Investigation Work Plan

at

Cropsey Iron & Scrap Metal
2994 Cropsey Avenue
Brooklyn, New York 11214

CROP2001

August 2022, Revised July 2023

Prepared for:

Cropsey Iron & Scrap Metal
2994 Cropsey Avenue
Brooklyn, New York 11214

WALDEN ENVIRONMENTAL ENGINEERING, PLLC
Industry Leader in Environmental Engineering Consulting
PROACTIVE SOLUTIONS SINCE 1995

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Professional Engineer Certification

I, Robert A. Lopinto, P.E. certify that I am currently a New York State registered professional engineer and that this *Investigation Work Plan*, dated August 23, 2022, revised July 7, 2023, 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).

I further certify that this submittal, *Investigation Work Plan*, dated August 23, 2022, revised July 7, 2023 was prepared under my direction.

July 7, 2023

Robert A. Lopinto, P.E. — Date

Walden Environmental Engineering, PLLC

1 INTRODUCTION

This *Investigation Work Plan* (IWP) describes the proposed soil and groundwater investigation to be conducted at the Cropsey Scrap Iron & Metal site located at 2994 Cropsey Avenue Brooklyn, New York (the "Site" or "Subject Property"). Walden Environmental Engineering, PLLC ("Walden") has prepared this IWP on behalf of Cropsey Scrap Iron & Metal Corp, the Owner of the Subject Property.

This IWP has been prepared in response to a letter dated April 7, 2022 from the New York State Department of Environmental Conservation (NYSDEC) that stated the Department received information related to hazardous waste disposal activities at the Site. Furthermore, the NYSDEC letter stated the Site is considered a potential inactive hazardous waste disposal site and that further investigation would be required. A copy of the NYSDEC letter is provided as **Appendix A**.

Walden understands that the NYSDEC letter is based upon a Site Inspection Report dated December 2021 prepared by Weston Solutions, Inc. (Weston) on behalf of the United States Environmental Protection Agency (USEPA). The report summarizes an investigation that took place at the Site in June 2021 as part of a larger investigation of the Coney Island Creek. The Coney Island Creek investigation was performed as part of the process to evaluate if it will be considered a Superfund site as well as to evaluate potentially responsible parties associated with its contamination. Throughout its history, the Coney Island Creek has been a discharge point for untreated sewage and stormwater, a dumping ground for local commercial and industrial companies as well as a location where boats and ships have been intentionally sunk.

During the investigation on the Cropsey Scrap Iron and Metal Site, elevated levels of metals were detected in select samples. Therefore, this IWP proposes a scope of work to supplement the work performed onsite in June 2021 and to aid in the determination if the Site is an inactive hazardous waste disposal site. This IWP was prepared in accordance with the requirements specified in NYSDEC DER-10 "*Technical Guidance for Site Investigation and Remediation"*. The proposed investigation consists of sampling to characterize soil and groundwater conditions at the Subject Property to determine if the Site is an inactive hazardous waste disposal site.

2 SITE DESCRIPTION AND HISTORY

2.1 Site Description

The Subject Property location is illustrated on **Figure 1**. The Subject Property is located at 2994 Cropsey Avenue in Brooklyn, New York. The Site is approximately 34,500 square foot (0.79-acres) in area. The site is generally bounded by the Coney Island Creek to the south, de-mapped West 19th Street and a Home Depot parking lot to the west, Bay 54th Street to the north, and Cropsey Avenue to the east. The Facility is of irregular shape and is located in a commercial zoning district C8-1 in the southwestern portion of Brooklyn (the Gravesend section of Brooklyn), at the southwestern corner of the intersection of Cropsey Avenue and Bay 54th Street.

The site is utilized as a metal salvage facility for scrap metal processing. The Facility presently receives ferrous and non-ferrous scrap metal from contractors and vendors. Cropsey Metal separates incoming material into various grades/types of metal, reduces it in volume, and then ships the recycled products to various users by truck. The outbound truck destinations include various trans-shipment facilities and metal processing facilities throughout the five boroughs of New York City and New Jersey.

The site is predominantly unpaved except for buildings and a paved area consisting of a concrete slab for metal processing operations occupying about 13,545 square feet, or 0.31 acres. The southern, western, and northern property boundaries are separated from the surrounding area by a concrete wall with corrugated metal fencing. The land immediately to the southern fence line is situated on the same tax lot as the scrap metal facility. However, no scrap metal operations occur in this area. This area was observed to contain significant amounts of debris and litter during previous site inspections.

The United States Geological Survey (USGS) 7.5-minute topographic map for the Coney Island quadrangle depicts basic topographic features on site as generally level with a slight slope from east to west, and approximately 10 feet above mean sea level (MSL). In addition, the elevation of the land situated immediately to the south of the Subject Property slopes significantly to the south towards Coney Island Creek. Groundwater is expected to be located between 10 and 20 feet below grade and flow in a southerly direction.

2.2 Site History and Prior Investigations

The Site is currently owned by Cropsey Scrap Iron & Metal Corp. and operates as a scrap metal yard, which sorts through ferrous and non-ferrous metals for recycling. This site has operated as this type of facility since at least 1970.

SPDES Permit Coverage

The Site is associated with Permit #NYR00F326 under the New York State Pollutant Discharge Elimination System (SPDES) Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activities" (GP-0-17-004). The Site falls under the regulatory definition of "Industrial Sector N: Scrap Recycling & Waste Recycling Facilities," subsector N-3 for scrap and waste (non-liquid) recycling facilities.

Stormwater runoff generated at Cropsey Metal facility ("Facility") has a potential for indirect discharge into the Coney Island Creek because the site is not covered by an impermeable layer. A potential stormwater runoff incident, due to the slope of the concrete entrance/exit pad, leading to/from Cropsey Avenue, may reach the New York City ("City") catch basins, connected to subsurface seepage basins. Cropsey submitted a Notice of Intent (NOI) in December 2014 to indicate that they wish to be covered under the Multi-Sector Group Permit GP-0-12-001. To continue coverage under the MSGP (GP-0-17-004), Cropsey submitted an electronic Notice of Intent (e-NOI) to the Department in April 2018.

There are three (3) distinct drainage areas at Cropsey Metal. The first is the area associated with the Facility's driveway, which is an impervious concrete pad. There are no industrial activities performed at this area, which is designated for truck arrival and departure only. A 3-inch-high concrete bump with a trench drain and a metal grille on top was installed across the entire width of the entrance pad to prevent or minimize the potential stormwater runoff from the Facility onto Cropsey Avenue.

Another drainage area is located in a low-elevation area of the Facility's open yard. The area is used for loading and unloading, as well as for processing and storage of ferrous scrap metal. There is no potential for any direct stormwater runoff into Coney Island Creek from this drainage area, as it is surrounded by higher elevations, and the stormwater percolates into the ground. Part of this drainage zone is located in the northwestern corner of the site, near the concrete pad along the western fence, which is mostly used for miscellaneous storage. Although it is the lowest spot at the facility, the off-site runoff is prevented by the surrounding higher elevations and a concrete wall with corrugated metal fence on top, and hence percolates into the ground.

The last drainage area is associated with the roof drains on the buildings. Stormwater from each roof is directed to a stormwater downspout inside each building, which is connected to a Fabco Downspout Storm Basin Filter, which filters the stormwater before it flows into a dry well, and percolates into the ground. In order to maintain compliance with the SPDES permit, regular inspection and sampling take place at the Site and are filed with the NYSDEC.

June 2021 Site Investigation

As stated above, Weston performed a Site investigation in June 2021to investigate the Cropsey Scrap Iron & Metal Site and to understand if its operations have impacted upon Coney Island Creek. Weston collected multiple soil samples from six (6) on-site locations and three (3) locations between the scrap metal yard and Coney Island Creek. The on-site locations were collected from borings installed to a maximum depth of 10 feet while the locations between the Site and the Coney Island Creek were installed to a maximum depth of 2 feet with a hand auger. Weston also collected background samples from a grass area just north of Belt Parkway Exit 6N. All of the Weston samples were analyzed for TAL VOCs, SVOCs, Pesticides, Aroclors, and Metals. The Weston report states that groundwater was not encountered in any of the sampling locations. The direct-push boreholes were completed to maximum depth of 10 feet bgs. Therefore, the depth from the lowest point of waste disposal/storage (i.e., the contaminated soil source) to the highest seasonal level of the saturated zone of the shallow aquifer is estimated to be greater than 3.7 feet.

The Weston report stated the soil samples indicated the presence of a CERCLA-eligible waste source at the Site containing various VOCs, SVOCs, pesticides, aroclors, and metals. Weston therefore concluded that a release occurred at the Site that resulted in actual contamination of the New York-New Jersey Harbor Estuary which encompasses all of Coney Island Creek. The Weston report is included as **Appendix B**.

During Weston's investigation, Walden collected samples from the same locations and depths in eight of the 9 locations. Limited soil recovery was observed in one of the locations and an additional boring location could not be installed due to Site activities. **Tables 2 through 5** provide a summary of the findings of the Walden samples compared to 6NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs), Residential SCOs, Commercial SCOs, and Industrial SCOs.

- The following VOCs were detected in the soil samples at concentrations exceeding their respective SCOs: 2-butanone (max 120 mg/kg), acetone (max 1.2 mg/kg), methylene chloride (max .26 mg/kg), and tetrachloroethylene (max 2.9 mg/kg).
- The following SVOCs were detected in the soil samples at concentrations exceeding their respective SCOs: benzo(a)anthracene (max 29.9 mg/kg), benzo(a)pyrene (max 30.1 mg/kg), benzo(b)fluoranthene (max 26.1 mg/kg), benzo(k)fluoranthene (max 27.0 mg/kg), chrysene (max 32.4 mg/kg), dibenzo(a,h)anthracene (max 6.26), ideno(1,2,3-cd)pyrene (max 20.3 mg/kg).
- The following metals were detected in the soil samples at concentrations exceeding their respective SCOs: arsenic (max 22.2 mg/kg), barium (max 2,430 mg/kg), cadmium (max 25.2 mg/kg), copper (1,380 mg/kg), lead (7,350 mg/kg), nickel (max 150 mg/kg), zinc (9,820 mg/kg) and mercury (max 3.63 mg/kg).

- Total PCBs (max 12.6 mg/kg) were detected in the soil samples at concentrations exceeding their respective unrestricted SCOs.
- The following pesticides were detected in the soil samples at concentrations exceeding their respective unrestricted SCOs: 4,4-DDD (max 0.108 mg/kg), 4,4-DDE (max 0.273 mg/kg), 4,4-DDT (max 0.639 mg/kg), aldrin (max 0.00939 mg/kg), alpha chlordane (max 0.118 mg/kg), and dieldrin (max 0.195 mg/kg).

In general, the shallow soil samples contained VOCs, SVOCs, pesticides, aroclors and metals at concentrations exceeding certain SCOs, as described in the aforementioned tables. None of the deep soil samples contained analytes above the background concentrations determined in Weston's report or Unrestricted SCOs except for copper, lead, and zinc in SB-01. Based on the soil sampling results and the interface between the lowest point of waste disposal/storage and the saturated zone of the shallow aquifer identified by Weston, a release from the Site cannot be identified without further investigation. Additionally, Weston's sampling indicated mercury was detected in location 6102-S10 at a concentration of 120 mg/kg. Walden collected a sample from the same location. The concentration of Mercury in this location was 0.237 mg/kg.

3 SOIL AND GROUNDWATER INVESTIGATION

3.1 Investigation Scope and Objectives

The proposed investigation will be conducted to further characterize soil and groundwater conditions at the Site. The investigation results supplement the findings of the Weston and Walden sampling activities performed at the site in June 2021. The results will also serve to assist the NYSDEC in determining if the Site will be considered an inactive hazardous waste disposal site. Data from the previous investigations conducted at the Site have been utilized to develop this proposed scope of work.

Based on previous soil sampling results, the contaminants of concern at the Site are VOCs, SVOCs, pesticides, PCBs, and metals, including mercury. Soil sampling will be performed in both shallow and deep intervals within the Site as well as within the embankment area between the southern Site boundary and the Coney Island Creek. The proposed soil sampling will confirm the extent of impacted materials from the scrap metal facility's operations. The groundwater investigation will establish the direction of groundwater flow at the Site and collect data to determine if groundwater at the Site has been impacted by on-site activities or upgradient off-site sources.

3.2 Utility Mark-out / Ground Penetrating Radar (GPR) Survey

Before commencing soil boring/drilling activities an on-site utility survey will be performed. The purpose of this survey will be to locate any subsurface pipes, utility lines, buried tanks, drainage structures, or any other features in order to clear the planned sampling locations and to confirm no subsurface obstructions are present prior to drilling.

3.3 Soil Sampling

Soil sampling will be performed to further evaluate the extent of on-site soil impacted by the scrap metal facility operations and to determine if elevated levels of mercury are present in the soil within the embankment area between the Site and Coney Island Creek.

3.3.1 Soil Sampling Locations

Soil samples will be collected at five (5) on-site locations to evaluate existing soil conditions at the Site. The on-site soil sampling locations are shown on **Figure 1** and are identified as follows:

- SB-A in the northern portion of the Site
- SB-B in the central portion of the Site within the low area associated with the scrap metal separating and sorting activities.
- SB-C outside of the Site in the embankment area between the Site and Coney Island Creek. SB-C would be installed in the vicinity of SB-10, which was installed and sampled during the Weston and Walden investigation during June 2021.
- SB-D in the scrap metal loading/un-loading area south of SB-B/TMW-B.
- SD-E in the southwest corner of the site where the land slopes towards the creek.

3.3.2 Soil Sampling Procedure

Soil sampling shall be conducted in accordance with DER-10 to supplement the data previously collected at the Site.

Five (5) soil borings (SB-A, SB-B, SB-C, SB-D and SB-E) shall be advanced via direct-push drilling at the locations shown on **Figure 1**. Due to Site conditions and spatial constraints, remote and/or hand equipment may be required to install SB-C. SB-A, SB-B, SB-D, and SB-E shall be advanced at least one foot into groundwater. SB-C shall be advanced to 10 feet below grade, or refusal. Soils will be continuously sampled, logged and field screened for lithology and evidence of contamination [including screening for the presence of organic vapors with the use of a calibrated photoionization detector (PID)]. Field observations of visual and/or olfactory evidence of contamination will be recorded in the field book. Soil boring logs will be prepared for each borehole. Soils will be selectively retained for laboratory analysis based on field screening results and field observations.

Up to tree (3) soil samples from each boring will be selected for laboratory analysis of (NYCRR) Part 375-6.8 Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), TCL pesticides, PCBs and Target Analyte List (TAL) metals, via USEPA Methods 8260, 8270, 8081B, 8082A and 6010, respectively. One (1) sample will be taken from the surface (0-2 ft bg interval), one (1) sample will be taken from the two-foot interval immediately above the groundwater interface. If there are olfactory or visual signs of contamination in any of the borings, an additional sample will be collected from the contaminated interval. The direct push drilling method does not generate any drill cuttings that would require separate handling and disposal.

3.3.3 Soil Sample Handling and Analysis

The soil samples selected for laboratory analysis will be placed in dedicated clean glassware provided by the laboratory. Following collection and labeling, all samples will be packed in iced coolers maintained at 4°C. Samples will be shipped to a NYSDOH ELAP CLP laboratory in

such a manner as to avoid breakage during transportation and to minimize the possibility of cross-contamination. The samples will be delivered to the analytical laboratory via an overnight courier under the appropriate Chain-of-Custody protocol for the analyses outlined above.

3.3.4 Evaluation of Soil Sampling Results

The soil sample analytical results reported by the laboratory will be compared to the applicable NYSDEC 6 NYCRR 375-6.8(b) soil cleanup objectives (SCOs) based on the values for unrestricted, residential, industrial, and protection of groundwater use.

3.4 Groundwater Sampling

Groundwater sampling will be performed to evaluate and characterize the groundwater below the Site and to determine a groundwater flow direction.

3.4.1 Groundwater Sampling Locations

Two (2) of the soil borings (SB-A, SB-B) will be advanced utilizing a direct-push drill rig (e.g., Geoprobe) to direct push to five (5) feet below the groundwater table (anticipated to be between 10 and 20 ft below grade). At each of these locations, a temporary well (TMW-A and TMW-B) will be constructed after identifying the top of the water table. An additional monitoring well (TMW-C) will be installed in the western portion of the Site to the same depth. The bottom of the three (3) temporary wells will be set approximately five (5) feet below the top of the water table at each location. The temporary wells will be constructed of one (1)-inch diameter polyvinylchloride (PVC) 0.020-inch screen extending from the bottom of the well to approximately two (2) feet above the water table and solid one (1)-inch diameter PVC riser pipe to grade. Each temporary well will be finished with a J-plug within a five (5)-inch diameter road box with a bolt-down manhole cover.

3.4.2 Groundwater Sampling Procedure

The depth to water and depth to the bottom of each on-site well will be measured to the nearest 0.01 foot using an electronic water level indicator and recorded. In addition, the elevations of the on-site temporary wells will be surveyed to determine the groundwater table elevations and flow direction at the Site.

Groundwater sampling shall follow the standard operating procedure (SOP) of the United States Environmental Protection Agency (USEPA) Region I Low Stress (Low Flow) groundwater sampling method (revised 2017). Samples will be collected via low-flow purging methods utilizing a peristaltic pump (or other appropriate submersible pump), with the pump placed at the

top of the water column within each well. Pump speed will be adjusted to target a maximum water level drawdown of approximately 0.3 feet.

The following water quality parameters shall be measured during purging activities: turbidity, specific conductance, pH, oxidation-reduction potential, and dissolved oxygen. Monitoring well purge water will pass through a Horiba U-50 Multiparameter Water Quality Meter (or similar) hand-held multi-meter equipped with a flow-through cell that is connected to the pump tubing. The water quality parameters, water level, and pumping rate will be recorded every five (5) minutes or greater during purging to be able to "turn over" at least one flow-through-cell volume between measurements, proportionate to the flow rate. The purge water volume will be calculated to adjust for the length of the monitoring well stick-up above grade. Purge water will be transferred into a 55-gallon drum for temporary storage to await waste characterization and future off-site disposal, if determined to be necessary.

Groundwater samples will be collected for laboratory analysis when water quality parameters have stabilized. Stabilization is considered to be achieved when three (3) consecutive readings are within the following limits:

- Turbidity: ± 10% for values greater than 5 Nephelometric Turbidity Units (NTUs), or three (3) consecutive values below 5 NTUs
- Dissolved Oxygen: ± 10% for values greater than 0.5 milligrams per liter (mg/L), or three (3) consecutive values below 0.5 mg/L
- Specific Conductance: ± 3%
- Temperature: ± 3% (not required by Order on Consent but typically monitored with low flow sampling)
- pH: ± 0.1
- Oxidation/Reduction Potential: ± 10 millivolts (mv)

The groundwater samples will be submitted for laboratory analysis for VOCs, SVOCs, pesticides, PCBs, metals, and cyanide via USEPA Methods 8260, 8270, 8081B, 8082A, 6010, and 9014 respectively.

3.4.3 Groundwater Sample Handling and Analysis

The collected groundwater samples will be placed into single-use sampling glassware provided by the laboratory. The sample containers will be labeled with the site name, the Walden job number, sample location and identification, date, time, sampler's initials, and the parameter(s) for analysis. All samples will be packed on ice in coolers maintained at 4°C prior to transport to the analytical laboratory. Samples will be shipped to the laboratory in such a manner as to avoid container breakage during transportation and to minimize the possibility of cross-contamination.

The samples will be picked up by the analytical laboratory or delivered via an overnight courier under the appropriate Chain-of-Custody protocol for the analyses outlined above.

3.4.4 Evaluation of Groundwater Sampling Results

The groundwater analytical results reported by the laboratory will be compared to the applicable NYSDEC Class GA groundwater quality standards.

4 REMEDIAL INVESTIGATION IMPLEMENTATION PLANS

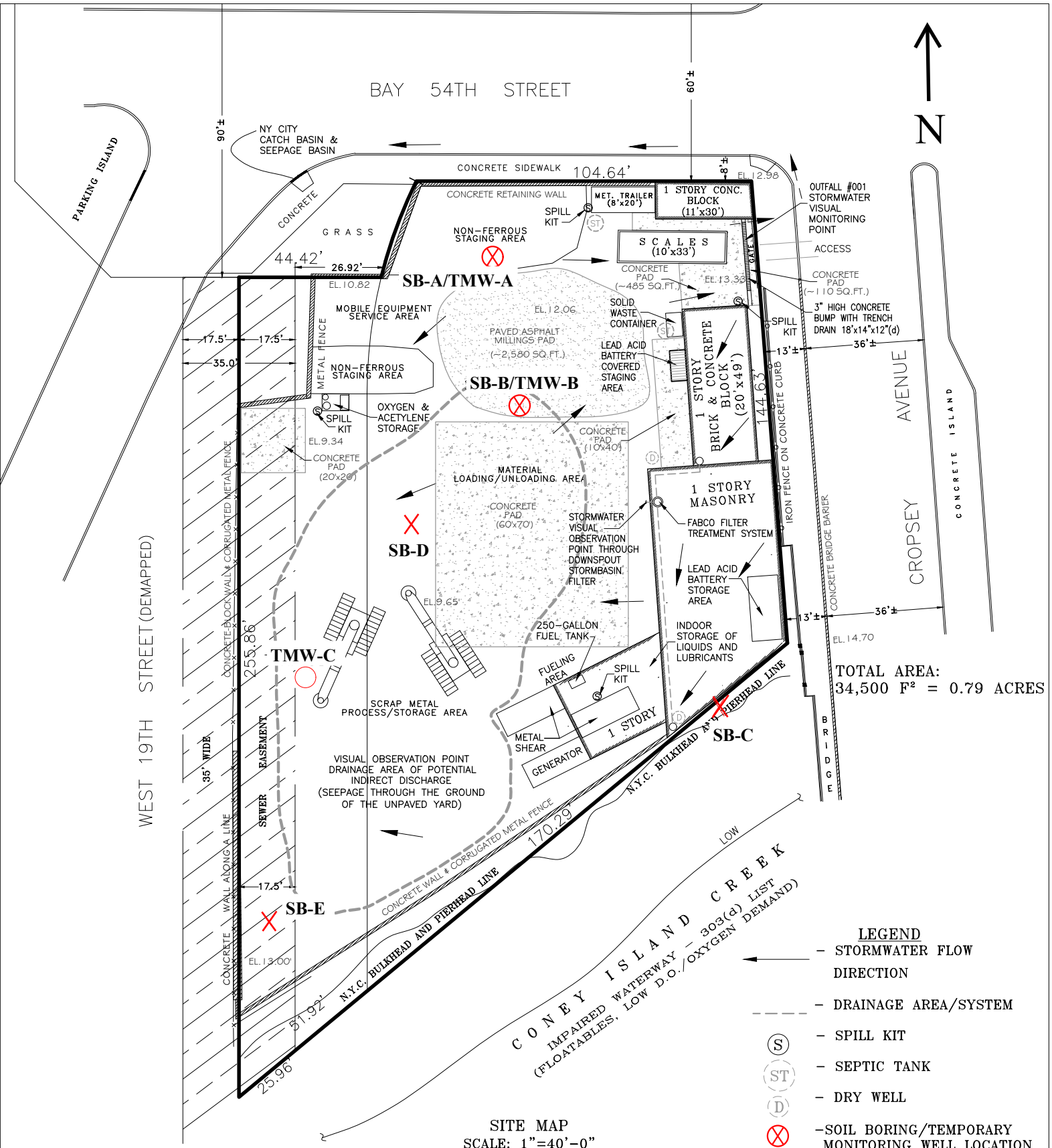
All proposed RI work will be conducted on the Subject Property. Prior to any on-site work, Walden will coordinate a private utility mark out to locate all existing utilities and buried structures to ensure they do not interfere with any portion of the soil and groundwater investigation.

Walden will be responsible for its own health and safety program; all subcontractor(s) will be required to work under acknowledgement of the HASP and CAMP provided in **Appendix C** and **Appendix D** respectively. All Site-related work tasks will be conducted in personnel protective equipment (PPE) Level D as appropriate for the tasks to be completed.

5 REPORTING

Upon completion of the investigation activities described in this IWP, an Investigation Report documenting the investigation findings will be prepared and submitted to NYSDEC for review and comment. The Investigation Report will include contaminant tables and figures. The contaminant figures will include the past data from the 2021 Weston study.

FIGURES



BLOCK: 6947
LOTS: 260 & 8900
ZONING: C8-1

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FOR: CROPSEY SCRAP IRON & METAL CORP. 2994 CROPSEY AVE. BROOKLYN, NY 11214		DRAWING TITLE: SITE LOCATIONS MAP/PROPOSED BORING LOCATIONS		DRAWING NO: 1
DESIGNED BY: MK	DRAWN BY: ER	JOB NO: S-CROP12-51	DATE: 07/07/2022 8½x11	SHEET NO: 1 OF 1
APPROVED BY: RAL	SCALE: AS NOTED	CAD FILE NAME: Z:\CROPSEY Scrap Iron and Metal\CROP2001 - Stormwater\ACAD\12-51 SITE PLAN (7-7-22).dwg		

Cropsey Scrap Iron & Metal
2994 Cropsey Avenue
Brooklyn, New York 11214

Table 1
Summary of Proposed Sampling

MATRIX	SAMPLE DEPTH	ANALYTICAL PARAMETERS FOR EACH SAMPLE	SAMPLING METHOD	RATIONALE	QA/QC SAMPLES
Soil	Depends on field screening and field observations. Default sample depths are 0-2 ft bg and the deepest dry sample before the groundwater table	VOCs, SVOCs, Pesticides, PCBs, Metals, Cyanide.	USEPA Methods 8260, 8270, 8081B, 8082A and 6010 Minimum reporting limit to be achieved: 0.5 µg/kg	Define nature and extent of contamination and determine if Site should be considered an inactive hazardous waste disposal site	MS/MSD, duplicates, blanks (as needed)
Groundwater	Approx. 10 to 20 feet below grade	VOCs, SVOCs, Pesticides, PCBs, Metals, Cyanide.	USEPA Method 8260 Minimum reporting limit to be achieved: 5 µg/L	Same as listed for soil Determine groundwater flow direction	MS/MSD, duplicates, blanks (as needed)

CROPSEY SCRAP METAL
2994 Crospey Ave
Brooklyn, New York
Summary of Soil Sampling Results - Volatile Organic Compunds(VOCs)

					Collection Date	6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021	
					Sample ID	SB-01 (0-2)		SB-01 (5-6.1)		SB-01 (6.1-7.2)		SB-02 (0-2)		SB-02 (5-6.25)		SB-02 (6.25-7.5)		SB-03 (0-2)		SB-03 (5-6.25)		SB-03 (6.25-7.5)		SB-04 (0-2)		SB-04 (5-6)		SB-04 (6-8)		SB-05 (0-2)		SB-05 (5-6)		SB-05 (8-9.4)		SB-08 (0-6)		SB-09 (0-1.5)		SB-10 (0-6)	
					Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
		6 NYCRR Part 375 SCOs																																	
	CAS	Unrestricted Use Soil Cleanup Objectives	Residential Use Soil Cleanup Objectives	Commercial Use Soil Cleanup Objectives	Industrial Use Soil Cleanup Objectives	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Volatiles By SW8260C		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
1,1,1,2-Tetrachloroethane	630-20-6	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,1,1-Trichloroethane	71-55-6	0.68	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,1,2-Trichloroethane	79-00-5	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,1-Dichloroethane	75-34-3	0.27	19	240	480	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,1-Dichloroethylene	75-35-4	0.33	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2,3-Trichlorobenzene	87-61-6	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2,3-Trichloropropane	96-18-4	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2,4-Trichlorobenzene	120-82-1	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2,4-Trimethylbenzene	95-63-6	3.6	47	190	380	< 0.0025	U	**0.027**		< 0.0028	U	**0.011**		< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.028**		**0.031**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2-Dibromoethane	106-93-4	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2-Dichlorobenzene	95-50-1	1.1	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2-Dichloroethane	107-06-2	0.02	2.3	30	60	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,2-Dichloropropane	78-87-5	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,3,5-Trimethylbenzene	108-67-8	8.4	47	190	380	< 0.0025	U	**0.01**		< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.0081**		**0.0098**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,3-Dichlorobenzene	541-73-1	2.4	17	280	560	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,4-Dichlorobenzene	106-46-7	1.8	9.8	130	250	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	**0.017**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
1,4-Dioxane	123-91-1	0.1	9.8	130	250	< 0.049	U	< 0.052	U	< 0.057	U	< 0.059	U	< 0.062	U	< 0.058	U	< 0.051	U	< 0.061	U	< 0.063	U	< 0.053	U	< 0.056	U	< 0.071	U	< 0.051	U	< 0.07	U	< 0.078	U	< 0.056	U	< 0.048	U	< 0.07	U
2-Butanone	78-93-3	0.12	100	500	1000	**0.018**		< 0.0026	U	< 0.0028	U	**0.014**		< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	**0.0046**	J	< 0.0036	U	**120**	D	**2.5**	D	**0.018**		**0.0069**		**0.0053**		**0.0065**	J
2-Hexanone	591-78-6	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.0037**	J	**0.0042**	J	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
4-Methyl-2-pentanone	108-10-1	NA	NA	NA	NA	< 0.0025	U	**0.017**		< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.0053**		**0.011**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Acetone	67-64-1	0.05	100	500	1000	**0.064**		**0.083**		**0.011**	J	**0.049**		**0.01**	J	**0.011**	J	< 0.0051	U	**0.0099**	J	**0.01**	J	**0.011**		**0.057**		**0.035**		**1**	JD	**1.2**	JD	**0.032**		**0.01**	J	**0.038**		**0.007**	J
Acrolein	107-02-8	NA	NA	NA	NA	< 0.0049	U	< 0.0052	U	< 0.0057	U	< 0.0059	U	< 0.0062	U	< 0.0058	U	< 0.0051	U	< 0.0061	U	< 0.0063	U	< 0.0053	U	< 0.0056	U	< 0.0071	U	< 0.0051	U	< 0.007	U	< 0.0078	U	< 0.0056	U	< 0.0048	U	< 0.007	U
Acrylonitrile	107-13-1	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Benzene	71-43-2	0.06	2.9	44	89	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Bromochloromethane	74-97-5	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Bromodichloromethane	75-27-4	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Bromoform	75-25-2	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Bromomethane	74-83-9	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Carbon disulfide	75-15-0	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.0099**		**0.024**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Carbon tetrachloride	56-23-5	0.76	1.4	22	44	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Chlorobenzene	108-90-7	1.1	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Chloroethane	75-00-3	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Chloroform	67-66-3	0.37	10	350	700	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Chloromethane	74-87-3	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
cis-1,2-Dichloroethylene	156-59-2	0.25	59	500	1000	< 0.0025	U	**0.01**		< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	**0.031**		**0.071**		< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
cis-1,3-Dichloropropylene	10061-01-5	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Cyclohexane	110-82-7	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Dibromochloromethane	124-48-1	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Dibromomethane	74-95-3	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Dichlorodifluoromethane	75-71-8	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Ethyl Benzene	100-41-4	1	30	390	780	< 0.0025	U	**0.0045**	J	< 0.0028	U	**0.0039**	J	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.015**		**0.028**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Hexachlorobutadiene	87-68-3	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Isopropylbenzene	98-82-8	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	**0.0037**	J	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Methyl acetate	79-20-9	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**51**	D	**13**	D	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Methyl tert-butyl ether (MTBE)	1634-04-4	0.93	62	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Methylcyclohexane	108-87-2	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Methylene chloride	75-09-2	0.05	51	500	1000	**0.029**		**0.051**		**0.068**		**0.073**		**0.089**		**0.083**		**0.07**		**0.085**		**0.088**		**0.099**		**0.086**		**0.23**		**0.087**		**0.18**		**0.26**		**0.1**		**0.11**		**0.16**	
n-Butylbenzene	104-51-8	12	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
n-Propylbenzene	103-65-1	3.9	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.0034**	J	**0.0039**	J	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
o-Xylene	95-47-6	NA	NA	NA	NA	< 0.0025	U	**0.0086**		< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.023**		**0.032**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
p- & m- Xylenes	179601-23-1	NA	NA	NA	NA	< 0.0049	U	**0.012**		< 0.0057	U	< 0.0059	U	< 0.0062	U	< 0.0058	U	< 0.0051	U	< 0.0061	U	< 0.0063	U	< 0.0053	U	< 0.0056	U	< 0.0071	U	**0.045**		**0.055**		< 0.0078	U	< 0.0056	U	< 0.0048	U	< 0.007	U
p-Isopropyltoluene	99-87-6	NA	NA	NA	NA	< 0.0025	U	**0.0041**	J	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
sec-Butylbenzene	135-98-8	11	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Styrene	100-42-5	NA	NA	NA	NA	< 0.0025	U	**0.0092**		< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.0037**	J	**0.0072**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
tert-Butyl alcohol (TBA)	75-65-0	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	**0.0062**		**0.0073**		< 0.0036	U	**0.058**		**0.026**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
tert-Butylbenzene	98-06-6	5.9	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Tetrachloroethylene	127-18-4	1.3	5.5	150	300	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**2.9**	D	**0.039**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Toluene	108-88-3	0.7	100	500	1000	< 0.0025	U	**0.01**		< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.083**		**0.053**		< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
trans-1,2-Dichloroethylene	156-60-5	0.19	100	500	1000	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	**0.0062**		**0.009**		< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
trans-1,3-Dichloropropylene	10061-02-6	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
trans-1,4-dichloro-2-butene	110-57-6	NA	NA	NA	NA	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Trichloroethylene	79-01-6	0.47	10	200	400	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	**0.0099**		< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Trichlorofluoromethane	75-69-4	NA	NA	NA	NA	< 0.0025	U	**0.0045**	J	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	< 0.0026	U	< 0.0028	U	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Vinyl Chloride	75-01-4	0.02	0.21	13	27	< 0.0025	U	< 0.0026	U	< 0.0028	U	< 0.003	U	< 0.0031	U	< 0.0029	U	< 0.0025	U	< 0.003	U	< 0.0032	U	**0.0035**	J	**0.003**	J	< 0.0036	U	< 0.0025	U	< 0.0035	U	< 0.0039	U	< 0.0028	U	< 0.0024	U	< 0.0035	U
Xylenes, Total	1330-20-7	0.26	100	500	1000	< 0.0074	U	**0.02**		< 0.0085	U	< 0.0089	U	< 0.0093	U	< 0.0087	U	< 0.0076	U	< 0.0091	U	< 0.0095	U	< 0.0079	U	< 0.0085	U	< 0.011	U	**0.068**		**0.087**		< 0.012	U	< 0.0084	U	< 0.0072	U	< 0.01	U

Notes:

Concentrations are provided in milligrams per kilogram (mg/kg).

U - The compound was anlayzed for but not detected at or above the Method Detection Limit (MDL). The number immediately preceding the "U" represents the Practical Quantitation Level (PQL) corrected for percent solids, weight and/or volume calculations, and dilution factors.

D - Result is from an anlysis that required dilution

J: The value is estimated.

Bold results indicate those detected above MDLs.

NA-No applicable standard

Result Exceeds Part 375 Unrestricted Use Soil Cleanup Objectives

Result Exceeds Part 375 Residential Use Soil Cleanup Objectives

CROPSEY SCRAP METAL
2994 Crospey Ave
Brooklyn, New York
Summary of Soil Sampling Results - Semi-Volatile Organic Compunds(SVOCs)

Semivolatiles By SW8270D	CAS	6 NYCRR Part 375 SCOs: Unrestricted Use Soil Cleanup Objectives	Residential Use Soil Cleanup Objectives	Commercial Use Soil Cleanup Objectives	Industrial Use Soil Cleanup Objectives	SB-01 (0-2) Result	Q	SB-01 (5-6.1) Result	Q	SB-01 (6.1-7.2) Result	Q	SB-02 (0-2) Result	Q	SB-02 (5-6.25) Result	Q	SB-02 (6.25-7.5) Result	Q	SB-03 (0-2) Result	Q	SB-03 (5-6.25) Result	Q	SB-03 (6.25-7.5) Result	Q	SB-04 (0-2) Result	Q	SB-04 (5-6) Result	Q	SB-04 (6-8) Result	Q	SB-05 (0-2) Result	Q	SB-05 (5-6) Result	Q	SB-05 (8-9.4) Result	Q	SB-08 (0-6) Result	Q	SB-09 (0-1.5) Result	Q	SB-10 (0-6) Result	Q
Collection Date						6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021	
Matrix						Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
1,1-Biphenyl	92-52-4	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	**0.358**	D	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
1,2,4,5-Tetrachlorobenzene	95-94-3	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
1,2,4-Trichlorobenzene	120-82-1	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
1,2-Dichlorobenzene	95-50-1	1.1	100	500	1000	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
1,2-Diphenylhydrazine (as Azobenzen	122-66-7	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
1,3-Dichlorobenzene	541-73-1	2.4	49	280	560	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
1,4-Dichlorobenzene	106-46-7	1.8	13	130	250	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2,3,4,6-Tetrachlorophenol	58-90-2	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
2,4,5-Trichlorophenol	95-95-4	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2,4,6-Trichlorophenol	88-06-2	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2,4-Dichlorophenol	120-83-2	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2,4-Dimethylphenol	105-67-9	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	**0.0978**	D	**0.0451**	JD	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2,4-Dinitrophenol	51-28-5	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
2,4-Dinitrotoluene	121-14-2	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2,6-Dinitrotoluene	606-20-2	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2-Chloronaphthalene	91-58-7	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2-Chlorophenol	95-57-8	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2-Methylnaphthalene	91-57-6	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	**1.4**	D	**0.468**	D	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	**0.111**	D	**0.0973**	JD	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2-Methylphenol	95-48-7	0.33	100	500	1000	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
2-Nitroaniline	88-74-4	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
2-Nitrophenol	88-75-5	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
3- & 4-Methylphenols	65794-96-9	0.33	100	500	1000	< 0.0451	U	**0.0554**	JD	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	**0.146**	D	< 0.0594	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	**0.0674**	JD	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
3,3-Dichlorobenzidine	91-94-1	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
3-Nitroaniline	99-09-2	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
4,6-Dinitro-2-methylphenol	534-52-1	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
4-Bromophenyl phenyl ether	101-55-3	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
4-Chloro-3-methylphenol	59-50-7	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
4-Chloroaniline	106-47-8	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
4-Chlorophenyl phenyl ether	7005-72-3	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
4-Nitroaniline	100-01-6	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
4-Nitrophenol	100-02-7	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
Acenaphthene	83-32-9	20	100	500	1000	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	**4.21**	D	**0.924**	D	< 0.0439	U	**0.111**	D	**0.106**	D	< 0.0536	U	**0.0655**	JD	**0.118**	JD	< 0.0561	U	**0.074**	JD	< 0.0445	U	**0.491**	JD
Acenaphthylene	208-96-8	100	100	500	1000	< 0.0451	U	< 0.0451	U	< 0.0449	U	**0.0929**	JD	< 0.0439	U	< 0.0433	U	**1.8**	D	**0.505**	D	< 0.0439	U	**0.0841**	JD	**0.131**	D	< 0.0536	U	**0.0781**	JD	**0.251**	D	< 0.0561	U	**0.13**	D	**0.083**	JD	**0.457**	JD
Acetophenone	98-86-2	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	**0.087**	JD	**0.0519**	JD	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	**0.0816**	JD	< 0.0445	U	< 0.358	U
Aniline	62-53-3	NA	NA	NA	NA	< 0.18	U	< 0.18	U	< 0.18	U	< 0.21	U	< 0.175	U	< 0.173	U	< 0.179	U	< 0.179	U	< 0.175	U	< 0.182	U	< 0.183	U	< 0.214	U	< 0.165	U	< 0.257	U	< 0.224	U	< 0.211	U	< 0.178	U	< 1.43	U
Anthracene	120-12-7	100	100	500	1000	**0.102**	D	**0.109**	D	< 0.0449	U	**0.153**	D	**0.0469**	JD	< 0.0433	U	**9.73**	D	**3.09**	D	< 0.0439	U	**0.276**	D	**0.356**	D	< 0.0536	U	**0.198**	D	**0.489**	D	< 0.0561	U	**0.276**	D	**0.187**	D	**1.97**	D
Atrazine	1912-24-9	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Benzaldehyde	100-52-7	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	**0.123**	D	< 0.0642	U	< 0.0561	U	**0.0681**	JD	< 0.0445	U	< 0.358	U
Benzidine	92-87-5	NA	NA	NA	NA	< 0.18	U	< 0.18	U	< 0.18	U	< 0.21	U	< 0.175	U	< 0.173	U	< 0.179	U	< 0.179	U	< 0.175	U	< 0.182	U	< 0.183	U	< 0.214	U	< 0.165	U	< 0.257	U	< 0.224	U	< 0.211	U	< 0.178	U	< 1.43	U
Benzo(a)anthracene	56-55-3	1	1	5.6	11	**0.35**	D	**0.5**	D	< 0.0449	U	**0.508**	D	**0.132**	D	**0.0477**	D	**29.9**	D	**5.87**	D	**0.0756**	JD	**0.794**	D	**1.1**	D	< 0.0536	U	**0.537**	D	**1.53**	D	< 0.0561	U	**1.08**	D	**0.622**	D	**4.28**	D
Benzo(a)pyrene	50-32-8	1	1	1	1.1	**0.332**	D	**0.565**	D	< 0.0449	U	**0.486**	D	**0.139**	D	< 0.0433	U	**30.1**	D	**5.41**	D	< 0.0439	U	**0.796**	D	**1.04**	D	< 0.0536	U	**0.471**	D	**1.16**	D	< 0.0561	U	**0.935**	D	**0.58**	D	**3.85**	D
Benzo(b)fluoranthene	205-99-2	1	1	5.6	11	**0.284**	D	**0.499**	D	< 0.0449	U	**0.418**	D	**0.118**	D	< 0.0433	U	**26.1**	D	**4.74**	D	< 0.0439	U	**0.704**	D	**0.818**	D	< 0.0536	U	**0.425**	D	**0.98**	D	< 0.0561	U	**0.935**	D	**0.534**	D	**3.84**	D
Benzo(g,h,i)perylene	191-24-2	100	100	500	1000	**0.24**	D	**0.419**	D	< 0.0449	U	**0.385**	D	**0.118**	D	< 0.0433	U	**17**	D	< 3.26	D	< 0.0439	U	**0.508**	D	**0.614**	D	< 0.0536	U	**0.294**	D	**0.647**	D	< 0.0561	U	**0.716**	D	**0.429**	D	**3.22**	D
Benzo(k)fluoranthene	207-08-9	0.8	3.9	56	110	**0.269**	D	**0.447**	D	< 0.0449	U	**0.423**	D	**0.108**	D	< 0.0433	U	**27**	D	**4.35**	D	< 0.0439	U	**0.67**	D	**0.815**	D	< 0.0536	U	**0.429**	D	**1.03**	D	< 0.0561	U	**0.839**	D	**0.513**	D	**3.56**	D
Benzoic acid	65-85-0	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	**0.375**	D	**0.0844**	JD	< 0.358	U
Benzyl alcohol	100-51-6	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	**0.0551**	JD	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Benzyl butyl phthalate	85-68-7	NA	NA	NA	NA	**0.0589**	JD	**0.691**	D	< 0.0449	U	**0.331**	D	**0.0511**	JD	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	**0.333**	D	< 0.0459	U	< 0.0536	U	**0.158**	D	**0.219**	D	< 0.0561	U	**0.812**	D	**0.151**	D	0.828	D
Bis(2-chloroethoxy)methane	111-91-1	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Bis(2-chloroethyl)ether	111-44-4	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Bis(2-chloroisopropyl)ether	108-60-1	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Bis(2-ethylhexyl)phthalate	117-81-7	NA	NA	NA	NA	**0.794**	D	**2.39**	D	**0.0473**	JD	**1.99**	D	**0.304**	D	< 0.0433	U	< 0.0448	U	**0.271**	D	< 0.0439	U	**9.14**	D	**0.935**	D	< 0.0536	U	**0.884**	D	**0.918**	D	< 0.0561	U	**1.89**	D	**0.34**	D	2.19	D
Caprolactam	105-60-2	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	< 0.0907	U	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	**0.124**	JD	< 0.0888	U	< 0.715	U
Carbazole	86-74-8	NA	NA	NA	NA	**0.0453**	JD	**0.0726**	JD	< 0.0449	U	**0.0695**	JD	< 0.0439	U	< 0.0433	U	**5.8**	D	**1.66**	D	< 0.0439	U	**0.112**	D	0.107	D	< 0.0536	U	**0.119**	D	**0.205**	D	< 0.0561	U	**0.155**	D	**0.0873**	JD	< 1.09	D
Chrysene	218-01-9	1	3.9	56	110	**0.355**	D	**0.532**	D	< 0.0449	U	**0.541**	D	**0.155**	D	**0.047**	D	**32.4**	D	**5.89**	D	**0.0728**	JD	**0.897**	D	**1.16**	D	< 0.0536	U	**0.601**	D	**1.59**	D	< 0.0561	U	**1.28**	D	**0.677**	D	**4.64**	D
Dibenzo(a,h)anthracene	53-70-3	0.33	0.33	0.56	1.1	**0.0633**	JD	**0.134**	D	< 0.0449	U	**0.126**	D	< 0.0439	U	< 0.0433	U	**6.26**	D	**1.07**	D	< 0.0439	U	**0.126**	D	**0.212**	D	< 0.0536	U	**0.101**	D	**0.209**	D	< 0.0561	U	**0.205**	D	**0.134**	D	**0.954**	D
Dibenzofuran	132-64-9	7	59	350	1000	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	**3.14**	D	**1.03**	D	< 0.0439	U	< 0.0455	U	**0.0541**	JD	< 0.0536	U	**0.0558**	JD	**0.0871**	JD	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Diethyl phthalate	84-66-2	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Dimethyl phthalate	131-11-3	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Di-n-butyl phthalate	84-74-2	NA	NA	NA	NA	< 0.0451	U	**0.0453**	JD	< 0.0449	U	**0.126**	D	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	**0.132**	D	< 0.0459	U	< 0.0536	U	**0.0502**	JD	**0.0973**	JD	< 0.0561	U	**0.378**	D	**0.0866**	JD	< 0.358	U
Di-n-octyl phthalate	117-84-0	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	**1.41**	D	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Diphenylamine	122-39-4	NA	NA	NA	NA	< 0.0899	U	< 0.09	U	< 0.0897	U	< 0.105	U	< 0.0876	U	< 0.0864	U	< 0.0893	U	< 0.0896	U	< 0.0876	U	**0.143**	JD	< 0.0915	U	< 0.107	U	< 0.0826	U	< 0.128	U	< 0.112	U	< 0.105	U	< 0.0888	U	< 0.715	U
Fluoranthene	206-44-0	100	100	500	1000	**0.538**	D	**0.666**	D	**0.0452**	JD	**0.868**	D	**0.249**	D	**0.0677**	D	**67.6**	D	**14**	D	**0.152**	D	**1.74**	D	**1.92**	D	< 0.0536	U	**1.18**	D	**3.09**	D	< 0.0561	U	**1.72**	D	**1.23**	D	**7.68**	D
Fluorene	86-73-7	30	100	500	1000	< 0.0451	U	**0.0475**	JD	< 0.0449	U	**0.0611**	JD	< 0.0439	U	< 0.0433	U	**4.94**	D	**1.5**	D	< 0.0439	U	**0.133**	D	**0.122**	D	< 0.0536	U	**0.106**	D	**0.191**	D	< 0.0561	U	**0.0858**	JD	< 0.0445	U	**0.48**	JD
Hexachlorobenzene	118-74-1	0.33	1.2	6	12	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Hexachlorobutadiene	87-68-3	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Hexachlorocyclopentadiene	77-47-4	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Hexachloroethane	67-72-1	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.5	5.6	11	**0.277**	D	0.46	D	< 0.0449	U	**0.384**	D	**0.119**	D	< 0.0433	U	**20.3**	D	**3.76**	D	< 0.0439	U	**0.594**	D	**0.692**	D	< 0.0536	U	**0.335**	D	**0.765**	D	< 0.0561	U	**0.73**	D	**0.475**	D	**3.43**	D
Isophorone	78-59-1	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Naphthalene	91-20-3	12	100	500	1000	< 0.0451	U	< 0.0451	U	< 0.0449	U	**0.0536**	JD	< 0.0439	U	< 0.0433	U	**2.94**	D	**0.926**	D	< 0.0439	U	**0.0544**	JD	0.0534	JD	< 0.0536	U	**0.103**	D	**0.114**	JD	< 0.0561	U	**0.0589**	JD	< 0.0445	U	**0.434**	JD
Nitrobenzene	98-95-3	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
N-Nitrosodimethylamine	62-75-9	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
N-nitroso-di-n-propylamine	621-64-7	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
N-Nitrosodiphenylamine	86-30-6	NA	NA	NA	NA	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Pentachlorophenol	87-86-5	0.8	6.7	6.7	55	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	< 0.0455	U	< 0.0459	U	< 0.0536	U	< 0.0414	U	< 0.0642	U	< 0.0561	U	< 0.0527	U	< 0.0445	U	< 0.358	U
Phenanthrene	85-01-8	100	100	500	1000	**0.352**	D	**0.386**	D	< 0.0449	U	**0.474**	D	**0.16**	D	< 0.0433	U	**48**	D	**13.5**	D	**0.127**	D	**1.06**	D	1.21	D	< 0.0536	U	**0.903**	D	**2.07**	D	< 0.0561	U	**0.922**	D	**0.67**	D	**4.54**	D
Phenol	108-95-2	0.33	100	500	1000	< 0.0451	U	< 0.0451	U	< 0.0449	U	< 0.0525	U	< 0.0439	U	< 0.0433	U	< 0.0448	U	< 0.0449	U	< 0.0439	U	**0.0609**	JD	< 0.0459	U	< 0.0536	U	**0.0539**	JD	< 0.0642	U	< 0.0561	U	**0.0563**	JD	< 0.0445	U	< 0.358	U
Pyrene	129-00-0	100	100	500	1000	**0.535**	D	**0.657**	D	**0.0459**	JD	**0.841**	D	**0.249**	D	< 0.0433	U	**55**	D	**11.3**	D	**0.137**	D	**1.57**	D	2.1	D	< 0.0536	U	**1.04**	D	**2.94**	D	< 0.0561	U	**1.85**	D	**1.16**	D	**7.7**	D

Notes:
Concentrations are provided in milligrams per kilogram (mg/kg).

