

Remedial Action Work Plan

For:
C241283--Archer Ave Auto Repair and Coal Yard
Site
163-25 Archer Avenue
Jamaica, Queens County, NY
BCP No. C241283

Prepared for:

Archer Towers Development LLC

SESI Project No:
12914

Date:
September 2025
Revised November 2025

CERTIFICATION STATEMENT

I, Fuad Dahan, certify that I am currently a NYS registered professional engineer and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and Green Remediation (DER-31).



NYS Professional Engineer #

11/03/2025

Date

A handwritten signature in blue ink, appearing to read "Fuad Dahan", is written over a horizontal line.

Signature

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AWQS	Ambient Water Quality Standards
AWQSGV	Ambient Water Quality Standards and Guidance Values
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	Below ground surface
COC	Contaminant of Concern
CVA	Climate Vulnerability Assessment
CVOC	Chlorinated Volatile Organic Compound
BMP	Best Management Practice
DER	Division of Environmental Remediation
DER-10	NYSDEC Technical Guidance for Site Investigation & Remediation
DOB	Department of Buildings
DUSR	Data Usability Summary Report
EC	Engineering Control
EE	Environmental Easement
ELAP	Environmental Laboratory Accreditation Program
ESCP	Erosion and Sediment Control Plan
ft-bgs	feet below ground surface
FWRIA	Fish and Wildlife Resources Impact Analysis
GHG	Greenhouse Gas
GSR	Green Sustainable Remediation
IDW	Investigative Derived Waste
msl	Mean Sea Level
MW	Monitoring Well
NYCDEP	New York City Department of Environmental Protection

Acronym	Definition
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PFAS	Per and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PGWSCO	Protection of Groundwater Soil Cleanup Objectives
RECs	Recognized Environmental Concerns
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
RSCO	Residential Soil Cleanup Objective
RRSCO	Restricted-Residential Use Soil Cleanup Objective
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objectives
SESI	SESI Consulting Engineers, DPC
SMP	Site Management Plan
SOE	Support of Excavation
SSDS	Sub-Slab Depressurization System
SV	Soil Vapor
SVI Guidance	Guidance for Evaluating Soil Vapor Intrusion in The State of New York (2006) with updates
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TOGS	Technical and Operations Guidance Series
UUSCO	Unrestricted Use Soil Cleanup Objectives

Acronym	Definition
VI	Vapor Intrusion
VOCs	Volatile Organic Compounds

Executive Summary

Site Description/Physical Setting/Site History

Archer Towers Development LLC (the "Volunteer") has entered into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to investigate and remediate the C-241283--Archer Ave Auto Repair and Coal Yard Site (BCP No. C241283). The Site consists of a 0.853-acre parcel and is located at 163-25 Archer Avenue, Jamaica, Queens County, New York. The Site is currently one (1) tax lot parcel identified as Block 10151, Lot 65. The Site is currently vacant and undeveloped, with all previous structures having been razed. Two (2) temporary office trailers and several storage containers currently sit on the Site.

The Site is bound to the west by a residential apartment tower followed by Guy R. Brewer Boulevard, to the north by mixed-use commercial properties followed by Jamaica Avenue, to the east by a vacant lot followed by a three-story parking structure, and to the south by Archer Avenue followed by elevated Long Island Rail Road lines.

Historical uses of the Site of potential environmental concern include the E.C. Hendrickson & Co. Coal and Lumber Yard (circa 1886 to 1912), Frank R. Smith Masons' Supply and Coal Yard (1912-1925), a bus terminal with a lubritorium to lubricate engines with motor oil and a gasoline tank (circa 1925 through 1970), and a filling station with automotive repair and painting operations (circa 1963). Most recently, the Site contained an 8-story concrete and steel parking garage from the early 1970s until 2018. The former garage was demolished in 2019.

This Remedial Action Work Plan (RAWP) was prepared on behalf of Archer Towers Development LLC (a Volunteer) and presents the planned Track 1 remedy.

Summary of the Remedial Investigation

SESI conducted a Remedial Investigation (RI) of the Site, which defined the nature and extent of contamination on-Site, identified contaminant source areas, and produced data of sufficient quantity and quality to inform the Qualitative Human Health Exposure Assessment and this RAWP. The RI consisted of collecting 170 soil samples from 34 soil borings, and from this volume, 122 soil samples were analyzed, as a multitude of the soil samples were collected on a

laboratory hold for contingency analyses for further investigative delineation of the former gasoline service station area at the Site. The RI also consisted of collecting six (6) groundwater samples from permanent monitoring wells, seven (7) soil vapor samples, and one (1) ambient air sample. The areas of concern (AOCs) identified during previous investigations included historical Site operations including a coal and lumber yard (circa 1886 to 1925), a bus terminal with a lubritorium to lubricate engines with motor oil and a gasoline tank (circa 1925 through 1970), and a filling station with automotive repair and painting operations (circa 1963). A gasoline tank of unknown size was shown in the southeastern corner of the Site (1925 through 1951). A geophysical survey conducted as part of the remedial investigation did not identify any anomalies consistent with USTs on the Site.

Results of the RI and prior investigations have identified pesticides and metals Site-wide in soil at concentrations exceeding the Track 1 Unrestricted Use Soil Cleanup Objectives (UUSCOs). The overall depth of impacted soils ranged from 0.5 to 17.5 ft bgs. Metals contaminated soils exceeding the Restricted Residential Soil Cleanup Objectives (RRSCOs) extends from 2.5 to 16.0 ft bgs. Metals contaminated soils exceeding the UUSCOs extends from 1.0 to 16.0 ft bgs Site-wide. Pesticide-impacted soils exceeding the UUSCOs extends from 0.5 to 17.5 ft bgs Site-wide. PCB contaminated soils exceeding the UUSCOs extends from 1.0 to 7.5 ft bgs on the southwestern portion of the Site. Three (3) additional soil borings will be completed as a Pre-Design Investigation (PDI) in the southeastern corner of the Site in the vicinity of borings RI-SV-5 and RI-SB-16 to delineate contamination.

