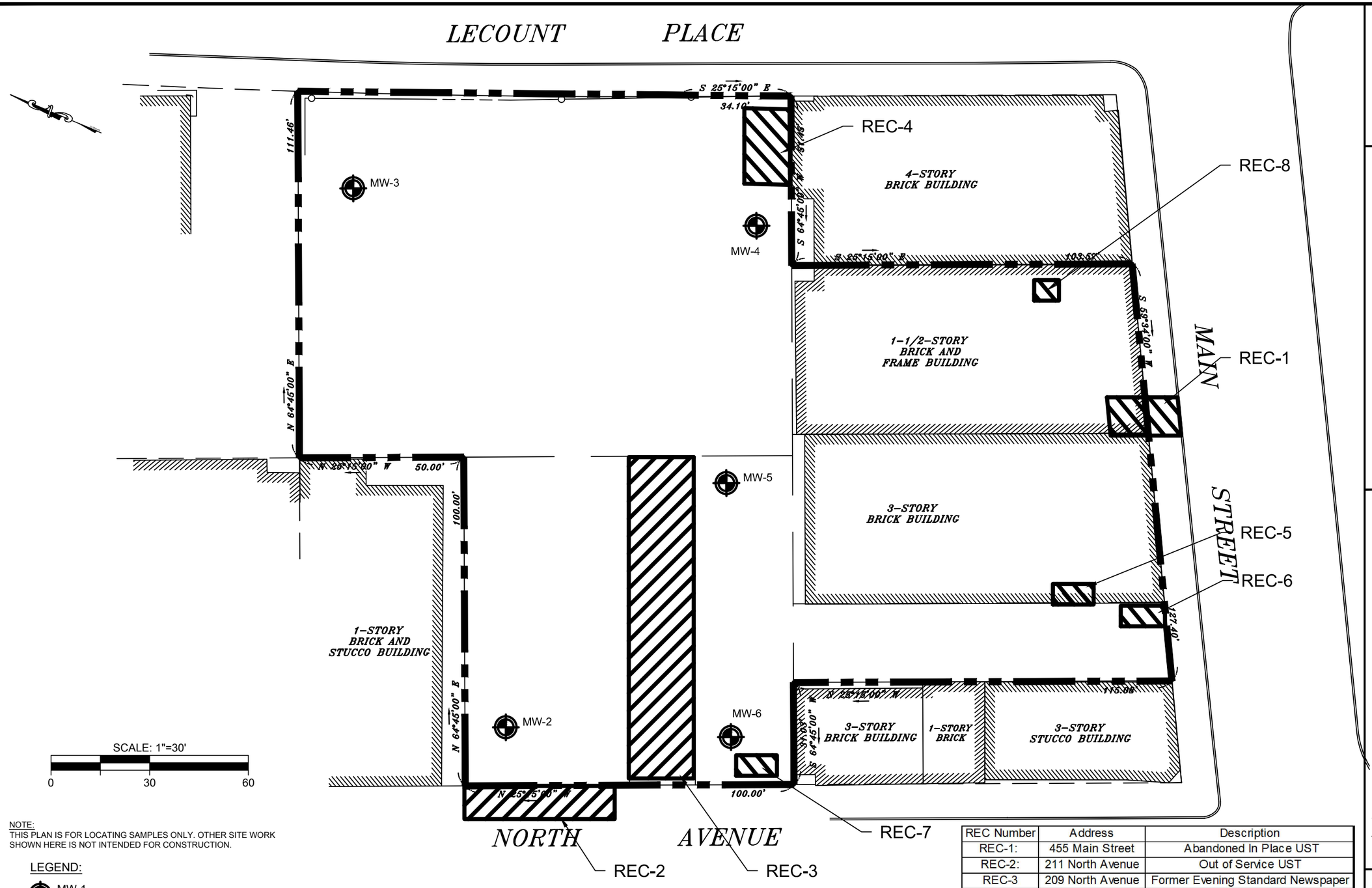
FUAD DAHAN, P.E.
PROFESSIONAL ENGINEER
N.Y. LIC. NO. 090531

LECOUNT PLACE
NEW ROCHELLE, N.Y.

drawing title:
PROPOSED EXCAVATION PLAN

job no. 10100
drawing no.
FIG-5.1A

N:\CAD\10100\CAD\XrefFiles\FIG-5.1 EXCAVATION PLAN 2019-07-29.dwg, 08/23/19 10:26:51 AM, jenny, AYDIN115--5.1A



NOTE:
THIS PLAN IS FOR LOCATING SAMPLES ONLY. OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

LEGEND:

MW-1 MONITORING WELL NUMBER & APPROX. LOCATION

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REFERENCE
EXIST CONDITIONS & BOUNDARY ARE TAKEN FROM "WORKSHEET" PREPARED BY CONTRACTORS' LINE & GRADE SOUTH, LLC. DATED MARCH 19, 2019.

REC Number	Address	Description
REC-1:	455 Main Street	Abandoned In Place UST
REC-2:	211 North Avenue	Out of Service UST
REC-3	209 North Avenue	Former Evening Standard Newspaper
REC-4	14 Le Count Place	Removed UST
REC-5:	459 Main Street	1,000 Gallon UST
REC-6:	463 Main Street	275 Gallon UST
REC-7	207 North Avenue	(2) 275 Gallon ASTS
REC-8	455 Main Street	(2) 275 Gallon ASTS

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: yy
chk by: CH
scale: 1"=30'
date: 03/20/2019

project: LECOUNT PLACE
NEW ROCHELLE, N.Y.

drawing title: MONITORING WELL NETWORK MAP

job no: 10100
drawing no:

FIG 6.1

N:\ACAD\10100\CAD\RAWP\10100 FIG-6.1 MONITORING WELL NETWORK MAP.DWG 03/22/19 11:52:32AM, jenny, LAYOUT:FIG 6.1

APPENDIX 1

Soil Boring/ MW Construction Logs

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-1**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED:	2/6/2019	GROUNDWATER TABLE DEPTH:
INSPECTOR: JS / TNP	DATE COMPLETED:	2/6/2019	0 Hr. N/M — 24 Hr. 15.25'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	48	S-1	0			4" Asphalt; Fill: Gray-brown Clayey SILT, little medium to fine	0
						Sand, trace Gravel with trace Concrete, Ash, Asphalt, Brick	0
					SESI-SB-1 (3')		0
							0
5				5			0
	59	S-2	5			Fill: Gray-brown coarse to fine SAND, little Silt, trace Gravel	0
						with trace Concrete, Ash, Wood	0
							0
					SESI-SB-1 (8')	…increased Ash amount	0
10				10			0
	58	S-3	10				0
						Brown/red-brown medium to fine SAND, some Silt, little medium	0
					SESI-SB-1 (12')	to fine Gravel with Mica Shist	0
							0
15				15			0
	12	S-4	15	16	SESI-SB-1 (15')	…with weathered rock	0
						GEOPROBE REFUSAL AT 16± FEET	
						(Performed Mud Rotary Drilling to Bedrock)	
						Bedrock	
20							
25						BORING COMPLETED AT 23± FEET	
						(Completed rock core from 18 to 23± feet)	
						(Monitoring well MW-3 installed, set at 23± feet)	
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-2**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/6/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/7/2019

GROUNDWATER TABLE DEPTH: 0 Hr. 12.5' 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0	26	S-1	0			12" Asphalt; Fill: Gray-brown coarse to fine SAND, some Clayey	0
						Silt, little coarse to fine Gravel with Brick, Asphalt	0
					SESI-SB-2 (3')		0
							0
5				5			0
	46	S-2	5		SESI-SB-2 (5')		0
							0
							0
						…with Quartz fragments	0
						Brown coarse to fine SAND, some coarse to fine Gravel, some	0
10				10		Silt with Mica Shist	0
	60	S-3	10				0
							0
						…with weathered rock	0
							0
15				15			0
	6	S-4	15	15.5	SESI-SB-2 (15')		0
						Bedrock	
						GEOPROBE REFUSAL AT 15.5± FEET	
						(Performed Mud Rotary Drilling to Bedrock)	
20							
						BORING COMPLETED AT 20.5± FEET	
						(Completed rock core from 15.5 to 20.5± feet)	
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-3**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/6/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/6/2019

GROUNDWATER TABLE DEPTH: 0 Hr. N/M | 24 Hr. 13.4'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	36	S-1	0			4" Asphalt; Fill: Gray-brown Clayey SILT, some medium to	0
					SESI-SB-3 (2')	fine Sand, trace Gravel with Concrete, Asphalt, Brick	0
							0
							0
5				5		…grading to coarse to fine Sand	0
	42	S-2	5				0
							0
					SESI-SB-3 (7')	Brown coarse to fine SAND, some Silt, little medium to	0
						fine Gravel with Mica Shist	0
10				10			0
	48	S-3	10				0
							0
							0
					SESI-SB-3 (13')	…with weathered rock	0
15				15			0
	1	S-4	15	15.1	SESI-SB-3 (15-17')	GEOPROBE REFUSAL AT 15± FEET	20s
						(Performed Mud Rotary Drilling to Bedrock)	20s
						Bedrock	
20							
25						BORING COMPLETED AT 23± FEET	
						(Completed rock core from 18 to 23± feet)	
						(Collected GW-1 groundwater sample from temp. well)	
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-4**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	HSA / Mud Rotary	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/5/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS	DATE COMPLETED: 2/5/2019	0 Hr. N/M	24 Hr. 13.0'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0	14	S-1	0			4" Asphalt; Fill: Dark gray medium to fine SAND, some Silt,	0
				2		trace Gravel with Asphalt, Brick	0
5							
	24	S-2	5		SESI-SB-4 (5-7')	Fill: Gray-brown coarse to fine SAND, some Silt, little medium	0
				7		to fine Gravel with trace Asphalt	0
10							
	12	S-3	10		SESI-SB-4 (10-12')	Gray-brown coarse to fine SAND, little Silt, little medium to	0
				12		fine Gravel	0
	18	S-4	12			…increased Gravel amount	0.5
				14			0.6
15							
	12	S-5	15		SESI-SB-4 (15-17')		5.2
				17			3.6
20							
	5	S-6	20		None (low recovery)	…grading to medium to fine Gravel	0.5
				22			0.2
						…with weathered rock	
25							
	1	S-7	25	25.1		Bedrock	
30							
						BORING COMPLETED AT 30± FEET	
						(Completed rock core from 25 to 30± feet)	
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-5**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED:	2/6/2019	GROUNDWATER TABLE DEPTH:
INSPECTOR: JS / TNP	DATE COMPLETED:	2/6/2019	0 Hr. N/E 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	42	S-1	0			4" Asphalt; Fill: Gray-brown medium to fine Sand and Clayey	0
						Silt, little fine Gravel with Concrete, Brick, Asphalt	0
							0
							0
5				5			5.4
	54	S-2	5		SESI-SB-5 (5')	…with Ash (slight odor)	1.5
							2.1
						…grading to coarse to fine Sand	2.5
					SESI-SB-5 (8')	…with trace Ash (slight odor)	8.4
10				10		Brown coarse to fine SAND, some Silt, some coarse to fine	0
	24	S-3	10			Gravel with Mica Shist	0
						…with weathered rock	0
				12.5	SESI-SB-5 (12')		0
15						GEOPROBE REFUSAL AT 12.5± FEET	
						BORING COMPLETED AT 12.5± FEET	
20							
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-6**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/7/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/7/2019	0 Hr. N/M	24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	47	S-1	0			4" Asphalt; Fill: Brown CLAY, some Silt, little medium to fine	0
						Sand, trace Gravel	0
					SESI-SB-6 (2')		0
							0
5				5			0
	60	S-2	5			Fill: Gray-brown medium to fine SAND, little Clayey Silt, trace	0
						Gravel with Concrete	0
							0
					SESI-SB-6 (8')		0
10				10			0
	48	S-3	10				0
							0
					SESI-SB-6 (12')		0
							0
15				15		Dark Gray CLAY, little Silt, some medium to fine Sand, trace	0
	18	S-4	15			Gravel with weathered rock	0
				16.5	SESI-SB-6 (16')		0
						GEOPROBE REFUSAL AT 16.5± FEET	
						(Performed Mud Rotary Drilling to Bedrock)	
20							
	8	S-5	20		SESI-SB-6 (20-22')	Gray-brown Silty Clay and medium to fine Sand, little medium	10s
				22		to fine Gravel with weathered rock	10s
						Bedrock	
25							
30						BORING COMPLETED AT 28± FEET	
						(Completed rock core from 23 to 28± feet)	
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-7**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED:	2/8/2019	GROUNDWATER TABLE DEPTH:
INSPECTOR: JS / TNP	DATE COMPLETED:	2/8/2019	0 Hr. 14'± 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	26	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete with	0
						gray-brown coarse to fine SAND, little coarse to fine Gravel,	0
						trace Silt with trace Ash	0
					SESI-SB-7 (3')		0
5				5			0
	24	S-2	5				0
							0
							0
					SESI-SB-7 (8')		0
10				10			0
	60	S-3	10				0
						Brown/orange-brown coarse to fine SAND, some Clayey Silt,	0
						little coarse to fine Gravel with Quartz, Mica	0
					SESI-SB-7 (13')	…soils varved	0
15				15			0
	18	S-4	15		SESI-SB-7 (15-17')	GEOPROBE REFUSAL AT 15± FEET	0
				17		(Performed Mud Rotary Drilling to Bedrock)	0
						…with weathered rock	
20							
						Bedrock	
25							
30						BORING COMPLETED AT 28± FEET	
						(Completed rock core from 23 to 28± feet)	
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-8**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/8/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/8/2019

GROUNDWATER TABLE DEPTH: 0 Hr. 12' | 24 Hr. 12.6'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	33	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete with	0
						gray-brown coarse to fine SAND, little coarse to fine Gravel,	0
						trace Silt	0
							0.5
5				5	SESI-SB-8 (4')		0
	34	S-2	5				0
							0
							0
							0
10				10	SESI-SB-8 (9')	…with some 4" thick layer of black Sand and Ash (slight odor)	5.2
	39	S-3	10				0.2
							0
						Brown coarse to fine SAND, some Silt, little medium to fine	0.3
						Gravel	0.5
15				15	SESI-SB-8 (14')		1.8
	44	S-4	15				1.2
						…with weathered rock	0.3
							0.3
				19	SESI-SB-8 (18')		0.3
20							
						GEOPROBE REFUSAL AT 19± FEET	
						BORING COMPLETED AT 19± FEET	
						(Collected GW-2 groundwater sample from temp. well)	
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-9**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/7/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/7/2019

GROUNDWATER TABLE DEPTH: 0 Hr. | N/M | 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	48	S-1	0			4" Asphalt; Fill: Gray-brown CLAY, some Silt, little fine Sand,	0
						trace Gravel with trace Concrete	0
							0
					SESI-SB-9 (3')		0
5				5			0
	54	S-2	5			Fill: Gray CLAY, little Silt, little fine Sand, trace fine Gravel	0
						with Concrete	0
							0
					SESI-SB-9 (8')		0
10				10		Gray-brown medium to fine SAND, little Clayey Silt,	0
	54	S-3	10			trace Gravel	0
							0
							0
					SESI-SB-9 (13')		0
15				15			0
	48	S-4	15				0
							0
				18	SESI-SB-9 (17')		0
20						GEOPROBE REFUSAL AT 18± FEET	
						BORING COMPLETED AT 18± FEET	
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-10**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/8/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/8/2019

GROUNDWATER TABLE DEPTH: 0 Hr. N/M | 24 Hr. 13.79'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	54	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete,	0
						Asphalt with gray-brown coarse to fine SAND, little coarse to	0
						fine Gravel, trace Silt, trace Ash	0
							0
5				5	SESI-SB-10 (4')		0
	24	S-2	5				0
							0
							0
							0
10				10	SESI-SB-10 (9')		0
	44	S-3	10			Brown medium to fine SAND, little Clayey Silt, little medium	0
					SESI-SB-10 (11')	to fine Gravel	0
							0
							0
15				15			0
	40	S-4	15				0
							0
							0
						…with weathered rock	0
				18.5	SESI-SB-10 (18')		0
20						GEOPROBE REFUSAL AT 18.5± FEET	
						(Performed Mud Rotary Drilling to Bedrock)	
						Bedrock	
25							
						BORING COMPLETED AT 27± FEET	
30						(Completed rock core from 22 to 27± feet)	
						(Monitoring well MW-4 installed, set at 25± feet)	
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-11**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/7/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/7/2019

GROUNDWATER TABLE DEPTH: 0 Hr. N/M | 24 Hr. 13.45'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	36	S-1	0			4" Asphalt; Fill: Gray-brown CLAY, little Silt, trace Sand,	0
						trace Gravel with Brick, Concrete	0
							0
							0
5				5	SESI-SB-11 (4')		0
	56	S-2	5			Fill: Gray-brown coarse to fine SAND, some coarse to fine	0
						Gravel, little Clayey Silt with trace Brick, Concrete	0
							0
							0
10				10	SESI-SB-11 (9')		0
	60	S-3	10			Gray-brown medium to fine SAND, little medium to fine Gravel,	0
						trace Clayey Silt	0
							0
							0
15				15	SESI-SB-11 (14')		0
	58	S-4	15				0
						…with Mica Shist	0
							0
					SESI-SB-11 (18')		0
20				19.5			0
						GEOPROBE REFUSAL AT 19.5± FEET	
						BORING COMPLETED AT 19.5± FEET	
						(Collected GW-3 groundwater sample from temp. well)	
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-12**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/14/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/14/2019

GROUNDWATER TABLE DEPTH: 0 Hr. | N/M | 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	33	S-1	0			3" Concrete slab; Possible Fill: Gray-brown medium to fine SAND,	1.1
						little medium to fine Gravel, trace Clayey Silt	2.2
3				3			2.4
	32	S-2	3				2.1
					SESI-SB-12 (4')	…with pulverized rock (slight odors observed)	140
6				6			140
	32	S-3	6		SESI-SB-12 (6')	...with orange-brown fine sand lenses	136
							85.8
9				9			10.7
	32	S-4	9	10			6.4
12						GEOPROBE REFUSAL AT 10± FEET	
						BORING COMPLETED AT 10± FEET	
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-13**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/18/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/18/2019

GROUNDWATER TABLE DEPTH: 0 Hr. N/E 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	6	S-1	0			2" Wood floor, 8" Concrete slab; Fill: Gray-brown coarse to fine	0
						GRAVEL, little coarse to fine Sand, little Silt	0
3				3			0
	36	S-2	3		SESI-SB-13 (3')	Fill: Dark brown coarse to fine SAND, some Clayey Silt, little	3.8
						fine Gravel with Charred Wood, Ash, trace Concrete	4
6				6			0.3
	24	S-3	6			…without Charred Wood, Ash, Concrete debris	0.2
				8	SESI-SB-13 (7')		0.2
9							
						GEOPROBE REFUSAL AT 8± FEET	
						BORING COMPLETED AT 8± FEET	
12							
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-14**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/15/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/15/2019	0 Hr. 4'±	24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	30	S-1	0			3" Concrete slab; Possible Fill: Gray-brown medium to fine	0
						SAND, little medium to fine Gravel, little Clayey Silt	11.6
3				3	SESI-SB-14 (2')		17.1
	32	S-2	3			Gray-brown medium to fine SAND, little medium to fine Gravel,	14.6
						trace Silt with Mica Shist, weathered rock	3.2
6				6			3.2
	12	S-3	6	7	SESI-SB-14 (6')		3.2
9						GEOPROBE REFUSAL AT 7± FEET	
						BORING COMPLETED AT 7± FEET	
12							
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-15**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/8/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/8/2019	0 Hr. N/M	24 Hr. 10.46'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	60	S-1	0			Fill: Gray-brown coarse to fine SAND, some Silty Clay,	0
						trace Gravel with Brick	0
							0
					SESI-SB-15 (3')		0
5				5		Brown/Gray-brown Silty CLAY, trace Sand, trace Gravel	0
	60	S-2	5			Gray-brown medium to fine SAND, little coarse to fine Gravel,	0
						little Clayey Silt	0
							0
					SESI-SB-15 (8')		0
10				10			0
	50	S-3	10				0
							0
							0
						Gray-brown medium to fine SAND, little medium to fine Gravel,	0
15				14.5	SESI-SB-15 (14')	trace Clayey Silt with weathered rock	0
	15	S-4	15		SESI-SB-15 (15-17')	GEOPROBE REFUSAL AT 14.5± FEET	5.8
				17		(Performed Mud Rotary Drilling to Possible Bedrock)	5.8
						…(attempted rock core at 17± feet)	
20						…(rock core attempt failure on Boulder at 19± feet)	
						…(split spoon refusals containing occasional clay lenses in shoe)	
25						…(attempted rock core at 24± feet)	
						…(rock core attempt failure on Boulder at 25± feet)	
						…(split spoon refusals containing occasional clay lenses in shoe)	
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-15**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/8/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/8/2019	0 Hr. N/M	24 Hr. 10.46'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
40						Gray-brown medium to fine SAND, little medium to fine Gravel, trace Clayey Silt with weathered rock, occasional clay lenses (Continued Mud Rotary Drilling to Possible Bedrock)	
45							
50							
55						BORING COMPLETED AT 50± FEET - NO REFUSAL (Bedrock depth not confirmed or verifiably encountered) (Collected GW-4 groundwater sample from temp. well*) *(temp. well point was installed at 20± feet with 10' screen)	
60							
65							
70							
75							
80							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-16**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/8/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/8/2019

GROUNDWATER TABLE DEPTH: 0 Hr. N/M 24 Hr. 12.1'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0	47	S-1	0			Fill: Gray-brown coarse to fine SAND, little Clayey Silt,	0
						trace Gravel with Brick, Concrete	0
						Brown/Gray-brown Silty CLAY, trace Sand, trace Gravel	0
					SESI-SB-16 (3')		0
5				5		Gray-brown medium to fine SAND, little Clayey Silt,	0
	47	S-2	5			trace Gravel	0
							0
							0
					SESI-SB-16 (8')		0
10				10			0
	41	S-3	10				0
							0
						Gray medium to fine SAND, trace Clayey Silt,	0
					SESI-SB-16 (13')	trace Gravel	0
15				14.5			0
	15	S-4	15		None (low recovery)	GEOPROBE REFUSAL AT 14.5± FEET	
				17		(Performed Mud Rotary Drilling to Possible Bedrock)	
20							
						…(split spoon refusals containing occasional clay lenses in shoe)	
25							
						…(split spoon refusals containing occasional clay lenses in shoe)	
30							
						BORING COMPLETED AT 30± FEET - NO REFUSAL	
						(No rock core attempts performed)	
						(Bedrock depth not confirmed or verifiably encountered)	
35						(Monitoring well MW-2 installed, set at 25± feet)	
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-17**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/11/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/11/2019

GROUNDWATER TABLE DEPTH: 0 Hr. | N/M | 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	52	S-1	0			Fill: Brown/gray-brown Silty CLAY, little coarse to fine Sand,	0
						trace Gravel with Brick	0
							0
							0
5				5	SESI-SB-17 (4')		0
	40	S-2	5				0
						Gray-brown medium to fine SAND, little coarse to fine Gravel,	0
						trace Clayey Silt with Mica Shist	0
					SESI-SB-17 (8')		0
10				10			0
	60	S-3	10				0
							0
							0
						Gray-brown coarse to fine SAND, little coarse to fine Gravel,	0
15				15	SESI-SB-17 (14')	trace Clayey Silt with Mica Shist, white fine sand lenses	0
	24	S-4	15		SESI-SB-17 (15-17')		7.5
				17		(Performed Mud Rotary Drilling to Bedrock)	7.5
						GEOPROBE REFUSAL AT 17± FEET	
						(Performed Mud Rotary Drilling to Bedrock)	
20							
						…with weathered rock	
25							
						Bedrock	
30							
						BORING COMPLETED AT 30± FEET	
						(Completed rock core from 25 to 30± feet)	
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-18**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/11/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/11/2019

GROUNDWATER TABLE DEPTH: 0 Hr. | N/M | 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	51	S-1	0			Fill: Gray-brown Silty CLAY, little coarse to fine Sand,	0
						trace Gravel with Brick, Asphalt, Concrete	0
							0
					SESI-SB-18 (3')		0
5				5		Fill: Gray-brown medium to fine SAND, some Clayey Silt,	0
	48	S-2	5			trace Gravel with Brick, Asphalt	0
							0
					SESI-SB-18 (7')		0
						Brown coarse to fine SAND, some Silt, little medium to fine	0
10				10		Gravel	0
	45	S-3	10				0
							0
							0
				14	SESI-SB-18 (13')	…with Mica Shist	0
15						GEOPROBE REFUSAL AT 14± FEET	-
	8	S-4	15		SESI-SB-18 (15-17')	(Performed Mud Rotary Drilling to Possible Bedrock)	13.7
				17		…(attempted rock core at 16± feet)	11.2
						…(rock core attempt failure on Boulder at 18.5± feet)	
20							
						BORING COMPLETED AT 18.5± FEET - NO REFUSAL	
						(Bedrock depth not confirmed or verifiably encountered)	
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-19**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/11/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/11/2019

GROUNDWATER TABLE DEPTH: 0 Hr. N/M | 24 Hr. 11.25'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	32	S-1	0			Fill: Gray-brown Silty CLAY, little medium to fine Sand,	0
						trace Gravel with Asphalt, Brick, Concrete	0
							0
					SESI-SB-19 (3')		0
5				5			0
	40	S-2	5				0
							0
						Gray-brown coarse to fine SAND, little Clayey Silt,	0
						trace Gravel with Quartz, pulverized rock	0
10				10	SESI-SB-19 (9')		0
	52	S-3	10				0
							0
					SESI-SB-19 (12')		0
						…with orange-brown fine sand lenses, Quartz, Mica flakes	0
15				15			0
	46	S-4	15				0
						…with weathered rock	0
							0
					SESI-SB-19 (18')		0
20				20			0
	38	S-5	20				0
							0
							0
				24	SESI-SB-19 (23')		0
25						GEOPROBE REFUSAL AT 24± FEET	
	0	S-6	25		None (no recovery)	(Performed Mud Rotary Drilling to Bedrock)	
				27		Bedrock	
30							
						BORING COMPLETED AT 31± FEET	
						(Completed rock core from 26 to 31± feet)	
35						(Monitoring well MW-5 installed, set at 25± feet)	
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-20**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/11/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/11/2019

GROUNDWATER TABLE DEPTH: 0 Hr. N/M 24 Hr. 12.20'

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	28	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete,	0
						Asphalt with gray-brown coarse to fine SAND, little Silt,	0
						trace Gravel	0
							0
5				5			10.8
	30	S-2	5		SESI-SB-20 (5')	…moderate petroleum odors observed	10.9
					SESI-SB-20 (6')	Fill: Gray-brown medium to fine SAND, little Clayey Silt,	370
						trace Gravel with Ash, pulverized rock (moderate staining,	290
						strong petroleum odors observed)	140
10				10	SESI-SB-20 (9')		50.4
	31	S-3	10				10.2
							20.3
							20.9
							5.1
15				14.5	SESI-SB-20 (14')		0.4
						Bedrock	
						GEOPROBE REFUSAL AT 14.5± FEET	
						(Performed Mud Rotary Drilling to Bedrock)	
20							
						BORING COMPLETED AT 20± FEET	
						(Completed rock core from 15 to 20± feet)	
						(Monitoring well MW-6 installed, set at 20± feet)	
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-21**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED:	2/15/2019	GROUNDWATER TABLE DEPTH:
INSPECTOR: JS / TNP	DATE COMPLETED:	2/15/2019	0 Hr. 4'± 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	29	S-1	0			3" Concrete slab; Possible Fill: Gray-brown medium to fine	0.5
						SAND, trace Clayey Silt, trace Gravel	0.5
3				3			0.5
	31	S-2	3		SESI-SB-21 (3')		1.0
							1.0
6				6		Gray-brown medium to fine SAND, trace Clayey Silt,	0.5
	32	S-3	6			trace Gravel with Mica Shist, weathered rock	0.5
							0.5
9				9	SESI-SB-21 (8')		0.5
						GEOPROBE REFUSAL AT 9± FEET	
12						BORING COMPLETED AT 9± FEET	
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-22**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/15/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/15/2019

GROUNDWATER TABLE DEPTH: 0 Hr. 4'± 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	16	S-1	0			3" Concrete slab; Possible Fill: Gray-brown medium to fine	0.0
						SAND, trace Clayey Silt, trace Gravel (with petroleum odors)	4.5
3				3			30.8
	21	S-2	3			Gray medium to fine SAND, little Silt, trace Gravel	234
						(strong petroleum odors and staining observed)	250
6				6	SESI-SB-22 (5')		441
	28	S-3	6			…with increased Gravel amount (continued strong odors/staining)	330
					SESI-SB-22 (7')		445
9				9			290
	20	S-4	9				280
						…with weathered rock	240
12				11.5	SESI-SB-22 (11')		130
						GEOPROBE REFUSAL AT 11.5± FEET	
15						BORING COMPLETED AT 11.5± FEET	
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-23**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED:	2/8/2019	GROUNDWATER TABLE DEPTH:
INSPECTOR: JS / TNP	DATE COMPLETED:	2/8/2019	0 Hr. 13'± 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	26	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete with	0
						gray-brown coarse to fine SAND, little coarse to fine Gravel,	0
						trace Silt with trace Ash	0
							0
5				5	SESI-SB-23 (4')		0
	30	S-2	5				0
							0
					SESI-SB-23 (7')		0
							0
10				10			0
	58	S-3	10				0
					SESI-SB-23 (11')	Brown/orange-brown coarse to fine SAND, some Clayey Silt,	0
						little coarse to fine Gravel with Quartz, Mica	0
						…soils varved	0
15				15			0
	18	S-4	15				0
				16.5	SESI-SB-23 (16')		0
						GEOPROBE REFUSAL AT 16.5± FEET	
20						(Performed Mud Rotary Drilling to Bedrock)	
25							
						…(attempted rock core at 26± feet)	
30							
						…(rock core attempt failure on Boulders at 31± feet)	
						…(split spoon refusals containing occasional clay lenses in shoe)	
35							
						Bedrock	
						(Completed rock core from 35 to 40± feet)	
40						BORING COMPLETED AT 40± FEET	

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-24**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/14/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/14/2019	0 Hr. N/E	24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	34	S-1	0			3" Concrete slab; Possible Fill: Gray-brown medium to fine	150
					SESI-SB-24 (1')	SAND, little medium to fine Gravel, trace Clayey Silt	178
3				3		(moderate petroleum odors observed)	330
	36	S-2	3			Gray medium to fine SAND, little Clayey Silt, trace Gravel	350
						(strong petroleum odors and slight staining observed)	470
6				6			400
	12	S-3	6	7	SESI-SB-24 (6')		570
9						GEOPROBE REFUSAL AT 7± FEET	
						BORING COMPLETED AT 7± FEET	
12							
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-25**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY:	AARCO	DATE STARTED:	2/18/2019
INSPECTOR:	JS / TNP	DATE COMPLETED:	2/18/2019

GROUNDWATER TABLE DEPTH: 0 Hr. | N/M | 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	18	S-1	0			6" Concrete slab; Fill: Gray Silty CLAY and medium to fine	0
						Sand, trace Gravel with Brick, Asphalt	0.2
				3			1.2
	32	S-2	3		SESI-SB-25 (3')	…(slight odors observed)	3.5
5							2.7
				6			1.8
	36	S-3	6			Gray-brown coarse to fine SAND, little medium to fine Gravel,	0.9
						little Clayey Silt	0
				9	SESI-SB-25 (8')	…with Quartz	0
10	12	S-4	9	10		…with weathered rock, Mica Shist	0
	14	S-5	10		SESI-SB-25 (10-12')	GEOPROBE REFUSAL AT 10± FEET	0
				12		(Performed Mud Rotary Drilling to Possible Bedrock)	0
							-
							-
15							-
	16	S-6	15		SESI-SB-25 (15-17')	…with increasing amounts of weathered rock	3.3
				17			3.3
							-
							-
20							-
	10	S-7	20		SESI-SB-25 (20-22')	…with increasing amounts of weathered rock	0
				22			0
							-
							-
25							-
	0	S-8	25	25.1	None (no recovery)		0
30						…(attempted rock core at 29± feet)	
						…(rock core attempt failure on Boulder at 33± feet)	
35						BORING COMPLETED AT 33± FEET - NO REFUSAL	
						(Bedrock depth not confirmed or verifiably encountered)	
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-26**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED:	2/18/2019	GROUNDWATER TABLE DEPTH:
INSPECTOR: JS / TNP	DATE COMPLETED:	2/18/2019	0 Hr. N/M 24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	28	S-1	0			6" Concrete slab; Fill: Dark gray medium to fine SAND, some	0
						Clayey Silt, trace Gravel with Concrete, Plastics, Organics	0.2
				3			1.2
	30	S-2	3		SESI-SB-26 (3')		34
5						Gray Silty CLAY, trace Sand	5.5
				6		Brown medium to fine SAND, little Silt, trace Gravel with	1.2
	36	S-3	6			Mica fragments	0.5
					SESI-SB-26 (7')		2.6
				9			1.1
10	33	S-4	9				0.4
							0.6
				12			0.1
	6	S-5	12	12.5	SESI-SB-26 (12')		0
						GEOPROBE REFUSAL AT 12.5± FEET	-
15						(Performed Mud Rotary Drilling to Possible Bedrock)	-
	10	S-6	15		SESI-SB-26 (15-17')	Brown coarse to fine SAND, some Clayey Silt, little coarse	2.4
				17		to fine Gravel with weathered rock, Quartz, Mica Shist	2.4
							-
							-
20							-
	2	S-7	20	20.2	None (low recovery)	Weathered / decomposed rock	0
							-
							-
							-
25							-
	0	S-8	25	25.1	None (no recovery)		-
30							
35							
						BORING COMPLETED AT 40± FEET - NO REFUSAL	
						(No rock core attempts performed)	
						(Bedrock depth not confirmed or verifiably encountered)	
						(Collected GW-5 groundwater sample from temp. well*)	
40						*(temp. well point was installed at 25± feet with 15' screen)	

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-27**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/18/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/18/2019	0 Hr. 5±	24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	34	S-1	0			3" Concrete slab; Possible Fill: Brown medium to fine SAND,	0
						little Silt, little medium to fine Gravel	2.7
3				3			43.3
	36	S-2	3				145
					SESI-SB-27 (4')	Gray-brown medium to fine SAND, little Silt, little medium to	270
6				6		fine Gravel (strong petroleum odors and moderate staining)	220
	36	S-3	6				205
					SESI-SB-27 (7')	…(heavy petroleum staining observed on soils)	332
9				9		…grading to little coarse to fine Gravel	224
	28	S-4	9				76.0
							120
12				12	SESI-SB-27 (11')		203
						GEOPROBE REFUSAL AT 12± FEET	
15						BORING COMPLETED AT 12± FEET	
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-28**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/13/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/13/2019	0 Hr. N/M 24 Hr.	

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0	23	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete with	0
						brown coarse to fine SAND, trace Silt, trace Gravel	0
							0
							0
5				5			0
	28	S-2	5				0
					SESI-SB-28 (6')	…(slight odors observed)	0
						Gray-brown medium to fine SAND, little Clayey Silt, trace	0
						Gravel	0
10				10			0
	36	S-3	10		SESI-SB-28 (10')	…(slight odors observed)	0
						…with weathered rock	0
							0
							0
15				15			0
	12	S-4	15	16	SESI-SB-28 (15')		0
						GEOPROBE REFUSAL AT 16± FEET	
						BORING COMPLETED AT 16± FEET	
20							
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-29**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/13/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/13/2019	0 Hr. N/M 24 Hr.	

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	28	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete with	0
						brown coarse to fine SAND, trace Silt, trace Gravel	0
							0
							0
5				5			0
	42	S-2	5				0
						Gray-brown medium to fine SAND, little Clayey Silt, trace	2.8
						Gravel	12.3
							15.3
10				10	SESI-SB-29 (9')	…(slight petroleum-based staining and odors observed)	87.5
	38	S-3	10				54.1
							16.2
					SESI-SB-29 (12')	…(slightly increased staining and odors observed)	36.8
							27.9
15				14.5	SESI-SB-29 (14')	…with weathered rock	21.5
							13.0
						GEOPROBE REFUSAL AT 14.5± FEET	
						BORING COMPLETED AT 14.5± FEET	
20							
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-30**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/13/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/13/2019	0 Hr. N/M 24 Hr.	

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	27	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete,	0.5
						Asphalt with gray-brown coarse to fine SAND, little Silt,	0.5
						trace Gravel	0.5
							0.5
5				5			0.5
	24	S-2	5			Fill: Gray-brown medium to fine SAND, little medium to fine	0.5
						Gravel, trace Clayey Silt (slight petroleum odors observed)	0.5
							8.9
							12.5
10				10			161
	30	S-3	10		SESI-SB-30 (10')		396
							20.1
					SESI-SB-30 (12')	…with weathered rock	17.2
							16.3
15				14.5	SESI-SB-30 (14')		5.4
						GEOPROBE REFUSAL AT 14.5± FEET	
						BORING COMPLETED AT 14.5± FEET	
20							
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-31**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/13/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/13/2019	0 Hr. N/M 24 Hr.	