U - The compound was analyzed for but not detected at or above the Method Detection Limit (MDL). The number immediately preceding the "U" represents the Practical Quantitation Level (PQL) corrected for percent solids, weight and/or volume calculations, and dilution factors.
J: The value is estimated.
D - Result is from an analysis that required dilution.
Bold results indicate those detected above MDLs.
NA-No applicable standard

Result Exceeds Part 375 Unrestricted Use Soil Cleanup Objectives
Result Exceeds Part 375 Residential Use Soil Cleanup Objectives
Result Exceeds Part 375 Commercial Use Soil Cleanup Objectives
Result Exceeds Part 375 Industrial Use Soil Cleanup Objectives

CROPSEY SCRAP METAL
2994 Crospey Ave
Brooklyn, New York
Summary of Soil Sampling Results - Metals

						Collection Date	6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021	
						Sample ID	SB-01 (0-2)		SB-01 (5-6.1)		SB-01 (6.1-7.2)		SB-02 (0-2)		SB-02 (5-6.25)		SB-02 (6.25-7.5)		SB-03 (0-2)		SB-03 (5-6.25)		SB-03 (6.25-7.5)		SB-04 (0-2)		SB-04 (5-6)		SB-04 (6-8)		SB-05 (0-2)		SB-05 (5-6)		SB-05 (8-9.4)		SB-08 (0-6)		SB-09 (0-1.5)		SB-10 (0-6)	
						Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
		6 NYCRR Part 375 SCOs																																				
	CAS	**Unrestricted Use Soil Cleanup Objectives**	**Residential Use Soil Cleanup Objectives**	**Commercial Use Soil Cleanup Objectives**	**Industrial Use Soil Cleanup Objectives**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
Metals, Total		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	7429-90-5	NA	NA	NA	NA	**3,040**		**1,850**		**3,030**		**4,480**		**1,800**		**2,270**		**5,560**		**3,260**		**1,870**		**5,700**		**6,820**		**1,370**		**3,660**		**4,150**		**1540**		**7,950**		**7,340**		**10,600**	
Antimony	7440-36-0	NA	NA	NA	NA	< 2.75	U	< 2.75	U	< 2.72	U	< 3.18	U	< 2.66	U	< 2.64	U	< 2.74	U	< 2.71	U	< 2.63	U	< 2.73	U	< 2.77	U	< 3.22	U	< 2.5	U	< 3.89	U	< 3.38	U	< 3.16	U	< 2.69	U	**26**	
Arsenic	7440-38-2	13	16	16	16	**2.84**		**2.58**		**11.6**		**4.74**		< 1.6	U	< 1.58	U	**4.76**		**4.85**		< 1.58	U	**5.36**		**4.27**		< 1.93	U	**2.6**		**3.76**		< 2.03	U	**8.34**		**5.76**		**22.2**	
Barium	7440-39-3	350	350	400	10000	**92.5**		**45.9**		**16.6**		**215**		**29.4**		**8.34**		**135**		**156**		**11.5**		**122**		**82.4**		**12**		**218**		**419**		**5.96**		**419**		**240**		**2430**	
Beryllium	7440-41-7	7.2	14	590	2700	< 0.055	U	< 0.055	U	**0.178**		< 0.064	U	< 0.053	U	< 0.053	U	< 0.055	U	< 0.054	U	< 0.053	U	< 0.055	U	< 0.055	U	< 0.064	U	< 0.05	U	< 0.078	U	< 0.068	U	< 0.063	U	< 0.054	U	< 0.057	U
Cadmium	7440-43-9	2.5	2.5	9.3	60	**1.32**		**0.56**		**1.17**		**3.91**		**0.367**		< 0.317	U	**1.35**		**0.78**		< 0.3	U	**3.13**		**1.3**		< 0.386	U	**1.36**		**1.57**		< 0.406	U	**10.1**		**5.02**		**25.2**	
Calcium	7440-70-2	NA	NA	NA	NA	**3,130**	B	**1,020**	B	**764**	B	**2,530**	B	820	B	608	B	1,700	B	**1,380**	B	**551**	B	**7,340**	B	**13,900**	B	**446**	B	9,300	B	43,500	B	**524**	B	**7,960**	B	**3,250**	B	**9,480**	B
Chromium	7440-47-3	NA	NA	NA	NA	**15.6**		**6.89**		**37.4**		**34.7**		**6.55**		**5.46**		**21.5**		**19.5**		**7.43**		**30.7**		**20.9**		**4.31**		**20.8**		**33**		**4.46**		**85.5**		**27**		**163**	
Cobalt	7440-48-4	NA	NA	NA	NA	**4.25**		**1.93**		**7.44**		**6.3**		**1.7**		**1.68**		**6.46**		**4.42**		**1.76**		**6.95**		**5.85**		**1.07**		**5.41**		**5.8**		**1.04**		**21.20**		**9.06**		**17.5**	
Copper	7440-50-8	50	270	270	10000	**71.6**		**56.7**		**55.5**		**139**		**12.5**		**4.78**		**56**		**53.7**		**3.73**		**580**		**166**		< 3	U	**72.2**		**126**		< 2.7	U	**505**		**201**		**1380**	
Iron	7439-89-6	NA	NA	NA	NA	**10,600**		**4,600**		**22,500**		**14,600**		**3,670**		**4,630**		**13,900**		**14,200**		**4,210**		**35,800**		**13,700**		**2,290**		**13,600**		**16,200**		**2530**		**48,500**		**23,300**		**94,900**	
Lead	7439-92-1	63	400	1000	3900	**186**		**95.5**		**82.8**		**405**		**118**		**9.41**		**291**		**366**		**16.6**		**420**		**198**		**18**		**356**		**590**		**2.04**		**1280**		**1430**		**7350**	
Magnesium	7439-95-4	NA	NA	NA	NA	**1,070**		**607**		**725**		**1,150**		**658**		**991**		**1,930**		**1,000**		**810**		**4,020**	B	**4,870**	B	**553**	B	**3,140**	B	**14,400**	B	**689**	B	**2,760**	B	**2,470**	B	**3,140**	B
Manganese	7439-96-5	1600	2000	10000	10000	**193**		**81.5**		**215**		**151**		**43.2**		**45**		**166**		**118**		**88**		**184**		**213**		**30**		**246**		**183**		**25.5**		**513**		**388**		**575**	
Nickel	7440-02-0	30	140	310	10000	**29**		**6.8**		**25.2**		**28.1**		**4.97**		**7.05**		**38.4**		**17.5**		**6.48**		**108**		**41.2**		**2.51**		**40.9**		**28**		**3.5**		**90.8**		**99.9**		**150**	
Potassium	7440-09-7	NA	NA	NA	NA	**470**	B	**357**	B	**415**	B	**514**	B	**430**	B	**590**	B	**776**	B	**671**	B	**522**	B	**813**		**781**		**357**		**870**		**1350**		**403**		**788**		**911**		**929**	
Selenium	7782-49-2	3.9	36	1500	6800	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 3	U	< 4	U	< 3.38	U	< 3	U	< 3	U	< 3	U
Silver	7440-22-4	2	36	1500	6800	< 0.55	U	< 0.55	U	< 0.545	U	< 0.636	U	< 0.532	U	< 0.528	U	< 0.548	U	< 0.542	U	< 0.527	U	< 0.546	U	< 0.554	U	< 0.643	U	< 0.5	U	< 0.778	U	< 0.676	U	**3.52**		< 0.537	U	**23.2**	
Sodium	7440-23-5	NA	NA	NA	NA	**108**		< 55	U	**76.6**		**137**		< 53.2	U	**113**		**80.9**		**87.3**		< 52.7	U	**191**		**227**		< 64.3	U	**266**		**477**		**110**		**339**		**122**		**1790**	
Thallium	7440-28-0	NA	NA	NA	NA	< 2.75	U	< 2.75	U	< 2.72	U	< 3.18	U	< 2.66	U	< 2.64	U	< 2.74	U	< 2.71	U	< 2.63	U	< 2.73	U	< 3	U	< 3.22	U	< 2.5	U	< 3.89	U	< 3.38	U	< 3.16	U	< 2.69	U	**3.26**	
Vanadium	7440-62-2	NA	NA	NA	NA	**10.4**		**6.35**		**24**		**15**		**6.17**		**7.16**		**17.3**		**11.2**		**7.6**		**38**		**24.9**		**4.66**		**13.3**		**15.6**		**5.17**		**30**		**36.6**		**84.6**	
Zinc	7440-66-6	109	2200	10000	10000	**1450**		**168**		**139**		**739**		**54.1**		**21.9**		**441**		**535**		**36.1**		**1050**		**337**		**25.9**		**408**		**666**		**7.59**		**3120**		**981**		**9820**	D
Mercury	7439-97-6	.18	.81	2.80	5.7	**1.21**		**0.221**		**0.0398**		**0.639**		**0.0628**		**0.0732**		**0.286**		**0.182**		< 0.0316	U	**0.424**		**0.299**		< 0.0386	U	**0.421**		**0.212**		< 0.0406	U	**3.63**		**1.43**		**0.237**	

Notes:
Concentrations are provided in milligrams per kilogram (mg/kg).

U - The compound was anlayzed for but not detected at or above the Method Detection Limit (MDL). The number immediately preceding the "U" represents the Practical Quantitation Level (PQL) corrected for percent solids, weight and/or volume calculations, and dilution factors.
D - Result is from an analysis that required dilution.
B - Analyte found in the analysis batch blank
J: The value is estimated.

Bold results indicate those detected above MDLs.
NA-No applicable standard

Result Exceeds Part 375 Unrestricted Use Soil Cleanup Objectives
Result Exceeds Part 375 Residential Use Soil Cleanup Objectives
Result Exceeds Part 375 Commercial Use Soil Cleanup Objectives
Result Exceeds Part 375 Industrial Use Soil Cleanup Objectives

CROPSEY SCRAP METAL
2994 Crospey Ave
Brooklyn, New York
Summary of Soil Sampling Results - Pesticides, PCBs

						Collection Date	6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/29/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021		6/4/2021	
						Sample ID	SB-01 (0-2)		SB-01 (5-6.1)		SB-01 (6.1-7.2)		SB-02 (0-2)		SB-02 (5-6.25)		SB-02 (6.25-7.5)		SB-03 (0-2)		SB-03 (5-6.25)		SB-03 (6.25-7.5)		SB-04 (0-2)		SB-04 (5-6)		SB-04 (6-8)		SB-05 (0-2)		SB-05 (5-6)		SB-05 (8-9.4)		SB-08 (0-6)		SB-09 (0-1.5)		SB-10 (0-6)	
						Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
		6 NYCRR Part 375 SCOs																																					
	CAS	Unrestricted Use Soil Cleanup Objectives	Residential Use Soil Cleanup Objectives	Commercial Use Soil Cleanup Objectives	Industrial Use Soil Cleanup Objectives	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PCBs		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aroclor 1016	12674-11-2	NA	NA	NA	NA	< 0.018	U	< 0.0181	U	< 0.0181	U	< 0.021	U	< 0.0176	U	< 0.0175	U	< 0.0181	U	< 0.018	U	< 0.0173	U	< 0.0181	U	< 0.0183	U	< 0.0213	U	< 0.0165	U	< 0.0258	U	< 0.0224	U	< 0.0209	U	< 0.0178	U	< 0.19	U
Aroclor 1221	11104-28-2	NA	NA	NA	NA	< 0.018	U	< 0.0181	U	< 0.0181	U	< 0.021	U	< 0.0176	U	< 0.0175	U	< 0.0181	U	< 0.018	U	< 0.0173	U	< 0.0181	U	< 0.0183	U	< 0.0213	U	< 0.0165	U	< 0.0258	U	< 0.0224	U	< 0.0209	U	< 0.0178	U	< 0.19	U
Aroclor 1232	11141-16-5	NA	NA	NA	NA	< 0.018	U	< 0.0181	U	< 0.0181	U	< 0.021	U	< 0.0176	U	< 0.0175	U	< 0.0181	U	< 0.018	U	< 0.0173	U	< 0.0181	U	< 0.0183	U	< 0.0213	U	< 0.0165	U	< 0.0258	U	< 0.0224	U	< 0.0209	U	< 0.0178	U	< 0.19	U
Aroclor 1242	53469-21-9	NA	NA	NA	NA	**0.24**		**0.246**		< 0.0181	U	**0.0579**		**0.0586**		< 0.0175	U	**0.148**		**0.0819**		< 0.0173	U	**0.286**		**0.0714**		< 0.0213	U	**0.395**		**0.315**		< 0.0224	U	< 0.0209	U	< 0.0178	U	< 0.19	U
Aroclor 1248	12672-29-6	NA	NA	NA	NA	< 0.018	U	< 0.0181	U	< 0.0181	U	< 0.021	U	< 0.0176	U	< 0.0175	U	< 0.0181	U	< 0.018	U	< 0.0173	U	< 0.0181	U	< 0.0183	U	< 0.0213	U	< 0.0165	U	< 0.0258	U	< 0.0224	U	< 0.0209	U	< 0.0178	U	< 0.19	U
Aroclor 1254	11097-69-1	NA	NA	NA	NA	< 0.018	U	< 0.0181	U	< 0.0181	U	< 0.021	U	< 0.0176	U	< 0.0175	U	< 0.0181	U	< 0.018	U	< 0.0173	U	< 0.0181	U	< 0.0183	U	< 0.0213	U	< 0.0165	U	< 0.0258	U	< 0.0224	U	**0.211**		**0.268**		**7.91**	D
Aroclor 1260	11096-82-5	NA	NA	NA	NA	**0.027**		< 0.0181	U	< 0.0181	U	< 0.021	U	< 0.0176	U	< 0.0175	U	< 0.0181	U	< 0.018	U	< 0.0173	U	**0.321**		**0.0966**		< 0.0213	U	**0.0541**		**0.0272**		< 0.0224	U	**0.204**		**0.328**		**4.65**	D
Total PCBs	1336-36-3	0.1	1	1	25	**0.267**		**0.246**		< 0.0181	U	**0.0579**		**0.0586**		< 0.0175	U	**0.148**		**0.0819**		< 0.0173	U	**0.607**		**0.168**		< 0.0213	U	**0.449**		**0.342**		< 0.0224	U	**0.415**		**0.596**		**12.6**	D
Pesticides		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																																	
4,4'-DDD	72-54-8	0.0033	2.6	92	180	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	**0.00805**	DP	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	**0.108**	D
4,4'-DDE	72-55-9	0.0033	1.8	62	120	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	**0.00922**	D	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	**0.0104**	D	**0.00858**	D	**0.273**	D
4,4'-DDT	50-29-3	0.0033	1.7	47	94	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	**0.00403**	DP	< 0.00255	U	< 0.00222	U	< 0.00207	U	**0.059**	D	**0.639**	D
Aldrin	309-00-2	0.005	0.019	0.68	1.4	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< **0.00939**	U
alpha-BHC	319-84-6	0.02	0.097	3.4	6.8	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
alpha-Chlordane	5103-71-9	0.094	0.91	24	47	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	**0.00889**	DP	**0.00713**	D	**0.118**	DP
beta-BHC	319-85-7	0.036	0.072	3	14	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Chlordane, total	57-74-9	NA	NA	NA	NA	< 0.0357	U	< 0.0358	U	< 0.0358	U	< 0.0416	U	< 0.0349	U	< 0.0348	U	< 0.0359	U	< 0.0357	U	< 0.0342	U	< 0.0358	U	< 0.0363	U	< 0.0422	U	< 0.0328	U	< 0.051	U	< 0.0443	U	**0.0747**	D	**0.0647**	D	**1.26**	DP
delta-BHC	319-86-8	0.04	100	500	1000	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Dieldrin	60-57-1	0.005	0.039	1.4	2.8	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	**0.0128**	D	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	**0.00998**	DP	**0.0178**	DP	**0.195**	DP
Endosulfan I	959-98-8	2.4	4.8	200	920	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Endosulfan II	33213-65-9	2.4	4.8	200	920	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Endosulfan sulfate	1031-07-8	2.4	4.8	200	920	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Endrin	72-20-8	0.014	2.2	89	410	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Endrin aldehyde	7421-93-4	NA	NA	NA	NA	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	**0.00693**	D	**0.0107**	DP	**0.169**	DP
Endrin ketone	53494-70-5	NA	NA	NA	NA	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
gamma-BHC (Lindane)	58-89-9	0.1	0.28	9.2	23	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
gamma-Chlordane	5566-34-7	NA	NA	NA	NA	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	**0.0134**	D	**0.0117**	D	**0.207**	DP
Heptachlor	76-44-8	0.042	0.42	15	29	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Heptachlor epoxide	1024-57-3	NA	NA	NA	NA	< 0.00178	U	< 0.00179	U	< 0.00179	U	< 0.00208	U	< 0.00174	U	< 0.00174	U	< 0.0018	U	< 0.00178	U	< 0.00171	U	< 0.00179	U	< 0.00182	U	< 0.00211	U	< 0.00164	U	< 0.00255	U	< 0.00222	U	< 0.00207	U	< 0.00176	U	< 0.00939	U
Methoxychlor	72-43-5	NA	NA	NA	NA	< 0.00892	U	< 0.00896	U	< 0.00896	U	< 0.0104	U	< 0.00872	U	< 0.00869	U	< 0.00898	U	< 0.00892	U	< 0.00855	U	< 0.00895	U	< 0.00908	U	< 0.0105	U	< 0.0082	U	< 0.0128	U	< 0.0111	U	< 0.0104	U	< 0.00881	U	< 0.047	U
Toxaphene	8001-35-2	NA	NA	NA	NA	< 0.0903	U	< 0.0907	U	< 0.0907	U	< 0.105	U	< 0.0883	U	< 0.0879	U	< 0.0909	U	< 0.0903	U	< 0.0865	U	< 0.0905	U	< 0.0919	U	< 0.107	U	< 0.0829	U	< 0.129	U	< 0.112	U	< 0.105	U	< 0.0892	U	< 0.475	U

Notes:
Concentrations are provided in milligrams per kilogram (mg/kg).
U - The compound was anlayzed for but not detected at or above the Method Detection Limit (MDL). The number immediately preceding the "U" represents the Practical Quantitation Level (PQL) corrected for percent solids, weight and/or volume calculations, and dilution factors.
D - Result is from an analysis that required dilution
P - There is a % difference for detected concentrations that exceed method dictated limits between the two GC columns used for analysis
Bold results indicate those detected above MDLs.
NA-No applicable standard

Result Exceeds Part 375 Unrestricted Use Soil Cleanup Objectives
Result Exceeds Part 375 Residential Use Soil Cleanup Objectives
Result Exceeds Part 375 Commercial Use Soil Cleanup Objectives
Result Exceeds Part 375 Industrial Use Soil Cleanup Objectives

APPENDICES

APPENDIX A
NYSDEC Letter Correspondence

DEC will carry out any needed field investigation. If the site is determined to be an inactive hazardous waste disposal site and DEC incurs costs to investigate or remediate the site, DEC will seek to recover all costs from any responsible person.

A summary of information we currently have about the site will soon be available on our public website, and may be accessed by using our "Environmental Site Remediation Database Search" tool at: http://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3.

If you have any questions or would like to discuss the possibility of undertaking the investigation of the site yourself, please feel free to contact the Project Manager for this site, Michael Sollecito, by email at michael.sollecito@dec.ny.gov or by telephone at (518) 402-2198 with any technical questions. Should you or your attorney have any legal questions, please contact Jennifer Andaloro at jennifer.andaloro@dec.ny.gov.

Sincerely,

Gerard Burke, P.E.
Director, Remedial Bureau B
Division of Environmental Remediation

ec:

M. Sollecito, DER
J. Andaloro, DER
J. O'Connell, DER
A. Servis, DER

Environmental Conservation Law

Section 27-1305(2)(a)

"The department shall conduct investigations of the sites listed in the registry and shall investigate areas or sites which it has reason to believe should be included in the registry. The purpose of these investigations shall be to develop the information required by subdivision one of this section to be included in the registry.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau B
625 Broadway, 12th Floor, Albany, NY 12233-7016
P: (518) 402-9767 I F: (518) 402-9773
www.dec.ny.gov

SENT BY CERTIFIED MAIL

April 7, 2022

Thomas Petrosino
17 Wedgewood Avenue
Colts Neck, NJ 07722

Re: Potential Hazardous Waste Disposal Site

Dear Property Owner's Site Contact:

As required by subdivision 27-1305(2)(a) of the Environmental Conservation Law (ECL, quoted below), the New York State Department of Environmental Conservation (DEC) must investigate all suspected or known inactive hazardous waste disposal sites. We have received information which leads us to suspect that hazardous waste has been disposed of at the following location:

Site Name: Cropsey Scrap Iron and Metal Corp.
Site Address: 2994 Cropsey Avenue, Brooklyn, NY 11214
DEC Site No.: 224364
Tax Map Identifier: Block 6947, Lot 260

Therefore, this letter constitutes DEC's notification to you as the identified property owner that this property is considered a potential inactive hazardous waste disposal site. If DEC determines that hazardous waste has been disposed of on the property and that the hazardous waste poses a significant threat to public health or the environment, the property will be listed on the Registry of Inactive Hazardous Waste Disposal Sites (Registry).

If you have any information that may be relevant to our investigation and pending determination, please forward it to me as soon as possible. If you prefer to carry out this investigation yourself, you may do so under a legal agreement with DEC under the Brownfield Cleanup Program or State Superfund Program and in accordance with DEC's technical requirements. Please contact the Project Manager (see below) at the above number within 10 business days if you want to discuss these options. Otherwise,

APPENDIX B
Site Inspection Report for Cropsey Scrap Iron & Metal Corp by Weston Solutions Inc (December 2021)

SITE INSPECTION REPORT
CROPSEY SCRAP IRON & METAL CORP.
2994 CROPSEY AVENUE
BROOKLYN, NEW YORK

EPA ID No.: NYN000203563

EPA Contract No.: 68HE0319D0004
Document Control No.: SAT-V.6202.0053

December 2021

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Prepared by:

Weston Solutions, Inc.
Edison, New Jersey 08837

SITE INSPECTION REPORT
CROPSEY SCRAP IRON & METAL CORP.
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Document Control No.: SAT-V.6202.0053

December 2021

SUBMITTED BY:

Habib Bravo-Ruiz
Associate Geoscientist

Date 12/03/2021

Gerald V. Gilliland, P.G.
Site Assessment Team (SAT) Lead

Date 12/03/2021

SITE SUMMARY

The Cropsey Scrap Iron & Metal Corp. (CSIMC) site (U.S. Environmental Protection Agency [EPA] ID No. NYN000203563) consists of an active scrap metal recycling facility along the northern bank of Coney Island Creek in Brooklyn, NY [Ref. 1, p. 1; 2, p. 1]. EPA discovery of the CSIMC site occurred in 2020 during the Site Discovery Initiative associated with the Coney Island Creek site [Ref. 3, p. 1; 4, pp. 5–7]. Available information indicates that the subject property has been utilized for ferrous and non-ferrous scrap metal recycling since at least 1970 [Ref. 6, pp. 31–32; 7, pp. 9–10; 8, p. 5]. Available Sanborn® Fire Insurance maps and aerial photographs indicate that, with the exception of what appear to be houses in 1924 and a small store in 1930, there were no structures on the property until the 1960s [Ref. 6, pp. 33–36; 7, pp. 11–14]. City directories list CSIMC as the occupant of the subject property since 1970; there are no occupants listed for the subject property prior to 1970 [Ref. 9, p. 5]. The Cropsey operational area, which covers most of the subject property, is bordered by concrete walls topped with corrugated metal fencing [Ref. 11, p. 3; 34, Figure 2]. The property is in a mostly commercial and industrial area and is bounded by a public right-of-way (ROW) and a parking lot to the west; Bay 54th Street and a gasoline station to the north; Cropsey Avenue to the east; and Coney Island Creek to the south [Ref. 5, pp. 1–2; 34, Figure 2]. A steep vegetated embankment that is part of the subject property separates the scrap metal recycling operations area (i.e., the concrete-walled area) from Coney Island Creek [Ref. 5, pp. 1–2; 34, Figure 2; 53, p. 2]. **Figure 1** presents a Site Location Map. **Figure 2** presents a Site Features Map.

Excluding buildings and a concrete slab utilized for metal processing operations that occupies approximately 13,545 square feet (ft^2), the subject property is predominantly an unpaved yard [Ref. 10, p. 9; 34, Figure 2]. CSIMC utilizes the subject property to separate incoming material into various grades/types of metal to reduce it in volume, and then ship the recycled products to various users by truck [Ref. 10, p. 8]. According to a May 2018 Registration Form for a Solid Waste Management Facility, CSIMC is able to receive a maximum of 100 tons of ferrous and 10 tons of non-ferrous scrap metal per day and has a total storage capacity of 500 tons [Ref. 12, p. 1]. Scrap Metal Processors Annual Reports submitted to the New York State Department of Environmental Conversation (NYSDEC) from 2013 to 2018 indicate that the CSIMC facility received a total of 120,859 tons of ferrous scrap metal, 5,876 tons of non-ferrous scrap metal, 5,310 tons of aluminum scrap metal, 657 tons of stainless steel, 655 tons of copper, and 417 tons of brass [Ref. 13, p. 1]. The Scrap Metal Processors Annual Reports also indicate that the CSIMC facility generated used oil waste [Ref. 13, p. 1]. This waste was either stored on-site (330 gallons) or disposed offsite (995 gallons) [Ref. 13, p. 1].

The CSIMC facility has a National Pollutant Discharge Elimination System (NPDES) Permit (No. NYR00F326), which expires in February 2023 [Ref. 14, p. 1; 15, p. 2]. The facility has two NDPES monitoring points/outfalls (Outfall #001 and #002) [Ref. 11, pp. 3, 13, 15; 34, Figure 2]. The outfalls are connected to two on-site subterranean dry wells that allow stormwater to percolate into the subsurface; the outfalls do not discharge directly to Coney Island Creek, however, the NPDES permit assumes that site runoff infiltrating the ground at the outfalls will discharge to Coney Island Creek [Ref. 11, p. 3; 15, p. 3; 10, pp. 10–11, 146; 18, p. 49; 34, Figure 2]. Prior to applying for the NPDES permit, CSIMC received a Notice of Violation (NOV) from NYSDEC under the Clean Water Act due to potential unregulated discharges from the facility [Ref. 16, p. 1]. The NOV stated

LEGEND:

★ Site Reference Location Lat: +40.581787° Long: -73.986513°

TITLE:

SITE LOCATION MAP
CROPSEY SCRAP IRON & METAL CORP.
BROOKLYN, KINGS COUNTY, NY

PROJECT: Cropsey Scrap Iron & Metal Corp SI

CLIENT NAME: EPA

DATE: December 2021

FIGURE #: 1

Path: P:\SAT2\ConeyIslandCreek\MXD\Cropsey_Scrap\SI\27098_CI_Creek6102_Cropsey_Scrap_Site_Location_SI.mxd

SCALE:

50 25 0 50

Graphic Scale In Feet

TITLE:

SITE FEATURES MAP
CROPSEY SCRAP IRON & METAL CORP.
BROOKLYN, KINGS COUNTY, NY

PROJECT: Cropsey Scrap Iron & Metal Corp SI

CLIENT NAME: EPA

WESTON SOLUTIONS

DATE: December 2021

FIGURE #: 2

Path: P:\SAT2\ConeyIslandCreek\MXD\Cropsey_Scrap\SI\27318_CI_Creek6102_Crospey_Scrap_Site_Features.mxd

that polluted stormwater from scrap metal operations on the fully unpaved portion of the facility can discharge into shallow groundwater that is hydraulically connected to Coney Island Creek [Ref. 16, p. 1]. Since receiving its NPDES permit in 2013, CSIMC has reported exceedances of its discharge limits for the metals aluminum (maximum concentration of 2,370 micrograms per liter [µg/L]), cadmium (7.0 µg/L), copper (780 µg/L), iron (13.2 µg/L), lead (1,400 µg/L), and zinc (1,300 µg/L) to NYSDEC in 2013, 2014 and 2015 [Ref. 17, p. 1]. EPA's Environmental and Compliance History Online (ECHO) database notes permit violations for late submittals of Discharge Monitoring Reports (DMR) in 2018, 2019, and 2020 [Ref. 15, p. 3; 18, p. 1].

CSIMC's Stormwater Pollution Prevention Plan (SWPPP) indicates that stormwater runoff generated at the facility has a potential for indirect discharge into Coney Island Creek because most of the site is not covered by an impermeable surface [Ref. 10, p. 4]. The SWPPP also indicates that stormwater runoff has a potential of reaching a New York City seepage catch basin located northwest of the site due to the slope of the concrete entrance/exit pad leading to/from Cropsey Avenue [Ref. 10, p. 4; 34, Figure 2]. The facility has three distinct drainage areas (DA); identified as DA no. 1 through no. 3 for the purpose of this report [Ref. 10, p. 9; 34, Figure 2]. DA no. 1 is associated with the facility's driveway, which is an impervious concrete pad [Ref. 10, p. 9; 11, pp. 3, 13]. No industrial activities take place in DA no. 1, which is designated for truck arrival and departure only; however, the facility installed a 3-inch trench drain topped with a metal grate across the entire width of DA no. 1 to minimize stormwater runoff migrating off the property [Ref. 10, p. 9; 11, pp. 3, 13]. The trench drain directs stormwater through a dry well into the ground, which is considered Outfall #001 under the NPDES permit [Ref. 10, p. 10]. DA no. 2 is associated with a low-elevation area in the facility's open yard [Ref. 10, p. 9; 11, pp. 3, 14–15; 34, Figure 2]. The low-elevation area is used for loading, unloading, processing, and storing ferrous scrap metal [Ref. 10, p. 9]. Most of DA no. 2 is exposed soil (i.e., permeable surface) surrounded by higher elevations and, as a result, stormwater percolates into the ground [Ref. 10, p. 9; 11, pp. 3, 14–15, 22; 34, Figure 2]. DA no. 3 is associated with the roof drains from two one-story buildings on the eastern portion of the site [Ref. 10, p. 10; 34, Figure 2]. Stormwater from each roof is directed to a downspout inside each building; each downspout is coupled to a filter designed to remove at least 80% of sediment and 40% to 60% of heavy metals from the stormwater before it flows into one of the on-site dry wells [Ref. 10, pp. 9, 158–159; 11, pp. 3, 15; 34, Figure 2].

Coney Island Creek receives approximately 290 million gallons of discharges per year through permitted combined sewer overflow (CSO) outfalls and 1,487 million gallons of stormwater runoff per year [Ref. 19, p. 2]. Environmental characterizations of Coney Island Creek indicate that creek sediments are contaminated with polycyclic aromatic hydrocarbons (PAH), BTEX compounds (i.e., benzene, toluene, ethylbenzene, and xylene), and inorganic constituents [Ref. 20, p. 1], all of which are possibly associated with the CSIMC facility. PAHs and BTEX compounds are known constituents of fuels (i.e., gasoline and diesel) and used oils (i.e., engine oils, hydraulic oils, etc.) which may be released by improper handling and storage of scrap metal that still contain these fluids [Ref 39, p. 15; 40, p. 22; 41, p. 20]. Inorganic constituents may be released through the corrosion of scrap metal and improper handling and storage of lead-acid batteries and other universal waste [Ref. 42, pp. 1–2]. As stated above, CSIMC stages large scrap metal piles directly on the ground surface without secondary containment, and the facility has exceeded discharge limits for such metals as aluminum, cadmium, copper, iron, lead, and zinc on multiple occasions [Ref. 13, p. 1; 17, p. 1].

On September 3, 2020, Weston Solutions, Inc. (WESTON®) Region 2 Site Assessment Team (SAT) performed an off-site reconnaissance at CSIMC in support of an Abbreviated Preliminary Assessment (APA) [Ref. 5, p. 1–3]. The facility was confirmed to be an active scrap metal recycling facility [Ref. 5, pp. 2, 15, 17–18]. Site conditions appeared to be similar to aerial imagery regarding poor housekeeping [Ref. 5, pp. 2, 7, 17; 7, pp. 3–6]. A large scrap metal pile approximately 25 to 30 feet high was observed [Ref. 5, p. 17]. The reconnaissance confirmed that fishing for human consumption occurs in the western portion of the creek at the Kaiser Park fishing pier; fishing is also known to occur in other parts of the creek [Ref. 5, pp. 2, 22–23; 21, p. 6; 68, pp. 1–2].

On April 9, 2021, Region 2 Site Assessment Team V (SAT V) personnel conducted pre-sampling reconnaissance activities at and in the vicinity of the CSIMC site [Ref. 11, pp. 3–4]. The objective of the reconnaissance was to observe current site conditions and to select potential on- and off-site SI sample locations [Ref. 11, pp. 3–4]. Based on observations made during the reconnaissance, the facility includes one office trailer, two non-ferrous scrap metal processing and storage buildings, and one building used for storage of a 250-gallon diesel aboveground storage tank (AST) and liquid/lubricant (i.e., used oil, lubricating oil, etc.) drums [Ref. 10, p. 21; 11, pp. 3–4; 34, Figure 2]. A generator and a metal shear are located in the southern portion of the site, adjacent to the AST/drums storage building [Ref. 34, Figure 2]. Most scrap metal operations take place in the facility's open yard, including loading/unloading, processing, and storage [Ref. 10, p. 14; 11, pp. 3, 14]. Non-ferrous metals, including copper, aluminum, and brass, are segregated from ferrous metals, if needed, and transferred to the on-site buildings for processing and storage [Ref. 10, p. 14; 34, Figure 2]. According to a facility representative, the facility does not accept the following materials: vehicles, mercury switches, mercury containing parts, PCB capacitors, ballasts containing PCBs, materials containing residual fluids (engines, transmissions, oil-filled transformers, etc.), and cracked lead-acid batteries [Ref. 10, p. 8; 11, p. 4]. The facility maintains one lead-acid battery staging area and one lead-acid battery storage area within the non-ferrous scrap metal processing and storage buildings [Ref. 10, p. 21; 11, pp. 4, 16; 34, Figure 2]. There were approximately 50 lead-acid batteries on-site during the reconnaissance [Ref. 11, pp. 4, 16]. The batteries were neatly stacked on pallets [Ref. 11, pp. 16]. The facility is surrounded by an approximately 4- to 6-foot-high reinforced concrete wall with a corrugated metal fence on top [Ref. 11, pp. 3, 14–15, 17]. The reinforced concrete wall was observed to be in good condition [Ref. 11, pp. 15, 17]. Region 2 SAT V noticed the eastern portion of the steep vegetated embankment between the facility's operational area and Coney Island Creek to be accessible by foot [Ref. 11, pp. 4, 17]. No drainage channels from the facility to Coney Island Creek were observed during the reconnaissance [Ref. 11, pp. 4, 17].

In April 2021, Region 2 SAT V personnel collected surface water and sediment samples as part of the Site Inspection (SI) evaluation of the Coney Island Creek site [Ref. 21, p. 1]. Region 2 SAT V collected a total of 12 surface water and 63 sediment samples [Ref. 21, pp. 1, 4, 6]. All surface water and sediment samples were analyzed for Organic Target Analyte List (TAL) Volatile Organic Compounds (VOC), Semivolatile Organic Compounds (SVOC), Pesticides, and Aroclors; and Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) 11+ Metals (including mercury and cyanide) through the EPA Contract Laboratory Program (CLP) [Ref. 21, p. 1]. The following substances were detected in creek sediments at concentrations greater than or

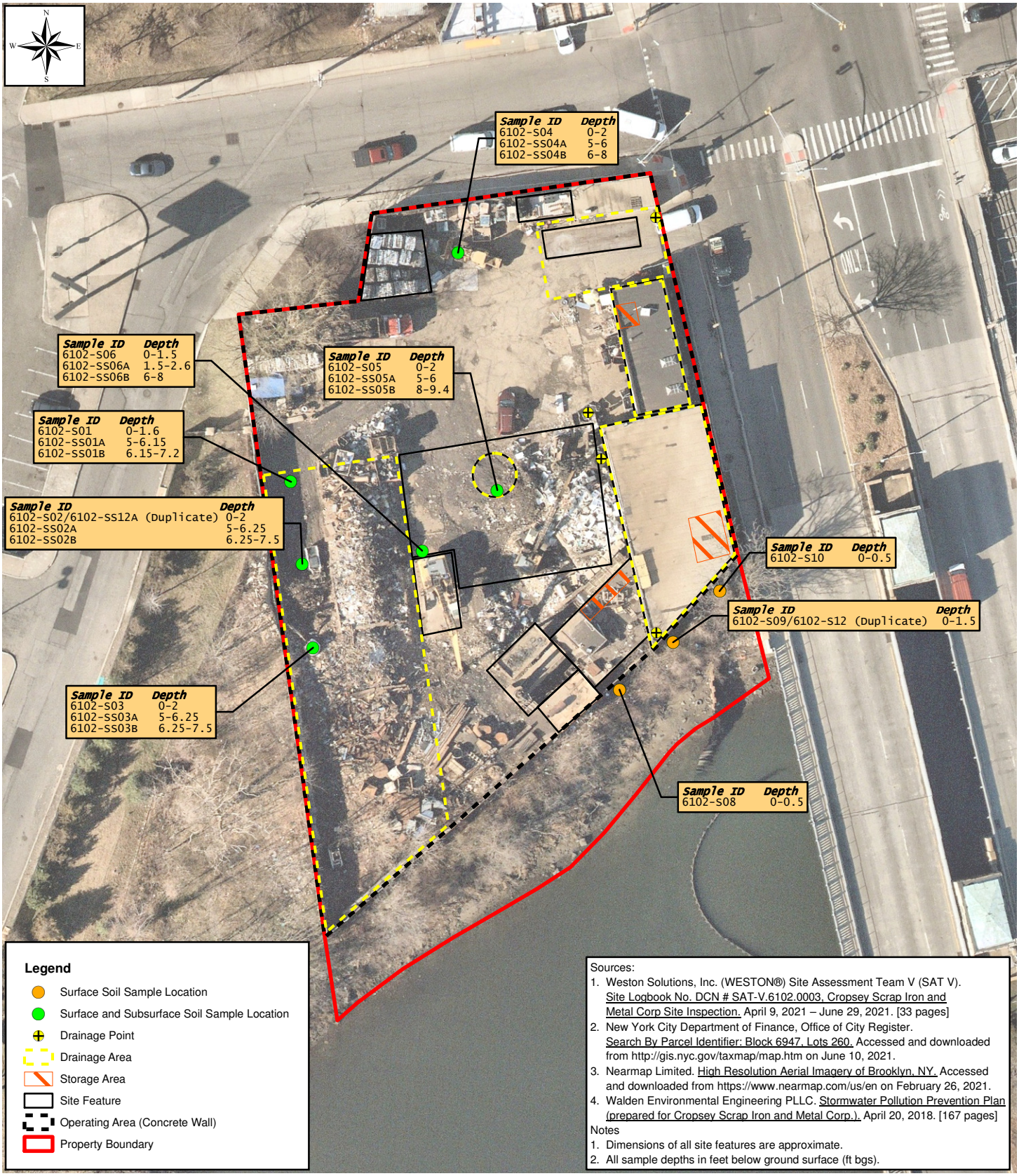
equal to three times (3x) the maximum background concentration, or greater than the highest background reporting detection limit (RDL) when all background results were non-detect: the VOC 1,2,4-trimethylbenzene; the SVOCs phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene; the pesticides 4,4'-DDE, 4,4'-DDD, 4,4'-DDT, cis-chlordane, trans-chlordane; and the metals barium, cadmium, calcium, chromium, cyanide, lead, silver, and zinc [Ref. 21, pp. 2, 6].