Samples collected from the Site's groundwater resulted in no exceedances of any of the TCL/TAL constituents however they resulted in perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) at concentrations slightly exceeding the Ambient Water Quality Standards and Guidance Values (AWQSGV). Chlorinated volatile organic compounds (VOCs), specifically Trichloroethene (TCE) and Tetrachloroethene (PCE), were detected in soil vapor from prior investigation results and specifically for PCE near the central portion of the Site at collection depth of approximately 15.0 ft bgs during the RI.

Qualitative Human Health Exposure Assessment

A human health assessment was conducted using data collected during the RI. Sesi evaluated exposure pathways as follows:

- The exposure pathway can be through direct physical contact with the discharged products or contact with the impacted soils. However, the soil source will be removed through RAWP activities; therefore, this pathway will be eliminated as a result of the soil source removal remediation.
- Metals exceedances of the RRSCOs in the Site soil that consist of contaminated fill from 0.5 to approximately 16.0 feet below grade pose a risk to human health. The exposure pathway to humans can be through direct dermal contact with the contaminated soils or incidental ingestion. Again, this pathway will be eliminated as a result of the soil source removal remediation.
- The CVOC levels in the Site soil vapors were found to exceed the New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in The State of New York (2006) with updates (SVI Guidance) at concentrations that may cause a vapor intrusion risk. The exposure route for soil vapor is through the inhalation of the contaminated soil vapor that may intrude into the enclosed spaces of any planned Site development. This pathway will be addressed through a soil vapor evaluation as described herein.

FISH AND WILDLIFE Assessment (FWIA)

The Site does not contain any ecologically sensitive resources and hence the contaminated soils are not expected to have any impacts on any ecological resources and will be removed during the soil removal Track 1 remedy.

Summary of the Remedy

A remedial program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;

- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial program, as appropriate. The project will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial program.

Additionally, the remedial program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be

identified, and the remedial program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

1. Excavation of soil/fill exceeding UUSCOs to depths of 19.5 ft-bgs;
2. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
3. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of UUSCOs;
4. Appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
5. Import of materials to be used for backfill and cover in compliance with: (1) chemical limits and other specifications included in NYCRR Sections 375-6.7(d) and 375-6.8 (b) and DER-10, (2) all Federal, State and local rules and regulations for handling and transport of material;
6. Post soil excavation groundwater monitoring well network to monitor the attainment of groundwater standards.
7. Installation of the elements of a sub-slab depressurization system (SSDS) underneath portions of the building foundation, if the sub-slab of the proposed building is not under the water table during the seasonal low. A soil vapor intrusion evaluation will be conducted to determine if the soil vapor (SV) levels constitute a vapor intrusion (VI) risk. Prior to conducting a VI evaluation, a work plan will be submitted to NYSDEC and New York State Department of Health (NYSDOH) for review and approval. The elements of the SSDS will be turned into engineering control (EC) as an active SSDS if the soil vapor evaluation determines that vapor mitigation is needed.
8. Installation of a 20-MIL sealing vapor barrier under the proposed building's foundation. The vapor barrier will be a construction element and not an EC unless the Site achieves a Track 4 remedy.
9. If an unrestricted use remedy is not achieved at the time of certificate of completion issuance an Environmental Easements will be required to be recorded. The EE will remain effective until any required Engineering Controls (ECs) and Institutional Controls (ICs) are removed if an unconditional Track 1 remedy is accomplished within five (5) years. If the

unconditional Track 1 remedy is not achieved in this timeframe as a result of any remaining on-Site conditions that do not meet the BCP Track 1 requirements, the EE will continue under a Track 2 remedy for any residual soil vapor contamination

10. Publication of a Site Management Plan for long term management of residual contamination as required by the Environmental Easement, including plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;
11. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and local rules and regulations.

Remedial Action Work Plan

1.0 INTRODUCTION

Archer Towers Development LLC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) on August 9, 2024, to investigate and remediate a 0.853-acre C-241283--Archer Ave Auto Repair and Coal Yard Site (the "Site") located at 163-25 Archer Avenue in Queens county New York. Archer Towers Development LLC is a Volunteer in the Brownfield Cleanup Program. Unrestricted use is proposed for the property. When completed, the Site will contain multi-story residential apartment building with ground floor retail and a basement level parking garage. The proposed redevelopment plans are presented as **Appendix A**. Refer to the Brownfield Cleanup Program (BCP) application for additional project details.

This Remedial Action Work Plan (RAWP) summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed between August 8, 2025, through September 23, 2025. It provides an evaluation of a Track 1 cleanup and other applicable Remedial Action alternatives, and the recommended and preferred remedy. The remedy described in this document is consistent with the procedures defined in DER-10, DER-31, and complies with all applicable standards, criteria and guidance. The remedy described in this document also complies with all applicable Federal, State and local laws, regulations and requirements. The RI for this Site did not identify fish and wildlife resources.

A formal Remedial Design document for a passive sub-slab depressurization system will be prepared and submitted prior to construction.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located in the County of Queens, Jamaica, New York and is identified as Block 10151, Lot 65 on the Queens Tax Map. A United States Geological Survey (USGS) topographical quadrangle or other suitable type map (see **Figure 1.1 Appendix B**) shows the Site location. The Site is situated on an approximately 0.853-acre area bounded by mixed-use commercial properties followed by Jamaica Avenue to the north, Archer Avenue followed by elevated Long Island Rail Road lines to the south, a vacant lot followed by a three-story parking structure to the east, and a residential apartment tower followed by Guy R. Brewer Boulevard to the west (see **Figure 2.1 Appendix B**). A boundary map is attached to the BCA as required by Environmental

Conservation Law (ECL) Title 14 Section 27-1419. The 0.853-acre property is fully described in **Appendix C – Metes and Bounds**. A global positioning system coordinate for the starting point is included.

1.2 CONTEMPLATED REDEVELOPMENT PLAN

The Remedial Action to be performed under the RAWP is intended to make the Site protective of human health and the environment consistent with the contemplated end use. The proposed redevelopment plan and end use is described here to provide the basis for this assessment. However, the Remedial Action contemplated under this RAWP may be implemented independent of the proposed redevelopment plan.