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	28	S-1	0			Fill: Building demolition debris (Crushed Brick, Concrete,	1.5
						Asphalt with gray-brown coarse to fine SAND, trace Gravel,	1.5
						trace Clayey Silt	1.5
							1.5
5				5			2.6
	27	S-2	5			Fill: Gray-brown medium to fine SAND, little medium to fine	2.8
						Gravel, trace Clayey Silt (slight petroleum odors observed)	137
							104
							213
10				10	SESI-SB-31 (9')		229
	36	S-3	10			…with orange-brown fine sand lenses, weathered rock	270
					SESI-SB-31 (11')		270
							94.6
							87.6
15				14.5	SESI-SB-31 (14')		18.5
						GEOPROBE REFUSAL AT 14.5± FEET	
						BORING COMPLETED AT 14.5± FEET	
20							
25							
30							
35							
40							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-32**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/15/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/15/2019	0 Hr. 4'±	24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	30	S-1	0			3" Concrete slab; Possible Fill: Gray-brown medium to fine	0.0
						SAND, trace Clayey Silt, trace Gravel	4.5
3				3		…(moderate petroleum staining and odors observed @ 2.5'±)	90.5
	17	S-2	3				101
					SESI-SB-32 (4')	Gray medium to fine SAND, little medium to fine Gravel, little	212
6				6		Clayey Silt (strong petroleum staining and odors observed)	203
	35	S-3	6				208
					SESI-SB-32 (7')	…(most heavy petroleum staining observed on soils)	240
9				9			66.0
	8	S-4	9	10			24.0
12						GEOPROBE REFUSAL AT 10± FEET	
						BORING COMPLETED AT 10± FEET	
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-33**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/18/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/18/2019	0 Hr. 4.5±	24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	26	S-1	0			3" Concrete slab; Possible Fill: Brown medium to fine SAND,	6.1
						little Silt, little coarse to fine Gravel (slight petroleum odors)	5.7
3				3			6.7
	36	S-2	3				8.9
					SESI-SB-33 (4')	Gray-brown medium to fine SAND, little Silt, little medium to	158
6				6		fine Gravel (strong petroleum odors and moderate staining)	182
	10	S-3	6		SESI-SB-33 (6')	…(most heavy petroleum staining observed on soils)	231
				8		…with weathered rock	198
9							
						GEOPROBE REFUSAL AT 8± FEET	
						BORING COMPLETED AT 8± FEET	
12							
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	GEOPROBE NO.	**SESI-SB-34**
LOCATION:	New Rochelle	JOB NO.	10100
METHOD:	Direct Push	GROUND ELEVATION:	
GEOPROBE BY: AARCO	DATE STARTED: 2/18/2019	GROUNDWATER TABLE DEPTH:	
INSPECTOR: JS / TNP	DATE COMPLETED: 2/18/2019	0 Hr. N/E	24 Hr.

DEPTH (ft)	RECOVERY (in)	SAMPLE TUBE No.	DEPTH FROM (ft)	DEPTH TO (ft)	ENVIRONMENTAL SOIL SAMPLE NAME	SOIL DESCRIPTION AND STRATIFICATION	PID
0							
	32	S-1	0			4" Concrete slab; Fill: Gray-brown coarse to fine SAND, little	0
						medium to fine Gravel with Concrete, trace Asphalt	0
3				3	SESI-SB-34 (2')		0
	36	S-2	3				0
						Brown medium to fine SAND, some Silt, trace Gravel	0.5
6				6		with Mica Shist, trace Quartz	0.8
	12	S-3	6	7	SESI-SB-34 (6')	…with weathered rock	1.5
9						GEOPROBE REFUSAL AT 7± FEET	
						BORING COMPLETED AT 7± FEET	
12							
15							
18							
21							
24							
27							
30							
33							
36							
39							

Nominal I.D. of Hole	in.
Nominal I.D. of Barrel Sampler	1⅜ in

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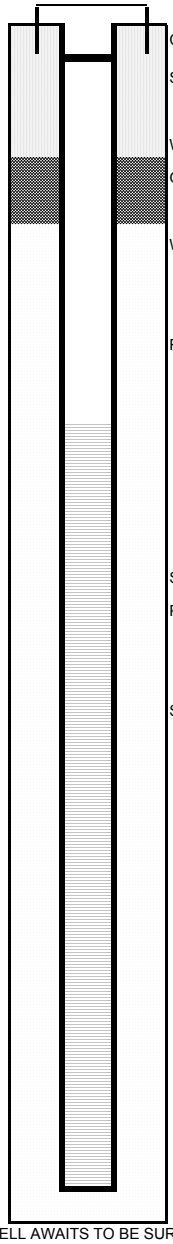
Pp: Pocket Penetrometer; DP: Direct Push

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS	PROJECT NAME:	14 LeCount Standard Printing	MONITORING WELL NO.	**MW-2**	
	PROJECT LOCATION:	New Rochelle, NY	JOB NO.	10100	
			GROUND ELEVATION:	N/A	

BORING BY: AARCO	DATE STARTED	2/13/19	DEVELOPMENT PERIOD	1-Hour	INSIDE CASING DIAMETER (in)	2"
INSPECTOR: JS / TNP	DATE COMPLETED	2/13/19	DEVELOPMENT METHOD	Sub. Pump	BOREHOLE DIAMETER (in)	6"
	DATE DEVELOPED	2/20/19	DEVELOPMENT RATE	N/A	INITIAL WATER LEVEL (ft):	12.10'



Remarks: MONITORING WELL AWAITS TO BE SURVEYED

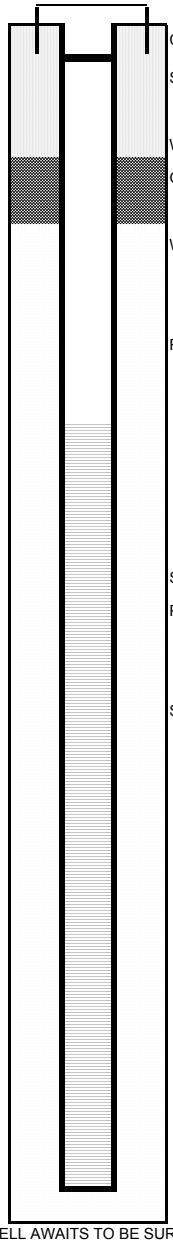
WELL CONSTRUCTION	DEPTH (ft)	Sample	Blows on Spoon 0/6	6/12	12/18	18/24	REC (in)	SOIL DESCRIPTION AND STRATIFICATION	P.I.D.
	0	0-5'					47	Fill: Gray-brown coarse to fine SAND, little Clayey Silt,	0
								trace Gravel with Brick, Concrete	0
								Brown/Gray-brown Silty CLAY, trace Sand, trace Gravel	0
									0
	5							Gray-brown medium to fine SAND, little Clayey Silt,	0
		5-10'					47	trace Gravel	0
									0
									0
									0
	10								0
		10-15'					41		0
									0
								Gray medium to fine SAND, trace Clayey Silt,	0
								trace Gravel	0
	15								0
		15-17'					15		0
									0
	20								
							0	…(split spoon refusal - occasional clay lenses in shoe)	
	25								
							0		
	30								
							0		
								BORING COMPLETED AT 30± FEET - NO REFUSAL	
								(No rock core attempt performed)	
								(Bedrock depth not confirmed or verifiably encountered)	
	35								
	40								

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS	PROJECT NAME:	14 LeCount Standard Printing	MONITORING WELL NO.	**MW-3**	
	PROJECT LOCATION:	New Rochelle, NY	JOB NO.	10100	
			GROUND ELEVATION:	N/A	

BORING BY: AARCO	DATE STARTED	2/6/19	DEVELOPMENT PERIOD	1-Hour	INSIDE CASING DIAMETER (in)	2"
INSPECTOR: JS / TNP	DATE COMPLETED	2/6/19	DEVELOPMENT METHOD	Sub. Pump	BOREHOLE DIAMETER (in)	6"
	DATE DEVELOPED	2/20/19	DEVELOPMENT RATE	N/A	INITIAL WATER LEVEL (ft):	15.25'



WELL CONSTRUCTION	DEPTH (ft)	Sample	Blows on Spoon 0/6	6/12	12/18	18/24	REC (in)	SOIL DESCRIPTION AND STRATIFICATION	P.I.D.
	0	0-5'					48	4" Asphalt; Fill: Gray-brown Clayey SILT, little medium to	0
								fine Sand, trace Gravel with Concrete, Ash, Asphalt, Brick	0
									0
									0
	5								0
		5-10'					59	Fill: Gray-brown coarse to fine SAND, little Silt,	0
								trace Gravel with trace Concrete, Ash, Wood	0
									0
								…increased Ash amount	0
	10								0
		10-15'					58		0
								Brown/red-brown medium to fine SAND, some Silt, little	0
								medium to fine Gravel with Mica Shist	0
									0
	15								0
		15-16'					12	…with weathered rock	0
								Bedrock	
	20								
							0		
	25							BORING COMPLETED AT 23± FEET	
							0	(Completed rock core from 18 to 23± feet)	
	30								
							0		
	35								
	40								

Remarks: MONITORING WELL AWAITS TO BE SURVEYED

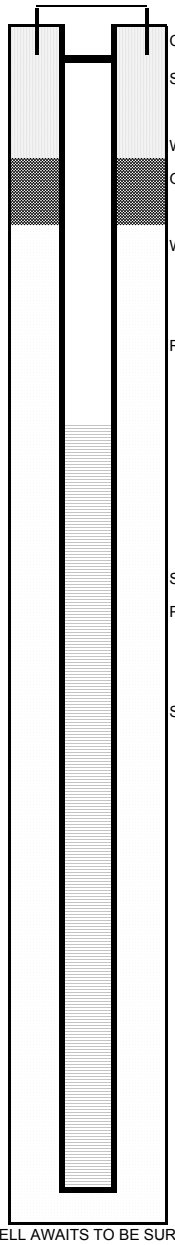
Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS

PROJECT NAME:	14 LeCount Standard Printing	MONITORING WELL NO.	**MW-4**	
PROJECT LOCATION:	New Rochelle, NY	JOB NO.	10100	
		GROUND ELEVATION:	N/A	

BORING BY: AARCO	DATE STARTED	2/11/19	DEVELOPMENT PERIOD	1-Hour	INSIDE CASING DIAMETER (in)	2"
INSPECTOR: JS / TNP	DATE COMPLETED	2/11/19	DEVELOPMENT METHOD	Sub. Pump	BOREHOLE DIAMETER (in)	6"
	DATE DEVELOPED	2/20/19	DEVELOPMENT RATE	N/A	INITIAL WATER LEVEL (ft):	13.79



Remarks: MONITORING WELL AWAITS TO BE SURVEYED

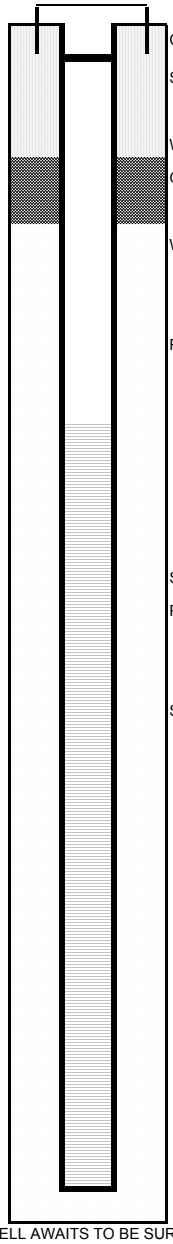
WELL CONSTRUCTION	DEPTH (ft)	Sample	Blows on Spoon 0/6	6/12	12/18	18/24	REC (in)	SOIL DESCRIPTION AND STRATIFICATION	P.I.D.
	0	0-5'					54	Fill: Building demolition debris (Crushed Brick, Concrete,	0
								Asphalt with gray-brown coarse to fine SAND, little coarse	0
								to fine Gravel, trace Silt, trace Ash	0
									0
	5								0
		5-10'					24		0
									0
									0
									0
	10								0
		10-15'					44	Brown medium to fine SAND, little Clayey Silt, little medium	0
								to fine Gravel	0
									0
									0
	15								0
		15-19'					40		0
									0
								…with weathered rock	0
									0
	20								
							0		
								Bedrock	
	25								
								BORING COMPLETED AT 27± FEET	
	30							(Completed rock core from 22 to 27± feet)	
	35								
	40								

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS	PROJECT NAME:	14 LeCount Standard Printing	MONITORING WELL NO.	**MW-5**
	PROJECT LOCATION:	New Rochelle, NY	JOB NO.	10100
			GROUND ELEVATION:	N/A

BORING BY: AARCO	DATE STARTED	2/11/19	DEVELOPMENT PERIOD	1-Hour	INSIDE CASING DIAMETER (in)	2"
INSPECTOR: JS / TNP	DATE COMPLETED	2/11/19	DEVELOPMENT METHOD	Sub. Pump	BOREHOLE DIAMETER (in)	6"
	DATE DEVELOPED	2/20/19	DEVELOPMENT RATE	N/A	INITIAL WATER LEVEL (ft):	11.25'



Remarks: MONITORING WELL AWAITS TO BE SURVEYED

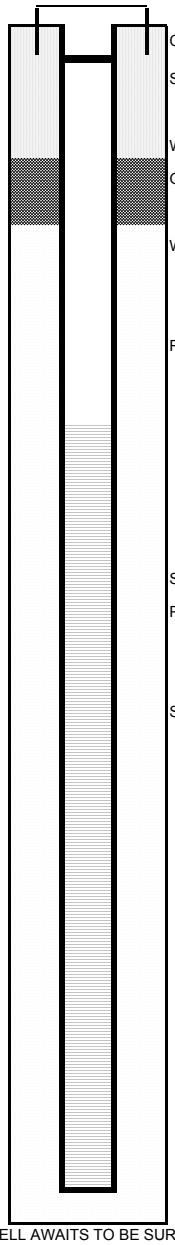
DEPTH (ft)	Sample	Blows on Spoon 0/6	6/12	12/18	18/24	REC (in)	SOIL DESCRIPTION AND STRATIFICATION	P.I.D.
0								
	0-5'					32	Fill: Gray-brown Silty CLAY, little medium to fine Sand,	0
							trace Gravel with Asphalt, Brick, Concrete	0
								0
								0
5								0
	5-10'					40		0
								0
							Gray-brown coarse to fine SAND, little Clayey Silt,	0
							trace Gravel with Quartz, pulverized rock	0
10								0
	10-15'					52		0
								0
								0
							…with orange-brown fine sand lenses, Quartz, Mica flakes	0
15								0
	15-20'					46		0
							…with weathered rock	0
								0
								0
20								0
	20-24'					38		0
								0
								0
								0
25								
						0		
							Bedrock	
30								
							BORING COMPLETED AT 31± FEET	
							(Completed rock core from 26 to 31± feet)	
35								
40								

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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SESI CONSULTING ENGINEERS	PROJECT NAME:	14 LeCount Standard Printing	MONITORING WELL NO.	**MW-6**
	PROJECT LOCATION:	New Rochelle, NY	JOB NO.	10100
			GROUND ELEVATION:	N/A

BORING BY: AARCO	DATE STARTED	2/12/19	DEVELOPMENT PERIOD	1-Hour	INSIDE CASING DIAMETER (in)	2"
INSPECTOR: JS / TNP	DATE COMPLETED	2/12/19	DEVELOPMENT METHOD	Sub. Pump	BOREHOLE DIAMETER (in)	6"
	DATE DEVELOPED	2/20/19	DEVELOPMENT RATE	N/A	INITIAL WATER LEVEL (ft):	12.20'



WELL CONSTRUCTION	DEPTH (ft)	Sample	Blows on Spoon 0/6	6/12	12/18	18/24	REC (in)	SOIL DESCRIPTION AND STRATIFICATION	P.I.D.
	0	0-5'					28	Fill: Building demolition debris (Crushed Brick, Concrete,	0
								Asphalt with gray-brown coarse to fine SAND, little Silt,	0
								trace Gravel	0
									0
	5								10.8
		5-10'					30		10.9
								Fill: Gray-brown medium to fine SAND, little Clayey Silt,	370
								trace Gravel with Ash, pulverized rock (moderate staining,	290
								strong petroleum odors observed)	140
	10								50.4
		10-15'					31		10.2
									20.3
									20.9
									5.1
	15								0.4
								Bedrock	
	20								
								BORING COMPLETED AT 20± FEET	
								(Completed rock core from 15 to 20± feet)	
	25								
	30								
	35								
	40								

Remarks: MONITORING WELL AWAITS TO BE SURVEYED

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

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APPENDIX 2

Groundwater Monitoring Well Sampling Logs

GROUNDWATER FIELD SAMPLING RECORD

SESI CONSULTING ENGINEERS				
	PROJECT NAME:	14 Lecount	JOB NO.	10100
	LOCATION:	14 Lecount Place, New Rochelle, NY	WEATHER:	Sunny, Windy, 30
	INSPECTOR:	JCS	MONITORING WELL NO.	**MW-2**
	DATE:	2/26/2019	PERMIT NO.	

LOW-FLOW

Well Diameter:	2.0	inches
PID Reading (Head Space)	9.10	
Total Depth to Well:	27.00	feet (from top of casing)
Depth to Water:	11.78	feet (from top of casing)
Depth to Product:		feet (from top of casing)
Thickness of Product:		feet
Linear feet of Water:	15.22	feet
Gallons/Linear Foot:	0.163	gal/ft
Volume of Water Column:	2.4800	Gallons

Diameter of Casing	Gal/lin. Foot
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080
12"	5.875

Permitted Variation	Groundwater Parameters	Pre-Purge	Dup	1st	2nd	3rd	4th	5th	6th	7th
	Time	12:20	12:25	12:30	12:35	12:40	12:45	12:50	12:55	13:00
±0.3'	Depth to Water (ft)	12.80	13.01	13.26	13.35	13.38	13.40	13.45	13.58	13.58
	Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
	Clarity	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
	Cominative Volume (gals)			0.40	0.60	0.80	1.00	1.20	1.40	1.60
±0.1	pH	8.10	7.97	7.81	7.73	7.83	7.72	7.74	7.72	7.70
±3%	Specific Cond. (ms/m)	3.180	3.200	3.500	3.730	3.800	4.230	4.750	4.860	5.020
±10%	Turbidity	148.0	107.0	40.7	24.8	14.7	8.1	6.6	5.8	4.1
±10%	DO (mg/L)	1.55	0.49	0.00	0.00	0.04	0.00	0.00	0.00	0.08
±3%	Temperature (°C)	9.01	9.62	9.73	10.15	10.13	10.05	10.37	10.50	10.35
	Salinity (%)	1.60	1.60	1.60	1.90	1.90	2.20	2.50	2.60	2.60
	TDS	2.040	2.050	2.260	2.400	2.510	2.790	3.050	3.110	3.190
±10mV	ORP(mV)	138	57	14	3	-5	-4	4	6	12

Purge Start Time: 12:20
Total Purge Volume: 2.50 gallons
Purge Method: Low Flow

Purge End Time: 13:20
Total Purge Time: 60.00 min
Purge Rate: 0.040000 gal/min

Analy
Dioxa

Sample Start Time: 13:20
Sampling Method: Peri Pump

Sample End Time: 13:30
Total Sampling Time: 0:10 min

Sampling Technician: Jon Stuart
Printed Name

Signature

GROUNDWATER FIELD SAMPLING RECORD

SESI CONSULTING ENGINEERS				
	PROJECT NAME:	14 Lecount	JOB NO.	10100
	LOCATION:	14 Lecount Place, New Rochelle, NY	WEATHER:	Sunny, V Windy, 30
	INSPECTOR:	JCS	MONITORING WELL NO.	**MW-3**
	DATE:	2/25/2019	PERMIT NO.	

LOW-FLOW

Well Diameter:	2.0	inches
PID Reading (Head Space)	7.90	
Total Depth to Well:	25.50	feet (from top of casing)
Depth to Water:	18.15	feet (from top of casing)
Depth to Product:		feet (from top of casing)
Thickness of Product:		feet
Linear feet of Water:	7.35	feet
Gallons/Linear Foot:	0.163	gal/ft
Volume of Water Column:	1.1900	Gallons

Diameter of Casing	Gal/lin. Foot
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080
12"	5.875

Permitted Variation	Groundwater Parameters	Pre-Purge	Dup	1st	2nd	3rd	4th	5th	6th	7th
	Time	9:10	9:15	9:20	9:25	9:30	9:35	9:40	9:45	9:50
±0.3'	Depth to Water (ft)	19.41	19.53	19.78	19.96	20.13	20.25	20.31	20.40	20.52
	Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
	Clarity	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
	Cominative Volume (gals)			0.40	0.50	0.60	0.75	1.00	1.20	1.50
±0.1	pH	7.97	7.51	7.41	7.44	7.46	7.48	7.53	7.51	7.52
±3%	Specific Cond. (ms/m)	0.624	0.620	0.602	0.599	0.590	0.583	0.581	0.580	0.587
±10%	Turbidity	6.2	5.8	8.5	8.1	8.3	9.0	10.2	11.0	11.0
±10%	DO (mg/L)	7.42	7.07	7.11	6.82	7.10	7.06	7.07	7.12	7.23
±3%	Temperature (°C)	9.99	10.30	9.92	9.47	8.91	8.80	8.75	8.49	8.53
	Salinity (%)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
	TDS	0.401	0.396	0.386	0.382	0.379	0.373	0.710	0.373	0.376
±10mV	ORP(mV)	252	253	254	253	252	252	252	253	252

Purge Start Time:	9:10	Purge End Time:	9:50
Total Purge Volume:	1.50 gallons	Total Purge Time:	0:40 min
Purge Method:	Low Flow	Purge Rate:	0.030000 gal/min
Sample Start Time:	9:50	Sample End Time:	10:00
Sampling Method:	Bladder pump	Total Sampling Time:	0:10 min

Sampling Technician: Jon Stuart
Printed Name

Signature

GROUNDWATER FIELD SAMPLING RECORD

SESI CONSULTING ENGINEERS				
	PROJECT NAME:	14 Lecount	JOB NO.	10100
	LOCATION:	14 Lecount Place, New Rochelle, NY	WEATHER:	Sunny, V Windy, 30
	INSPECTOR:	JCS	MONITORING WELL NO.	**MW-4**
	DATE:	2/25/2019	PERMIT NO.	

LOW-FLOW

Well Diameter:	2.0	inches
PID Reading (Head Space)	8.40	
Total Depth to Well:	29.00	feet (from top of casing)
Depth to Water:	17.42	feet (from top of casing)
Depth to Product:		feet (from top of casing)
Thickness of Product:		feet
Linear feet of Water:	11.60	feet
Gallons/Linear Foot:	0.163	gal/ft
Volume of Water Column:	1.8900	Gallons

Diameter of Casing	Gal/lin. Foot
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080
12"	5.875

Permitted Variation	Groundwater Parameters	Pre-Purge	Dup	1st	2nd	3rd	4th	5th	6th	7th
	Time	11:10	11:15	11:20	11:25	11:30	11:35	11:40	11:45	11:50
±0.3'	Depth to Water (ft)	17.42	18.20	19.28	19.55	20.30	20.95	21.64	22.25	22.61
	Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
	Clarity	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
	Cominative Volume (gals)			0.40	0.50	0.75	1.00	1.20	1.40	1.6
±0.1	pH	7.51	7.40	7.39	7.39	7.40	7.43	7.60	7.54	7.55
±3%	Specific Cond. (ms/m)	2.470	2.500	2.510	2.480	2.340	2.230	2.250	2.240	2.250
±10%	Turbidity	2.9	1.5	1.2	0.9	1.1	1.3	1.2	0.7	0.8
±10%	DO (mg/L)	1.36	0.57	0.49	0.47	1.42	2.38	1.90	1.55	1.36
±3%	Temperature (°C)	7.91	8.59	8.82	8.20	8.83	8.79	8.73	8.79	8.77
	Salinity (%)	1.20	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.10
	TDS	1.580	1.600	1.610	1.580	1.470	1.430	1.490	1.430	1.440
±10mV	ORP(mV)	262	270	273	273	271	268	257	256	255

Purge Start Time: 11:10
Total Purge Volume: 3.20 gallons
Purge Method: Low Flow

Purge End Time: 12:30
Total Purge Time: 80.00 min
Purge Rate: 0.040000 gal/min

Sample Start Time: 12:30
Sampling Method: Bladder Pump

Sample End Time: 12:40
Total Sampling Time: 0:10 min

Sampling Technician: Jon Stuart
Printed Name

Signature

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Dioxane. S

GROUNDWATER FIELD SAMPLING RECORD

SESI CONSULTING ENGINEERS				
	PROJECT NAME:	14 Lecount	JOB NO.	10100
	LOCATION:	14 Lecount Place, New Rochelle, NY	WEATHER:	Sunny, V Windy, 30
	INSPECTOR:	JCS	MONITORING WELL NO.	**MW-5**
	DATE:	2/25/2019	PERMIT NO.	

LOW-FLOW

Well Diameter:	2.0	inches
PID Reading (Head Space)	9.00	
Total Depth to Well:	27.00	feet (from top of casing)
Depth to Water:	16.74	feet (from top of casing)
Depth to Product:		feet (from top of casing)
Thickness of Product:		feet
Linear feet of Water:	10.26	feet
Gallons/Linear Foot:	0.163	gal/ft
Volume of Water Column:	1.6700	Gallons

Diameter of Casing	Gal/lin. Foot
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080
12"	5.875

Permitted Variation	Groundwater Parameters	Pre-Purge	Dup	1st	2nd	3rd	4th	5th	6th
	Time	14:35	14:40	14:45	14:50	14:55	15:00	15:05	
±0.3'	Depth to Water (ft)	17.97	18.21	18.30	18.36	18.44	18.47	18.47	
	Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear	
	Clarity	Clear	Clear	Clear	Clear	Clear	Clear	Clear	
	Cominative Volume (gals)			0.40	0.50	0.75	1.00	1.25	
±0.1	pH	7.59	7.60	7.62	7.62	7.62	7.61	7.61	
±3%	Specific Cond. (ms/m)	0.721	0.719	0.711	0.708	0.706	0.706	0.707	
±10%	Turbidity	22.9	9.9	2.8	1.5	1.1	0.7	0.5	
±10%	DO (mg/L)	2.04	1.72	1.60	1.59	1.63	1.68	1.63	
±3%	Temperature (°C)	10.61	10.69	11.05	11.33	11.32	11.38	11.40	
	Salinity (%)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
	TDS	0.490	0.460	0.455	0.452	0.452	0.452	0.452	
±10mV	ORP(mV)	151	97	72	65	63	65	67	

Purge Start Time: 14:35
Purge End Time: 15:05
Total Purge Volume: 1.25 gallons
Total Purge Time: 0:35 min
Purge Method: Low Flow
Purge Rate: 0.041000 gal/min

Sample Start Time: 15:05
Sample End Time: 15:15
Sampling Method: Bladder pump
Total Sampling Time: 0:10 min

Sampling Technician: Jon Stuart
Printed Name

Signature

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GROUNDWATER FIELD SAMPLING RECORD

SESI CONSULTING ENGINEERS	PROJECT NAME:	14 Lecount	JOB NO.	10100
	LOCATION:	14 Lecount Place, New Rochelle, NY	WEATHER:	Sunny, V Windy, 30
	INSPECTOR:	JCS	MONITORING WELL NO.	**MW-6**
	DATE:	2/26/2019	PERMIT NO.	

LOW-FLOW

Well Diameter:	2.0	inches
PID Reading (Head Space)	7.50	
Total Depth to Well:	22.50	feet (from top of casing)
Depth to Water:	14.45	feet (from top of casing)
Depth to Product:	14.35	feet (from top of casing)
Thickness of Product:	0.10	feet
Linear feet of Water:	8.05	feet
Gallons/Linear Foot:	0.163	gal/ft
Volume of Water Column:	1.3100	Gallons

Diameter of Casing	Gal/lin. Foot
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080
12"	5.875

Permitted Variation	Groundwater Parameters	Pre-Purge	Dup	1st	2nd	3rd	4th	5th	6th	5th
	Time	14:55	15:00	15:05	15:10	15:15	15:20	15:25	15:30	15:35
±0.3'	Depth to Water (ft)	14.90	15.00	15.02	15.05	15.08	15.10	15.12	15.13	15.15
	Color	Light yellow	Light yellow	Light yellow	Light yellow	Light yellow	Light yellow	Light yellow	Light yellow	Light yellow
	Clarity	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
	Cominative Volume (gals)			0.40	0.60	0.80	1.00	1.20	1.40	1.60
±0.1	pH	7.59	7.50	7.46	7.46	7.45	7.42	7.45	7.44	7.50
±3%	Specific Cond. (ms/m)	10.500	10.600	10.300	10.000	9.750	9.600	9.380	9.300	9.270
±10%	Turbidity	295.0	260.0	169.0	107.0	81.7	87.5	50.5	19.7	9.5
±10%	DO (mg/L)	1.94	0.64	0.21	0.13	0.03	0.01	0.00	0.00	0.00
±3%	Temperature (°C)	9.58	10.31	10.69	10.89	11.33	11.15	11.13	11.20	11.25
	Salinity (%)	3.80	5.90	5.70	5.60	5.40	5.30	5.30	5.00	5.00
	TDS	6.520	6.540	6.390	6.210	6.120	5.900	5.900	5.730	5.620
±10mV	ORP(mV)	173	177	178	179	173	172	168	166	162

Samp

Purge Start Time: 14:55
Purge End Time: 15:45
Total Purge Volume: 2.00 gallons
Total Purge Time: 50 min
Purge Method: Low Flow
Purge Rate: 0.040000 gal/min

Sample Start Time: 15:45
Sample End Time: 15:55
Sampling Method: Peri Pump
Total Sampling Time: 0:10 min

Sampling Technician: Jon Stuart
Printed Name

Signature

APPENDIX 3

Citizens Participation Plan

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan
for
14 Le Count Standard Printing

October 2018

C360176
14 Le Count Pl. 455 Main Street
Westchester County
New Rochelle, New York

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* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: 14 Le Count Place LLC and GSLM 14 Le Count Owner LLC ("Applicant")
Site Name: 14 Le Count Standard Printing ("Site")
Site Address: 14 Le Count Place, 207, 209, and 211 North Avenue, 455, 459, and 463 Main Street; New Rochelle, NY
Site County: Westchester County
Site Number: BCP C360176

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at:
http://www.dec.ny.gov/chemical/8450.html .

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process

- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process

- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community

- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.
The site contact list includes, at a minimum:

- chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See http://www.dec.ny.gov/chemical/61092.html .

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at
http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation **Note:** Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. **Note:** The two fact sheets are combined when possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

Since subsurface remediation of soil will be required at this site, major issues of community concern may be noise, odor, dust and/or truck traffic associated with removal of contaminated soil. However, these impacts will be mitigated through implementation of a Health and Safety Plan and Soil Management Plan approved by the Department, which will be designed to minimize these impacts. A Community Air Monitoring Plan will also be implemented to monitor dust and vapors to ensure the community is not impacted.

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

- **location -** 14 Le Count Place, 207, 209, and 211 North Avenue, 455, 459, and 463 Main Street New Rochelle NY
- **setting - urban**
- **site size -** 0.92 Acres
- **adjacent properties -** Residential/Commercial

History of Site Use, Investigation, and Cleanup

Historically, the site has been dedicated to commercial/residential uses. Notable commercial uses include a former printing shop operated by the Evening Standard Newspaper (209 North Avenue), a photo-engraving shop (207 North Avenue) and an undertaker/funeral home (14 Le Count Place). The existing on-site buildings were reportedly constructed between 1903 and 1931. Several Recognized Environmental Concerns (RECs) were identified during Phase I site assessments. The RECs are identified as out of service or previously abandoned USTs, soil contamination as a result of the historic printing operations, and soil vapor exceedances.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for unrestricted residential use purposes.

To achieve this goal, the Applicant will conduct investigation and cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant will conduct an investigation of the site officially called a "remedial investigation" (RI). This investigation will be performed with NYSDEC oversight. The Applicant must develop a remedial investigation workplan, which is subject to public comment.

The site investigation has several goals:

1) define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
2) identify the source(s) of the contamination;
3) assess the impact of the contamination on public health and the environment; and
4) provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

The Applicant submits a draft "Remedial Investigation Work Plan" to NYSDEC for review and approval. NYSDEC makes the draft plan available to the public review during a 30-day public comment period.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a "significant threat," it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a "Certificate of Completion" (described below) to the Applicant.

or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a "Remedial Work Plan". The Remedial Work Plan describes the Applicant's proposed remedy for addressing contamination related to the site.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that

cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A -
Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Matthew King
Project Manager
NYSDEC
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
Matthew.king@dec.ny.gov

New York State Department of Health (NYSDOH):

Dr. Sherlita Amler
NYSDOH
145 Huguenot Street
New Rochelle, NY 10801

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

New Rochelle Public Library
1 Library Plaza
New Rochelle, NY 10801
Attn: Tom Geoffino, Director
Phone: (914)632-7878

Hours:	Mon, Tues, Thurs	9am-8pm
	Wednesday	10am-6pm
	Fri, Sat	9am-5pm
	Sunday	1pm-5pm

Appendix B - Site Contact List

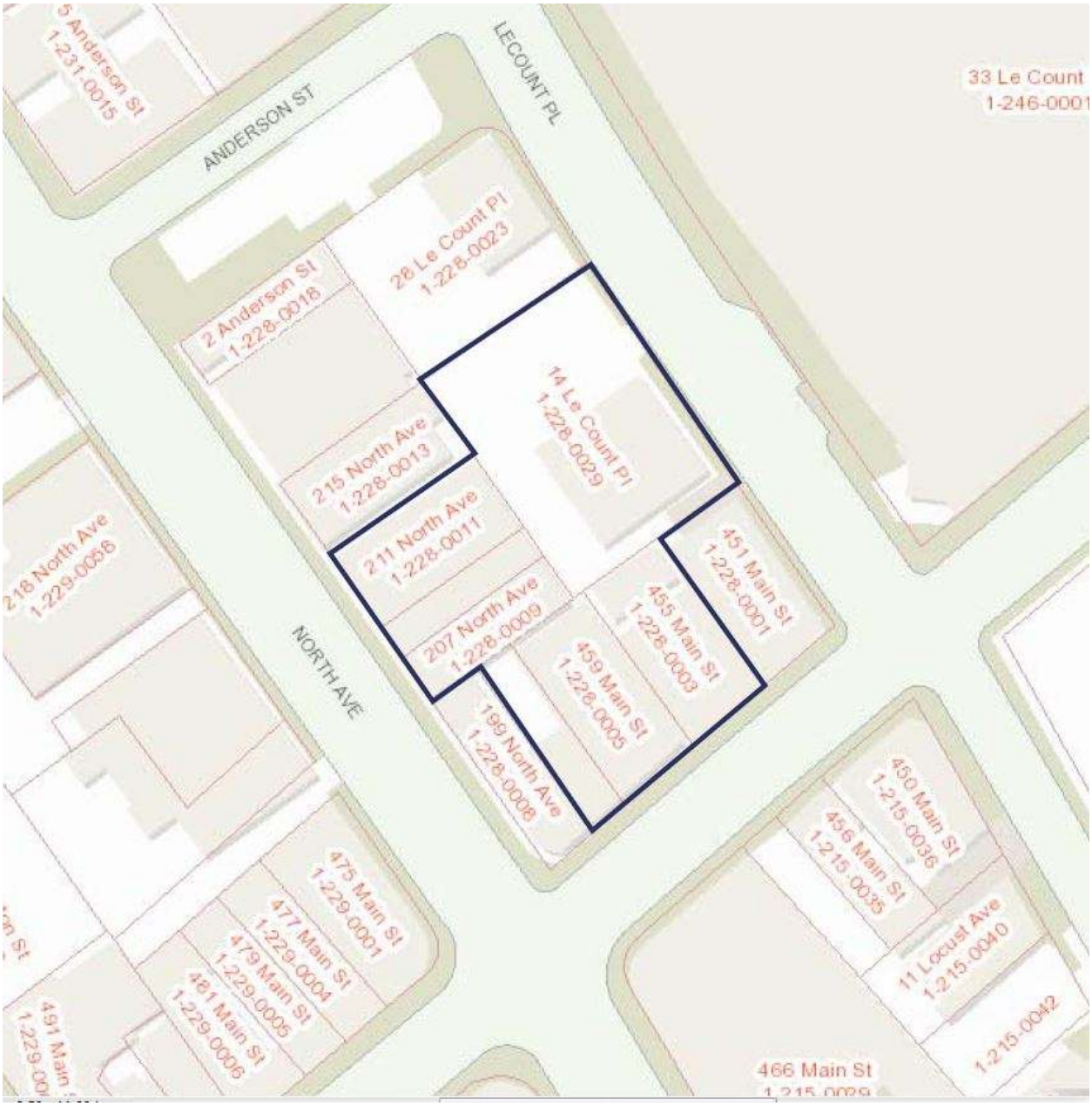
The Chief Executive Officers	
City of New Rochelle Mayor Noam Bramson 515 North Avenue New Rochelle, NY 10801 (914) 654-2150	Westchester County County Executive George Latimer 900 Michaelian Bldg 148 Martine Avenue White Plains, NY 10601 (914) 995-2900
State Government Officials	
Hon. Charles Schumer US Senate Washington, DC 20510	Hon Kirsten Gillibrand US Senate Washington, DC 20501
Local Government Officials	
Hon. Shelley Mayer 222 Grace Church St., Ste. 300 Port Chester, NY 10573	Bridget Gibbons, Director Economic Development 148 Martine Ave. White Plains, NY 10601
Timothy Idoni, County Clerk 110 MLK Jr. Blvd White Plains, NY 10601	Hon Catherine Parker County Legislature 800 Michaelian Office Bldg. White Plains, NY 10601
Hugh Greechan PE, Commissioner Public Works 148 Martine Ave. White Plains, NY 10601	George Latimer, County Executive 900 Michaelian Building 148 Martine Avenue White Plains, NY 10601
Hon Nita Lowey 222 Mamaroneck Ave., Ste 312 White Plains, NY 10601	
The City Dept. of Planning and Community Development	
New Rochelle Division of Planning and Sustainability Kevin Kaine, Director City Hall 515 North Avenue New Rochelle, NY 10801 (914) 654-2191	New Rochelle Division of Planning and Sustainability Luiz Aragon, Commissioner City Hall 515 North Avenue New Rochelle, NY 10801 (914) 654-2191
New Rochelle Sanitation and Recycling Joe Serrano, Manager of Refuse 224 East Main Street	New Rochelle Sanitation and Recycling William Bonacci, Asst. Supt. Of Refuse 224 East Main Street