On June 4 and 29, 2021, Region 2 SAT V personnel collected soil samples as part of the SI evaluation of the CSIMC site. Region 2 SAT V collected a total of 23 soil samples (including two environmental duplicates) [Ref. 11, pp. 7–12, 18–33; 22, pp. 3, 5–8]. During the June 4, 2021 sampling activities, Region 2 SAT V observed flooding in the infiltration area, which prevented access to locations 6102-S01, 6102-S02, and 6102-S03 (the low point at location 6102-S05 also had floodwater but was able to be accessed). The flooding and additional rainfall events precluded SAT V from returning to complete the sampling at those locations for more than 3 weeks, until June 29, 2021 [Ref. 11, pp. 7, 10–12, 21–22]. Groundwater was not encountered at the CSIMC site; therefore, proposed groundwater samples could not be collected [Ref. 22, p. 3]. **Figure 3** presents the CSIMC Site Sample Location Map. On June 7 and 8, 2021, Region 2 SAT V personnel collected background soil samples associated with the SI evaluation of the CSIMC site. Region 2 SAT V collected seven soil samples (including one environmental duplicate) from a grass area just north of Belt Parkway Exit 6N. The location is considered to represent background conditions for the SI evaluation because it is believed to be unaffected by activities or possible releases at the CSIMC site [Ref. 31, pp. 3, 5–8; 32, pp. 2–4; 33, p. 2]. **Figure 4** presents the Background Sample Location Map. All samples collected in support of the CSIMC site SI evaluation were analyzed by CLP laboratories for TAL VOCs, SVOCs, Pesticides, and Aroclors; and ICP-AES 11+ Metals (including mercury) [Ref. 22, p. 4; 31, p. 4].

Analytical results for on-site soil samples document the presence of a CERCLA-eligible waste source at the site containing the following hazardous substances (maximum concentrations): the VOCs trichlorofluoromethane (95 micrograms per kilogram [µg/kg]), acetone (600 µg/kg), methyl acetate (17,000 µg/kg), cis-1,2-dichloroethylene (DCE) (85 J [estimated concentration µg/kg), 2-butanone (120,000 µg/kg), trichloroethylene (TCE) (99 J µg/kg), tetrachloroethylene (PCE) (1,900 µg/kg), 2-hexanone (28 µg/kg), ethylbenzene (420 µg/kg), o-xylene (470 µg/kg), m,p-xylene (1,100 µg/kg), and 1,2,4-trimethylbenzene (770 µg/kg); the SVOCs phenol (880 µg/kg), naphthalene (4,800 µg/kg), 1-methylnaphthalene (1,500 µg/kg), 2-methylnaphthalene (2,600 µg/kg), acenaphthylene (1,000 µg/kg), acenaphthene (6,300 µg/kg), dibenzofuran (4,000 µg/kg), fluorene (5,900 µg/kg), phenanthrene (45,000 µg/kg), anthracene (12,000 µg/kg), carbazole (6,700 µg/kg), fluoranthene (51,000 µg/kg), pyrene (39,000 µg/kg), benzo(a)anthracene (22,000 µg/kg), chrysene (20,000 µg/kg), bis(2-ethylhexyl)phthalate (5,900 J µg/kg), benzo(b)fluoranthene (26,000 µg/kg), benzo(k)fluoranthene (12,000 µg/kg), benzo(a)pyrene (19,000 µg/kg), indeno(1,2,3-cd)pyrene (12,000 µg/kg), and benzo(g,h,i)perylene (8,600 µg/kg); the pesticides beta-BHC (36 J µg/kg), heptachlor (68 J+ [estimated, possible high bias] µg/kg), aldrin (43 J+ µg/kg), heptachlor epoxide (42 J µg/kg), dieldrin (1,400 µg/kg), endrin (60 µg/kg), endosulfan II (38 µg/kg), 4,4'-DDD (110 µg/kg), endosulfan sulfate (8.5 J µg/kg), 4,4'-DDT (3,500 µg/kg), methoxychlor (540 J+ µg/kg), endrin ketone (47 µg/kg), endrin aldehyde (130 J µg/kg), cis-chlordane (3.2 J µg/kg), and trans-chlordane (480 J µg/kg); the polychlorinated biphenyls (PCBs)

Aroclor-1242 (3,000 µg/kg), Aroclor-1248 (7,400 J µg/kg), Aroclor-1254 (17,000 µg/kg), and Aroclor-1260 (6,400 J µg/kg); and the metals antimony (31 milligrams per kilogram [mg/kg]), barium (3,500 mg/kg), cadmium (49 mg/kg), chromium (240 mg/kg), iron (150,000 mg/kg), lead (9,200 mg/kg), nickel (230 mg/kg), silver (11 mg/kg), vanadium (180 mg/kg), zinc (10,000 mg/kg), and mercury (120 mg/kg).

Analytical results for samples collected in support of the Coney Island Creek SI document an observed release of site-related contaminants to the Surface Water Migration Pathway. The 2021 SI sampling analytical results for the CSIMC and Coney Island Creek sites are discussed in detail in **Part III**. The release documented at CSIMC results in actual contamination of the New York-New Jersey (NY-NJ) Harbor Estuary, which is a sensitive environment identified under the National Estuary Program that encompasses all of Coney Island Creek [Ref. 34, Figure 7; 47, pp. 4–5, 99–100]. There is a downstream fishery at Kaiser Park that is subject to potential contamination [Ref. 5, pp. 2, 14, 22–23; 21, p. 6].



SCALE:

50 25 0 50

Graphic Scale In Feet

TITLE:

SITE SAMPLE LOCATION MAP
CROPSEY SCRAP IRON & METAL CORP.
BROOKLYN, KINGS COUNTY, NY

PROJECT: Cropsey Scrap Iron & Metal Corp SI

CLIENT NAME: EPA

WESTON SOLUTIONS

DATE: December 2021

FIGURE #: 3

Path: P:\SAT2\ConeyIslandCreek\MXD\Cropsey_Scrap\SI\27099_CI_Creek6102_Crospey_Scrap_Sample_Locs_SI.mxd

Sources:
1. Weston Solutions, Inc. (WESTON®) Site Assessment Team V (SAT V). Site Logbook No. 1 of 2, DCN # SAT-V.6100.0001, Coney Island Creek Site Inspection, May 28, 2021 – June 7, 2021. [8 pages]
2. WESTON SAT V. Site Logbook No. 2 of 2, DCN # SAT-V.6100.0056, Coney Island Creek Site Inspection, June 8, 2021. [4 pages]
3. ESRI World Imagery, 2021.

Notes:
1. *The source of this map image is Esri, used by EPA with Esri's permission.*
2. Depth in feet below ground surface (ft bgs).

LEGEND:
- Upland Site Location
- Surface and Subsurface Soil Sample Location
- Groundwater Sample Location
- Coney Island Creek Area

TITLE:

BACKGROUND SAMPLE LOCATION MAP
BROOKLYN, KINGS COUNTY, NY

PROJECT: Cropsey Scrap Iron & Metal Corp SI

CLIENT NAME: EPA

DATE: December 2021

FIGURE #: 4

Path: P:\SAT2\ConeyIslandCreek\MXD\Cropsey_Scrap\SI\27100_CI_Creek6102_Cropsey_Scrap_Soil_Background_SI.mxd

SITE INSPECTION REPORT

PART I: SITE INFORMATION

1. Site Name/Alias Cropsey Scrap Iron & Metal Corp.

   Street 2994 Cropsey Avenue

   City Brooklyn State New York Zip 11214

2. County Kings County Code 047 Cong. Dist. 11th

3. EPA ID No. NYN000203563

4. Block No. 6947 Lot No. 260

5. Latitude* +40.581787º Longitude* -73.986513º

   * The latitude and longitude values are an update for the EPA database, based on the SI sampling results. These coordinates correspond to 6102-S05 on the subject property. The coordinates were recorded using GPS technology on June 4, 2021. The coordinate system is WGS 1984.

   USGS Quad(s) Coney Island

6. Approximate size of site 0.92 acre

7. Owners Louis Petrosino and Thomas Petrosino

   Site Contact Thomas Petrosino Telephone No. (718) 372-5348

   Address 17 Wedgewood Avenue, Colts Neck, NJ 07722

8. Operator Cropsey Scrap Iron & Metal Corp.

   Site Contact Thomas Petrosino Telephone No. (718) 372-5348

   Address 2994 Cropsey Avenue, Brooklyn, NY 11214

9. Type of Ownership

   X Private ___ Federal ___ State

   ___ County ___ Municipal ___ Unknown ___ Other_____

10. Owner/Operator Notification on File

___ RCRA 3010 Date_____ ___ CERCLA 103c Date_____

_X_ None ___ Unknown

11. Permit Information

Permit Type	Permit No.	Expiration Date	Reference(s)
National Pollutant Discharge Elimination System	NYR00F326	February 28, 2023	15, p. 2
Air Facility Registration	2-6106-00334/00001	July 10, 2027	37, p. 1
Scrap Metal Processor Registration	24V30010	February 27, 2025	38, p. 1

12. Site Status

_X_ Active ___ Inactive ___ Unknown

13. Years of Operation: 1970-present

14. Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.

a) Waste Sources

Waste Unit No.	Waste Source Type	Facility Name for Unit
1	Contaminated Soil	N/A

b) Other Areas of Concern

No other areas of concern have been identified.

Ref. 9, p. 5; 14, p. 2; 34, Figures 1, 2, and 5; 35, pp. 1–2; 36, p. 1.

15. Describe the regulatory history of the site, including the scope and objectives of any previous response actions, investigations and litigation by State, Local and Federal agencies (indicate type, affiliation, date of investigations).

- **Notice of Violation, NYSDEC, April 2013** – NYSDEC issued an NOV under the Clean Water Act due to potential unregulated discharges from the CSIMC facility. The NOV stated that metals and other pollutants that are discharged with stormwater in the

facility (via percolation) have enough potential of, and can cause or contribute to, a violation of water quality standards of Coney Island Creek [Ref. 16, p. 1].

- **Corrective Action Forms/Non-Compliance Event Forms, CSIMC, December 2013, November 2014, and March 2015** – Corrective Action Forms/Non-Compliance Event Forms submitted by CSIMC to NYSDEC for discharge limit exceedances of inorganic substances (i.e., aluminum, cadmium, copper, iron, lead, and zinc) under their NPDES permit. The exceedances occurred at the two on-site outfalls [Ref. 17, p. 1].

- **Notice of Violation, NYSDEC, May 2019** – NOV for failure to submit the 2018 calendar year Annual Certification Report (ACR) to comply with the terms and conditions of the facility's State Pollution Discharge Elimination (SPDES) permit [Ref. 18, p. 49].

- **Notice of Violation, NYSDEC, September 2019** – NOV for failure to submit a DMR for the 2nd quarter of 2019 in order to comply with the terms and conditions of the facility's SPDES permit [Ref. 18, p. 22].

- **Off-site Reconnaissance, WESTON SAT, September 2020** – Off-site reconnaissance of the CSIMC site in support of an APA. The facility was confirmed to be an active scrap metal recycling facility. Site conditions appeared to be similar to aerial imagery regarding poor housekeeping [Ref. 5, pp. 2, 15, 17–18].

- **On-site Reconnaissance, WESTON SAT V, April 2021** – On-site reconnaissance to observe current site conditions in support of the SI, and to select potential SI sampling locations. Most scrap metal operations take place in the facility's open yard, including loading/unloading, processing and storage. Region 2 SAT V observed poor housekeeping in the open yard, including different types of scrap metal stored on exposed soil. The non-ferrous processing and storage buildings and the 250-gallon diesel AST and liquid/lubricant drums storage building were inspected. Good housekeeping was observed inside the buildings, and the 250-gallon diesel AST and the liquid/lubricant drums were within secondary containment. One lead-acid battery staging area and one lead-acid battery storage area were observed within the non-ferrous scrap metal processing and storage buildings. There were approximately 50 lead-acid batteries on-site during the reconnaissance. The batteries were neatly stacked on pallets. The facility is surrounded by an approximately 4- to 6-foot-high reinforced concrete wall with a corrugated metal fence on top. No direct drainage channels from the facility to Coney Island Creek were observed during the reconnaissance [Ref. 10, p. 14; 11, pp. 3–4, 14–17; 34, Figure 2].

- **SI Sampling, WESTON SAT V, June 2021 –** In support of the SI evaluation, Region 2 SAT V collected a total of 23 soil samples at the CSIMC site; and seven soil samples and from a grass area just north of Belt Parkway Exit 6N considered to represent background conditions for the SI evaluation. All samples were analyzed for Organic TAL VOCs, SVOCs, Pesticides, and Aroclors; and ICP-AES 11+ Metals (including

Hg), by CLP laboratories [Ref. 11, pp. 7–12, 18–33; 22, pp. 3–8; 31, pp. 3–8; 32, pp. 2–4; 33, p. 2]. Sample analytical results are discussed in **Part III**.

a) Is the site or any waste source subject to Petroleum Exclusion? Identify petroleum products and by products that justify this decision.

The Petroleum Exclusion would apply to the 250-gallon diesel AST and the liquid/lubricant (i.e., used oil, lubricating oil, etc.) 55-gallon drums. Both the diesel 250-gallon diesel AST and the 55-gallon liquid/lubricant drums are in a covered building and within secondary containment.

Ref. 11, pp. 4, 16; 34, Figure 2.

b) Has normal farming application of pesticides registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) occurred at the site? Have pesticides been produced or stored at the site? Have there been any leaks or spills of pesticides on site?

Available background information does not indicate that agricultural activities have been conducted on site. It is unknown if pesticides regulated under FIFRA were applied to the subject site. Pesticides are not known to have been produced or stored at the site, and there are no records of leaks or spills of pesticides at the site.

As discussed in **Part III**, the June 2021 SI sampling showed the following pesticides at concentrations greater than or equal to 3x the maximum background concentration, or greater than the highest background RDL when all background results were non-detect, in soil at the CSIMC site: beta-BHC, heptachlor, aldrin, heptachlor epoxide, dieldrin, endrin, endosulfan II, 4,4'-DDD, endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone, endrin aldehyde, cis-chlordane, and trans-chlordane. The subject site has been utilized for scrap metal recycling operations on exposed soil since at least 1970. Pesticides are not directly related to current operations. Scrap metal recycling, which involves loading/unloading, processing, storage of different types of scrap on the site, has been the main use of the property since development.

Ref. 6, pp. 31–32; 7, pp. 9–10; 8, p. 5; 34, Figure 5.

c) Is the site or any waste source subject to Resource Conservation and Recovery Act (RCRA) Subtitle C (briefly explain)?

Neither the site nor any waste source is currently regulated under RCRA Subtitle C. The facility recycles and sells ferrous and non-ferrous scrap metal (i.e., aluminum, copper, brass, stainless steel, lead-acid batteries, etc.). Petroleum-related waste fluids (i.e., used oil, hydraulic fluid, etc.) are generated from the operation of the on-site generator and metal shear.

Ref. 6, pp. 31–32; 7, pp. 9–10; 8, p. 9; 9, p. 5; 10, p. 14; 13, p. 1; 14, p. 1.

d) Is the site or any waste source maintained under the authority of the Nuclear Regulatory Commission (NRC)?

Neither the site nor any waste source is maintained under the authority of the NRC. The subject site has been utilized for ferrous and non-ferrous scrap metal recycling since at least 1970 and is not known to have handled radiological materials. Available information indicates that, except for what appear to be houses in 1924 and a small store in 1930, there were no structures on the property until the 1960s.

Ref. 6, pp. 31–36; 7, pp. 9–14; 8, p. 9; 9, p. 5.

16. Do any conditions exist on site which would warrant immediate or emergency action?

No conditions were noted which would warrant immediate or emergency action during the April 2021 site reconnaissance or the June 2021 SI sampling.

Ref. 11, pp. 3–23.

17. Information available from:

Contact: Denise Zeno Agency: EPA Region 2 Tel. No.: (212) 637-4319

Preparer: Habib Bravo-Ruiz Agency: Region 2 START V Date: December 2021

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following items.

Waste Unit 1 – Contaminated Soil

Source Type

_____ Landfill	___X___ Contaminated Soil
_____ Surface Impoundment	_____ Pile
_____ Drums	_____ Land Treatment
_____ Tanks/Containers	_____ Other

Description:

1. Describe the types of containers, impoundments, or other storage systems (i.e., concrete - lined surface impoundments) and any labels that may be present.

   On June 4 and 29, 2021, Region 2 SAT V personnel collected soil samples from nine boreholes advanced throughout the CSIMC site. Six of the boreholes were advanced mechanically within the operational area (i.e., within the concrete-walled area) of the subject property using direct-push technology. The other three boreholes were advanced manually in the non-operational area (i.e., on the vegetated embankment) of the subject property using a hand-auger. Region 2 SAT V collected a total of 23 soil samples (including two environmental duplicates) from the nine boreholes. Direct-push soil borings were screened using a photoionization detector (PID) in 6-inch intervals. PID readings above background were noted in the soil cores from locations 6102-S01, 6102-S02, 6102-S04, 6102-S05, and 6102-S06. In borings where no PID readings above background were noted, soil samples were collected in intervals approximately at the surface, mid-point, and bottom of the borehole. All samples collected in support of the CSIMC site SI evaluation were analyzed by a CLP laboratory for TAL VOCs, SVOCs, Pesticides, and Aroclors; and ICP-AES 11+ Metals (including mercury).

   Soil sample analytical results document the presence of a contaminated soil source at the site consisting of the VOCs trichlorofluoromethane, acetone, methyl acetate, cis-1,2-DCE, 2-butanone, TCE, PCE, 2-hexanone, ethylbenzene, o-xylene, m,p-xylene, and 1,2,4-trimethylbenzene; the SVOCs phenol, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene; the pesticides beta-BHC, heptachlor, aldrin, heptachlor epoxide, dieldrin, endrin, endosulfan II, 4,4'-DDD, endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone, endrin aldehyde, cis-chlordane, and trans-chlordane; the PCBs

Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260; and the metals antimony, barium, cadmium, chromium, iron, lead, nickel, silver, vanadium, zinc and mercury.

The CSIMC subject property has been utilized for scrap metal recycling operations since at least 1970. As previously stated, most scrap metal recycling operations take place in the facility's open yard, including loading/unloading, processing and storage. Most of the facility's open yard is unpaved (i.e., permeable) and poorly maintained. The CSIMC facility received and processed more than 100,000 tons of scrap metal in a period of five years (i.e., 2013–2018). High-resolution aerial imagery from 2017 through 2020 indicate that scrap metal piles at CSIMC have been large enough for material to overflow beyond the operational area (i.e., concrete wall) of the facility to the west and south. The contaminants mentioned above are considered to be directly related to facility operations, as discussed below:

- VOCs: Trichlorofluoromethane, also known as CFC-11 and Freon 11, is a refrigerant, aerosol propellant, and foam-blowing agent. Acetone and 2-butanone are common solvents used in many industrial products such as paints, coatings, cleaning products, among others. The VOC 2-hexanone was historically used in paint and paint thinner, in the manufacture of other chemical substances, and in dissolving oils and waxes. Methyl acetate can be used as solvent in fast-drying paints such as lacquers. The compound cis-1,2-DCE can be used as solvent for waxes and resins, and as a refrigerant. TCE and PCE are documented constituents in degreasers and used oil. Xylene (o-xylene and m,p-xylene) is a BTEX compound and known constituent in fuel (i.e., gasoline and diesel) and used oil, together with ethylbenzene and 1,2,4-trimethylbenzene.

- SVOCs: Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene are PAHs, which can accumulate in used oil primarily as the result of incomplete combustion of fuel. Phenol is used medicinally as an antiseptic and disinfectant and during the manufacturing process of many commercial products. Dibenzofuran is used as an insecticide. Carbazole is used as a chemical feedstock to produce dyes, reagents, explosives, insecticides, and lubricants. The phthalate bis(2-ethylhexyl)phthalate is a manufactured chemical. Phthalates are used as plasticizers to make plastic soft and flexible, and can be found in wall coverings, tablecloths, floor tiles, furniture upholstery, carpet backings, shower curtains, pesticides, and numerous other products.

- Pesticides: Beta-BHC, heptachlor, aldrin, heptachlor epoxide, dieldrin, endrin, endosulfan II, 4,4'-DDD, endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone, endrin aldehyde, cis-chlordane, and trans-chlordane could have been used or spilled at the site. As previously stated, CSIMC has conducted scrap metal recycling operations on mostly exposed soil since at least 1970, prior to the banning of commercial pesticides.

- PCBs: PCBs (including Aroclor-1260) were manufactured between 1929 and 1979 and used extensively in many applications. The use of PCBs was banned by the EPA Toxic Substances Control Act (TSCA) in 1979; however, PCBs may still be present in products and materials produced before 1979 (including oil used in motors, hydraulic systems, and transformers). The site has operated as a scrap metal recycling facility since 1970 and could have stored or recycled materials containing PCBs prior to and shortly after the ban.

- As previously indicated, the CSIMC facility received and processed more than 100,000 tons of scrap metal from 2013 to 2018 (i.e., a period of 6 years). There is no documentation for the quantity of scrap metal received and processed prior to 2013; however, the long history of metal recycling operations at the facility dates to 1970 (i.e., a period of more than 50 years). Therefore, the detections of the metals antimony, barium, cadmium, chromium, iron, lead, nickel, silver, vanadium, zinc, and mercury in soil are considered to be site-related.

Ref. 6, pp. 31–36; 7, pp. 9–14; 8, p. 9; 9, p. 5; 10, p. 14; 11, pp. 3, 14; 12, p. 1; 22, pp. 3–8; 34, Figures 2 and 5; 39, p. 15; 41, p. 20; 54, p. 1; 55, p. 1; 56, p. 1; 57, p. 1; 58, p. 6; 59, p. 1; 60, p. 1; 61, p. 1; 62, p. 1; 63, p. 1; 64, p. 1; 65, p. 2; 66, pp. 1–7.

2. Describe the physical condition of the containers or storage systems (i.e., rusted and/or bulging drums).

   Except for buildings and a paved area consisting of a concrete slab for metal processing operations, the 0.92-acre subject property is predominantly an unpaved yard. A vegetated embankment that is part of the subject property separates the scrap metal recycling operations area (i.e., the concrete-walled area) from Coney Island Creek. Site topography is generally flat. Stormwater runoff from the facility's roofs and driveway is captured by drains connected to dry wells, which allows stormwater to percolate into the subsurface. Stormwater runoff from the facility's open yard migrates to low elevation areas in the central and western portion of the site and percolates into the subsurface. During the June 2021 SI sampling event, direct-push cores were collected and logged. The predominant type of soil observed at subsurface depths (i.e., greater than 2 feet below ground surface [bgs]) was fine sand.

   Ref. 5, p. 1–2; 10, p. 9; 22, pp. 3–8; 34, Figures 2 and 5; 53, p. 2.

3. Describe any secondary containment that may be present (e.g., drums on concrete pad in building or aboveground tank surrounded by berm).

   There is no secondary containment associated with the on-site contaminated soil.

   Ref. 11, pp. 13–23; 34 Figure 5.

Hazardous Waste Quantity

The full lateral extent of contaminated soil at the CSIMC site is unknown. Therefore, a hazardous waste quantity greater than 0 square feet is utilized for the purposes of this report.

Ref. 34, Figure 5.

Hazardous Substances/Physical State

The following hazardous substances and maximum concentrations are present in on-site contaminated soil:

Trichlorofluoromethane	95 µg/kg
Acetone	600 µg/kg
Methyl acetate	17,000 µg/kg
cis-1,2-Dichloroethene	85 J µg/kg
2-Butanone	120,000 µg/kg
TCE	99 J µg/kg
PCE	1,900 µg/kg
2-Hexanone	28 µg/kg
Ethylbenzene	420 µg/kg
o-Xylene	470 µg/kg
m,p-Xylene	1,100 µg/kg
1,2,4-Trimethylbenzene	770 µg/kg
Phenol	880 µg/kg
Naphthalene	4,800 µg/kg
1-Methylnaphthalene	1,500 µg/kg
2-Methylnaphthalene	2,600 µg/kg
Acenaphthylene	1,000 µg/kg
Acenaphthene	6,300 µg/kg
Dibenzofuran	4,000 µg/kg
Fluorene	5,900 µg/kg
Phenanthrene	45,000 µg/kg
Anthracene	12,000 µg/kg
Carbazole	6,700 µg/kg
Fluoranthene	51,000 µg/kg
Pyrene	39,000 µg/kg
Benzo(a)anthracene	22,000 µg/kg
Chrysene	20,000 µg/kg
Bis(2-ethylhexyl)phthalate	5,900 J µg/kg
Benzo(b)fluoranthene	26,000 µg/kg
Benzo(k)fluoranthene	12,000 µg/kg
Benzo(a)pyrene	19,000 µg/kg
Indeno(1,2,3-cd)pyrene	12,000 µg/kg
Benzo(g,h,i)perylene	8,600 µg/kg
beta-BHC	36 J µg/kg

Heptachlor	68 J+ µg/kg (adjusted concentration 8.6 µg/kg)
Aldrin	43 J+ µg/kg (adjusted concentration 3.0 µg/kg)
Heptachlor epoxide	42 J µg/kg
Dieldrin	1,400 µg/kg
Endrin	60 µg/kg
Endosulfan II	38 µg/kg
4,4'-DDD	110 µg/kg
Endosulfan sulfate	8.5 J µg/kg
4,4'-DDT	3,500 µg/kg
Methoxychlor	540 J+ µg/kg (adjusted concentration 54 µg/kg)
Endrin ketone	47 µg/kg
Endrin aldehyde	130 J µg/kg
cis-Chlordane	3.2 J µg/kg
trans-Chlordane	480 J µg/kg
Aroclor-1242	3,000 µg/kg
Aroclor-1248	7,400 J µg/kg
Aroclor-1254	17,000 µg/kg
Aroclor-1260	6,400 J µg/kg
Antimony	31 mg/kg
Barium	3,500 mg/kg
Cadmium	49 mg/kg
Chromium	240 mg/kg
Iron	150,000 mg/kg
Lead	9,200 mg/kg
Nickel	230 mg/kg
Silver	11 mg/kg
Vanadium	180 mg/kg
Zinc	10,000 mg/kg
Mercury	120 mg/kg

Summaries of the soil sample analytical results, including comparisons to background concentrations and reference citations, are presented in **Part III**. The physical state of the contaminated soil is solid.

Ref. 34, Figure 5.

PART III. SAMPLING RESULTS

REGION 2 SAT V CONEY ISLAND CREEK SAMPLING RESULTS, APRIL 2021

In April 2021, Region 2 SAT V personnel collected surface water and sediment samples as part of the SI evaluation of the Coney Island Creek site [Ref. 21, p. 1]. Region 2 SAT V collected a total of 12 surface water and 63 sediment samples [Ref. 21, p. 1]. Eight surface water samples (including one environmental duplicate) and 50 sediment samples (including three environmental duplicates) were collected from Coney Island Creek [Ref. 21, pp. 1–2, 4]. Four surface water samples and 13 sediment samples (including one environmental duplicate) were collected from Shell Bank Creek for evaluation of background conditions [Ref. 21, pp. 1–2, 6]. All surface water and sediment samples, as well as their respective quality assurance/quality control (QA/QC) samples, were analyzed for Organic TAL VOCs, SVOCs, Pesticides, and Aroclors; and ICP-AES 11+ Metals (including mercury and cyanide) through EPA CLP [Ref. 21, p. 1].

The following substances were detected at concentrations greater than three times the maximum background concentrations, or greater than the highest background RDL when all background results were non-detect, in the creek's sediment (maximum concentration provided): the VOC 1,2,4-trimethylbenzene (190 µg/kg); the SVOCs phenanthrene (2,600 µg/kg), anthracene (700 µg/kg), fluoranthene (4,500 J [estimated] µg/kg), pyrene (3,700 µg/kg), benzo(a)anthracene (2,100 µg/kg), chrysene (2,100 µg/kg), bis(2-ethylhexyl)phthalate (2,500 µg/kg), benzo(b)fluoranthene (2,900 µg/kg), benzo(k)fluoranthene (820 µg/kg), benzo(a)pyrene (2,300 µg/kg), indeno(1,2,3-cd)pyrene (1,200 µg/kg), benzo(g,h,i)perylene (1,300 µg/kg); the pesticides 4,4'-DDE (23 J µg/kg), 4,4'-DDD (46 µg/kg), 4,4'-DDT (290 µg/kg), cis-chlordane (9.6 µg/kg), trans-chlordane (14 µg/kg); and the metals barium (610 J mg/kg), cadmium (15 J mg/kg), calcium (25,000 J mg/kg), chromium (290 J mg/kg), cyanide (5.5mg/kg), lead (1,600 J mg/kg), silver (11 J mg/kg), and zinc (1,900 mg/kg) [Ref. 21, pp. 2, 6]. Iron (600 µg/L) and cyanide (40 J- µg/L) were the only substances detected above the highest background RDLs (all background results were non-detect) in the creek's surface water [Ref. 21, p. 6].

REGION 2 SAT V SAMPLING RESULTS, JUNE 2021

On June 4 and 29, 2021, Region 2 SAT V personnel collected soil samples as part of the SI evaluation of the CSIMC site. Region 2 SAT V collected a total of 23 soil samples (including two environmental duplicates) and from six direct-push boreholes and three hand-auger boreholes advanced throughout the site [Ref. 11, pp. 7–12, 18–23; 22, pp. 3, 5–8].

On June 7 and 8, 2021, Region 2 SAT V personnel collected background soil samples associated with the SI evaluation of the CSIMC site. Region 2 SAT V collected a total of seven soil samples (including one environmental duplicate) from two direct-push boreholes advanced in a grass area just north of Belt Parkway Exit 6N. The location is considered to represent background conditions for the SI evaluation because it is believed to be unaffected by activities or possible releases at the CSIMC site [Ref. 31, pp. 3, 5–8; 32, pp. 2–4; 33, p. 2].

The direct-push boreholes were advanced to a maximum depth of 10 feet. Up to three soil samples were collected from each direct-push borehole based on visual observation and field screening

results using a PID [Ref. 11, pp. 18–19, 24–30; 22, pp. 3, 5–8]. Hand-auger boreholes were advanced to a maximum depth of 1.5 feet bgs [Ref. 11, pp. 21, pp. 31–33]. One sample was collected from each hand-auger borehole [Ref. 21, pp. 31–33]. The proposed boring location 6102-S07 was not advanced because the proposed sample location was covered by a scrap metal pile after utility markouts had been completed; therefore, proposed soil samples 6102- S07, 6102-SS07A, and 6102-SS07B could not be collected [Ref. 22, p. 3]. Groundwater was not encountered in any of the completed boreholes at the CSIMC site; therefore, proposed groundwater samples were not collected [Ref. 22, p. 3].

All samples were analyzed for Organic TAL VOCs, SVOCs, Pesticides, and Aroclors; and ICP-AES 11+ Metals (including Hg) by CLP laboratories (Pace Analytical Services [CSIMC Organics; CSIMC and Background Inorganics] and Chemtech Consulting Group [Background Organics]) [Ref. 22, p. 2; 31, p. 2]. Organic TAL VOC soil sample fractions were collected with dedicated EnCore™ sampling devices directly from the soil core. All other CLP sample fractions, including the percent moisture fraction required in conjunction with EnCore sampling, were collected into 4-oz. glass jars after the sampling interval was homogenized using dedicated aluminum trays and disposable polyethylene scoops. Soil borings were screened using a PID in 6-inch intervals [Ref. 11, p. 19; 22, p. 3; 31, p. 3]. PID readings above background were noted in the soil cores from locations 6102-S01 (1.2 parts per million [ppm]), 6102-S02 (3.5 ppm), 6102-S04 (6.3 ppm), 6102-S05 (40.1 ppm), and 6102-S06 (4.0 ppm) [Ref. 22, pp. 5–8]. In borings where no PID readings above background were noted, soil samples were collected in intervals approximately at the surface, mid-point, and bottom of the borehole [Ref. 22, p. 3; 31, p. 3].

Samples collected for QA/QC purposes at the CSIMC site included two soil environmental duplicate samples and one rinsate blank to demonstrate adequate decontamination of non-dedicated equipment (i.e., cutting shoe). Two soil on-site samples were designated for matrix spike/matrix spike duplicate (MS/MSD) analyses [Ref. 22, p. 4]. Samples collected for QA/QC purposes at the background location included one soil environmental duplicate sample. One soil background sample was designated for MS/MSD analyses [Ref. 31, p. 4].

Region 2 SAT V logged sample locations electronically using GPS equipment and performed post-processing differential correction of the GPS data in accordance with EPA Region 2 GPS Standard Operating Procedures [Ref. 22, p. 4; 31, p. 4]. **Table 1** presents the sample location coordinates. **Figure 3** presents the Site Sample Location Map. **Figure 4** presents the Background Sample Location Map.

Soil analytical results document the presence of an on-site contaminated soil source consisting of the VOCs trichlorofluoromethane, acetone, methyl acetate, cis-1,2-DCE, 2-butanone, TCE, PCE, 2-hexanone, ethylbenzene, o-xylene, m,p-xylene, and 1,2,4-trimethylbenzene; the SVOCs phenol, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene; the pesticides beta-BHC, heptachlor, aldrin, heptachlor epoxide, dieldrin, endrin, endosulfan II, 4,4'-DDD, endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone, endrin aldehyde, cis-chlordane,

TABLE 1
SAMPLE LOCATION COORDINATES
CROPSEY SCRAP IRON AND METAL CORP.

Location Type	Location IDs	Sample IDs	Latitude	Longitude	Data Collection Type
Direct-push Soil	6102-S01	6102-S01	40.581857°	-73.986789°	GPS point collected in the field
		6102-SS01A			
		6102-SS01B			
Direct-push Soil	6102-S02	6102-S02	40.581774°	-73.986774°	GPS point collected in the field
		6102-SS12A (Duplicate of 6102-S02)			
		6102-SS02A			
		6102-SS02B			
Direct-push Soil	6102-S03	6102-S03	40.581689°	-73.98676°	GPS point collected in the field
		6102-SS03A			
		6102-SS03B			
Direct-push Soil	6102-S04	6102-S04	40.582091°	-73.986565°	GPS point collected in the field
		6102-SS04A			
		6102-SS04B			
Direct-push Soil (New Site Reference Location)	6102-S05	6102-S05	40.581787°	-73.986513°	GPS point collected in the field
		6102-SS05A			
		6102-SS05B			
Direct-push Soil	6102-S06	6102-S06	40.581849°	-73.986613°	GPS point collected in the field
		6102-SS06A			
		6102-SS06B			
Hand-auger Soil	6102-S08	6102-S08	40.581646°	-73.98635°	GPS point collected in the field
Hand-auger Soil	6102-S09	6102-S09	40.581694°	-73.986278°	GPS point collected in the field
		6102-S12 (Duplicate of 6102-S09)			
Hand-auger Soil	6102-S10	6102-S10	40.581746°	-73.986216°	GPS point collected in the field
Direct-push Soil and Groundwater (Background)	6100B-S01	6100B-S01	40.584371°	-73.985065°	GPS point collected in the field
		6100B-SS01A			
		6100B-SS01B			
		6100B-GW01			
		6100B-GW03 (Duplicate of 6100B-GW01)			
Direct-push Soil (Background)	6100B-S02	6100B-S02	40.584201°	-73.985125°	GPS point collected in the field
		6100B-SS03 (Duplicate of 6100B-S02)			
		6100B-SS02A			
		6100B-SS02B			

and trans-chlordane; the PCBs Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260; and the metals antimony, barium, cadmium, chromium, iron, lead, nickel, silver, vanadium, zinc, and mercury [Ref. 25, pp. 24–25, 30, 32–34, 36–37, 40–41, 46–47, 50, 52–53, 55–56, 58–59, 64–65, 68, 70–71, 74, 82–83, 86, 100; 26, pp. 22, 25–26, 28, 38–39, 41, 44–47, 50–51, 53–54, 62, 73–74, 76–77; 27, pp. 12, 20, 44; 28, pp. 12–15, 23–29; 34, Figure 5]. Soil Analytical Results are presented in **Tables 2A through 2D**. The contaminant levels at the CSIMC site are presented in **Figure 5**.

Most of the VOC contaminants (trichlorofluoromethane [95 µg/kg], acetone [600 µg/kg], methyl acetate [17,000 µg/kg], 2-butanone [120,000 µg/kg], PCE [1,900 µg/kg], ethylbenzene [420 µg/kg], o-xylene [470 µg/kg], m,p-xylene [1,100 µg/kg], and 1,2,4-trimethylbenzene [770 µg/kg]) were detected in surface soil sample 6102-S05, which was collected in a low spot near the center of the site that is used for unloading scrap metal [Ref. 11, pp. 3, 14; 25, pp. 40–41; 34, Figure 5]. Cis-1,2-DCE was detected in samples 6102-S04, 6102-SS04A, and 6102-SS06A at a maximum level of 85 J µg/kg [Ref. 25, p. 34, 74, 100; 34, Figure 5]. TCE was detected above the highest background RDL in sample 6102-SS06A (25 J µg/kg) [Ref. 25, p. 50; 34, Figure 5]. The VOC 2-hexanone was detected in surface samples 6102-S08 and 6102-S10 at a concentration of 23 µg/kg and 28 µg/kg, respectively [Ref. 25, pp. 56, 68; 34, Figure 5].

The following SVOCs (maximum concentration provided) were detected in surface soil sample 6102-S03 and subsurface soil sample 6102-SS03A: naphthalene (4,800 µg/kg), 1-methylnaphthalene (1,500 µg/kg), 2-methylnaphthalene (2,600 µg/kg), acenaphthene (6,300 µg/kg), dibenzofuran (4,000 µg/kg), fluorene (5,900 µg/kg), phenanthrene (45,000 µg/kg), anthracene (12,000 µg/kg), carbazole (6,700 µg/kg), fluoranthene (51,000 µg/kg), pyrene (39,000 µg/kg), benzo(a)anthracene (22,000 µg/kg), chrysene (20,000 µg/kg), benzo(b)fluoranthene (26,000 µg/kg), benzo(k)fluoranthene (12,000 µg/kg), benzo(a)pyrene (19,000 µg/kg), indeno(1,2,3-cd)pyrene (12,000 µg/kg), and benzo(g,h,i)perylene (8,600 µg/kg) [Ref. 26, pp. 46–47, 76–77; 34, Figure 5]. These samples were collected from a borehole completed near the central portion of DA no. 3 (i.e., stormwater runoff percolation area) [Ref. 34, Figure 2]. Some of the aforementioned SVOCS (phenanthrene [8,000 µg/kg], anthracene [2,800 µg/kg], fluoranthene [13,000 µg/kg], pyrene [10,000 µg/kg], benzo(a)anthracene [5,900 µg/kg], chrysene [4,900 µg/kg], benzo(b)fluoranthene [5,800 µg/kg], benzo(k)fluoranthene [2,100 µg/kg], benzo(a)pyrene [5,200 µg/kg], indeno(1,2,3-cd)pyrene [2,400 µg/kg], and benzo(g,h,i)perylene [2,000 µg/kg]) were also detected in surface soil sample 6102-S04, which was collected in the northern portion of the site, near the non-ferrous scrap metal staging area [Ref. 25, pp. 22–23; 34, Figure 2 and 5]. Phenol was detected in surface soil sample 6102-S02 at a concentration of 880 µg/kg [Ref. 26, p. 40; 34, Figure 5]. Bis(2-ethylhexyl)phthalate was identified in samples 6102-SS01A, 6102-S02, 6102-SS012A (environmental duplicate sample of 6102-S02), 6102-SS03, 6102-SS04, 6102-SS04A, 6102-S05, and 6102-S08 at a maximum level of 5,900 J µg/kg [Ref. 34, Figure 5].