The planned redevelopment of the Site consists of a multi-story residential apartment building with ground floor retail and a basement level parking garage.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The Site is located in an urban setting, and no sensitive natural resources or endangered species are present in the vicinity. The nearest surface water body is a pond within Captain Tilly Park, approximately 0.53 miles to the north. Given its distance and location, it is unlikely to be impacted by contamination from the Site.

Potential human exposure pathways to Site-related contaminants include direct contact with contaminated soil and inhalation exposure with soil vapor intrusion, if not remediated or mitigated. According to the NYS Water Wells database, there are no domestic, irrigation, or production wells within a 1-mile radius of the Site. As a result, the likelihood of human exposure to contaminated groundwater is limited.

As required by DER-10 Section 3.3(c)1(iii), potential sensitive receptors within approximately half a mile are summarized in **Table 1.1** below.

Table 1.1 Potential Sensitive Receptors within Approximately a Half Mile

Type	Name	Address	Distance (mile)	Direction
School (College)	CUNY York College	94-20 G R BREWER BLVD	0.18	SW
School (K-12)	Queens High School for the Sciences at York College	94-50 159TH ST	0.26	SW
Parks	Ashmead Park	168-01 Liberty Ave	0.28	SE
School (K-12)	Rising Stars Islamic School	166-26 89TH AVE	0.30	NE
School (K-12)	Queens School For Leadership and Excellence	88-08 164TH ST	0.36	NNW
School (K-12)	MS 358	88-06 164TH ST	0.36	NNW
School (K-12)	Queens Satellite High School for Opportunity	162-02 HILLSIDE AVE	0.37	NW
School (K-12)	Elhaam Academy	87-41 165TH ST	0.41	NNW
Parks	Rufus King Park	150-29 Jamaica Ave	0.45	W
School (K-12)	Ps 182 Samantha Smith	153-27 88TH AVE	0.45	NW
Parks	Detective Keith L. Williams Park	Liberty Ave &, 173rd St	0.52	E
Parks	Captain Tilly Park	Chapin Pkwy. &, Gothic Dr	0.52	NNW
School (K-12)	Hillcrest High School	160-05 HIGHLAND AVE	0.53	NW

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The Site was investigated in accordance with the scope of work presented in the NYSDEC-approved Remedial Investigation (RI) Work Plan dated June 2025. The investigation was conducted between August 8 and September 23, 2025. The RI was submitted to NYSDEC on September 16, 2025 and is pending NYSDEC approval.

2.1 SUMMARY REMEDIAL INVESTIGATIONS PERFORMED

2.1.1 BORINGS, VAPOR PROBES, AND WELLS

Soil Borings

The RI consisted of advancing 34 soil borings and collection of 170 soil samples. The borings were advanced utilizing direct-push and hollow stem augur drilling techniques. Borings were

advanced to depths of approximately 20 ft bgs. Soil samples were collected utilizing a macro-core and split-spoon samplers. Samples for laboratory chemical analyses were collected based on field screening, which includes visual and olfactory observations and screening with photo-ionization detector (PID).

Monitoring Wells

To investigate groundwater at the Site, six (6) monitoring wells were installed and sampled. The monitoring wells were installed to approximately 50 ft bgs. All the wells were constructed utilizing 2-inch PVC pipe with a 10-foot, 20 (0.020 inches) slot screen from approximately 40 to 50 ft bgs. The PVC screen was surrounded by #2 filter sand. The filter sand extends at least about one (1) foot above the screen. Bentonite about 1 foot thick was then placed on top of the filter sand and the remaining annular space around the PVC riser was grouted with cement/bentonite mix. The wells were subsequently completed with protective steel manholes as flush mount.

Soil Vapor

Seven (7) temporary soil vapor probes were installed using direct push sampling equipment to a depth of 15 feet, which is the depth of the planned basement. The vapor points were installed with an adequate surface seal to prevent outdoor air infiltration at each sampling location. Porous, inert backfill packer sand was used to create a sampling column of two (2) feet in length. The implants were fitted with inert Teflon® tubing to the surface. Soil vapor probes were sealed above the sampling zone with a bentonite slurry for a minimum distance of three (3) feet. The remainder of the borehole was backfilled with clean material.

Prior to sampling, the soil vapor points were purged three (3) times the volume of the sample probe and tube. Flow rates for both purging and collecting were maintained below 0.2 liters per minute to minimize outdoor air infiltration during sampling. Samples were collected in certified 1.4-L Summa® canisters provided by the laboratory. The ground surface was unpaved at the time of sampling which would not allow for sealing a helium trap over the vapor points, and therefore the helium tracer test was not conducted.

2.1.2 REMEDIAL INVESTIGATION SAMPLES COLLECTED

The RI consisted of collecting 170 soil samples from 34 soil borings, and of this volume, 122 soil samples were analyzed, as a multitude of the soil samples were collected on a laboratory hold for

contingency analyses for further investigative delineation of the former gasoline service station area at the Site. The RI also consisted of collecting six (6) groundwater samples from permanent monitoring wells, seven (7) soil vapor samples, and one (1) ambient air sample.

2.1.3 CHEMICAL ANALYTICAL WORK PERFORMED

Soil and groundwater samples were analyzed for a combination of full target compound list (TCL) and target analyte list (TAL) analytes – which include volatile organic compounds (VOCs, USEPA Method 8260), metals (USEPA Methods 6010/7471), semi-volatile organic compounds (SVOCs, USEPA Method 8270), polychlorinated biphenyls (PCBs) and pesticides (USEPA Methods 8081/8082). In addition, samples were analyzed for per- and polyfluoroalkyl substances (PFAS, USEPA Method 1633A), and 1,4-dioxane (USEPA Method 8270). Duplicate samples were collected in general accordance with frequencies specified in DER-10. Soil vapor samples were analyzed for VOCs (USEPA Method TO-15). A summary of samples collected and their analysis is presented on **Tables 2.2**.