New Rochelle, NY 10801	New Rochelle, NY 10801
New Rochelle Sanitation and Recycling Omar Small, Deputy City Manager/HR Director 224 East Main Street New Rochelle, NY 10801	New Rochelle Sanitation and Recycling Charles B. Strome III, City Manager 224 East Main Street New Rochelle, NY 10801
New Rochelle Sanitation and Recycling Kathy Reilly, Executive Assistant 224 East Main Street New Rochelle, NY 10801	New Rochelle Sanitation and Recycling Janice Carroll, Secretarial Assistant 224 East Main Street New Rochelle, NY 10801
Soraya Ben-Habib Deputy Building Official 515 North Avenue New Rochelle, NY 10801	Paul Vacca Deputy Commissioner/ Building Official 515 North Avenue New Rochelle, NY 10801
Regina O'Hare Office Manager, Zoning Board Secretary 515 North Avenue New Rochelle, NY 10801	
The County Department of Planning	
Richard Hyman, Chair Westchester County Dept. of Planning 148 Martine Ave., Room 432 White Plains, NY 10601 (914) 995-4400	
Public Water Supply	
Suez Water Westchester 2525 Palmer Avenue New Rochelle, NY 10801 (914) 637-5333	Janet Gonzalez New Business Office, Suez Water'360 West Nyack Road West Nyack, NY 10994
Media	
The Journal News 1 Gannett Drive White Plains, NY 10604 (914)694-9300	New Rochelle Daily Voice Online Newsletter/Newspaper New Rochelle, NY 10801
Adjacent Property Owners	
Union Baptist Church Adj. Property Owner 438 Main Street 438 Main Street New Rochelle, NY 10805	434 Main Street Realty LLC Adj. Property Owner 434 Main St 434 Main Street West Harrison, NY 10604
New Rochelle Main LLC Adj. Property Owner 484 Main St 1 New King St., Ste 201	New Rochelle Main LLC Adj. Property Owner 480 Main St 1 New King St., Ste. 201

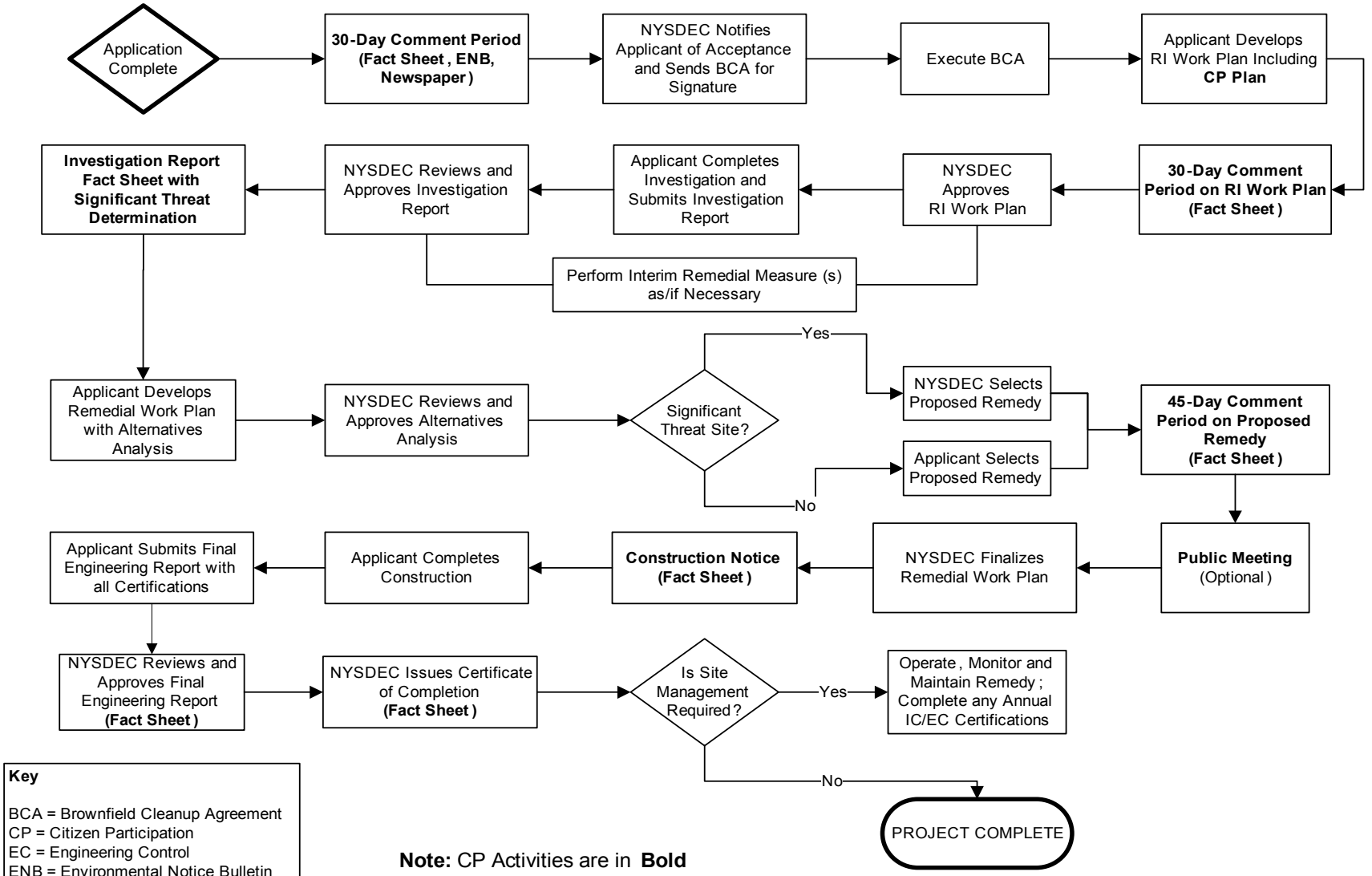
West Harrison, NY 10604	West Harrison, NY 10604
New Rochelle Main LLC Adj. Property Owner 482 Main St 1 New King St., Ste. 201 West Harrison, NY 10604	Robert Ann Realty Adj. Property Owner 478 Main St. 1 Lasalle Avenue Rye, NY 10580
Enterprises United LLC Adj. Property Owner 476 Main Street 1 Lasalle Avenue Rye, NY 10580	Metro Urban Community Corp Adj. Property Owner 466 Main Street 466 Main Street New Rochelle, NY 10801
Blake Park Housing Co. LLC Adj. Property Owner Main St 16 Court St., Ste. 2408 Brooklyn, NY 11241	Dechiara Realty Corp. Adj. Property Owner 456 Main Street 34 Morgan Street New Rochelle, NY 10805
450-454 Main St. Realty LLC Adj. Property Owner 450 Main Street 334 East 110th Street New York, NY 10029	3034 Albany Crescent Inc. Adj. Property Owner 11 Locust Ave PO Box 289 Harrison, NY 10528
Main/Le Count LLC Adj. Property Owner 455 Main Street 35 Center Street Ardsley, NY 10502	455 Main Real Estate LLC Adj. Property Owner 455 Main Street 34 Tompkins Road Scarsdale, NY 10583
459 Main NR LLC Adj. Property Owner 459 Main Street 480 Bedford Avenue Chappaqua, NY 10514	463 Main NR LLC Adj. Property Owner 463 Main Street 480 Bedford Avenue Chappaqua, NY 10514
Robert Rochelle Assoc., LLC Adj. Property Owner 199 North Avenue 40 Franklin Road Scarsdale, NY 10583	207 North NR LLC Adj. Property Owner 207 North Avenue 480 Bedford Avenue Chappaqua, NY 10514
14 Le Count Place LLC Adj. Property Owner 209 North Avenue 480 Bedford Avenue Chappaqua, NY 10514	211 North Ave LLC Adj. Property Owner 211 North Avenue 211 North Avenue New Rochelle, NY 10801
215 North RMR LLC Adj. Property Owner 2015 North Avenue 374 McLean Avenue Yonkers, NY 10705	A&F Anderson Realty Inc. Adj. Property Owner 2 Anderson Street 2 Anderson Street New Rochelle, NY 10801
Union State Bank Adj. Property Owner 28 Le Count Pl 100 Dutch Hill Road Orangeburg, NY 10962	14 Le Count Place LLC Adj. Property Owner 14 Le Count Pl 480 Bedford Road Chappaqua, NY 10514

200 North RMR LLC Adj. Property Owner 475 Main Street 374 McLean Ave. Yonkers, NY 10705	Mateo A LLC Adj. Property Owner 477 Main Street 19 Pheasant Dr. Rye, NY 10580
479 Main RMR LLC Adj. Property Owner 479 Main Street 30 Church St., Ste. 4 New Rochelle, NY 10801	Rettner Main Street LLC Adj. Property Owner 481 Main Street 481 Main Street New Rochelle, NY 10801
Manor Realty Group Adj. Property Owner 485 Main Street 999 Washington Ave. Pelham, NY 10803	DBECHASE LLC Adj. Property Owner 491 Main Street 1345 Avenue of the Americas, Fl. 46 New York, NY 10105
DBECHASE LLC Adj. Property Owner 11 Lawton Street 1345 Avenue of the Americas, Fl. 46 New York, NY 10105	Mouzakis Rlty Co. Inc. Adj. Property Owner 234 North Avenue 145-56 17th Rd Whitestone, NY 11357
MKM Equity LLC Adj. Property Owner 230 North Avenue 77 Tarrytown Rd., Ste. 1E White Plains, NY 10607	City of New Rochelle Adj. Property Owner 35 Lawton Street 515 North Avenue New Rochelle, NY 10801
45 South Main Street Corp. Adj. Property Owner 218 North Avenue 1 CVS Drive Woonsocket RI, 02895	Peter Enterprises Ltd Adj. Property Owner 212 North Avenue 1468 Midlane Ave., #2G Bronxville, NY 10708
210 North Avenue LLC Adj. Property Owner 210 North Avenue 65 W. 45th St., Fl. 8 New York, NY 10036	A&F Anderson Realty Inc. Adj. Property Owner 15 Anderson Street 15 Anderson Street New Rochelle, NY 10801
Anderson Development LLC New ROC Associates LP Adj. Property Owner 5 Anderson Street 1955 Central Park Ave Yonkers, NY 10701	New ROC Associates LP Adj. Property Owner 33 Le Count Pl. 33 Le Count Pl. New Rochelle, NY 10801
City of New Rochelle Adj. Property Owner 51 Le Count Pl 515 North Avenue New Rochelle, NY 10801	

Appendix C - Site Location Map



Appendix D– Brownfield Cleanup Program Process



Key

BCA = Brownfield Cleanup Agreement
CP = Citizen Participation
EC = Engineering Control
ENB = Environmental Notice Bulletin
IC = Institutional Control
RI = Remedial Investigation

Note: CP Activities are in **Bold**

Division of Environmental Remediation

Remedial Programs
Scoping Sheet for Major Issues of Public Concern (see instructions)

Site Name: 14 Le Count Standard Printing and GSLM 14 Le Count Owner LLC ("Applicant")

Site Number: C360176

Site Address and County: 14 Le Count Place, 207, 209, and 211 North Avenue, 455, 459, and 463 Main Street New Rochelle NY

Remedial Party(ies): 14 Le Count Place LLC

Note: For Parts 1. – 3. the individuals, groups, organizations, businesses and units of government identified should be added to the site contact list as appropriate.

Part 1. List major issues of public concern and information the community wants. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and information needs. **Use this information as an aid to prepare or update the Major Issues of Public Concern section of the site Citizen Participation Plan.**
There are no known major issues the community wants at this time that we are aware of.

How were these issues and/or information needs identified?
Site plan approval has obtained therefore we do not anticipated any community opposition or involvement.

Part 2. List important information needed **from** the community, if applicable. Identify individuals, groups, organizations, businesses and/or units of government related to the information needed.
NA

How were these information needs identified?
NA

Part 3. List major issues and information that need to be communicated **to** the community. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and/or information.
Information needs to be provided during Fact Sheets re: the remediation once it starts.

How were these issues and/or information needs identified?
Via the BCP standard protocols.

Part 4. Identify the following characteristics of the affected/interested community. This knowledge will help to identify and understand issues and information important to the community, and ways to effectively develop and implement the site citizen participation plan (mark all that apply):

a. Land use/zoning at and around site:
☒ **Residential** ☐ **Agricultural** ☐ **Recreational** ☒ **Commercial** ☐ **Industrial**

b. Residential type around site:
☒ **Urban** ☐ **Suburban** ☐ **Rural**

c. Population density around site:
☐ **High** ☒ **Medium** ☐ **Low**

d. Water supply of nearby residences:
☒ **Public** ☐ **Private Wells** ☐ **Mixed**

e. Is part or all of the water supply of the affected/interested community currently impacted by the site?
☐ **Yes** ☒ **No**

Provide details if appropriate:
NA

f. Other environmental issues significantly impacted/impacting the affected community?
☐ **Yes** ☒ **No**

Provide details if appropriate:
Click here to enter text.

g. Is the site and/or the affected/interested community wholly or partly in an Environmental Justice Area?
☒ **Yes** ☐ **No**

h. Special considerations:
☒ **Language** ☐ **Age** ☐ **Transportation** ☐ **Other**

Explain any marked categories in **h:**
There may be a Hispanic population since the site is in a designated EJ Area.

Part 5. The site contact list must include, at a minimum, the individuals, groups, and organizations identified in Part 2. of the Citizen Participation Plan under 'Site Contact List'. Are *other* individuals, groups, organizations, and units of government affected by, or interested in, the site, or its remedial program? (Mark and identify all that apply, then adjust the site contact list as appropriate.)

☒ **Non-Adjacent Residents/Property Owners:** Click here to enter text.

☒ **Local Officials:** Click here to enter text.

☒ **Media:** Click here to enter text.

☒ **Business/Commercial Interests:** Click here to enter text.

☒ **Labor Group(s)/Employees:** Click here to enter text.

☒ **Indian Nation:** Click here to enter text.

☒ **Citizens/Community Group(s):** Click here to enter text.

☒ **Environmental Justice Group(s):** Click here to enter text.

☒ **Environmental Group(s):** Click here to enter text.

☒ **Civic Group(s):** Click here to enter text.

☒ **Recreational Group(s):** Click here to enter text.

☒ **Other(s):** Click here to enter text.

Prepared/Updated By: Fuad Dahan **Date:** Click here to enter text.

Reviewed Approved By: Click here to enter text. **Date:** Click here to enter text.

APPENDIX 4

Health and Safety Plan

SITE-SPECIFIC HEALTH AND SAFETY PLAN

14 Le Count Place,
207, 209, and 211 North Avenue
455, 459, and 463 Main Street
New Rochelle, New York

BCP #C360176

Prepared For:

14 Le Count Place LLC
c/o Wilder Balter Partners, Inc
480 Bedford Road
Chappaqua, NY 10514

Prepared By:

SESI CONSULTING ENGINEERS
12A Maple Avenue
Pine Brook, NJ 07058

Project No.: 10100

August 31, 2018

SITE-SPECIFIC HEALTH AND SAFETY PLAN

For

14 Le Count Place,
207, 209, and 211 North Avenue
455, 459, and 463 Main Street
New Rochelle, New York

Prepared by: _____ Date:

_____

Christopher J. Hoen
SESI- Project Manager

Approved by: _____ Date:

_____

Fuad Dahan
SESI-Principal

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LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
COC	Constituent(s) of Concern
CRZ	Contamination Reduction Zone
EZ	Exclusion Zone
FS	Field Supervisor
GFCI	Ground Fault Circuit Interrupter
HASP	Health and Safety Plan
HSM	Health and Safety Manager
LEL	Lower Explosive Limit
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyls
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	Project Manager
PO	Project Officer
PPE	Personal Protective Equipment
SESI	SESI Consulting Engineers
SSO	Site Safety Officer
SVOC	Semi-Volatile Organic Compound
SZ	Support Zone
TLV	Threshold Limit Value
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

HEALTH AND SAFETY PLAN SUMMARY

The chemical hazards associated with site operations are related to inhalation, ingestion, and skin exposure to site Chemicals of Concern (COCs). COCs at the site include metals, some VOC compounds, some SVOC compounds and some pesticides. Concentrations of airborne COCs during site tasks may be measurable and will require air monitoring during certain operations.

The potential for inhalation of site COCs is low. The potential for dermal contact with soils containing site COCs during remedial operations is moderate.

The following table summarizes airborne contaminant action levels that will be used to determine the procedures and protective equipment necessary based on conditions as measured at the site.

Parameter	Reading	Action
Dust	0 to .5 mg/m3	Normal operations
	0.5 to 1 mg/m3	Begin soil wetting procedure (Level C protection would be needed beyond this point)
	> 1 mg/m3	Stop work, fully implement dust control plan
Oxygen	$\leq$ 19.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
	> 19.5% to < 23.5%	Normal operations
	$\geq$ 23.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Carbon Monoxide	0 ppm to $\leq$ 20 ppm	Normal operations
	> 20 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area

The level of personal protection selected will be based on air monitoring of the work environment and an assessment by the Field Supervisor and Site Safety Officer. The following table presents a selection matrix to determine appropriate Personal Protective Equipment.

Task	Anticipated Level of Protection
Mobilization	Level D
Subsurface Intrusive Activities (Mass Excavation, Drilling, Soil Grouting)	Modified Level D/Level C
Earthwork/Grading	Level D
Additional Chemical Sampling / Delineation	Modified Level D/Level C
Decontamination	Modified Level D
Demobilization	Level D

1.0 INTRODUCTION

1.1 Objective

The objective of this Health and Safety Plan (HASP) is to provide a mechanism for establishing safe working conditions during activities at the 14 Lecount Place, 207, 209, and 211 North Avenue 455, 459, and 463 Main Street in the Town of New Rochelle, NY (the Site). The safety organization, procedures, and protective equipment have been established based on an analysis of potential physical, chemical, and biological hazards. Specific hazard control methodologies have been evaluated and selected to minimize the potential of injury, illness, or other hazardous incident.

The HASP was written to meet the requirements of all applicable Federal, State, and local health and safety regulations, including 29 CFR 1910.120. The HASP is based on current knowledge regarding the specific chemical and physical hazards that are known or anticipated at the Site. This HASP is a dynamic document, for which changes and/or revisions may be realized as changes in scope and/or site conditions are encountered. Should revised documents be produced, said revised documents will refer to the specific changes and why they were made.

1.2 Site and Facility Description

The Site consists of approximately a 0.93-acres parcel that are occupied by various commercial operations. The Site has been historically developed with residential and commercial buildings. Several commercial operations at the site include an undertaker/funeral home (14 Lecount Place) and the Evening Standard Newspaper (209 North Avenue). Site buildings were generally constructed between 1903 and 1931.

The current topographic map [White Plains, NY, 1994 (Scale: 1:24,000)] shows the Property as located in an urban setting. The property is located in an area of primarily commercial and mixed uses. The property and nearby properties are generally level. Figure 2.1 presents a Site Location Map.

The Site properties are identified on the Westchester County Clerk's as a portion of tax parcel map Section-Block-Lot number 1-228-0029, 1-228-0009, 1-228-0010, 1-228-0011, 1-228-0003, 1-228-0005, and 1-228-0007, respectively. The properties total approximately 0.93-acres and have been historically utilized for residential, commercial, and industrial purposes.

The Site is bounded to the north by commercial buildings, to the south by Main Street and multiple commercial properties across Main Street, to the east by Lecount Place and multiple commercial properties across LeCount Place, and to the west by the North Avenue and multiple commercial properties across North Avenue. Figure 2.2 presents a Site Plan.

1.3 Policy Statement

The policy of SESI Consulting Engineers (SESI) is to provide a safe and healthful work environment. No aspect of operations is of greater importance than injury and illness prevention. A fundamental principle of safety management is that all injuries, illnesses,

and incidents are preventable. SESI will take every reasonable step to eliminate or control hazards in order to minimize the possibility of injury, illness, or incident.

This HASP prescribes the procedures that must be followed by SESI personnel during activities at the site. Operational changes that could affect the health and safety of personnel, the community, or the environment will not be made without the prior approval of the Project Manager (PM) and the Health and Safety Manager (HSM). This document will be reviewed periodically by the HSM to ensure that it is current and technically correct. Any changes in site conditions and/or the scope of work will require a review and modification to this HASP. Such changes will be completed in the form of an addendum or a revision to the plan.

The provisions of this plan are mandatory for all SESI personnel and are advisory for all contractors, and subcontractors assigned to the project. ***Subcontractors will be responsible for preparing their own site-specific HASPs that meet the basic requirements outlined in this HASP.*** All visitors to SESI work areas at the site must abide by the requirements of this plan.

1.4 References

This HASP complies with applicable Occupational Safety and Health Administration (OSHA) regulations, United States Environmental Protection Agency (USEPA) regulations, and SESI health and safety policies and procedures. This plan follows the guidelines established in the following:

- *Standard Operating Safety Guides*, USEPA (Publication 9285.1-03, June 1992).
- *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, NIOSH, OSHA, USCG, USEPA (86116, October 1985).
- *Title 29 of the Code of Federal Regulations* (CFR), Part 1910.
- *Title 29 of the Code of Federal Regulations* (CFR), Part 1926.
- *Pocket Guide to Chemical Hazards*, DHHS, PHS, CDC, NIOSH (2004).
- *Threshold Limit Values*, ACGIH (2005).
- *Guide to Occupational Exposure Values*, ACGIH (2005).
- *Quick Selection Guide to Chemical Protective Clothing*, Forsberg, K. and S.Z. Mansdorf, 2nd Ed. (1993).

1.5 Definitions

The following definitions (listed alphabetically) are applicable to this HASP:

- *Contamination Reduction Zone (CRZ)* - Area between the exclusion zone and support zone that provides a transition between contaminated and clean areas. Decontamination stations are located in this zone.
- *Exclusion Zone (EZ)* - Any portions of the site where hazardous substances are, or are reasonably suspected to be present, and pose an exposure hazard to on-site personnel.
- *Incident* - All losses, including first aid cases, injuries, illnesses, spills/leaks, equipment and property damage, motor vehicle accidents, regulatory violations, fires, and business interruptions.
- *On-Site Personnel* - All SESI and subcontractors involved with the project.
- *Project* - All on-site work performed under the scope of work.

- *Site* - The area described in Section 1.2, Site and Facility Description, where the work is to be performed by SESI personnel and subcontractors.
- *Support Zone (SZ)* - All areas of the site except the EZ and CRZ. The SZ surrounds the CRZ and EZ. Support equipment and break areas are located in this zone.
- *Subcontractor* - Includes contractor personnel hired by SESI.
- *Visitor* - All other personnel, except the on-site personnel.
- *Work Area* - The portion of the site where work activities are actively being performed. This area may change daily as work progresses and includes the SZ, CRZ, and EZ. If the work area is located in an area on the site that is not contaminated, or suspected of being contaminated, the entire work area may be a SZ.

2.0 PROJECT SCOPE OF WORK

This HASP contains information for the following tasks that SESI is anticipated to conduct at the Site. Should additional and/or different tasks be identified, amendments to this HASP will be required to address these changed items.

- Mobilization/Sample location stakeout;
- Soil Borings and Monitoring Well Installation;
- Excavation of contaminated soil “hot spots”;
- Earthwork and grading;
- Chemical sampling of soil and groundwater; and
- Decontamination and demobilization/site restoration.

3.0 ROLES AND RESPONSIBILITIES

3.1 All Personnel

All SESI project personnel must adhere to the procedures outlined in this HASP during the performance of their work. Each person is responsible for completing tasks safely and reporting any unsafe acts or conditions to their supervisor. No person may work in a manner that conflicts with these procedures. After due warnings, the PM will dismiss from the site any SESI employee or subcontractor who violates safety procedures.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. In addition, all SESI personnel will attend an initial hazard briefing prior to beginning work at the site.

The roles of key safety personnel and subcontractors are outlined in the following sections. Key project personnel and contacts are summarized in Table 1.

3.2 Key Safety Personnel

3.2.1 Project Officer (PO)

The PO is responsible for providing resources to assure project activities are completed in accordance with this HASP, and for meeting all regulatory and contractual requirements.

3.2.2 Project Manager (PM)

The PM is responsible for verifying that project activities are completed in accordance with the requirements of this HASP. The PM is responsible for confirming that the Field Supervisor (FS) has the equipment, materials, and qualified personnel to fully implement the safety requirements of this HASP, and/or that subcontractors assigned to this project meet the requirements established by SESI. It is also the responsibility of the PM to:

- Consult with the HSM on site health and safety issues;
- Verify that subcontractors meet health and safety requirements prior to commencing work;
- Verify that all incidents are thoroughly investigated;
- Approve, in writing, addenda or modifications of this HASP; and
- Suspend work or modify work practices, as necessary, for personal safety, protection of property, and regulatory compliance.

3.2.3 Health and Safety Manager (HSM)

The HSM or his designee, the health and safety manager (HSM), has overall responsibility for the technical health and safety aspects of the project, including review and approval of this HASP. Inquiries regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The HSM or his designee must approve changes or addenda to this HASP.

3.2.4 Site Safety Officer (SSO)

The SSO is responsible for field health and safety issues, including the execution of this HASP. Questions in the field regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The SSO will advise the PM on health and safety issues and will establish and coordinate the project air-monitoring program if one is deemed necessary (see Section 5.1, Air Monitoring). The SSO is the primary site contact on health and safety matters. It is the responsibility of the SSO to:

- Provide on-site technical assistance, if necessary;
- Participate in all accident/incident reports and ensure that they are reported to the HSM, client, and PM within 24 hours;
- Coordinate site and personal air monitoring as required, including equipment maintenance and calibration;
- Conduct site safety orientation training and safety meetings;
- Verify that project personnel have received the required physical examinations and medical certifications;
- Review site activities with respect to compliance with this HASP;
- Maintain required health and safety documents and records; and
- Assist the FS in instructing field personnel on project hazards and protective procedures.

3.2.5 Field Supervisor (FS)

The FS is responsible for implementing this HASP, including communicating requirements to on-site personnel and subcontractors. The FS will be responsible for informing the PM of changes in the work plan, procedures, or site conditions so that those changes may be addressed in this HASP. Other responsibilities are to:

- Consult with the SSO on site health and safety issues;
- Stop work, as necessary, for personal safety, protection of property, and regulatory compliance;
- Obtain a site map and determine and post routes to medical facilities and emergency telephone numbers;
- Notify local public emergency representatives (as appropriate) of the nature of the site operations, and post their telephone numbers (i.e., local fire department personnel who would respond for a confined space rescue);
- Observe on-site project personnel for signs of ill health effects;
- Investigate and report any incidents to the SSO;
- Verify that all on-site personnel have had applicable training;
- Verify that on-site personnel are informed of the physical, chemical, and biological hazards associated with the site activities, and the procedures and protective equipment necessary to control the hazards; and
- Issue/obtain any required work permits (hot work, confined space, etc.).

3.2.6 Field Personnel (FP)

All SESI field personnel are responsible for following the Health and Safety procedures specified in this HASP and work practices specified in applicable operation procedures. Some specific responsibilities include, but are not limited to:

- Reading and understanding the HASP;
- Reporting all accidents, incidents, injuries, or illnesses to the FS;
- Complying with the requests of the SSO;
- Immediately communicating newly identified hazards or noncompliance issues to the FS or SSO; and
- Stopping work in cases of immediate danger.

3.3 Subcontractors

Subcontractors and their personnel must understand and comply with applicable regulations and site requirements established in this HASP. Subcontractors will prepare their own site-specific HASP that must be consistent with the requirements of this HASP.

All subcontractor personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. All subcontractor personnel will attend an initial hazard briefing prior to beginning work at the site. Additionally, on-site subcontractor personnel must conduct daily site safety meetings.

Subcontractors must designate individuals to function as the PM, HSM, SSO, and FS. In some firms the HSM to be carried out by the PM. This is acceptable provided the PM has the required knowledge, training, and experience to properly address all hazards associated with the work, and to prepare, approve, and oversee the execution of the site-specific HASP. A subcontractor may designate the same person to perform the duties of both the SSO and the FS. However, depending on the level of complexity of a contractor's scope of work, it may be infeasible for one person to perform both functions satisfactorily.

3.4 Stop Work Authority

Every SESI employee and subcontractor is empowered, expected, and has the responsibility to stop the work of another co-worker if the working conditions or behaviors are considered unsafe.

3.5 All On-Site Personnel

All on-site SESI personnel (including SESI subcontractors) must read and acknowledge their understanding of their respective HASPs before commencing work and abide by the requirements of the plans. All on-site SESI personnel shall sign their HASP Acknowledgement Form following their review of their HASP.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. In addition, all on-site personnel will attend an initial hazard briefing provided by the SSO prior to beginning work at the site and conduct daily safety meetings thereafter.

On-site personnel will immediately report the following to the FS or SSO:

- Personal injuries and illnesses no matter how minor;
- Unexpected or uncontrolled release of chemical substances;
- Symptoms of chemical exposure;
- Unsafe or hazardous situations;
- Unsafe or malfunctioning equipment;
- Changes in site conditions that may affect the health and safety of project personnel;
- Damage to equipment or property; and
- Situations or activities for which they are not properly trained.

3.6 Visitors

All SESI personnel and subcontractors visiting the Site must check in with the FS. Visitors will be cautioned to avoid skin contact with surfaces, soils, groundwater, or other materials that may impacted or be suspected to be impacted by constituents of concern (COCs).

Visitors requesting to observe work at the site must don appropriate personal protective equipment (PPE) prior to entry to the work area and must have the appropriate training and medical clearances to do so. If respiratory protective devices are necessary, visitors who wish to enter the work area must have been respirator-trained and fit tested for a respirator within the past 12 months.

Table 1 – Key Safety Personnel

SESI Personnel		
Role	**Name**	**Address/Telephone No.**
Project Officer (PO)	TBD	
Project Manager (PM)	TBD	
Senior Project Engineer (SPE)	TBD	
Health and Safety Manager (HSM)	TBD	
Site Safety Officer (SSO)	TBD	
Field Supervisor (FS)	TBD	

Field Personnel	TBD	
Field Personnel	TBD	
Subcontractors		
Company/Role	**Name**	**Address/Telephone No.**
TBD	TBD	TBD

4.0 PERSONAL PROTECTIVE EQUIPMENT

4.1 Levels of Protection

PPE is required to safeguard site personnel from various hazards. Varying levels of protection may be required depending on the levels of COCs and the degree of physical hazard. This section presents the various levels of protection and defines the conditions of use for each level. A summary of the levels is presented in Table 2 in this section.

4.1.1 Level D Protection

The minimum level of protection that will be required of project personnel at the site will be Level D, which will be worn when site conditions or air monitoring indicates no inhalation hazard exists. The following equipment will be used:

- Work clothing as prescribed by weather;
- Steel toe work boots, meeting American National Standards Institute (ANSI) Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Leather work gloves and/or nitrile surgical gloves;
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and
- PFD if working on or near the water.

4.1.2 Modified Level D Protection

Modified Level D will be used when airborne contaminants are not present at levels of concern, but site activities present an increased potential for skin contact with contaminated materials. Modified Level D consists of:

- Nitrile gloves worn over nitrile surgical gloves;
- Latex/polyvinyl chloride (PVC) overboots when contact with COC-impacted media is anticipated;
- Steel toe work boots, meeting ANSI Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Face shield in addition to safety glasses or goggles when projectiles or splash hazards exist (e.g. during Power Washing activities);
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used);
- Tyvek® suit (polyethylene coated Tyvek® suits for handling liquids) when body contact with COC-impacted media is anticipated; and
- PFD if working on or near the water.

4.1.3 Level C Protection

Level C protection will be required when the airborne concentration of COC reaches one-half of the OSHA Permissible Exposure Limit or ACGIH TLV. The following equipment will be used for Level C protection:

- Full-face, air-purifying respirator with combination organic vapor/HEPA cartridges;
- Polyethylene-coated Tyvek® suit, with ankles and cuffs taped to boots and gloves;
- Nitrile gloves worn over nitrile surgical gloves;
- Steel toe work boots, meeting ANSI Z41;
- Chemical-resistant boots with steel toes or latex/PVC overboots over steel toe boots;
- Hard hat, meeting ANSI Z89;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and
- PFD if working on or near the water.

4.2 Selection of PPE

Equipment for personal protection will be selected based on the potential for contact, site conditions, ambient air quality, and the judgment of supervising site personnel and health and safety professionals. The PPE used will be chosen to be effective against the COCs present on the site.

4.3 Site Respiratory Protection Program

Respiratory protection is an integral part of employee health and safety at the site due to potentially hazardous concentrations of airborne COCs. The site respiratory protection program will consist of the following (as a minimum):

- All on-site personnel who may use respiratory protection will have an assigned respirator.
- All on-site personnel who may use respiratory protection will have been fit tested and trained in the use of a full-face air-purifying respirator within the past 12 months. Documentation of the fit test must be provided to the SSO prior to commencement of work.
- All on-site personnel who may use respiratory protection must within the past year have been medically certified as being capable of wearing a respirator. Documentation of the medical certification must be provided to the SSO, prior to commencement of site work.
- Only cleaned, maintained, NIOSH-approved respirators will be used.
- If respirators are used, the respirator cartridge is to be properly disposed of at the end of each work shift, or when load-up or breakthrough occurs.
- Contact lenses are not to be worn when a respirator is worn.
- All on-site personnel who may use respiratory protection must be clean-shaven. Mustaches and sideburns are permitted, but they must not touch the sealing surface of the respirator.
- Respirators will be inspected, and a negative pressure test performed prior to each use.

- After each use, the respirator will be wiped with a disinfectant, cleansing wipe. When used, the respirator will be thoroughly cleaned at the end of the work shift. The respirator will be stored in a clean plastic bag, away from direct sunlight in a clean, dry location, in a manner that will not distort the face piece.

4.4 Using PPE

Depending upon the level of protection selected, specific donning and doffing procedures may be required. The procedures presented in this section are mandatory if Modified Level D or Level C PPE is used. All personnel entering the EZ must put on the required PPE in accordance with the requirements of this HASP. When leaving the EZ, PPE will be removed in accordance with the procedures listed, to minimize the spread of COCs.

4.4.1 Donning Procedures

These procedures are mandatory only if Modified Level D or Level C PPE is used on the site:

- Remove bulky outerwear. Remove street clothes and store in clean location;
- Put on work clothes or coveralls;
- Put on the required chemical protective coveralls;
- Put on the required chemical protective boots or boot covers;
- Tape the legs of the coveralls to the boots with duct tape;
- Put on the required chemical protective gloves;
- Tape the wrists of the protective coveralls to the gloves;
- Don the required respirator and perform appropriate fit check (Level C);
- Put hood or head covering over head and respirator straps and tape hood to facepiece (Level C); and
- Don remaining PPE, such as safety glasses or goggles and hard hat.

When these procedures are instituted, one person must remain outside the work area to ensure that each person entering has the proper protective equipment.

4.4.2 Doffing Procedures

The following procedures are only mandatory if Modified Level D or Level C PPE is required for the site. Whenever a person leaves the work area, the following decontamination sequence will be followed:

- Upon entering the CRZ, rinse contaminated materials from the boots or remove contaminated boot covers;
- Clean reusable protective equipment;
- Remove protective garments, equipment, and respirator (Level C). All disposable clothing should be placed in plastic bags, which are labeled with contaminated waste labels;
- Wash hands, face, and neck (or shower if necessary);
- Proceed to clean area and dress in clean clothing; and
- Clean and disinfect respirator for next use.

All disposable equipment, garments, and PPE must be bagged in plastic bags, labeled for disposal. See Section 7, Decontamination, for detailed information on decontamination stations.

4.5 Selection Matrix

The level of personal protection selected will be based on air monitoring of the work environment and an assessment by the FS and SSO of the potential for skin contact with COCs. The PPE selection matrix is presented in Table 2. This matrix is based on information available at the time this plan was written. The Airborne Contaminant Action Levels in Table 3, Airborne Contaminant Action Levels, should be used to verify that the PPE prescribed in these matrices is appropriate.

Table 2 – PPE Selection Matrix

Task	Anticipated Level of Protection
Mobilization	Level D
Subsurface Intrusive Activities (Excavation, Drilling)	Modified Level D/Level C
Earthwork/Grading	Level D
Chemical Sampling / Delineation	Modified Level D/Level C
Decontamination	Modified Level D
Demobilization	Level D

5.0 AIR AND NOISE MONITORING

5.1 Air Monitoring

Air monitoring, sampling, and testing will be conducted to determine employee exposure to airborne constituents. The monitoring results will dictate work procedures and the selection of PPE. The SESI SSO will be responsible for defining appropriate air monitoring procedures and for utilizing the air monitoring results to determine appropriate procedures and PPE for project personnel. Air monitoring results should be recorded in field notebooks or on an air monitoring log (see Attachment 1 for a copy of the Air Monitoring Log). Any deviations from the procedures listed here should be documented and explained in the Air Monitoring Log.

The monitoring devices to be used are a PDR1000 particulate monitor (or equivalent) and a Rae Systems MultiRAE detector (PID with a 11.7 eV lamp/oxygen/LEL/hydrogen sulfide sensors). Colorimetric detector tubes may be utilized to estimate airborne concentrations of benzene and should be onsite during any activities that may result in elevated PID readings including drilling, excavating, and groundwater sampling.

Air monitoring will be conducted continuously with the LEL/Oxygen meter during drilling in areas where flammable vapors or gases are suspect. All work activity must stop where tests indicate the concentration of flammable vapors exceeds 10% of the LEL at a location with a potential ignition source. Such an area must be ventilated to reduce the concentration to an acceptable level.

5.2 Noise Monitoring

Noise monitoring may be conducted as required. Hearing protection is mandatory for all employees in noise hazardous areas, such as around heavy equipment. As a general

rule, sound levels that cause speech interference at normal conversation distance should require the use of hearing protection.

5.3 Monitoring Equipment Maintenance and Calibration

All direct-reading instrumentation calibrations should be conducted under the approximate environmental conditions the instrument will be used. Instruments must be calibrated before and after use, noting the reading(s) and any adjustments that are necessary. All air monitoring equipment calibrations, including the standard used for calibration, must be documented on a calibration log or in the field notebook. All completed health and safety documentation/forms must be reviewed by the SSO and maintained by the FS.

All air monitoring equipment will be maintained and calibrated in accordance with the specific manufacturer's procedures. Preventive maintenance and repairs will be conducted in accordance with the respective manufacturer's procedures. When applicable, only manufacturer-trained and/or authorized personnel will be allowed to perform instrument repairs or preventive maintenance.