The majority of the pesticide contaminants (heptachlor [47 J µg/kg], heptachlor epoxide [42 J µg/kg], dieldrin [1,400 µg/kg], endrin [60 µg/kg], endosulfan II [38 µg/kg], 4,4'-DDD [110 µg/kg], 4,4'-DDT [3,500 µg/kg], endrin ketone [47 µg/kg], endrin aldehyde [130 J µg/kg], and trans-chlordane [480 J µg/kg]) were detected in surface soil sample 6102-S10, which was collected in the eastern portion of a vegetated strip of land between the facility's operational area and Coney Island Creek [Ref. 25, p. 65; 34, Figure 5]. The compounds 4,4'-DDT and trans-chlordane were also detected in samples 6102-SS04A, 6102-S05, 6102-S09, and 6102-S12 (environmental

TABLE 2A
SOIL ANALYTICAL DATA - VOLATILE ORGANIC COMPOUNDS
CROPSEY SCRAP IRON METAL WORKS

Sample Purpose:	Background Samples																		3x Maximum Background, or Highest Reporting Detection Limit		Source Samples																					
Field Sample ID:	6100B-S01			6100B-SS01A			6100B-SS01B			6100B-S02			6100B-S03			6100B-SS02A			6100B-SS02B					6102-S01			6102-SS01A			6102-SS01B			6102-S02			6102-SS12A			6102-SS02A			6102-SS02B			6102-S03			6102-SS03A		
CLP ID:	BG5H8			BG5J1			BG5J2			BG5H9			BG5J0			BG5J3			BG5J4					BG5J7			BG5K8			BG5K9			BG5J8			BG5J6			BG5L0			BG5L1			BG5J9			BG5L2		
Date:	6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021					6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021		
Depth Interval (ft bgs):	0 - 2			5 - 6.5			7 - 8.5			0 - 2			0 - 2			5 - 6			6 - 7.5					0 - 1.6			5 - 6.15			6.15 - 7.2			0 - 2			0 - 2			5 - 6.25			6.25 - 7.5			0 - 2			5 - 6.25		
Comments:													Duplicate of 6100B-S02																								Duplicate of 6102-S02													
VOC	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Value	Q	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL
Dichlorodifluoromethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Chloromethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Vinyl chloride	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Bromomethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Chloroethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Trichlorofluoromethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,1-Dichloroethene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	UJ	5.9	6.2	UJ	6.2	5.7	UJ	5.7	5.4	UJ	5.4	5.3	UJ	5.3	5.0	UJ	5.0	5.8	UJ	5.8	5.1	UJ	5.1	5.8	UJ	5.8
1,1,2-Trichloro-1,2,2-trifluoroethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Acetone	11	U	11	14	U	14	16	U	16	12	U	12	10	U	10	15	U	15	19	U	*19*	19	U	12	U	12	41		12	11	U	11	11	U	11	96		11	10	U	10	12	U	12	10	U	10	12	U	12			
Carbon disulfide	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	UJ	5.9	6.2	UJ	6.2	5.7	UJ	5.7	5.4	UJ	5.4	5.3	UJ	5.3	5.0	UJ	5.0	5.8	UJ	5.8	5.1	UJ	5.1	5.8	UJ	5.8
Methyl Acetate	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Methylene chloride	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
trans-1,2-Dichloroethene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Methyl tert-butyl Ether	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,1-Dichloroethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
cis-1,2-Dichloroethene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
2-Butanone	11	U	11	14	U	14	16	U	16	12	U	12	10	U	10	15	U	15	19	U	*19*	19	U	12	U	12	14		12	11	U	11	11	U	11	39		11	10	U	10	12	U	12	10	U	10	12	U	12			
Bromochloromethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Chloroform	5.6	U	5.6	*1.6*	J	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	9.7	4.8	J	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,1,1-Trichloroethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Cyclohexane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Carbon tetrachloride	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Benzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2-Dichloroethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Trichloroethene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Methylcyclohexane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2-Dichloropropane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Bromodichloromethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
cis-1,3-Dichloropropene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
4-Methyl-2-pentanone	11	U	11	14	U	14	16	U	16	12	U	12	10	U	10	15	U	15	19	U	*19*	19	U	12	U	12	4.4	J	12	11	U	11	11	U	11	11	U	11	10	U	10	12	U	12	10	U	10	12	U	12			
Toluene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
trans-1,3-Dichloropropene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,1,2-Trichloroethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Tetrachloroethene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	UJ	5.9	6.2	UJ	6.2	5.7	UJ	5.7	5.4	UJ	5.4	5.3	UJ	5.3	5.0	UJ	5.0	5.8	UJ	5.8	5.1	UJ	5.1	5.8	UJ	5.8
2-Hexanone	11	U	11	14	U	14	16	U	16	12	U	12	10	U	10	15	U	15	19	U	*19*	19	U	12	U	12	12	U	12	11	U	11	11	U	11	11	U	11	10	U	10	12	U	12	10	U	10	12	U	12			
Dibromochloromethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2-Dibromoethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Chlorobenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Ethylbenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
o-Xylene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
m,p-Xylene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Styrene	*2.9*	J	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	9.7	8.7	J	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Bromoform	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Isopropylbenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2,3-Trichloropropane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,1,2,2-Tetrachloroethane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,3-Dichlorobenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,4-Dichlorobenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2-Dichlorobenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2-Dibromo-3-chloropropane	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2,4-Trimethylbenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2		6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,3,5-Trimethylbenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	3.1	J	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2,4-Trichlorobenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
1,2,3-Trichlorobenzene	5.6	U	5.6	6.8	U	6.8	8.0	U	8.0	5.8	U	5.8	5.1	U	5.1	7.3	U	7.3	9.7	U	*9.7*	9.7	U	5.9	U	5.9	6.2	U	6.2	5.7	U	5.7	5.4	U	5.4	5.3	U	5.3	5.0	U	5.0	5.8	U	5.8	5.1	U	5.1	5.8	U	5.8
Reference	Ref. 29, pp. 41, 42, 110, 111			Ref. 29, pp. 63, 64, 112, 113			Ref. 29, pp. 69, 70, 113, 114			Ref. 29, pp. 51, 52, 111, 112			Ref. 29, pp. 57, 58, 112			Ref. 29, pp. 75, 76, 114, 115			Ref. 29, pp. 81, 82, 115					Ref. 26, pp. 32, 33, 109, 110			Ref. 26, pp. 54, 55, 111, 112			Ref. 26, pp. 60, 61, 112, 113			Ref. 26, pp. 42, 43, 110, 111			Ref. 26, pp. 26, 27, 109			Ref. 26, pp. 66, 67, 113, 114			Ref. 26, pp. 72, 73, 114			Ref. 26, pp. 48, 49, 111			Ref. 26, pp. 78, 79, 114, 115		

All results are reported in micrograms per kilogram (µg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation limit (ACRQL)
Q = Validation Qualifier
Data Qualifiers:

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the ACRQL for sample and method [Ref. 26, p. 2; 29, p. 2]
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL) [Ref. 26, p. 2; 29, p. 2]. Values qualified J due to issues of quality control as determined by the Data Validator are not considered for selection of 3x background or for evaluation of observed contamination.
J+ = The result is an estimated quantity, but the result may be biased high [Ref. 26, p. 2; 29, p. 2]
UJ = The analyte was not detected at a level greater than or equal to the ACRQL. However, the reported ACRQL is approximate and may be innacurate or imprecise [Ref. 26, p. 2; 29, p. 2]

Values in parentheses have been adjusted per EPA Fact Sheet *Using Quaified Data to Document an Observed Release and Observed Contamination* [Ref. 23, pp. 4-9]
ITALICS indicate the highest background detection for each analyte (or highest RDL if no detections)
YELLOW HIGHLIGHT indicates that the result meets observed release/observed contamination criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2A
SOIL ANALYTICAL DATA - VOLATILE ORGANIC COMPOUNDS
CROPSEY SCRAP IRON METAL WORKS

Sample Purpose:			Source Samples																	
Field Sample ID:	3x Maximum Background, or Highest Reporting Detection Limit		6102-SS03B			6102-S04			6102-SS04A			6102-SS04B			6102-S05			6102-SS05A		
CLP ID:			BG5L3			BG5K0			BG5L4			BG5L5			BG5K1			BG5L6		
Date:			6/29/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021		
Depth Interval (ft bgs):			6.25 - 7.5			0 - 2			5 - 6			6 - 8			0 - 2			5 - 6		
Comments:																				
VOC	**Value**	**Q**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
Dichlorodifluoromethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Chloromethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Vinyl chloride	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Bromomethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Chloroethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Trichlorofluoromethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	95	J	300	4.3	UJ	4.3
1,1-Dichloroethene	9.7	U	5.5	UJ	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,1,2-Trichloro-1,2,2-trifluoroethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Acetone	19	U	11	U	11	11	U	11	8.7	UJ	8.7	11	UJ	11	600		590	55	J	8.6
Carbon disulfide	9.7	U	5.5	UJ	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	3.9	J	4.3
Methyl Acetate	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	17000		3000	4.3	UJ	4.3
Methylene chloride	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
trans-1,2-Dichloroethene	9.7	U	5.5	U	5.5	2.9	J	5.4	6.3	J	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Methyl tert-butyl Ether	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,1-Dichloroethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
cis-1,2-Dichloroethene	9.7	U	5.5	U	5.5	17		5.4	85	J	4.4	5.5	UJ	5.5	300	U	300	2.7	J	4.3
2-Butanone	19	U	11	U	11	11	U	11	8.7	UJ	8.7	11	UJ	11	120000		5900	85	J	8.6
Bromochloromethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Chloroform	4.8	J	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,1,1-Trichloroethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Cyclohexane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Carbon tetrachloride	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Benzene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,2-Dichloroethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Trichloroethene	9.7	U	5.5	U	5.5	5.4	U	5.4	7.8	J	4.4	5.5	UJ	5.5	99	J	300	5.5	J	4.3
Methylcyclohexane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,2-Dichloropropane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Bromodichloromethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
cis-1,3-Dichloropropene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
4-Methyl-2-pentanone	19	U	11	U	11	11	U	11	8.7	UJ	8.7	11	UJ	11	590	U	590	8.6	UJ	8.6
Toluene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	1200		300	3.2	J	4.3
trans-1,3-Dichloropropene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,1,2-Trichloroethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Tetrachloroethene	9.7	U	5.5	UJ	5.5	5.4	U	5.4	18	J	4.4	5.5	UJ	5.5	1900		300	28	J	4.3
2-Hexanone	19	U	11	U	11	11	U	11	8.7	UJ	8.7	11	UJ	11	590	U	590	8.6	UJ	8.6
Dibromochloromethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,2-Dibromoethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Chlorobenzene	9.7	U	5.5	U	5.5	5.4	UJ	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Ethylbenzene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	420		300	4.3	UJ	4.3
o-Xylene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	470		300	4.3	UJ	4.3
m,p-Xylene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	1100		300	4.3	UJ	4.3
Styrene	8.7	J	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	200	J	300	4.3	UJ	4.3
Bromoform	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Isopropylbenzene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,2,3-Trichloropropane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,1,2,2-Tetrachloroethane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,3-Dichlorobenzene	9.7	U	5.5	U	5.5	5.4	UJ	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,4-Dichlorobenzene	9.7	U	5.5	U	5.5	5.4	UJ	5.4	4.4	UJ	4.4	5.5	UJ	5.5	72	J	300	4.3	UJ	4.3
1,2-Dichlorobenzene	9.7	U	5.5	U	5.5	5.4	UJ	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,2-Dibromo-3-chloropropane	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,2,4-Trimethylbenzene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	770		300	2.6 (0.26)	J+	4.3
1,3,5-Trimethylbenzene	9.7	U	5.5	U	5.5	5.4	U	5.4	4.4	UJ	4.4	5.5	UJ	5.5	250	J	300	4.3	UJ	4.3
1,2,4-Trichlorobenzene	9.7	U	5.5	U	5.5	5.4	UJ	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
1,2,3-Trichlorobenzene	9.7	U	5.5	U	5.5	5.4	UJ	5.4	4.4	UJ	4.4	5.5	UJ	5.5	300	U	300	4.3	UJ	4.3
Reference			Ref. 26, pp. 84, 85, 115, 116			Ref. 25, pp. 34, 35, 130, 131			Ref. 25, pp. 74, 75, 135, 136			Ref. 25, pp. 80, 81, 136, 137			Ref. 25, pp. 40, 41, 131, 132			Ref. 25, pp. 86, 87, 137, 138		

Sample Purpose:	Source Samples																							
Field Sample ID:	6102-SS05B			6102-S06			6102-SS06A			6102-SS06B			6102-S08			6102-S09			6102-S12			6102-S10		
CLP ID:	BG5L7			BG5K2			BG5L8			BG5L9			BG5K4			BG5K5			BG5J5			BG5K6		
Date:	6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021		
Depth Interval (ft bgs):	8 - 9.4			0 - 1.5			1.5 - 2.6			6 - 8			0 - 0.5			0 - 1.5			0 - 1.5			0-0.5		
Comments:																			Duplicate of 6102-S09					
VOC	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
Dichlorodifluoromethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Chloromethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Vinyl chloride	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Bromomethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Chloroethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Trichlorofluoromethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,1-Dichloroethene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,1,2-Trichloro-1,2,2-trifluoroethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Acetone	11	UJ	11	120		9.2	8.8	UJ	8.8	8.6	UJ	8.6	20		13	10	U	10	10	U	10	13	U	13
Carbon disulfide	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Methyl Acetate	5.7	UJ	5.7	4.6	U	4.6	1.6	J	4.4	4.3	UJ	4.3	2.9	J	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Methylene chloride	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
trans-1,2-Dichloroethene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Methyl tert-butyl Ether	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,1-Dichloroethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
cis-1,2-Dichloroethene	5.7	UJ	5.7	3.2	J	4.6	16	J	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
2-Butanone	11	UJ	11	24		9.2	8.8	UJ	8.8	8.6	UJ	8.6	13	U	13	10	U	10	10	U	10	13	U	13
Bromochloromethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Chloroform	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,1,1-Trichloroethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Cyclohexane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Carbon tetrachloride	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Benzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,2-Dichloroethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Trichloroethene	5.7	UJ	5.7	4.6	U	4.6	25	J	4.4	2.9	J	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Methylcyclohexane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,2-Dichloropropane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Bromodichloromethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
cis-1,3-Dichloropropene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
4-Methyl-2-pentanone	11	UJ	11	9.2	U	9.2	8.8	UJ	8.8	8.6	UJ	8.6	13	U	13	10	U	10	10	U	10	13	U	13
Toluene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
trans-1,3-Dichloropropene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,1,2-Trichloroethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Tetrachloroethene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
2-Hexanone	11	UJ	11	9.2	U	9.2	8.8	UJ	8.8	8.6	UJ	8.6	23		13	8.0	J	10	10	U	10	28		13
Dibromochloromethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,2-Dibromoethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Chlorobenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Ethylbenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
o-Xylene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
m,p-Xylene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Styrene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
Bromoform	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
Isopropylbenzene	5.7	UJ	5.7	3.8	J	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,2,3-Trichloropropane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,1,2,2-Tetrachloroethane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	U	6.4	5.2	U	5.2	5.2	U	5.2	6.4	U	6.4
1,3-Dichlorobenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,4-Dichlorobenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,2-Dichlorobenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,2-Dibromo-3-chloropropane	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,2,4-Trimethylbenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,3,5-Trimethylbenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,2,4-Trichlorobenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
1,2,3-Trichlorobenzene	5.7	UJ	5.7	4.6	U	4.6	4.4	UJ	4.4	4.3	UJ	4.3	6.4	UJ	6.4	5.2	U	5.2	5.2	U	5.2	6.4	UJ	6.4
Reference	Ref. 25, pp. 94, 95, 138, 139			Ref. 25, pp. 50, 51, 132, 133			Ref. 25, pp. 100, 101, 139, 140			Ref. 25, pp. 106, 107, 140, 141			Ref. 25, pp. 56, 57, 133, 134			Ref. 25, pp. 62, 63, 134			Ref. 25, pp. 28, 29, 130			Ref. 25, pp. 68, 69, 134, 135		

All results are reported in micrograms per kilogram (µg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation limit (ACRQL)
Q = Validation Qualifier
Data Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the ACRQL for sample and method [Ref. 25, p. 2; 26, p.2]
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL) [Ref. 25, p. 2; 26, p. 2]. Values qualified J due to issues of quality control as determined by the Data Validator are not considered for selection of 3x background or for evaluation of observed contamination.
UJ = The analyte was not detected at a level greater than or equal to the ACRQL. However, the reported ACRQL is approximate and may be innacurate or imprecise [Ref. 25, p. 2; 26, p. 2]
Values in parentheses have been adjusted per EPA Fact Sheet *Using Quaified Data to Document an Observed Release and Observed Contamination* [Ref. 23, pp. 4-9]
YELLOW HIGHLIGHT indicates that the result meets observed release/observed contamination criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2B
SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANIC COMPOUNDS
CROPSEY SCRAP IRON METAL WORKS
Page 1 of 2

Sample Purpose:	Background Samples																						
Field Sample ID:	6100B-S01			6100B-SS01A			6100B-SS01B			6100B-S02			6100B-S03			6100B-SS02A			6100B-SS02B			3x Maximum Background, or Highest Reporting Detection Limit	
CLP ID:	BG5H8			BG5J1			BG5J2			BG5H9			BG5J0			BG5J3			BG5J4				
Date:	6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021				
Depth Interval (ft bgs):	0 - 2			5 - 6.5			7 - 8.5			0 - 2			0 - 2			5 - 6			6 - 7.5				
Comments:													Duplicate of 6100B-S02										
SVOC	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Value	Q
1,4-Dioxane	82	U	82	80	U	80	110	U	*110*	77	U	77	77	U	77	83	U	83	96	U	96	110	U
Benzaldehyde	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Phenol	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Bis(2-Chloroethyl)ether	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
2-Chlorophenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2-Methylphenol	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
2,2-oxybis(1-Chloropropane)	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Acetophenone	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
4-Methylphenol	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
N-Nitroso-di-n-propylamine	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Hexachloroethane	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Nitrobenzene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Isophorone	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2-Nitrophenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2,4-Dimethylphenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Bis(2-Chloroethoxy)methane	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2,4-Dichlorophenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Naphthalene	52	J	210	*110*	J	200	270	U	270	200	U	200	200	U	200	210	U	210	240	U	240	330	U
4-Chloroaniline	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Hexachlorobutadiene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Caprolactam	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
4-Chloro-3-methylphenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
1-Methylnaphthalene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2-Methylnaphthalene	210	U	210	*41*	J	200	270	U	270	200	U	200	200	U	200	210	U	210	240	U	240	123	J
Hexachlorocyclopentadiene	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
2,4,6-Trichlorophenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2,4,5-Trichlorophenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
1,1-Biphenyl	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2-Chloronaphthalene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
2-Nitroaniline	210	U	210	200	UJ	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Dimethylphthalate	230		210	200	U	200	270	U	270	*270*		200	200	U	200	210	U	210	240	U	240	810	
2,6-Dinitrotoluene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Acenaphthylene	*160*	J	210	200	U	200	270	U	270	52	J	200	43	J	200	210	U	210	240	U	240	480	J
3-Nitroaniline	410	U	410	400	UJ	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Acenaphthene	*50*	J	210	200	U	200	270	U	270	200	U	200	200	U	200	210	U	210	240	U	240	150	J
2,4-Dinitrophenol	410	U	410	400	UJ	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
4-Nitrophenol	410	U	410	400	UJ	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Dibenzofuran	71	J	210	*100*	J	200	270	U	270	200	U	200	200	U	200	210	U	210	240	U	240	300	J
2,4-Dinitrotoluene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Diethylphthalate	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Fluorene	*81*	J	210	200	U	200	270	U	270	200	U	200	200	U	200	210	U	210	240	U	240	243	J
4-Chlorophenyl-phenylether	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
4-Nitroaniline	410	U	410	400	UJ	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
4,6-Dinitro-2-methylphenol	410	U	410	400	UJ	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
N-Nitrosodiphenylamine	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
1,2,4,5-Tetrachlorobenzene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
4-Bromophenyl-phenylether	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Hexachlorobenzene	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Atrazine	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Pentachlorophenol	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Phenanthrene	*1100*		210	390		200	270	U	270	98	J	200	120	J	200	78	J	210	100	J	240	3300	
Anthracene	*250*		210	79	J	200	270	U	270	200	U	200	200	U	200	210	U	210	240	U	240	750	
Carbazole	*67*	J	410	400	U	400	530	U	530	380	U	380	380	U	380	410	U	410	470	U	470	201	
Di-n-butylphthalate	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Fluoranthene	*2000*		210	560		200	270	U	270	260		200	280		200	210		210	120	J	240	6000	
Pyrene	*1500*		210	440		200	270	U	270	250		200	240		200	190	J	210	130	J	240	4500	
Butylbenzylphthalate	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
3,3-Dichlorobenzidine	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Benzo(a)anthracene	*1100*		210	290		200	270	U	270	190	J	200	180	J	200	130	J	210	77	J	240	3300	
Chrysene	*930*		210	280		200	270	U	270	190	J	200	170	J	200	130	J	210	74	J	240	2790	
Bis(2-ethylhexyl)phthalate	230		210	220		200	270	U	270	290		200	260		200	*320*		210	300		240	960	
Di-n-octyl phthalate	410	U	410	400	U	400	530	U	*530*	380	U	380	380	U	380	410	U	410	470	U	470	530	U
Benzo(b)fluoranthene	*1100*		210	330		200	270	U	270	280		200	240		200	170	J	210	72	J	240	3300	
Benzo(k)fluoranthene	*390*		210	100	J	200	270	U	270	89	J	200	77	J	200	66	J	210	240	U	240	1170	
Benzo(a)pyrene	*810*		210	250		200	270	U	270	220		200	190	J	200	140	J	210	67	J	240	2430	
Indeno(1,2,3-cd)pyrene	*410*		210	140	J	200	270	U	270	140	J	200	120	J	200	85	J	210	240	U	240	1230	
Dibenzo(a,h)anthracene	*140*	J	210	41	J	200	270	U	270	44	J	200	200	U	200	210	U	210	240	U	240	420	J
Benzo(g,h,i)perylene	*370*		210	140	J	200	270	U	270	150	J	200	120	J	200	89	J	210	240	U	240	1110	
2,3,4,6-Tetrachlorophenol	210	U	210	200	U	200	270	U	*270*	200	U	200	200	U	200	210	U	210	240	U	240	270	U
Reference	Ref. 29, pp. 39, 40, 121, 122			Ref. 29, pp. 61, 62, 125, 126			Ref. 29, pp. 67, 68, 126, 127			Ref. 29, pp. 49, 50, 123, 124			Ref. 29, pp. 55, 56, 124, 125			Ref. 29, pp. 73, 74, 127, 128			Ref. 29, pp. 79, 80, 128, 129				

Sample Purpose:	Source Samples																										
Field Sample ID:	6102-S01			6102-SS01A			6102-SS01B			6102-S02			6102-SS12A			6102-SS02A			6102-SS02B			6102-S03			6102-SS03A		
CLP ID:	BG5J7			BG5K8			BG5K9			BG5J8			BG5J6			BG5L0			BG5L1			BG5J9			BG5L2		
Date:	6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021		
Depth Interval (ft bgs):	0 - 1.6			5 - 6.15			6.15 - 7.2			0 - 2			0 - 2			5 - 6.25			6.25 - 7.5			0 - 2			5 - 6.25		
Comments:													Duplicate of 6102-S02														
SVOC	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL
1,4-Dioxane	73	R	73	76	R	76	72	R	72	75	UJ	75	370	UJ	370	71	UJ	71	69	UJ	69	360	UJ	360	370	UJ	370
Benzaldehyde	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Phenol	360	U	360	380	U	380	360	U	360	880		370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Bis(2-Chloroethyl)ether	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
2-Chlorophenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
2-Methylphenol	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
2,2-oxybis(1-Chloropropane)	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Acetophenone	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
4-Methylphenol	360	U	360	380	U	380	360	U	360	370	U	370	520	J	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
N-Nitroso-di-n-propylamine	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Hexachloroethane	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Nitrobenzene	190	UJ	190	190	UJ	190	180	UJ	180	190	UJ	190	930	UJ	930	180	UJ	180	180	UJ	180	920	UJ	920	930	UJ	930
Isophorone	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
2-Nitrophenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
2,4-Dimethylphenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Bis(2-Chloroethoxy)methane	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
2,4-Dichlorophenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Naphthalene	190	U	190	210		190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	4800		920	1300		930
4-Chloroaniline	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Hexachlorobutadiene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Caprolactam	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
4-Chloro-3-methylphenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
1-Methylnaphthalene	190	U	190	100	J	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	1200		920	1500		930
2-Methylnaphthalene	190	U	190	150	J	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	1800		920	2600		930
Hexachlorocyclopentadiene	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
2,4,6-Trichlorophenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
2,4,5-Trichlorophenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
1,1-Biphenyl	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	530	J	920	670	J	930
2-Chloronaphthalene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
2-Nitroaniline	190	UJ	190	190	UJ	190	180	UJ	180	190	UJ	190	930	UJ	930	180	UJ	180	180	UJ	180	920	UJ	920	930	UJ	930
Dimethylphthalate	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
2,6-Dinitrotoluene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Acenaphthylene	190	U	190	190	U	190	180	U	180	76	J	190	930	U	930	180	U	180	180	U	180	1000		920	740	J	930
3-Nitroaniline	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Acenaphthene	190	U	190	190	U	190	180	U	180	48	J	190	240	J	930	180	U	180	180	U	180	6300		920	4000		930
2,4-Dinitrophenol	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
4-Nitrophenol	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Dibenzofuran	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	4000		920	2500		930
2,4-Dinitrotoluene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Diethylphthalate	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Fluorene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	5900		920	3500		930
4-Chlorophenyl-phenylether	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
4-Nitroaniline	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
4,6-Dinitro-2-methylphenol	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
N-Nitrosodiphenylamine	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
1,2,4,5-Tetrachlorobenzene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
4-Bromophenyl-phenylether	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Hexachlorobenzene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Atrazine	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Pentachlorophenol	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Phenanthrene	150	J	190	210		190	180	U	180	420		190	2700		930	130	J	180	180	U	180	45000		9200	22000		4700
Anthracene	190	U	190	190	U	190	180	U	180	130	J	190	460	J	930	180	U	180	180	U	180	12000		920	6300		930
Carbazole	360	U	360	380	U	380	360	U	360	370	U	370	390	J	1800	350	U	350	340	U	340	6700		1800	3300		1800
Di-n-butylphthalate	190	U	190	160	J	190	180	U	180	51	J	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Fluoranthene	270		190	360		190	180	U	180	880		190	3600		930	240		180	180	U	180	51000		9200	24000		4700
Pyrene	210		190	250		190	180	U	180	640		190	2700		930	190		180	180	U	180	39000		9200	18000		4700
Butylbenzylphthalate	190	UJ	190	79	J	190	180	UJ	180	110	J	190	260	J	930	180	UJ	180	180	UJ	180	920	UJ	920	930	UJ	930
3,3-Dichlorobenzidine	360	U	360	380	U	380	360	U	360	370	U	370	1800	U	1800	350	U	350	340	U	340	1800	U	1800	1800	U	1800
Benzo(a)anthracene	140	J	190	150	J	190	180	U	180	460		190	1700		930	140	J	180	180	U	180	22000		9200	10000		930
Chrysene	140	J	190	150	J	190	180	U	180	430		190	1700		930	130	J	180	180	U	180	20000		9200	9000		930
Bis(2-ethylhexyl)phthalate	720	J	190	2500	J	190	180	UJ	180	1200	J	190	5900	J	930	260	J	180	180	UJ	180	1100	J	920	640	J	930
Di-n-octyl phthalate	360	U	360	380	U	380	360	U	360	370	U	370	1800	UJ	1800	350	U	350	340	U	340	1800	UJ	1800	1800	UJ	1800
Benzo(b)fluoranthene	220		190	230		190	180	U	180	720		190	2100		930	190		180	180	U	180	26000		9200	12000		930
Benzo(k)fluoranthene	59	J	190	70	J	190	180	U	180	260		190	830	J	930	88	J	180	180	U	180	12000		920	4100		930
Benzo(a)pyrene	140	J	190	160	J	190	180	U	180	490		190	1600		930	140	J	180	180	U	180	19000		9200	9100		930
Indeno(1,2,3-cd)pyrene	96	J	190	95	J	190	180	U	180	310		190	950		930	99	J	180	180	U	180	12000		920	4700		930
Dibenzo(a,h)anthracene	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Benzo(g,h,i)perylene	190	U	190	190	U	190	180	U	180	260		190	710	J	930	100	J	180	180	U	180	8600		920	2500		930
2,3,4,6-Tetrachlorophenol	190	U	190	190	U	190	180	U	180	190	U	190	930	U	930	180	U	180	180	U	180	920	U	920	930	U	930
Reference	Ref. 26, pp. 30, 31, 120			Ref. 26, pp. 52, 53, 124, 125			Ref. 26, pp. 58, 59, 125, 126			Ref. 26, pp. 40, 41, 121, 122			Ref. 26, pp. 24, 25, 118			Ref. 26, pp. 64, 65, 126, 127			Ref. 26, pp. 70, 71, 127, 128			Ref. 26, pp. 46, 47, 122, 123			Ref. 26, pp. 76, 77, 128, 129		

All results are reported in micrograms per kilogram (µg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation limit (ACRQL)
Q = Validation Qualifier
Data Qualifiers:

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the ACRQL for sample and method [Ref. 26, p. 2; 29, p. 2]
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL) [Ref. 26, p. 2; 29, p. 2]. Values qualified J due to issues of quality control as determined by the Data Validator are not considered for selection of 3x background or for evaluation of observed contamination.
UJ = The analyte was not detected at a level greater than or equal to the ACRQL. However, the reported ACRQL is approximate and may be innacurate or imprecise [Ref. 26, p. 2; 29, p.2]
R = The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample [Ref. 26, p. 2; 29, p.2]

ITALICS indicate the highest background detection for each analyte (or highest RDL if no detections)
YELLOW HIGHLIGHT indicates that the result meets observed release/observed contamination criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2B
SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANIC COMPOUNDS
CROPSEY SCRAP IRON METAL WORKS

Sample Purpose:			Source Samples																																							
Field Sample ID:	3x Maximum		6102-SS03B			6102-SS04			6102-SS04A			6102-SS04B			6102-SS05			6102-SS05A			6102-SS05B			6102-SS06			6102-SS06A			6102-SS06B			6102-SS08			6102-SS09			6102-S12			6102-S10		
CLP ID:	Background, or		BG5L3			BG5K0			BG5L4			BG5L5			BG5K1			BG5L6			BG5L7			BG5K2			BG5L8			BG5L9			BG5K4			BG5K5			BG5J5			BG5K6		
Date:	Highest Reporting		6/29/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021		
Depth Interval (ft bgs):	Detection Limit		6.25 - 7.5			0 - 2			5 - 6			6 - 8			0 - 2			5 - 6			8 - 9.4			0 - 1.5			1.5 - 2.6			6 - 8			0 - 0.5			0 - 1.5			0 - 1.5			0-0.5		
Comments:																																						Duplicate of 6102-S09							
SVOC	**Value**	**Q**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
1,4-Dioxane	110	U	69	UJ	69	370	UJ	370	370	UJ	370	71	UJ	71	380	UJ	380	360	UJ	360	69	UJ	69	360	UJ	360	72	R	72	69	UJ	69	420	UJ	420	360	UJ	360	360	UJ	360	370	UJ	370
Benzaldehyde	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Phenol	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Bis(2-Chloroethyl)ether	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
2-Chlorophenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2-Methylphenol	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
2,2-oxybis(1-Chloropropane)	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Acetophenone	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
4-Methylphenol	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
N-Nitroso-di-n-propylamine	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Hexachloroethane	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Nitrobenzene	270	U	180	UJ	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Isophorone	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2-Nitrophenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2,4-Dimethylphenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Bis(2-Chloroethoxy)methane	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2,4-Dichlorophenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Naphthalene	330	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
4-Chloroaniline	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Hexachlorobutadiene	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Caprolactam	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
4-Chloro-3-methylphenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
1-Methylnaphthalene	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2-Methylnaphthalene	123	J	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Hexachlorocyclopentadiene	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
2,4,6-Trichlorophenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2,4,5-Trichlorophenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
1,1-Biphenyl	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2-Chloronaphthalene	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2-Nitroaniline	270	U	180	UJ	180	930	UJ	930	940	UJ	940	180	UJ	180	960	UJ	960	910	UJ	910	*170*	UJ	170	920	UJ	920	180	UJ	180	180	UJ	180	1100	UJ	1100	930	UJ	930	920	UJ	920	940	UJ	940
Dimethylphthalate	810		180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2,6-Dinitrotoluene	270	U	180	U	180	930	UJ	930	940	UJ	940	180	UJ	180	960	UJ	960	910	UJ	910	170	UJ	170	920	UJ	920	180	UJ	180	180	UJ	180	1100	UJ	1100	930	UJ	930	920	UJ	920	940	UJ	940
Acenaphthylene	480	J	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	310	J	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
3-Nitroaniline	530	U	340	U	340	1800	UJ	1800	1800	UJ	1800	350	UJ	350	1900	UJ	1900	1800	UJ	1800	340	UJ	340	1800	UJ	1800	360	UJ	360	340	UJ	340	2100	UJ	2100	1800	UJ	1800	1800	UJ	1800	1800	UJ	1800
Acenaphthene	150	J	49	J	180	580	J	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2,4-Dinitrophenol	530	U	340	U	340	1800	UJ	1800	1800	UJ	1800	350	UJ	350	1900	UJ	1900	1800	UJ	1800	340	UJ	340	1800	UJ	1800	360	UJ	360	340	UJ	340	2100	UJ	2100	1800	UJ	1800	1800	UJ	1800	1800	UJ	1800
4-Nitrophenol	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Dibenzofuran	300	J	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
2,4-Dinitrotoluene	270	U	180	U	180	930	UJ	930	940	UJ	940	180	UJ	180	960	UJ	960	910	UJ	910	170	UJ	170	920	UJ	920	180	UJ	180	180	UJ	180	1100	UJ	1100	930	UJ	930	920	UJ	920	940	UJ	940
Diethylphthalate	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Fluorene	243	J	180	U	180	840	J	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
4-Chlorophenyl-phenylether	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
4-Nitroaniline	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
4,6-Dinitro-2-methylphenol	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
N-Nitrosodiphenylamine	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
1,2,4,5-Tetrachlorobenzene	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
4-Bromophenyl-phenylether	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Hexachlorobenzene	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Atrazine	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Pentachlorophenol	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Phenanthrene	3300		310		180	8000		930	1500	J	940	180	UJ	180	1400		960	1500	J	910	170	UJ	170	370	J	920	62	J	180	58	J	180	870	J	1100	680	J	930	1700		920	820	J	940
Anthracene	750		86	J	180	2800		930	350	J	940	180	UJ	180	960	U	960	310	J	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	380	J	920	940	U	940
Carbazole	201		340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Di-n-butylphthalate	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	340	J	1100	930	U	930	920	U	920	260	J	940
Fluoranthene	6000		320		180	13000		930	2300	J	940	180	UJ	180	1700		960	1800	J	910	170	UJ	170	1100		920	110	J	180	98	J	180	1400		1100	1000		930	2200		920	1500		940
Pyrene	4500		230		180	10000		930	2000	J	940	180	UJ	180	1400		960	1400	J	910	170	UJ	170	1000		920	100	J	180	81	J	180	1400		1100	970		930	2000		920	1400		940
Butylbenzylphthalate	270	U	180	UJ	180	930	U	930	940	UJ	940	180	UJ	180	260	J	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	470	J	1100	930	U	930	920	U	920	370	J	940
3,3-Dichlorobenzidine	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Benzo(a)anthracene	3300		150	J	180	5900		930	1100	J	940	180	UJ	180	720	J	960	790	J	910	170	UJ	170	790	J	920	63	J	180	180	UJ	180	810	J	1100	580	J	930	1200		920	800	J	940
Chrysene	2790		120	J	180	4900		930	1100	J	940	180	UJ	180	750	J	960	810	J	910	170	UJ	170	700	J	920	180	UJ	180	180	UJ	180	850	J	1100	540	J	930	1200		920	920	J	940
Bis(2-ethylhexyl)phthalate	960		180	UJ	180	1700		930	1000	J	940	180	UJ	180	2900		960	650	J	910	170	UJ	170	630	J	920	180	UJ	180	180	UJ	180	1900		1100	250	J	930	310	J	920	920	J	940
Di-n-octyl phthalate	530	U	340	U	340	1800	U	1800	1800	UJ	1800	350	UJ	350	1900	U	1900	1800	UJ	1800	340	UJ	340	1800	U	1800	360	UJ	360	340	UJ	340	2100	U	2100	1800	U	1800	1800	U	1800	1800	U	1800
Benzo(b)fluoranthene	3300		140	J	180	5800		930	1300	J	940	180	UJ	180	940	J	960	860	J	910	170	UJ	170	1200		920	180	UJ	180	64	J	180	1200		1100	680	J	930	1700		920	1300		940
Benzo(k)fluoranthene	1170		73	J	180	2100		930	480	J	940	180	UJ	180	330	J	960	380	J	910	170	UJ	170	490	J	920	180	UJ	180	180	UJ	180	380	J	1100	310	J	930	660	J	920	410	J	940
Benzo(a)pyrene	2430		120	J	180	5200		930	1100	J	940	180	UJ	180	700	J	960	700	J	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	820	J	1100	590	J	930	1500		920	910	J	940
Indeno(1,2,3-cd)pyrene	1230		62	J	180	2400		930	610	J	940	180	UJ	180	440	J	960	420	J	910	170	UJ	170	640	J	920	180	UJ	180	180	UJ	180	530	J	1100	390	J	930	970		920	660	J	940
Dibenzo(a,h)anthracene	420	J	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Benzo(g,h,i)perylene	1110		48	J	180	2000		930	450	J	940	180	UJ	180	380	J	960	290	J	910	170	UJ	170	510	J	920	180	UJ	180	180	UJ	180	400	J	1100	340	J	930	900	J	920	600	J	940
2,3,4,6-Tetrachlorophenol	270	U	180	U	180	930	U	930	940	UJ	940	180	UJ	180	960	U	960	910	UJ	910	170	UJ	170	920	U	920	180	UJ	180	180	UJ	180	1100	U	1100	930	U	930	920	U	920	940	U	940
Reference			Ref. 26, pp. 82, 83, 130, 131			Ref. 25, pp. 32, 33, 146, 147			Ref. 25, pp. 72, 73, 153, 154			Ref. 25, pp. 78, 79, 155			Ref. 25, pp. 38, 39, 147, 148			Ref. 25, pp. 84, 85, 156			Ref. 25, pp. 92, 93, 157, 158			Ref. 25, pp. 48, 49, 148, 149			Ref. 25, pp. 98, 99, 158, 159			Ref. 25, pp. 104, 105, 159, 160			Ref. 25, pp. 54, 55, 150, 151			Ref. 25, pp. 60, 61, 151, 152			Ref. 25, pp. 26, 27, 144, 145			Ref. 25, pp. 66, 67, 152, 153		

All results are reported in micrograms per kilogram (µg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation limit (ACRQL)
Q = Validation Qualifier
Data Qualifiers:

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the ACRQL for sample and method [Ref. 25, p. 2; 26, p. 2]
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL) [Ref. 25, p. 2; 26, p. 2]. Values qualified J due to issues of quality control as determined by the Data Validator are not considered for selection of 3x background or for evaluation of observed contamination.
UJ = The analyte was not detected at a level greater than or equal to the ACRQL. However, the reported ACRQL is approximate and may be innacurate or imprecise [Ref. 25, p. 2; 26, p. 2]
R = The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample [Ref. 25, p. 2; 26, p. 2]

YELLOW HIGHLIGHT indicates that the result meets observed release/observed contamination criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2C
SOIL ANALYTICAL DATA - PESTICIDES AND AROCLORS
CROPSEY SCRAP IRON METAL WORKS

Sample Purpose:	Background Samples																		Source Samples																	
Field Sample ID:	6100B-S01			6100B-SS01A			6100B-SS01B			6100B-S02			6100B-S03			6100B-SS02A			6100B-SS02B			3x Maximum Background, or Highest Reporting Detection Limit		6102-S01			6102-SS01A			6102-SS01B			6102-S02			6102-SS12A			6102-SS02A			6102-SS02B			6102-S03			6102-SS03A		
CLP ID:	BG5H8			BG5J1			BG5J2			BG5H9			BG5J0			BG5J3			BG5J4					BG5J7			BG5K8			BG5K9			BG5J8			BG5J6			BG5L0			BG5L1			BG5J9			BG5L2		
Date:	6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021					6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021		
Depth Interval (ft bgs):	0 - 2			5 - 6.5			7 - 8.5			0 - 2			0 - 2			5 - 6			6 - 7.5					0 - 1.6			5 - 6.15			6.15 - 7.2			0 - 2			0 - 2			5 - 6.25			6.25 - 7.5			0 - 2			5 - 6.25		
Comments:													Duplicate of 6100B-S02																							Duplicate of 6102-S02													
Pesticide	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Value**	**Q**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
alpha-BHC	2.1	U	2.1	2.0	U	2.0	2.7	U	*2.7*	2.0	UJ	2.0	2.0	U	2.0	2.1	U	2.1	2.4	U	2.4	2.7	U	1.4 (0.14)	J+	1.9	0.56	NJ	1.9	1.8	U	1.8	2.2 (0.22)	J+	1.9	2.2 (0.22)	J+	1.9	1.8	U	1.8	1.8	U	1.8	0.19 (0.01)	J+	1.8	1.9	U	1.9
beta-BHC	2.1	U	2.1	2.0	U	2.0	2.7	U	*2.7*	2.0	UJ	2.0	2.0	U	2.0	2.1	U	2.1	2.4	U	2.4	2.7	U	1.9	U	1.9	1.9	U	1.9	0.58	J	1.8	1.9	U	1.9	0.51	NJ	1.9	1.8	U	1.8	1.8	U	1.8	2.5 (0.25)	J+	1.8	3.1	NJ	1.9
delta-BHC	0.47	J	2.1	2.0	U	2.0	2.7	U	2.7	2.0	UJ	2.0	*0.55*	J	2.0	2.1	U	2.1	2.4	U	2.4	1.65	J	0.78	NJ	1.9	3.0	NJ	1.9	0.20	NJ	1.8	1.3	NJ	1.9	1.4	NJ	1.9	0.22	NJ	1.8	1.8	U	1.8	1.8	NJ	1.8	0.92	NJ	1.9
gamma-BHC (Lindane)	2.9	J	2.1	1.8	J	2.0	2.7	U	2.7	2.0	UJ	2.0	1.3	J	2.0	2.1	U	2.1	2.4	U	2.4	8.7	J	1.7	NJ	1.9	4.3	NJ	1.9	1.8	U	1.8	3.3 (0.27)	J+	1.9	1.5	NJ	1.9	1.8	U	1.8	1.8	U	1.8	1.8	U	1.8	1.1	NJ	1.9
Heptachlor	2.1	U	2.1	2.0	U	2.0	2.7	U	*2.7*	2.0	UJ	2.0	2.0	U	2.0	2.1	U	2.1	2.4	U	2.4	2.7	U	1.9	U	1.9	68 (8.6)	J+	19	0.69	J	1.8	1.4	NJ	1.9	10	NJ	1.9	2.2	J	1.8	1.8	U	1.8	3.8	NJ	1.8	0.83	NJ	1.9
Aldrin	*0.59*	J	2.1	0.23	J	2.0	2.7	U	2.7	2.0	UJ	2.0	0.39	J	2.0	2.1	U	2.1	2.4	U	2.4	1.77	J	0.24	NJ	1.9	43 (3.0)	J+	19	0.40	J	1.8	2.3	NJ	1.9	0.36	NJ	1.9	1.8	U	1.8	1.8	U	1.8	1.8	U	1.8	4.6 (0.32)	J+	1.9
Heptachlor epoxide	2.1	U	2.1	2.0	U	2.0	2.7	U	2.7	*0.30 (3.0)*	J-	2.0	0.56	J	2.0	0.38	J	2.1	0.63	J	2.4	9.0	J	0.45	NJ	1.9	1.9	NJ	1.9	1.8	U	1.8	7.9 (0.79)	J+	1.9	0.38	NJ	1.9	1.8	U	1.8	1.8	U	1.8	1.8	U	1.8	3.1 (0.31)	J+	1.9
Endosulfan I	2.1	U	2.1	2.0	U	2.0	2.7	U	*2.7*	2.0	UJ	2.0	2.0	U	2.0	2.1	U	2.1	2.4	U	2.4	2.7	U	2.6 (0.26)	J+	1.9	1.5 (0.15)	J+	1.9	1.8	U	1.8	7.1 (0.71)	J+	1.9	6.0 (0.60)	J+	1.9	0.53	J	1.8	1.8	U	1.8	1.8	U	1.8	1.9	U	1.9
Dieldrin	40	J	4.1	11	J	3.9	5.3	U	5.3	*12 (143)*	J-	3.8	37		3.8	7.1		4.1	0.29	NJ	4.7	429	J	14 (1.17)	J+	3.6	20 (1.6)	J+	3.7	0.35	NJ	3.5	36 (3.0)	J+	3.7	34 (2.8)	J+	3.7	3.7	J	3.5	3.5	U	3.5	11	NJ	3.6	5.9	NJ	3.6
4,4'-DDE	4.1	U	4.1	0.79	J	3.9	5.3	U	5.3	*0.19 (1.9)*	J-	3.8	0.37	J	3.8	4.1	U	4.1	4.7	U	4.7	5.7	J	1.9	NJ	3.6	2.8	NJ	3.7	3.5	U	3.5	4.7	NJ	3.7	7.1 (0.71)	J+	3.7	0.48	NJ	3.5	3.5	U	3.5	1.6	NJ	3.6	0.97	NJ	3.6
Endrin	*2.6*	J	4.1	3.9	U	3.9	5.3	U	5.3	3.8	UJ	3.8	3.8	U	3.8	4.1	U	4.1	4.7	U	4.7	7.8	J	1.2	NJ	3.6	1.9	NJ	3.7	0.53	J	3.5	11 (0.77)	J+	3.7	1.7	NJ	3.7	0.29	NJ	3.5	3.5	U	3.5	2.8 (0.19)	J+	3.6	4.8 (0.33)	J+	3.6
Endosulfan II	4.1	U	4.1	3.9	U	3.9	5.3	U	5.3	*0.38 (3.8)*	J-	3.8	3.8	U	3.8	0.36	J	4.1	0.51	J	4.7	11.4	J	5.1 (0.51)	J+	3.6	7.2 (0.72)	J+	3.7	3.5	U	3.5	14 (1.4)	J+	3.7	7.0 (0.7)	J+	3.7	1.4	J	3.5	3.5	U	3.5	1.8	NJ	3.6	1.7	NJ	3.6
4,4'-DDD	0.38	NJ	4.1	*1.1*	J	3.9	5.3	U	*5.3*	3.8	UJ	3.8	1.0	NJ	3.8	0.25	NJ	4.1	4.7	U	4.7	3.3	J	5.0 (0.5)	J+	3.6	4.6 (0.46)	J+	3.7	3.5	U	3.5	12 (1.2)	J+	3.7	19 (1.9)	J+	3.7	1.3	J	3.5	3.5	U	3.5	4.6 (0.46)	J+	3.6	2.2 (0.22)	J+	3.6
Endosulfan Sulfate	4.1	U	4.1	3.9	U	3.9	5.3	U	5.3	*0.24 (2.4)*	J-	3.8	3.8	U	3.8	4.1	U	4.1	4.7	U	4.7	7.2	J	2.0 (0.2)	J+	3.6	3.7	U	3.7	3.5	U	3.5	2.0 (0.2)	J+	3.7	5.0 (0.5)	J+	3.7	3.5	U	3.5	3.5	U	3.5	3.9 (0.39)	J+	3.6	2.9 (0.29)	J+	3.6
4,4'-DDT	4.1	U	4.1	3.9	U	3.9	5.3	U	5.3	*0.30 (3.8)*	J-	3.8	0.68	J	3.8	4.1	U	4.1	4.7	U	4.7	11.4	J	15 (1.1)	J+	3.6	20 (1.5)	J+	3.7	3.5	U	3.5	49 (3.8)	J+	3.7	64 (4.9)	J+	18	5.3		3.5	3.5	U	3.5	12 (0.93)	J+	3.6	5.9 (0.46)	J+	3.6
Methoxychlor	21	U	21	20	U	20	27	U	*27*	20	UJ	20	20	U	20	21	U	21	24	U	24	27	U	2.1	NJ	19	2.5	NJ	19	0.46	NJ	18	3.4	NJ	19	5.2	NJ	19	0.53	NJ	18	18	U	18	540 (54)	J+	92	3.6	NJ	19
Endrin ketone	4.1	U	4.1	3.9	U	3.9	5.3	U	*5.3*	3.8	UJ	3.8	3.8	U	3.8	4.1	U	4.1	4.7	U	4.7	5.3	U	2.5	NJ	3.6	3.7	U	3.7	3.5	U	3.5	2.1	NJ	3.7	5.3	NJ	3.7	3.5	U	3.5	3.5	U	3.5	95 (9.5)	J+	18	6.6	NJ	3.6
Endrin Aldehyde	1.5	J	4.1	3.9	U	3.9	5.3	U	5.3	*0.22 (2.2)*	J-	3.8	3.8	U	3.8	4.1	U	4.1	4.7	U	4.7	6.6	J	5.3	NJ	3.6	1.2	NJ	3.7	0.72	J	3.5	3.1 (0.31)	J+	3.7	3.7	U	3.7	0.30	NJ	3.5	3.5	U	3.5	3.7	NJ	3.6	6.5 (0.65)	J+	3.6
cis-Chlordane	2.1	U	2.1	2.0	U	2.0	2.7	U	*2.7*	2.0	UJ	2.0	2.0	U	2.0	2.1	U	2.1	2.4	U	2.4	2.7	U	5.7 (0.57)	J+	1.9	4.5	NJ	1.9	1.8	U	1.8	8.6 (0.86)	J+	1.9	11 (1.1)	J+	1.9	1.8	U	1.8	1.8	U	1.8	3.8 (0.38)	J+	1.8	1.9	UJ	1.9
trans-Chlordane	2.1	U	2.1	2.0	U	2.0	2.7	U	*2.7*	2.0	UJ	2.0	2.0	U	2.0	2.1	U	2.1	0.29	NJ	2.4	2.7	U	7.9 (0.79)	J+	1.9	5.9	NJ	1.9	1.8	U	1.8	11 (1.1)	J+	1.9	14 (1.4)	J+	1.9	0.85	J	1.8	1.8	U	1.8	0.42 (0.04)	J+	1.8	1.7	NJ	1.9
Toxaphene	210	U	210	200	U	200	270	U	*270*	200	UJ	200	200	U	200	210	U	210	240	U	240	270	U	190	U	190	190	U	190	180	U	180	190	U	190	190	U	190	180	U	180	180	U	180	180	U	180	190	U	190
Reference	Ref. 29, pp. 38, 133, 134			Ref. 29, pp. 60, 134, 135			Ref. 29, pp. 66, 135			Ref. 29, pp. 48, 134			Ref. 29, pp. 54, 134			Ref. 29, pp. 72, 135			Ref. 29, pp. 78, 135					Ref. 28, pp. 29, 135			Ref. 26, pp. 51, 136			Ref. 26, pp. 57, 136, 137			Ref. 26, pp. 39, 135, 136			Ref. 26, pp. 23, 135			Ref. 26, pp. 63, 137			Ref. 26, pp. 69, 137			Ref. 26, pp. 45, 136			Ref. 26, pp. 75, 137		