2.1.4 BEST MANAGEMENT PRACTICES

Best management practices (BMPs) implemented at the Site to reduce the environmental footprint of the RI include:

- Use minimally invasive drilling techniques such as direct-push or sonic technology whenever feasible to reduce drilling duration, avoid or minimize use of water, and prevent or reduce generation of cuttings and associated disposal of investigation derived waste.
- Deploy machinery that is suitably sized to increase efficiencies considerably.
- Use machines with repowered or newer engines that are more fuel efficient.
- Implement an engine idle reduction plan to avoid fuel consumption when machinery is not actively engaged.
- Select service providers, product suppliers and analytical laboratories from the local area and consolidate the service and delivery schedules.
- Portable vapor/gas detection systems using photoionization or flame ionization for screening purposes.
- Choose groundwater monitoring equipment made of noncorrosive material.
- Compressed the number of days needed for a given round of sampling and use of mass transit to access the Site.

2.1.5 REMEDIAL INVESTIGATION SUMMARY

Below is a summary of RI findings.

Based on the field investigation, the soil results indicate the overall depth of impacted soils ranged from 0.5 to 17.5 ft bgs. Metals contaminated soils exceeding the RRSCOs extends from 2.5 to 16.0 ft bgs. Metals contaminated soils exceeding the UUSCOs extends from 1.0 to 16.0 ft bgs Site-wide. Pesticide-impacted soils including 4,4-DDD, 4,4-DDT, aldrin, and dieldrin exceeding the UUSCOs extends from 0.5 to 17.5 ft bgs Site-wide. PCB contaminated soils exceeding the UUSCOs extends from 1.0 to 7.5 ft bgs on the southwestern portion of the Site (see **RIR Figure 4.2, Appendix B**). The applicable standards criteria and guidance (SCGs) for the Site groundwater are the NYSDEC TOGS 1.1.1 AWQSGV. Samples collected from the Site's groundwater identified VOCs including chloroform, cis-1,2-dichloroethene and tetrachloroethene (PCE), and slight exceedance of the PFOA and PFOS AWQSGV. (see **RIR Figure 4.3, Appendix B**). Finally, PCE was detected in soil vapor in the central portion of the Site (see **RIR Figure 4.4, Appendix B**).

2.2 SIGNIFICANT THREAT

The NYSDEC and New York State Department of Health (NYSDOH) have determined that this Site does not pose a significant threat to human health and the environment.

2.3 SITE HISTORY

2.3.1 PAST USES AND OWNERSHIP

Historic research indicates that the Site land uses include a coal and lumber yard (circa 1886 to 1925), a bus terminal with a lubritorium to lubricate engines with motor oil and a gasoline tank (circa 1925 through 1970), and a filling station with automotive repair and painting operations (circa 1963). Most recently, the Site contained an 8-story concrete and steel parking garage from the early 1970s until 2018. The former garage was demolished in 2019.

Based on land title records the Site ownership history is provided below:

1. Jamaica Tower, LLC (2014 – present)
2. Gertz Plaza Acquisition 4, LLC (2008 – 2014)
3. Gertz Plaza Acquisition LLC (2001 – 2008)

4. Lager Associated (1985 – 2001)
5. Geral Associates (1974 – 1985)
6. Alstores Realty Corp (1974)
7. Archer Assoc (1971 – 1974)
8. Jerrold Gertz, Stanley Gertz, & Alstores Realty Corp (1969 – 1971)
9. Greenwillow Equities Inc (1969)
10. Margaret Wells Smith (TRS & IND), Norman Smith (TRS & IND), Frank R Smith (TRS) (prior to 1969)

2.3.2 PHASE I AND PHASE II REPORTS

The data from the Phase II reports will not be used for the remedial decision and therefore the data will not be validated.

2.3.2.1 PHASE I AND LIMITED PHASE II – MAY 2017

Three (3) initial investigations were conducted at the Site:

- Phase I ESA – Gertz Plaza Acquisition 4 & 5, LLC, by Property Solutions Inc., October 7, 2013
- Limited Phase II Investigation – 163-05 Archer Avenue Queens, NY by J.R. Holzmacher P.E., LLC for United Construction & Development Group Corp., June 9, 2014
- Phase II Subsurface Investigation by Advanced Cleanup Technologies, Inc. for Cathay Bank, September 8, 2014

An October 2013 Phase I report was prepared for the Site and the adjacent Lot 75 by Property Solutions Inc. for an affiliate of the former adjacent Gertz Department store. This report discussed the historical uses noted below. Thereafter, the June 2014 and September 2014 Phase II environmental investigations were performed on the Site and on Lot 75. None of the investigations revealed any exceedances of contamination above the Track 1 UUSCOs. Only minor exceedances of the groundwater standards were identified and no elevated soil vapor levels were noted.

2.3.2.2 PHASE I AND LIMITED PHASE II – MAY 2017

A Phase I and Limited Phase II ESAs were performed by Langan Engineering, Environmental, Surveying, and Landscaping, D.P.C. (Langan) in May 2017 for the Site and adjacent 1-story mixed use building. Two (2) onsite Recognized Environmental Conditions (RECs) were identified

in the Phase I ESA performed by Langan Engineering in 2017. These concur with the concerns identified during SESI's subsequent review of historic Sanborn maps, as detailed below:

- REC 1 – Historic Site Use: historical uses of the Site of potential environmental concern include a coal and lumber yard (circa 1886 to 1925), and a filling station with automotive repair and painting operations (circa 1963).
- REC 2 – Gasoline Tank: A gasoline tank of unknown size was shown in the southeastern corner of the Site on Sanborn maps from 1925 through 1951.

Based on a Limited Phase II Environmental Site Assessment Report from July 2017 prepared by Langan, once again no VOCs or PCBs were detected above UUSCOs or RRSCOs in the soil samples collected. However, SVOCs and Metals were detected above the Unrestricted and Restricted-Residential SCOs in the soil samples collected. The soil vapor sampling results indicated the presence of chlorinated VOCs, and several other VOCs above the anticipated range of background concentrations. Due to the presence of VOCs in soil vapor and the potential for the migration of VOCs into future site building, Langan recommended a vapor barrier be installed under a future site building.