If an instrument is found to be inoperative or suspected of giving erroneous readings, the SSO must be responsible for immediately removing the instrument from service and obtaining a replacement unit. If the instrument is essential for safe operation during a specific activity, that activity must cease until an appropriate replacement unit is obtained. The SSO will be responsible for ensuring a replacement unit is obtained and/or repairs are initiated on the defective equipment.

5.4 Action Levels

Table 3 presents airborne contaminant action levels that will be used to determine the procedures and protective equipment necessary based on conditions as measured at the site.

Table 3 – Airborne Contaminant Action Levels

Parameter	Reading	Action
Total Hydrocarbons	0 ppm to $\leq$ 1 ppm	Normal operations; continue hourly breathing zone monitoring
	> 1 ppm to 5 ppm	Increase monitoring frequency to every 15 minutes and use benzene detector tube to screen for the presence of benzene
	$\geq$ 5 ppm to $\leq$ 50 ppm	Upgrade to Level C PPE; continue screening for benzene
	> 50 ppm	Stop work; investigate cause of reading
Benzene	$\geq$ 1 ppm to 5 ppm	Upgrade to Level C PPE
	> 5 ppm	Stop work; investigate cause of reading
Dust	0 to .5 mg/m3	Normal operations
	0.5 to 1 mg/m3	Begin soil wetting procedure (Level C protection would be needed beyond this point)
	> 1 mg/m3	Stop work, fully implement dust control plan

Parameter	Reading	Action
Oxygen	≤ 19.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
	> 19.5% to < 23.5%	Normal operations
	≥ 23.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Carbon Monoxide	0 ppm to ≤ 20 ppm	Normal operations
	> 20 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Hydrogen Sulfide	0 ppm to ≤ 5 ppm	Normal operations
	> 5 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Flammable Vapors (LEL)	< 10% LEL	Normal operations
	≥ 10% LEL	Stop work, ventilate area, investigate source of vapors

6.0 WORK ZONES AND DECONTAMINATION

6.1 Work Zones

6.1.1 Authorization to Enter

Only personnel with the appropriate training and medical certifications (if respirators are required) will be allowed to work at the project site. The FS will maintain a list of authorized persons; only personnel on the authorized persons list will be allowed to enter the site work areas.

6.1.2 Site Orientation and Hazard Briefing

No person will be allowed in the work area during site operations without first being given a site orientation and hazard briefing. This orientation will be presented by the FS or SSO and will consist of a review of this HASP. This review must cover the chemical, physical, and biological hazards, protective equipment, safe work procedures, and emergency procedures for the project. Following this initial meeting, daily safety meetings will be held each day before work begins.

All people entering the site work areas, including visitors, must document their attendance at this briefing, as well as the daily safety meetings on the forms included with this plan.

6.1.3 Certification Documents

A training and medical file may be established for the project and kept on site during all site operations. Specialty training, such as first aid/cardiopulmonary resuscitation (CPR) certificates, as well as current medical clearances for all project field personnel required to wear respirators, will be maintained within that file. All project personnel must provide their training and medical documentation to the SSO prior to starting work.

6.1.4 Entry Log

A log-in/log-out sheet will be maintained at the site by the FS. Personnel must sign in and out on a log sheet as they enter and leave the work area, and the FS may document entry and exit in the field notebook.

6.1.5 Entry Requirements

In addition to the authorization, hazard briefing, and certification requirements listed above, no person will be allowed in any SESI work area unless they are wearing the minimum PPE as described in Section 4.0.

6.1.6 Emergency Entry and Exit

People who must enter the work area on an emergency basis will be briefed of the hazards by the FS or SSO. All activities will cease in the event of an emergency. People exiting the work area because of an emergency will gather in a designated safe area for a head count. The FS is responsible for ensuring that all people who entered the work area have exited in the event of an emergency.

6.1.7 Contamination Control Zones

Contamination control zones are maintained to prevent the spread of contamination and to prevent unauthorized people from entering hazardous areas.

6.1.8 Exclusion Zone (EZ)

An EZ may consist of a specific work area or may be the entire area of potential contamination. All employees entering an EZ must use the required PPE and must have the appropriate training and medical clearance for hazardous waste work. The EZ is the defined area where there is a possible respiratory and/or contact health hazard. Cones, caution tape, or a posted site diagram will identify the location of each EZ.

6.1.9 Contamination Reduction Zone

The CRZ or transition area will be established, if necessary, to perform decontamination of personnel and equipment. All personnel entering or leaving the EZ will pass through this area to prevent any cross-contamination. Tools, equipment, and machinery will be decontaminated in a specific location. The decontamination of all personnel will be performed on site adjacent to the EZ. Personal protective outer garments and respiratory protection will be removed in the CRZ and prepared for cleaning or disposal. This zone is the only appropriate corridor between the EZ and the support zone (SZ) discussed below.

6.1.10 Support Zone (SZ)

The SZ is a clean area outside the CRZ located to prevent employee exposure to hazardous substances. Eating and drinking will be permitted in the support area only after proper decontamination. Smoking may be permitted in the SZ, subject to site requirements.

6.1.11 Posting

Work areas will be prominently marked and delineated using cones, caution tape, or a posted site diagram.

6.1.12 Site Inspections

The FS will conduct a daily inspection of site activities, equipment, and procedures to verify that the required elements are in place.

6.2 Decontamination

6.2.1 Personnel Decontamination

All personnel wearing Modified Level D or Level C protective equipment in the EZ must undergo personal decontamination prior to entering the SZ. The personnel decontamination area will consist of the following stations at a minimum:

- *Station 1*: Personnel leaving the contaminated zone will remove the gross contamination from their outer clothing and boots.
- *Station 2*: Personnel will remove their outer garment and gloves and dispose of it in properly labeled containers. Personnel will then decontaminate their hard hats, and boots with an aqueous solution of detergent or other appropriate cleaning solution. These items are then hand carried to the next station.
- *Station 3*: Personnel will thoroughly wash their hands and face before leaving the CRZ. Respirators will be sanitized and then placed in a clean plastic bag.

6.2.2 Equipment Decontamination

All vehicles that have entered the EZ will be decontaminated at the decontamination pad prior to leaving the zone. If the level of vehicle contamination is low, decontamination may be limited to rinsing of tires and wheel wells with water. If the vehicle is significantly contaminated, steam cleaning or pressure washing of vehicles and equipment may be required.

6.2.3 Personal Protective Equipment Decontamination

Where and whenever possible, single-use, external protective clothing must be used for work within the EZ or CRZ. This protective clothing must be disposed of in properly labeled containers. Reusable protective clothing will be rinsed at the site with detergent and water. The rinsate will be collected for disposal.

When removed from the CRZ, the respirator will be thoroughly cleaned with soap and water. The respirator face piece, straps, valves, and covers must be thoroughly cleaned at the end of each work shift, and ready for use prior to the next shift. Respirator parts may be disinfected with a solution of bleach and water (mixed at 2% bleach by volume), or by using a spray disinfectant.

7.0 TRAINING AND MEDICAL SURVEILLANCE

7.1 Training

7.1.1 General

All on-site project personnel who work in areas where they may be exposed to site contaminants must be trained as required by OSHA Regulation 29 CFR 1910.120 (HAZWOPER). Field employees also must receive a minimum of three days of actual field experience under the direct supervision of a trained, experienced supervisor.

Personnel who completed their initial training more than 12 months prior to the start of the project must have completed an eight-hour refresher course within the past 12 months. The FS must have completed an additional eight hours of supervisory training and must have a current first-aid/CPR certificate (See Attachment 2).

7.1.2 Basic 40-Hour Course

The following is a list of the topics typically covered in a 40-hour HAZWOPER training course:

- General safety procedures;
- Physical hazards (fall protection, noise, heat stress, cold stress);
- Names and job descriptions of key personnel responsible for site health and safety;
- Safety, health, and other hazards typically present at hazardous waste sites;
- Use, application, and limitations of PPE;
- Work practices by which employees can minimize risks from hazards;
- Safe use of engineering controls and equipment on site;
- Medical surveillance requirements;
- Recognition of symptoms and signs which might indicate overexposure to hazards;
- Worker right-to-know (Hazard Communication OSHA 1910.1200);
- Routes of exposure to contaminants;
- Engineering controls and safe work practices;
- Components of a health and safety program and a site-specific HASP;
- Decontamination practices for personnel and equipment;
- Confined-space entry procedures; and
- General emergency response procedures.

7.1.3 Supervisor Course

Management and supervisors must receive an additional eight hours of training, which typically includes:

- General site safety and health procedures;
- PPE programs; and
- Air monitoring techniques.

7.1.4 Site-Specific Training

Site-specific training will be accomplished by on-site personnel reading this HASP, and through a thorough site briefing by the PM, FS, or SSO on the contents of this HASP before work begins. The review must include a discussion of the chemical, physical, and biological hazards; the protective equipment and safety procedures; and emergency procedures.

7.1.5 Daily Safety Meetings

Daily safety meetings will be held to cover the work to be accomplished, the hazards anticipated, the PPE and procedures required to minimize site hazards, and emergency procedures. The FS or SSO should present these meetings prior to beginning the day's fieldwork. No work will be performed in an EZ before a daily safety meeting has been

held. An additional safety meeting must also be held prior to new tasks, or if new hazards are encountered. The daily safety meetings will be logged in the field notebook.

7.1.6 First Aid and CPR

At least one employee current in first aid/CPR will be assigned to the work crew and will be on the site during operations. Site records will document the presence of this individual. Refresher training in first aid (triennially) and CPR (annually) is required to keep the certificate current. These individuals must also receive training regarding the precautions and protective equipment necessary to protect against exposure to blood-borne pathogens.

7.2 Medical Surveillance

7.2.1 Medical Examination

All personnel who are potentially exposed to site contaminants must participate in a medical surveillance program as defined by OSHA at 29 CFR 1910.120 (f).

7.2.2 Pre-placement Medical Examination

All potentially exposed personnel must have completed a comprehensive medical examination prior to assignment, and periodically thereafter as defined by applicable regulations. The pre-placement and periodic medical examinations typically include the following elements:

- Medical and occupational history questionnaire;
- Physical examination;
- Complete blood count, with differential;
- Liver enzyme profile;
- Chest X-ray, at a frequency determined by the physician;
- Pulmonary function test;
- Audiogram;
- Electrocardiogram for persons older than 45 years of age, or if indicated during the physical examination;
- Drug and alcohol screening, as required by job assignment;
- Visual acuity; and
- Follow-up examinations, at the discretion of the examining physician or the corporate medical director.

The examining physician provides the employee with a letter summarizing his findings and recommendations, confirming the worker's fitness for work and ability to wear a respirator. Documentation of medical clearance will be available for each employee during all project site work.

Subcontractors will certify that all their employees have successfully completed a physical examination by a qualified physician. The physical examinations must meet the requirements of 29 CFR 1910.120 and 29 CFR 1910.134. Subcontractors will supply copies of the medical examination certificate for each on-site employee.

7.2.3 Other Medical Examinations

In addition to pre-employment, annual, and exit physicals, personnel may be examined:

- At employee request after known or suspected exposure to toxic or hazardous materials; and
- At the discretion of the SSO, HSM, or occupational physician in anticipation of, or after known or suspected exposure to toxic or hazardous materials.

7.2.4 Periodic Exam

Following the placement examination, all employees must undergo a periodic examination, similar in scope to the placement examination. For employees potentially exposed over 30 days per year, the frequency of periodic examinations will be annual. For employees potentially exposed less than 30 days per year, the frequency for periodic examinations will be 24 months.

7.2.5 Medical Restriction

When the examining physician identifies a need to restrict work activity, the employee's supervisor must communicate the restriction to the employee and the SSO. The terms of the restriction will be discussed with the employee and the supervisor.

8.0 GENERAL SAFETY PRACTICES

8.1 General Safety Rules

General safety rules for site activities include, but are not limited to, the following:

- At least one copy of this HASP must be in a location at the site that is readily available to personnel, and all project personnel shall review the plan prior to starting work.
- Consume or use food, beverages, chewing gum, and tobacco products only in the SZ or other designated area outside the EZ and CRZ. Cosmetics shall not be applied in the EZ or CRZ.
- Wash hands before eating, drinking, smoking, or using toilet facilities.
- Wear all PPE as required and stop work and replace damaged PPE immediately.
- Secure disposable coveralls, boots, and gloves at the wrists and legs and ensure closure of the suit around the neck.
- Upon skin contact with materials that may be impacted by COCs, remove contaminated clothing and wash the affected area immediately. Contaminated clothing must be changed. Any skin contact with materials potentially impacted by COCs must be reported to the FS or SSO immediately. If needed, medical attention should be sought.
- Practice contamination avoidance. Avoid contact with surfaces either suspected or known to be impacted by COCs, such as standing water, mud, or discolored soil. Equipment must be stored on elevated or protected surfaces to reduce the potential for incidental contamination.
- Remove PPE as required in the CRZ to limit the spread of COC-containing materials.
- At the end of each shift or as required, dispose of all single-use coveralls, soiled gloves, and respirator cartridges in designated receptacles designated for this purpose.

- Removing soil containing site COCs from protective clothing or equipment with compressed air, shaking, or any other means that disperses contaminants into the air is prohibited.
- Inspect all non-disposable PPE for contamination in the CRZ. Any PPE found to be contaminated must be decontaminated or disposed of appropriately.
- Recognize emergency signals used for evacuation, injury, fire, etc.
- Report all injuries, illnesses, and unsafe conditions or work practices to the FS or SSO.
- Use the "buddy system" during all operations requiring Level C PPE, and when appropriate, during Modified Level D operations.
- Obey all warning signs, tags, and barriers. Do not remove any warnings unless authorized to do so.
- Use, adjust, alter, and repair equipment only if trained and authorized to do so, and in accordance with the manufacturer's directions.
- Personnel are to perform only tasks for which they have been properly trained and will advise their supervisor if they have been assigned a task for which they are not trained.
- The presence or consumption of alcoholic beverages or illicit drugs during the workday, including breaks, is strictly prohibited. Notify your supervisor if you must take prescription or over-the-counter drugs that indicate they may cause drowsiness or, that you should not operate heavy equipment.
- Remain upwind during site activities whenever possible.

8.2 Buddy System

On-site personnel must use the buddy system as required by operations. Use of the "buddy system" is required during all operations requiring Level C to Level A PPE, and when appropriate, during Level D operations. Crewmembers must observe each other for signs of chemical exposure, and heat or cold stress. Indications of adverse effects include, but are not limited to:

- Changes in complexion and skin coloration;
- Changes in coordination;
- Changes in demeanor;
- Excessive salivation and pupillary response; and
- Changes in speech pattern.

Crewmembers must also be aware of the potential exposure to possible safety hazards, unsafe acts, or non-compliance with safety procedures.

Field personnel must inform their partners or fellow crewmembers of non-visible effects of exposure to toxic materials that they may be experiencing. The symptoms of such exposure may include, but are not limited to:

- Headaches;
- Dizziness;
- Nausea;
- Blurred vision;
- Cramps; and
- Irritation of eyes, skin, or respiratory tract.

If protective equipment or noise levels impair communications, prearranged hand signals must be used for communication. Personnel must stay within line of sight of another team member.

8.3 Heat Stress

Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, etc., as well as the physical and conditioning characteristics of the individual. Since heat stress is one of the most common illnesses associated with heavy outdoor work conducted with direct solar load and, in particular, because wearing PPE can increase the risk of developing heat stress, workers must be capable of recognizing the signs and symptoms of heat-related illnesses. Personnel must be aware of the types and causes of heat-related illnesses and be able to recognize the signs and symptoms of these illnesses in both themselves and their co-workers.

Heat rashes are one of the most common problems in hot work environments. Commonly known as prickly heat, a heat rash is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

Heat cramps are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused both by too much or too little salt.

Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution (plus or minus 0.3% NaCl), excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.

Under extreme conditions, such as working for 6 to 8 hours in heavy protective gear, a loss of sodium may occur. Drinking commercially available carbohydrate electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

Heat exhaustion occurs from increased stress on various body organs due to inadequate blood circulation, cardiovascular insufficiency, or dehydration. Signs and symptoms include pale, cool, moist skin; heavy sweating; dizziness; nausea; headache, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment.

Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, which is a medical emergency.

Workers suffering from heat exhaustion should be removed from the hot environment, be given fluid replacement, and be encouraged to get adequate rest.

Heat stroke is the most serious form of heat stress. Heat stroke occurs when the body's system of temperature regulation fails and the body's temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of workload and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The worker should be placed in a shady area and the outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

Regardless of the worker's protestations, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

Proper training and preventive measures will help avert serious illness and loss of work productivity. Preventing heat stress is particularly important because once someone suffers from heat stroke or exhaustion, that person may be predisposed to additional heat injuries.

8.4 Heat Stress Safety Precautions

Heat stress monitoring and work rest cycle implementation should commence when the ambient adjusted temperature exceeds 72°F. A minimum work rest regimen and procedures for calculating ambient adjusted temperature are described in Table 4.

Table 4 – Work/Rest Schedule

Adjusted Temperature[b]	Work/Rest Regimen Normal Work Ensemble[c]	Work/Rest Regimen Impermeable Ensemble
90ºF (32.2ºC) or above	After each 45 minutes of work	After each 15 minutes of work
87.5º - 90ºF (30.8º-32.2ºC)	After each 60 minutes of work	After each 30 minutes of work
82.5º - 87.5ºF (28.1º - 30.8ºC)	After each 90 minutes of work	After each 60 minutes of work
77.5º - 82.5ºF (25.3º - 28.1ºC)	After each 120 minutes of work	After each 90 minutes of work

Adjusted Temperature[b]	Work/Rest Regimen Normal Work Ensemble[c]	Work/Rest Regimen Impermeable Ensemble
72.5º - 77.5ºF (30.8º - 32.2ºC)	After each 150 minutes of work	After each 120 minutes of work

a. For work levels of 250 kilocalories/hour (Light-Moderate Type of Work)
b. Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)
c. A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.
d. The information presented above was generated using the information provided in the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) Handbook.

In order to determine if the work rest cycles are adequate for the personnel and specific site conditions, additional monitoring of individual heart rates will be conducted during the rest cycle. To check the heart rate, count the radial pulse for 30 seconds at the beginning of the rest period. If the heart rate exceeds 110 beats per minute, shorten the next work period by one third and maintain the same rest period.

Additionally, one or more of the following control measures can be used to help control heat stress and are mandatory if any site worker has a heart rate (measure immediately prior to rest period) exceeding 115 beats per minute:

- Site workers will be encouraged to drink plenty of water and electrolyte replacement fluids throughout the day.
- On-site drinking water will be kept cool (50 to 60°F).
- A work regimen that will provide adequate rest periods for cooling down will be established, as required.
- All personnel will be advised of the dangers and symptoms of heat stroke, heat exhaustion, and heat cramps.
- Cooling devices, such as vortex tubes or cooling vests, should be used when personnel must wear impermeable clothing in conditions of extreme heat.
- Employees should be instructed to monitor themselves and co-workers for signs of heat stress and to take additional breaks as necessary.
- A shaded rest area must be provided. All breaks should take place in the shaded rest area.
- Employees must not be assigned to other tasks during breaks.
- Employees must remove impermeable garments during rest periods. This includes white Tyvek-type garments.

All employees must be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress disorders.

8.5 Cold Stress

Cold stress normally occurs in temperatures at or below freezing, or under certain circumstances, in temperatures of 40°F. Extreme cold for a short time may cause severe injury to exposed body surfaces or result in profound generalized cooling, causing death. Areas of the body that have high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. Two factors influence the development of a cold weather injury: ambient temperature and the velocity of the wind. For instance, 10°F with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at 18°F. An

equivalent chill temperature chart relating the actual dry bulb temperature and wind velocity is presented in Table 5.

Table 5 – Wind Chill Temperature Chart

Estimated Wind Speed (in mph)	Actual Temperature Reading (ºF)											
	50	**40**	**30**	**20**	**10**	**0**	**-10**	**-20**	**-30**	**-40**	**-50**	**-60**
	Equivalent Chill Temperature (ºF)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind speeds greater than 40 mph have little additional effect.)	**LITTLE DANGER Maximum danger of false sense of security.**				**INCREASING DANGER Danger from freezing of exposed flesh within one minute.**			**GREAT DANGER Flesh may freeze within 30 seconds.**				
	Trench foot and immersion foot may occur at any point on this chart.											

[This chart was developed by the U.S. Army Research Institute of Environmental Medicine, Natick, MA (Source: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents)].

Local injury resulting from cold is included in the generic term frostbite. There are several degrees of tissue damage associated with frostbite. Frostbite of the extremities can be categorized into:

- *Frost Nip or Incipient Frostbite* - characterized by sudden blanching or whitening of skin.
- *Superficial Frostbite* - skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.
- *Deep Frostbite* - tissues are cold, pale, and solid; extremely serious injury.

Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperature. It can be fatal. Its symptoms are usually exhibited in five stages: 1) shivering; 2) apathy, listlessness, sleepiness, and (sometimes) rapid cooling of the body to less than 95°F; 3) unconsciousness, glassy stare, slow pulse, and slow respiratory rate; 4) freezing of the extremities; and 5) death. Trauma sustained in freezing or sub-zero conditions requires special attention because an injured worker is predisposed to secondary cold injury. Special provisions must be made to prevent hypothermia and secondary freezing of damaged tissues in addition to providing for first aid treatment. To avoid cold stress, site personnel must wear protective clothing appropriate for the level of cold and physical activity. In addition to protective clothing, preventive safe work practices, additional training, and warming regimens may be utilized to prevent cold stress.

8.6 Safety Precautions for Cold Stress Prevention

For air temperature of 0°F or less, mittens should be used to protect the hands. For exposed skin, continuous exposure should not be permitted when air speed and temperature results in a wind chill temperature of -25°F.

At air temperatures of 36°F or less, field personnel who become immersed in water or whose clothing becomes wet must be immediately provided with a change of clothing and be treated for hypothermia.

If work is done at normal temperature or in a hot environment before entering the cold, the field personnel must ensure that their clothing is not wet as a consequence of sweating. Wet field personnel must change into dry clothes prior to entering the cold area.

If the available clothing does not give adequate protection to prevent hypothermia or frostbite, work must be modified or suspended until adequate clothing is made available or until weather conditions improve.

Field personnel handling evaporative liquid (e.g., gasoline, alcohol, or cleaning fluids) at air temperatures below 40°F must take special precaution to avoid soaking of clothing or gloves with the liquids because of the added danger of cold injury due to evaporative cooling.

8.7 Safe Work Practices

Direct contact between bare skin and cold surfaces (< 20°F) should be avoided. Metal tool handles and/or equipment controls should be covered by thermal insulating material.

For work performed in a wind chill temperature at or below 10°F, workers should be under constant protective observation (buddy system). The work rate should be established to prevent heavy sweating that will result in wet clothing. For heavy work, rest periods must be taken in heated shelters and workers should be provided with an opportunity to change into dry clothing if needed.

Field personnel should be provided the opportunity to become accustomed to cold-weather working conditions and required protective clothing. Work should be arranged in such a way that sitting or standing still for long periods is minimized.

During the warming regimen (rest period), field personnel should be encouraged to remove outer clothing to permit sweat evaporation or to change into dry work clothing. Dehydration, or loss of body fluids, occurs insidiously in the cold environment and may increase susceptibility to cold injury due to a significant change in blood flow to the extremities. Fluid replacement with warm, sweet drinks and soups is recommended. The intake of coffee should be limited because of diuretic and circulatory effects.

8.8 Biological Hazards

Biological hazards may include poison ivy, snakes, thorny bushes and trees, ticks, mosquitoes, spiders, and other pests.

8.8.1 Tick Borne Diseases

Lyme Disease - The disease commonly occurs in summer and is transmitted by the bite of infected ticks. “Hot spots” in the United States include New York, New Jersey, Pennsylvania, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

Erlichiosis - The disease also commonly occurs in summer and is transmitted by the bite of infected ticks. "Hot spots" in the United States include New York, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

These diseases are transmitted primarily by the deer tick, which is smaller and redder than the common wood tick. The disease may be transmitted by immature ticks, which are small and hard to see. The tick may be as small as a period on this page.

Symptoms of Lyme disease include a rash or a peculiar red spot, like a bull's eye, which expands outward in a circular manner. The victim may have headache, weakness, fever, a stiff neck, and swelling and pain in the joints, and eventually, arthritis. Symptoms of erlichiosis include muscle and joint aches, flu-like symptoms, but there is typically no skin rash.

Rocky Mountain Spotted Fever (RMSF) - This disease is transmitted via the bite of an infected tick. The tick must be attached 4 to 6 hours before the disease-causing organism (Rickettsia rickettsii) becomes reactivated and can infect humans. The primary symptom of RMSF is the sudden appearance of a moderate-to-high fever. The fever may persist for two to three weeks. The victim may also have a headache, deep muscle pain, and chills. A rash appears on the hands and feet on about the third day and eventually spreads to all parts of the body. For this reason, RMSF may be confused with measles or meningitis. The disease may cause death, if untreated, but if identified and treated promptly, death is uncommon.

Control - Tick repellant containing diethyltoluamide (DEET) should be used when working in tick-infested areas, and pant legs should be tucked into boots. In addition, workers should search the entire body every three or four hours for attached ticks. Ticks should be removed promptly and carefully without crushing, since crushing can squeeze the disease-causing organism into the skin. A gentle and steady pulling action should be used to avoid leaving the head or mouth parts in the skin. Hands should be protected with surgical gloves when removing ticks.

8.8.2 Poisonous Plants

Poisonous plants may be present in the work area. Personnel should be alerted to its presence and instructed on methods to prevent exposure.

Control - The main control is to avoid contact with the plant, cover arms and hands, and frequently wash potentially exposed skin. Particular attention must be given to avoiding skin contact with objects or protective clothing that have touched the plants. Treat every surface that may have touched the plant as contaminated, and practice contamination avoidance. If skin contact is made, the area should be washed immediately with soap and water and observed for signs of reddening.

8.8.3 Snakes

The possibility of encountering snakes exists, specifically for personnel working in wooded/vegetated areas. Snake venoms are complex and include proteins, some of which have enzymatic activity. The effects produced by venoms include neurotoxic effects with sensory, motor, cardiac, and respiratory difficulties; cytotoxic effects on red blood cells, blood vessels, heart muscle, kidneys, and lungs; defects in coagulation; and effects from local release of substances by enzymatic actions. Other noticeable effects

of venomous snakebites include swelling, edema, and pain around the bite, and the development of ecchymosis (the escape of blood into tissues from ruptured blood vessels).

Control - To minimize the threat of snakebites, all personnel walking through vegetated areas must be aware of the potential for encountering snakes, and the need to avoid actions potentiating encounters, such as turning over logs, etc. If a snakebite occurs, an attempt should be made to safely identify the snake via size and markings. The victim must be transported to the nearest hospital within 30 minutes; first aid consists of applying a constriction band and washing the area around the wound to remove any unabsorbed venom.

8.8.4 Spiders

Personnel may encounter spiders during work activities.

Two spiders are of concern, the black widow and the brown recluse. Both prefer dark sheltered areas such as basements, equipment sheds and enclosures, and around woodpiles or other scattered debris. The black widow is shiny black, approximately one inch long, and found throughout the United States. There is a distinctive red hourglass marking on the underside of the black widows body. The bite of a black widow is seldom fatal to healthy adults, but effects include respiratory distress, nausea, vomiting, and muscle spasms. The brown recluse is smaller than the black widow and gets its name from its brown coloring and behavior. The brown recluse is more prevalent in the southern United States. The brown recluse has a distinctive violin shape on the top of its body. The bite of the brown recluse is painful and the bite site ulcerates and takes many weeks to heal completely.

Control - To minimize the threat of spider bites, all personnel walking through vegetated areas must be aware of the potential for encountering these arachnids. Personnel need to avoid actions that may result in encounters, such as turning over logs, and placing hands in dark places such as behind equipment or in corners of equipment sheds or enclosures. If a spider bite occurs, the victim must be transported to the nearest hospital as soon as possible; first aid consists of applying ice packs and washing the area around the wound to remove any unabsorbed venom.

8.9 Noise

Exposure to noise over the OSHA action level can cause temporary impairment of hearing; prolonged and repeated exposure can cause permanent damage to hearing. The risk and severity of hearing loss increases with the intensity and duration of exposure to noise. In addition to damaging hearing, noise can impair voice communication, thereby increasing the risk of accidents on site.

Control - All personnel must wear hearing protection, with a Noise Reduction Rating (NRR) of at least 20, when noise levels exceed 85 dBA. When it is difficult to hear a co-worker at normal conversation distance, the noise level is approaching or exceeding 85 dBA, and hearing protection is necessary. All site personnel who may be exposed to noise must also receive baseline and annual audiograms and training as to the causes and prevention of hearing loss. Noise monitoring is discussed in Section 5.2, Noise Monitoring.

Whenever possible, equipment that does not generate excessive noise levels will be selected for this project. If the use of noisy equipment is unavoidable, barriers or increased distance will be used to minimize worker exposure to noise, if feasible.

8.10 Spill Control

All personnel must take every precaution to minimize the potential for spills during site operations. All on-site personnel shall immediately report any discharge, no matter how small, to the FS.

Spill control equipment and materials will be located on the site at locations that present the potential for discharge. All sorbent materials used for the cleanup of spills will be containerized and labeled appropriately. In the event of a spill, the FS will follow the provisions in Section 10.0, Emergency Procedures, to contain and control released materials and to prevent their spread to off-site areas.

8.11 Sanitation

Site sanitation will be maintained according to OSHA requirements.

8.11.1 Break Area

Breaks must be taken in the SZ, away from the active work area after site personnel go through decontamination procedures. There will be no smoking, eating, drinking, or chewing gum or tobacco in any area other than the SZ.

8.11.2 Potable Water

The following rules apply to all field operations:

- An adequate supply of potable water will be provided at each project site. Potable water must be kept away from hazardous materials or media, and contaminated clothing or equipment.
- Portable containers used to dispense drinking water must be capable of being tightly closed and must be equipped with a tap dispenser. Water must not be consumed directly from the container (drinking from the tap is prohibited) nor may it be removed from the container by dipping.
- Containers used for drinking water must be clearly marked and shall not be used for any other purpose.
- Disposable drinking cups must be provided. A sanitary container for dispensing cups and a receptacle for disposing of used cups is required.

8.11.3 Sanitary Facilities

Access to facilities for washing before eating, drinking, or smoking, or alternate methods such as waterless hand-cleaner and paper towels will be provided.

8.11.4 Lavatory

If permanent toilet facilities are not available, an appropriate number of portable chemical toilets will be provided. This requirement does not apply to mobile crews or to normally unattended site locations so long as employees at these locations have transportation immediately available to nearby toilet facilities.

8.12 Emergency Equipment

Adequate emergency equipment for the activities being conducted on site and as required by applicable sections of 29 CFR 1910 and 29 CFR 1926 will be on site prior to the commencement of project activities. Personnel will be provided with access to emergency equipment, including, but not limited to, the following:

- Fire extinguishers of adequate size, class, number, and location as required by applicable sections of 29 CFR 1910 and 1926;
- Industrial first aid kits of adequate size for the number of personnel on site; and
- Emergency eyewash and/or shower if required by operations being conducted on site.

8.13 Lockout/Tagout Procedures

Only fully qualified and trained personnel will perform maintenance procedures. Before maintenance begins, lockout/tagout procedures per OSHA 29 CFR 1910.147 will be followed.

Lockout is the placement of a device that uses a positive means, such as lock, to hold an energy or material-isolating device such that the equipment cannot be operated until the lockout device is removed. If a device cannot be locked out, a tagout system shall be used. Tagout is the placement of a warning tag on an energy or material isolating device indicating that the equipment controls may not be operated until the personnel who attached the tag remove the tag.

8.14 Electrical Safety

Electricity may pose a particular hazard to site workers due to the use of portable electrical equipment. If wiring or other electrical work is needed, a qualified electrician must perform it.

General electrical safety requirements include:

- All electrical wiring and equipment must be a type listed by Underwriters Laboratories (UL), Factory Mutual Engineering Corporation (FM), or other recognized testing or listing agency.
- All installations must comply with the National Electrical Safety Code (NESC), the National Electrical Code (NEC), or USCG regulations.
- Portable and semi-portable tools and equipment must be grounded by a multi-conductor cord having an identified grounding conductor and a multi-contact polarized plug-in receptacle.
- Tools protected by an approved system of double insulation, or its equivalent, need not be grounded. Double insulated tools must be distinctly marked and listed by UL or FM.
- Live parts of wiring or equipment must be guarded to prevent persons or objects from touching them.
- Electric wire or flexible cord passing through work areas must be covered or elevated to protect it from damage by foot traffic, vehicles, sharp corners, projections, or pinching.
- All circuits must be protected from overload.

- Temporary power lines, switchboxes, receptacle boxes, metal cabinets, and enclosures around equipment must be marked to indicate the maximum operating voltage.
- Plugs and receptacles must be kept out of water unless of an approved submersible construction.
- All extension cord outlets must be equipped with ground fault circuit interrupters (GFCI).
- Attachment plugs or other connectors must be equipped with a cord grip and be constructed to endure rough treatment.
- Extension cords or cables must be inspected prior to each use and replaced if worn or damaged. Cords and cables must not be fastened with staples, hung from nails, or suspended by bare wire.
- Flexible cords must be used only in continuous lengths without splice, with the exception of molded or vulcanized splices made by a qualified electrician.

8.15 Lifting Safety

Using proper lifting techniques may prevent back strain or injury. The fundamentals of proper lifting include:

- Consider the size, shape, and weight of the object to be lifted. A mechanical lifting device or additional persons must be used to lift an object if it cannot be lifted safely alone.
- The hands and the object should be free of dirt or grease that could prevent a firm grip.
- Gloves must be used, and the object inspected for metal slivers, jagged edges, burrs, or rough or slippery surfaces.
- Fingers must be kept away from points that could crush or pinch them, especially when putting an object down.
- Feet must be placed far enough apart for balance. The footing should be solid and the intended pathway should be clear.
- The load should be kept as low as possible, close to the body with the knees bent.
- To lift the load, grip firmly and lift with the legs, keeping the back as straight as possible.
- A worker should not carry a load that he or she cannot see around or over.
- When putting an object down, the stance and position are identical to that for lifting; the legs are bent at the knees, and the back is straight as the object is lowered.

8.16 Ladder Safety

When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (9 m) above the upper landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder. In no case shall the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support.

- Ladders shall be maintained free of oil, grease, and other slipping hazards.

- Ladders shall not be loaded beyond the maximum intended load for which they were built, or beyond their manufacturer's rated capacity.
- Ladders shall be used only for the purpose for which they were designed.
- Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).
- Wood job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one-eighth the working length of the ladder.
- Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal, as measured to the back side of the ladder.
- Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement.
- Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement. Slip-resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces, including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery.
- Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder.
- The area around the top and bottom of ladders shall be kept clear.
- The top of a non-self-supporting ladder shall be placed with the two rails supported equally unless it is equipped with a single support attachment.
- Ladders shall not be moved, shifted, or extended while occupied.
- Ladders shall have non-conductive side rails if they are used where the employee or the ladder could contact exposed energized electrical equipment.
- The top, top step, or the step labeled that it or any step above it should not be used as a step.
- Cross-bracing on the rear section of stepladders shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- Ladders shall be inspected by the HSM for visible defects on a daily basis and after any occurrence that could affect their safe use.
- Portable ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; corroded components; or other faulty or defective components shall either be immediately marked in a manner that readily identifies them as defective or be tagged with "Do Not Use" or similar language and shall be withdrawn from service.
- Fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; or corroded components; shall be withdrawn from service.
- Ladder repairs shall restore the ladder to a condition meeting its original design criteria, before the ladder is returned to use.
- Single-rail ladders shall not be used.
- When ascending or descending a ladder, the user shall face the ladder.

- Each employee shall use at least one hand to grasp the ladder when progressing up and/or down the ladder.
- An employee shall not carry any object or load that could cause the employee to lose balance and fall.

8.17 Traffic Safety

The project site may be located adjacent to a public roadway where exposure to vehicular traffic is likely. Traffic may also be encountered as vehicles enter and exit the area. To minimize the likelihood of project personnel and activities being affected by traffic, the following procedures will be implemented.

Cones must be placed along the shoulder of the roadway starting 100 feet from the work area to alert passing motorists to the presence of personnel and equipment. A "Slow" or "Men Working" sign must be placed at the first cone. Barricades with flashing lights should be placed between the roadway and the work area.

During activities along a roadway, equipment will be aligned parallel to the roadway to the extent feasible, facing into the oncoming traffic so as to place a barrier between the work crew and the oncoming traffic. All crewmembers must remain behind the equipment and the traffic barrier.

All site personnel who are potentially exposed to vehicular traffic must wear an outer layer of orange warning garments, such as vests, jackets, or shirts. If work is performed in hours of dusk or darkness, workers will be outfitted with reflective garments either orange, white (including silver-coated reflective coatings or elements that reflect white light), yellow, fluorescent red-orange, or fluorescent yellow-orange.

The flow of traffic into and out of the adjacent business must be assessed, and precautions taken to warn motorists of the presence of workers and equipment. Where possible, vehicles should be aligned to provide physical protection of people and equipment.

9.0 SITE-SPECIFIC HAZARDS AND CONTROL MEASURES

9.1 Evaluation of Hazards

The evaluation of hazards is provided as a quick reference as to the known conditions for the Site, wherein the level of detail for each of the subsections is identified.

9.1.1 Hazard Characteristics

Existing information for Site:
__X__ Detailed _____ Preliminary _____ None

Hazardous/Contaminated Material Form(s):
__X__ Solid __X__ Liquid _____ Sludge ___ Gas X Vapor

Containment Type(s):
_____ Drum __X__ Tank _____ Pit _____ Debris
_____ Pond _____ Lagoon Other:

Hazardous Material Characteristics:

X Volatile	____ Corrosive	____ Reactive	____ Radioactive
____ Ignitable	X Toxic	X Unknown	

Routes of Exposure:

X Oral	X Dermal	X Eye	X Respiratory

9.1.2 Potential Health and Safety Hazards

X Heat	____Congested areas
X Cold	X General Construction
____ Confined space entry	X Physical injury
____ Oxygen depletion	X Electrical hazards
____ Asphyxiation	X Handling and product transfer
X Excavation	X Fire
X Cave-ins	X Explosion
X Falls, slippage	X Biological Hazards
	X Plants – Poison Ivy, Poison Oak
	X Insects – Ticks
	X Insects – Mosquitoes
	X Insects – Bees and Wasps
	X Rats and Mice
X Heavy equipment	____ Non-ionizing Radiation (i.e. UV, IR, etc.)