Sample Purpose:	Background Samples																		Source Samples																	
Field Sample ID:	6100B-S01			6100B-SS01A			6100B-SS01B			6100B-S02			6100B-S03			6100B-SS02A			6100B-SS02B			3x Maximum Background, or Highest Reporting Detection Limit		6102-S01			6102-SS01A			6102-SS01B			6102-S02			6102-SS12A			6102-SS02A			6102-SS02B			6102-S03			6102-SS03A		
CLP ID:	BG5H8			BG5J1			BG5J2			BG5H9			BG5J0			BG5J3			BG5J4					BG5J7			BG5K8			BG5K9			BG5J8			BG5J6			BG5L0			BG5L1			BG5J9			BG5L2		
Date:	6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021					6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021		
Depth Interval (ft bgs):	0 - 2			5 - 6.5			7 - 8.5			0 - 2			0 - 2			5 - 6			6 - 7.5					0 - 1.6			5 - 6.15			6.15 - 7.2			0 - 2			0 - 2			5 - 6.25			6.25 - 7.5			0 - 2			5 - 6.25		
Comments:													Duplicate of 6100B-S02																							Duplicate of 6102-S02													
PCB	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Value**	**Q**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
Aroclor-1016	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	36	U	36	37	U	37	35	U	35	37	U	37	37	U	37	35	U	35	35	U	35	36	U	36	36	U	36
Aroclor-1221	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	36	U	36	37	U	37	35	U	35	37	U	37	37	U	37	35	U	35	35	U	35	36	U	36	36	U	36
Aroclor-1232	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	36	U	36	37	U	37	35	U	35	37	U	37	37	U	37	35	U	35	35	U	35	36	U	36	36	U	36
Aroclor-1242	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	1200 (120)	J+	180	3000		370	24	J	35	930		74	760 (76)	J+	73	140	J	37	35	U	35	350	J	36	290	J	36
Aroclor-1248	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	36	U	36	37	U	37	35	U	35	37	U	37	37	U	37	35	U	35	35	U	35	36	U	36	36	U	36
Aroclor-1254	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	240 (24)	J+	36	310 (31)	J+	37	35	U	35	470		37	320 (32)	J+	37	46	J	35	35	U	35	140		36	99		36
Aroclor-1260	7.2	J	41	39	U	39	53	U	*53*	38	UJ	38	*7.6*	J	38	42	U	42	47	U	47	22.8	J	98 (9.8)	J+	36	110 (11)	J+	37	35	U	35	210		37	280 (28)	J+	37	25	J	35	35	U	35	61		36	44	J	36
Aroclor-1262	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	36	U	36	37	U	37	35	U	35	37	U	37	37	U	37	35	U	35	35	U	35	36	U	36	36	U	36
Aroclor-1268	41	U	41	39	U	39	53	U	*53*	38	UJ	38	38	U	38	42	U	42	47	U	47	53	U	36	U	36	37	U	37	35	U	35	37	U	37	37	U	37	35	U	35	35	U	35	36	U	36	36	U	36
Reference	Ref. 29, pp. 37, 138			Ref. 29, pp. 59, 138, 139			Ref. 29, pp. 65, 139			Ref. 29, pp. 47, 138			Ref. 29, pp. 53, 138			Ref. 29, pp. 71, 139			Ref. 29, pp. 77, 139					Ref. 26, pp. 28, 140			Ref. 26, pp. 50, 140			Ref. 26, pp. 56, 140			Ref. 26, pp. 38, 140			Ref. 26, pp. 22, 139, 140			Ref. 26, pp. 62, 140			Ref. 26, pp. 68, 140			Ref. 26, pp. 44, 140			Ref. 26, pp. 74, 140, 141		

All results are reported in micrograms per kilogram (µg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation limit (ACRQL)
Q = Validation Qualifier
Data Qualifiers:

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the ACRQL for sample and method [Ref. 26, p. 2; 29, p. 2]
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL) [Ref. 26, p. 2; 29, p. 2]. Values qualified J due to issues of quality control as determined by the Data Validator are not considered for selection of 3x background or for evaluation of observed contamination.
J+ = The result is an estimated quantity, but the result may be biased high [Ref. 26, p. 2; 29, p. 2]
J- = The result is an estimated quantity, but the result may be biased low [Ref. 26, p. 2; 29, p. 2]
UJ = The analyte was not detected at a level greater than or equal to the ACRQL. However, the reported ACRQL is approximate and may be innacurate or imprecise [Ref. 26, p. 2; 29, p. 2]
NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration [Ref. 26, p. 2; 29, p. 2]

Values in parentheses have been adjusted per EPA Fact Sheet *Using Quaified Data to Document an Observed Release and Observed Contamination* [Ref. 23, pp. 4-9]
ITALICS indicate the highest background detection for each analyte (or highest RDL if no detections)
YELLOW HIGHLIGHT indicates that the result meets observed release/observed contamination criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2C
SOIL ANALYTICAL DATA - PESTICIDES AND AROCLORS
CROPSEY SCRAP IRON METAL WORKS

Sample Purpose:		Source Samples																																							
Field Sample ID:	3x Maximum	6102-SS03B			6102-S04			6102-SS04A			6102-SS04B			6102-S05			6102-SS05A			6102-SS05B			6102-S06			6102-SS06A			6102-SS06B			6102-S08			6102-S09			6102-S12			6102-S10		
CLP ID:	Background, or	BG5L3			BG5K0			BG5L4			BG5L5			BG5K1			BG5L6			BG5L7			BG5K2			BG5L8			BG5L9			BG5K4			BG5K5			BG5J5			BG5K6		
Date:	Highest Reporting	6/29/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021		
Depth Interval (ft bgs):	Detection Limit	6.25 - 7.5			0 - 2			5 - 6			6 - 8			0 - 2			5 - 6			8 - 9.4			0 - 1.5			1.5 - 2.6			6 - 8			0 - 0.5			0 - 1.5			0 - 1.5			0-0.5		
Comments:																																						Duplicate of 6102-S09					
Pesticide	**Value**	**Q**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
alpha-BHC	2.7	U	1.8	U	1.8	1.9	U	1.9	1.9	UJ	1.9	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	1.7	J	1.9	1.8	UJ	1.8	1.8	UJ	1.8	2.2	U	2.2	1.9	U	1.9	1.8	U	1.8	19	U	19
beta-BHC	2.7	U	1.8	U	1.8	0.79 (0.07)	J+	1.9	1.9	UJ	1.9	1.8	UJ	1.8	36	J	3.8	0.35	NJ	1.8	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	2.2	U	2.2	0.39	NJ	1.9	1.8	UJ	1.8	19	U	19
delta-BHC	1.65	J	1.8	U	1.8	1.9	UJ	1.9	1.9	UJ	1.9	1.8	UJ	1.8	8.2	NJ	1.9	1.8	UJ	1.8	1.8	UJ	1.8	1.9	UJ	1.9	1.8	UJ	1.8	1.8	UJ	1.8	2.2	UJ	2.2	1.9	U	1.9	1.8	U	1.8	19	UJ	19
gamma-BHC (Lindane)	8.7	J	1.4	J	1.8	0.69	NJ	1.9	0.56	NJ	1.9	1.8	UJ	1.8	2.4	NJ	1.9	0.58	NJ	1.8	1.8	UJ	1.8	0.78	NJ	1.9	1.8	UJ	1.8	1.8	UJ	1.8	4.5 (0.38)	J+	2.2	1.8	J	1.9	1.8	U	1.8	3.7	NJ	19
Heptachlor	2.7	U	1.8	U	1.8	1.9	U	1.9	1.9	UJ	1.9	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	0.87 (0.11)	J+	2.2	1.9	U	1.9	1.8	U	1.8	47	J	19
Aldrin	1.77	J	1.8	U	1.8	1.3 (0.09)	J+	1.9	1.0	J	1.9	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	2.5	J	1.9	1.8	UJ	1.8	1.8	UJ	1.8	0.26	NJ	2.2	1.9	U	1.9	1.8	U	1.8	9.7	NJ	19
Heptachlor epoxide	9.0	J	1.8	U	1.8	0.50 (0.05)	J+	1.9	1.9	UJ	1.9	1.8	UJ	1.8	1.0	NJ	1.9	1.8	UJ	1.8	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	0.77	NJ	2.2	1.9	U	1.9	1.8	U	1.8	42	J	19
Endosulfan I	2.7	U	1.8	U	1.8	0.50 (0.05)	J+	1.9	1.9	UJ	1.9	1.8	UJ	1.8	0.83	J	1.9	1.8	UJ	1.8	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	2.2	U	2.2	1.9	U	1.9	1.8	U	1.8	12	NJ	19
Dieldrin	429	J	3.5	U	3.5	5.9	NJ	3.6	5.2	NJ	3.7	3.5	UJ	3.5	17	J	3.7	4.2	J	3.5	3.4	UJ	3.4	4.9	J	3.6	3.6	UJ	3.6	3.4	UJ	3.4	47 (3.9)	J+	4.2	29	J	3.7	27	J	3.5	1400		370
4,4'-DDE	5.7	J	3.5	U	3.5	1.6 (0.16)	J+	3.6	0.28	NJ	3.7	3.5	UJ	3.5	5.5	J	3.7	1.2	J	3.5	3.4	UJ	3.4	1.1	NJ	3.6	3.6	UJ	3.6	0.31	J	3.4	15 (1.5)	J+	4.2	2.9	J	3.7	3.0	J	3.5	140	NJ	37
Endrin	7.8	J	0.66	J	3.5	3.6	UJ	3.6	0.30	NJ	3.7	3.5	UJ	3.5	3.7	UJ	3.7	3.5	UJ	3.5	3.4	UJ	3.4	3.6	U	3.6	3.6	UJ	3.6	3.4	UJ	3.4	4.6	NJ	4.2	3.7	UJ	3.7	3.5	UJ	3.5	60		37
Endosulfan II	11.4	J	3.5	U	3.5	3.6	UJ	3.6	3.7	UJ	3.7	3.5	UJ	3.5	11	J	3.7	3.5	UJ	3.5	3.4	UJ	3.4	3.6	U	3.6	3.6	UJ	3.6	3.4	UJ	3.4	25 (2.5)	J+	4.2	3.7	UJ	3.7	3.5	UJ	3.5	38		37
4,4'-DDD	3.3	J	3.5	U	3.5	3.7 (0.37)	J+	3.6	0.63	NJ	3.7	3.5	UJ	3.5	2.9	J	3.7	1.1	J	3.5	3.4	UJ	3.4	0.60	J	3.6	3.6	UJ	3.6	3.4	UJ	3.4	3.9 (0.39)	J+	4.2	2.5	J	3.7	1.9	J	3.5	110		37
Endosulfan Sulfate	7.2	J	3.5	U	3.5	0.54	NJ	3.6	8.5	J	3.7	3.5	UJ	3.5	0.96	NJ	3.7	0.39	NJ	3.5	3.4	UJ	3.4	0.66	J	3.6	3.6	UJ	3.6	3.4	UJ	3.4	3.7	NJ	4.2	6.5		3.7	7.3	J	3.5	6.3	NJ	37
4,4'-DDT	11.4	J	3.5	U	3.5	22 (1.7)	J+	3.6	18	J	3.7	3.5	UJ	3.5	23		3.7	5.2	J	3.5	3.4	UJ	3.4	5.9		3.6	0.54	J	3.6	0.84	J	3.4	170 (13.2)	J+	21	110		7.4	110		7.1	3500		370
Methoxychlor	27	U	13	J	18	5.2	NJ	19	4.6	NJ	19	18	UJ	18	1.2	NJ	19	42	J	18	18	UJ	18	12	J	19	3.7	J	18	0.96	J	18	5.7	NJ	22	4.9	NJ	19	5.9	NJ	18	120	J	190
Endrin ketone	5.3	U	2.9	J	3.5	2.8	NJ	3.6	1.0	J	3.7	3.5	UJ	3.5	1.4	J	3.7	1.4	NJ	3.5	3.4	UJ	3.4	3.6	U	3.6	3.6	UJ	3.6	3.4	UJ	3.4	3.3	NJ	4.2	2.1	J	3.7	1.9	J	3.5	47		37
Endrin Aldehyde	6.6	J	3.5	U	3.5	1.1	NJ	3.6	0.84	NJ	3.7	3.5	UJ	3.5	3.7	U	3.7	3.5	UJ	3.5	3.4	UJ	3.4	0.40	NJ	3.6	3.6	UJ	3.6	3.4	UJ	3.4	4.0	NJ	4.2	2.2	NJ	3.7	1.9	NJ	3.5	130	J	37
cis-Chlordane	2.7	U	1.8	U	1.8	2.6	NJ	1.9	1.9	UJ	1.9	1.8	UJ	1.8	2.4	NJ	1.9	0.65	NJ	1.8	1.8	UJ	1.8	1.9	U	1.9	1.8	UJ	1.8	1.8	UJ	1.8	7.7 (0.77)	J+	2.2	3.2	J	1.9	3.2	J	1.8	97	NJ	19
trans-Chlordane	2.7	U	0.49	J	1.8	3.5	NJ	1.9	3.4	J	1.9	1.8	UJ	1.8	12	J	1.9	1.5	NJ	1.8	1.8	UJ	1.8	3.6	NJ	1.9	1.8	UJ	1.8	1.8	UJ	1.8	24 (0.24)	J+	2.2	11		1.9	3.9	J	1.8	480	J	190
Toxaphene	270	U	180	U	180	190	U	190	190	UJ	190	180	UJ	180	190	U	190	180	UJ	180	180	UJ	180	190	U	190	180	UJ	180	180	UJ	180	220	U	220	190	U	190	180	U	180	1900	U	1900
Reference			Ref. 26, pp. 81, 137, 138			Ref. 25, pp. 31, 162			Ref. 25, pp. 71, 164			Ref. 25, pp. 77, 164, 165			Ref. 25, pp. 37, 163			Ref. 25, pp. 83, 165			Ref. 25, pp. 91, 165			Ref. 25, pp. 47, 163			Ref. 25, pp. 97, 165			Ref. 25, pp. 103, 165, 166			Ref. 25, pp. 53, 163			Ref. 25, pp. 59, 163, 164			Ref. 25, pp. 25, 162			Ref. 25, pp. 65, 164		

Sample Purpose:		Source Samples																																							
Field Sample ID:	3x Maximum	6102-SS03B			6102-S04			6102-SS04A			6102-SS04B			6102-S05			6102-SS05A			6102-SS05B			6102-S06			6102-SS06A			6102-SS06B			6102-S08			6102-S09			6102-S12			6102-S10		
CLP ID:	Background, or	BG5L3			BG5K0			BG5L4			BG5L5			BG5K1			BG5L6			BG5L7			BG5K2			BG5L8			BG5L9			BG5K4			BG5K5			BG5J5			BG5K6		
Date:	Highest Reporting	6/29/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021			6/4/2021		
Depth Interval (ft bgs):	Detection Limit	6.25 - 7.5			0 - 2			5 - 6			6 - 8			0 - 2			5 - 6			8 - 9.4			0 - 1.5			1.5 - 2.6			6 - 8			0 - 0.5			0 - 1.5			0 - 1.5			0-0.5		
Comments:																																						Duplicate of 6102-S09					
PCB	**Value**	**Q**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
Aroclor-1016	53	U	35	U	35	36	U	36	37	UJ	37	35	UJ	35	37	U	37	35	UJ	35	34	UJ	34	36	U	36	36	UJ	36	34	UJ	34	42	U	42	37	U	37	35	U	35	180	U	180
Aroclor-1221	53	U	35	U	35	36	U	36	37	UJ	37	35	UJ	35	37	U	37	35	UJ	35	34	UJ	34	36	U	36	36	UJ	36	34	UJ	34	42	U	42	37	U	37	35	U	35	180	U	180
Aroclor-1232	53	U	35	U	35	36	U	36	37	UJ	37	35	UJ	35	37	U	37	35	UJ	35	34	UJ	34	36	U	36	36	UJ	36	34	UJ	34	42	U	42	37	U	37	35	U	35	180	U	180
Aroclor-1242	53	U	35	U	35	160	J	36	37	UJ	37	35	UJ	35	1900		37	410	J	35	34	UJ	34	420	J	36	36	UJ	36	34	UJ	34	42	U	42	37	U	37	35	U	35	180	U	180
Aroclor-1248	53	U	35	U	35	36	U	36	170	J	37	35	UJ	35	37	U	37	35	UJ	35	34	UJ	34	36	U	36	36	UJ	36	34	UJ	34	330 (33)	J+	42	100	NJ	37	82	NJ	35	7400	J	180
Aroclor-1254	53	U	35	U	35	36	U	36	37	UJ	37	35	UJ	35	300	J	37	63	J	35	34	UJ	34	96	J	36	36	UJ	36	34	UJ	34	650 (65)	J+	42	340	J	37	300		35	17000		180
Aroclor-1260	22.8	J	35	U	35	240		36	220	J	37	35	UJ	35	160	J	37	41	J	35	34	UJ	34	36	U	36	36	UJ	36	34	UJ	34	640 (64)	J+	42	360	J	37	330	J	35	6400	J	180
Aroclor-1262	53	U	35	U	35	36	U	36	37	UJ	37	35	UJ	35	37	U	37	35	UJ	35	34	UJ	34	36	U	36	36	UJ	36	34	UJ	34	42	U	42	37	U	37	35	U	35	180	U	180
Aroclor-1268	53	U	35	U	35	36	U	36	37	UJ	37	35	UJ	35	37	U	37	35	UJ	35	34	UJ	34	36	U	36	36	UJ	36	34	UJ	34	42	U	42	37	U	37	35	U	35	180	U	180
Reference			Ref. 26, pp. 80, 141			Ref. 25, pp. 30, 168			Ref. 25, pp. 70, 168			Ref. 25, pp. 76, 168, 169			Ref. 25, pp. 36, 168			Ref. 25, pp. 82, 169			Ref 25, pp. 90, 169			Ref. 25, pp. 46, 168			Ref. 25, pp. 96, 169			Ref. 25, pp. 102, 169			Ref. 25, pp. 52, 168			Ref. 25, pp. 58, 168			Ref. 25, pp. 24, 167, 168			Ref. 25, pp. 64, 168		

All results are reported in micrograms per kilogram (µg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation limit (ACRQL)
Q = Validation Qualifier
Data Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the ACRQL for sample and method [Ref. 25, p. 2; 26, p. 2]
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL) [Ref. 25, p. 2; 26, p. 2]. Values qualified J due to issues of quality control as determined by the Data Validator are not considered for selection of 3x background or for evaluation of observed contamination.
J+ = The result is an estimated quantity, but the result may be biased high [Ref. 25, p. 2; 26, p. 2]
UJ = The analyte was not detected at a level greater than or equal to the ACRQL. However, the reported ACRQL is approximate and may be innacurate or imprecise [Ref. 25, p. 2; 26, p. 2]
NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration [Ref. 25, p. 2; 26, p. 2]
Values in parentheses have been adjusted per EPA Fact Sheet *Using Quaified Data to Document an Observed Release and Observed Contamination* [Ref. 23, pp. 4-9]
YELLOW HIGHLIGHT indicates that the result meets observed release/observed contamination criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2D
SOIL ANALYTICAL DATA - INORGANICS
CROPSEY SCRAP IRON AND METAL CORP.

Sample Purpose:	Background Samples																		3x Maximum Background, or Highest Reporting Detection Limit		EPA Regional Screening Level (RSL) for Industiral Soil	Source Samples															
Field Sample ID:	6100B-S01			6100B-SS01A			6100B-SS01B			6100B-S02			6100B-S03			6100B-SS02A			6100B-SS02B							6102-S01			6102-SS01A			6102-SS01B			6102-S02			6102-SS12A		
CLP ID:	BG5H8			BG5J1			BG5J2			BG5H9			BG5J0			BG5J3			BG5J4							BG5J7			BG5K8			BG5K9			BG5J8			BG5J6		
Date:	6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021			6/7/2021							6/29/2021			6/29/2021			6/29/2021			6/29/2021			6/29/2021		
Depth Interval (ft bgs):	0 - 2			5 - 6.5			7 - 8.5			0 - 2			0 - 2			5 - 6			6 - 7.5							0 - 1.6			5 - 6.15			6.15 - 7.2			0 - 2			0 - 2		
Comments:													Duplicate of 6100B-S02																									Duplicate of 6102-S02		
	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Value	Q		R	Q	RDL	R	Q	RDL	R	Q	RDL	R	Q	RDL	R	Q	RDL
Aluminum	*13000*		20	10000		21	6300		19	12000		20	*13000*		21	9300		22	6000		20	39000		110000	4100		18	4100		20	2200		17	5500		16	5200		18
Antimony	1.4 (2.7)	J-	5.9	0.76	J	6.3	5.8	U	5.8	3.0	J	6.1	*3.3*	J	6.4	2.5	J	6.7	0.86	J	6.0	9.9	J	47	0.79	J	5.4	6.0	U	6.0	5.2	U	5.2	1.8	J	4.8	2.0	J	5.5
Arsenic	**10**		0.99	**6.5**		1.1	**9.9**		0.97	**11**		1.0	**10**		1.1	**9.4**		1.1	***23***		1.00	69		3	**5.4**	**J**	0.90	2.5		1.00	1.7		0.86	**6.1**		0.79	**4.9**		0.92
Barium	650	J	20	*790*		21	110		19	210		20	180		21	230		22	150		20	2370		22000	120		18	110		20	24		17	440	J	16	220	J	18
Beryllium	0.37	J	0.49	0.26	J	0.53	*0.59*		0.48	0.39	J	0.51	0.35	J	0.54	0.51	J	0.56	0.45	J	0.50	1.77		230	0.15	J	0.45	0.50	U	0.50	0.11	J	0.43	0.21	J	0.40	0.20	J	0.46
Cadmium	*0.57*		0.49	0.36	J	0.53	0.12	J	0.48	0.51		0.51	0.50	J	0.54	0.37	J	0.56	0.16	J	0.50	1.71		98	1.6		0.45	1.2		0.50	0.17	J	0.43	2.6		0.40	3.4		0.46
Calcium	19000	J	490	*58000*		1600	3500		480	2800		510	2600		540	4800		560	4800		500	174000		NL	3700		450	2800		500	730		430	9000	J	400	3600	J	460
Chromium	22	J	0.99	22		1.1	11		0.97	21		1.0	23		1.1	18		1.1	*54*		1.00	162		180000**	22		0.90	17		1.00	6.2		0.86	26		0.79	28		0.92
Cobalt	8.4		4.9	9.1		5.3	8.1		4.8	8.4		5.1	8.0		5.4	*10*		5.6	9.5		5.0	30		35	4.7		4.5	4.1	J	5.0	2.2	J	4.3	5.0		4.0	7.8		4.6
Copper	65		2.5	44		2.6	110		2.4	69		2.5	67		2.7	*1800*		11	120		2.5	5400		4700	93	J	2.2	110		2.5	31		2.2	100		2.0	110		2.3
Iron	*20000*	J	9.9	13000		11	9500		9.7	19000		10	19000		11	15000		11	12000		10.0	60000	J	82000	13000		9.0	9300		10.0	5200		8.6	14000		7.9	21000		9.2
Lead	***1000***	J	3.0	***1000***		3.2	180		0.97	370		1.0	380		1.1	390		1.1	400		1.00	3000		800	320	J	1.8	180		1.00	61		0.86	540		2.4	330		0.92
Magnesium	3300		490	*3600*		530	580		480	2500		510	2600		540	1500		560	550		500	10800		NL	1600		450	2600		500	930		430	1700		400	1800		460
Manganese	*450*		1.5	300		1.6	180		1.5	350		1.5	400		1.6	290		1.7	180		1.5	1350		2600	190	J	1.3	160		1.5	89		1.3	170	J	1.2	290	J	1.4
Nickel	23		4.0	*45*		4.2	16		3.9	27		4.1	26		4.3	24		4.4	19		4.0	135		2200	27		3.6	21		4.0	9.1		3.4	25	J	3.2	44	J	3.7
Potassium	1000		490	*1200*		530	740		480	850		510	950		540	870		560	760		500	3600		NL	650		450	1200		500	570		430	660		400	750		460
Selenium	0.83	J	3.5	3.7	UJ	3.7	1.7	J	3.4	3.5	UJ	3.5	3.7	UJ	3.7	0.87	J	3.9	*2.0*	J	3.5	6.0	J	580	0.83	J	3.1	0.70	J	3.5	3.0	UJ	3.0	2.2	J	2.8	2.6	J	3.2
Silver	0.99	U	0.99	1.1	U	*1.1*	0.97	U	0.97	1.0	U	1.0	1.1	U	*1.1*	1.1	U	*1.1*	1.0	U	1.00	1.1	U	580	0.90	U	0.90	1.0	U	1.00	0.86	U	0.86	0.42	J	0.79	0.44	J	0.92
Sodium	130	J	490	400	J	530	*1100*		480	510	U	510	540	U	540	250	J	560	280	J	500	3300		NL	160	J	450	210	J	500	430	U	430	190	J	400	170	J	460
Thallium	***2.4***	J	2.5	**1.5**	J	2.6	0.74	J	2.4	**1.4**	J	2.5	**1.8**	J	2.7	**1.2**	J	2.8	**1.3**	J	2.5	7.2	J	1.2	1.1	J	2.2	1.1	J	2.5	0.69	J	2.2	0.89	J	2.0	**1.7**	**J**	2.3
Vanadium	*38*		4.9	25		5.3	23		4.8	32		5.1	35		5.4	30		5.6	27		5.0	114		580	17		4.5	15		5.0	6.8		4.3	16		4.0	18		4.6
Zinc	*440*		5.9	410		6.3	180		5.8	330		6.1	280		6.4	390		6.7	220		6.0	1320		35000	3100	J	27	480		6.0	48		5.2	700		4.8	610		5.5
Mercury	0.38	J	0.11	0.34	J	0.11	0.17	J	0.12	0.26	J	0.12	0.23	J	0.098	*0.45*	J	0.12	0.43	J	0.12	1.35	J	4.6	0.59 (0.32)	J+	0.22	0.83		0.11	0.067	J	0.10	0.84		0.10	1.2		0.10
Reference	Ref. 30, pp. 11-13, 45, 48			Ref. 30, pp. 28-30, 46, 48			Ref. 30, pp. 31-33, 46, 48			Ref. 30, pp. 22-24, 45, 48			Ref. 30, pp. 25-27, 46, 48			Ref. 30, pp. 34-36, 47, 48			Ref. 30, pp. 37-39, 47, 48							Ref. 27, pp. 11, 12, 45, 49			Ref. 27, pp. 23, 24, 46, 49			Ref. 27, pp. 25, 26, 46, 49			Ref. 27, pp. 19, 20, 45, 49			Ref. 27, pp. 9, 10, 44, 49		

All concentrations presented in milligrams per kilogram (mg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation Limit (ACRQL)
NL = Not Listed
Q = Validation Qualifier
Data Qualifiers:

U = The analyte was analyzed for, but was not detected above the level of the reported quantitation limit. [Ref. 27, p. ; 30, p. 2]
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. [Ref. 27, p. 2; 30, p. 2]
J- = The result is an estimated quantity, but the result may be biased low [Ref. 27, p. 2; 30, p. 2]
J+ = The result is an estimated quantity, but the result may be biased high [Ref. 27, p. 2; 30, p. 2]
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise [Ref. 27, p. 2; 30, p. 2]

Values in parentheses have been adjusted per EPA Fact Sheet *Using Quaified Data to Document an Observed Release and Observed Contamination* [Ref. 23, pp. 4-9]
*Screening levels are based on the generic Regional Screening Level (RSL) for industiral soil from the May 2021 summary table for target hazard quotients (THQ) of 0.1, unless otherwise noted [Ref. 24, pp. 8-18]
**The generic RSL table does not include an industrial soil RSL for total chromium; the maximum contaminant level (MCL)-based soil screening level (SSL) for protection of groundwater is used [Ref. 24, p. 9]
BOLD indicates detections of an analyte that exceed the Risk Assessment RSL for industrial soil.
ITALICS indicate the highest background detection for each analyte (or highest RDL if no detections)
YELLOW HIGHLIGHT indicates that the result meets observed release criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2D
SOIL ANALYTICAL DATA - INORGANICS
CROPSEY SCRAP IRON AND METAL CORP.

Sample Purpose: / Field Sample ID: / CLP ID: / Date: / Depth Interval (ft bgs): / Comments:	3x Maximum Background, or Highest Reporting Detection Limit		EPA Regional Screening Level (RSL) for Industiral Soil	Source Samples																															
				6102-SS02A BG5L0 6/29/2021 5 - 6.25			6102-SS02B BG5L1 6/29/2021 6.25 - 7.5			6102-S03 BG5J9 6/29/2021 0 - 2			6102-SS03A BG5L2 6/29/2021 5 - 6.25			6102-SS03B BG5L3 6/29/2021 6.25 - 7.5			6102-S04 BG5K0 6/4/2021 0 - 2			6102-SS04A BG5L4 6/4/2021 5 - 6			6102-SS04B BG5L5 6/4/2021 6 - 8			6102-S05 BG5K1 6/4/2021 0 - 2			6102-SS05A BG5L6 6/4/2021 5 - 6			6102-SS05B BG5L7 6/4/2021 8 - 9.4			6102-S06 BG5K2 6/4/2021 0 - 1.5		
	Value	**Q**		**R**	**Q**	**RDL**	**R**	**Q**	**RDL**	**R**	**Q**	**RDL**	**R**	**Q**	**RDL**	**R**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**	**Result**	**Q**	**RDL**
Aluminum	39000		110000	2400		18	2200		15	5200		17	2800		15	2100		18	6000		16	11000		16	1200		19	8700		16	4200		18	1300		18	13000		16
Antimony	9.9	J	47	5.5	U	5.5	4.4	U	4.4	1.6	J	5.0	0.90	J	4.6	5.5	U	5.5	1.5	J	4.7	4.9	U	4.9	5.6	U	5.6	3.5	J	4.7	4.0	J	5.4	5.4	U	5.4	1.5	J	4.8
Arsenic	69		3	1.8		0.91	1.4		0.73	**4.7**		0.84	**3.6**		0.77	1.2		0.91	**6.5**		0.78	**7.1**		0.81	0.88	J	0.93	**9.5**		0.78	**5.0**		0.90	1.1		0.91	**13**		0.79
Barium	2370		22000	43		18	8.2	J	15	160		17	870		31	15	J	18	170		16	96		16	9.7	J	19	610	J	16	300		18	3.9	J	18	140		16
Beryllium	1.77		230	0.45	U	0.45	0.14	J	0.36	0.24	J	0.42	0.11	J	0.38	0.46	U	0.46	0.36	J	0.39	0.53		0.41	0.46	U	0.46	0.29	J	0.39	0.29	J	0.45	0.45	U	0.45	0.72		0.40
Cadmium	1.71		98	0.57		0.45	0.17	J	0.36	0.96		0.42	0.38		0.38	0.46	U	0.46	2.7		0.39	0.77		0.41	0.46	U	0.46	3.2	J	0.39	0.85		0.45	0.45	U	0.45	3.6		0.40
Calcium	174000		NL	2300		450	760		360	2600		420	2600		380	600		460	2300		390	16000		410	390	J	460	36000	J	1600	11000		450	410	J	450	11000		400
Chromium	162		180000**	9.5		0.91	5.7		0.73	21		0.84	14		0.77	6.6		0.91	18		0.78	20		0.81	4.0		0.93	83	J	0.78	25		0.90	4.0		0.91	43		0.79
Cobalt	30		35	1.8	J	4.5	1.7	J	3.6	6.0		4.2	2.8	J	3.8	1.5	J	4.6	5.1		3.9	6.9		4.1	4.6	U	4.6	9.5		3.9	4.7		4.5	4.5	U	4.5	9.8		4.0
Copper	5400		4700	19		2.3	5.3		1.8	63		2.1	33		1.9	3.6		2.3	360		1.9	79		2.0	2.2	J	2.3	2400	R	19	63		2.2	1.9	J	2.3	79		2.0
Iron	60000	J	82000	5200		9.1	5200		7.3	17000		8.4	9300		7.7	4400		9.1	19000		7.8	16000		8.1	2000		9.3	33000		31	14000		9.0	2100		9.1	26000		16
Lead	3000		800	67		0.91	11		0.73	310		0.84	370		0.77	11		0.91	510		1.6	140		0.81	13		0.93	**1300**	**J**	39	440		0.90	1.8		0.91	260		0.79
Magnesium	10800		NL	910		450	910		360	1700		420	1000		380	1100		460	1800		390	7500		410	480		460	5700	J	390	3400		450	540		450	4900		400
Manganese	1350		2600	53		1.4	50		1.1	190		1.3	86		1.1	88		1.4	120		1.2	240		1.2	29		1.4	280	J	1.2	140		1.3	21		1.4	580		1.2
Nickel	135		2200	7.8		3.6	10		2.9	27		3.4	11		3.1	7.8		3.7	45		3.1	33		3.2	2.3	J	3.7	57		3.1	30		3.6	2.3	J	3.6	34		3.2
Potassium	3600		NL	530		450	420		360	720		420	590		380	620		460	720		390	990		410	320	J	460	1500		390	1300		450	340	J	450	1900		400
Selenium	6.0	J	580	3.2	UJ	3.2	0.72	J	2.5	1.7	J	2.9	0.72	J	2.7	3.2	UJ	3.2	1.0	J	2.7	1.1	J	2.8	3.2	U	3.2	11	U	11	3.1	U	3.1	3.2	U	3.2	5.6	U	5.6
Silver	1.1	U	580	0.91	U	0.91	0.73	U	0.73	0.27	J	0.84	0.77	U	0.77	0.91	U	0.91	0.78	UJ	0.78	0.81	UJ	0.81	0.93	UJ	0.93	2.7	J	0.78	0.90	UJ	0.90	0.91	UJ	0.91	0.79	UJ	0.79
Sodium	3300		NL	450	U	450	360	U	360	170	J	420	110	J	380	460	U	460	160	J	390	230	J	410	460	U	460	1100		390	470		450	84	J	450	360	J	400
Thallium	7.2	J	1.2	2.3	U	2.3	0.68	J	1.8	0.91	J	2.1	0.74	J	1.9	0.79	J	2.3	1.9	U	1.9	2.0	U	2.0	2.3	U	2.3	1.9	U	1.9	2.2	U	2.2	2.3	U	2.3	2.0	U	2.0
Vanadium	114		580	8.2		4.5	7.7		3.6	16		4.2	13		3.8	7.4		4.6	41		3.9	28		4.1	4.2	J	4.6	25		3.9	14		4.5	4.2	J	4.5	35		4.0
Zinc	1320		35000	130		5.5	27		4.4	500		5.0	290		4.6	48		5.5	430		4.7	250		4.9	20		5.6	3700		47	1000		11	6.2		5.4	450		4.8
Mercury	1.35	J	4.6	0.054	J	0.099	0.015	J	0.097	0.32		0.11	0.22		0.099	0.010	J	0.089	0.57		0.10	0.19		0.10	0.090	UJ	0.090	1.6	J-	0.21	0.53		0.091	0.096	UJ	0.096	0.36		0.10
Reference				Ref. 27, pp. 27, 28, 46, 49			Ref. 27, pp. 29, 30, 47, 49			Ref. 27, pp. 21, 22, 45, 49			Ref. 27, pp. 31, 32, 47, 49			Ref. 27, pp. 33, 34, 47, 49			Ref. 28, pp. 12, 13, 46, 51			Ref. 28, pp. 30, 31, 48, 51			Ref. 28, pp. 32, 33, 49, 51			Ref. 28, pp. 14, 15, 47, 51			Ref. 28, pp. 34, 35, 49, 51			Ref. 28, pp. 36, 37, 49, 51			Ref. 28, pp. 22, 23, 47, 51		

All concentrations presented in milligrams per kilogram (mg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation Limit (ACRQL)
NL = Not Listed
Q = Validation Qualifier
Data Qualifiers:

U = The analyte was analyzed for, but was not detected above the level of the reported quantitation limit. [Ref. 27, p. 2; 28, p. 2]
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. [Ref. 27, p. 2; 28, p. 2]
J- = The result is an estimated quantity, but the result may be biased low [Ref. 27, p. 2]
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise [Ref. 27, p. 2; 28, p. 2]
R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample [Ref. 27, p. 2; 28, p. 2]

*Screening levels are based on the generic Regional Screening Level (RSL) for industiral soil from the May 2021 summary table for target hazard quotients (THQ) of 0.1, unless otherwise noted [Ref. 24, pp. 8-18]
**The generic RSL table does not include an industrial soil RSL for total chromium; the maximum contaminant level (MCL)-based soil screening level (SSL) for protection of groundwater is used [Ref. 24, p. 9]
BOLD indicates detections of an analyte that exceed the Risk Assessment RSL for industrial soil.
YELLOW HIGHLIGHT indicates that the result meets observed release criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

TABLE 2D
SOIL ANALYTICAL DATA - INORGANICS
CROPSEY SCRAP IRON AND METAL CORP.

Sample Purpose: / Field Sample ID: / CLP ID: / Date: / Depth Interval (ft bgs): / Comments:	3x Maximum Background, or Highest Reporting Detection Limit		EPA Regional Screening Level (RSL) for Industiral Soil	Source Samples																
				6102-SS06A BG5L8 6/4/2021 1.5 - 2.6			6102-SS06B BG5L9 6/4/2021 6 - 8			6102-S08 BG5K4 6/4/2021 0 - 0.5			6102-S09 BG5K5 6/4/2021 0 - 1.5			6102-S12 BG5J5 6/4/2021 0 - 1.5 Duplicate of 6102-S09			6102-S10 BG5K6 6/4/2021 0-0.5		
	Value	Q		Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL	Result	Q	RDL
Aluminum	39000		110000	11000		19	1900		19	10000		22	8100		18	9800		17	29000		31
Antimony	9.9	J	47	5.7	U	5.7	5.8	U	5.8	6.9		6.7	2.8	J	5.3	2.2	J	5.2	31		4.7
Arsenic	69		3	**6.6**		0.95	1.7		0.97	**14**		1.1	**12**		0.88	**8.6**		0.87	**65**		0.78
Barium	2370		22000	82		19	28		19	520		22	560	J	18	270	J	17	3500		160
Beryllium	1.77		230	0.93		0.48	0.090	J	0.49	0.53	J	0.56	0.43	J	0.44	0.45		0.43	0.49		0.39
Cadmium	1.71		98	0.47	U	0.47	0.20	J	0.49	12		0.56	5.2		0.44	3.8		0.43	49		0.39
Calcium	174000		NL	2900		480	1900		490	9600		560	4300		440	3000		430	13000		390
Chromium	162		180000**	25		0.95	5.3		0.97	100		1.1	32		0.88	29		0.87	240		0.78
Cobalt	30		35	8.2		4.8	1.5	J	4.9	24		5.6	8.5		4.4	8.4		4.3	28		3.9
Copper	5400		4700	20		2.4	11		2.4	560		5.6	190		2.2	160		2.2	2500		20
Iron	60000	J	82000	18000		9.5	5600		9.7	55000		22	31000		18	24000		8.7	**150000**		78
Lead	3000		800	28		0.95	170		0.97	**1500**		4.5	790		1.8	590		1.7	**9200**		39
Magnesium	10800		NL	5700		480	740		490	3500		560	3400		440	3000		430	6300		390
Manganese	1350		2600	490		1.4	61		1.5	570		1.7	340		1.3	300		1.3	900		2.3
Nickel	135		2200	18		3.8	3.9		3.9	110		4.5	47		3.5	39		3.5	230		3.1
Potassium	3600		NL	3300		480	390	J	490	1100		560	980		440	1000		430	880		390
Selenium	6.0	J	580	3.3	U	3.3	3.4	U	3.4	2.9	J	7.8	6.1	U	6.1	1.2	J	3.0	27	U	27
Silver	1.1	U	580	0.95	UJ	0.95	0.97	UJ	0.97	2.1		1.1	0.39	J	0.88	0.36	J	0.87	11		0.78
Sodium	3300		NL	260	J	480	490	U	490	480	J	560	150	J	440	180	J	430	1000		390
Thallium	7.2	J	1.2	2.4	U	2.4	2.4	U	2.4	2.8	U	2.8	2.2	U	2.2	2.2	U	2.2	2.0	U	2.0
Vanadium	114		580	40		4.8	6.5		4.9	39		5.6	43		4.4	44		4.3	180		7.8
Zinc	1320		35000	72		5.7	71		5.8	3200		27	960		11	880		10	10000		94
Mercury	1.35	J	4.6	0.11	UJ	0.11	0.098	UJ	0.098	3.2		0.24	1.4		0.094	1.3		0.10	**120**		8.1
Reference				Ref. 28, pp. 38, 39, 50, 51			Ref. 28, pp. 40, 41, 50, 51			Ref. 28, pp. 24, 25, 47, 51			Ref. 28, pp. 26, 27 , 48, 51			Ref. 28, pp. 10, 11, 46, 51			Ref. 28, pp. 28, 29, 46, 51		

All concentrations presented in milligrams per kilogram (mg/kg)
ft bgs = feet below ground surface
RDL = Reporting Detection Limit, equivalent to the adjusted Contract Required Quantitation Limit (ACRQL)
NL = Not Listed
Q = Validation Qualifier
Data Qualifiers:

U = The analyte was analyzed for, but was not detected above the level of the reported quantitation limit. [Ref. 28, p. 2]
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample. [Ref. 28, p. 2]
J- = The result is an estimated quantity, but the result may be biased low [Ref. 28, p. 2]
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise [Ref. 28, p. 2]

*Screening levels are based on the generic Regional Screening Level (RSL) for industiral soil from the May 2021 summary table for target hazard quotients (THQ) of 0.1, unless otherwise noted [Ref. 24, pp. 8-18]
**The generic RSL table does not include an industrial soil RSL for total chromium; the maximum contaminant level (MCL)-based soil screening level (SSL) for protection of groundwater is used [Ref. 24, p. 9]
BOLD indicates detections of an analyte that exceed the Risk Assessment RSL for industrial soil.
YELLOW HIGHLIGHT indicates that the result meets observed release criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections)

Sources:

1. Weston Solutions, Inc. (WESTON®) Site Assessment Team V (SAT V). Site Logbook No. DCN # SAT-V.6102.0003, Cropsey Scrap Iron and Metal Corp Site Inspection. April 9, 2021 – June 29, 2021. [33 pages]
2. New York City Department of Finance, Office of City Register. Search By Parcel Identifier: Block 6947, Lots 260. Accessed and downloaded from http://gis.nyc.gov/taxmap/map.htm on June 10, 2021.
3. Nearmap Limited. High Resolution Aerial Imagery of Brooklyn, NY. Accessed and downloaded from https://www.nearmap.com/us/en on February 26, 2021.
4. Walden Environmental Engineering PLLC. Stormwater Pollution Prevention Plan (prepared for Cropsey Scrap Iron and Metal Corp.). April 20, 2018. [167 pages]
5. Kumar, Narendra, USEPA/R2/HWSB/HWSS. Executive Narrative, Case No.: 49464, SDG Nos.: BG5J5; with attached analytical data. July 20, 2021. [170 pages]
6. Kumar, Narendra, USEPA/R2/HWSB/HWSS. Executive Narrative, Case No.: 49464, SDG Nos.: BG5J6; with attached analytical data. August 8, 2021. [141 pages]
7. Kumar, Narendra, USEPA/R2/HWSB/HWSS. Executive Narrative, Case No.: 49464, SDG Nos.: BG5J7-M; with attached analytical data. August 9, 2021. [49 pages]
8. Arnone, Russell, USEPA/R2/HWSB/HWSS. Executive Narrative, Case No.: 49464, SDG Nos.: BG5K0-M; with attached analytical data. July 13, 2021. [51 pages]
9. EPA. Using Qualified Data to Document an Observed Release and Observed Contamination (EPA 540-F-94-028). November 1996. [18 pages]

Notes

1. Dimensions of all site features are approximate.
2. Resuts for organic constituents presented in micrograms per kilogram (µg/kg).
3. Results for inorganic constituents presented in milligrams per kilogram (mg/kg).
4. J - estimated concentration.
5. J+ - estimated concentration; possible bias high
6. J- - estimated concentration; possible bias low
7. BEHP - Bis(2-ethylhexyl) phthalate
8. Only showing results that meet observed release/observed contamination criteria (≥ 3x maximum background, or ≥ highest RDL if no background detections).