Archer Towers Development LLC relied on the Langan Phase I to acquire the Site (Lot 65) and adjacent Lot 75 in January 2018. The new residential building on Lot 75 was the first phase of the planned two building project. Since Lot 75 was E-Designated, the Requestor remediated Lot 75 through the City's Office of Environmental Remediation program, eliminated the E-Designation, and constructed the first phase residential building on Lot 75.

2.3.2.3 GEOPHYSICAL SURVEY REPORT (AMERICAN GEOPHYSICS) – AUGUST 2019

In preparation for a project on Lot 65, prior to conducting any subsurface environmental drilling, SESI was hired to try to locate the gasoline tank on the Site. SESI's drilling contractor contacted New York's utility mark-out system. In addition, SESI retained the services of American Geophysics, a private utility locator, to locate underground utilities not included in the one-call and to conduct a geophysical survey to investigate the potential for historical underground storage

tanks (USTs). American Geophysics performed the survey on August 20, 2019, and located several inactive underground utilities throughout the Site but no anomalies consistent with a UST.

2.3.2.4 PHASE II ENVIRONMENTAL SITE INVESTIGATION REPORT, SESI, FEBRUARY 2024

SESI also performed several rounds of environmental soil, groundwater and soil vapor sampling in August 2019, which identified some UUSCO exceedances but no RRSCO exceedances. Therefore, SESI did not advise that the Site was BCP eligible at that time. The second phase project was delayed several years due to funding. Before any construction commenced on this second phase project, SESI was hired once again to confirm earlier investigations. An investigation conducted in January 2024, which was more extensive than any of the prior investigations, revealed RRSCO exceedances. SESI prepared a Phase II Environmental Site Investigation Report dated February 2024. The Phase II Report summarized the results of 38 soil samples that were collected from 30 soil borings, one (1) groundwater sample that was collected from one (1) temporary well, and four (4) soil vapor samples that were collected from four (4) temporary vapor points.

Unlike prior investigations, this field investigation identified contaminated historic fill in the top 5 to 12 ft-bgs, and native soils consisting of dark brown sand, some gravel, little silt, trace clay, and trace silt that extend beyond the maximum boring depth of 15 ft-bgs. Pesticides, SVOCs, and Metals impacts were identified in soil exceeding the UUSCOs and RRSCO levels at much higher levels than previously detected in the Langan 2017 Phase II or August 2019 initial SESI Phase II investigation across the Site at depths ranging from grade up to 8.5 ft-bgs. PCBs were also identified exceeding the UUSCOs in several soil samples across the Site to a maximum depth of 8 ft-bgs. The SVOC analyte benzo(a)anthracene, and various metals impacting groundwater were identified exceeding their respective AWQSGV in the temporary monitoring well TWP-1. Chlorinated VOCs Trichloroethene and Tetrachloroethene were detected in soil vapor at elevated Levels. Due to the presence of chlorinated VOCs and other VOCs being detected, it was noted that there is potential for the migration of VOCs into the future Site building.

The Report concluded that the contamination on the Site is likely derived from the historic uses of the Site as well as from the presence of contaminated historic fill.

2.3.3 SANBORN MAPS

Sanborn Fire insurance maps depict a coal and lumber yard (circa 1886 to 1925), a gasoline tank (circa 1925 through 1970), and a filling station with automotive repair and painting operations (circa 1963 through 1967), and an open deck parking garage (1981 through 2006). All Sanborn Maps available for this Site were reviewed prior to preparation of the RAWP.

2.4 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

Geologically, the Site soils are mapped as glacial soils overlying bedrock, consisting of varying amounts of sand, silt, gravel, cobbles and boulders. Based on the University of the State of New York Geologic Map of New York, Lower Hudson Sheet, 1970 (reprinted 1995), the Site is underlain by Upper Cretaceous period Coastal Plain Deposits, specifically the Monmouth Group, Matawan Group, and Magothy Formation, which generally consist of silty clay, glauconitic sandy clay, sand, and gravel.

Based on soil borings conducted during the SESI investigation, a historic fill layer was encountered in most borings to depths of 5 to 15 ft-bgs below the surface materials. The fill layer appears to be characterized by brown/black/gray sand with varying amounts of silt, gravel, brick and concrete. Beneath the existing fill are the natural soil deposits consisting primarily of dark brown sand, some gravel, little silt, trace clay, and trace silt (glacial till), which are presumed to extend beyond the terminal depth of the borings. Bedrock was not encountered during previous investigations. Based on the bedrock sheets of the University of the State of New York Geologic Map of New York, Lower Hudson, the bedrock on the Site consists of Onondaga Limestone at depth ranging from 450-1000 ft bgs.

During the remedial investigation, previous investigations groundwater was encountered during the drilling in Site monitoring wells at depths ranging between 31.2 to 39.8 ft-bgs (14.87 to 24.74 amsl) of approximately 32± and 34± ft-bgs. This is consistent with groundwater data obtained from nearby sites. The direction of groundwater flow was not calculated in these prior reports but was anticipated to follow the topography and flow in a southeasterly direction across the Site..

2.5 CONTAMINATION CONDITIONS

2.5.1 CONCEPTUAL MODEL OF SITE CONTAMINATION

Historical uses of the Site of potential environmental concern include a coal and lumber yard (circa 1886 to 1925), a bus terminal with a lubritorium to lubricate engines with motor oil and a gasoline tank (circa 1925 through 1970), and a filling station with automotive repair and painting operations (circa 1963). Most recently, the Site contained an 8-story concrete and steel parking garage from the early 1970s until 2018. The former garage was demolished in 2019.

The overall depth of impacted soils ranged from 0.5 to 17.5 ft bgs as a result of historical land uses and USTs. Metals contaminated soils exceeding the RRSCOs extends from 2.5 to 16.0 ft bgs. Lead, specifically, was identified at concentrations exceeding its RRSCO in one sample from 15.5-16.0 ft bgs. Additional investigation will be needed to determine the source and extent of lead. Metals contaminated soils exceeding the UUSCOs extend from 1.0 to 16.0 ft bgs Site-wide. Pesticide-impacted soils including 4,4-DDD, 4,4-DDT, aldrin, and dieldrin, exceeding the UUSCOs extend from 0.5 to 17.5 ft bgs Site-wide. PCB contaminated soils exceeding the UUSCOs extends from 1.0 to 7.5 ft bgs on the southwestern portion of the Site.