____ Other: Potential Ignition Hazard.

9.2 Field Activities, Hazards, and Control Procedures

The following task-specific safety analyses identify potential health, safety, and environmental hazards associated with each type of field activity. Because of the complex and changing nature of field projects, supervisors must continually inspect the site to identify hazards that may affect on-site personnel, the community, or the environment. The FS must be aware of these changing conditions and discuss them with the PM whenever these changes impact employee health, safety, the environment, or performance of the project. The FS will keep on-site personnel informed of the changing conditions, and the PM will write and/or approve addenda or revisions to this HASP as necessary.

9.2.1 Mobilization/Construction Stakeout

Description of Tasks

Site mobilization will include establishing excavation locations, determining the location of utilities and other installations, and establishing work areas. Mobilization will also include setting up equipment and establishing a temporary site office. A break area will be set up outside of regulated work areas. Mobilization may involve clearing areas for the SZ and CRZ. During this initial phase, project personnel will walk the site to confirm the existence of anticipated hazards and identify safety and health issues that may have arisen since the writing of this plan.

Hazard Identification

The hazards of this phase of activity are associated with heavy equipment operation, manual materials handling, installation of temporary on-site facilities, and manual site preparation.

Manual materials handling and manual site preparation may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Installation of temporary field office and support facilities may expose personnel to electrical hazards, underground and overhead utilities, and physical injury due to the manual lifting and moving of materials. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat- or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

Controls
Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

9.2.2 Demolition/Site Clearing

Description of Tasks
Site clearance will involve manual or mechanical removal of objects impeding access to the construction footprint. These obstructions are both natural and man-made items and will include, but not be limited to, fabricated metal and concrete structures, trees, vegetation, rubble, and miscellaneous trash/debris.

Hazard Identification
Hazards associated with demolition and site clearance include personnel working in and around potentially unstable structures, or locations of potential contact with hazardous chemicals, utilities, and/or falling objects. This task will involve manual, as well as mechanical demolition/clearance efforts so exertion and equipment hazards exist.

Controls
PPE – Personnel shall be protected from hazards of irritant and toxic plants and suitably instructed in the first aid treatment available.

Preparatory Operations – Prior to permitting employees to start demolition operations, an engineering survey shall be made, by a licensed Professional Engineer, of the structure to determine the stability of the structure. Any adjacent structure shall where personnel may be exposed shall also be similarly checked. The PO shall have in writing evidence that such a survey has been performed. All structural instabilities shall be shored or braced, under the supervision of a licensed Professional Engineer, prior to access by an FP.

Utilities – All electric, gas, water, steam, sewer, and other service lines shall be shut off, caped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company that is involved shall be notified in advance. If

it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary.

Hazardous Substances – It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

Falling Debris/Objects – No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effective protected. Access to the area where falling objects/debris may be encountered must be gated and controlled.

Structural Collapse – Structural or load supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load. Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are not of sufficient strength to support the imposed load.

Rollover Guards – All equipment used in site clearing operations shall be equipped with rollover guards meeting the applicable requirements. In addition, rider-operated equipment shall be equipped with an overhead and rear canopy guard meeting the applicable requirements.

Inspections – During demolition, continuing inspections by a licensed Professional Engineer shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, walls, or loosened material. No FP shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

9.2.3 Excavation and Cut/Fill Operations

9.2.3.1 Excavation/Trenching

Description of Tasks

This task includes the excavation of contaminated soils and superficial debris. Excavation depths vary across the site.

Hazard Identification

The hazards of this activity are associated with heavy equipment operation, subsurface intrusion, manual materials handling, stockpiling, and disposal. Subsurface intrusion presents hazards associated with negotiating buried utilities, cave-ins of the excavated areas, and regress methods for personnel working inside the excavated areas. Disruption of contaminated soil also presents a health hazard.

Controls

Underground Utilities – The estimated locations of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during the excavation work, shall be determined prior to opening an excavation. Utility companies or owners shall be contacted (“Call Before You Dig”) within established or customary local response times,

advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by save and acceptable means. While the excavation is open, underground installations shall be protected, supported, or removed, as necessary, to safeguard site personnel.

Cave-Ins – Project personnel in an excavation shall be protected from cave-ins by an adequate protective system, except when:

- Excavations are made entirely in stable rock or excavations are less than five feet in depth and examination of the ground by the SSO provides no indication of a potential cave-in.
- Protective systems shall have the capacity to resist, without failure, all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

Project personnel shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

Daily inspections of excavations, the adjacent areas, and protective systems shall be made by the SSO for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the SSO prior to the start of work and as needed throughout operations. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when project personnel exposure can be reasonably anticipated.

Where the SSO finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed personnel shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

Excavation Egress – A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet or lateral travel for project personnel.

9.2.3.2 Heavy Equipment Operation

Description of Tasks

Heavy equipment to be used for this task include, but are not limited to, excavators, dozers, dump trucks, and water sprayers (if required).

Hazard Identification

The most common type of accident that occurs in material handling operations is the “caught between” situation when a load is being handled and an object gets caught

between two moving parts of the equipment. Operation of the heavy construction equipment may produce harmful noise.

Controls

Equipment Inspection – All vehicles in use shall be checked prior to operation to ensure that all parts, equipment, and accessories that affect safe operations are in proper operating condition and free from defects. All defects shall be corrected before the vehicle is placed in service.

Ground Guides – No personnel shall use any motor vehicle, earthmoving, or compacting equipment having an obstructed view to the rear, unless:

- The vehicle has a reverse signal alarm distinguishable from the surrounding noise level; or
- The vehicle is backed up only when an observer signals that it is safe to do so.

Blocking – Heavy machinery, equipment, or parts thereof that are suspended or held aloft shall be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

Noise – Control measures for noise are addressed in Section 4.9.

Traffic – Control measures for traffic are addressed in Section 8.17.

9.2.3.3 Disturbance/Handling of Contaminated Material

Description of Tasks

After the contaminated soil is excavated from below the Site's surface, the material will be stockpiled, dried, and either transported offsite or relocated and backfilled on site.

Hazard Identification

The hazards associated with materials handling include contact of the contaminated material with project personnel, or cross contamination with other site soil.

Controls

Cross Contamination – Following excavation, contaminated soil stockpiles will be placed on a structure constructed to separate the material from the site soil and collect any groundwater leachate. The material shall be covered to prevent storm water erosion or migration of contaminants through storm water.

Air Monitoring – Air and particulate monitoring will be conducted during soil excavation activities to assess the potential for exposure to airborne COCs. If the results of air monitoring indicate the presence of organic vapors or particulates in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. A description of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

Traffic – Control measures for traffic are addressed in Section 8.17.

9.2.4 Drilling/Subsurface Intrusion Activities

Description of Tasks

This component of work includes the project tasks of delineation and sampling the PCB–impacted soil, installation of the groundwater cutoff wall, and in-situ soil grouting. Geotechnical testing of the grout and existing site soils will also be conducted.

Hazard Identification

The primary physical hazards for this activity are associated with the use of soil boring and grouting equipment. The equipment is hydraulically powered and uses static force and dynamic percussion force to advance sampling and penetrating tubes.

Accidents can occur as a result of improperly placing the equipment on uneven or unstable terrain or failing to adequately secure the equipment prior to the start of operations. Overhead utility lines can create hazardous conditions if contacted by the equipment. Underground installations such as electrical lines, conduit, and product lines pose a significant hazard if contacted.

Controls

Geoprobe and Drill Rig Safety Procedures - The operator of the equipment must possess required state or local licenses to perform such work. All members of the crew shall receive site-specific training prior to beginning work.

The operator is responsible for the safe operation of the rig, as well as the crew's adherence to the requirements of this HASP. The operator must ensure that all safety equipment is in proper condition and is properly used. The members of the crew must follow all instructions of the operator, wear all personal protective equipment, and be aware of all hazards and control procedures. The operator and crew must participate in the Daily Safety Meetings and be aware of all emergency procedures.

Equipment Inspection - Each day, prior to the start of work, the rig and associated equipment must be inspected by the operator. The following items must be inspected:

- Vehicle condition;
- Proper storage of equipment;
- Condition of all hydraulic lines;
- Fire extinguisher; and
- First aid kit.

Equipment Set Up - The drill rig must be properly blocked and leveled prior to raising the derrick. The wheels which remain on the ground must be chocked. The leveling jacks shall not be raised until the derrick is lowered. The rig shall be moved only after the derrick has been lowered.

All well sites will be inspected by the driller prior to the location of the rig to verify a stable surface exists. This is especially important in areas where soft, unstable terrain is common.

The drill rig must be properly blocked and leveled prior to raising the derrick. Blocking provides a more stable drilling structure by evenly distributing the weight of the rig. Proper blocking ensures that differential settling of the rig does not occur.

When the ground surface is soft or otherwise unstable, wooden blocks, at least 24" by 24" and 4" to 8" thick shall be placed between the jack swivels and the ground. The emergency brake shall be engaged, and the wheels that are on the ground shall be chocked.

Rules for Intrusive Activity - Before beginning any intrusive activity, the existence and location of underground pipe, conduit, electrical equipment, and other installations will be determined. This will be done, if possible, by contacting the appropriate client representative to mark the location of the lines. "Call Before You Dig" will verify the potential for encountering subsurface utilities. If the client's knowledge of the area is incomplete, an appropriate device, such as a magnetometer, will be used to locate the line.

Combustible gas readings of the general work area will be made regularly in areas where and/or during operations when the presence of flammable vapors or gases is suspected, such as during intrusive activities (see Section 5.1). Operations must be suspended and corrective action taken if the airborne flammable concentration reaches 10% of the LEL in the immediate area (a one-foot radius) of the point of drilling, or near any other ignition sources.

Overhead Electrical Clearances - If equipment is operated in the vicinity of overhead power lines, the power to the lines must be shut off or the equipment must be positioned and blocked such that no part, including cables, can come within the minimum clearances as follows:

Nominal System Voltage	**Minimum Required Clearance**
0-50kV	10 feet
51-100kV	12 feet
101-200kV	15 feet
201-300kV	20 feet
301-500kV	25 feet
501-750kV	35 feet
751-1,000kV	45 feet

When the drill rig is in transit, with the boom lowered and no load, the equipment clearance must be at least 4 feet for voltages less than 50kV, 10 feet for voltages of 50 kV to 345 kV, and 16 feet for voltages above 345 kV.

Hoisting Operations - Drillers should never engage the rotary clutch without watching the rotary table, and ensuring it is clear of personnel and equipment.

Unless the drawworks is equipped with an automatic feed control, the brake should not be left unattended without first being tied down.

Drill pipe, auger strings or casing should be picked up slowly. Drill pipe should not be hoisted until the driller is sure that the pipe is latched in the elevator, or the derrickman has signaled that he may safely hoist the pipe.

During instances of unusual loading of the derrick or mast, such as when making an unusually hard pull, only the driller should be on the rig floor; no one else should be on the rig or derrick.

The brakes on the drawworks of the drill rig should be tested by the driller each day. The brakes should be thoroughly inspected by a competent individual each week.

A hoisting line with a load imposed should not be permitted to be in direct contact with any derrick member or stationary equipment, unless it has been specifically designed for line contact.

Workers should never stand near the borehole whenever any wire line device is being run.

Hoisting control stations should be kept clean and controls labeled as to their functions.

Catline Operations - Only experienced workers will be allowed to operate the cathead controls. The kill switch must be clearly labeled and operational prior to operation of the catline. The cathead area must be kept free of obstructions and entanglements.

The operator should not use more wraps than necessary to pick up the load. More than one layer of wrapping is not permitted.

Personnel should not stand near, step over, or go under a cable or catline which is under tension.

Employees rigging loads on catlines shall:

- Keep out from under the load;
- Keep fingers and feet where they will not be crushed;
- Be sure to signal clearly when the load is being picked;
- Use standard visual signals only and not depend on shouting to coworkers; and
- Make sure the load is properly rigged, since a sudden jerk in the catline will shift or drop the load.

Wire Rope - When two wires are broken or rust or corrosion is found adjacent to a socket or end fitting, the wire rope shall be removed from service or re-socketed. Special attention shall be given to the inspection of end fittings on boom support, pendants, and guy ropes.

Wire rope removed from service due to defects shall be cut up or plainly marked as being unfit for further use as rigging.

Wire rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope; the clip nuts shall be re-tightened immediately after initial load carrying use and at frequent intervals thereafter.

When a wedge socket fastening is used, the dead or short end of the wire rope shall have a clip attached to it or looped back and secured to itself by a clip; the clip shall not be attached directly to the live end.

Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

Except for eye splices in the ends of wires and for endless wire rope slings, wire rope used in hoisting, lowering, or pulling loads, shall consist of one continuous piece without knot or splice.

An eye splice made in any wire rope shall have not less that five full tucks.

Wire rope shall not be secured by knots. Wire rope clips shall not be used to splice rope.

Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire clips or knots.

Pipe/Auger Handling - Pipe and auger sections shall be transported by cart or carried by two persons. Individuals should not carry auger or pipe sections without assistance.

Workers should not be permitted on top of the load during loading, unloading, or transferring of pipe or rolling stock.

Employees should be instructed never to try to stop rolling pipe or casing; they should be instructed to stand clear of rolling pipe.

Slip handles should be used to lift and move slips. Employees are not permitted to kick slips into position.

When pipe is being hoisted, personnel should not stand where the bottom end of the pipe could whip and strike them.

Pipe and augers stored in racks, catwalks or on flatbed trucks should be secured to prevent rolling.

9.2.5 Subsurface Chemical Sample Collection/Analysis

Description of Tasks

This sub-task consists of the collection of soil samples for subsequent field and laboratory analysis. The physical hazards of soil sampling are primarily associated with the sample collection methods, procedures utilized, and the environment itself.

Hazard Identification

Incidental contact with COCs is the primary hazard associated with sampling the stabilized material. This contact may occur through the manipulation of sample media and equipment, manual transfer of media into sample containers, and proximity of operations to the breathing zone. The primary hazards associated with these sampling procedures are not potentially serious; however, other operations in the area, or the conditions under which samples must be collected, may present chemical and physical hazards. The hazards directly associated with sampling procedures are generally limited to strains/sprains and potential eye hazards. Potential chemical hazards may include contact with media containing site COCs and potential contact with chemicals used for equipment decontamination.

Controls
PPE – To control dermal exposure during sampling activities, a minimum of Level D protection will be worn. If necessary, based on field observations and site conditions, air monitoring may be conducted during sediment sampling activities. If the results of air monitoring indicate the presence of airborne contaminants in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. A description of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

9.2.6 UST Closure

9.2.6.1 Working in Confined Spaces

Description of Tasks
The project will involve the closure of several USTs.

Hazard Identification
Closure activities may require the entrance into confined spaces to facilitate cleaning and removal of the USTs.

Controls
All personnel required to enter into confined or enclosed spaces must be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment. The PO shall comply with all specific regulations that apply to work in dangerous or potentially dangerous areas.

9.2.6.2 Working with Compressed Air

Description of Tasks
The proposed method of purging the USTs includes the injection of compressed gas into the tank and attached piping network.

Hazard Identification
Uncontrolled release of the highly pressured air can cause injury to FP during this task. Cylinders must also be properly managed to ensure they are not compromised during storage and/or use.

Controls
Pressure Regulation – Compressed air used for cleaning purposes shall be reduced to less than 30 pounds per square inch and then only with effective chip guarding and personal protective equipment.

Cylinder Storage – Valve protection caps shall be in place and secured when compressed gas cylinders are transported, moved, or stored. Cylinder valves shall be closed when work is finished and when cylinders are empty or are moved. Compressed gas cylinders shall be secured in an upright position at all times, except if necessary for short periods of time when cylinders are actually being hoisted or carried. Cylinders shall be placed in a location where they cannot become part of an electrical circuit.

9.2.7 Site Capping System Construction

Refer to Section 8.0 for general safety procedures.

9.2.8 Creek Relocation

Refer to Section 8.0 for general safety procedures.

9.2.9 Decontamination

All equipment will be decontaminated before leaving the site. Personnel involved in decontamination activities may be inadvertently exposed to skin contact with contaminated materials and chemicals brought from the EZ. Personnel involved in decontamination activities must wear PPE that is, at a minimum, one level below the level worn by personnel working in the EZ.

9.2.10 Demobilization

Demobilization involves the removal of all tools, equipment, supplies, and vehicles brought to the site. The hazards of this phase of activity are associated with heavy equipment operation and manual materials handling.

Manual materials handling may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Heavy equipment operation presents noise and vibration hazards, and hot surfaces, to operators. Personnel in the vicinity of heavy equipment operation may be exposed to physical hazards resulting in fractures, contusions, and lacerations and may be exposed to high noise levels. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat-or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

9.3 Chemical Hazards

The chemical hazards associated with site operations are related to inhalation, ingestion, and skin exposure to site COCs. Concentrations of airborne COCs during site tasks may be measurable and will require air monitoring during certain operations. Air monitoring requirements for site tasks are outlined in Section 5.1.

COCs at the site include heavy metals, some VOC compounds, some SVOC compounds and potentially other industrial chemicals including PCBs and pesticides.

The potential for inhalation of site COCs is low. The potential for dermal contact with soils containing site COCs during remedial operations is moderate. Table 6 lists the primary contaminants that have been identified at the Site and the media in which they are present.

Table 6 – List of Primary Contaminants

Media: Soil		
Metals	**Concentration (mg/kg)**	**Applicable Monitoring Instrument**
Cobalt	36.4	Not Applicable
Nickel	48.2	Not Applicable
Copper	52.5	Not Applicable
Vanadium	117	Not Applicable
Zinc	141	Not Applicable
Lead	121	Not Applicable
Mercury	0.68	Not Applicable
Pesticides/PCBs	**Concentration (mg/kg)**	**Applicable Monitoring Instrument**
4,4'-DDE	0.0058	Not Applicable
4,4'-DDT	0.0078	Not Applicable

Media: Groundwater		
Volatile Organic Compounds	**Concentration (ppb)**	**Applicable Monitoring Instrument**
Chloroform	22	PID
Phenol	3.6	PID

10.0 EMERGENCY PROCEDURES

10.1 General

Prior to the start of operations, the work area will be evaluated for the potential for fire, contaminant release, or other catastrophic event. Unusual conditions or events, activities, chemicals, and conditions will be reported to the FS/SSO immediately.

The FS/SSO will establish evacuation routes and assembly areas for the site. All personnel entering the site will be informed of this route and the assembly area.

10.2 Emergency Response

If an incident occurs, the following steps will be taken:

- The FS/SSO will evaluate the incident and assess the need for assistance and/or evacuation;
- The FS/SSO will call for outside assistance as needed;
- The FS/SSO will ensure the PM is notified promptly of the incident; and
- The FS/SSO will take appropriate measures to stabilize the incident scene.

10.2.1 Fire

In the case of a fire at the site, the FS/SSO will assess the situation and direct fire-fighting activities. The FS/SSO will ensure that the PM is immediately notified of any fires. Site personnel will attempt to extinguish the fire with available extinguishers, if safe to do so. In the event of a fire that site personnel are unable to safely extinguish with one fire extinguisher, the local fire department will be summoned.

10.2.2 Contaminant Release

In the event of a contaminant release, the following steps will be taken:

- Notify FS/SSO immediately;
- Evacuate immediate area of release;
- Conduct air monitoring to determine needed level of PPE; and
- Don required level of PPE and prepare to implement control procedures.

The FS/SSO has the authority to commit resources as needed to contain and control released material and to prevent its spread to off-site areas.

10.3 Medical Emergency

All employee injuries must be promptly reported to the SSO/FS, who will:

- Ensure that the injured employee receives prompt first aid and medical attention;
- In emergency situations, the worker is to be transported by appropriate means to the nearest urgent care facility (normally a hospital emergency room); and
- If the injured person is a SESI employee, notify SESI at 973-808-9050.

10.3.1 Emergency Care Steps

Survey the scene. Determine if it is safe to proceed. Try to determine if the conditions that caused the incident are still a threat. Protect yourself from exposure before attempting to rescue the victim.

- Do a primary survey of the victim. Check for airway obstruction, breathing, and pulse. Assess likely routes of chemical exposure by examining the eyes, mouth, nose, and skin of the victim for symptoms.
- Phone Emergency Medical Services (EMS). Give the location, telephone number used, caller's name, what happened, number of victims, victim's condition, and help being given.
- Maintain airway and perform rescue breathing as necessary.
- Perform CPR as necessary.
- Do a secondary survey of the victim. Check vital signs and do a head-to-toe exam.

Treat other conditions as necessary. If the victim can be moved, take him/her to a location away from the work area where EMS can gain access.

10.4 First Aid - General

All persons must report any injury or illness to their immediate supervisor or the FS. Trained personnel will provide first aid. Injuries and illnesses requiring medical treatment must be documented. The FS and SSO must fill out an accident/incident report as soon as emergency conditions no longer exist and first aid and/or medical treatment has been ensured. The report must be completed and submitted to the PM within 24 hours after the incident.

If first-aid treatment is required, first aid kits are kept at the CRZ. If treatment beyond first aid is required, the injured person(s) should be transported to the medical facility. If the injured person is not ambulatory or shows any sign of not being in a comfortable and stable condition for transport, then an ambulance/paramedics should be summoned. If there is any doubt as to the injured worker's condition, it is best to let the local paramedic or ambulance service examine and transport the worker.

10.4.1 First Aid - Inhalation

Any employee complaining of symptoms of chemical overexposure as described in Section 4, General Site Safety Procedures, will be removed from the work area and transported to the designated medical facility for examination and treatment.

10.4.2 First Aid - Ingestion

Call EMS and consult a poison control center for advice. If available, refer to the MSDS for treatment information. If the victim is unconscious, keep them on their side and clear the airway if vomiting occurs.

10.4.3 First Aid - Skin Contact

Project personnel who have had skin contact with contaminants will, unless the contact is severe, proceed through the CRZ, to the wash area. Personnel will remove any contaminated clothing, and then flush the affected area with water for at least 15

minutes. The worker should be transported to the medical facility if he/she shows any sign of skin reddening, irritation, or if he/she requests a medical examination.

10.4.4 First Aid - Eye Contact

Project personnel who have had contaminants splashed in their eyes or who have experienced eye irritation while in the EZ, must immediately proceed to the eyewash station in the CRZ. Do not decontaminate prior to using the eyewash. Remove whatever protective clothing is necessary to use the eyewash. Flush the eye with clean running water for at least 15 minutes. Arrange prompt transport to the designated medical facility.

10.5 Reporting Injuries, Illnesses, and Safety Incidents

Injuries and illnesses, however minor, will be reported to the FS immediately. The FS will complete an injury report and submit it to the HSM, and the PM by end of shift.

10.6 Emergency Information

The means to summon local public response agencies such as police, fire, and ambulance will be reviewed in the daily safety meeting. These agencies are identified in Table 7.

Table 7 – Emergency Contacts

Local Emergency Contacts	**Telephone No.**
EMERGENCY	911
Montefiore New Rochelle Hospital	(914) 632-5000
Police Emergency	911
Fire Emergency	911
Rescue Squad	911
Ambulance	911
Miscellaneous Contacts	**Telephone No.**
N.Y. Poison Control Center	(800) 222-1222
National Response Center and Terrorist Hotline	(800) 424-8802
Center for Disease Control	(800) 311-3435
Utility Mark-Out	(800) 962-7962

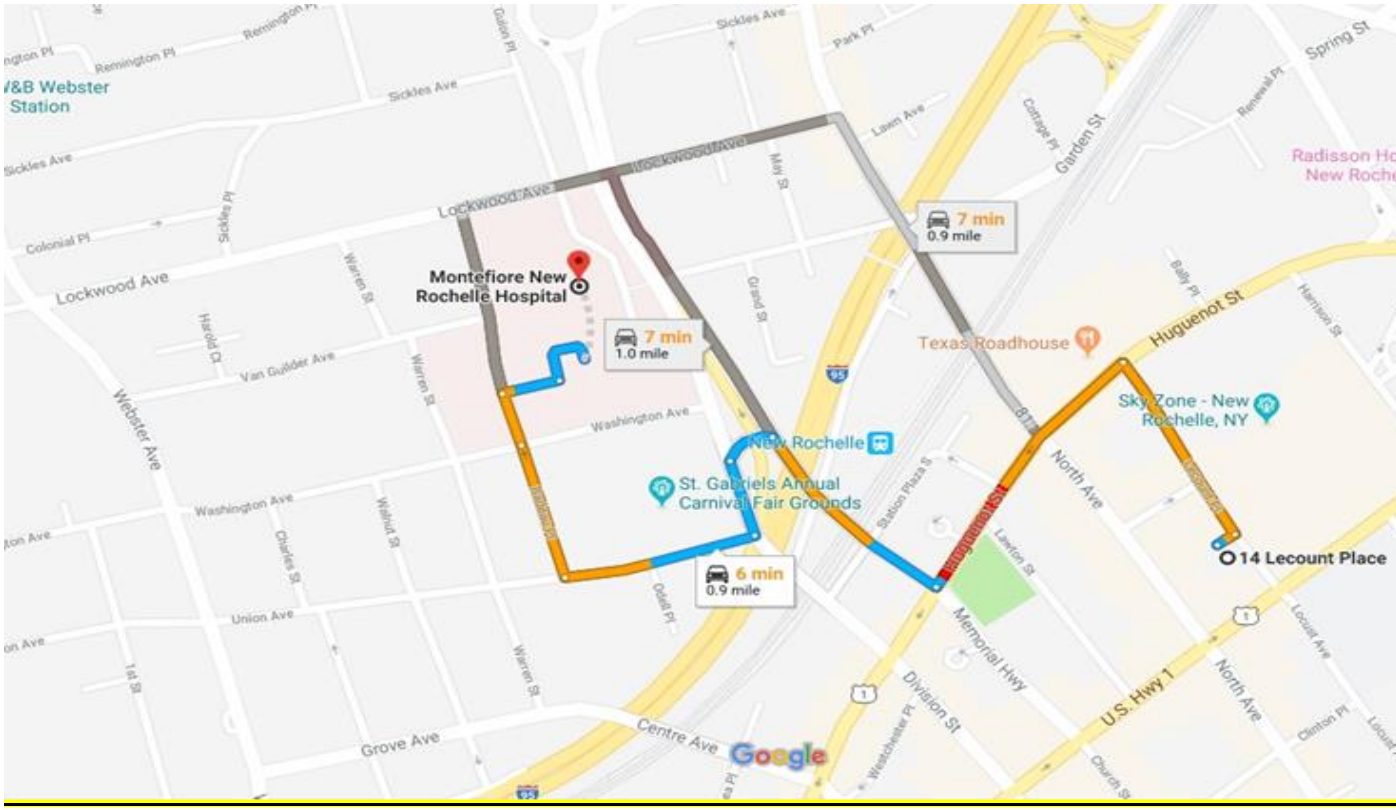
10.6.1 Directions to Hospital

Montefiore New Rochelle Hospital
W677+52 New Rochelle, New York

(914) 632-5000

Directions to Hospital:
Turn Left onto LeCount Place
Follow LeCount Place to Huguenot Street
Turn Left onto Huguenot Street
Turn Right onto Memorial Highway
Turn Left onto Division Street
Turn Right onto Union Avenue
Turn Right onto Badeau Place

Continue to Glover Johnson Place
Turn Right
Turn Left
The Hospital is on the Left



11.0 LOGS, REPORTS, AND RECORD KEEPING

The following is a summary of required health and safety logs, reports, and record keeping for the operations at the subject site.

11.1 HASP Field Change Request

To be completed for initiating a change to the HASP. PM approval is required. The original will be kept in the project file (See Attachment 3).

11.2 Medical and Training Records

The HSM must obtain and keep a log of personnel meeting appropriate training and medical qualifications for the site work. The log will be kept in the project file. Each company's Human Resources Department will maintain medical records, in accordance with 29 CFR 1910.1020.

11.3 Exposure Records

Any personnel monitoring results, laboratory reports, calculations, and air sampling data sheets are part of an employee exposure record. These records will be kept in accordance with 29 CFR 1910.1020. For SESI employees, the originals will be sent to the Human Resources Manager. For subcontractor employees, the original file will be sent to the subcontractor employer with a copy maintained in the SESI project file.

11.4 Accident/Incident Report

Any accident/incident reports must be completed following procedures given in Section 10.5 of this HASP. The originals will be sent to the HSM for maintenance. A copy of the forms will be kept in the project file. (See Attachment 4)

11.5 OSHA Form 200

An OSHA Form 200 (Log of Occupational Injuries and Illnesses) will be kept at the project site. All recordable injuries or illnesses will be recorded on this form. At the end of the project, the original will be sent to the Human Resources Manager for maintenance. Subcontractor employees must also meet the requirements of maintaining an OSHA 200 Form. The accident/incident report meets the requirements of the OSHA Form 101 (Supplemental Record), which must be maintained with the OSHA Form 200 for all recordable injuries or illnesses.

11.6 On-Site Health and Safety Field Logbooks

The HSM or designee will maintain an on-site health and safety log book in which daily Site conditions, activities, personnel, and significant events will be recorded. Calibration records and personnel monitoring results, if available, will also be recorded in the field logbook. The original logbook will be kept in the project file.

Whenever any personnel monitoring is conducted onsite, the monitoring results will be noted in the filed logbook. These will become part of the exposure records file and will be maintained by the HSM.

A signatory page is included (See Attachment 5) and is to be signed by those working on and/or visiting the site.

11.7 Material Safety Data Sheets

Material Safety Data Sheets (MSDS) will be obtained and kept on file at the project site for each hazardous chemical brought to, use, or stored at the Site (See Attachment 6).

ATTACHMENT 1

OSHA FORMS 300, 3001, AND 301

OSHA's Form 301
Injury and Illness Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by _____

Title _____

Phone (_____)_____-_____ Date ____/ ____/ ____

Information about the employee

1) Full name _____

2) Street _____

City _____ State _____ ZIP _____

3) Date of birth ____/ ____/ ____

4) Date hired ____/ ____/ ____

5) ☐ Male
☐ Female

Information about the physician or other health care professional

6) Name of physician or other health care professional _____

_____

7) If treatment was given away from the worksite, where was it given?

Facility _____

Street _____

City _____ State _____ ZIP _____

8) Was employee treated in an emergency room?
☐ Yes
☐ No

9) Was employee hospitalized overnight as an in-patient?
☐ Yes
☐ No

Information about the case

10) Case number from the *Log* _____ *(Transfer the case number from the Log after you record the case.)*

11) Date of injury or illness ____/ ____/ ____

12) Time employee began work _____ AM / PM

13) Time of event _____ AM / PM ☐ Check if time cannot be determined

14) ***What was the employee doing just before the incident occurred?*** Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. *Examples:* "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."

15) ***What happened?*** Tell us how the injury occurred. *Examples:* "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

16) ***What was the injury or illness?*** Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or sore." *Examples:* "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."

17) ***What object or substance directly harmed the employee?*** *Examples:* "concrete floor"; "chlorine"; "radial arm saw." *If this question does not apply to the incident, leave it blank.*

18) ***If the employee died, when did death occur?*** Date of death ____/ ____/ ____

Public reporting burden for this collection of information is estimated to average 22 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about this estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20__ __

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name _____

City _____ State _____

Identify the person			Describe the case			Classify the case (CHECK ONLY ONE box for each case based on the most serious outcome for that case:)				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job title (*e.g., Welder*)	(D) Date of injury or onset of illness	(E) Where the event occurred (*e.g., Loading dock north end*)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (*e.g., Second degree burns on right forearm from acetylene torch*)	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other recordable cases (J)	Away from work (K)	On job transfer or restriction (L)	Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)
____			__/__ month/day			☐	☐	☐	☐	____ days	____ days	☐	☐	☐	☐	☐	☐
____			__/__ month/day			☐	☐	☐	☐	____ days	____ days	☐	☐	☐	☐	☐	☐
____			__/__ month/day			☐	☐	☐	☐	____ days	____ days	☐	☐	☐	☐	☐	☐
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____			__/__ month/day			☐	☐	☐	☐	____ days	____ days	☐	☐	☐	☐	☐	☐
Page totals ➤						____	____	____	____	____	____	____	____	____	____	____	____

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Injury (1) Skin disorder (2) Respiratory condition (3) Poisoning (4) Hearing loss (5) All other illnesses (6)

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 20__ __

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
_____	_____	_____	_____
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
_____	_____
(K)	(L)

Injury and Illness Types

Total number of . . .	(M)		
(1) Injuries	_____	(4) Poisonings	_____
		(5) Hearing loss	_____
(2) Skin disorders	_____	(6) All other illnesses	_____
(3) Respiratory conditions	_____		

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name _____

Street _____

City _____ State _____ ZIP _____

Industry description (*e.g., Manufacture of motor truck trailers*)

_____

Standard Industrial Classification (SIC), if known (*e.g., 3715*)

__ __ __ __

OR

North American Industrial Classification (NAICS), if known (e.g., 336212)

__ __ __ __ __ __

Employment information *(If you don't have these figures, see the Worksheet on the back of this page to estimate.)*

Annual average number of employees _____

Total hours worked by all employees last year _____

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

_____ _____
Company executive Title

( ) - / /
Phone Date

ATTACHMENT 2

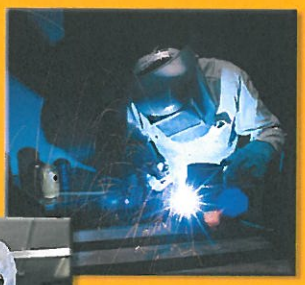
OSHA POSTER

Job Safety and Health

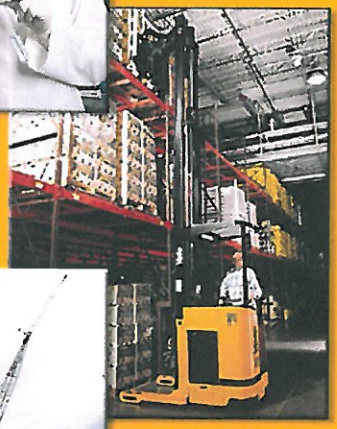
It's the law!

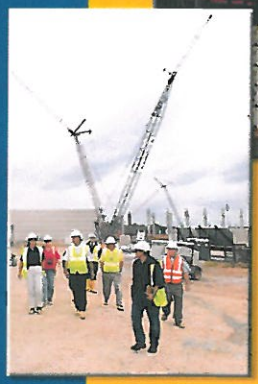
OSHA®

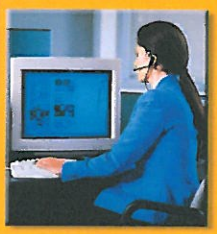
Occupational Safety and Health Administration
U.S. Department of Labor











EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act*.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the *OSH Act* that apply to your own actions and conduct on the job.

EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the *OSH Act*.

This free poster available from OSHA –
The Best Resource for Safety and Health

Free assistance in identifying and correcting hazards or complying with standards is available to employers, without citation or penalty, through OSHA-supported consultation programs in each state.

1-800-321-OSHA (6742)
www.osha.gov

OSHA 3165-02 2012R

ATTACHMENT 3

AIR MONITORING LOG

Air Monitoring: Sample Collection and Analysis

Date & Time of Monitoring	Task / Operation Being	Substance(s)/ Hazard(s) Being	Monitoring Location	Type/Method of Monitoring (separate lines for	Monitoring Results	Exposure Limits	Required Action

ATTACHMENT 4

HEALTH AND SAFETY ORIENTATION SIGNATORY PAGE

Attachment 4 – Site-Specific Health and Safety Orientation Signatory Page
HEALTH AND SAFETY PLAN
173-269 Doremus Avenue - Newark, NJ

Title	Name	Signature
Project Manager:	TBD	
Health and Safety Manager:	TBD	

I have read the attached Health and Safety Plan (HASP) and have received site-specific information and orientation regarding the identified physical, chemical, and biological hazards anticipated at this site. My signature certifies that I understand the procedures, equipment, and restrictions applicable to this project site and agree to abide by them.

Signature	Printed Name	Company	Date

Attachment 4 – Health and Safety Orientation Signatory Page (continued)

Signature	Printed Name	Company	Date

ATTACHMENT 5

SAFETY DATA SHEETS (SDSs)

POCH Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH). Creation date / last update: *2002-10-15 / 2005-04-22*

1. Identification of the substance/preparation and of the company/undertaking

BENZENE

Catalogue Numbers: *99,9% standard for GC-162500320; pure-162500426; pure p. a.-162500110; for HPLC-162503155; Pochsolv-162505156;*

Use of the substance / preparation: analitical and chemical reagent for synthesis solvent

POCH SA
44-101 Gliwice, Sowinskiego Str. 11
tel.: +48 32 23-92-381; fax: +48 32 23-92-370; e-mail: export@poch.com.pl
Emergency telephone no: +48 606-659-006

2. Hazard identification

Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

3. Composition/information on ingredients

CAS-No.: *71-43-2*

Molecular mass: *78.11*

Molecular formula: C_6H_6

WE Number: *200-753-7*

EC-Index No.: *601-020-00-8*

4. First aid measures

After eye contact: *rinse out with plenty of water with the eyelid held wide open. Call in ophtalmologist.*

After skin contact: *wash off with plenty of water. Remove contaminated clothing.*

After swallowing: *make victim drink plenty of water. Avoid vomiting (risk of aspiration). Laxative: paraffin oil (3 mg/kg), sodium sulfate (1 tablespoon 1/4 l water). Lavage of stomach only if necessary. Call in physician.*

After inhalation: *fresh air. If necessary, apply mouth- to- mouth resuscitation or mechanical ventilation.*

5. Fire-fighting measures

Suitable extinguishing media: *foam, powder*

Special risk: *combustible. Vapours heavier than air. Formation of explosive mixtures possible with air. Keep away from sources of fire. Take measures to prevent electrostatic charging. Development of hazardous gases or vapours possible in the event of fire.*

Special protective equipment for fire fighting:

Other information: *contain escaping vapoures with spray water. Do not stay in dangerous zone without self- contained breathing apparatus. Prevent fire- fighting water from entering surface water or groundwater*

Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance. Contain escaping vapours with water.