SCALE: 0 20 40 80 Feet

TITLE: CONTAMINANT LEVELS AT CROPSEY SCRAP IRON & METAL CORP. BROOKLYN, KINGS COUNTY, NY

DRAWN BY: H. Bravo-Ruiz

REVIEWED BY: G. Gilliland

PROJECT MANAGER: H. Bravo-Ruiz

SCALE: 1 " = 40 '

DATE: December 2021

PROJECT: Cropsey Scrap Iron & Metal Corp SI

CLIENT NAME: EPA

WESTON SOLUTIONS SM

DRAWING NUMBER:

FIGURE #: 5

N W E S

duplicate sample of 6102-S09) at maximum concentrations of 110 µg/kg and 12 J µg/kg, respectively [Ref. 34, Figure 5]. Beta-BHC was detected in a single sample (i.e., 6102-S05) at a concentration of 36 J µg/kg [Ref. 25, p. 37]. Aldrin was identified at concentrations greater than 3x the maximum background level in samples 6102-SS01A (43 [3.0] J+) and 6102-S06 (2.5 J µg/kg), as was heptachlor in 6102-SS01A (68 [8.6] J+) [Ref. 23, pp. 4–9; 26, pp. 47, 51]. Endosulfan sulfate was detected in sample 6102-SS04A at a concentration of 8.5 J µg/kg [Ref. 25, p. 71]. This pesticide was also detected in sample 6102-S12 (7.3 J µg/kg) but not in corresponding field duplicate sample 6105-S09 [Ref. 25, pp. 25, 59]. Methoxychlor was detected above the maximum background RDL in samples 6102-S03 (540 [54] J+ µg/kg) and 6102-SS05A (42 J µg/kg) [Ref. 25, p. 83; 26, p. 45; 29, p. 135]. Cis-chlordane was identified at concentrations higher than the maximum background RDL in samples 6102-S09 (3.2 J µg/kg) and its environmental duplicate sample, 6102-S12 (3.2 J µg/kg) [Ref. 25, pp. 25, 59; 29, p. 135]. With the exception of the detections of dieldrin and 4,4'-DDT in sample 6102-S10, all the above pesticide detections are more than one order of magnitude below EPA's Regional Screening Levels (RSL) for industrial soil (1,300 µg/kg [beta-BHC], 630 µg/kg [heptachlor], 180 µg/kg [aldrin], 330 µg/kg [heptachlor epoxide], 140 µg/kg [dieldrin], 250,000 µg/kg [endrin], 700,000 µg/kg [endosulfan II], 2,500 µg/kg [4,4'-DDD], 8,500 µg/kg [4,4'-DDT], 490,000 [endosulfan sulfate], 410,000 µg/kg [methoxychlor], 25,000 µg/kg [endrin ketone and endrin aldehyde], and 50,000 µg/kg [cis-chlordane and trans-chlordane]) [Ref. 24, pp. 8–11, 13].

One or more of the following PCBs was detected at concentrations greater than 3x the maximum background level, or above the highest background RDL when all background results were non-detect, in at least one sample from each of the nine boreholes completed for the SI evaluation of the CSIMC site: Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260 [Ref. 34, Figure 5]. Aroclor-1242 was detected at a maximum concentration of 1,900 µg/kg in surface sample 6102-S05 [Ref. 25, p. 36; 34, Figure 5]. Aroclor-1248, Aroclor-1254, and Aroclor-1260 were detected at the maximum level of 7,400 J µg/kg, 17,000 µg/kg, and 6,400 J µg/kg, respectively [Ref. 25, p. 64]. These detections occurred in surface soil sample 6102-S10 [Ref. 34, Figure 5]. The detections of the above PCBs exceed EPA's RSL for industrial soil (950 µg/kg [Aroclor-1242], 940 µg/kg [Aroclor-1248], 970 µg/kg [Aroclor-1254], and 990 µg/kg [Aroclor-1260]) [Ref. 24, p. 15]. Other samples that exhibited detections of PCBs greater than 3x background levels or above the highest background RDL include: 6102-S01, 6102-SS01A, 6102-S02, 6102-SS12A (environmental duplicate sample of 6102-S02), 6102-SS02A, 6102-SS03, 6102-SS03A, 6102-S04, 6102-SS04A, 6102-SS05A, 6102-S06, 6102-S08, 6102-S09, and 6102-S12 (environmental duplicate of sample 6102-S09) [Ref. 34, Figure 5].

Most of the detections of metals at concentrations above 3x maximum background levels or above the highest background RDL (antimony [31 mg/kg], barium [3,500 mg/kg], cadmium [49 mg/kg], chromium [240 mg/kg], iron [150,000 mg/kg], lead [9,200 mg/kg], nickel [230 mg/kg], silver [11 mg/kg], vanadium [180 mg/kg], zinc [10,000 mg/kg] and mercury [120 mg/kg]) occurred in surface soil sample 6102-S10 [Ref. 28, pp. 28–29]. The concentrations of iron, lead, and zinc in sample 6102-S10 exceed EPA's RSLs for industrial soil (82,000 mg/kg [iron], 800 mg/kg [lead], and 4.6 mg/kg [mercury]) [Ref. 24, p. 12–13]. Cadmium, zinc, and mercury were also detected in other samples [Ref. 34, Figure 5]. Cadmium was detected at concentrations 3x greater than the maximum background level in samples 6102-S02 (2.6 mg/kg), 6102-SS12A (3.4 mg/kg), 6102-S04 (2.7 mg/kg), 6102-S05 (3.2 J mg/kg), 6102-S06 (3.6 mg/kg), 6102-S08 (12 mg/kg), 6102-S09

(5.2 mg/kg), and 6102-S12 (3.8 mg/kg) [Ref. 34, Figure 5]. Zinc was identified in samples 6102-S01 (3,100 J mg/kg), 6102-S05 (3,700 mg/kg), and 6102-S08 (3,200 mg/kg) [Ref. 27, p. 12; 28, pp. 15, 25]. Mercury was detected at concentrations greater than 3x the maximum background level in samples 6102-S05 (1.6 J- [estimated, possible bias low] mg/kg) and 6102-S08 (3.2 mg/kg) [Ref. 23, pp. 4–9; 28, pp. 14, 24]. In addition, mercury was detected in sample 6102-S09, but not in the corresponding duplicate sample, 6102-S12 [Ref. 28, pp. 10, 26].

PART IV: HAZARD ASSESSMENT

GROUNDWATER MIGRATION PATHWAY

1. Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence and relationship to background.

A release of on-site contamination to groundwater is suspected. In April 2013, prior to applying for its NPDES permit, CSIMC received an NOV from NYSDEC under the Clean Water Act stating that polluted stormwater from scrap metals operations on the unpaved area of the facility can discharge into shallow groundwater. Since that time, CSIMC has reported exceedances of its stormwater discharge limits for aluminum (maximum concentration of 2,370 µg/L), cadmium (7.0 µg/L), copper (780 µg/L), iron (13.2 µg/L), lead (1,400 µg/L), and zinc (1,300 µg/L).

Analytical results for surface and subsurface soil samples collected by Region 2 SAT V in June 2021 document an on-site contaminated soil source consisting of VOCs (trichlorofluoromethane, acetone, methyl acetate, cis-1,2-DCE, 2-butanone, TCE, PCE, 2-hexanone, ethylbenzene, o-xylene, m,p-xylene, and 1,2,4-trimethylbenzene), SVOCs (phenol, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene), pesticides (beta-BHC, heptachlor, aldrin, heptachlor epoxide, dieldrin, endrin, endosulfan II, 4,4'-DDD, endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone, endrin aldehyde, cis-chlordane, and trans-chlordane), PCBs (Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260), and metals (antimony, barium, cadmium, chromium, iron, lead, nickel, silver, vanadium, zinc and mercury).

Most scrap metal recycling operations at the CSIMC facility take place on exposed soil, and the stormwater runoff generated at the facility migrates into subsurface soil via on-site dry wells and designated percolation areas. As a result, contaminants in soil can leach (i.e., process of migration involving the movement of a chemical downward through soil by percolation of water) into the groundwater beneath the facility. Groundwater was not encountered in any of the direct-push boreholes completed at the CSIMC site during the June 2021 SI sampling event, which extended to a maximum depth of 10 feet bgs.

Ref. 10, pp. 4, 9; 11, pp. 24–33; 16, p. 1; 17, p. 1; 22, p. 3; 34, Figure 2 and 5.

2. Describe the aquifer of concern; include information such as depth, thickness, geologic composition, areas of karst terrain, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.

The CSIMC site is located within the Atlantic Coastal Plain physiographic province of NY State, which is characterized by low relief with elevations ranging from sea level to almost 400 feet above mean sea level. The stratigraphy of the province consists of Late Cretaceous- and Pleistocene-age unconsolidated deposits that overlie a southeastward sloping surface of Precambrian crystalline bedrock. The unconsolidated deposits form six distinct hydrogeologic units (four aquifers and two confining layers). The regional hydrogeologic units, in ascending order, are the Lloyd aquifer, Raritan Formation confining unit, Magothy aquifer, Jameco aquifer, Gardiners clay confining unit, and upper glacial aquifer; these units are not all continuous throughout the region.

Based on borings performed at and near the CSIMC site by Region 2 SAT V, the site is underlain by the upper glacial aquifer. This aquifer consists of Pleistocene glacial outwash deposits composed mostly of fine to coarse sand and gravel in Kings County, NY. The hydraulic conductivity of these Pleistocene outwash deposits ranges from less than 4.6×10^{-2} centimeters per second (cm/s) to 9.5×10^{-2} cm/s. At the CSIMC site investigation area, upper glacial units are underlain by the Gardiners clay at an approximate depth of 40 to 120 feet bgs and the Jameco aquifer at an approximate depth of 80 to 140 feet bgs. The Gardiners clay is recognized as a confining unit. It is composed of clay and few sand and silt beds. The hydraulic conductivity of this confining unit is less than 10^{-6} cm/s. The Jameco aquifer lies unconformably beneath the Gardiners clay throughout Kings County, NY. This aquifer consists of fine to coarse sand and gravel and has an estimated hydraulic conductivity of 9.4×10^{-2} cm/s. Based on these considerations, the upper glacial aquifer is the aquifer of concern at the CSIMC site; however, there are no known drinking water or resource uses of groundwater in New York City.

The water table surface occurs in the upper glacial aquifer from approximately 4 to 10 feet bgs in Kings County, NY. In general, groundwater flow is to the east and northeast in the Upper Glacial aquifer.

Geologic Unit	Depth (Approximate)	Thickness (Approximate)
Upper glacial aquifer	0 feet	40-120 feet
Gardiners clay	40-120 feet	0-90 feet
Jameco aquifer	80-140 feet	0-100 feet

Ref. 22, pp. 5–8; 36, p. 1; 43, pp. 7–9; 44, pp. 6, 9–10; 45, p. 2; 34, Figure 6.

3. What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?

Analytical results for soil samples collected by Region 2 SAT V in June 2021 in support of the SI document an on-site contaminated soil source. Subsurface soil sample 6102-SS03A (deepest sample collected during the SI sampling event exhibiting contamination) showed

detections of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, Aroclor-1242, Aroclor-1254, and Aroclor-1260 at concentrations greater than 3x the maximum background concentration, or greater than the highest background RDL when all background results were non-detect. This sample was collected from 5–6.3 feet bgs.

During the June 2021 sampling event, groundwater was not encountered in any of the direct-push boreholes completed at the CSIMC site. The direct-push boreholes were completed to maximum depth of 10 feet bgs. Therefore, the depth from the lowest point of waste disposal/storage (i.e., the contaminated soil source) to the highest seasonal level of the saturated zone of the shallow aquifer is estimated to be greater than 3.7 feet.

Ref. 11, pp. 24–30; 22, p. 6; 34, Figure 5.

4. What is the permeability value of the least permeable continuous intervening stratum between the ground surface and the top of the aquifer of concern?

Direct-push soil cores were collected and logged as part of the June 2021 SI sampling event. The predominant types of soil observed was fine sand; therefore, find sand represents the least permeable continuous intervening stratum between the ground surface and the top of the aquifer of concern. Fine sand is assigned a hydraulic conductivity of 10^{-2} cm/s.

Ref. 11, pp. 24–33; 46, p. 7.

5. What is the net precipitation at the site (inches)?

Net precipitation at the site is greater than 15 to 30 inches.

Ref. 46, pp. 5–6.

6. What is the distance to and depth of the nearest well that is currently used for drinking purposes?

The groundwater in New York City is not used as a drinking water supply. Therefore, the nearest well used for drinking purposes is outside the 4-mile target distance limit (TDL).

Ref. 43, p. 5; 45, p. 1; 34, Figure 6.

7. If a release to groundwater is observed or suspected, determine the number of people that obtain drinking water from wells that are documented or suspected to be actually contaminated by hazardous substance(s) attributed to an observed release from the site.

A release of on-site contamination to the groundwater pathway is suspected (see the response to Question No. 1 for a description of the likelihood of a release); however, there are no drinking water wells located within 4 miles of the site. Additionally, the groundwater in New York City is not used as a drinking water supply.

Ref. 43, p. 5; 45, p. 1; 34, Figures 5 and 6.

8. Identify the population served by wells located within 4 miles of the site that draw from the aquifer of concern.

There are no populations served by wells within 4 miles of the site. The groundwater in New York City is not used as a drinking water supply.

Ref. 43, p. 5; 45, p. 1; 34, Figure 6.

State whether groundwater is blended with surface water, groundwater, or both before distribution.

The groundwater in the TDL is not used as a drinking water supply. Therefore, there is no groundwater blending or distribution.

Ref. 43, p. 5; 45, p. 1; 34, Figure 6.

Is a designated wellhead protection area within 4 miles of the site?

There are no drinking water supply wells and, therefore, no designated wellhead protection areas (WHPA), within 4 miles of the site.

Ref. 34, Figure 6.

Does a waste source overlie a designated or proposed wellhead protection area? If a release to groundwater is observed or suspected, does a designated or proposed wellhead protection area lie within the contaminant boundary of the release?

The groundwater in New York City is not used as a drinking water supply. Therefore, there are no designated or proposed WHPAs within the contaminant boundary of the release.

Ref. 43, p. 5; 45, p. 1.

9. Identify one of the following resource uses of groundwater within 4 miles of the site (i.e., commercial livestock watering, ingredient in commercial food preparation, supply for commercial aquaculture, supply for major, or designated water recreation area, excluding drinking water use, irrigation (5-acre minimum) of commercial food or commercial forage crops, unusable).

There are no known resource uses of groundwater within 4 miles of the site.

Ref. 43, pp. 5, 10–14; 34, Figure 6.

SURFACE WATER MIGRATION PATHWAY

10. Describe the likelihood of a release of contaminant(s) to surface water as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence and relationship to background.

A release to surface water is documented by chemical analysis. The nearest surface water body is Coney Island Creek, located immediately south of the CSIMC site. The site's shoreline along Coney Island Creek consists of a steep, vegetated embankment on which contaminated soil is documented. The creek's watershed drainage is dominated by shallow groundwater discharge, CSO and New York City Municipal Separate Stormwater Sewer System (MS4) discharges, and overland flow.

As shown in **Figure 5**, the shortest distance from the documented contaminated soil source to Coney Island Creek is 35.5 feet. The following site-related contaminants were detected at concentrations greater than 3x the maximum background concentration, or greater than the highest background RDL when all background results were non-detect, in sediment samples collected by Region 2 SAT V in April 2021 in support of a Coney Island Creek SI: the VOC 1,2,4-trimethylbenzene (190 µg/kg); the SVOCs phenanthrene (2,600 µg/kg), anthracene (700 µg/kg), fluoranthene (4,500 J µg/kg), pyrene (3,700 µg/kg), benzo(a)anthracene (2,100 µg/kg), chrysene (2,100 µg/kg), bis(2-ethylhexyl)phthalate (2,500 µg/kg), benzo(b)fluoranthene (2,900 µg/kg), benzo(k)fluoranthene (820 µg/kg), benzo(a)pyrene (2,300 µg/kg), indeno(1,2,3-cd)pyrene (1,200 µg/kg), benzo(g,h,i)perylene (1,300 µg/kg); the pesticides 4,4'-DDD (46 µg/kg), 4,4'-DDT (290 µg/kg), cis-chlordane (9.6 µg/kg), trans-chlordane (14 µg/kg); and the metals barium (610 J mg/kg), cadmium (15 J mg/kg), chromium (290 J mg/kg), lead (1,600 J mg/kg), silver (11 J mg/kg), vanadium (180 mg/kg), and zinc (1,900 mg/kg). These contaminants are considered part of the contaminated soil source due to the history of scrap metal recycling operations at the site.

Most of the scrap metal recycling operations at the facility take place on exposed soil. CSIMC's operational area is bounded by reinforced concrete walls that prevent stormwater runoff generated at the facility from migrating offsite via overland paths; however, the runoff generated at the facility migrates into subsurface soil via on-site dry wells and designated percolation areas. As a result, in addition to overland flow of contaminants directly from the

exposed contaminated soil, contaminants in soil can leach into the groundwater beneath the facility that is hydraulically connected to Coney Island Creek.

During a September 2020 off-site reconnaissance in support of an APA, Region 2 SAT observed a large scrap metal pile approximately 25 to 30 feet high at the CSIMC facility. High-resolution aerial imagery from 2017 to 2020 indicates that scrap metal piles at CSIMC have been large enough for material to overflow beyond the operational area of the facility and to the vegetated embankment between the operational area and Coney Island Creek.

During the June 4, 2021 sampling activities, Region 2 SAT V observed flooding in the infiltration area, which prevented access to locations 6102-S01, 6102-S02, and 6102-S03 (the low point at location 6102-S05 also had floodwater but was able to be accessed). The flooding and additional rainfall events precluded SAT V from returning to complete the sampling at those locations for more than 3 weeks, until June 29, 2021.

Based on these considerations, although there are multiple possible sources of VOCs, SVOCs, pesticides, and metals within the Coney Island Creek watershed, the release of 1,2,4-trimethylbenzene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, 4,4'-DDD, 4,4'-DDT, cis-chlordane, trans-chlordane, barium, cadmium, chromium, lead, silver, and zinc are considered at least partially attributable to the CSIMC site.

Ref. 5, p. 17; 10, pp. 4, 9; 11, pp. 7, 10–12, 21–22; 16, p. 1; 21, pp. 1–6; 34, Figure 5; 66, pp. 1–7.

11. Identify the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.

The nearest downslope surface water is Coney Island Creek, an arm of the NY-NJ Harbor estuary. The shortest distance from the documented contaminated soil source to Coney Island Creek is 35.5 feet. Contaminants in surface and subsurface soil within the operational area of the facility can leach into groundwater that is hydraulically connected to Coney Island Creek. Contaminants in surface soil outside the operational area of the facility (i.e., vegetated embankment) can be directly transported to Coney Island Creek via drainage channels.

Coney Island Creek is a tidal inlet that extends for approximately 1.2 miles from the site into Gravesend Bay. The 15-mile TDL extends from that confluence through six bays (Lower New York Bay, Upper New York Bay, Newark Bay, Raritan Bay, Sandy Hook Bay, and Jamaica Bay) and 4 rivers (East River, Hudson River, Kill Van Kull, and Arthur Kill), and terminates in the Atlantic Ocean south of Brooklyn. Except for the Atlantic Ocean, the water bodies within the 15-mile TDL are part of the core area of the NY-NJ Harbor estuary, which was designated as an "Estuary of National Significance" by EPA in 1988.

Ref. 10, p. 4; 16, p. 1; 34, Figures 5 and 7; 47, pp. 5, 93.

12. What is the distance in feet to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.

The distance from the contaminated soil source to the nearest downslope surface water (i.e., Coney Island Creek) is approximately 35.5 feet, which is measured directly overland from the contaminated surface soil outside the concrete wall (i.e., the vegetated embankment). Contaminants in surface and subsurface soil within the operational area of the facility can leach into groundwater that is hydraulically connected to Coney Island Creek.

Ref. 34, Figure 5.

13. Identify all surface water body types within 15 downstream miles.

Most of the water bodies within the TDL are part of the core area of the NY-NJ Harbor estuary.

Name	Water Body Type	Flow (cfs)	Salt/Fresh/Brackish
Atlantic Ocean	Moderate depth ocean	N/A	Salt
NY-NJ Harbor Estuary*	Coastal tidal waters	N/A	Salt

*The following New York-New Jersey Harbor estuary water bodies are within the 15-mile TDL: Coney Island Creek, Gravesend Bay, New York Upper Bay, Newark Bay, Raritan Bay, Sandy Hook Bay, Jamaica Bay, East River, Hudson River, Kill Van Kull, and Arthur Kill.

Ref. 34, Figures 6 and 7; 46, p. 11; 47, pp. 5, 93.

14. Determine the 2-yr, 24-hr rainfall (inches) for the site.

The 2-year, 24-hour rainfall for the site location is 3.44 inches.

Ref. 48, p. 8.

15. Determine size of the drainage area (acres) for sources at the site.

Topography in the site area is generally flat with runoff from neighboring properties intercepted by storm drains on adjacent streets. There is no upslope area that can contribute runoff to the site. Therefore, the drainage area for sources at the site is equal to the site area, or 0.79 acres. Approximately 0.02 acre (988 ft^2) of the 0.13 acre (5,646 ft^2) contaminated soil source is currently covered by concrete that routes runoff to the percolation area on the western portion of the property.

Ref. 11, pp. 13–22; 34, Figure 5.

16. Describe the predominant soil group in the drainage area.

The predominant type of soil encountered at the site by Region 2 SAT V during the June 2021 SI sampling event was sand, which is evaluated under soil group designation A (i.e.,

coarse-textured soils with high infiltration rates). Concrete provides an impermeable surface for most of the central portion of the site.

Ref. 34, Figure 5; 46, p. 9.

17. Determine the type of floodplain that the site is located within.

The Federal Emergency Management Agency (FEMA) has designated the central portion and southern portion of the property to be within Flood Zone X and Flood Zone AE, respectively. Zone X is defined as an area with moderate flood hazard (i.e., 0.2% annual chance of flooding). Zone AE is defined as an area within the base floodplain (i.e., special flood hazard area). The base flood elevation for the southern portion of the property is 10 feet. FEMA has designated the northern portion of the property to be in a minimal flood hazard area. According to a facility representative, CSIMC was not impacted by flooding from Hurricane Ida.

Ref. 49, p. 1; 67, p. 1.

18. Identify drinking water intakes in surface waters within 15 miles downstream of the point of surface water entry. For each intake identify: the name of the surface water body in which the intake is located, the distance in miles from the point of surface water entry, population served, and stream flow at the intake location.

The estuarine waters within the TDL are classified as saline waters that are not used for drinking water supply. There are no drinking water intakes within 15 miles downstream of the site.

Ref. 34, Figures 6 and 7.

19. Identify fisheries that exist within 15 miles downstream of the point of surface water entry.

The 15-mile TDL for the site is mostly within the NY-NJ Harbor Estuary, which is used for fishing and is home to more than 100 fish species, including striped bass and bluefish, as well as crabs, clams, mussels, and other invertebrates. Region 2 SAT V personnel observed fishing for human consumption in the western portion of Coney Island Creek at the Kaiser Park fishing pier. Fishing is also known to occur in other parts of the creek.

Fishery Name	Water Body Type	Flow (cfs)	Salt/Fresh/Brackish
Atlantic Ocean	Moderate depth ocean	N/A	Salt
NY-NJ Harbor Estuary	Coastal tidal waters	N/A	Salt

Ref. 5, pp. 2, 14, 22–23; 46, p. 11; 34, Figure 7; 47, pp. 99–100; 68, pp. 1–2.

20. Identify surface water sensitive environments that exist within 15 miles of the point of surface water entry.

The following HRS- eligible sensitive environments exist along the 15-mile surface water pathway:

- 7 Federally Endangered/Threatened Species Habitats
- 13 State Endangered/Threatened Species Habitats
- 1 National Seashore Recreation Area (including NY Protected Areas Database)
- 2 State Designated Natural Areas (including NYSDEC Critical Environmental Areas, and NYSDEC Natural Heritage Sites)
- 1 Unique Biotic Community (including the Hudson River Significant Biodiversity Area)

There is a designated estuary subject to actual contamination within the creek segment. There is a total of 38.7 miles of wetland frontage along the water bodies within the TDL subject to potential contamination.

Water Body	Water Body Type	Flow (cfs)	Dilution Weight	Wetlands Frontage (miles)
Upper Bay	Coastal tidal waters	N/A	0.0001	1.8
Lower Bay	Coastal tidal waters	N/A	0.0001	0.2
Jamaica Bay	Coastal tidal waters	N/A	0.0001	30.2
Kill Van Kull	Coastal tidal waters	N/A	0.0001	1.0
Newark Bay	Coastal tidal waters	N/A	0.0001	0.0
Arthur Kill	Coastal tidal waters	N/A	0.0001	1.3
Raritan Bay	Coastal tidal waters	N/A	0.0001	2.8
Sandy Hook Bay	Coastal tidal waters	N/A	0.0001	1.3
			Total	38.7

Ref. 21, pp. 1–2, 6; 34, Figure 7; 47, pp. 1–5, 8, 9, 15, 36, 39, 43, 45, 47, 50, 53, 55, 58, 61, 64–66, 71, 73, 75, 77, 78, 83, 86, 89.

21. If a release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 18-20 that are or may be actually contaminated by hazardous substance(s) attributed to an observed release of from the site.

A release to surface water is documented by chemical analysis; see the response to Question No. 10 for a description of the likelihood of a release. The release documented at CSIMC results in actual contamination of the NY-NJ Harbor Estuary, which is a sensitive environment identified under the National Estuary Program that encompasses all of Coney Island Creek. There is a downstream fishery at Kaiser Park that is subject to potential contamination.

Ref. 5, pp. 2, 14, 22–23; 34, Figures 5 and 7; 47, pp. 1–5.

22. Identify whether the surface water is used for any of the following purposes, such as: irrigation (5 acre minimum) of commercial food or commercial forage crops, watering of commercial livestock, commercial food preparation, recreation, potential drinking water supply.

Surface water within 15 miles of the site is used for primary (swimming and baptisms) and secondary (recreational fishing and boating) contact recreation.

Ref. 47, pp. 103, 120, 126–127; 50, pp. 2–3; 51, p. 2.

SOIL EXPOSURE AND SUBSURFACE INTRUSION PATHWAY

23. Determine the number of people that occupy residences or attend school or day care on or within 200 feet of observed contamination.

Analytical results for soil samples collected by Region 2 SAT V during the June 2021 SI sampling event document the presence of a contaminated soil source at the site. The full lateral extent of contaminated soil is unknown. The CSIMC site consists of a scrap metal recycling operation. There are no residences, schools, or day care facilities on or within 200 feet of the site.

individuals residing in or attending school or day care in regularly occupied structures within documented ASCs or AOEs.

Ref. 34, Figure 5.

30. Identify the number of full-time workers and the number of part-time workers in regularly occupied structures within the documented AOE(s). Also identify the number of full-time workers and the number of part-time workers in regularly occupied structures within the ASC but outside the documented AOE(s).

There are no documented AOEs associated with the site, and the on-site buildings are not known to be within the documented ASC. Therefore, there are no full-time or part-time workers in regularly occupied structures within documented AOEs or ASCs.

Ref. 34, Figure 5.

31. Is there resource use of regularly occupied establishments (e.g., library, church, tribal facility) within either an AOE or an ASC?

There are no known AOEs associated with the site, and there are no libraries, churches, or tribal facilities where subsurface contamination is documented. Therefore, there are no resource uses of regularly occupied structures within documented ASCs or AOEs.

Ref. 11, pp. 13–23; 34, Figure 5.

AIR MIGRATION PATHWAY

32. Describe the likelihood of release of hazardous substances to air as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence and relationship to background.

A release to air is not observed, but possible. The CSIMC property has been utilized for scrap metal recycling activities since 1970. There are no reported active emissions of CERCLA-eligible hazardous substances reported at the site.

During the June 2021 SI sampling event, Region 2 SAT V conducted air monitoring and screening of soil cores with a PID. There were PID readings above background in surface soil at Borehole 1 (1.2 ppm), Borehole 2 (3.5 ppm), Borehole 4 (2.0 ppm), Borehole 5 (40.1 ppm), and Borehole 6 (4.0 ppm); however, there were no readings above background in ambient air.

Analytical results from soil samples collected during the June 2021 SI sampling event indicate the presence of the VOCs trichlorofluoromethane, acetone, methyl acetate, cis-1,2-DCE, 2-butanone, PCE, 2-hexanone, ethylbenzene, o-xylene, m,p-xylene, and 1,2,4-

trimethylbenzene; and the SVOCs naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene at concentrations greater than 3x the maximum background concentration, or greater than the highest background RDL when all background results were non-detect, in surface soil from Boreholes 1, 2, 3, 4, 5, and 8. These boreholes were completed on permeable surfaces (i.e., unpaved areas). In addition, concentrations of antimony, barium, cadmium, chromium, iron, lead, nickel, silver, vanadium, zinc, and mercury were detected at levels three times above background or above the applicable background RDL in one or more surface soil sample from unpaved areas. Based on these considerations, there is a potential for gaseous and particulate (i.e., contaminated fugitive dust) air release from the contaminated soil source.

Ref. 22, pp. 5–8; 34, Figure 5.

33. Determine populations that reside within 4 miles of the site.

The total population residing within 4 miles of the site is 803,582, as follows:

Distance Ring (mi)	Population
On-site	0
>0 - ¼	1,763
>¼ - ½	11,069
>½ - 1	62,636
>1 - 2	189,920
>2 - 3	233,415
>3 - 4	304,779
Total	803,582

Ref. 52, pp. 1–2.

34. Identify sensitive environments, including wetlands and associated wetlands acreage, within 4 miles of the site.

Distance (miles)	Wetlands Acreage	Sensitive Environments
On-site	0	None identified
0–¼	0	NJ-NY Harbor Estuary
¼–½	0	None identified
>½–1	0	None identified
>1–2	0	NYSDEC Critical Environmental Area
>2–3	8.3	Gateway National Recreation Area NYSDEC-designated Natural Heritage Site Hudson River Significant Biodiversity Area

Distance (miles)	Wetlands Acreage	Sensitive Environments
>3 – 4	46.7	4 Federal-listed endangered/threated species habitats 8 State-listed endangered/threatened species habitats
Total Acreage	55.0	

Ref. 34, Figure 6; 47, p. 3.

35. If a release to air is observed or suspected, determine the number of people that reside or are suspected to reside within the area of air contamination from the release.

A release to air is neither observed nor suspected. See the response to Question No. 32 for a description of the likelihood of a release.

36. If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 34 that are or may be located within the area of air contamination from the release.

A release to air is neither observed nor suspected. See the response to Question No. 32 for a description of the likelihood of a release.

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APPENDIX C
Community Air Monitoring Plan

CROPSEY IRON & SCRAP METAL
COMMUNITY AIR MONITORING PLAN (CAMP)

The following Community Air Monitoring Plan (CAMP) is based on the New York State Department of Environmental Conservation's (NYSDEC's) Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10) (May 2010) Appendix 1A: New York State Department of Health Generic Community Air Monitoring Plan, with modifications as appropriate for the scope of work to be performed at Cropsey Iron & Scrap Metal.

Overview

A CAMP requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Qualified Environmental Monitor Responsibilities

The qualified environmental monitor (QEM) shall be Walden Environmental Engineering, PLLC (Walden), whose designated employees will be responsible for implementing the CAMP and performing the on-site air monitoring specified below. The QEM has the authority to stop work and shall be responsible for the air monitoring and daily calibration and maintenance of the equipment in accordance with the manufacturer's specifications. All instrumentation and equipment shall be maintained at all times in proper operating condition. Copies of manufacturers' monitoring equipment specifications shall be maintained on-site at all times during the work and shall be attached to the on-site copy of the CAMP.

The QEM or designated representative shall document in the dedicated CAMP project log book each calibration event, any equipment and instrument malfunctions, unusual conditions, air monitoring station locations, any exceedances of action levels and countermeasures implemented. Dates and times must be well documented. Ambient air monitoring shall be conducted upwind and downwind of the work area at the property perimeters for fugitive dust emissions and organic vapors during periods of soil boring, excavation, other ground intrusive activities, placement of excavated materials in storage piles, and loading of transporting vehicles. If readings above established threshold levels are detected, the Contractor shall institute measures to control dust and/or organic vapors at no additional cost to the

Owner. The measures utilized shall be subject to the approval of the Owner and Owner's designated representatives.

Any exceedance of a CAMP threshold or action level shall be recorded on the project summary report which shall be submitted to NYSDEC and NYSDOH. The summary report shall include the instrument readings at the monitoring stations, location of the monitoring station where any exceedance was recorded, readings at upwind locations, duration of any elevated readings (i.e., number of 15-minute time-weighted exceedances), activities being performed at the time of any exceedances, and descriptions of countermeasures implemented to control the exceedance and prevent future occurrences.

The Contractor shall respond to exceedances of the CAMP action levels immediately.

Odor or dust complaints from any owner of an adjacent or nearby property shall be managed by the Contractor in a manner equivalent to an exceedance of an action level in the CAMP.

Community Air Monitoring Plan

Based upon the nature of known or potential contaminants at the Site, real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone/work area will be necessary.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities in this case include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil samples. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while overturning soil, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) shall be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment such as a MiniRAE 2000 photoionization detector (PID) Portable VOC Monitor or other appropriate instrument 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.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds five (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 five (5) ppm over background, work activities can resume with continued monitoring;
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of five (5) ppm over background but less than 25 ppm, work activities must be halted. The source of vapors must be identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can only 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 five (5) ppm over background for the 15-minute average; and
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. Work methods and controls will be re-evaluated.

All 15-minute readings must be recorded and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate (dust) concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment (such as a portable particulate monitor EPAM 5000 or equal) capable of measuring particulate matter less than ten (10) micrometers in size (PM-10) and capable of integrating over a period of fifteen (15) minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

All readings must be recorded and be available for State (NYSDEC and NYSDOH) personnel to review.

Particulate concentrations shall be monitored at the upwind perimeter of an active work zone for background concentrations at the beginning and the end of the work day and at the downwind perimeter of an active work zone on a continuous basis during all ground intrusive activities. At any time, the Contractor will carry out dust and particulate control measures, such as water misting to prevent generation of dust and particulate matter during the work activities.

If the elevated levels of particulate matter are detected during the monitoring, corrective action is determined by the following levels:

- If the downwind PM-10 at a site perimeter location is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background (upwind perimeter) for the 15-minute period of if airborne dust is observed leaving the perimeter of the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques if the downwind PM-10 particulate level does not exceed 150 $\mu g/m^3$ above the upwind level and if no visible dust is migrating from the work area; and
- If, after implementing dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped and re-evaluation of work activities initiated. Work can resume if dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

Summary

As noted above, air monitoring activities for Cropsey Iron & Scrap Metal area investigation work described in the *Cropsey Iron & Scrap Metal Investigation Work Plan* (Walden, November 2022) will be appropriate for the soil sampling activities to be conducted in the investigation area. Therefore, the CAMP will encompass VOC and particulate monitoring during the ground intrusive activities. A CAMP report will be submitted to NYSDEC and NYSDOH upon completion of the project.

APPENDIX D
Site Health and Safety Plan

Health and Safety Plan (HASP)

At

Cropsey Iron & Scrap Metal

January 2023

Prepared for:

Cropsey Iron & Scrap Metal
2994 Cropsey Avenue
Brooklyn, New York 11214

Prepared by:

Walden Environmental Engineering
16 Spring Street
Oyster Bay, New York 11771

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Attachments

1.0 INTRODUCTION

Walden Environmental Engineering, PLLC (Walden) employees may be exposed to risks from site-related hazardous conditions while performing field activities at Cropsey Iron & Scrap Metal Site owned by Cropsey Scrap Iron & Metal Corp. located in Brooklyn, New York (refer to **Attachment A**). Walden's policy is to minimize the possibility of work-related injury through aware and qualified supervision, health and safety training, medical monitoring and the use of appropriate personal protective equipment (PPE). Walden has established a guidance program to implement this corporate policy in a manner that protects personnel to the maximum reasonable extent.

This Health and Safety Plan (HASP) applies to all Walden personnel, Cropsey Iron & Scrap representatives, subcontractors, the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of Health (NYSDOH), and any other individuals on the jobsite where operations involve actual or potential physical and chemical hazards that have been identified by Walden or others during activities including but not limited to the following:

- Shallow soil sampling;
- Sediment sampling;
- Groundwater sampling;
- Construction or demolition work that disturbs surface or subsurface soils, groundwater, sediment, etc. at the Site; and
- Construction or demolition work involving equipment, piping, etc. currently or formerly containing hazardous materials or wastes at the Site.

This HASP is also intended to inform and guide all personnel (Walden employees and/or owner representatives, subcontractors or State/local regulatory agency representatives) entering the exclusion zone, ensuring that each person sign and acknowledge the Site hazards on the Acknowledgement Form provided in Section 9.0. Walden and/or the owner's subcontractors are retained as independent contractors and, as such, are responsible for ensuring the safety of their employees.

Walden may require that its personnel take certain precautions in accordance with this HASP, and Walden requests that others protect their personnel in a manner that they deem necessary or sufficient.

This HASP is based on the best available information to date. Should a conflict occur between this document and any other related Health and Safety Plans, Operating Procedures, regulations, etc., workers shall follow the most stringent/protective requirements. HASP Supplements will be generated, as necessary, to address any new information, change in conditions, or activities. While it is not possible to discover, evaluate, and protect in advance against all possible hazards which may be encountered throughout the course of this project, adherence to the requirements of this HASP will significantly reduce the potential for occupational injury.

2.0 SCOPE

2.1 Generic Scope

This HASP is intended to be utilized during intrusive work performed at the Site, including but not limited to the following:

- Collection of soil samples via hand auger or similar methods;
- Installation of soil borings;
- Collection of groundwater samples;
- Collection of soil gas and sub-slab vapor samples;
- Collection of air samples;
- Non-hazardous and hazardous soil/solids management;
- Non-hazardous and hazardous liquid management;
- Real-time air monitoring using instrumentation;
- Cutting and handling of concrete slabs;
- Construction, installation and maintenance of engineering controls to reduce chemical exposure;
- Excavation;
- Stockpiling;
- Grading;
- Trenching;
- Removal/installation/modification of piping and drainage structures;
- Interior building renovations;
- Installation of pavement and concrete; and
- General site construction and building activities.

Previous site investigations have identified soil, soil vapor and groundwater contamination at the Site associated with historic site activities. Contaminants associated with the Site include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and inorganics. Therefore, precautions shall be taken to prevent exposure to contaminants and ensure that appropriate and safe procedures are followed when potentially contaminated media and hazardous materials and wastes may be encountered and handled during the work. Work at the Site shall be performed by employees who are properly trained and experienced in dealing with the hazards which may arise from these types of tasks, which are defined as toxic effects, including threshold limit values (TLVs), immediately dangerous to life and health (IDLH), reactivity, stability, flammability, and operational hazards with sampling, decontaminating, etc.

2.2 Project-Specific Scope of Work

This HASP is intended to be utilized during intrusive soil and groundwater investigation work at Cropsey Iron & Scrap, including collection of soil samples via Geoprobe®. Specific details of the investigation work to be performed at the site are provided in the *Cropsey & Iron Investigation Work Plan* (Walden, August 2022, revised January 2023).

2.3 Equipment

The following equipment may be utilized for this task:

1. Geoprobe®;
2. Hand auger;
3. Scrub brush;
4. Photoionization detector (PID);
5. MultiRAE multi-gas meter;
6. 55-gallon drums, both metal and plastic;
7. Excavation machinery (e.g. mini-excavator);
8. Hand shovels;
9. Plastic sheeting;
10. Soil/solids sampling containers;
11. Chemical-resistant, leather, and/or cut-resistant gloves; and
12. Miscellaneous hand tools (screwdriver, socket driver).

2.4 Site Access

Access to work areas will be denied to the general public via the SSO or designated personnel, thus establishing the perimeter of controlled work areas, minimizing potential exposure to unauthorized individuals, protecting the public from hazards and preventing vandalism. All equipment and materials will be secured during non-work hours. Continuous communication (via portable radios, hand signals, telephones, etc.) shall be maintained between the SSO and key personnel associated with this project at all times during field operations.

2.5 Controlled Work Areas

Controlled work areas will be established prior to and for each work area, depending on the task, and shall float (move around) depending on the tasks being performed on any given day. Each controlled work area will consist of three (3) zones: the exclusion zone, the contaminant reduction zone and the support zone, based on the degree of danger present. To the extent

possible, the support and contaminant reduction zones will be established outside of the exclusion zone.

2.5.1 Exclusion Zone

The exclusion zone consists of the primary activity area, as defined by the SSO. Only personnel directly involved with performance of a job task within that area and meeting the required qualifications (40 Hour HAZWOPER trained) may be allowed entry. Before entering the exclusion zone, all personnel must be familiar with emergency response procedures, Site safety locations, first aid and communication equipment, and the locations of the map to the hospital and the list of emergency telephone numbers. Attempts will be made so that equipment and Site activities taking place in the exclusion zone are situated so that personnel are upwind of potential contaminant sources.

2.5.2 Contaminant Reduction Zone

The contaminant reduction zone shall be located between the exclusion zone and the support zone. In this area authorized personnel (those with 40 Hour HAZWOPER training) will don protective equipment, as needed in the exclusion zone. When exiting the restricted area, personnel will remove contaminated PPE.

2.5.3 Support Zone

The support zone shall extend beyond the exclusion and contaminant reduction zones, where other support activities shall occur, such as first aid, equipment supply, etc., and where vendors, subcontractors and inspectors, and the like, shall be allowed. The support zone shall be established prior to commencement of activities and shall serve as the entry point for controlling access.

Trespassers shall be immediately escorted outside of these established areas and all work within these areas shall halt until the trespasser has been removed.

3.0 ORGANIZATIONAL STRUCTURE

The following Walden personnel are the main parties involved with the project at hand.

POSITION/TITLE	NAME/AFFILIATION	PHONE NUMBER/PAGER
Project Manager(s)	Robert A. Lopinto, P.E.	516-624-7200 (Office)
	Erica M. Johnston, QEP	631-521-1266 (Mobile)
Site Safety Officer(s)	Jaqueline A. Bell	516-624-7200 (Office)
	Erin B. Kelly	516-624-7200 (Office)

3.1 Project Manager

The Project Manager has the responsibility and authority to direct all operations related to this project. The Project Manager is responsible to observe and provide guidance to employees, subcontractors and visitors with regard to safe work behavior and safety training, discuss deviations from the work plan and any safety issues that arise, assist the SSO with the development and implementation of corrective actions for Site safety deficiencies, the implementation of this HASP, and ensuring compliance.

3.2 Site Safety Officer

A qualified SSO will be continuously on the jobsite during the period of work and will have the authority to receive and execute any directions given by the owner representative in the absence of the Project Manager. The SSO will establish the necessary controlled work areas. The SSO will ensure that task areas are kept in a clean condition, free of rubbish and all undue accumulations and surplus materials while the work progresses. The SSO and/or Project Manager shall guarantee that all employees are fit for duty and that material and equipment is protected to prevent damage to employees and visitors, as well as, at the end of each work day, all rubbish and unused materials are removed and any damage done is repaired. These individuals will enforce this HASP, ensuring required safety equipment is on-site, clean and operable.

The SSO will coordinate all relevant health and safety issues, and may conduct specialized training and compliance inspections, as required. It will be the duty of the SSO to provide emergency training to associated personnel and, in the event of an emergency situation, to inform the local authorities as to the nature of the incident. In case of an emergency incident, the SSO will be contacted immediately. The SSO is to work with the Project Manager to develop and implement any corrective actions that may be necessary.

The Project Manager and the SSO are responsible for periodically reviewing the HASP and its Attachments and any Supplements and, as necessary, amending them to keep current with new or changing conditions.

3.3 Employees

Employees are responsible for understanding and abiding by the policies and procedures specified in this HASP and other applicable safety policies, and clarifying those areas where understanding is incomplete; providing feedback to health and safety management relating to omissions and modifications in the HASP or other safety policies; and, notifying the SSO, in writing, of unsafe conditions and acts. Each employee shall sign this HASP (Section 9.0) in acknowledgement of such.

The health and safety authority of each employee assigned to the Site includes the right to refuse to work and/or stop work authority when the employee feels that the work is unsafe (including subcontractors), or where specified safety precautions are not adequate or fully understood; the right to refuse to work on any task where the safety procedures specified in this HASP or other safety policies are not being followed; the right to contact the SSO at any time to discuss potential concerns; the right and duty to stop work when conditions are unsafe, and to assist in correcting these conditions.