The applicable standards criteria and guidance (SCGs) for the Site groundwater are the NYSDEC TOGS 1.1.1 AWQSGV. Samples collected from the Site's groundwater Three (3) VOCs, including chloroform, cis-1,2-dichloroethene and tetrachloroethene (PCE) were detected at concentrations exceeding their respective TOGS Class GA AWQS in one or more samples. Although the site historically contained fuel oil storage tanks, there is no evidence that petroleum-related releases are contributing to the detected PCE. The presence of PCE is likely due to historical off-site or upgradient sources, with dissolved-phase migration occurring along the groundwater flow path toward the site. did not identify any exceedances of the applicable AWQSGV. The pathway of the contaminated groundwater to human receptors is not applicable due to the lack of exceedances identified during this investigation. However, groundwater in this area of Jamaica, Queens is not used for drinking and contaminants in groundwater are not a concern to human health.

Finally, PCE detected in soil vapor can result in soil vapor intrusion into the future on-Site buildings. A vapor intrusion evaluation will be needed for this Site proposed enclosed areas as this PCE concentration may result in soil vapor intrusion into the future on-Site buildings. Once present in groundwater, PCE may volatilize and migrate upward through the vadose zone,

resulting in the detections within the soil vapor samples. The observed PCE concentrations are consistent with vapor intrusion potential from the underlying groundwater impacts.

2.5.2 DESCRIPTION OF AREAS OF CONCERN

Historic research and the remedial investigation have identified the following AOCs:

- AOC 1 – Historic Site Use: Site wide historical uses of the Site of potential environmental concern include a coal and lumber yard (circa 1886 to 1925), a bus terminal with a lubritorium to lubricate engines with motor oil and a gasoline tank (circa 1925 through 1970), and a filling station with automotive repair and painting operations (circa 1963).
- AOC 2 – Gasoline Tank: A gasoline tank of unknown size was shown in the southeastern corner of the Site on Sanborn maps from 1925 through 1951, likely associated with the bus terminal operations previously conducted at the Site.
- A geophysical survey conducted as part of the remedial investigation did not identify any anomalies consistent with USTs on the Site.

2.5.3 IDENTIFICATION OF STANDARDS, CRITERIA AND GUIDANCE

The following standards, criteria, and guidance are typically applicable to Remedial Action projects in New York State, and will be consulted and adhered to as applicable:

- 6 NYCRR Part 364 - NYS Waste Transporter Permits
- 6 NYCRR Part 360 - NYS Solid Waste Management Requirements
- 6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
- 6 NYCRR Subpart 374-2 - Standards for the Management of Used Oil
- 6 NYCRR Part 375 - Environmental Remediation Programs
- 6 NYCRR Part 376 - Land Disposal Restrictions
- 6 NYCRR Part 613 - Petroleum Bulk Storage
- 6 NYCRR Part 661 - Tidal Wetlands - Land Use Regulations

- 6 NYCRR Part 663 - Freshwater Wetlands - Permit Requirements
- 6 NYCRR Parts 700-706 – Classes and Standards of Quality and Purity
- 6 NYCRR Part 750 - State Pollutant Discharge Elimination System (SPDES) Permits
- 29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response
- 40 CFR Part 144 - Underground Injection Control Program
- CP-43 - Commissioner Policy on Groundwater Monitoring Well Decommissioning (December 2009)
- CP-49 – Climate Change and DEC Action (2022)
- CP-51- Soil Cleanup Guidance (2010)
- CP-60 – Screening and Assessment of Contaminated Sediment (2014)
- DER-2 - Making Changes to Selected Remedies (April 2008)
- DER-4 – Management of Coal Tar Waste & Coal Tar Contaminated Soils from Manufactured Gas Plants (2001)
- DER-10 – Technical Guidance for Site Investigation and Remediation (2010)
- DER-13 – Strategy for Evaluating Soil Vapor Intrusion at Remedial Sites in New York (2006)
- DER-23 – Citizen Participation Handbook for Remedial Programs (2010)
- DER-31 – Green Remediation (2010)
- DER-32 – Brownfield Cleanup Program Applications and Agreements (2017)
- DER-33 – Guide to Drafting and Recording Institutional Controls (2010)
- TAGM 3028 - "Contained In" Criteria for Environmental Media: Soil Action Levels (August 1997)
- TOGS 1.1.1 - Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations (1998, Addenda 2000, 2004 and 2023)

- TOGS 1.3.8 - New Discharges to Publicly Owned Treatment Works (1994)
- TOGS 2.1.2 - Underground Injection/Recirculation (UIR) at Groundwater Remediation Sites (1990)
- New York State Standards and Specifications for Erosion and Sediment Control (2016)
- DAR-1 (formerly Air Guide 1) - Guidelines for the Control of Toxic Ambient Air Contaminants (1997)
- U.S. EPA OSWER Directive 9200.4-17 - Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites (December 1997)
- New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006) with updates (SVI) Guidance
- New York State Climate Act (2019)
- NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (2023)

2.6 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS

2.6.1 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

This exposure assessment discusses potential migration routes by which contaminants in the environment may be able to reach human receptors in accordance with NYSDEC DER-10 sections 3.14(c)17, 3.3(c)4 and Appendix 3B. This discussion is based on current and hypothetical future Site conditions at the investigation area.

An exposure assessment must evaluate five (5) elements that comprise an exposure pathway. A complete exposure pathway includes the following:

1. A description of the contaminant source. If the original source is unknown, then a description of the contaminated environmental medium at the point of exposure;
2. An explanation of the transport mechanism;

3. An identification of all potential exposure points;
4. A description of the exposure route at the contact point; and
5. A receptor population.