6. Accidental release measures

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms. Take up with liquid- absorbent material. Forward for disposal. Clean up affected area. Do not allow to enter sewerage system (risk of explosion).

7. Handling and storage

Handling: *Use with adequate ventilation. Use of the basic principles of Industrial Hygiene. Use according to good industry practice. Work under hood. Do not inhale substance. Do not empty into sewerage system. Use protective equipment according to p.8. Avoid skin contact. Protect against electrostatic charges. Keep away from source od ignition.*

Storage: *tightly closed. Dry well-ventilated place. Protect from light. Keep away from sources of ignition and heat. At +15 to + 25 deg C.*

8. Exposure controls/personal protection

Specific control parameter:

Provide exhaust ventilation. Ensure the eye wash station and safety showers. Protective equipment should be selected for the working place, depending on concentration and quantity of the hazardous product handled. The resistance of the protective clothing to chemicals should be ascertained with respective supplier.

POCH

Personal protective equipment:

respiratory protection: *required when vapours/aerosols are generated - gas mask with specific absorber.*

eye protection: *required - safety goggles.*

hand protection: *required - protective clothing.*

body protection: *required - protective clothing.*

industrial hygiene: *immediately change contaminated clothing. Apply skin - protective barrier cream. Wash hands and face after working with substance.*

9. Physical and chemical properties

Form: *liquid*

Colour: *colourless*

Odour: *characteristic*

pH value: *not available*

Melting point: *5°C*

Boiling point: *80°C*

Autoignition temperature: *555°C*

Flash point: *-11°C*

Explosion limit:

lower: *1,4 Vol%*

upper: *8 Vol%*

dynamic viscosity: *(20°C): 0,66 mPa*s*

kinematical viscosity: *0,75 mm2/s*

Vapour pressure: *100 mbar (20°C)*

Density: *0,88 g/cm³ (20°C)*

Bulk density: *not applicable*

Solublity:

in water: *1,8 g/l (20°C)*

in organic solvents: *soluble*

log P(w/o): *2,65. Bioconcentration factor: 1,10.*

10. Stability and reactivity

Conditions to be avioded: *high temperature*

Substances to be avoided: *nonorganic acids, sulfur, halogen-halogen compounds, oxidizing agents, peroxide compounds, oxyhalogenic compounds, halogenic hydrocarbons, rubber.*

Hazardous decomposition products: *no information available*

Other information: *volatile in steam. Unsuitable workings materials: various plastics*

11. Toxicological information

Toxicological information: *LD50 (oral rat) 930 mg/kg, LC50 (inhalation rat) 10 000 ppm (vol.) /7h. Experience has shown this substance to be carcinogenic to man.*

Other information: *After skin contact: irritations, danger of absorption, Degreasing effect on the skin possibly followed by secondary inflammation; After swallowing: nausea and vomiting; After absorption: pain and dizziness, cardiac arrhythmia, drop in blood pressure, dyspnoea, spasms, narcosis, respiratory paralysis, death; After eye contact: irritations of mucous membranes. Carcinogenic class 1. This substance should be handled with particular care.*

12. Ecological information

Log P(w/o): 2,65. No appreciable bioaccumulation potential is to be expected. Toxicity: Fish: Onchorhynchus mykiss LC50: 5,3 mg/l/96h. C. auratus LC50: 34 mg/l/96h. Daphnia: Daphnia magma EC50: 200 mg/l/48h. Algea: Chlorella vulgaris: LC50: 530 mg/l/24h. Bacteria: Ps. putida EC10: 168 mg/l. Toxic effect on aquatic organisms. Biologic degradation: ThOD 3,1 g/g, B.O.D 10% ThOD, C.O.D. 19% ThOD. Hazard for drinking water supplies. Do not allow to enter waters, waste water or soil!

13. Disposal considerations

POCH product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Handle contaminated packing in the same way as the substrate itself. Always contact a permitted waste disposal to assure compliance with all current local, state and federal regulations.

14. Transport information

ADR Class and package group: *3,II*

UN Number: *1114*

Name (acc. to UN): *benzene*

15. Regulatory information

Labelling according to EC Directives.

Symbol: *F, T; Flammable. Toxic.*

R-phrases: *45-11-48/23/24/25; Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.*

S-phrases: *53-45; In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid exposure - obtain special instructions before use. Restricted to professional users.*

EC label.

16. Other information

Reason for alteration: general update.

Informations contained in this SDS while accurate to the best knowledge

POCH

SAFETY DATA SHEET

Version 5.4
Revision Date 09/11/2015
Print Date 05/12/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Benzo(A)pyrene sol, 1x1ml,100UG/ml,CH2Cl2

Product Number : 49473-U
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Warning

Hazard statement(s)
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P321	Specific treatment (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Methylene chloride			
CAS-No. EC-No. Index-No.	75-09-2 200-838-9 602-004-00-3	Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; STOT SE 3; STOT RE 2; H315, H319, H335, H336, H351, H373, H373	>= 90 - <= 100 %
Benzo[a]pyrene			
CAS-No. EC-No. Index-No.	50-32-8 200-028-5 601-032-00-3	Skin Sens. 1; Muta. 1B; Carc. 1B; Repr. 1B; Aquatic Acute 1; Aquatic Chronic 1; H317, H340, H350, H360, H410	< 0.1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	Potential Occupational Carcinogen See Appendix A		
Methylene chloride	75-09-2	TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		Substance listed; for more information see OSHA document 1910.1052		

		Substance listed; for more information see OSHA document 1910.1052		
		See Table Z-2		
		PEL	25.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		
		STEL	125.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Methylene chloride	75-09-2	Dichloromethane	0.3000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-97 °C (-143 °F)
f)	Initial boiling point and boiling range	40 °C (104 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	353.1 hPa (264.8 mmHg) at 20 °C (68 °F)
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Methylene chloride)
NTP:	Reasonably anticipated to be a human carcinogen (Methylene chloride)
OSHA:	OSHA specifically regulated carcinogen (Methylene chloride)

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Blood - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1593 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: DICHLOROMETHANE, SOLUTION

IATA

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benzo[a]pyrene	50-32-8	2007-03-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benzo[a]pyrene	50-32-8	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benzo[a]pyrene	50-32-8	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the	CAS-No.	Revision Date
State of California to cause cancer.	75-09-2	2007-09-28
Methylene chloride		
Benzo[a]pyrene	50-32-8	1990-01-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs (/$/*_ORG_REP_ORAL/$/) through prolonged or repeated exposure if swallowed.
H410	Very toxic to aquatic life with long lasting effects.
Muta.	Germ cell mutagenicity
Repr.	Reproductive toxicity
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation
STOT RE	Specific target organ toxicity - repeated exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 09/11/2015 Print Date: 05/12/2016

SDS preview

LEAD

DANGER

7439-92-1

by Fisher Scientific

Synonyms

C.I. 77575, C.I. Pigment Metal 4, EINECS 231-100-4, Glover, HSDB 231, Lead flake, Olow, Plumbum, CI 77575, Plumbum metallicum, Blei, CI pigment metal 4, EC 231-100-4, KS-4, Lead, Lead element, Lead S2, Olow [Polish], Omaha & grant, Pb-S 100, Rough lead bullion, CCRIS 1581, Lead metal, Lead S 2, SSO 1, UNII-2P299V784P

Hazard statements

Harmful if inhaled
Harmful if swallowed
May cause cancer
May cause damage to organs through prolonged or repeated exposure
May cause drowsiness or dizziness

Precautions

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Rinse mouth
Store locked up

Hazard category

Acute toxicity, inhalation, Acute toxicity, oral, Carcinogenicity, Specific target organ toxicity, repeated exposure, Specific target organ toxicity, single exposure; Narcotic effects



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The information contained herein is based on data compiled from the chemical components of the (M)SDS and may not accurately represent the safety hazards for the product. Only the manufacturer of the product can make actual representations about the hazard profile of a chemical product. No warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

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SDS preview

ALCONOX® DETERGENT

DANGER

by SIGMA ALDRICH

Hazard statements

Causes serious eye damage
Causes skin irritation
Harmful if swallowed
May cause respiratory irritation
Toxic to aquatic life

Precautions

Avoid breathing dust/fume/gas/mist/vapours/spray
Wash ... thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Avoid release to the environment
Wear protective gloves/protective clothing/eye protection/face protection
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Store in a well-ventilated place., Keep container tightly closed
Store locked up
Dispose of contents/container to ...

Hazard category

Acute toxicity, oral, Hazardous to the aquatic environment, (Acute), Serious eye damage/eye irritation, Skin corrosion/irritation, Specific target organ toxicity, single exposure; Respiratory tract irritation



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SDS preview

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DANGER

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Hazard statements

Causes serious eye damage
Causes skin irritation
Harmful if swallowed
May cause respiratory irritation
Toxic to aquatic life

Precautions

Avoid breathing dust/fume/gas/mist/vapours/spray
Wash ... thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Avoid release to the environment
Wear protective gloves/protective clothing/eye protection/face protection
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Store in a well-ventilated place., Keep container tightly closed
Store locked up
Dispose of contents/container to ...

Hazard category

Acute toxicity, oral, Hazardous to the aquatic environment, (Acute), Serious eye damage/eye irritation, Skin corrosion/irritation, Specific target organ toxicity, single exposure; Respiratory tract irritation



View GHS Label (2008&param1=ZmRwLjFfNjYxMTgwMDNORQ==&unique=1525286306)

The information contained herein is based on data compiled from the chemical components of the (M)SDS and may not accurately represent the safety hazards for the product. Only the manufacturer of the product can make actual representations about the hazard profile of a chemical product. No warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

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Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 22-Sep-2009 **Revision Date** 17-Jun-2015 **Revision Number** 2

1. Identification

Product Name **Antimony**

Cat No. : **A845-500**

Synonyms Antimony Regulus; Stibium

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word
Warning

Hazard Statements
Harmful if inhaled
Harmful if swallowed
Causes skin irritation
Causes eye irritation
May cause respiratory irritation



Precautionary Statements
Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Avoid breathing dust/fume/gas/mist/vapors/spray
Inhalation
Call a POISON CENTER or doctor/physician if you feel unwell
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation occurs: Get medical advice/attention
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Ingestion
Rinse mouth
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

Component	CAS-No	Weight %
Antimony	7440-36-0	>= 99.5

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature 330 °C
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Fumes
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Antimony	TWA: 0.5 mg/m³	(Vacated) TWA: 0.5 mg/m³ TWA: 0.5 mg/m³	IDLH: 50 mg/m³ TWA: 0.5 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Antimony	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	630 °C
Boiling Point/Range	1635 °C
Flash Point	No information available
Evaporation Rate	negligible
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	negligible
Vapor Density	No information available
Relative Density	6.684
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	330 °C
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Sb
Molecular Weight	121.71

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Fumes
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information	No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Antimony	7 g/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Antimony	7440-36-0	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Antimony	Not listed	Cyprinodon variegatus: LC50 = 6.2-8.3 mg/L/96h	Not listed	Not listed

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
UN-No UN2871
Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

TDG
UN-No UN2871

Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

IATA

UN-No UN2871
Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN2871
Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Antimony	X	X	-	231-146-5	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Antimony	7440-36-0	>= 99.5	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard Yes
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Antimony	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Antimony	X		-

OSHA Occupational Safety and Health Administration

Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Antimony	5000 lb 10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Antimony	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1B Toxic materials
D2B Toxic materials



16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 22-Sep-2009
Revision Date 17-Jun-2015
Print Date 17-Jun-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 4.7
Revision Date 05/23/2016
Print Date 06/23/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Arsenic

Product Number : 202657
Brand : Aldrich
Index-No. : 033-001-00-X

CAS-No. : 7440-38-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H302 Harmful if swallowed.
H331 Toxic if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	As
Molecular weight	:	74.92 g/mol
CAS-No.	:	7440-38-2
EC-No.	:	231-148-6
Index-No.	:	033-001-00-X

Hazardous components

Component	Classification	Concentration
Arsenic		
	Acute Tox. 4; Acute Tox. 3; Aquatic Acute 1; Aquatic Chronic 1; H302, H331, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Arsenic	7440-38-2	TWA	0.01 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Lung cancer Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed human carcinogen		
		C	0.0020 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A 15 minute ceiling value		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Arsenic	7440-38-2	inorganic arsenic plus methylated metabolites	35µg As/l	In urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of the workweek (After four or five consecutive working days			

		with exposure)			
		inorganic arsenic plus methylated metabolites	35µg As/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of the workweek (After four or five consecutive working days with exposure)			

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Pieces Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available

d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 817 °C (1,503 °F) - lit.
f)	Initial boiling point and boiling range	613 °C (1,135 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	5.727 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat Exposure to air may affect product quality.

10.5 Incompatible materials
Oxidizing agents, Halogens, Palladium undergoes a violent reaction with arsenic, Zinc, Platinum oxide, Nitrogen trichloride, Bromine azide

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Arsenic oxides
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 763 mg/kg
Remarks: Behavioral:Ataxia. Diarrhoea

LD50 Oral - Mouse - 145 mg/kg
Remarks: Behavioral:Ataxia. Diarrhoea

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

IARC:	1 - Group 1: Carcinogenic to humans (Arsenic)
NTP:	Known to be human carcinogen (Arsenic)
	Known to be human carcinogen (Arsenic)
OSHA:	OSHA specifically regulated carcinogen (Arsenic)

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CG0525000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 9.9 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 3.8 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1558 Class: 6.1 Packing group: II
Proper shipping name: Arsenic
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1558 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: ARSENIC
Marine pollutant:yes

IATA
UN number: 1558 Class: 6.1 Packing group: II
Proper shipping name: Arsenic

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Arsenic	7440-38-2	2008-10-10

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H302	Harmful if swallowed.
H331	Toxic if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 05/23/2016 Print Date: 06/23/2016

SAFETY DATA SHEET

Version 4.5
Revision Date 03/02/2015
Print Date 05/24/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Barium

Product Number : 237094
Brand : Aldrich

CAS-No. : 7440-39-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 2), H261
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H261 In contact with water releases flammable gases.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232 Handle under inert gas. Protect from moisture.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Ba
Molecular weight	:	137.33 g/mol
CAS-No.	:	7440-39-3
EC-No.	:	231-149-1

Hazardous components

Component	Classification	Concentration
Barium		
	Water-react. 2; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H261, H315, H319, H335	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
Barium oxide

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Store under inert gas.
Storage class (TRGS 510): Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Barium	7440-39-3	TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye, skin, & Gastrointestinal irritation Muscular stimulation Not classifiable as a human carcinogen		

		TWA	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Eye irritation Muscular stimulation Skin irritation Gastrointestinal irritation Not classifiable as a human carcinogen		
		TWA	0.500000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form: Rods

		Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 725 °C (1,337 °F) - lit.
f)	Initial boiling point and boiling range	1,640 °C (2,984 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	3.6 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents, Water, acids, Oxygen, Chlorinated solvents, Carbon dioxide (CO2), Halogens, Halogenated hydrocarbon, Alcohols, Sulphur compounds, Hydrogen sulfide gas

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CQ8370000

Stomach/intestinal disorders, Nausea, Vomiting, Drowsiness, Dizziness, Gastrointestinal disturbance, Weakness, Tremors, Seizures.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 500 mg/l - 96 h
	LC50 - Cyprinodon variegatus (sheepshead minnow) - > 500 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1400 Class: 4.3 Packing group: II EMS-No: F-G, S-O
Proper shipping name: BARIUM

IATA
UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date

Barium	7440-39-3	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.	Eye irritation
H261	In contact with water releases flammable gases.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure
Water-react.	Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	1

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	1
Special hazard.I:	W

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.5 Revision Date: 03/02/2015 Print Date: 05/24/2016

POCH Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH). Creation date / last update: *2002-10-15 / 2005-04-22*

1. Identification of the substance/preparation and of the company/undertaking

BENZENE

Catalogue Numbers: *99,9% standard for GC-162500320; pure-162500426; pure p. a.-162500110; for HPLC-162503155; Pochsolv-162505156;*

Use of the substance / preparation: analitical and chemical reagent for synthesis solvent

POCH SA
44-101 Gliwice, Sowinskiego Str. 11
tel.: +48 32 23-92-381; fax: +48 32 23-92-370; e-mail: export@poch.com.pl
Emergency telephone no: +48 606-659-006

2. Hazard identification

Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

3. Composition/information on ingredients

CAS-No.: *71-43-2*

Molecular mass: *78.11*

Molecular formula: C_6H_6

WE Number: *200-753-7*

EC-Index No.: *601-020-00-8*

4. First aid measures

After eye contact: *rinse out with plenty of water with the eyelid held wide open. Call in ophtalmologist.*

After skin contact: *wash off with plenty of water. Remove contaminated clothing.*

After swallowing: *make victim drink plenty of water. Avoid vomiting (risk of aspiration). Laxative: paraffin oil (3 mg/kg), sodium sulfate (1 tablespoon 1/4 l water). Lavage of stomach only if necessary. Call in physician.*

After inhalation: *fresh air. If necessary, apply mouth- to- mouth resuscitation or mechanical ventilation.*

5. Fire-fighting measures

Suitable extinguishing media: *foam, powder*

Special risk: *combustible. Vapours heavier than air. Formation of explosive mixtures possible with air. Keep away from sources of fire. Take measures to prevent electrostatic charging. Development of hazardous gases or vapours possible in the event of fire.*

Special protective equipment for fire fighting:

Other information: *contain escaping vapoures with spray water. Do not stay in dangerous zone without self- contained breathing apparatus. Prevent fire- fighting water from entering surface water or groundwater*

Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance. Contain escaping vapours with water.

6. Accidental release measures

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms. Take up with liquid- absorbent material. Forward for disposal. Clean up affected area. Do not allow to enter sewerage system (risk of explosion).

7. Handling and storage

Handling: *Use with adequate ventilation. Use of the basic principles of Industrial Hygiene. Use according to good industry practice. Work under hood. Do not inhale substance. Do not empty into sewerage system. Use protective equipment according to p.8. Avoid skin contact. Protect against electrostatic charges. Keep away from source od ignition.*

Storage: *tightly closed. Dry well-ventilated place. Protect from light. Keep away from sources of ignition and heat. At +15 to + 25 deg C.*

8. Exposure controls/personal protection

Specific control parameter:

Provide exhaust ventilation. Ensure the eye wash station and safety showers. Protective equipment should be selected for the working place, depending on concentration and quantity of the hazardous product handled. The resistance of the protective clothing to chemicals should be ascertained with respective supplier.

POCH

Personal protective equipment:

respiratory protection: *required when vapours/aerosols are generated - gas mask with specific absorber.*

eye protection: *required - safety goggles.*

hand protection: *required - protective clothing.*

body protection: *required - protective clothing.*

industrial hygiene: *immediately change contaminated clothing. Apply skin - protective barrier cream. Wash hands and face after working with substance.*

9. Physical and chemical properties

Form: *liquid*

Colour: *colourless*

Odour: *characteristic*

pH value: *not available*

Melting point: *5°C*

Boiling point: *80°C*

Autoignition temperature: *555°C*

Flash point: *-11°C*

Explosion limit:

lower: *1,4 Vol%*

upper: *8 Vol%*

dynamic viscosity: *(20°C): 0,66 mPa*s*

kinematical viscosity: *0,75 mm2/s*

Vapour pressure: *100 mbar (20°C)*

Density: *0,88 g/cm³ (20°C)*

Bulk density: *not applicable*

Solublity:

in water: *1,8 g/l (20°C)*

in organic solvents: *soluble*

log P(w/o): *2,65. Bioconcentration factor: 1,10.*

10. Stability and reactivity

Conditions to be avioded: *high temperature*

Substances to be avoided: *nonorganic acids, sulfur, halogen-halogen compounds, oxidizing agents, peroxide compounds, oxyhalogenic compounds, halogenic hydrocarbons, rubber.*

Hazardous decomposition products: *no information available*

Other information: *volatile in steam. Unsuitable workings materials: various plastics*

11. Toxicological information

Toxicological information: *LD50 (oral rat) 930 mg/kg, LC50 (inhalation rat) 10 000 ppm (vol.) /7h. Experience has shown this substance to be carcinogenic to man.*

Other information: *After skin contact: irritations, danger of absorption, Degreasing effect on the skin possibly followed by secondary inflammation; After swallowing: nausea and vomiting; After absorption: pain and dizziness, cardiac arrhythmia, drop in blood pressure, dyspnoea, spasms, narcosis, respiratory paralysis, death; After eye contact: irritations of mucous membranes. Carcinogenic class 1. This substance should be handled with particular care.*

12. Ecological information

Log P(w/o): 2,65. No appreciable bioaccumulation potential is to be expected. Toxicity: Fish: Onchorhynchus mykiss LC50: 5,3 mg/l/96h. C. auratus LC50: 34 mg/l/96h. Daphnia: Daphnia magma EC50: 200 mg/l/48h. Algea: Chlorella vulgaris: LC50: 530 mg/l/24h. Bacteria: Ps. putida EC10: 168 mg/l. Toxic effect on aquatic organisms. Biologic degradation: ThOD 3,1 g/g, B.O.D 10% ThOD, C.O.D. 19% ThOD. Hazard for drinking water supplies. Do not allow to enter waters, waste water or soil!

13. Disposal considerations

POCH product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Handle contaminated packing in the same way as the substrate itself. Always contact a permitted waste disposal to assure compliance with all current local, state and federal regulations.

14. Transport information

ADR Class and package group: *3,II*

UN Number: *1114*

Name (acc. to UN): *benzene*

15. Regulatory information

Labelling according to EC Directives.

Symbol: *F, T; Flammable. Toxic.*

R-phrases: *45-11-48/23/24/25; Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.*

S-phrases: *53-45; In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid exposure - obtain special instructions before use. Restricted to professional users.*

EC label.

16. Other information

Reason for alteration: general update.

Informations contained in this SDS while accurate to the best knowledge

POCH

SAFETY DATA SHEET

Version 5.4
Revision Date 04/24/2015
Print Date 05/12/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Benzo(a)anthracene solution

Product Number : 49477-U
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system, H335, H336
Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, Blood, H373
Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Central nervous system, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Warning

Hazard statement(s)

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs (Liver, Blood) through prolonged or repeated exposure if swallowed.
H373	May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Molecular weight : 84.93 g/mol

Hazardous components

Component		Classification	Concentration
Methylene chloride			
CAS-No. EC-No. Index-No.	75-09-2 200-838-9 602-004-00-3	Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; STOT SE 3; STOT RE 2; H315, H319, H335, H336, H351, H373, H373	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	Potential Occupational Carcinogen See Appendix A		
Methylene chloride	75-09-2	TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia		

		Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		Substance listed; for more information see OSHA document 1910.1052		
		Substance listed; for more information see OSHA document 1910.1052		
		See Table Z-2		
		PEL	25.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		
		STEL	125.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Methylene chloride	75-09-2	Dichloromethane	0.3000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators

and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-97.0 °C (-142.6 °F)
f)	Initial boiling point and boiling range	40.0 °C (104.0 °F)
g)	Flash point	No data available
h)	Evaporation rate	0.71
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 19 %(V) Lower explosion limit: 12 %(V)
k)	Vapour pressure	470.9 hPa (353.2 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	2.93 - (Air = 1.0)
m)	Relative density	1.32 g/cm3
n)	Water solubility	slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 1.25
p)	Auto-ignition temperature	556.1 °C (1,033.0 °F) 662.0 °C (1,223.6 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	2.93 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks. Exposure to sunlight.

10.5 Incompatible materials
Alkali metals, Aluminum, Strong oxidizing agents, Bases, Amines, Magnesium, Strong acids and strong bases, Vinyl compounds

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 2,000 mg/kg

LC50 Inhalation - Rat - 52,000 mg/m3

LD50 Dermal - Rat - > 2,000 mg/kg
(OECD Test Guideline 402)

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h
(Draize Test)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Irritating to eyes. - 24 h
(Draize Test)

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity

Rat
DNA damage

Carcinogenicity

Carcinogenicity - Rat - Inhalation
Tumorigenic:Carcinogenic by RTECS criteria. Endocrine:Tumors.

Limited evidence of carcinogenicity in animal studies

Suspected human carcinogens

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Methylene chloride)
NTP:	Reasonably anticipated to be a human carcinogen (Methylene chloride)
OSHA:	OSHA specifically regulated carcinogen (Methylene chloride)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
Inhalation - May cause damage to organs through prolonged or repeated exposure. - Central nervous system
Oral - May cause damage to organs through prolonged or repeated exposure. - Liver, Blood

Aspiration hazard
No data available

Additional Information
RTECS: Not available

Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood., Acts as a simple asphyxiant by displacing air., anesthetic effects, Difficulty in breathing, Headache, Dizziness, Prolonged or repeated contact with skin may cause:, defatting, Dermatitis, Contact with eyes can cause:, Redness, Blurred vision, Provokes tears., Effects due to ingestion may include:, Gastrointestinal discomfort, Central nervous system depression, Paresthesia., Drowsiness, Convulsions, Conjunctivitis., Pulmonary edema. Effects may be delayed., Irregular breathing., Stomach/intestinal disorders, Nausea, Vomiting, Increased liver enzymes., Weakness, Heavy or prolonged skin exposure may result in the absorption of harmful amounts of material., Abdominal pain

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 193.00 mg/l - 96 h
	NOEC - Cyprinodon variegatus (sheepshead minnow) - 130 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1,682.00 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability: Result: < 26 % - Not readily biodegradable. (OECD Test Guideline 301C)

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1593 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: DICHLOROMETHANE, SOLUTION

IATA

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Benz[a]anthracene	56-55-3	1993-04-24
Methylene chloride	75-09-2	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benz[a]anthracene	56-55-3	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benz[a]anthracene	56-55-3	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the	CAS-No.	Revision Date
State of California to cause cancer.	56-55-3	2007-09-28
Benz[a]anthracene		
Methylene chloride	75-09-2	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 04/24/2015 Print Date: 05/12/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 12/29/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Beryllium

Product Number : 378135
Brand : Aldrich

CAS-No. : 7440-41-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 2), H330
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure (Category 1), H372

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H301 Toxic if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H350 May cause cancer.

H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Be
Molecular weight	:	9.01 g/mol
CAS-No.	:	7440-41-7
EC-No.	:	231-150-7

Hazardous components

Component	Classification	Concentration
Berylium foil		
	Acute Tox. 3; Acute Tox. 2; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Carc. 1B; STOT SE 3; STOT RE 1; H301, H315, H317, H319, H330, H335, H350, H372	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Beryllium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Berylium foil	7440-41-7	TWA	2.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		CEIL	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Peak	25.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	2.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
	Remarks	Z27.29-1970		
		CEIL	5.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000micro gram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	0.000050 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Beryllium sensitization Chronic beryllium disease (berylliosis) Confirmed human carcinogen Danger of cutaneous absorption Sensitizer		
		C	0.000500 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		See Table Z-2		
		TWA	2.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	2.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000micro gram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000micro gram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	0.000050 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Beryllium sensitization		

		Chronic beryllium disease (berylliosis) Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Confirmed human carcinogen Danger of cutaneous absorption Sensitizer		
		C	0.000500 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		See Table Z-2		
		TWA	2microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		C	0.0005 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,278 °C (2,332 °F) - lit.
f)	Initial boiling point and boiling range	2,970 °C (5,378 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.85 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Alkali metals

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

LD50 Intravenous - Rat - 0.496 mg/kg
Remarks: Liver:Hepatitis (hepatocellular necrosis), zonal.

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Hamster
Lungs
Result: negative

Carcinogenicity

Carcinogenicity - Rat - Intratracheal
Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Lungs, Thorax, or Respiration:Bronchiogenic carcinoma.

Carcinogenicity - Rabbit - Intravenous
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Musculoskeletal:Tumors.

Possible human carcinogen

IARC:	1 - Group 1: Carcinogenic to humans (Berylium foil)
NTP:	Known to be human carcinogen (Berylium foil)
	Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Berylium foil)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: DS1750000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1567 Class: 6.1 (4.1) Packing group: II
Proper shipping name: Beryllium, powder
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1567 Class: 6.1 (4.1) Packing group: II EMS-No: F-G, S-G
Proper shipping name: BERYLLIUM POWDER

IATA
UN number: 1567 Class: 6.1 (4.1) Packing group: II
Proper shipping name: Beryllium powder

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Berylium foil	7440-41-7	2008-10-10

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H301	Toxic if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	3
Reactivity Hazard:	3

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 13-Sep-2013 **Revision Date** 21-Jul-2015 **Revision Number** 2

1. Identification

Product Name **Chromium**

Cat No. : **C318-500**

Synonyms Chrome

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 3

Label Elements

Signal Word
Warning

Hazard Statements
May cause respiratory irritation



Precautionary Statements
Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Chromium	7440-47-3	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects None reasonably foreseeable.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media Carbon dioxide (CO2)

Flash Point Not applicable
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Dust can form an explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Chromium oxide
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Avoid dust formation. Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chromium	TWA: 0.5 mg/m³	(Vacated) TWA: 1 mg/m³ TWA: 1 mg/m³	IDLH: 250 mg/m³ TWA: 0.5 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Chromium	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	1857.2 °C / 3375 °F

Boiling Point/Range	2640 °C / 4784 °F
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Relative Density	7.2
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Cr
Molecular Weight	51.996

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Sensitive to air.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials Strong oxidizing agents, Strong acids

Hazardous Decomposition Products Chromium oxide

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation May cause irritation of respiratory tract

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Chromium	7440-47-3	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Chromium	Not listed	LC50: 14.3 mg/l/96 H (Pimephales promelas)	Not listed	EC50: 0.07 mg/l/48 H

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Proper technical name** Chromium
- **Hazard Class** 9
- **Packing Group** III

TDG Not regulated

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Hazard Class** 9
- **Packing Group** III

IATA

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

IMDG/IMO

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Chromium	X	X	-	231-157-5	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chromium	7440-47-3	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chromium	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chromium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Chromium	5000 lb 10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chromium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D2B Toxic materials



16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 13-Sep-2013
Revision Date 21-Jul-2015
Print Date 21-Jul-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 13-Sep-2013 **Revision Date** 21-Jul-2015 **Revision Number** 2

1. Identification

Product Name **Chromium**

Cat No. : **C318-500**

Synonyms Chrome

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 3

Label Elements

Signal Word
Warning

Hazard Statements
May cause respiratory irritation



Precautionary Statements
Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Chromium	7440-47-3	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects None reasonably foreseeable.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media Carbon dioxide (CO2)

Flash Point Not applicable
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Dust can form an explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Chromium oxide
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Avoid dust formation. Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chromium	TWA: 0.5 mg/m³	(Vacated) TWA: 1 mg/m³ TWA: 1 mg/m³	IDLH: 250 mg/m³ TWA: 0.5 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Chromium	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	1857.2 °C / 3375 °F

Boiling Point/Range	2640 °C / 4784 °F
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Relative Density	7.2
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Cr
Molecular Weight	51.996

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Sensitive to air.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials Strong oxidizing agents, Strong acids

Hazardous Decomposition Products Chromium oxide

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation May cause irritation of respiratory tract

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Chromium	7440-47-3	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Chromium	Not listed	LC50: 14.3 mg/l/96 H (Pimephales promelas)	Not listed	EC50: 0.07 mg/l/48 H

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Proper technical name** Chromium
- **Hazard Class** 9
- **Packing Group** III

TDG Not regulated

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Hazard Class** 9
- **Packing Group** III

IATA

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

IMDG/IMO

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Chromium	X	X	-	231-157-5	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chromium	7440-47-3	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chromium	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chromium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Chromium	5000 lb 10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chromium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D2B Toxic materials



16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 13-Sep-2013
Revision Date 21-Jul-2015
Print Date 21-Jul-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

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End of SDS

SAFETY DATA SHEET

Version 5.10
Revision Date 06/02/2016
Print Date 07/04/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : PCBs - WS

Product Number : QC1579
Brand : Sigma-Aldrich

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.

P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Repeated exposure may cause skin dryness or cracking.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Acetone			
CAS-No. EC-No. Index-No. Registration number	67-64-1 200-662-2 606-001-00-8 01-2119471330-49-XXXX	Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, H336	>= 90 - <= 100 %
Aroclor 1254			
CAS-No. Index-No.	11097-69-1 602-039-00-4	Acute Tox. 4; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H373, H410	< 0.1 %
Aroclor 1016			
CAS-No. Index-No.	12674-11-2 602-039-00-4	STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H373, H410	< 0.1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store at Room Temperature.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Acetone	67-64-1	TWA	500.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Hematologic effects Upper Respiratory Tract irritation Eye irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	250 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation 2015 Adoption Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	750.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Hematologic effects Upper Respiratory Tract irritation Eye irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	500 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation 2015 Adoption Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	1,000.000000 ppm 2,400.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

		TWA	250.000000 ppm 590.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		STEL	750 ppm 1,780 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		C	3,000 ppm	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	500 ppm 1,200 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Aroclor 1254	11097-69-1	TWA	0.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Liver damage Chloracne Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Liver damage Chloracne Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		
		TWA	0.001000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		PEL	0.5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		
Aroclor 1016	12674-11-2	TWA	0.001000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Acetone	67-64-1	Acetone	50.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Acetone	25 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)

		End of shift (As soon as possible after exposure ceases)

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	56 °C (133 °F) at 1,013 hPa (760 mmHg)
g)	Flash point	-17 °C (1 °F) - closed cup - Solvent
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 13 %(V) Lower explosion limit: 2 %(V)
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available

p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney - Irregularities - Based on Human Evidence
Skin - Dermatitis - Based on Human Evidence
Kidney - Irregularities - Based on Human Evidence
Skin - Dermatitis - Based on Human Evidence
Nerves. - (Aroclor 1260)
Stomach - Irregularities - Based on Human Evidence (Aroclor 1254)
Stomach - Irregularities - Based on Human Evidence (PCB - Aroclor 1221)
Stomach - Irregularities - Based on Human Evidence (Aroclor 1248)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1090 Class: 3 Packing group: II
Proper shipping name: Acetone, solution
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1090 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ACETONE, SOLUTION

IATA
UN number: 1090 Class: 3 Packing group: II
Proper shipping name: Acetone, solution

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Acetone	67-64-1	2007-03-01
Aroclor 1254	11097-69-1	1993-04-24
Aroclor 1242	53469-21-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Acetone	67-64-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Acetone	67-64-1	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Aroclor 1260	11096-82-5	2008-08-01
Aroclor 1254	11097-69-1	1990-06-30
PCB - Aroclor 1221	11104-28-2	2008-08-01
Aroclor 1232	11141-16-5	2008-08-01
Aroclor 1248	12672-29-6	2008-08-01
Aroclor 1016	12674-11-2	2008-08-01
Aroclor 1242	53469-21-9	2008-08-01

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No.	Revision Date
Aroclor 1260	11096-82-5	2008-08-01
Aroclor 1254	11097-69-1	1990-06-30
PCB - Aroclor 1221	11104-28-2	2008-08-01
Aroclor 1232	11141-16-5	2008-08-01
Aroclor 1248	12672-29-6	2008-08-01
Aroclor 1016	12674-11-2	2008-08-01
Aroclor 1242	53469-21-9	2008-08-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.10 Revision Date: 06/02/2016 Print Date: 07/04/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 05/24/2016
Print Date 06/21/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Thallium

Product Number : 277932
Brand : Aldrich
Index-No. : 081-001-00-3

CAS-No. : 7440-28-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 2), H300
Acute toxicity, Inhalation (Category 2), H330
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H300 + H330 Fatal if swallowed or if inhaled
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P284 Wear respiratory protection.

P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Tl
Molecular weight	:	204.38 g/mol
CAS-No.	:	7440-28-0
EC-No.	:	231-138-1
Index-No.	:	081-001-00-3

Hazardous components

Component	Classification	Concentration
Thallium		
	Acute Tox. 2; Aquatic Acute 3; Aquatic Chronic 3; H300 + H330, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Thallium	7440-28-0	TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Alopecia Adopted values or notations enclosed are those for which changes are proposed in the NIC 2010 Revision or addition to the notice of intended changes See Notice of Intended Changes (NIC) Danger of cutaneous absorption		
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral neuropathy Gastrointestinal damage 2015 Adoption Danger of cutaneous absorption		
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral neuropathy Gastrointestinal damage Danger of cutaneous absorption varies		

		TWA	0.1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.02 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral neuropathy Gastrointestinal damage Danger of cutaneous absorption varies		
		TWA	0.1 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		PEL	0.1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: granular Colour: light grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 303 °C (577 °F) - lit.
f)	Initial boiling point and boiling range	1,457 °C (2,655 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Air sensitive.

10.5 Incompatible materials

Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - thallium oxides

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Possible risk of congenital malformation in the fetus.