3.4 Subcontractors

Subcontractors shall submit to the SSO a copy of their own health and safety plan or shall review and sign this document acknowledging acceptance and understanding of the information contained herein. Subcontractors are responsible for assigning specific work tasks to their employees. Subcontractors shall provide qualified employees equipped with the necessary PPE and training required for the task. Each subcontractor is responsible for compliance with the regulatory requirements that pertain to those services. Each subcontractor is expected to perform operations in accordance with their own unique safety policies and procedures, or those documented herein, in order to ensure that hazards associated with the performance of the work activities are properly controlled. Copies of any required safety documentation/certification for a subcontractor's work activities will be provided to Walden for review prior to the start of on-site activities, if required. Hazards not listed herein but known to any subcontractor must be identified to Walden prior to commencing any on-site activity. The Project Manager and SSO have the authority to halt any subcontractor operations, and to remove any subcontractor or subcontractor employee for failure to comply with established health and safety procedures or for operating in an unsafe manner.

3.5 Visitors

Authorized visitors requiring entry to any work location on-site shall be briefed by the SSO on the hazards present prior to entry and acknowledge receipt of this briefing by signing this HASP. Visitors shall be escorted at all times within the controlled zones and shall be responsible for compliance with all health and safety policies. All visitors shall hold the appropriate qualifications, training and PPE which are required for entry to any controlled work area. Should a visitor requiring entry to an exclusion zone fail to meet the qualifications for that zone, all work activities within the exclusion zone shall halt while the visitor is within the controlled zone.

4.0 EMERGENCY RESPONSE

Site personnel must be prepared in the event of an emergency. Emergencies can take many forms including: illnesses, injuries, chemical exposure, fires, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. Walden employees shall not participate in any emergency response where there are potential safety or health hazards (i.e., fire, explosion or chemical exposure); their actions will thus be limited to evacuation. Predetermined safe areas shall be determined and relayed by the SSO to all on-site personnel at the start of each shift and will be based on prevailing wind direction. Evacuation routes established by work area locations will be highlighted on a Site map and periodically reviewed. As the work areas change, the evacuation route and map will be altered accordingly, and the new route will be reviewed.

Emergency telephone numbers and a map to the nearest hospital shall be on-hand at the Site. The hospital with an emergency room closest to the Site is Coney Island Hospital at 2601 Ocean Parkway, Brooklyn, New York 11235. A map of the route to Coney Island Hospital is provided herein as **Attachment B**. Personnel shall be familiar with the emergency procedures, and the locations of safety, first aid and communication equipment.

4.1 Emergency Facilities and Telephone Numbers

COMPANY	NAME	PHONE #
Project Manager(s)	Robert A. Lopinto, P.E.	516-624-7200 (Office)
	Erica M. Johnston, QEP	631-521-1266 (Mobile)
Site Safety Officer(s)	Jaqueline A. Bell	516-624-7200 (Office)
	Erin B. Kelly	516-624-7200 (Office)
Cropsey Iron & Scrap Corp.	Thomas Petrosino	347-672-7573 (Mobile)
Emergency Response	Police/Fire/Medical	911
Coney Island Hospital		718-616-3000
NYSDEC Spill Hotline		518-457-7362
American Association of Poison Control Centers		800-222-1222

First Aid Kit Locations: Within work vehicles on-site.

Fire Extinguishers: On-site buildings.

4.2 Response Procedures

A communication network shall be established prior to commencement of any on-site tasks. At least one (1) on-site person shall have a phone accessible and in good working order at all times. Hand signals shall be used in instances when verbal communication is not feasible. The Project Manager, followed by the SSO, will immediately coordinate any and all emergency situations with the proper local medical/emergency organizations and personnel at the Site. In the event of a fire, use of fire-fighting equipment available on-site may be administered, if appropriate; removing or isolating flammable or other hazardous materials that may contribute to the fire will be performed. The personnel on-site will coordinate evacuation procedures (if necessary) and remain a safe distance away from the area of health and safety concern. Personnel on-site may need to perform basic first aid as warranted by the emergency situation. Personnel with suspected neck or back injuries must not be moved. A detailed written report of the emergency situation will be provided within 24 hours to Walden by the Project Manager or SSO. Site security and control will be enforced by the SSO with consent for undertaken measures from the Project Manager. The SSO is responsible for pre-emergency planning, as well as emergency recognition and prevention.

4.3 First Aid Kit and Medical Emergencies

A basic first aid kit will be maintained and readily available (never locked up) at the Site and within easy access to work areas (in personnel vehicles on-site). At a minimum, the first aid kit will include the following, as per ANSI Z308.1-1978: aspirin, bandage compresses, adhesive/triangular bandages (to keep wounds clean), medical tape, gauze, scissors, tweezers, sterilization lotion/cream, eye dressing, and antibacterial lotion/soap or pads. Items are to be replaced as they are used. Sterile items must be wrapped, sealed and used only once. Reusable items, such as scissors and tape, shall be kept clean. Should plentiful amounts of clean water not be available, eye flush shall be utilized. The number of first aid kits on-site shall be:

Number of Persons Assigned to the Site	Minimum First Aid Supplies
1-5	10 Package Kit
6-15	16 Package Kit
16-30+	24 Package Kit

Professional medical assistance is to be called in the event of a medical emergency. In the event of a medical emergency:

- Stay calm and seek help, do not delay in calling for more assistance;
- Do not provide medical assistance unless you are trained to do so;
- Do not move the injured party unnecessarily;
- Do not attempt to remove any object that may have impaled the victim;
- Check to ensure the victim has an open airway, is breathing and has a heartbeat (if not, immediate action is required prior to taking care of any additional injuries);
- Promptly control any bleeding;
- Treat the injured party gently and keep them calm and quiet, reassuring them that additional help is on the way;
- Do not administer any food or drink and never provide the injured party with alcohol;
- Gather as much information as you can about the accident/injury and the victim's condition and be prepared to report that to first responders, as well as any medical actions already taken; and
- Let emergency responders do their job and aid them in keeping others out of their way.

4.3.1 Burns

For minor burns (redness or blisters over a small area), flush the wound with cold water and apply a sterile dressing; do not use butter or similar substance on any burn and do not break open blisters.

For major burns (white or charred skin; redness or blisters over a large area; burns on face, hands or genital area), cover the wound with sterile dressing and seek immediate emergency medical attention.

In the event of a chemical burn (spilled liquid or dry chemical on skin), promptly seek medical attention. For a liquid chemical burn, flush the wound with large amounts of water immediately and keep the water at a gentle flow. For dry chemical burns, brush off as much as possible before flushing with water. In both instances, flush the wound for at least five (5) minutes before covering with sterile dressing. Never use anything but water on a burned area and do not break open blisters.

4.3.2 Eye Wounds

Should an individual find/feel they have a foreign object in their eye, do not rub the eye; have them pull their upper eyelid over their lower eyelid or run plain water over the eye. If the object persists, cover <u>both</u> eyes with a gauze dressing and aid them in seeking immediate emergency medical attention.

If the eye is wounded (eyelid or eyeball; pain; history of blow to eye area; discoloration), seek immediate emergency medical attention and apply loose sterile dressing over both eyes. For bruising, a cold compress or ice pack should be used to relieve pain and reduce swelling. Do not try to remove any imbedded object or apply any pressure to an injured eye.

If the eye has sustained a chemical burn, seek immediate emergency medical attention. Flush the open eye (it may be necessary to hold the patient's eyelid open) immediately with water for at least ten (10) minutes, twenty (20) minutes if the substance was alkali. Cover both eyes with sterile dressing. Never put anything but water in the eye.

4.4 Fire: Hazards, Prevention, Protection and Extinguishers

Many potential ignition hazards may exist on-site, including internal combustion engines, combustible materials and smoking. Combustible materials shall be kept well away from the exhaust of any internal combustion engine powered equipment. Smoking is prohibited except in designated areas, as determined by the SSO. Operations which constitute a fire hazard shall be identified as such, with signs conspicuously posted, stating: "No Smoking or Open Flame". Flammable gases and liquids shall be stored and handled in approved containers, places and as per the requirements described on the applicable Safety Data Sheet (SDS).

All employees who will use a fire extinguisher shall be trained on the use and hazards involved with firefighting initially and annually thereafter. All fire extinguishers shall be visually inspected monthly for general condition and adequate charge and serviced, tested, and certified by qualified personnel at least annually. Fire extinguisher inspection and maintenance are the responsibility of the Site owner. Records of the annual maintenance check must be maintained. Only those employees designated as capable of using fire extinguishers shall be allowed to do so. Extinguishers shall be located and identified for easy accessibility.

It is imperative to use the proper extinguisher for a fire, as using the wrong one can spread the fire. Portable extinguishers shall be suitable for ABC class fires. The following table provides further information on types of fire extinguishers and their use:

Class	Distribution	Notes
A ("A" on a green triangle)	75' or less travel distance between the employee and the extinguisher	Use on wood, paper, trash

B ("B" on a red square)	50’ or less travel distance between hazard area and the employee	Use on flammable liquid, gas
C ("C" on a blue circle)	Based on the appropriate pattern for the existing Class A or Class B hazards	Use on electrical fires
D ("D" on a yellow star)	75’ or less travel distance between the combustible metal working area and the extinguisher or other containers of Class D extinguishing agent	Use on combustible metals

4.4.1 Fire Prevention

The best method of protection against fire is prevention. The following rules are to be adhered to in an effort to prevent fire:

- Smoking is prohibited except in designated areas, as determined by the SSO. All smoking materials are to be totally extinguished and placed in appropriate receptacles;
- SDS’s shall be referred and adhered to prior to the moving, handling and storage of any chemical product;
- In order to prevent accidental ignition of combustible materials, heat producing equipment is to be properly maintained and operated as per the manufacturer’s instructions;
- All chemicals and combustibles must be stored in approved containers;
- Materials that severely react or combust when mixed must not be stored near each other;
- Chemical spills must immediately be cleaned, particularly in the case of spilled combustible or reactive materials. Damaged containers and cleaning materials must be properly disposed;
- Combustible materials and refuse must be segregated and kept from sources of ignition;
- All employees shall be made aware of the locations of fire extinguishers and hydrants and access to those resources shall be kept clear;
- The SSO shall notify all employees of any unusual fire hazard condition; and
- Good housekeeping practices are to be followed.

4.4.2 Fire Protection

All personnel shall be notified if a fire occurs; the local fire department shall also be notified. When notifying the local fire department: remain calm and speak clearly and slowly; give the

exact location of the fire and describe the situation; give a phone number for the location you are calling from; and, do not hang up until you are told to do so.

4.5 Evacuation Procedures

In the event of an emergency which necessitates evacuation of the work area, personnel will notify other personnel verbally or otherwise. All personnel will immediately evacuate the work area, keeping upwind of smoke, vapors or spill location, to a predetermined safe area, without regard for equipment. The predetermined safe area will be specified to all personnel by the SSO prior to the start of field work. Personnel will not re-enter the area until all health and safety issues return to a satisfactory level. The SSO is responsible for selecting the most effective evacuation route, as well as designating safe distances and places of refuge. The SSO shall conduct a roll call to ensure that all personnel have been evacuated safely.

Evacuation procedures in case of personal injury of personnel will be conducted as follows:

- Another team member (buddy) should signal the SSO that the injury has occurred;
- A field team member trained in first aid can administer treatment to an injured worker;
- The victim should then be transported to the nearest emergency room (see **Attachment B**). If necessary, an ambulance should be called to transport the victim; and
- The SSO is responsible for making certain that an Accident Report Form is completed. This form is to be submitted to the Project Manager. Follow-up action should be taken to correct the situation that caused the accident.

If a member of the field crew demonstrates symptoms of chemical exposure, the procedures outlined below shall be followed:

- Another team member (buddy) is to remove the individual from the immediate area of contamination if it is safe for them to do so. The buddy shall communicate to the SSO (via voice/hand signals) about the chemical exposure. The SSO will then contact the appropriate emergency response agency;
- Precautions must be taken to avoid exposure of other individuals to the chemical;
- If the chemical is on the individual's clothing, the chemical shall be neutralized or removed if it is safe to do so;
- If the chemical has contacted the skin, the skin shall be washed with copious amounts of water; and
- In case of eye contact, an emergency eye wash is to be used. Eyes should be washed for at least fifteen (15) minutes.

All chemical exposure incidents must be reported in writing to the Project Manager. The SSO is responsible for completing the accident report.

4.6 Spill Containment

In an effort to prevent spills, all hazardous material will be stored in appropriate containers and the tops/lids will be placed back on the containers after use. Hazardous materials brought on-site shall come with the appropriate SDS (the SDS sheets for chemicals that are most likely to be encountered on-site are attached to this HASP in **Attachment C**), will be stored appropriately, with labels, and away from moving equipment. Containers will be lifted/moved utilizing equipment appropriate for the task and secured and handled in a manner which minimizes spillage and reduces the risk of personal injury. At least one (1) spill response kit shall be available at the Site.

All environmental spills or releases of hazardous materials are to be immediately reported to the SSO and dealt with according to the chemical manufacturers recommended procedures, which can be found on the SDS. The SDS for chemicals/contaminants identified during historic Site investigations and known to be associated with the Site are provided in **Attachment C**. If any materials brought on-site during the work come with an SDS, that SDS will be added to **Attachment C**.

4.7 Incident Reporting

If an accident, fire, or release of toxic materials occurs during the course of work, the Project Manager shall be telephoned immediately and receive written notification within 24 hours. That notification shall include the following information:

- Name, organization, telephone number, and location of the Contractor;
- Name and title of the person(s) reporting;
- Date and time of the accident/incident;
- Location of the accident/incident (i.e. site location, Site name);
- Brief summary of the accident/incident giving pertinent details including type of operation ongoing at the time of the accident/incident;
- Cause of the accident/incident, if known;
- Casualties (fatalities, disabling injuries);
- Details of any existing chemical hazard or contamination;
- Estimated property damage and effect on contract schedule;
- Action taken by Contractor to ensure safety and security; and
- Other damage or injuries sustained, public, or private.

If any employee of a subcontractor is injured, documentation of the incident will be recorded in accordance with the subcontractor's procedures; however, copies of all documentation (which at a minimum must include the OSHA Form 301 or equivalent) must be provided to the SSO within 24 hours after the accident has occurred. All accidents/incidents will be investigated. Copies of all subcontractor accident investigations will be provided to the SSO within five (5) days of the accident/incident.

5.0 GENERAL HEALTH AND SAFETY REQUIREMENTS

All Site personnel shall conduct themselves in a safe manner and maintain a working environment that is free of additional hazards.

5.1 Qualifications and Training

All personnel performing work at the Site must be qualified for their assigned project task, as determined by the Project Manager. They must meet the training and medical monitoring requirements necessary for the task and as described herein. If possible exposure above an OSHA permissible exposure limit (PEL) has or is expected to occur, employees must be required to receive supplemental medical testing to document any symptoms that may be specific to the particular materials present.

Training programs instruct employees on the intent of the OSHA standards, health and safety principles and procedures, proper operation of monitoring instruments, use of personal protective equipment, decontamination, and specific emergency plans. All personnel are required to remain current in all of their required training and evaluate their need for additional training when there is a change in work. In addition to the general health and safety training programs, personnel will be required to complete any supplemental task specific training (e.g. OSHA 40 Hour HAZWOPER training) developed for the tasks to be performed. Administration and compliance with the requirements for additional task-specific training will be the responsibility of the Project Manager. Any additional required training that is completed will be documented and tracked in the project files. Additional training will be provided to any employees responsible for responding to emergencies.

A copy of this HASP will also be made available to all personnel for review. All employees on-site will sign the Record of HASP Acknowledgement form (refer to Section 9.0) to verify they have reviewed this Plan. Any subcontractors involved in implementing the work plan will be required to acknowledge that their employees have received adequate training.

All on-site personnel involved with the project will attend a pre-entry briefing on the contents of this HASP, including chemical and physical hazards associated with the Site. The initial health and safety briefing will consist of the following information:

- Names of personnel and alternates responsible for worker safety and health;
- Injury, illness, and other potential project hazards;
- Safe use of engineering controls and equipment on-site;

- Work practices by which the employee can minimize risks from hazards;
- Selection, use, care, and maintenance of PPE; and
- Standard operation safety procedures.

Documentation of all training, testing and medical monitoring certificates (if applicable) will be maintained by Walden.

5.1.1 Hazardous Communication Training (29 CFR 1910.1200)

Hazardous materials that may be encountered as existing on-site environmental or physical/health contaminants during the work activities are addressed in this HASP and their properties, hazards and associated required controls will be communicated to all affected employees and subcontractors, as per OSHA's Hazard Communication Standard. All personnel shall be briefed on the hazards of any chemical product they use and shall be aware of and have access to all SDS; these employees must be 40 Hour HAZWOPER trained.

All containers on-site shall be properly labeled in compliance with the Globally Harmonized System to indicate their contents. Labeling on any containers not intended for single day, individual use shall contain additional information indicating potential health and safety hazards (flammability, reactivity, etc.). SDS for chemicals/contaminants known to be associated with the Site are provided in **Attachment C**. If any materials brought on-site during the work come with an SDS, that SDS will be added to **Attachment C**.

5.1.2 Visitor Training

All visitors to work areas will be informed of the hazards and necessary personal protective equipment associated with those areas, should they require entry to controlled work areas. Visitors shall also be briefed on emergency procedures.

5.2 General Safety

The SSO shall inspect work areas prior to commencement of daily activities. The SSO will take all corrective measures necessary to perform safe work at the Site. All inspections and corrective measures will be documented and communicated to Site workers at the initial safety meeting and subsequent safety meetings.

Employees will practice contamination avoidance to include not walking through puddles or mud unnecessarily, avoiding kneeling on the ground or leaning on equipment whenever possible, or setting equipment on the ground. Weather conditions that may escalate potential hazards such as lightning, rain or extreme temperatures, will be recorded in the project files.

Employees will use extreme caution in inclined areas. Ground surfaces may be wet and slippery and may have hazardous objects protruding from the surface.

Dependent on the season in which the work will be performed, employees should exercise caution when encountering animals (e.g. snakes, spiders, bees, wasps, ticks, mosquitoes, ants, etc.) at the Site. Employees who are known to be highly sensitive to insect stings should carry a "sting kit" and notify the SSO. All employees are encouraged to use permethrin (0.5%) clothing repellent and DEET (30%) skin repellent for protection against ticks and mosquitoes.

Hearing protection devices will be available to be worn by all field personnel in work areas where noise levels are at or above 85 decibels (dBA). The use of hearing protection devices when the noise levels exceed 85 dBA on an 8-hour average is a condition of employment.

5.2.1 Tailgate Safety Meetings

The SSO will conduct an informational safety meeting at the start of each workday to ensure that all on-site personnel (those entering the exclusion, contaminant reduction and support zones) understand changing conditions and daily operating procedures, and to address safety questions and concerns; these topics shall typically require ten (10) minutes to discuss and shall be recorded in the field notebook. Additional meetings may be conducted, as required. Attendance is mandatory and an attendance record shall be kept by the SSO. Any person who observes safety concerns or potential hazards that have not been addressed in the daily safety meeting should immediately report observations/concerns to the SSO. Meetings will include pertinent information regarding the day's work and include, but will not be limited to, the following:

- The whereabouts of any hazardous chemicals near specific work areas;
- Methods used to detect the presence or release of hazardous chemicals;
- The physical and chemical health hazards of the Site;
- Protective measures such as safe work practices, emergency procedures, and PPE;
- Details regarding the proper use of protective measures and SDS's;
- Target activities for the day's work;
- Changes in observed exposure levels; and
- Staff changes (e.g., due to vacations, reassignments, etc.) and responsibilities.

5.2.2 Housekeeping

During project activities, work areas will be continuously policed for identification of excess trash and unnecessary debris. Excess trash and debris will be collected and stored in an

appropriate container (e.g., plastic trash bags, garbage can, roll-off bin) prior to disposal. All electrical equipment must be grounded.

5.2.3 Hazardous, Solid or Municipal Waste

If hazardous, solid, and/or municipal wastes are generated, the waste shall be accumulated, labeled, and disposed of in accordance with all applicable Federal, State and/or local regulations. If equipment or materials that will be used (i.e., calibration gases, lithium batteries, etc.) need to be shipped but fall under criteria that define them as hazardous materials under Department of Transportation (DOT) regulations 49 Code of Federal Regulations (CFR) Parts 171-177, then they must be shipped in accordance with those regulations by an individual who is certified as having been "function-specific" trained, as required under the DOT regulations.

5.2.4 Smoking, Eating and Drinking

Eating, drinking, or smoking is permitted only in designated areas in the support zone. An exception is made for the replacement of fluids as a preventive measure for heat stress. Workers will first wash hands and face immediately after leaving controlled work areas (and always prior to eating or drinking).

5.2.5 Personal Hygiene

The following personal hygiene requirements will be observed:

- No contact lenses shall be worn in the exclusion zone without the use of additional eye protection;
- If work is to be performed outdoors on a building perimeter, protective clothing that is loose fitting and covers arms and legs to protect against sunlight during times of high levels of ultraviolet exposure (May through September) shall be worn; hats, sunscreen that provides UVA and UVB protection and sunglasses shall also be donned, as appropriate;
- A water supply meeting the following requirements will be utilized:
    - *Potable Water* - An adequate supply of potable water will be available for personnel consumption. Potable water can be provided in the form of water bottles, canteens, water coolers, or drinking fountains. Where drinking fountains are not available, individual-use cups will be provided as well as adequate disposal containers. Potable water containers will be properly identified in order to distinguish them from non-potable water sources; and
    - *Non-Potable Water* - Non-potable water may be used for job tasks and cleaning activities only. Non-potable water will not be used for drinking purposes or for

hand washing. All containers of non-potable water will be marked with a label stating: "***Non-Potable Water - Not Intended for Drinking Water Consumption"***.

- Access to nearby toilet facilities shall be maintained; and
- Employees will be provided washing facilities (e.g., buckets with water and soap). The use of water and hand soap (or similar substance) will be required by all employees following exit from the exclusion zone, prior to breaks, and at the end of daily work activities.

5.2.6 Stop Work Authority

All employees have the right and duty to stop work when conditions are unsafe and to assist in correcting these conditions. Whenever the SSO determines that workplace conditions present an uncontrolled risk of injury or illness to employees, immediate resolution shall be sought. Stop work shall be immediately binding on all affected employees and subcontractors. Upon issuing the stop work order, the SSO shall implement corrective actions so that operations may be safely resumed. Resumption of safe operations is the primary objective; however, operations shall not resume until the SSO and Project Manager concur that workplace conditions meet acceptable safety standards.

5.2.7 Severe Weather

Severe weather can occur with little warning. Employees will be vigilant for the potentials for storms, lightning, high winds, and flash flood events. The SSO will be attentive to daily weather forecasts for the project area each morning. For activities occurring outdoors, the following conditions will be observed:

- Condition #1 – Storm threat within 24 hours: stow non-essential gear indoors and maintain a six (6) hour weather watch; and
- Condition #2 – Storm threat within 12 hours: securely lash down all moveable gear, drums, pipes, tools, etc. and maintain a three (3) hour weather watch.

5.3 Communication Procedures

Personnel will be informed of all known Site hazards during an initial safety meeting and will be kept informed of hazards discovered during work activities.

- Personnel within the exclusion zone will remain in constant communication or within sight of other personnel. Failure of communication requires evacuation of the exclusion zone until communication is reestablished;

- The emergency signal will be one of the following:
    - Any blast from a pressurized air horn or vehicle horn; and
    - Verbal notification.
- The following standard hand signals will be used:
    - Hand gripping throat -- Out of air and cannot breathe;
    - Grip buddy's wrist -- Leave area immediately;
    - Both hands on buddy's waist -- Leave area immediately;
    - Hands on top of head -- Need assistance;
    - Thumb down -- No/negative; and
    - Thumb up -- Yes/I am OK/I am alright.

5.4 Hazard Communication

SDSs, along with a list of those materials covered by the SDSs, will be available to all personnel (including subcontractors) for all hazardous substances brought on-site. SDS for chemicals/ contaminants known to be associated with the Site are provided in **Attachment C**. SDS's for materials later brought on-site shall come with an SDS, which is to be included in **Attachment C**. Any employee or subcontractor intending to bring a hazardous material onto the jobsite must first provide a copy of the SDS to the SSO for review and filing. Should an SDS be necessary but not available for the material in question, the material may not be brought onto the Site.

All containers on-site shall be properly labeled to indicate their contents. Labeling on any containers not intended for single-day, individual use shall contain additional information indicating potential health and safety hazards (flammability, reactivity, etc.). Prior to starting work, personnel, including any subcontractors, will be briefed by the SSO regarding hazardous chemicals and their properties, hazards and associated required controls present at the work-site that personnel could use or be exposed to.

5.5 Medical Monitoring

OSHA has established requirements for a medical surveillance program designed to monitor and reduce health risks for employees who may potentially be exposed to hazardous materials. The medical surveillance program has been designed to provide baseline medical data for each employee involved in hazardous material operations. Each employee must undergo testing and training, and a determination of his/her ability to wear PPE and carry out certain tasks. Medical examinations must be administered during pre-employment, on an annual basis, upon employment termination, and as warranted for potential chemical exposure. These examinations shall be provided by employers without cost or loss of pay to the employee. In accordance with 29 CFR 1910.1020, medical surveillance records should be maintained for thirty (30) years past employment and shall be available to the employee, owner, or regulatory agencies, as required.

Due to potential exposure to hazardous materials, all contractors, employees, subcontractors and other prime contractors involved in Site activities within the exclusion zone will be informed about the medical monitoring program meeting specifications of 29 CFR Part 1926.1153. Each contractor shall assume the responsibility of maintaining a medical surveillance program (if needed) as well as maintaining personnel medical records, as regulated by 29 CFR 1910.1020, for all personnel, including subcontractors, who will be on-site. Subcontractors working on the job must provide the SSO with documentation on their medical monitoring programs.

5.6 Logs, Reports and Record Keeping

Walden shall keep a permanently bound logbook containing as a minimum the following information:

- Agency property number, Site name, address, location and project duration;
- Contractor name, address, phone number;
- A list of Contractor personnel assigned to the project; and
- A day-to-day record of personnel entering the work area, short description of the day's work, and a record of any significant or unusual events occurring during the course of work, including but not limited to inspections, observations, unusual incidents, (e.g. damage, unexpected visitors, etc.). The project narrative is to be kept by the Project Manager.

The SSO and Project Manager will ensure that all records are kept up to date and maintained in accordance with applicable regulations. The following items will be recorded in the daily field log in waterproof, permanent ink:

- Daily list of field personnel;
- Record of all visitors;
- Training logs;
- Levels of PPE worn by workers and, as appropriate, visitors;
- Exposure work-hours and a log of occupational injuries and illnesses;
- Accident investigations;
- Daily record of all first aid treatments not otherwise reportable; and
- Daily health and safety inspection report.

6.0 HAZARD ASSESSMENT

This section identifies the general and activity-specific hazards associated with Site operations and what should be implemented to reduce the hazards; identifies general physical hazards that can be expected; and presents a summary of documented or potential chemical hazards that may be encountered during the soil investigation work, as well as biological hazards. Every effort must be made to reduce or eliminate these hazards. Those which cannot be eliminated must be guarded against by using engineering controls and/or personal protective equipment.

6.1 Physical Hazards

The following physical hazards may be associated with the project at hand:

6.1.1 Site Mobilization/Demobilization

Mobilization and demobilization activities may cause health injuries during traffic accidents. Manual materials handling and manual site preparation may cause blisters, sore muscles and joints, and skeletal injuries. It may also present the potential for eye hazards, contusions and lacerations. Slippery work surfaces can increase the likelihood of back injuries, overexertion injuries, slips and falls.

Underground utilities must be identified before commencing any subsurface work.

6.1.2 General Work Activities

Tasks required for this project may involve exposure to slipping/tripping/falling, manual lifting, noise, heat/cold stress, electrical, hand and power tools, operation of motorized vehicles, and other physical hazards associated with soil investigation activities. All work at this Site will be conducted during daylight hours.

Slipping/Falling: Slips, trips and falls are the most common workplace incidents and can result in serious injuries, even death. General housekeeping of the Site, PPE, attention to your surroundings, minimizing distractions and warding off fatigue can all help to minimize risk of slips, trips and falls. Work areas shall be kept free of any materials, obstructions and substances that could cause a hazardous situation. Workers shall ensure clear footing and avoid obstructions, holes, protruding objects or other tripping hazards and look out for uneven, unstable and slippery terrain. Designated routes shall be taken, not shortcuts, and makeshift substitutes of equipment must not be used. Workers are prohibited from horse-play and shall ensure a clear path prior to carrying/moving equipment.

Manual Lifting: Lifting/carrying of equipment and materials may cause strains, particularly back injuries, fatigue and over-exertion. Proper lifting techniques should be exercised; bend at the knees, let your legs do the lifting, do not twist while lifting, bring the load as close to you as possible prior to lifting, be sure there is a clear walking path, use mechanical devices for heavier objects, team lift.

Noise: The operation of certain equipment (e.g., generator, nearby construction work, etc.) may result in momentary high noise levels which could result in temporary to permanent hearing loss and interference in communication. Hearing protection (e.g. ear plugs, ear muffs) will be used as necessary; as a rule of thumb, if it becomes necessary to shout at someone three (3) feet away, hearing protection should be worn.

Eye Protection: All Site-related operations involving possible eye injury (chemical splash, etc.), must have approved eye wash units readily available. Protective eyewear shall be donned in Level D, when directed by the SSO.

Heat Stress: Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature is 72°F or above. Monitoring frequency should increase as ambient temperature increases or as slow recovery rates are observed. Heat stress monitoring should be performed by the SSO, who shall be able to recognize symptoms of heat stress; refer to **Attachment D**.

Proper training and preventive measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat-related illness. To avoid heat stress, the following steps should be taken:

- Adjust work schedules;
- Mandate work slowdowns as needed;
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided;
- Provide shelter (air conditioned, if possible) or shaded areas to protect personnel during rest periods; and
- Maintain workers' body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, i.e. eight (8) fluid ounces (0.23 liters) of water must be ingested for approximately every eight (8) ounces (0.23 kg) of weight lost. When heavy

sweating occurs, encourage workers to drink more. The following strategies may be useful:

- Maintain water temperature between 50° and 60°F (10° to 16.6°C);
- Provide small disposal cups that hold about four ounces (0.1 liter);
- Have workers drink sixteen (16) ounces (0.5 liter) of fluid (preferably water or dilute drinks) before beginning work;
- Urge workers to drink one (1) or two (2) cups every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight; and
- Train workers to recognize the symptoms of heat-related illness.

Should an employee display signs of heat exhaustion (fatigue, weakness, profuse sweating, normal temperature, pale clammy skin, headache, cramps, vomiting, fainting), they are to be immediately removed from the hot area and lay down with their feet raised. Their clothing should be loosened or removed and cool, wet clothes applied. If the victim is not vomiting, they should be encouraged to take small sips of water.

Should an employee display signs of heat stroke (dizziness, nausea, severe headache, hot and dry skin, confusion, collapse, delirium, coma and death), seek immediate emergency medical attention. Remove the victim from the hot area and remove clothing, lay them down and cool their body (shower, cool wet clothes); do not give stimulants to the victim. Refer to **Attachment D** for further instruction.

Cold Stress: Cold stress is a result of cold, wetness, and wind. A worker's susceptibility to cold stress can vary according to their physical fitness, degree of acclimatization to cold weather, age, and diet. If work on this project occurs during winter months, thermal injury due to cold exposure can become a problem for on-site personnel. A cold-stress monitoring program shall be implemented, as appropriate. Workers should be aware of the local cold exposure hazard (frostbite) and the overall cold exposure hazard (hypothermia). Refer to **Attachment E** for further information on Cold Stress.

To prevent cold-related illness:

- Educate workers to recognize the symptoms of frostbite and hypothermia;
- Identify and limit known risk factors;
- Assure the availability of enclosed, heated environments on or adjacent to the Site;
- Assure the availability of dry changes of clothing;
- Assure the availability of warm drinks; and

- Start oral temperature recording at the Site:
  - At the SSO or Project Manager's discretion when changes in a worker's performance or mental status are suspected;
  - At a worker's request;
  - As a screening measure, two (2) times per shift, under unusually hazardous conditions (e.g. wind chill less than 20°F or wind chill less than 30°F with precipitation); and
  - As a screening measure whenever any worker at the Site develops hypothermia.

Electrical: Hazards associated with electricity include shock, electrocution, burns, fires and explosions, as well as trip and fall hazards from power cords, and including electrical hazards and exposure to carbon monoxide from the use of portable generators. No work is to be performed on electrical equipment or near any part of an electrical circuit unless the worker is protected against shock by guarding or de-energizing and grounding the circuit. Ground Fault Circuit Interrupters (GFCIs) are required for portable tools. Extension cords shall be rated for hard or extra hard use and must be capable of grounding. All cords shall be inspected prior to use for wear and exposed wiring, strain, rips, tears, cuts or burns; defective cords shall be taken out of commission. Generators shall be fueled only after being shut down and allowed to cool, in addition, portable generators shall not be utilized indoors; the exhaust is to pointed downwind from workers.

Hand and Power Tools: The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, sparks, fire, abrasions, contusions and electrocution, or being exposed to harmful dusts, fumes, mists, vapors or gases. Ground Fault Circuit Interrupters are required for portable tools. Workers shall confirm that all tools are in proper operating condition and that they are used in accordance with applicable manufacturers' recommendations. All appropriate PPE must be provided and utilized throughout the duration of applicable tasks.

Operation of Motorized Vehicles: Moving vehicles can be a danger whether one is within or outside of a vehicle. Distracted drivers, drivers under the influence of drugs/alcohol, tired drivers can all lead to injury, damage or death. Only authorized workers may operate motorized vehicles. Site conditions may include off-road surfaces and operation should be performed according to ground conditions. Authorized drivers must comply with all applicable state laws while operating the vehicle and possess the appropriate qualifications. Loads shall be secured and within the appropriate weight limit for the vehicle (including the number of passengers). Vehicles shall be inspected prior to use and taken out of commission if deemed unsafe. The vehicles shall be properly maintained. Operators are not to be distracted, should wear seatbelts anytime a vehicle is in motion and headlights shall be used during operation. Operation by an

employee who has recently partaken in consumption of alcoholic beverages and/or illegal drugs is prohibited.

6.2 Chemical Hazards

Previously identified chemicals used at various locations throughout the Site, thus potentially contained in soil and groundwater, include:

Chemical	OSHA Permissible Exposure Limit (PEL), 8-Hour Time-Weighted Average (TWA)	OSHA Short-term Exposure Limit (STEL)
Tetrachloroethylene	25 ppm*	100 ppm
Trichloroethylene	25 ppm	100 ppm
1,2-Dichloroethene	200 ppm	n/a
Vinyl Chloride	1 ppm	n/a
Freon-113	500 ppm	n/a

*ppm = parts per million

The major route of exposure to these contaminants will be respiratory in nature, however dermal exposure is also possible. Inhalation of vapors and contaminated dusts would provide the mechanism for respiratory exposure. Skin contact with soils and groundwater would result in dermal exposure. Site-related work will use engineering controls, work practices, air monitoring and personnel protective equipment to reduce the amount of potential exposure. Restricting access to controlled work areas, staying upwind of potential sources, adhering to personal hygiene practices and wearing proper safety equipment will reduce risk of injuries.

During construction, excavation, sampling and soil management activities, air monitoring shall be performed with a PID and/or multi-gas meter to determine if workers are at risk for chemical exposure. Air monitoring equipment shall be calibrated daily and noted in a log book. Air monitoring shall be performed by trained Walden individuals, only. If concentrations exceed time-weighted average (TWA), the SSO shall immediately instruct the workers to stop work. Once everyone is removed from the work area, the SSO shall consider the following measures, listed in order from most desirable to least desirable:

- Installation of engineering controls (e.g. ventilation, containment of source);
- Administrative controls; and
- Donning of PPE; upgrading PPE.

The SSO shall decide which of the above options are feasible and make a rational decision based on available resources. Workers shall not be allowed back into the work zone until the chemical hazard is properly mitigated, with no exceptions. Refer to Section 7.2 below for further information.

6.3 Biological Hazards

Potential biological hazards include illnesses and/or injuries transmitted by plants, insects, animals, and pathogenic agents.

6.3.1 Plants

Contact with poisonous plants, such as ivy, oak and sumac, can cause skin irritation referred to as contact dermatitis, which may appear as a red, itchy rash consisting of small bumps, blisters or swelling, caused by the urushiol on the leaves, stems, roots and vines. These vines/shrubs/ground cover grow in woods and fields alike, as well as in both wet and dry areas. Workers will avoid contact with these plants. If work is to take place in a field or wooded area where poisonous plants may exist, precautions shall be implemented to avoid contact including wearing protective clothing, using Tyvek™ coveralls and nitrile gloves, or using a barrier cream. If contact is suspected, workers will immediately wash all exposed skin/materials with a strong soap and water to remove the oil. Personnel that believe they may have been in contact with such plants during work at the Site should notify the SSO or Project Manager of such an incident immediately.

6.3.2 Animals

During operations at the Site, animals such as dogs, pigeons, sea gulls, mice, and rats may be encountered. Contact with such animals can cause rabies (dog's or squirrel's bite); Hantavirus (rat and mice droppings); psittacosis, crytococcosis, and histoplasmosis (dried bird droppings). Workers will use discretion and avoid all contact with animals.

6.3.3 Insects

Bees, wasps, hornets, mosquitoes, ticks and spiders may be present at the Site. Some individuals may have severe allergic reactions to an insect bite or sting that can result in a life-threatening condition. In addition, mosquito bites may lead to St. Louis encephalitis or West Nile encephalitis. Personnel that have been bitten or stung by an insect during work at the Site should notify the SSO or Project Manager of such an incident immediately. Workers will wear protective clothing and footwear, apply insect repellent prior to work, and avoid contact with bushes, tall grass, or brush to the extent possible. Field personnel who may have insect allergies

should provide this information to the SSO or Project Manager in advance and will have allergy medication on-hand.

6.3.4 Blood-borne Pathogens

Blood-borne pathogens (BBPs) include diseases that can be transmitted by contact with blood or other bodily fluids as well as contaminated items which may be encountered (e.g., used syringes, medical pads, etc.). Universal precautions shall be used when administering first aid. Good hygiene practices and proper decontamination of non-disposable PPE will minimize potential for transmission of BBPs.

7.0 EXPOSURE MONITORING

The following is a discussion of the hazards presented to worker personnel during work at this Site from on-site physical and chemical hazards known, suspected or anticipated to be present on-site at the time this HASP was prepared.

7.1 Noise

Noise levels are measured in units of dBA, which matches the response of the human ear, and are measured on the A-scale of a standard sound level meter at slow response. Normal conversation produces a noise level of 60 dBA, while power tools often produce levels between 90-110 dBA. If two people standing an arm's length apart must raise their voices to talk, the noise level is over 85 dBA. Noise levels above 140 dBA cause pain immediately and produce hearing damage. Decibels are a logarithmic scale, meaning that 100 dBA is ten (10) times as loud as 90 dBA, 100 times as loud as 80 dBA, and 1,000 times as loud as 70 dBA.

Hearing protection (disposable or reusable type) will be utilized by any on-site personnel potentially exposed to either continuous or impact noise levels exceeding 90 dBA (slow response) for an 8-hour work shift. Should employees be exposed to such sound levels, all feasible administrative and engineering controls shall be utilized. If such controls fail to reduce sound levels within the specified sound levels provided in the table below, PPE shall be provided and used to reduce sound levels within the levels provided in the table. A sound is considered if the variations in noise level involve maxima intervals of one (1) second or less. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

Permissible Noise Exposure Table

Duration Per Day (Hours)	Sound Level (dBA)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115

7.1.1 Hearing Conservation Program

In all cases where the sound levels exceed the values shown in the table above, a continuing, effective hearing conservation program shall be administered. The program shall equip employees with the knowledge and hearing protection devices necessary to safeguard themselves from occupational hearing loss. The program shall consist of the following elements:

- Monitoring of employee noise exposures;
- The institution of engineering, work practice, and administrative controls for excessive noise;
- The provision of each overexposed employee with an individually fitted hearing protector with an adequate noise reduction rating;
- Employee training and education regarding noise hazards and protection measures;
- Baseline and annual audiometry;
- Procedures for preventing further occupational hearing loss by an employee whenever such an event has been identified; and
- Record keeping.

7.2 Chemical Contaminants

OSHA Permissible Exposure Limits (PEL) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) may be exceeded during soil and groundwater investigative activities or when contaminated media are exposed or disturbed during construction or other activities. These activities will be closely monitored and evaluated to determine potential for exceeding standards and the need to implement control measures to protect personnel and the environment.

7.2.1 Air Monitoring

Direct reading instruments will be used in active work areas in order to enable rapid field decisions regarding levels of respiratory protection, as well as indicate the need for increased monitoring frequency at the edge of the exclusion zone. Walden staff will conduct air monitoring during all intrusive activities.

A MiniRAE or equivalent PID, which is calibrated daily and adjusted to give maximum sensitivity to the contaminants of concern will be used to monitor the air on a continuous basis while intrusive activities are performed. Should the meter read 0.5 parts per million (ppm) or greater above background in the breathing zone for more than one (1) minute and the source of the reading is unknown, work will be stopped until PPE is upgraded; the same holds true if the

meter reads greater than five (5) ppm above background levels in the breathing zone for more than thirty (30) continuous seconds.

PPE requirements and upgrade thresholds are summarized in the tables presented below:

Personal Protective Equipment Requirements Table

Location	Level of Protection/Tasks	Description
Support Zone	D	Steel toe boots and work clothes
Exclusion Zone and Contaminant Reduction Zone	To be determined by the site safety officer based on contamination present	
	D (modified)	Steel toe boots, nitrile or latex gloves, hard hat, safety glasses
	C	Full face respirator fitted with organic vapor cartridge and Level D PPE.
	B	Positive pressure, pressure demand self-contained breathing apparatus or positive pressure, pressure demand supplied air and Level C PPE.

Air Monitoring Action Levels Table

Instrument	Hazard Monitored	Instrument Reading	Action Required
PID	Organic Vapors	0.5 ppm or greater above background in the breathing zone for 1 minute and the source of the reading is unknown.	PPE will be upgraded to Level C.
		5 ppm or greater above background in the breathing zone for 30 continuous seconds	Stop work. Evaluate the source and upgrade Level C to Level B.
Combustible Gas Indicator	Explosive Vapors	>10% LEL	Explosion hazard! Withdraw from the area immediately until LEL <10%.
Oxygen Meter	Oxygen	<19.5% O_2	Stop work and withdraw from area until oxygen levels increase.

The following are examples of actions that can be implemented in addition to PPE upgrades to reduce the potential for contaminant release and exposure:

- Cover areas of exposed soils;
- Increase ventilation; and
- Install measures to contain areas of contaminant release.

7.3 Calibration

Any exposure monitoring instruments used will be calibrated at the beginning of each work shift, in accordance with the manufacturer's recommendations. If the owner's manual is not available, the personnel operating the equipment will contact the applicable office representative, rental agency or manufacturer for technical guidance for proper calibration. If equipment cannot be pre-calibrated to specifications, operations requiring monitoring for worker exposure will be postponed or temporarily ceased until this requirement is completed.

8.0 PERSONAL PROTECTIVE EQUIPMENT

The purpose of PPE is to provide a barrier, which will shield or isolate individuals from the chemical and/or physical hazards that may be encountered during work activities. The level of worker protection can be increased or reduced if determined by an employee exposure assessment. Until an employee exposure assessment is complete, the following procedures and PPE shall be made available:

- Head protection;
- Foot protection;
- Hand protection;
- Eye protection;
- Hearing protection; and
- Respiratory protection.

By signing this HASP (Section 9.0) the employee agrees to having been trained in the use, limitations, care and maintenance of the PPE to be used by the employee at this project. If training has not been provided, request same of the SSO for the proper training before signing.

8.1 Head Protection

Workers and individuals within work areas where overhead work is being performed must wear protective helmets. The protective helmets will reduce the potential for permanent injury to the head from falling and/or sharp edged objects. The head protection shall comply with the ANSI and the International Safety Equipment Association (ISEA) latest standard ANSI/ISEA Z89.1-2014, “Industrial Head Protection”.

8.2 Foot Protection

All personnel and individuals in the work areas will wear steel-toed or equivalent protective footwear to help prevent foot injuries from falling or rolling objects, objects piercing the footwear sole, and/or exposure to electrical hazards. The footwear will be properly secured to the feet at all times. Protective footwear will comply with the American National Standard for Safety-Toe Footwear, Z41.1-1967.

8.3 Hand Protection

All workers entering the work areas will use hand protection to prevent injuries caused from exposure, abrasions, lacerations, and burns of any type. The performance characteristics of the

hand protection will reflect the task(s) of the individual worker. If worn, protective disposable clothing will cover the hand protection as much as possible.

8.4 Eye Protection

All workers and individuals within the work areas will use appropriate eye protection to reduce the potential of damage caused by splashing, falling or flying objects/materials. The eye protection should fit securely on the face so the objects/materials will not enter from any side of the protection (goggles that seal to the face using an elastic headband are recommended). Eye protection will comply with ANSI/ISEA Z87.1-2015 Standards.