There are some exposure pathways related to the contamination if left unaddressed. SESI evaluated exposure pathways as follows:

Soil

- The exposure pathway can be through direct physical contact with the discharged products or contact with the impacted soils. However, the soil source will be removed through RAWP activities.
- Metals exceedances of the RRSCOs in the Site soil that consist of contaminated fill from 0.5 to approximately 16.0 feet below grade pose a risk to human health. The exposure pathway to humans can be through direct dermal contact with the contaminated soils or incidental ingestion.

Groundwater

Potential groundwater exposure points include dermal contact and inhalation of vapors. However, the New York City utilizes municipal treated water (not groundwater) for drinking purposes; in addition, the depth to groundwater at the Site ranges from 32 to 34 ft bgs and the proposed remedial excavation is anticipated to extended to 19 ft bgs. Therefore, ingestion of on-Site groundwater as a potential exposure point may be eliminated from further evaluation.

Soil Vapor

- tetrachloroethylene (PCE) was detected in the Site soil vapors at elevated concentrations that may cause a vapor intrusion risk. The exposure route for soil vapor is through the inhalation of the contaminated soil vapor that may intrude into the enclosed spaces of any planned Site development.

2.6.2 FISH & WILDLIFE REMEDIAL IMPACT ANALYSIS

The Site does not contain any ecologically sensitive resources or nearby fish or wildlife receptors. The closest water body is more than 0.53 miles from the Site. Hence the Site contamination is

not expected to have any impacts on any ecological resources. The Fish and Wildlife Analysis Decision Key is included in **Appendix D**.

2.7 REMEDIAL ACTION OBJECTIVES

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

2.7.1 GROUNDWATER

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination.

2.7.2 SOIL

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater contamination.

2.7.3 SOIL VAPOR

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

3.1 EVALUATION OF REMEDIAL ALTERNATIVES

The objective of the remedy, a mixed use residential and commercial development that will cover the entire Site, is to achieve a cleanup that is the most protective of human health and the environment and that does not rely on long term Engineering or Institutional Controls (ECs or

ICs). This objective will most likely be accomplished under a Track 1 remedy by removing all soils that exceed the UUSCOs. However, to the extent this most stringent remedy cannot be achieved, the applicant shall develop and evaluate at least one remedial alternative. The remedial alternatives are discussed below: and the SEFA Remedial Alternatives Analysis and CVA are provided in **Appendix E**.

Track 1

A remedy pursuant to this Track must achieve compliance with the UUSCOs for soils set forth in 6 NYCRR § 375-6.8(a). Achievement of Track 1 will be documented based on end point samples every 900 square feet at the bottom of the excavation. Side wall samples will be collected where possible, adhering to DER-10; however, sidewall sampling will not be possible on the perimeter of the Site based on the anticipated support of excavation (SOE) that will be constructed at the Site. However, sidewall samples will be collected where adjacent remedial cells are excavated to different depths.

This alternative would involve the complete removal and/or remediation of the soil with exceedances of the RRSCOs and UUSCOs, which were encountered as deep as 17.5 ft-bgs. A feasible remedial technology that may be used to implement this alternative involves the excavation of the contaminated soil and transportation to an approved off-site facility for disposal. The estimated excavation volume is approximately 13,000 cubic yards (CY) of contaminated material.

Temporary institutional and engineering controls may be implemented to address residual contamination in soil vapor for a conditional Track 1 remedy. Following soil remediation, dissolved contamination in groundwater will be monitored via the RI monitoring well network. The groundwater remedial investigation identified exceedances of VOCs and metals of the AWQS, and PFOA/PFOS that were identified above the NYSDEC groundwater TOGS AWQSGV guidance values in most wells but at levels that are typically being found as background on most BCP sites. Given the low levels of groundwater exceedances, no groundwater remedy is anticipated of Track 1. It is expected that the groundwater will meet the AWQS or reach asymptotic levels in less than five (5) years after the implementation of excavation, which will result in the removal of contamination sources for purposes of eventually achieving an unconditional Track 1 remedy. A round of groundwater sampling will be conducted post the soil excavation.

Chlorinated VOCs in soil vapor were detected during the RI. The proposed remedy includes the removal of all soil exceeding the UUSCOs which could be the source of the soil vapor since groundwater did not contain any VOCs exceedances. Since the proposed building will include one level of aerated parking garage, a soil vapor intrusion issue is not anticipated. However, the remedy will include the installation of the piping elements of an SSDS underneath the buildings if the sub slab of each of the proposed building is not totally submerged under the water table including during the seasonal low, and a vapor barrier. The vapor barrier will be a construction element and not an EC unless the Site achieves a Track 4 remedy. The design for the SSDS piping, assuming it is feasible to install based on the water table levels, will be developed, and will be submitted for NYSDEC and NYSDOH approvals. If it is determined that an SSDS or portions of an SSDS would be below the water table, then no SSDS will be installed in such areas if approved by NYSDEC and NYSDOH.

A soil vapor intrusion evaluation will also be completed in each building. A work plan for the soil vapor intrusion evaluation will be submitted for NYSDEC and NYSDOH approvals. If the evaluation determines that vapor mitigation is required, then assuming the SSDS could be installed, the SSDS will be turned active and its operation and monitoring will be described in the SMP. If vapor mitigation is required and the active SSDS turns into an EC, the vapor intrusion monitoring will include the collection of samples from the sub-slab of the proposed buildings and the indoor air in accordance with the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006) with updates (SVI Guidance). When the soil vapor levels drop to below the "no further action" sub-slab vapor concentrations, a work plan to shut it off will be provided to the NYSDEC and NYSDOH approval. If the work plan is approved, the SSDS will be shut down and not be considered an EC anymore and the condition on the Track 1 remedy will be removed. If soil vapors continue to exceed the matrix values that require mitigation or monitoring after 5 years, then the SSDS will become a permanent EC and the remedy will revert to a Track 2 remedy as described below. A site management plan (SMP) and environmental easement (EE) as institutional controls will be put in place for the groundwater monitoring and SVI evaluation.