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: XG3425000

The most characteristic symptom of thallium exposure is alopecia (loss of hair). Cutaneous effects may include dry, scaly skin and impairment of nail growth often resulting in the appearance of crescent-shaped strips across fingernails and toenails (Mees' line). Other symptoms in acute poisoning relate chiefly to the gastrointestinal tract, nervous system, skin, eyes, and cardiovascular system. Acute poisoning results in swelling of the feet and legs, arthralgia, vomiting, insomnia, hyperesthesia and paresthesia of the hands and feet, mental confusion, polyneuritis with severe pain in the legs and loins, partial paralysis of the legs, angina-like pains, nephritis, wasting and weakness, and lymphocytosis and eosinophilia. In chronic poisoning, central and peripheral nervous system abnormalities may persist including ataxia, tremor, incoordination, paralysis of extremities, endocrine disorders, memory loss, and psychoses

may develop., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinodon variegatus (sheepshead minnow) - 21.0 mg/l - 96.0 h
	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 14.0 mg/l - 96.0 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3288 Class: 6.1 Packing group: II
Proper shipping name: Toxic solid, inorganic, n.o.s. (Thallium)
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 3288 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. (Thallium)

IATA
UN number: 3288 Class: 6.1 Packing group: II
Proper shipping name: Toxic solid, inorganic, n.o.s. (Thallium)

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date

Thallium	7440-28-0	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Thallium	7440-28-0	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Thallium	7440-28-0	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Thallium	7440-28-0	2007-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H300	Fatal if swallowed.
H300 + H330	Fatal if swallowed or if inhaled

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	0
Reactivity Hazard:	0

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 05/24/2016 Print Date: 06/21/2016

SAFETY DATA SHEET

Version 5.8
Revision Date 10/12/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Zinc

Product Number : 96454
Brand : Sigma-Aldrich

CAS-No. : 7440-66-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Combustible dust,
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Warning

Hazard statement(s)

May form combustible dust concentrations in air
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : Zn
Molecular weight : 65.39 g/mol

Hazardous components

Component		Classification	Concentration
Zinc powder (stabilized)			
CAS-No. EC-No. Index-No.	7440-66-6 231-175-3 030-001-01-9	Aquatic Acute 1; Aquatic Chronic 1; H410	<= 100 %
Zinc oxide			
CAS-No. EC-No. Index-No.	1314-13-2 215-222-5 030-013-00-7	Aquatic Acute 1; Aquatic Chronic 1; H410	>= 5 - < 10 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Special powder against metal fire Dry sandUse water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media
Water

5.2 Special hazards arising from the substance or mixture

Zinc/zinc oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Zinc oxide	1314-13-2	TWA	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	metal fume fever		
		STEL	10.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		metal fume fever		

		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		C	15.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	15.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	Not applicable
e)	Melting point/freezing point	Melting point/range: 420 °C (788 °F) - lit.
f)	Initial boiling point and boiling range	907 °C (1,665 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	May form combustible dust concentrations in air
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	Not applicable
l)	Vapour density	No data available
m)	Relative density	7.133 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	Not applicable
p)	Auto-ignition temperature	does not ignite
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	During processing, dust may form explosive mixture in air.
t)	Oxidizing properties	No data available

9.2 Other safety information

Bulk density	1.8 - 3.2 kg/m3

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Dust may form explosive mixture in air.

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Acids and bases

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available (Zinc powder (stabilized))

Inhalation: No data available (Zinc powder (stabilized))

Dermal: No data available (Zinc powder (stabilized))

No data available (Zinc powder (stabilized))

Skin corrosion/irritation
No data available (Zinc powder (stabilized))

Serious eye damage/eye irritation
No data available (Zinc powder (stabilized))

Respiratory or skin sensitisation
Did not cause sensitisation on laboratory animals. (Zinc powder (stabilized))

Germ cell mutagenicity
No data available (Zinc powder (stabilized))

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available (Zinc powder (stabilized))

No data available (Zinc powder (stabilized))

Specific target organ toxicity - single exposure
No data available (Zinc powder (stabilized))

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available (Zinc powder (stabilized))

Additional Information
RTECS: ZG8600000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Effects due to ingestion may include:, chills, dry throat, sweet taste, Fever, Cough, Nausea, Vomiting, Weakness, Contact with eyes or skin may cause:, Irritation (Zinc powder (stabilized))

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinus carpio (Carp) - 450 µg/l - 96 h (Zinc powder (stabilized))
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 0.068 mg/l - 48 h (Zinc powder (stabilized))
	mortality NOEC - Daphnia (water flea) - 0.101 - 0.14 mg/l - 7 d (Zinc powder (stabilized))

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Bioaccumulation	Algae - 7 d at 16 °C - 5 µg/l (Zinc powder (stabilized))
	Bioconcentration factor (BCF): 466

12.4 Mobility in soil

No data available (Zinc powder (stabilized))

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Zinc powder (stabilized))
Reportable Quantity (RQ): 1020 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder (stabilized))
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Zinc powder (stabilized))

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Zinc oxide	1314-13-2	2007-03-01
Zinc powder (stabilized)	7440-66-6	1993-04-24

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Zinc powder (stabilized)	7440-66-6	1993-04-24
Zinc oxide	1314-13-2	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Zinc powder (stabilized)	7440-66-6	1993-04-24
Zinc oxide	1314-13-2	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Zinc powder (stabilized)	7440-66-6	1993-04-24
Zinc oxide	1314-13-2	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

	May form combustible dust concentrations in air
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.8 Revision Date: 10/12/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 3.20
Revision Date 02/26/2015
Print Date 05/13/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Chloroform

Product Number : 02487
Brand : Sigma-Aldrich
Index-No. : 602-006-00-4

CAS-No. : 67-66-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Specific target organ toxicity - repeated exposure (Category 1), Liver, Kidney, H372
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.

H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure.
H402	Harmful to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P311	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Trichloromethane Methylidyne trichloride
Formula	:	$CHCl_3$
Molecular weight	:	119.38 g/mol
CAS-No.	:	67-66-3
EC-No.	:	200-663-8
Index-No.	:	602-006-00-4
Registration number	:	01-2119486657-20-XXXX

Hazardous components

Component	Classification	Concentration
Chloroform		
	Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 3; H302, H315, H319, H331, H336, H351, H361, H372, H402	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Move out of dangerous area.Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Chloroform	67-66-3	TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Liver damage Embryo/fetal damage Confirmed animal carcinogen with unknown relevance to humans		
		ST	2.000000 ppm 9.780000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		C	50.000000 ppm 240.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -63 °C (-81 °F)
f)	Initial boiling point and boiling range	60.5 - 61.5 °C (140.9 - 142.7 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	213.3 hPa (160.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.492 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 1.97
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	27.1 mN/m at 20.0 °C (68.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Contains the following stabiliser(s):
2-Methyl-2-butene (0.003 %)

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Strong bases, Magnesium, Sodium/sodium oxides, Lithium

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LD50 Oral - Rat - 908 mg/kg
Remarks: Behavioral:Change in motor activity (specific assay). Behavioral:Ataxia. Lungs, Thorax, or Respiration:Respiratory stimulation.

Inhalation: No data available

LOEC Inhalation - Rat - male - 6 h - 500 ppm

LD50 Dermal - Rabbit - > 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Irritating to eyes. - 24 h

Respiratory or skin sensitisation
Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Carcinogenicity

Carcinogenicity - Rat - Oral
Tumorigenic:Carcinogenic by RTECS criteria. Leukaemia

The National Cancer Institute (NCI) has found clear evidence for carcinogenicity. Limited evidence of a carcinogenic effect.

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Chloroform)
NTP:	Reasonably anticipated to be a human carcinogen (Chloroform)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Suspected of damaging the unborn child. Suspected human reproductive toxicant

Specific target organ toxicity - single exposure
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1. - Liver, Kidney

Aspiration hazard
No data available

Additional Information
RTECS: FS9100000

Vomiting, Gastrointestinal disturbance, Exposure to and/or consumption of alcohol may increase toxic effects.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Leuciscus idus (Golden orfe) - 162 mg/l - 48 h
	LC100 - Leuciscus idus (Golden orfe) - 220 mg/l - 48 h
	LC50 - other fish - 97 mg/l - 96 h
	LC50 - Danio rerio (zebra fish) - 121 mg/l - 96 h
	NOEC - Oryzias latipes - 122 mg/l - 10 d
	NOEC - Oncorhynchus mykiss (rainbow trout) - 24 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 79.00 mg/l - 24 h
	Immobilization EC50 - Daphnia magna (Water flea) - 51.6 mg/l - 48 h
	NOEC - Daphnia magna (Water flea) - 120 mg/l - 11 d
Toxicity to algae	EC50 - No information available. - 500.00 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Bioaccumulation	Lepomis macrochirus (Bluegill) - 14 d - 0.11 mg/l
	Bioconcentration factor (BCF): 6

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1888 Class: 6.1 Packing group: III
Proper shipping name: Chloroform
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1888 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: CHLOROFORM

IATA
UN number: 1888 Class: 6.1 Packing group: III
Proper shipping name: Chloroform

15. REGULATORY INFORMATION

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

New Jersey Right To Know Components

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Chloroform	CAS-No. 67-66-3	Revision Date 2011-09-01
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No. 67-66-3	Revision Date 2011-09-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.
Repr.	Reproductive toxicity
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.20 Revision Date: 02/26/2015 Print Date: 05/13/2016

SAFETY DATA SHEET

Version 4.7
Revision Date 03/02/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	:	Cobalt
Product Number	:	266639
Brand	:	Aldrich
Index-No.	:	027-001-00-9
CAS-No.	:	7440-48-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	:	Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Respiratory sensitisation (Category 1), H334
Skin sensitisation (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word: Danger

Hazard statement(s)

H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves.
P285	In case of inadequate ventilation wear respiratory protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/

physician.

P363	Wash contaminated clothing before reuse.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Co
Molecular weight	:	58.93 g/mol
CAS-No.	:	7440-48-4
EC-No.	:	231-158-0
Index-No.	:	027-001-00-9

Hazardous components

Component	Classification	Concentration
Cobalt		
	Resp. Sens. 1; Skin Sens. 1; Aquatic Chronic 4; H317, H334, H413	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Cobalt/cobalt oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Air sensitive. Handle and store under inert gas. Keep in a dry place.
Storage class (TRGS 510): Flammable solid hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Cobalt	7440-48-4	TWA	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Pulmonary function Asthma Myocardial effects Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		

		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Pulmonary function Asthma Myocardial effects Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans varies		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Cobalt	7440-48-4	Cobalt	15.0000 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift at end of workweek			
		Cobalt	1.0000 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Cobalt	15 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Cobalt	1 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: light grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,493 - 1,495 °C (2,719 - 2,723 °F)
f)	Initial boiling point and boiling range	2,900 °C (5,252 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	8.9 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	log Pow: 5.0
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available

s) Explosive properties No data available

t) Oxidizing properties No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Air

10.5 Incompatible materials
Oxidizing agents, Mineral acidsAcetylene, Hydrazinium nitrate, Strong oxidizing agents, Material readily reacts with acids generating flammable and/or explosive hydrogen gas.

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 7,510 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 15 min
(OECD Test Guideline 439)

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Ames test
S. typhimurium
Result: negative

OECD Test Guideline 474
Mouse - male and female
Result: negative

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

2A - Group 2A: Probably carcinogenic to humans (Cobalt)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

2A - Group 2A: Probably carcinogenic to humans (Cobalt)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity - Rat - male and female - inhalation (dust/mist/fume)
RTECS: GF8750000

Kidney injury may occur., Damage to the eyes., Lung irritation, Throat., Rash, Vomiting, Diarrhoea

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96.0 h
Toxicity to algae	Remarks: No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3089 Class: 4.1 Packing group: II
Proper shipping name: Metal powders, flammable, n.o.s.
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG
UN number: 3089 Class: 4.1 Packing group: II EMS-No: F-G, S-G
Proper shipping name: METAL POWDER, FLAMMABLE, N.O.S.

IATA
UN number: 3089 Class: 4.1 Packing group: II
Proper shipping name: Metal powder, flammable, n.o.s.

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Cobalt	7440-48-4	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Chronic	Chronic aquatic toxicity
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H413	May cause long lasting harmful effects to aquatic life.
Resp. Sens.	Respiratory sensitisation
Skin Sens.	Skin sensitisation

HMIS Rating
Health hazard: 0
Chronic Health Hazard: *

Flammability:	3
Physical Hazard	3

NFPA Rating

Health hazard:	0
Fire Hazard:	3
Reactivity Hazard:	3

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 03/02/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 04/24/2015
Print Date 06/20/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Vanadium

Product Number : 262935
Brand : Aldrich

CAS-No. : 7440-62-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : V
Molecular weight : 50.94 g/mol
CAS-No. : 7440-62-2
EC-No. : 231-171-1

Hazardous components

Component	Classification	Concentration
Vanadium		
		<= 100 %

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Vanadium/vanadium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas. Keep in a dry place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Vanadium	7440-62-2	TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing	Melting point/range: 1,890 °C (3,434 °F) - lit.

	point	
f)	Initial boiling point and boiling range	3,380 °C (6,116 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	10.67 hPa (8.00 mmHg) at 20 °C (68 °F)
l)	Vapour density	No data available
m)	Relative density	6.11 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Carcinogenicity - Rat - Intramuscular
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: YW1355000

metallic taste, greenish-black discoloration of the tongue, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 04/24/2015 Print Date: 06/20/2016

SAFETY DATA SHEET

Version 5.7
Revision Date 03/02/2016
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Naphthalene

Product Number : 184500
Brand : Aldrich
Index-No. : 601-052-00-2

CAS-No. : 91-20-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable solids (Category 2), H228
Acute toxicity, Oral (Category 4), H302
Carcinogenicity (Category 2), H351
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Warning

Hazard statement(s)
H228 Flammable solid.
H302 Harmful if swallowed.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_{10}H_8C_{10}H_8$
Molecular weight	:	128.17 g/mol
CAS-No.	:	91-20-3
EC-No.	:	202-049-5
Index-No.	:	601-052-00-2

Hazardous components

Component	Classification	Concentration
Naphthalene		
	Flam. Sol. 2; Acute Tox. 4; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; H228, H302, H351, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Flammable solid hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Naphthalene	91-20-3	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Hemolytic anemia Upper Respiratory Tract irritation Cataract Confirmed animal carcinogen with unknown relevance to humans		

		Danger of cutaneous absorption		
		TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Hematologic effects Upper Respiratory Tract irritation Eye irritation Eye damage Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		STEL	15.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Hematologic effects Upper Respiratory Tract irritation Eye irritation Eye damage Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	10.000000 ppm 50.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	10.000000 ppm 50.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	15.000000 ppm 75.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	10 ppm 50 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	15 ppm 75 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	10 ppm 50 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	10 ppm 50 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	15 ppm 75 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Naphthalene	91-20-3	1-Naphthol + 2-Naphthol			ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: flakes, granules Colour: white
b)	Odour	aromatic
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 80 - 82 °C (176 - 180 °F) - lit.
f)	Initial boiling point and boiling range	218 °C (424 °F) - lit.
g)	Flash point	80.0 °C (176.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available

j)	Upper/lower flammability or explosive limits	Upper explosion limit: 5.9 %(V) Lower explosion limit: 0.9 %(V)
k)	Vapour pressure	1.3 hPa (1.0 mmHg) at 53.0 °C (127.4 °F) 0.04 hPa (0.03 mmHg) at 25.0 °C (77.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.085 g/cm3 at 24.7 °C (76.5 °F)
n)	Water solubility	0.0308 g/l at 25 °C (77 °F) - OECD Test Guideline 105 - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 3.4 at 25 °C (77 °F)
p)	Auto-ignition temperature	526.0 °C (978.8 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	1.05 mm2/s at 81.5 °C (178.7 °F) -
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	31.8 mN/m at 100.0 °C (212.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 490.0 mg/kg

LC50 Inhalation - Rat - male and female - 4 h - > 0.4 mg/l
(OECD Test Guideline 403)

LD50 Dermal - Rabbit - 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation

Respiratory or skin sensitisation
Maximisation Test - Guinea pig
Result: Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
Ames test
S. typhimurium
Result: negative

Rat - male
Result: negative

Carcinogenicity

Carcinogenicity - Rat - male and female - inhalation (vapour)
Tumorigenic:Tumors at site or application.

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Naphthalene)
NTP:	Reasonably anticipated to be a human carcinogen (Naphthalene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity	Rat - male and female - Oral - NOAEL : 100 mg/kg - LOAEL : 400 mg/kg - OECD Test Guideline 408

RTECS: QJ0525000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Naphthalene is retinotoxic and systemic absorption of its vapors above 15ppm, may result in:, cataracts, optic neuritis, corneal injury, Eye irritation, Ingestion may provoke the following symptoms:, hemolytic anemia, hemoglobinuria, Nausea, Headache, Vomiting, Gastrointestinal disturbance, Convulsions, anemia, Kidney injury may occur., Seizures., Coma.

Heart -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 7.9 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 2.16 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d

Result: 2 % - Not readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation Fish

Bioconcentration factor (BCF): 427 - 1,158

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1334 Class: 4.1 Packing group: III
Proper shipping name: Naphthalene, crude
Reportable Quantity (RQ): 100 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG

UN number: 1334 Class: 4.1 Packing group: III EMS-No: F-A, S-G
Proper shipping name: NAPHTHALENE, CRUDE
Marine pollutant:yes

IATA

UN number: 1334 Class: 4.1 Packing group: III
Proper shipping name: Naphthalene, crude

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Naphthalene	91-20-3	1990-01-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Flam. Sol.	Flammable solids
H228	Flammable solid.
H302	Harmful if swallowed.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	2
Physical Hazard	2

NFPA Rating

Health hazard:	2
Fire Hazard:	2
Reactivity Hazard:	2

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.7 Revision Date: 03/02/2016 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 3.12
Revision Date 12/02/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Mercury

Product Number : 215457
Brand : Sigma-Aldrich
Index-No. : 080-001-00-0

CAS-No. : 7439-97-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Inhalation (Category 2), H330
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H330 Fatal if inhaled.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Hg
Molecular weight	:	200.59 g/mol
CAS-No.	:	7439-97-6
EC-No.	:	231-106-7
Index-No.	:	080-001-00-0

Hazardous components

Component	Classification	Concentration
Mercury		
	Acute Tox. 2; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H330, H360, H372, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Mercury/mercury oxides.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. In some instances, a mercury spill kit may be used. Please consult with your site EHS representative to determine the most appropriate clean up method.Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Mercury	7439-97-6	C	0.1 mg/m3	USA. NIOSH Recommended Exposure Limits
	Remarks	Potential for dermal absorption		

		CEIL	1.0mg/10m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	0.05 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		
		TWA	0.025 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	0.05 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Mercury	7439-97-6	Mercury	0.0400 mg/g	In urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	Prior to shift (16 hours after exposure ceases)			
		Mercury	15.0000 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: silver, white
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -38.87 °C (-37.97 °F) - lit.
f)	Initial boiling point and boiling range	356.6 °C (673.9 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	< 0.01 hPa (< 0.01 mmHg) at 20 °C (68 °F) 1 hPa (1 mmHg) at 126 °C (259 °F)
l)	Vapour density	6.93 - (Air = 1.0)
m)	Relative density	13.55 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.00006 g/l at 25 °C (77 °F)
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	6.93 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Ammonia, Azides, Nitrates, Chlorates, Copper

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LC50 Inhalation - Rat - male - 2 h - < 27 mg/m3

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Mercury)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Presumed human reproductive toxicant

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: OV4550000

Mercury accumulates in almost all tissues, especially in the:, Kidney, Effects due to ingestion may include:, Nausea, Vomiting, Diarrhoea, intestinal bleeding

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality LC50 - Cyprinus carpio (Carp) - 0.160 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential

Bioaccumulation	Carassius auratus (goldfish) - 1,789 d - 0.25 µg/l
	Bioconcentration factor (BCF): 155,986

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2809 Class: 8 (6.1) Packing group: III
Proper shipping name: A,W Mercury
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2809 Class: 8 (6.1) Packing group: III EMS-No: F-A, S-B
Proper shipping name: MERCURY
Marine pollutant:yes

IATA
UN number: 2809 Class: 8 (6.1) Packing group: III
Proper shipping name: Mercury

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Mercury	7439-97-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Mercury	7439-97-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Mercury	7439-97-6	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Mercury	7439-97-6	2013-12-20

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H330	Fatal if inhaled.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Repr.	Reproductive toxicity

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.12 Revision Date: 12/02/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.7
Revision Date 02/27/2015
Print Date 05/24/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Copper

Product Number : 12816
Brand : Aldrich

CAS-No. : 7440-50-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : Cu
Molecular weight : 63.55 g/mol
CAS-No. : 7440-50-8
EC-No. : 231-159-6

Hazardous components

Component	Classification	Concentration
Copper		
		<= 100 %

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Copper oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Store under inert gas. Air sensitive.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Copper	7440-50-8	TWA	1.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Irritation Gastrointestinal metal fume fever		
		TWA	0.200000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Irritation Gastrointestinal metal fume fever		
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Foil Colour: light red
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,083.4 °C (1,982.1 °F)
f)	Initial boiling point and boiling range	2,567 °C (4,653 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	8.940 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids, Strong oxidizing agents, Acid chlorides, Halogens

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal - Mouse - 3.5 mg/kg

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: GL5325000

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper)
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Copper)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Copper	7440-50-8	1989-08-11

New Jersey Right To Know Components

	CAS-No.	Revision Date
Copper	7440-50-8	1989-08-11

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 02/27/2015 Print Date: 05/24/2016

SAFETY DATA SHEET

Version 4.7
Revision Date 12/28/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Nickel

Product Number : 268259
Brand : Aldrich
Index-No. : 028-002-00-7

CAS-No. : 7440-02-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 2), H351
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), H372
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and

	understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Ni
Molecular weight	:	58.69 g/mol
CAS-No.	:	7440-02-0
EC-No.	:	231-111-4
Index-No.	:	028-002-00-7

Hazardous components

Component	Classification	Concentration
Nickel		
	Skin Sens. 1; Carc. 2; STOT RE 1; Aquatic Acute 3; Aquatic Chronic 3; H317, H351, H372, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Nickel/nickel oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Nickel	7440-02-0	TWA	1.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Dermatitis Pneumoconiosis Not suspected as a human carcinogen		
		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.015000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.015000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	1.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermatitis Pneumoconiosis Not suspected as a human carcinogen		
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.015 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Foil Colour: white, silver, metallic
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,453 °C (2,647 °F) - lit.
f)	Initial boiling point and boiling range	2,732 °C (4,950 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	1 hPa (1 mmHg) at 1,810 °C (3,290 °F)
l)	Vapour density	No data available
m)	Relative density	8.9 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
acids, Oxidizing agents, Sulphur compounds, Hydrogen gas, Oxygen, Methanol, organic solvents, Aluminium, Fluorine, Ammonia

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
May cause sensitisation by skin contact.

Germ cell mutagenicity
No data available

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
	1 - Group 1: Carcinogenic to humans (Nickel)
	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
IARC:	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
	1 - Group 1: Carcinogenic to humans (Nickel)
	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
NTP:	Reasonably anticipated to be a human carcinogen (Nickel)
	Reasonably anticipated to be a human carcinogen (Nickel)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Inhalation - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: QR5950000

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinus carpio (Carp) - 1.3 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1 mg/l - 48 h

12.2 Persistence and degradability
Not applicable

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Nickel	7440-02-0	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 12/28/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 03/05/2015
Print Date 05/13/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : DDT-Endrin Mix

Product Number : 48282
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Specific target organ toxicity - single exposure (Category 1), H370
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H370	Causes damage to organs.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P311	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P307 + P311	IF exposed: Call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Methanol			
CAS-No. EC-No. Index-No. Registration number	67-56-1 200-659-6 603-001-00-X 01-2119433307-44-XXXX	Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370	>= 90 - <= 100 %
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane			
CAS-No. EC-No. Index-No.	50-29-3 200-024-3 602-045-00-7	Acute Tox. 3; Carc. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301 + H311, H351, H372, H410	< 0.1 %
Endrin			
CAS-No. EC-No. Index-No.	72-20-8 200-775-7 602-051-00-X	Acute Tox. 1; Acute Tox. 2; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310, H410	< 0.1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Methanol	67-56-1	TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Headache Nausea Dizziness Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption		
		STEL	250.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Headache Nausea Dizziness Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption		
		TWA	200.000000 ppm 260.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		ST	250.000000 ppm 325.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		TWA	200.000000 ppm 260.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Methanol	67-56-1	Methanol	15.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	9.7 °C (49.5 °F) - closed cup - Solvent
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available

p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Acids, Oxidizing agents, Alkali metals, Acid chlorides, Acid anhydrides, Reducing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

Methyl alcohol may be fatal or cause blindness if swallowed., Cannot be made non-poisonous., Effects due to ingestion may include:, Nausea, Dizziness, Gastrointestinal disturbance, Weakness, Confusion., Drowsiness, Unconsciousness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence
Pancreas. - (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)
Central nervous system - (Endrin)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol
Reportable Quantity (RQ): 2000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1230 Class: 3 (6.1) Packing group: II EMS-No: F-E, S-D
Proper shipping name: METHANOL

IATA
UN number: 1230 Class: 3 (6.1) Packing group: II
Proper shipping name: Methanol

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	1993-04-24
Endrin	72-20-8	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	1993-04-24
Endrin	72-20-8	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. 1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 2008-06-17
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Methanol	CAS-No. 67-56-1	Revision Date 2012-03-16
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	2008-06-17
Endrin	72-20-8	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H300 + H310	Fatal if swallowed or in contact with skin
H301	Toxic if swallowed.

H301 + H311	Toxic if swallowed or in contact with skin
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H401	Toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 03/05/2015 Print Date: 05/13/2016

SAFETY DATA SHEET

Version 4.8
Revision Date 05/24/2016
Print Date 07/04/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Trichloroethylene

Product Number : 46267
Brand : Sigma-Aldrich
Index-No. : 602-027-00-9

CAS-No. : 79-01-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	TCE Trichloroethene
Formula	:	C_2HCl_3
Molecular weight	:	131.39 g/mol
CAS-No.	:	79-01-6
EC-No.	:	201-167-4
Index-No.	:	602-027-00-9

Hazardous components

Component	Classification	Concentration
Trichloroethylene Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Skin Irrit. 2; Eye Irrit. 2A; Muta. 2; Carc. 1B; STOT SE 3; Aquatic Acute 3; Aquatic Chronic 3; H315, H319, H336, H341, H350, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive. Handle and store under inert gas.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Trichloroethylene	79-01-6	TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment cognitive decrement Renal toxicity Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen		
		STEL	25.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment cognitive decrement Renal toxicity Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen		
		Potential Occupational Carcinogen See Appendix C See Appendix A		
		See Table Z-2		
		TWA	100.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		CEIL	200.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		Peak	300.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		TWA	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		CEIL	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		Peak	300 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		STEL	100 ppm 537 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		C	300 ppm	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	25 ppm 135 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Trichloroethylene	79-01-6	Trichloroacetic acid	15.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)

	Remarks	End of shift at end of workweek			
		Trichloroethanol	0.5000 mg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Trichloroethylene		In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Trichloroethylene		In end-exhaled air	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -84.8 °C (-120.6 °F) - lit.
f)	Initial boiling point and boiling range	86.7 °C (188.1 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 10.5 %(V) Lower explosion limit: 8 %(V)
k)	Vapour pressure	81.3 hPa (61.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.463 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 2.29log Pow: 5
p)	Auto-ignition temperature	410.0 °C (770.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Oxidizing agents, Strong bases, Magnesium

10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 4,920 mg/kg

LC50 Inhalation - Mouse - 4 h - 8450 ppm

LD50 Dermal - Rabbit - > 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Severe skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
In vitro tests showed mutagenic effects

Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC:	1 - Group 1: Carcinogenic to humans (Trichloroethylene)
NTP:	Reasonably anticipated to be a human carcinogen (Trichloroethylene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KX4550000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Exposure to and/or consumption of alcohol may increase toxic effects., Gastrointestinal disturbance, Kidney injury may occur., narcosis
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 41 mg/l - 96.0 h

	LOEC - other fish - 11 mg/l - 10.0 d
	NOEC - Oryzias latipes - 40 mg/l - 10.0 d
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 18.00 mg/l - 48 h
Toxicity to algae	IC50 - Pseudokirchneriella subcapitata (green algae) - 175.00 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1710 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TRICHLOROETHYLENE

IATA
UN number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Trichloroethylene	CAS-No. 79-01-6	Revision Date 2011-09-01
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Trichloroethylene	CAS-No. 79-01-6	Revision Date 2011-09-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H402	Harmful to aquatic life.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.8 Revision Date: 05/24/2016 Print Date: 07/04/2016

APPENDIX 5

Quality Assurance Project Plan

Quality Assurance Project Plan

14 Lecount Place,
207, 209, and 211 North Avenue
455, 459, and 463 Main Street
New Rochelle, New York

BCP #C360176

1.0 PROJECT DESCRIPTION

This document presents the Quality Assurance Project Plan (QAPP) for the Remedial Investigation Workplan/Interim Remedial Measure (RIWP/IRM) for the property at 14 Lecount Place, 207, 209, and 211 North Avenue 455, 459, and 463 Main Street in the Town of New Rochelle, NY. The Site consists of approximately 0.93 acres and is identified on the Westchester County Clerk's as a portion of tax parcel map Section-Block-Lot number 1-228-0029, 1-228-0009, 1-228-0010, 1-228-0011, 1-228-0003, 1-228-0005, and 1-228-0007, respectively.

2.0 PROJECT ORGANIZATION

The RIWP/IRM will be conducted by Soils Engineering Services, Inc. (SESI), on behalf of 14 Le Count Place LLC. The organization of SESI's key project management and field staff, and respective areas of responsibility, is presented below.

2.1 Project Principal

Michael W. St. Pierre, P.E.
Provide technical and administrative oversight and guidance throughout the project, assist in securing company resources, participate in technical review of deliverables, and attend key meetings as needed.

2.2 Principal Engineer

Fuad Dahan, PhD, P.E.
Provide technical guidance and review of reports, analytical data. Will have key involvement in screening and development of remedial alternatives.

2.3 Project Manager

Fuad Dahan, PhD, P.E.
Responsible for maintaining the day-to-day schedule for completing the fieldwork and deliverables according to BCP program requirements and client expectations.

2.4 Remedial Investigation Program Manager

Fuad Dahan, PhD, P.E.
Responsible for coordinating and directing field efforts of SESI staff and subcontractors, and for maintaining that work is done according to QAPP specifications.

2.5 Field Team Leader

Joseph Scardino

Responsible for overseeing field work during the RI and IRM, including observing subcontractors, maintaining field notes, and collecting samples of various environmental media, in accordance with the NYSDEC-approved Work Plan.

3.0 QA/QC OBJECTIVES FOR MEASUREMENT OF DATA

Sample Collection

The chemical constituents anticipated to be sampled and their analytical methods are listed in Table 7-1. In addition to the collection of investigative field samples, requirements and procedures for the collection of field QA/QC samples for the Site will be adhered to as discussed below:

Duplicate Samples: The NYSDEC specifies a duplicate sample frequency requirement of 20% (1 duplicate per 20 investigative samples of a given matrix). Duplicates will be analyzed for the same parameters as the original investigative sample. The time of duplicate sample collection will not be recorded on any documents, jars, labels, or other equipment that is to be submitted to the laboratory performing the sample analysis; instead, the duplicate sample information is to be recorded by the field personnel in the project field notes for reference. The analytical results of the duplicate will be used to check for analytical and sampling reproducibility, which is to measure the precision of laboratory methods and instrumentation, in addition to the precision of field sample collection methods employed.

Field and Trip Blanks: Field and trip blanks consisting of distilled water will be submitted to the analytical laboratory to provide the means to assess the quality of the data resulting from the field-sampling program. Field (equipment) blank samples will be analyzed to check for procedural chemical constituents at the facility that may cause sample contamination. One (1) field blank will be collected for every 20 or fewer investigative samples of a given matrix and will be analyzed for the total amount of parameters to be sampled during the sampling event. Trip blanks will be used to assess the potential for contamination of samples due to contaminant migration during sample shipment and storage. One (1) trip blank will be included with each shipment container storing at least one (1) aqueous sample collected and proposed for volatile organic compound analysis. Each trip blank will be submitted for volatile organic compound analysis.

Matrix Spike / Matrix Spike Duplicates (MS/MSD): MS/MSD and MS/Duplicate samples provide information about the effect of the sample matrix on the digestion and measurement methodology. Depending on site-specific circumstances, one MS/MSD or MS/Duplicate should be collected for every 20 or fewer investigative samples to be analyzed for organic and inorganic parameters of a given matrix.

Sample Preservation

Effective sample preservation methods increase the prevention for degradation of a sample due to precipitation, biological action, or other physical/chemical processes between the time of sample collection and analysis. Prior to sample collection in the field, all sample bottleware must be checked to ensure the proper sample containerization is provided from the laboratory for the respective sample parameters to be collected. Table 4.1 provides sample containerization elements to be referenced with the objective of achieving the proper collection and preservation of samples in accordance to their proposed laboratory method to be performed. Containerization elements to be considered include the sample analysis method by matrix, quantity of containers required for proposed analysis, the size and material construction of bottleware, the requirement for temperature-based and/or chemical preservatives to be present within select sample containers based on proposed laboratory analysis, and the consideration of parameter-specific sample

holding times that must not be exceeded for collected samples awaiting delivery, processing, and extraction at the laboratory. Section 4.4 provides additional information on sample preservation and shipment.

Sample preservation must be documented on the Chain-of-Custody form either using codes provided by the laboratory or written notes.

In cases where NYSDOH ELAP Certification exists for a specific group or category of parameters, the laboratories performing analysis in connection with this project will have appropriate NYSDOH ELAP Certification. For analysis of samples where Analytical Service Protocol (ASP, July 2005) Category B deliverables are required, NYSDOH ELAP CLP certification is required.

Detection limits set by NYSDEC-ASP (July 2005) will be used for all sample analyses unless otherwise noted. If NYSDEC-ASP-dictated detection limits prove insufficient to assess project goals (i.e., comparison to drinking water standards or attainment of ARARs), then ASP Special Analytical Services (SAS) or other appropriate methods will be utilized.

The quality assurance/quality control objectives for all measurement data include completeness, representativeness, comparability, precision and accuracy.

3.1 COMPLETENESS

The analyses performed must be appropriate and inclusive. The parameters selected for analysis are chosen to meet the objectives of the study.

Completeness of the analyses will be assessed by comparing the number of parameters intended to be analyzed with the number of parameters successfully determined and validated. Data must meet QC acceptance criteria for 100 percent or more of requested determinations.

3.2 REPRESENTATIVENESS

Samples must be taken of the population and, where appropriate, the population will be characterized statistically to express the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or environmental condition.

Non-dedicated sampling devices will be cleaned between sampling points by washing and rinsing with pesticide-grade methanol, followed by a thorough rinse with distilled water. Specific cleaning techniques are described in the Field Sampling Procedure. Two types of blank samples will accompany each sample set where Target Compound List (TCL) volatiles are to be analyzed (water matrix only). A trip blank, consisting of a 40 ml VOA vial of organic-free water prepared by the laboratory, will accompany each set of sample bottles from the laboratory to the field and back. This bottle will remain sealed throughout the shipment and sampling process. This blank will be analyzed for TCL volatile organic compounds along with the groundwater samples to ensure that contamination with TCL volatile compounds has not occurred during the bottle preparation, shipment and sampling phase of the project. In order to check for contaminant carryover when non-dedicated sampling equipment is used, a rinsate blank will be submitted to the laboratory. This blank will also be analyzed for TCL volatile organic compounds. The TCL compounds are identified in the United States Environmental Protection Agency (USEPA) Contract Laboratory Program dated 7/85 or as periodically updated.

The analysis results obtained from the determination of identical parameters in field duplicate samples can be used to further assess the representativeness of the sample data.

3.3 COMPARABILITY

Consistency in the acquisition, preparation, handling and analysis of samples is necessary in order for the results to be compared where appropriate. Additionally, the results obtained from analyses of the samples will be compared with the results obtained in previous studies, if available.

To ensure the comparability of analytical results with those obtained in previous or future testing, all samples will be analyzed by NYSDEC-approved methods. The NYSDEC-ASP mandated holding times for various analyses will be strictly adhered to.

3.4 PRECISION AND ACCURACY

The validity of the data produced will be assessed for precision and accuracy. Analytical methods which will be used include gas chromatography/mass spectrometry (GC/MS), gas chromatography (GC), colorimetry, atomic spectroscopy, gravimetric and titrametric techniques. The following outlines the procedures for evaluating precision and accuracy, routine monitoring procedures, and corrective actions to maintain analytical quality control. All data evaluations will be consistent with NYSDEC-ASP procedures (July 2005). Data will be 100 percent compliant with NYSDEC-ASP requirements.

The requirements of QA/QC are both method specific and matrix dependent. The number of duplicate, spiked and blank samples analyzed will be dependent upon the total number of samples of each matrix to be analyzed, but there will be at least one split per matrix. The inclusion and frequency of analysis of field blanks and trip blanks will be on the order of one per each site. Samples to be analyzed for volatile organic compounds will be accompanied by trip and field blanks (water matrix) or field blanks (soil, sediment matrice).

Quality assurance audit samples will be prepared and submitted by the laboratory QA manager for each analytical procedure used. The degree of accuracy and the recovery of analyte to be expected for the analysis of QA samples and spiked samples is dependent upon the matrix, method of analysis, and compound or element being determined. The concentration of the analyte relative to the detection limit is also a major factor in determining the accuracy of the measurement. The lower end of the analytical range for most analyses is generally accepted to be five times the detection limit. At or above this level, the determination and spike recoveries for metals in water samples will be expected to range from 75 to 125 percent. The recovery of organic surrogate compounds and matrix spiking compounds determined by GC/MS will be compared to the guidelines for recovery of individual compounds as established by the United States Environmental Protection Agency Contract Laboratory Program dated 7/85 or as periodically updated.

The quality of results obtained for inorganic ion and demand parameters will be assessed by comparison of QC data with laboratory control charts for each test.

4.0 SAMPLING PROCEDURES

4.1 SAMPLING PROGRAM

The sampling program for this project will include soil and groundwater. Soil samples will be collected from split spoon sampling or macrocore devices retrieved from soil borings.

Groundwater samples will be collected from groundwater monitoring wells using low flow purging techniques.

4.1.1 Drilling/Sampling Procedures

Soil and groundwater samples will be collected by means of a soil boring program. Soil borings shall be completed using the hollow stem auger drilling methods, direct push methods, or rotary drilling methods, whichever methods are determined to be best suited to site conditions by the SESI project manager and SESI field team leader.

Soil samples will be collected from soil borings and analyzed in accordance with the NYSDEC-approved Work Plan. Monitoring wells for groundwater sample collection will be installed in completed soil borings. Either hollow stem auger (HSA) or direct push drilling methods may be utilized for monitoring well completion.