8.5 Hearing Protection

All workers and individuals within the work areas will use appropriate hearing protection if operations produce noise levels that exceed levels given in the permissible noise exposure table provided in Section 7.1. Exposure to impulsive or impact noise should not exceed 140 dBA peak sound pressure level. Hearing protection will be recommended if either continuous or impact noise levels exceed 90 dBA (slow response) for an 8-hour work shift. If unable to carry out conversation at an arm length or at three (3) feet distance, hearing protection such as ear plugs or muffs will be used. Hearing protection selected must control employee exposures to comply with OSHA permissible noise standards if noise levels exceed OSHA permissible noise levels. Where disposable earplugs are selected, sufficient supplies will be maintained on-site to allow for multiple changeovers per day, per worker. A non-"roll-down" type earplug, such as the E-A-R Pod Plug, should be considered to reduce the potential for ear canal contamination.

8.6 Respiratory Protection

All personnel and individuals in the work areas will wear respiratory protective equipment when needed, to help prevent exposure to any fumes, vapors, dust, and other respiratory hazards that may be encountered during on-site activities. The respirators (if needed) will be properly fitted and employees who wear or may wear respiratory protection will undergo fit-testing. Respiratory protection will comply with applicable National Institute for Occupational Safety and Health (NIOSH) and American Society for Testing and Materials (ASTM) International Standards depending on the type of PPE to be worn.

During work activities including, but not limited to, saw-cutting of concrete and the operation of power tools such as jackhammers, grinders or drills on concrete or cement (none presently anticipated for the work covered under this HASP), personnel will wear protective equipment to prevent the inhalation of dust and silica particles.

8.7 PPE Program

PPE will be required when work activities generate and/or involve known or suspected atmospheric vapors, gases, liquids, or particulates at or above satisfactory health and safety levels or regulatory action limits. Protective equipment shall be ANSI/ISEA/NIOSH-approved.

For the work covered under this HASP, PPE should typically comprise Level D protection. Should air monitoring indicate that Level D fails to meet protection requirements, work shall be stopped and PPE shall be upgraded to Level C. Level D PPE consists of:

- Standard work uniform with coveralls or tyvek, as needed;
- Steel-toe and steel shank work boots;
- Hard hat;
- Gloves, as needed;
- Safety glasses; and
- Hearing protection, as needed.

Level C PPE consists of:

- Full face respirator fitted with appropriate organic vapor cartridge and Level D PPE.

8.7.1 Inspections

Before use of protective clothing, all personnel shall determine that the clothing material is correct for the specified task at hand. The clothing is to be visually inspected for imperfect seams, non-uniform coatings, tears and malfunctioning closures.

Before using gloves, they are to be checked for pinhole leaks. It is imperative that any equipment found to be defective be replaced immediately.

8.7.2 Donning/Doffing of Personal Protective Equipment

The following information is to provide on-site personnel with helpful hints that, when applied, make donning and doffing of PPE a more safe and manageable task:

- Have a “buddy” check your ensemble to ensure proper donning before entering controlled work areas. Without mirrors, the most obvious discrepancies can go unnoticed and may result in a potential exposure situation;
- Never perform personal decontamination with a pressure washer;
- Decontamination of equipment with water and a detergent shall be performed while PPE is still worn; and

- PPE will be removed and personnel will thoroughly wash their hands prior to leaving the Site.

All PPE is to be bagged and contained in the proper receptacle prior to proper off-site disposal.

9.0 RECORD OF HASP ACKNOWLEDGEMENT

I certify that I have thoroughly read and fully understand the information in this HASP for intrusive activities performed at Cropsey Scrap Iron & Metal. I understand the associated potential health and safety hazards and issues.

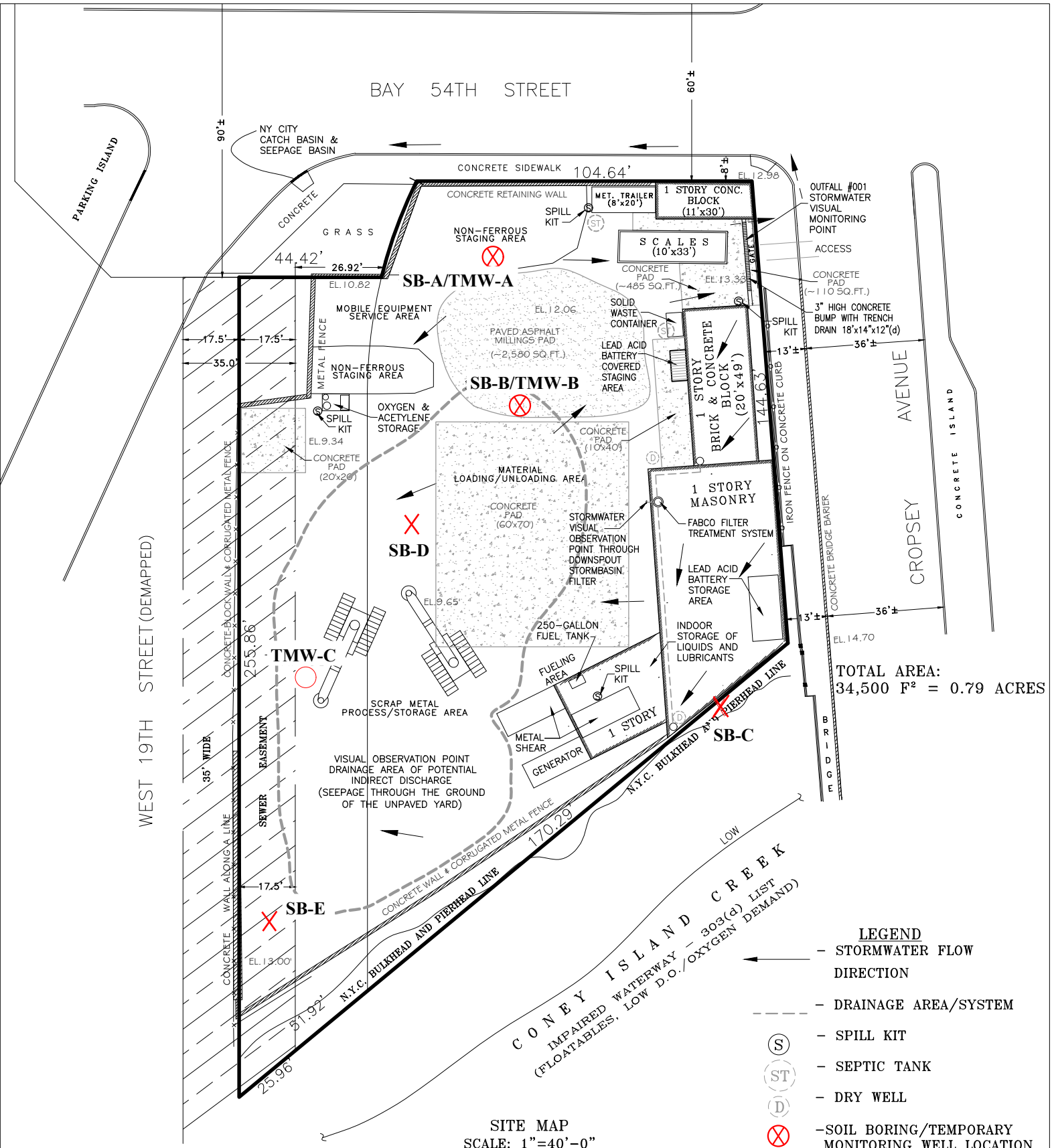
I certify that I have been trained in the use, care, and limitations of the PPE that could be used.

My signature below is official record that I comply with provisions of the HASP and federal, state, and local health and safety regulations and guidelines.

Printed Name	Signature	Representing	Date

ATTACHMENT A

CROPSEY IRON & SCRAP SITE MAP



BLOCK: 6947
LOTS: 260 & 8900
ZONING: C8-1

Walden Environmental Engineering

WALDEN ENVIRONMENTAL ENGINEERING, PLLC
16 SPRING STREET
OYSTER BAY, NEW YORK 11771
P: (516) 624-7200 F: (516) 624-3219
WWW.WALDEN-ASSOCIATES.COM

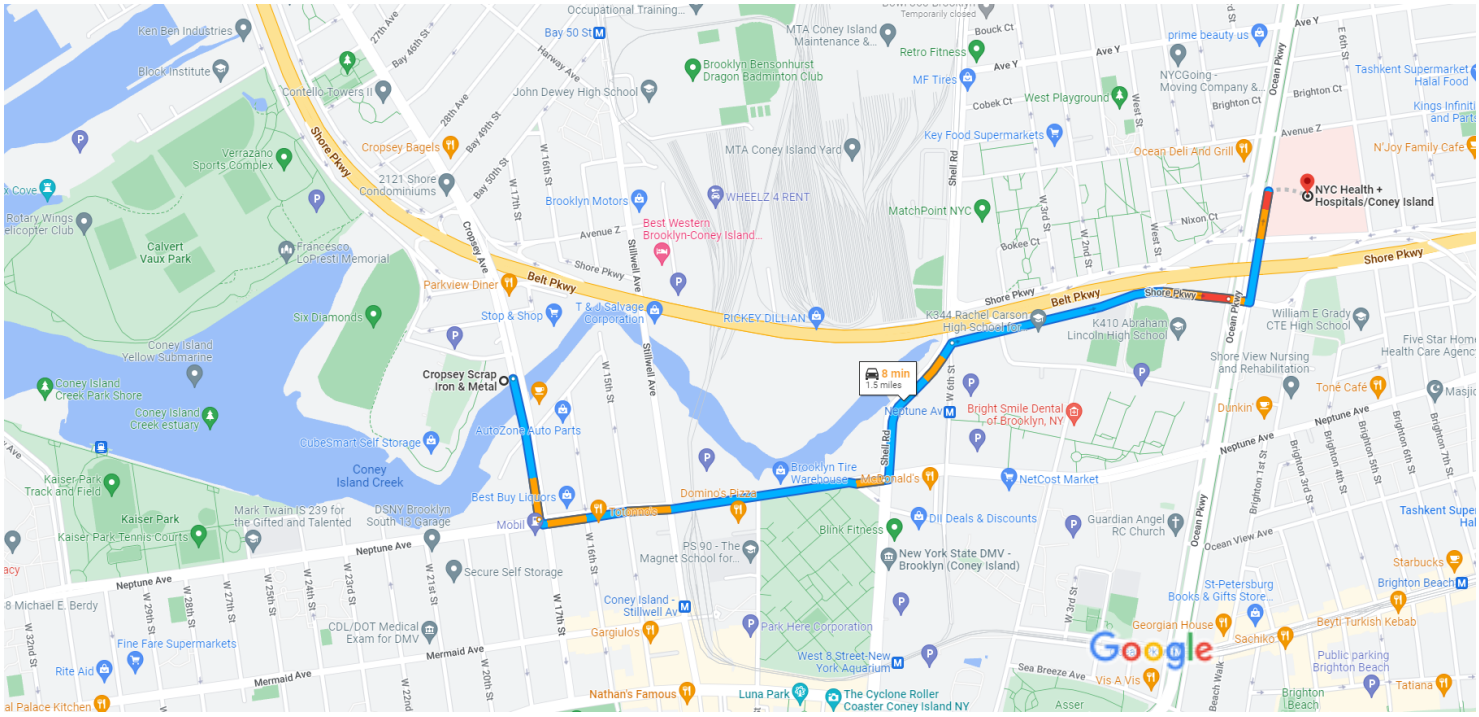
FOR: CROPSEY SCRAP IRON & METAL CORP. 2994 CROPSEY AVE. BROOKLYN, NY 11214		DRAWING TITLE: SITE LOCATIONS MAP/PROPOSED BORING LOCATIONS		DRAWING NO: 1
DESIGNED BY: MK	DRAWN BY: ER	JOB NO: S-CROP12-51	DATE: 07/07/2022 8½x11	SHEET NO: 1 OF 1
APPROVED BY: RAL	SCALE: AS NOTED	CAD FILE NAME: Z:\CROPSEY Scrap Iron and Metal\CROP2001 - Stormwater\ACAD\12-51 SITE PLAN (7-7-22).dwg		

ATTACHMENT B
EMERGENCY ROOM DIRECTIONS

Google Maps

Cropsey Scrap Iron & Metal, 2994 Cropsey Ave, Brooklyn, NY 11214 to NYC Health + Hospitals/Coney Island, 2601 Ocean Pkwy, Brooklyn, NY 11235

Drive 1.5 miles, 8 min



Map data ©2023 Google 500 ft

Cropsey Scrap Iron & Metal
2994 Cropsey Ave, Brooklyn, NY 11214

1. Head south on Cropsey Ave toward Neptune Ave — 0.2 mi
2. Turn left onto Neptune Ave — 0.5 mi
3. Turn left onto Shell Rd — 0.2 mi
4. Turn right onto Shore Pkwy — 0.4 mi
5. Turn left onto Ocean Parkway — 0.2 mi

Destination will be on the right

NYC Health + Hospitals/Coney Island
2601 Ocean Pkwy, Brooklyn, NY 11235

ATTACHMENT C
SAFETY DATA SHEETS

SAFETY DATA SHEET

Creation Date 22-Sep-2009 **Revision Date** 23-Jan-2018 **Revision Number** 3

1. Identification

Product Name **cis-1,2-Dichloroethylene**

Cat No. : **AC113380000; AC113380025; AC113380100; AC113380500**

Synonyms cis-Acetylene dichloride.

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**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)

Flammable liquids	Category 2
Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Vapors	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
Danger

Hazard Statements
Highly flammable liquid and vapor
Harmful if swallowed
Harmful if inhaled
Causes serious eye irritation
Causes skin irritation
May cause respiratory irritation

Precautionary Statements
Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Avoid breathing dust/fume/gas/mist/vapors/spray
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Take precautionary measures against static discharge
Do not eat, drink or smoke when using this product
Response
Call a POISON CENTER or doctor/physician if you feel unwell
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
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
Fire
Explosion risk in case of fire
Fight fire with normal precautions from a reasonable distance
Evacuate area
Storage
Store in a well-ventilated place. Keep cool
Store in a closed container
Store locked up
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 %
cis-1,2-Dichloroethylene	156-59-2	97

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms and effects Breathing difficulties. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. Use water spray to cool unopened containers. Chemical foam. Cool closed containers exposed to fire with water spray.

Unsuitable Extinguishing Media No information available

Flash Point 6 °C / 42.8 °F

Method - No information available

Autoignition Temperature 440 °C / 824 °F

Explosion Limits

Upper 12.80%

Lower 9.70%

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Flammable. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Hydrogen chloride gas Carbon monoxide (CO) Carbon dioxide (CO_2)

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	3	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing.

Environmental Precautions See Section 12 for additional ecological information. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling Ensure adequate ventilation. Wear personal protective equipment. Use explosion-proof equipment. Use only non-sparking tools. Avoid contact with skin, eyes and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Flammables area. Keep container tightly closed in a dry and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
cis-1,2-Dichloroethylene	TWA: 200 ppm			

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

Engineering Measures Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. 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 No protective equipment is needed under normal use conditions.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	aromatic
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-80 °C / -112 °F
Boiling Point/Range	60 °C / 140 °F @ 760 mmHg
Flash Point	6 °C / 42.8 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	12.80%
Lower	9.70%
Vapor Pressure	201 mmHg @ 25 °C
Vapor Density	3.34 (Air = 1.0)
Specific Gravity	1.280
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	440 °C / 824 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C2 H2 Cl2
Molecular Weight	96.94

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Exposure to light. Incompatible products. Exposure to moist air or water.

Incompatible Materials Bases

Hazardous Decomposition Products Hydrogen chloride gas, Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information
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
cis-1,2-Dichloroethylene	156-59-2	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 Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

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. Do not flush into surface water or sanitary sewer system. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

cis-1,2-Dichloroethylene	Not listed	Not listed	EC50 = 721 mg/L 5 min EC50 = 905 mg/L 30 min	Not listed

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

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 UN1150
Proper Shipping Name 1,2-DICHLOROETHYLENE
Hazard Class 3
Packing Group II

TDG

UN-No UN1150
Proper Shipping Name 1,2-DICHLOROETHYLENE
Hazard Class 3
Packing Group II

IATA

UN-No 1150
Proper Shipping Name 1,2-DICHLOROETHYLENE
Hazard Class 3
Packing Group II

IMDG/IMO

UN-No 1150
Proper Shipping Name 1,2-DICHLOROETHYLENE
Hazard Class 3
Packing Group II

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
cis-1,2-Dichloroethylene	X	-	X	205-859-7	-		-	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 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
cis-1,2-Dichloroethylene	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

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 22-Sep-2009
Revision Date 23-Jan-2018
Print Date 23-Jan-2018
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 in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Revision Date 17-Jan-2018 **Revision Number** 3

1. Identification

Product Name **1,1,2-Trichloro-1,2,2-trifluoroethane**

Cat No. : **T178-1; T178-4**

Synonyms Fluorocarbon 113; Freon 113; 1,1,2-Trichlorotrifluoroethane

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

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)

Based on available data, the classification criteria are not met

Label Elements
None required

Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	99

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes.

Inhalation	Move to fresh air.
Ingestion	Do not induce vomiting.
Most important symptoms and 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 770 °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
No information available
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
1	0	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.
Methods for Containment and Clean Up	No information available.

7. Handling and storage

Handling	Ensure adequate ventilation.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
1,1,2-Trichloro-1,2,2-trifluoroethane	TWA: 1000 ppm STEL: 1250 ppm	(Vacated) TWA: 1000 ppm (Vacated) TWA: 7600 mg/m³ (Vacated) STEL: 1250 ppm (Vacated) STEL: 9500 mg/m³ TWA: 1000 ppm TWA: 7600 mg/m³	IDLH: 2000 ppm TWA: 1000 ppm TWA: 7600 mg/m³ STEL: 1250 ppm STEL: 9500 mg/m³	TWA: 1000 ppm TWA: 1600 mg/m³ STEL: 1250 ppm STEL: 9500 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.

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	Liquid
Appearance	Clear
Odor	aromatic
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-36 °C
Boiling Point/Range	48 °C
Flash Point	No information available
Evaporation Rate	> 1.0 (Ether = 1.0)
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	363 hPa @ 20 °C
Vapor Density	6.5 (Air = 1.0)
Specific Gravity	1.47 @ 21°C
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	770 °C
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C2Cl3F3
Molecular Weight	187.38

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 acids, Powdered metals

Hazardous Decomposition Products No information available

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,1,2-Trichloro-1,2,2-trifluoroethane	LD50 = 43 g/kg (Rat)	Not listed	LC50 = 38000 ppm (Rat) 4 h LC50 = 38500 mg/kg (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

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
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	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 None known

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. Chlorotrifluoromethane (CFC-13) is a Class I ozone-depleting chlorofluorocarbon. It is stable in the atmosphere. The half-life for degradation by reaction with photochemically-produced hydroxyl radicals is about 62 years. Following gradual diffusion into the stratosphere above the ozone layer, it slowly degrades (est. half-life of 180-450 years) due to direct photolysis and contributes to the catalytic removal of atmosphere ozone.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
1,1,2-Trichloro-1,2,2-trifluoro ethane	Not listed	LC50: 7 - 14 mg/L, 96h static (Brachydanio rerio) LC50: = 1250 mg/L, 96h (Pimephales promelas) LC50: = 6240 mg/L, 96h (Oryzias latipes)	Not listed	EC50: = 71 mg/L, 48h (Daphnia magna)

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 Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
1,1,2-Trichloro-1,2,2-trifluoro ethane	X	X	-	200-936-1	-		X	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 Not applicable

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	99	1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
1,1,2-Trichloro-1,2,2-trifluoroethane	-	X	-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
1,1,2-Trichloro-1,2,2-trifluoroethane	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations Not applicable

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
1,1,2-Trichloro-1,2,2-trifluoroethane	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

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 17-Jan-2018
Print Date 17-Jan-2018
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 in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Creation Date 10-Dec-2009 **Revision Date** 23-Jan-2018 **Revision Number** 5

1. Identification

Product Name **Tetrachloroethylene**

Cat No. : **AC445690000; ACR445690010; AC445690025; AC445691000**

CAS-No 127-18-4
Synonyms Perchloroethylene

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**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)

Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Skin Sensitization	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Kidney, Liver, Blood.	

Label Elements

Signal Word
Danger

Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause drowsiness or dizziness
May cause cancer
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
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 or rash 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
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)
Toxic to aquatic life with long lasting effects
WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Tetrachloroethylene	127-18-4	>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. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects	None reasonably foreseeable. May cause allergic skin reaction. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
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
Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode when heated.

Hazardous Combustion Products
Chlorine Hydrogen chloride gas Phosgene
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	0	0	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment. Ensure adequate ventilation.
Environmental Precautions	Do not flush into surface water or sanitary sewer system.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling	Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Tetrachloroethylene	TWA: 25 ppm STEL: 100 ppm	(Vacated) TWA: 25 ppm (Vacated) TWA: 170 mg/m^3 Ceiling: 200 ppm TWA: 100 ppm	IDLH: 150 ppm	TWA: 100 ppm TWA: 670 mg/m^3 TWA: 200 ppm TWA: 1250 mg/m^3 STEL: 200 ppm STEL: 1340 mg/m^3

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 Use only under a chemical fume hood. 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 Long sleeved clothing.

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	Liquid
Appearance	Colorless
Odor	Characteristic, sweet
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-22 °C / -7.6 °F
Boiling Point/Range	120 - 122 °C / 248 - 251.6 °F @ 760 mmHg
Flash Point	No information available
Evaporation Rate	6.0 (Ether = 1.0)
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	18 mbar @ 20 °C
Vapor Density	No information available
Density	1.619
Specific Gravity	1.625
Solubility	0.15 g/L water (20°C)
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	> 150°C
Viscosity	0.89 mPa s at 20 °C
Molecular Formula	C2 Cl4
Molecular Weight	165.83

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat. Exposure to moist air or water.

Incompatible Materials Strong acids, Strong oxidizing agents, Strong bases, Metals, Zinc, Amines, Aluminium

Hazardous Decomposition Products Chlorine, Hydrogen chloride gas, Phosgene

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tetrachloroethylene	LD50 = 2629 mg/kg (Rat)	LD50 > 10000 mg/kg (Rat)	LC50 = 27.8 mg/L (Rat) 4 h

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 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
Tetrachloroethylene	127-18-4	Group 2A	Reasonably Anticipated	A3	X	A3

IARC: (International Agency for Research on Cancer)

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS)

STOT - repeated exposure Kidney Liver Blood

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Tetrachloroethylene	Group II Chemical	Not applicable	Not applicable

Other Adverse Effects Tumorigenic effects have been reported in experimental animals.

12. Ecological information

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Tetrachloroethylene	EC50: > 500 mg/L, 96h (Pseudokirchneriella subcapitata)	LC50: 4.73 - 5.27 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 11.0 - 15.0 mg/L, 96h static (Lepomis macrochirus) LC50: 8.6 - 13.5 mg/L, 96h static (Pimephales promelas) LC50: 12.4 - 14.4 mg/L, 96h flow-through (Pimephales promelas)	EC50 = 100 mg/L 24 h EC50 = 112 mg/L 24 h EC50 = 120.0 mg/L 30 min	EC50: 6.1 - 9.0 mg/L, 48h Static (Daphnia magna)

Persistence and Degradability Insoluble in water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility . Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its volatility.

Component	log Pow
Tetrachloroethylene	2.53 - 2.88

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.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Tetrachloroethylene - 127-18-4	U210	-

14. Transport information

DOT

UN-No UN1897
Proper Shipping Name TETRACHLOROETHYLENE
Hazard Class 6.1
Packing Group III

TDG

UN-No UN1897

Proper Shipping Name TETRACHLOROETHYLENE
Hazard Class 6.1
Packing Group III

IATA
UN-No UN1897
Proper Shipping Name TETRACHLOROETHYLENE
Hazard Class 6.1
Packing Group III

IMDG/IMO
UN-No UN1897
Proper Shipping Name TETRACHLOROETHYLENE
Hazard Class 6.1
Subsidiary Hazard Class P
Packing Group III

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Tetrachloroethylene	X	X	-	204-825-9	-		X	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 %
Tetrachloroethylene	127-18-4	>95	0.1

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Tetrachloroethylene	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Tetrachloroethylene	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Tetrachloroethylene	100 lb 1 lb	-

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Tetrachloroethylene	127-18-4	Carcinogen	14 µg/day	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Tetrachloroethylene	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant Y
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

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 10-Dec-2009
Revision Date 23-Jan-2018
Print Date 23-Jan-2018
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 in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Creation Date 03-Feb-2010 **Revision Date** 14-Jul-2016 **Revision Number** 2

1. Identification

Product Name **Trichloroethylene**

Cat No. : **T340-4; T341-4; T341-20; T341-500; T403-4**

Synonyms Trichloroethene (Stabilized/Technical/Electronic/Certified ACS)

Recommended Use Laboratory chemicals.
Uses advised against

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)

Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Kidney, Liver, Heart, spleen, Blood.	

Label Elements

Signal Word
Danger

Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause drowsiness or dizziness
Suspected of causing genetic defects
May cause cancer
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
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 or rash 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
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)
Harmful to aquatic life with long lasting effects
WARNING! This product contains a chemical known in the State of California to cause cancer, birth defects or other reproductive harm.

3. Composition / information on ingredients

Component	CAS-No	Weight %
Trichloroethylene	79-01-6	100

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a

	pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Most important symptoms/effects	None reasonably foreseeable. May cause allergic skin reaction. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	410 °C / 770 °F
Explosion Limits	
Upper	10.5 vol %
Lower	8 vol %
Oxidizing Properties	Not oxidising
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Hydrogen chloride gas Chlorine Phosgene Carbon monoxide (CO) Carbon dioxide (CO_2)
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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	0	N/A

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.
Environmental Precautions	Should not be released into the environment. Do not flush into surface water or sanitary sewer system.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling	Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not ingest.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from light. Do not store in aluminum containers.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Trichloroethylene	TWA: 10 ppm STEL: 25 ppm	(Vacated) TWA: 50 ppm (Vacated) TWA: 270 mg/m³ Ceiling: 200 ppm (Vacated) STEL: 200 ppm (Vacated) STEL: 1080 mg/m³ TWA: 100 ppm	IDLH: 1000 ppm	TWA: 100 ppm TWA: 535 mg/m³ STEL: 200 ppm STEL: 1080 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 Use only under a chemical fume hood. 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 Long sleeved clothing.

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	Liquid
Appearance	Colorless
Odor	Characteristic
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-85 °C / -121 °F
Boiling Point/Range	87 °C / 188.6 °F
Flash Point	No information available
Evaporation Rate	0.69 (Carbon Tetrachloride = 1.0)
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	10.5 vol %
Lower	8 vol %
Vapor Pressure	77.3 mbar @ 20 °C
Vapor Density	4.5 (Air = 1.0)
Specific Gravity	1.460
Solubility	Slightly soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	410 °C / 770 °F
Decomposition Temperature	> 120°C
Viscosity	0.55 mPa.s (25°C)

Molecular Formula C2 H Cl3
Molecular Weight 131.39

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Light sensitive.

Conditions to Avoid Incompatible products. Excess heat. Exposure to light. Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents, Strong bases, Amines, Alkali metals, Metals,

Hazardous Decomposition Products Hydrogen chloride gas, Chlorine, Phosgene, Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Trichloroethylene	LD50 = 4290 mg/kg (Rat) LD50 = 4920 mg/kg (Rat)	LD50 > 20 g/kg (Rabbit) LD50 = 29000 mg/kg (Rabbit)	LC50 = 26 mg/L (Rat) 4 h

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 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
Trichloroethylene	79-01-6	Group 1	Reasonably Anticipated	A2	X	Not listed

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects Mutagenic effects have occurred in humans.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS)
STOT - repeated exposure Kidney Liver Heart spleen Blood

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not empty into drains. The product contains following substances which are hazardous for the environment. Contains a substance which is:. Harmful to aquatic organisms. Toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Trichloroethylene	EC50: = 175 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 450 mg/L, 96h (Desmodesmus subspicatus)	LC50: 39 - 54 mg/L, 96h static (Lepomis macrochirus) LC50: 31.4 - 71.8 mg/L, 96h flow-through (Pimephales promelas)	EC50 = 0.81 mg/L 24 h EC50 = 115 mg/L 10 min EC50 = 190 mg/L 15 min EC50 = 235 mg/L 24 h EC50 = 410 mg/L 24 h EC50 = 975 mg/L 5 min	EC50: = 2.2 mg/L, 48h (Daphnia magna)

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Trichloroethylene	2.4

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.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Trichloroethylene - 79-01-6	U228	-

14. Transport information

DOT

UN-No UN1710
Proper Shipping Name TRICHLOROETHYLENE
Hazard Class 6.1
Packing Group III

TDG

UN-No UN1710
Proper Shipping Name TRICHLOROETHYLENE
Hazard Class 6.1
Packing Group III

IATA

UN-No UN1710
Proper Shipping Name TRICHLOROETHYLENE

Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN1710
Proper Shipping Name TRICHLOROETHYLENE
Hazard Class 6.1
Packing Group III

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Trichloroethylene	X	X	-	201-167-4	-		X	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

Component	TSCA 12(b)
Trichloroethylene	Section 5

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Trichloroethylene	79-01-6	100	0.1

SARA 311/312 Hazard Categories

Acute Health Hazard Yes
Chronic Health Hazard Yes
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Trichloroethylene	X	100 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Trichloroethylene	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Trichloroethylene	100 lb 1 lb	-

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Trichloroethylene	79-01-6	Carcinogen Developmental Male Reproductive	14 µg/day 50 µg/day	Developmental Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Trichloroethylene	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
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

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 03-Feb-2010
Revision Date 14-Jul-2016
Print Date 14-Jul-2016
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 in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Revision Date 19-Jan-2018 **Revision Number** 3

1. Identification

Product Name **Poly(vinyl chloride), high molecular weight**

Cat No. : **AC183320000; AC183320010; AC183325000**

Synonyms Chlorethene homopolymer; Ethylene, chloro-, polymer; PVC

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Label Elements
None required

Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
PVC (Chloroethylene, polymer)	9002-86-2	100

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Move to fresh air.

Ingestion Do not induce vomiting.

Most important symptoms and effects No information available.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point
Method - No information available

Autoignition Temperature 435 °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
None known
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
1	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.

Methods for Containment and Clean Up No information available.

7. Handling and storage

Handling Ensure adequate ventilation.

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	Mexico OEL (TWA)
PVC (Chloroethylene, polymer)	TWA: 1 mg/m³			

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

Engineering Measures Ensure adequate ventilation, especially in confined areas.

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 Solid
Appearance	Off-white
Odor	Odorless
Odor Threshold	No information available
pH	
Melting Point/Range	No data available
Boiling Point/Range	
Flash Point	
Evaporation Rate	No information available
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	No information available
Specific Gravity	1.4000
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	435 °C
Decomposition Temperature	No information available
Viscosity	No information available

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 None under normal use conditions

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 No information available

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
PVC (Chloroethylene, polymer)	9002-86-2	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 None known

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.

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 Not regulated

TDG Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
PVC (Chloroethylene, polymer)	X	X	-	-	420-490-3		X	X	X	X	X

Legend:
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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 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations Not applicable

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
PVC (Chloroethylene, polymer)	-	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

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date	19-Jan-2018
Print Date	19-Jan-2018
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

ALCONOX MSDS

Section 1 : MANUFACTURER INFORMATION

Product name: Alconox

Supplier: Same as manufacturer.

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Manufacturer emergency phone number: 800-255-3924.
813-248-0585 (outside of the United States).

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Supplier MSDS date: 2009/04/20

D.O.T. Classification: Not regulated.

Section 2 : HAZARDOUS INGREDIENTS

C.A.S.	CONCENTRATION %	Ingredient Name	T.L.V.	LD/50	LC/50
25155-30-0	10-30	SODIUM DODECYLBENZENESULFONATE	NOT AVAILABLE	438 MG/KG RAT ORAL 1330 MG/KG MOUSE ORAL	NOT AVAILABLE
497-19-8	7-13	SODIUM CARBONATE	NOT AVAILABLE	4090 MG/KG RAT ORAL 6600 MG/KG MOUSE ORAL	2300 MG/M3/2H RAT INHALATION 1200 MG/M3/2H MOUSE INHALATION
7722 88-5	10-30	TETRASODIUM PYROPHOSPHATE	5 MG/M3	4000 MG/KG RAT ORAL 2980 MG/KG MOUSE ORAL	NOT AVAILABLE
7758-29-4	10-30	SODIUM PHOSPHATE	NOT AVAILABLE	3120 MG/KG RAT ORAL 3100 MG/KG MOUSE ORAL >4640 MG/KG RABBIT DERMAL	NOT AVAILABLE

Section 2A : ADDITIONAL INGREDIENT INFORMATION

Note: (supplier).
CAS# 497-19-8: LD50 4020 mg/kg - rat oral.
CAS# 7758-29-4: LD50 3100 mg/kg - rat oral.

Section 3 : PHYSICAL / CHEMICAL CHARACTERISTICS

Physical state: Solid

Appearance & odor: Almost odourless.
White granular powder.

Odor threshold (ppm): Not available.

Vapour pressure (mmHg): Not applicable.

Vapour density (air=1): Not applicable.

By weight: Not available.

Evaporation rate (butyl acetate = 1): Not applicable.

Boiling point (°C): Not applicable.

Freezing point (°C): Not applicable.

pH: (1% aqueous solution).
9.5

Specific gravity @ 20 °C: (water = 1).
0.85 - 1.10

Solubility in water (%): 100 - > 10% w/w

Coefficient of water\oil dist.: Not available.

VOC: None

Section 4 : FIRE AND EXPLOSION HAZARD DATA

Flammability: Not flammable.

Conditions of flammability: Surrounding fire.

Extinguishing media: Carbon dioxide, dry chemical, foam.
Water
Water fog.

Special procedures: Self-contained breathing apparatus required.
Firefighters should wear the usual protective gear.

Auto-ignition temperature: Not available.

Flash point (°C), method: None

Lower flammability limit (% vol): Not applicable.

Upper flammability limit (% vol): Not applicable.

Not available.

Sensitivity to mechanical impact: Not applicable.

Hazardous combustion products: Oxides of carbon (COx).
Hydrocarbons.

Rate of burning: Not available.

Explosive power: None

Section 5 : REACTIVITY DATA

Chemical stability: Stable under normal conditions.

Conditions of instability: None known.

Hazardous polymerization: Will not occur.

Incompatible substances: Strong acids.
Strong oxidizers.

Hazardous decomposition products: See hazardous combustion products.

Section 6 : HEALTH HAZARD DATA

Route of entry: Skin contact, eye contact, inhalation and ingestion.

Effects of Acute Exposure

Eye contact: May cause irritation.

Skin contact: Prolonged contact may cause irritation.

Inhalation: Airborne particles may cause irritation.

Ingestion: May cause vomiting and diarrhea.
May cause abdominal pain.
May cause gastric distress.

Effects of chronic exposure: Contains an ingredient which may be corrosive.

LD50 of product, species & route: > 5000 mg/kg rat oral.

LC50 of product, species & route: Not available for mixture, see the ingredients section.

Exposure limit of material: Not available for mixture, see the ingredients section.

Sensitization to product: Not available.

Carcinogenic effects: Not listed as a carcinogen.

Reproductive effects: Not available.

Teratogenicity: Not available.

Mutagenicity: Not available.

Synergistic materials: Not available.

Medical conditions aggravated by exposure: Not available.

First Aid

Skin contact: Remove contaminated clothing.
Wash thoroughly with soap and water.
Seek medical attention if irritation persists.

Eye contact: Check for and remove contact lenses.
Flush eyes with clear, running water for 15 minutes while holding eyelids open: if irritation persists, consult a physician.

Inhalation: Remove victim to fresh air.
Seek medical attention if symptoms persist.

Ingestion: Dilute with two glasses of water.
Never give anything by mouth to an unconscious person.
Do not induce vomiting, seek immediate medical attention.

Section 7 : PRECAUTIONS FOR SAFE HANDLING AND USE

Leak/Spill: Contain the spill.
Recover uncontaminated material for re-use.
Wear appropriate protective equipment.
Contaminated material should be swept or shoveled into appropriate waste container for disposal.

Waste disposal: In accordance with municipal, provincial and federal regulations.

Handling procedures and equipment: Protect against physical damage.
Avoid breathing dust.
Wash thoroughly after handling.
Keep out of reach of children.
Avoid contact with skin, eyes and clothing.
Launder contaminated clothing prior to reuse.

Storage requirements: Keep containers closed when not in use.
Store away from strong acids or oxidizers.
Store in a cool, dry and well ventilated area.

Section 8 : CONTROL MEASURES

Precautionary Measures

Gloves/Type:

Neoprene or rubber gloves.

Respiratory/Type:

If exposure limit is exceeded, wear a NIOSH approved respirator.

Eye/Type:

Safety glasses with side-shields.

Footwear/Type: Safety shoes per local regulations.

Clothing/Type: As required to prevent skin contact.

Other/Type: Eye wash capability should be in close proximity.

Ventilation requirements: Local exhaust at points of emission.

ATTACHMENT D
HEAT STRESS

HEAT STRESS

1. Heart rate (HR) should be monitored by the radial pulse for 30 seconds as soon as possible in the resting period.

   If at the beginning of the rest period a worker's radial pulse is measure and his heart rate exceeds 100 beats per minute, the worker's next work period should be reduced by 33%. Therefore, if the original work period was one hour, the following work cycle should be reduced to 40 minutes.

2. Heat Stroke is a true medical emergency. First aid should be directed toward immediate measures to cool the body quickly, as well as seeing that the victim receives medical attention as soon as possible.

   Prior to medical treatment, remove as much clothing as possible and proceed to cool the victim's body, taking care not to over chill the victim once his temperature falls below 102^0F. One of the following cooling measures should be taken: (a) sponge the bare skin with cool water; (b) apply cold packs continuously; (c) wrap the victim in a sheet soaked with water; or (d) immerse the victim in a tub of cold water, while closely monitoring the victim's level of consciousness.

3. Prior to site activity, the Site Safety Officer may make arrangements for heat stress monitoring (i.e., monitoring heart rate, body temperature and body water loss) during actual site work if conditions warrant these measures. In addition, the Site Safety Officer would want to ensure that the team members have been acclimatized to the particular environmental conditions and that personnel are aware of the signs and symptoms of heat sickness and have been adequately trained in first aid procedures. As Site Safety Officer, one could also make sure there is sufficient personnel on-site, so as to rotate work assignments, schedule work during hours of reduced temperatures and ensure personnel do not consume alcoholic or caffeinated beverages but rather drink moderate levels of an electrolyte solution and eat well prior to commencing site work.

4. The worker could be experiencing a condition of heat rash. Allow workers to rest and relieve the itching associated with heat rash rather than return to work too soon. Itching

workers may not follow stringent decontamination procedures or scratch where it itches on-site and risk cross contamination.

Keeping the skin clean and dry will reduce the incidence of heat rash. This can be accomplished by wearing cotton garments (or other materials that absorb perspiration) underneath protective clothing. Upon removal of the protective clothing, the worker should wash and dry his skin thoroughly.

5. The sense of thirst is not an adequate regulator of water replacement during heat exposure. Therefore, as a general rule, the amount of water administered should replace the amount of water lost, and it should be administered at regular intervals throughout the day. For every 1/2 pound of water loss, 8 ounces of water should be ingested. Water should be replaced by drinking 2-4 ounce servings during every rest period. A recommended alternative to water is an electrolyte drink spilt 50/50 with water.

6. Although there is no specific test given during a baseline physical that would identify a person's intolerance to heat, there are physical factors and personal habits which may indicate possible intolerance to heat, such as, whether or not an individual smokes, one's dietary habit, body weight, as well as predisposed physical conditions such as high blood pressure, heavier conditions, diabetes or one's medication, that may influence an individual's ability to tolerate excessive heat.

7. Heat cramps are caused by profuse perspiration with inadequate fluid intake and salt replacement. Heat cramps most often afflict people in good physical condition who overwork in conditions of high temperature and humidity. Heat cramps usually come on suddenly during vigorous activity. Untreated, heat cramps may progress directly to heat exhaustion or heat stroke. First aid treatment: remove victim to a cool place and give sips of salted water (1 teaspoon of salt to 1 quart of water) - 4 ounces every 15 minutes over a period of one hour. A commercial preparation, e.g., Gatorade, may be used if split 50/50 with water.

   The salted water or solution should mitigate the cramps. Manual pressure should not be applied to the cramped muscles.

TABLE C-1

REQUIRED FREQUENCY OF HEAT STRESS MONITORING
FOR WORKERS IN IMPERMEABLE CLOTHING

Adjusted (2) Temperature (^{0}F)	**Work Time Allowed Before Monitoring Break (min.)**
90 or above	15
87.5-90	30
82.5-87.5	60
77.5-82.5	90
72.5-77.5	120

(1) Adapted from Eastern Research Group and National Institute for Occupational Safety and Health, Occupational Safety and Health Guidance Manual for Super Activities. September 26, 1984, pp. 8-75.

(2) Calculate the adjusted air temperature (Ta adj) by using this equation:

$$\text{Ta adj } {}^0\text{F} = \text{Ta } {}^0\text{F} + (13 \times \% \text{ sunshine})$$

Measure air temperature (Ta) with a standard thermometer, with the bulb shielded from radiant heat. Then estimate percent sunshine (100 percent sunshine = no cloud cover an a sharp, distinct shadow; 0 percent sunshine = no shadows).

TABLE C-2

HEAT STRESS SIGNS AND SYMPTOMS

Heat Stress Indicator	**When to Measure**	**If Exceeds**	**Action**
heart rate (pulse)	beginning of rest period	110 beats per minute	shorten next work period by 33%
oral temperature	beginning of rest period	99 ^{0}F (after thermometer is under tongue for 3 minutes) 100.6 ^{0}F or greater	shorten next work period by 33% prohibit work in impermeable clothing and shorten next work period by 33%
body weight	1. before workday begins (a.m.) 2. after workday ends (p.m.)	Decreases more than 5%	increase fluid intake

ATTACHMENT E
COLD STRESS

COLD STRESS (Hypothermia)

Cold stress is a function of cold, wetness and wind. A worker's susceptibility to cold stress can vary according to his/her physical fitness, degree of acclimatization to cold weather, age and diet.

Prevention

Institute the following steps to prevent or overexposure of workers to cold:

1. Maintain body core temperature at 96.8^0 F or above by encouraging workers to drink warm liquids during breaks (preferably not coffee) and wear several layers of clothing. Wool is recommended since it can keep the body warm even when the wood is wet.
2. Avoid frostbite by adequately covering hands, feet and other extremities. Clothing such as insulated gloves or mittens, earmuffs and hat liners should be worn. To prevent contact frostbite (from touching metal and cold surfaces below 20^0 F) workers should wear anti-contact gloves. Tool handles and control bars should be covered with insulating material.
3. Adjust work schedules if necessary, providing adequate rest periods. When feasible, rotate personnel and perform work during the warmer hours of the day.
4. Provide a heated enclosure for workers close to their work area. Workers should remove their outer layer(s) of clothing while in the shelter to allow for sweat evaporation.
5. In the event that wind barriers are constructed around an intrusive operation (such as drilling), the enclosure must be properly vented to prevent the build-up of toxic or explosive gases or vapors. Care must be taken to keep any heat source away from flammable substances.
6. Using a wind chill chart such as the one in Table D-1, obtain the equivalent chill temperature (ECT) based on actual wind speed and temperature. Refer to the ECT when setting up work warm-up schedules, planning appropriate clothing, etc. Workers should use warming shelters at regular intervals at or below an ECT or 20^0 F For exposure skin, continuous exposure should not be permitted at or below an ECT of -35^0 F.
7. Workers who become immersed in water or whose clothing becomes wet (from perspiration, rain, etc) must immediately be provided a change of dry clothing whenever the air temperature is 25.6^0 F or below.

8. Maintain an optimal level of worker fitness by encouraging regular exercise, proper diet, etc. If possible, acclimatize workers to site conditions for several days before work begins.

Monitoring

Personnel should be aware of the symptoms of cold stress. If the following symptoms of systemic hypothermia are noticed in any worker, he/she should immediately go the warm shelter:

Heavy, uncontrollable shivering;
Excessive fatigue or drowsiness;
Loss of coordination;
Difficulty in speaking; and,
Frostbite (see below).

Frostbite is the generic term for local injury resulting from cold. The stages of frostbite and their symptoms are as follows:

1. Frostbite or incipient frostbite: sudden blanching or whitening of the skin.
2. Superficial frostbite: waxy or white skin, which is firm to the touch (tissue underneath is still resilient).
3. Deep frostbite: tissues are cold, pale and solid.

TABLE D-1

WINDCHILL CHART

Wind Speed (mph)	Actual thermometer Reading (^{0}F)									
	50	40	30	20	10	0	-10	-20	-30	-40
	Equivalent Temperature (^{0}F)									
Calm	50	40	30	20	10	0	-10	-20	-30	-40
5	48	37	27	16	6	-5	-15	-26	-36	-47
10	40	28	16	4	-9	-21	-33	-46	-58	-70
15	36	22	9	-5	-18	-36	-45	-58	-72	-85
20	32	18	4	-10	-25	-39	-53	-67	-82	-96
25	30	16	0	-15	-29	-44	-59	-74	-88	-104
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116
>40 (Little added effect)	Little Danger (For properly clothed person)				Increasing Danger (Danger from freezing of exposed flesh)			Great Danger		