Samples of the encountered surface materials shall be collected continuously during drilling so that a complete soil profile is examined and described by the SESI field geologist. The sampling method employed shall be ASTM D-1586/Split Barrel Sampling using a standard 2-foot long, 2-inch outside diameter split- spoon sampler with a 140-pound hammer, in cases where HSA methods are used. Upon retrieval of the sampling barrel, the collected sample shall be placed in glass jars and labeled, stored on site (on ice in a cooler if necessary), and transmitted to the appropriate testing laboratory or storage facility. Chain-of-custody procedures will be practiced following Section 15, EPA-600/4-82-029, Handbook for Sampling and Sample Preservation of Water and Waste Waters.

A geologist or engineer will be on site during the drilling operations to fully describe each soil sample, following the New York State Soil Description Procedure, and to retain representative portions of each sample.

The drilling contractor will be responsible for obtaining accurate and representative samples, informing the geologist of changes in drilling pressure, keeping a separate general log of soils encountered including blow counts [i.e., the number of blows from a soil sampling drive weight (140 pounds)] required to drive the split-spoon sampler in 6-inch increments and installing monitoring wells to levels directed by the supervising geologist following specifications further outlined in this protocol.

4.1.2 Monitoring Well Completion

Monitoring wells will be constructed of 0.010-inch slot size PVC well screen and riser casing. Other materials utilized for completion will be washed silica sand (Q-Rock No. 4 or approved equivalent) bentonite grout, Portland cement, and a protective steel locking well casing and cap with locks. The depth of the wells will be determined based on the depth to water and field conditions encountered.

The monitoring well installation method for wells installed within unconsolidated sediments shall be to place the screen and riser assembly into the casing once the screen interval has been selected. At that time, a washed silica sand pack will be placed around the well screen if required to prevent screen plugging. If a sand pack is not warranted, the auger string will be pulled back to allow the native aquifer material to collapse 2 to 3 feet above the top of the screen. Bentonite pellets will then be added to the annulus between the casing and the inside auger to insure proper sealing. Cement/bentonite grout will continue to be added during the extraction of the augers until the entire aquifer thickness has been sufficiently sealed off from horizontal and/or vertical

flow above the screened interval. During placement of sand and bentonite pellets, frequent measurements will be made to check the height of the sand pack and thickness of bentonite layers by a weighted drop tape measure.

A bolt-down protective curb box will be installed, flush with the ground, or steel "stick-up" protective casing and secured by a Portland cement seal. The cement seal shall extend laterally at least 1 foot in all directions from the protective casing and shall slope gently away to drain water away from the well.

4.1.3 Well Development

All monitoring wells will be developed or cleared of all fine-grained materials and sediments that have settled in or around the well during installation so that the screen is transmitting representative portions of the groundwater. The development will be by one of two methods, pumping or bailing groundwater from the well until it yields relatively sediment-free water.

A decontaminated pump or bailer will be used and subsequently decontaminated after each use following procedures outlined in the Decontamination Protocol. Pumping or bailing will cease when the turbidity falls below 50 NTUs or until specific conductivity, pH, and temperature are stable (i.e., consecutive readings are within 10 percent with no overall upward or downward trends in measurements). Well development water will be disposed of on the ground surface at each well location or contained in drums as conditions warrant.

4.1.4 Decontamination

All drilling equipment and associated tools including augers, drill rods, sampling equipment, wrenches and any other equipment or tools that have come in contact with contaminated materials will be decontaminated before any drilling on site begins, between each well, and prior to removing any equipment from the site. The preferred decontamination procedure will be to use a high pressure steam cleaner to remove soils and volatile organics from the equipment. The water used for this procedure will be contained and shall come from a controlled source, preferably a municipal drinking supply. Representative samples of the contained decontamination water and well development water will be screened in the field to determine the proper method of disposal. Every effort will be made to minimize the generation of contaminated water.

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4.2 Groundwater Sampling Program.

4.2.1 Well Evacuation

Prior to sampling a monitoring well, the static water level will be recorded. All well data will be recorded on a field sampling record. The wells will be sampled in accordance with the USEPA guidelines for the Low Flow Purging Sampling (LFPS). The purpose of LFPS is to collect groundwater samples from monitoring wells that are representative of ambient groundwater conditions in the aquifer. The LFPS method reduces turbidity which is needed particularly when sampling for metals.

4.2.2 Sampling Procedure

The wells will be sampled using the LFPS technique. A flow rate of 100 ml to 250 ml per minute is used to purge the wells. Drawdown should not exceed 0.3 feet. QED bladder pumps are used for this method. The pump intake is lowered to the mid-point of the water column. At the initiation of low flow purging a water level is recorded as well as field parameters. Field

parameters are then monitored every five minutes during low flow purging using a flow through cell. When three consecutive measurements of pH differ by 0.1 units or less, with ORP within 10 mv or less, turbidity varies 10 percent or less, conductivity differs by 3 percent or less and dissolved oxygen by 10 percent or less, sampling may begin. Flow through cells are used so continuous real time readings are made. When the parameters stabilize the flow through cell is disconnected and sample bottles are filled directly from the tubing.

In addition to water samples collected from the monitoring wells, two types of "blanks" will be collected and submitted to the chemical laboratory for analyses. The blanks will consist of 40 ml VOA vials, as follows:

A trip blank will be prepared before the sample bottles are sent by the laboratory. It consists of a sample of distilled, deionized water which accompanies the other sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of samples where sampling and analysis for TCL volatiles is planned (water matrix only). The trip blank will be analyzed for TCL volatile organic compounds as a measure of the internal laboratory procedures and their effect on the results.

4.3 Soil Vapor Sampling

Soil vapor sampling will be conducted in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). Soil vapor samples will be collected in the vadose zone from shallow vapor probes installed either between 1 to 2 feet below impervious surfaces such as concrete or asphalt (sub-slab samples), or from vapor probes with a minimum distance of 3 feet below atmosphere-permeable surfaces to be sealed above the installed vapor probe to prevent atmospheric interference. In addition, indoor air samples may be collected within building interiors to evaluate ambient air conditions representative of selected locations within the building.

Each soil vapor point will be installed in a boring drilled either by hand-operated equipment (e.g. hand auger or percussion hammer drill), or by a small truck-mounted drill rig. Drilling equipment used shall be based on soil conditions, and the method that provides the most practical approach.

Each soil vapor point will consist of an inert sampling tube (polyethylene, stainless steel, or Teflon®) attached with a probe tip at the bottom through which soil vapors can be sampled. Each designated soil vapor sampling location will be purged of a minimum of three volumes using a low volume pump, and then attached to a regulator, and secured with a clamp. The regulator will then be attached to a 1-liter summa canister.

The regulator will be set to collect a soil vapor sample at a flow rate of no less than 0.2 liters per minute. After the summa canister is filled, the valve will be closed.

Each canister will be listed according to a specific sample I.D. on a chain-of-custody form. Sample canisters will be delivered to the laboratory within 24 hours, and analyzed for VOCs by EPA method TO-15. The detection limit for VOCs will be 1 µg/m3 or less.

The soil vapor sampling effort will include the use inert helium tracer gas to verify that the soil vapor samples are not diluted by ambient air. The atmosphere around the sampling tube will be enriched with the tracer gas, and the soil vapor sample will be collected in the presence of the enriched tracer atmosphere. This will be accomplished by placing an inverted plastic pail over the sampling point and filling the pail with the tracer gas via a small tube penetrating the site of

the pail. Refer to NYSDOH Guidance for Evaluating Indoor Air Intrusion in New York State (October 2006).

Weather conditions in the 48 hours prior to the test, and during the test, will be noted, including average wind speed, precipitation, temperature, and barometric pressure.

4.4 SAMPLE PRESERVATION AND SHIPMENT

Since all bottles will contain the necessary preservatives as shown in Table 4.1, they need only be filled. The 40 ml VOA vials must be filled to the container brim with no air bubbles present. The other bottles should be filled to within about 1 inch from the top.

The bottles will be sent from the laboratory in coolers which will be organized on a per site basis. Following sample collection, the bottles should be placed on ice in the shipping cooler. The samples will be cooled to 4°C, but not frozen.

Final packing and shipment of coolers will be performed in accordance with guidelines outlined in the "User's Guide to the CLP".

5.0 SAMPLE CUSTODY

The program for sample custody and sample transfer is in compliance with the NYSDEC-ASP, as periodically updated. If samples may be needed for legal purposes, chain-of-custody procedures, as defined by NEIC Policies and Procedures (USEPA-330/9-78-001-R, Revised June 1988) will be used. Sample chain-of-custody is initiated by the laboratory with selection and preparation of the sample containers. To reduce the chance for error, the number of personnel handling the samples should be minimized.

5.1 FIELD SAMPLE CUSTODY

A chain-of-custody record accompanies the sample from initial sample container selection and preparation at the laboratory, shipment to the field for sample containment and preservation, and return to the laboratory. Two copies of this record follow the samples to the laboratory. The laboratory maintains one file copy and the completed original is returned to the site inspection team. Individual sample containers provided by the laboratory are used for shipping samples. The shipping containers are insulated and chemical or ice water is used to maintain samples at approximately 4°C until samples are returned and in the custody of the laboratory. All sample bottles within each shipping container are individually labeled and controlled. Samples are to be shipped to the laboratory within 24-48 hours of the day of collection.

Each sample shipping container is assigned a unique identification number by the laboratory. This number is recorded on the chain-of-custody record and is marked with indelible ink on the outside of the shipping container. The field sampler will indicate the sample designation/location number in the space provided on the appropriate chain-of-custody form for each sample collected. The shipping container is closed and a seal provided by the laboratory is affixed to the latch. This seal must be broken to open the container, and this indicates possible tampering if the seal is broken before receipt at the laboratory. The laboratory will contact the site investigation team leader and the sample will not be analyzed if tampering is apparent.

5.2 LABORATORY SAMPLE CUSTODY

The site investigation team leader or Project Quality Assurance Officer notifies the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This

notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The laboratory sample program meets the following criteria:

1. The laboratory has designated a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.
2. Upon receipt of the samples, the custodian will check the original chain-of-custody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-of-custody record and records the date and time received.
3. Care is exercised to annotate any labeling or descriptive errors. In the event of discrepant documentation, the laboratory will immediately contact the site investigation team leader as part of the corrective action process. A qualitative assessment of each sample container is performed to note any anomalies, such as broken or leaking bottles. This assessment is recorded as part of the incoming chain-of-custody procedure.
4. The samples are stored in a secured area at a temperature of approximately 4°C until analyses are to commence.
5. A laboratory chain-of-custody record accompanies the sample or sample fraction through final analysis for control.
6. A copy of the chain-of-custody form will accompany the laboratory report and will become a permanent part of the project records.

5.3 FINAL EVIDENCE FILES

Final evidence files include all originals of laboratory reports and are maintained under documented control in a secure area.

A sample or an evidence file is under custody if:

- It is in your possession; it is in your view, after being in your possession.
- It was in your possession and you placed it in a secure area.
- It is in a designated secure area.

6.0 CALIBRATION PROCEDURES

Instruments and equipment used to gather, generate or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the appropriate manufacturer's specifications or project specific requirements. The procedures for instrument calibration, calibration verification, and the frequency of calibrations are described in the NYSDEC-CLP. The calibration of instruments used for the determination of metals will be as described in the appropriate CLP standard operating procedures.

Calibration of other instruments required for measurements associated with these analyses will be in accordance with the manufacturer's recommendations and the standard operating procedures of the laboratory.

7.0 ANALYTICAL PROCEDURES

Analytical procedures shall conform to the most recent revision of the NYSDEC-ASP (July 2005) and are summarized on Table 7.1. In the absence of USEPA or NYSDEC guidelines, appropriate procedures shall be submitted for approval by NYSDEC prior to use.

The procedures for the sample preparation and analysis for organic compounds are as specified in the NYSDEC-ASP. Analytical cleanups are mandatory where matrix interferences are noted. No sample shall be diluted any more than 1 to 5. The sample shall be either re-extracted, re-sonicated, re-stream distilled, etc. or be subjected to any one analytical cleanup noted in SW846 or a combination thereof. The analytical laboratory shall expend such effort and discretion to demonstrate good laboratory practice and demonstrate an attempt to best achieve the method detection limit.

7.1 VOLATILE ORGANICS (VOA)

For the analysis of water samples for Target Compound List (TCL), volatile organic compounds (VOCs), no sample preparation is required. The analytical procedure for volatiles is detailed in NYSDEC-ASP (Volume I, Section D-I). A measured portion of the sample is placed in the purge and trap apparatus and the sample analysis is performed by gas chromatography/mass spectrometry for the first round. USEPA Method 8260 will be used, plus tentatively identified compounds (TICs). USEPA Methods 8010 or 8020 (gas chromatography with different detectors) will be used if subsequent rounds with lower limits of detection are warranted.

7.2 SEMI-VOLATILE ORGANIC COMPOUNDS

The extraction and analytical procedures used for preparation of water, soil and sediment samples for the analysis of the TCL semi-volatile organic compounds are described in NYSDEC-ASP Volume I, Section D-III. USEPA Method 8270 will be used, plus tentatively identified compounds (TICs).

Instrument calibration, compound identification, and quantitation are performed as described in Section 6 of this document and in the NYSDEC-ASP.

7.3 PESTICIDE AND PCB COMPOUNDS

The sample preservation procedures for gas chromatography for pesticides and PCB's will be as described in the NYSDEC-ASP methods (Section D-IV). The analysis of standard mixes, blanks and spiked samples will be performed at the prescribed frequency with adherence to the 72-hour requirement described in the method.

7.4 METALS

Water, soil and waste samples will be analyzed for the metals listed in Table 7.1. The detection limits for these metals are as specified in the NYSDEC-ASP, Section D-V. The instrument detection limits will be determined using calibration standards and procedures specified in the NYSDEC-ASP. The detection limits for individual samples may be higher due to the sample matrix. The procedures for these analyses will be as described in the NYSDEC-ASP.

The digestion procedures for water samples are not recommended for samples requiring analysis for mercury, arsenic or selenium. The aliquot of sample analyzed for As and Se will be prepared using the modifications described in USEPA Methods 206.2 CLP-M and 270.2 CLP-M, respectively. Analysis for mercury requires a separate digestion procedure (245.1 CLP-M, or 245.2 CLP-M).

The analyses for metals will be performed by atomic absorption spectroscopy (AAS) or inductively-coupled plasma emission spectroscopy (ICPES), as specified in the ASP with regard to AAS flame analysis.

7.5 SITE SPECIFICITY OF ANALYSES

Work plans prepared for remedial investigation waste sites contain recommendations for the chemical parameters to be determined for each site. Thus, some or all of the referenced methods will apply to the analysis of samples collected at the individual waste sites. Analyses of Target Compound List (TCL) analytes will be performed on all samples.

TABLE 4.1 – SAMPLE CONTAINERIZATION

PARAMETER & ANALYTICAL METHOD	NO.	BOTTLE TYPE	PRESERVATIVE(1)	HOLDING TIME
Aqueous Samples				
SVOCs (BNAs) – USEPA 8270C	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
Pesticides – USEPA 8081A	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
VOCs – USEPA 8260B	2	40 mL, glass vial with septum cap	Hydrochloric Acid to pH <2	14 days
Metals(2)	1	1-liter, plastic bottle	Nitric acid to pH <2	180 days Mercury: 28 days
Cyanide – SM 4500-CN-E	1	1-liter, plastic	Sodium Hydroxide to pH >12	14 days
Soil, Sediment, Solid Waste Samples				
VOCs – USEPA 8260B	3	15-gram EnCore samplers	None	14 days
SVOCs (BNAs) – USEPA 8270C	1	4-oz. glass jar with Teflon lid	None	7 days (until extraction, 40 days extracted)
Pesticides – USEPA 8081A	1	4-oz. glass jar with Teflon lid	None	7 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082	1	4-oz. glass jar with Teflon lid	None	7 days (until extraction) 40 days (extracted)
Metals(2)	1	4-oz. glass jar with Teflon lid	None	180 days Cyanide: 14 days Mercury: 28 days
Soil Vapor / Indoor Air Samples				
VOCs – USEPA TO-15	1	Summa Canister	None	30 days

(1) All samples will be preserved with ice during collection and shipment.
(2) Metals refers to the 24 metals and cyanide in the Target Compound List (NYSDEC-CLP 11/87).

TABLE 4.2 – SAMPLING PROCEDURE FOR MONITORING WELLS

1. Initial static water level recorded with an electric contact probe accurate to the nearest 0.1 foot.

2. Sampling device and electric contact probe decontaminated.
    a. Sampling device and probe are rinsed with pesticide-grade methanol and distilled water.
    b. Methanol is collected into a large funnel which empties into a five- gallon container.

3. Sampling device lowered into well.
    a. Bailer lowered by dedicated PVC or polypropylene line.

4. Sample taken.
    a. Sample is poured slowly from the open end of the bailer and the sample bottle tilted so that aeration and turbulence are minimized.
    b. Duplicate sample is collected when appropriate.

5. Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.

6. All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.
    a. Dedicated line is disposed of or left at well site.

7. Equipment/wash blanks are collected when non-dedicated sampling equipment is used.

8. Chain-of-custody forms are completed in triplicate.
    a. The original and one carbon copy are put into a zip-lock bag and placed into the cooler.

9. The original will be returned following sample analysis.
    a. A second carbon copy is kept on file.

10. Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.

TABLE 4.3 – SAMPLING PROCEDURE FOR MONITORING WELLS USING LOW-STESS (LOW-FLOW) METHODS

1. Initial static water level recorded with an electric contact probe accurate to the nearest 0.1 foot.

2. Sampling device is lowered into well. Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well. Pump intake must be no less than 2 feet from the bottom of the well to prevent disturbance and resuspension of sediments which may be at the bottom of the well.

3. Measure water level again: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.

4. Purge Well: Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.

5. Monitor Indicator Parameters: During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows (Puls and Barcelona, 1996):

    a. 0.1 for pH
    b. 3% for specific conductance (conductivity)
    c. 10 mv for redox potential
    d. 10% for DO and turbidity

6. Dissolved oxygen and turbidity usually require the longest time to achieve stabilization. The pump must not be removed from the well between purging and sampling.

7. Collect Samples: Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.

8. Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary. If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and equal volume of water (e.g., 40 ml). Groundwater purged from the well prior to sampling can be used for this purpose.

9. Remove Pump and Tubing: After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the well for resampling by hanging the tubing inside the well.

10. Measure and record well depth.

11. Close and lock the well.

12. Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.

13. All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.

    a. Dedicated line is disposed of or left at well site.

14. Equipment/wash blanks are collected when non-dedicated sampling equipment is used.

15. Chain-of-custody forms are completed in triplicate.

    a. The original and one carbon copy are put into a zip-lock bag and placed into the cooler. The original will be returned following sample analysis.
    b. A second carbon copy is kept on file.

16. Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.

TABLE 7-1 – CONTRACT-REQUIRED QUANTITATION LEVELS AND ANALYTICAL METHODS FOR ASP INORGANICS, ASP VOLATILES, ASP SEMI-VOLATILES, ASP PESTICIDES, AND PCBS

Superfund Target Compound List (TCL) and Contract-Required Quantitation Limit

SECTION 1 - ASP INORGANICS Method: NYSDEC-ASP-91-4					
	PARAMETER	**CONTRACT-REQUIRED DETECTION LEVEL* (µg/L)**		**PARAMETER**	**CONTRACT-REQUIRED DETECTION LEVEL* (µg/L)**
1.	Aluminum	200	13.	Magnesium	5,000
2.	Antimony	60	14.	Manganese	15
3.	Arsenic	15	15.	Mercury	0.2
4.	Barium	200	16.	Nickel	40
5.	Beryllium	5	17.	Potassium	5,000
6.	Cadmium	5	18.	Selenium	35
7.	Calcium	5,000	19.	Silver	10
8.	Chromium	10	20.	Sodium	5,000
9.	Cobalt	50	21.	Thallium	25
10.	Copper	25	22.	Vanadium	50
11.	Iron	100	23.	Zinc	60
12.	Lead	10	24.	Cyanide	10

SECTION 2 – ASP ORGANICS (VOLATILES) Method: NYSDEC-ASP-91-1					
	VOLATILE	**CONTRACT-REQUIRED QUANTITATION LIMIT** (µg/L)**		**VOLATILE**	**CONTRACT-REQUIRED QUANTITATION LIMIT** (µg/L)**
1.	Chloromethane	5.0	18.	1,2-Dichloropropane	5.0
2.	Bromomethane	5.0	19.	cis-1,3-Dichloropropene	5.0
3.	Vinyl Chloride	5.0	20.	Trichloroethene	5.0
4.	Chloroethane	5.0	21.	Dibromochloromethane	5.0
5.	Methylene Chloride	5.0	22.	1,1,2-Trichloroethane	5.0
6.	Acetone	10.0	23.	Benzene	5.0
7.	Carbon Disulfide	5.0	24.	Trans-1.3-Dichloropropene	5.0
8.	1,1-Dichloroethylene	5.0	25.	Bromoform	5.0
9.	1,1-Dichloroethane	5.0	26.	2-Hexanone	10.0
10.	1,2-Dichloroethylene (total)	5.0	27.	4-Methyl, 1,2-Pentanone	10.0
11.	Chloroform	5.0	28.	Tetrachloroethylene	5.0
12.	1,2-Dichloroethane	5.0	29.	Toluene	5.0
13.	2-Butanone	10.0	30.	Chlorobenzene	5.0
14.	1,1,1-Trichloroethane	5.0	31.	Ethylbenzene	5.0
15.	Carbon Tetrachloride	5.0	32.	Styrene	5.0
16.	Bromodichloromethane	5.0	33.	Total Xylenes	5.0
17.	1,1,2,2-Tetrachloroethane	5.0			

SECTION 3 - ASP ORGANICS (SEMI-VOLATILES) Method: NYSDEC-ASP-91-2					
	SEMI-VOLATILE	**CONTRACT-REQUIRED QUANTITATION LIMIT (µg/l)**		**SEMI-VOLATILE**	**CONTRACT-REQUIRED QUANTITATION LIMIT (µg/l)**
1.	Phenol	5.0	33.	Acenaphthene	5.0
2.	Bis(2-chloroethyl)ether	5.0	34.	2,4-Dinitrophenol	10.0
3.	2-Chlorophenol	5.0	35.	4-Nitrophenol	10.0
4.	1,3-Dichlorobenzene	5.0	36.	Dibenzofuran	5.0
5.	1,4-Dichlorobenzene	5.0	37.	Dinitrotoluene	5.0
6.	1,2-Dichlorobenzene	5.0	38.	Diethylphthalate	5.0
7.	2-Methylphenol	5.0	39.	4-Chlorophenyl phenyl ether	5.0
8.	2,2'oxybis(1-Chloropropane)	5.0	40.	Fluorene	5.0
9.	4-Methylphenol	5.0	41.	4-Nitroanile	10.0
10.	N-Nitroso-dipropylamine	5.0	42.	4,6-Dinitro-2-methylphenol	10.0
11.	Hexachloroethane	5.0	43.	N-nitrosodiphenyl amine	5.0
12.	Nitrobenzene	5.0	44.	4-Bromophenyl phenyl ether	5.0
13.	Isophorone	5.0	45.	Hexachlorobenzene	5.0
14.	2-Nitrophenol	5.0	46.	Pentachlorophenol	10.0
15.	2,4-Dimethylphenol	5.0	47.	Phenanthrene	5.0
16.	Bis(2-Chloroethoxy) methane	5.0	48.	Anthracene	5.0
17.	2,4-Dichlorophenol	5.0	49.	Carbazole	5.0
18.	1,2,4-Trichlorobenzene	5.0	50.	Di-n-butyl phthalate	5.0
19.	Naphthalene	5.0	51.	Fluoranthene	5.0
20.	4-Chloroaniline	5.0	52.	Pyrene	5.0
21.	Hexachlorobutadiene	5.0	53.	Butyl benzyl phthalate	5.0
22.	4-Chloro-3-methylphenol	5.0	54.	3,3'-Dichloro benzidine	5.0
23.	2-Methylnaphthalene	5.0	55.	Benz(a)anthracene	5.0
24.	Hexachlorocyclopentadiene	5.0	56.	Chrysene	5.0
25.	2,4,6-Trichlorophenol	5.0	57.	Bis(2-ethylhexyl) phthalate	5.0
26.	2,4,5-Trichlorophenol	10.0	58.	Di-n-octyl phthalate	5.0
27.	2-Chloronapthalene	5.0	59.	Benzo(b)fluoranthene	5.0
28.	2-Nitroananiline	10.0	60.	Benzo(k)fluoranthene	5.0
29.	Dimethyl phthalate	5.0	61.	Benzo(a)pyrene	5.0
30.	Acenaphthylene	5.0	62.	Indeno(1,2,3-cd) pyrene	5.0
31.	2,6-Dinitrotoluene	5.0	63.	Dibenz(a,h) anthracene	5.0
32.	3-Nitroaniline	10.0	64.	Benzo(g,h,i)perylene	5.0

SECTION 3 - ASP ORGANICS (PESTICIDES/PCBS) Method: NYSDEC-ASP-91-3					
PESTICIDE/PCB		**CONTRACT-REQUIRED QUANTITATION LIMIT (µg/l)**	**PESTICIDE/PCB**		**CONTRACT-REQUIRED QUANTITATION LIMIT (µg/l)**
1.	Alpha-BHC	0.05	15.	4,4'-DDT	0.10
2.	Beta-BHC	0.05	16.	Methoxychlor	0.5
3.	Delta-BHC	0.05	17.	Endrin ketone	0.10
4.	Gamma-BHC (lindane)	0.05	18.	Endrin aldehyde	0.10
5.	Heptachlor	0.05	19.	Alpha-Chlordane	0.05
6.	Aldrin	0.05	20.	Gamma-Chlordane	0.05
7.	Heptachlor epoxide	0.05	21.	Toxaphene	5.0
8.	Endosulfan I	0.05	22.	AROCHLOR-1016	1.0
9.	Dieldrin	0.10	23.	AROCHLOR-1221	1.0
10.	4,4'-DDE	0.10	24.	AROCHLOR-1232	1.0
11.	Endrin	0.10	25.	AROCHLOR-1242	1.0
12.	Endosulfan II	0.10	26.	AROCHLOR-1248	1.0
13.	4,4'-DDD	0.10	27.	AROCHLOR-1254	1.0
14.	Endosulfan sulfate	0.10	28.	AROCHLOR-1260	1.0

*Matrix: groundwater. For soil matrix, multiply CRDL by 100.

**Quantitation limit for medium-level soil is 1,200 µg/kg (wet weight basis).

APPENDIX 6

Community Air Monitoring Plan

Community Air Monitoring Plan

14 Le Count Place,
207, 209, and 211 North Avenue
455, 459, and 463 Main Street
New Rochelle, New York
BCP # C360176

1.0 INTRODUCTION

This document presents a Community Air Monitoring Plan (CAMP) for the remedial investigation (RI) and interim remedial measures (IRMs) for the proposed development at 14 LeCount Place, 207, 209 and 211 North Avenue, 455, 459 and 463 Main Street, New Rochelle, New York.

The Site, which is the subject of this RIWP/IRM, is approximately 0.93-acres occupied by several commercial buildings. The Site properties are identified on the Westchester County Clerk's as a portion of tax parcel map Section-Block-Lot number 1-228-0029, 1-228-0009, 1-228-0010, 1-228-0011, 1-228-0003, 1-228-0005, and 1-228-0007, respectively. The Site is depicted on a United States Geological Survey (USGS) Topographic Map (Figure 2.1) and Survey Map (Figure 2.2).

The property is located in an area of primarily commercial and mixed uses. The Site has been historically developed with residential and commercial buildings. Several commercial operations at the site include an undertaker/funeral home (14 Lecount Place) and the Evening Standard Newspaper (209 North Avenue). Site buildings were generally constructed between 1903 and 1931.

1.1 OBJECTIVES

The objective of this CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that may arise as a result of the planned remedial excavation and construction, which may include temporary soil stockpiling.

1.2 METHODS

The CAMP will include monitoring for particulate matter (e.g., airborne “dust”) during the planned remedial excavation and construction activities. Readings will be recorded and will be available for State (DEC and DOH) personnel to review, as requested.

1.3 PARTICULATE MONITORING

When deemed by SESI to be applicable, particulate (e.g. “dust”) emissions will be measured continuously at the upwind and downwind work zone boundaries. In addition, a third mobile CAMP station will be implemented to monitor particulates in other areas of the Site as needed. Real time monitoring equipment (e.g. Trak TSI Dust monitors or equivalent), with audible alarms and capable of measuring particulate matter less than 10 micrometers in size (PM-10), will be used. If the wind is calm, the monitors should be placed between each work area and the nearest sensitive receptors. If the wind is variable, the monitors must be placed accordingly to ensure there is a monitor downwind of each work area at all times. Air monitoring locations will be selected daily based on prevailing wind conditions and specific locations where field-work is to be conducted on a daily basis.

- If the downwind particulate level is 100 micrograms per cubic meter (ug/m3) greater than background (upwind) for a 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression provided that downwind particulate levels do not exceed 150 ug/m3 above upwind levels and provided that no visible dust is migrating from the work area.
- If, after dust suppression techniques, downwind particulate levels are greater than 150 ug/m3 above upwind levels, work will be stopped and a re-evaluation of activities will be initiated. Work will resume, provided that dust suppression measures and other controls are successful in reducing downwind particulate concentrations to within 150 ug/m3 of the upwind level and in preventing visible dust migration.
- All readings must be recorded and be available for State (NYSDEC and NYSDOH) and County Health personnel to review.

1.4 VOC MONITORING

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. In addition, a third mobile CAMP station will be implemented to monitor particulates in other areas of the Site as needed. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

APPENDIX 7

NYSDEC Soil Cleanup Objectives

375-6.8 Soil cleanup objective tables.

(a) Unrestricted use soil cleanup objectives.

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
Metals		
Arsenic	7440-38-2	13 [c]
Barium	7440-39-3	350 [c]
Beryllium	7440-41-7	7.2
Cadmium	7440-43-9	2.5 [c]
Chromium, hexavalent [e]	18540-29-9	1[b]
Chromium, trivalent [e]	16065-83-1	30 [c]
Copper	7440-50-8	50
Total Cyanide [e, f]		27
Lead	7439-92-1	63 [c]
Manganese	7439-96-5	1600 [c]
Total Mercury		0.18 [c]
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9[c]
Silver	7440-22-4	2
Zinc	7440-66-6	109 [c]
PCBs/Pesticides		
2,4,5-TP Acid (Silvex) [f]	93-72-1	3.8
4,4'-DDE	72-55-9	0.0033 [b]
4,4'-DDT	50-29-3	0.0033 [b]
4,4'-DDD	72-54-8	0.0033 [b]
Aldrin	309-00-2	0.005 [c]
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.036
Chlordane (alpha)	5103-71-9	0.094

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
delta-BHC [g]	319-86-8	0.04
Dibenzofuran [f]	132-64-9	7
Dieldrin	60-57-1	0.005 [c]
Endosulfan I [d, f]	959-98-8	2.4
Endosulfan II [d, f]	33213-65-9	2.4
Endosulfan sulfate [d, f]	1031-07-8	2.4
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.042
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	0.1
Semivolatile organic compounds		
Acenaphthene	83-32-9	20
Acenapthylene [f]	208-96-8	100 [a]
Anthracene [f]	120-12-7	100 [a]
Benz(a)anthracene [f]	56-55-3	1 [c]
Benzo(a)pyrene	50-32-8	1 [c]
Benzo(b)fluoranthene [f]	205-99-2	1 [c]
Benzo(g,h,i)perylene [f]	191-24-2	100
Benzo(k)fluoranthene [f]	207-08-9	0.8 [c]
Chrysene [f]	218-01-9	1 [c]
Dibenz(a,h)anthracene [f]	53-70-3	0.33 [b]
Fluoranthene [f]	206-44-0	100 [a]
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene [f]	193-39-5	0.5 [c]
m-Cresol [f]	108-39-4	0.33 [b]
Naphthalene [f]	91-20-3	12
o-Cresol [f]	95-48-7	0.33 [b]

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
p-Cresol [f]	106-44-5	0.33 [b]
Pentachlorophenol	87-86-5	0.8 [b]
Phenanthrene [f]	85-01-8	100
Phenol	108-95-2	0.33 [b]
Pyrene [f]	129-00-0	100
Volatile organic compounds		
1,1,1-Trichloroethane [f]	71-55-6	0.68
1,1-Dichloroethane [f]	75-34-3	0.27
1,1-Dichloroethene [f]	75-35-4	0.33
1,2-Dichlorobenzene [f]	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 [c]
cis -1,2-Dichloroethene [f]	156-59-2	0.25
trans-1,2-Dichloroethene [f]	156-60-5	0.19
1,3-Dichlorobenzene [f]	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1 [b]
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene [f]	104-51-8	12
Carbon tetrachloride [f]	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene [f]	100-41-4	1
Hexachlorobenzene [f]	118-74-1	0.33[b]
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether [f]	1634-04-4	0.93
Methylene chloride	75-09-2	0.05

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
n - Propylbenzene [f]	103-65-1	3.9
sec-Butylbenzene [f]	135-98-8	11
tert-Butylbenzene [f]	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene [f]	95-63-6	3.6
1,3,5-Trimethylbenzene[f]	108-67-8	8.4
Vinyl chloride[f]	75-01-4	0.02
Xylene (mixed)	1330-20-7	0.26

All soil cleanup objectives (SCOs) are in parts per million (ppm).

Footnotes

[a] The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

[b] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

[c] For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

[d] SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[f] Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with “NS”. Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

(b) Restricted use soil cleanup objectives.

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Metals							
Arsenic	7440-38-2	16[f]	16[f]	16[f]	16[f]	13[f]	16[f]
Barium	7440-39-3	350[f]	400	400	10,000 [d]	433	820
Beryllium	7440-41-7	14	72	590	2,700	10	47
Cadmium	7440-43-9	2.5[f]	4.3	9.3	60	4	7.5
Chromium, hexavalent [h]	18540-29-9	22	110	400	800	1[e]	19
Chromium, trivalent [h]	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50-8	270	270	270	10,000 [d]	50	1,720
Total Cyanide [h]		27	27	27	10,000 [d]	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63[f]	450
Manganese	7439-96-5	2,000[f]	2,000[f]	10,000 [d]	10,000 [d]	1600[f]	2,000[f]
Total Mercury		0.81[j]	0.81[j]	2.8[j]	5.7[j]	0.18[f]	0.73
Nickel	7440-02-0	140	310	310	10,000 [d]	30	130
Selenium	7782-49-2	36	180	1,500	6,800	3.9[f]	4[f]
Silver	7440-22-4	36	180	1,500	6,800	2	8.3
Zinc	7440-66-6	2200	10,000 [d]	10,000 [d]	10,000 [d]	109[f]	2,480
PCBs/Pesticides							
2,4,5-TP Acid (Silvex)	93-72-1	58	100[a]	500[b]	1,000[c]	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 [e]	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 [e]	136
4,4'- DDD	72-54-8	2.6	13	92	180	0.0033 [e]	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04[g]	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71-9	0.91	4.2	24	47	1.3	2.9

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
delta-BHC	319-86-8	100[a]	100[a]	500[b]	1,000[c]	0.04[g]	0.25
Dibenzofuran	132-64-9	14	59	350	1,000[c]	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan II	33213-65-9	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan sulfate	1031-07-8	4.8[i]	24[i]	200[i]	920[i]	NS	1,000[c]
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
Semivolatiles							
Acenaphthene	83-32-9	100[a]	100[a]	500[b]	1,000[c]	20	98
Acenapthylene	208-96-8	100[a]	100[a]	500[b]	1,000[c]	NS	107
Anthracene	120-12-7	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benz(a)anthracene	56-55-3	1[f]	1[f]	5.6	11	NS	1[f]
Benzo(a)pyrene	50-32-8	1[f]	1[f]	1[f]	1.1	2.6	22
Benzo(b)fluoranthene	205-99-2	1[f]	1[f]	5.6	11	NS	1.7
Benzo(g,h,i)perylene	191-24-2	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benzo(k)fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1[f]	3.9	56	110	NS	1[f]
Dibenz(a,h)anthracene	53-70-3	0.33[e]	0.33[e]	0.56	1.1	NS	1,000[c]
Fluoranthene	206-44-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Fluorene	86-73-7	100[a]	100[a]	500[b]	1,000[c]	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5[f]	0.5[f]	5.6	11	NS	8.2
m-Cresol	108-39-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
Naphthalene	91-20-3	100[a]	100[a]	500[b]	1,000[c]	NS	12

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
o-Cresol	95-48-7	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
p-Cresol	106-44-5	34	100[a]	500[b]	1,000[c]	NS	0.33[e]
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8[e]	0.8[e]
Phenanthrene	85-01-8	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Phenol	108-95-2	100[a]	100[a]	500[b]	1,000[c]	30	0.33[e]
Pyrene	129-00-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Volatiles							
1,1,1-Trichloroethane	71-55-6	100[a]	100[a]	500[b]	1,000[c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33
1,2-Dichlorobenzene	95-50-1	100[a]	100[a]	500[b]	1,000[c]	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02[f]
cis-1,2-Dichloroethene	156-59-2	59	100[a]	500[b]	1,000[c]	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100[a]	100[a]	500[b]	1,000[c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1[e]	0.1[e]
Acetone	67-64-1	100[a]	100[b]	500[b]	1,000[c]	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100[a]	100[a]	500[b]	1,000[c]	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100[a]	100[a]	500[b]	1,000[c]	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33[e]	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100[a]	100[a]	500[b]	1,000[c]	100[a]	0.12

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Methyl tert-butyl ether	1634-04-4	62	100[a]	500[b]	1,000[c]	NS	0.93
Methylene chloride	75-09-2	51	100[a]	500[b]	1,000[c]	12	0.05
n-Propylbenzene	103-65-1	100[a]	100[a]	500[b]	1,000[c]	NS	3.9
sec-Butylbenzene	135-98-8	100[a]	100[a]	500[b]	1,000[c]	NS	11
tert-Butylbenzene	98-06-6	100[a]	100[a]	500[b]	1,000[c]	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100[a]	100[a]	500[b]	1,000[c]	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5- Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20-7	100[a]	100[a]	500[b]	1,000[c]	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm).
NS=Not specified. See Technical Support Document (TSD).

Footnotes

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

[f] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

[g] This SCO is derived from data on mixed isomers of BHC.

[h] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[i] This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.