Track 2

Cleanups pursuant to this track may consider the intended future use in determining the appropriate cleanup levels for soil. This track requires the Volunteer implement a cleanup that

achieves SCOs from tables in 6 NYCRR § 375-6.8(b), which is consistent with the intended Site use for the top 15 feet of soil (or bedrock if less than 15 feet). Under a Track 2 remedy, the remedial program may include the use of long-term institutional or engineering controls to address contamination related to other media including, but not limited to groundwater and soil vapor. The Site remediation pursuant to Track 2 would still involve excavation and disposal of the contaminated soils to 17.5 feet to meet the RRSCOs and Protection of Groundwater Soil Cleanup Objectives (PGWSCOs).

Because the soils on the Site will be excavated down to around 17.5 feet, it is anticipated that Track 1 SCOs will be achieved for soil. However, if this is not possible, a Track 2 remedy will be an alternative remediation for the Site soils.

The same precautionary measure for Site soil vapor (i.e. SSDS piping and vapor barrier) and IC in the form of an easement that will require soil vapor evaluation sampling will be implemented for a Track 2 remedy in the event that only Track 2 can be achieved on all or portions of the Site. A SMP and EE as institutional controls will be temporarily put in place to ensure that all of the institutional and engineering controls are maintained until no longer required by NYSDEC and NYSDOH.

Track 4

A Track 4 remedy for a restricted residential use requires a minimum 2 foot source removal and typically a Site-wide cover system where, as here, there is Site-wide surficial contamination. The cover in landscaped areas must consist of 24 inches of soil, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Short and long-term IC and ECs through maintenance of the cover system, vapor barrier, and any other applicable ICs and ECs are utilized to continue to achieve protection of public health and the environment on a long-term basis.

Track 4 also includes a Site Management Plan (SMP) and Environmental Easement (EE) as institutional controls to ensure that all of the institutional and engineering controls are maintained, and any soil removed from the Site post remedial action is managed properly. The SMP will include periodic (annual) monitoring and inspection and reporting of the condition of the cover system to ensure continued protection of the human health and the environment.

No Action Alternative

No action does not involve implementation of any active remedial activities or monitoring, and therefore, there are no costs associated with this alternative. The no action alternative would leave existing sources of contamination in soil and groundwater and soil vapor. The no action alternative is thus unacceptable and has not been compared to the factors below.

Protection of human health and the environment

Although all tracks will provide adequate protection of human health and the environment, Track 1 would be more protective than the other cleanup tracks because it would remove all soil contamination to meet the State's most stringent SCOs and should expedite the elimination of soil vapor intrusion sources. Moreover, because a Track 1 remedy requires no long term ongoing institutional or engineering controls to manage contamination indefinitely into the future (other than possibly some short term soil vapor mitigation measures), the cleanup does not anticipate relying on human intervention or mechanical equipment to remain effective in protecting human health and the environment. A Track 2 remedy would also be protective of human health and the environment if the proper long-term engineering and institutional controls are put in place and managed in an SMP. A Track 4 remedy, if less soil removal is ultimately anticipated, would also be protective of human health and the environment with some source removal, a proper cover system and implementation of the proper long-term engineering and institutional controls to be managed in an SMP.

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

All cleanup tracks will achieve applicable cleanup standards. A Track 1 cleanup achieves a more stringent set of standards than a Track 2 cleanup. A Track 4 cleanup is not driven by standards but rather hot spot source removal and SMP ECs and ICs to manage the remaining contamination in place to enable the safe reuse of the site for restricted residential purposes.

Short-term effectiveness and impacts:

Generally, Track 1 provides the best short term effectiveness because it promptly removes the most contaminant mass from the Site. Track 2 also accomplishes this, but to a lesser extent. Track 4 is less effective in this regard. Tracks 1 and 2 are somewhat less favorable in terms of

short-term impacts primarily because mass removal of the contaminated soils generates more truck trips than a Track 4 limited removal remedy. A Track 4 approach also reduces the risk of construction worker exposure by reducing the volume of contaminated soil being managed, and has less potential to cause dust and traffic issues. Excavation may result in a greater potential for migration of impacts from the open excavation (e.g. wind erosion, storm water intrusion, etc.), however, an air monitoring program and erosion and sediment controls will be implemented to minimize and control any potential migration.

Long-term effectiveness and Performance:

Because Tracks 1 and 2 would involve removal of the greatest amount of contaminated soil, these remedies will provide the most long-term effectiveness. As already discussed above, a Track 1 cleanup will allow the Site to be used for any purpose without restriction and without reliance on the long-term employment ICs or ECs (which can fail and require on-going monitoring and maintenance to remain effective over the long-term). A restricted residential Track 2 clean-up allows the Site to be used for almost all possible uses in an urban setting but requires ECs and ICs to ensure there is no exposure to residual contamination.

The long-term effectiveness of the Track 4 clean-up will be ensured with adherence to the SMP and recording of an Environmental Easement. Although contaminants are left on Site, a properly maintained cover system is effective at eliminating the risk of dermal exposure and the planned soil vapor mitigation measures will also help to ensure lack of exposure to any remaining on-Site vapors.

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

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

Constructability:

Tracks 1, 2, and 4 are all implementable given the location and the planned use for the Site. While there are additional short term potential impacts from a Track 1 or 2 remedy than Track 4, the Site is located in the middle of an urban area, and, therefore disposal of the contaminated

soils and truck access will not be a problem. Moreover, these short-term impacts will be avoided through implementation of the CAMP and HASP, which will employ truck washing and odor and dust control measures. Therefore, Track 1 or 2 are readily constructable remedies for this Site.

Cost effectiveness:

The preferred alternative should provide optimal suitability of the eight accompanying evaluation factors with minimal remedial cost. The contaminated fill and soil layer extends from the surface to a maximum depth of 17.5 ft bgs. Removal of the fill and soil layer and metal exceedances of the UUSCOs to achieve Track 1 or 2 Site wide remedy will be more costly than a Track 4 remedy. However, this mass removal results in long term savings by eliminating (or, in Track 2, significantly reducing) the need for indefinite cap monitoring and maintenance. In addition, a Track 1 or 2 remedy should eliminate any on-Site soil source that maybe contributing to soil vapor issues at the Site. Therefore, a Track 1 or 2 remedy for the Site is cost effective.

Community Acceptance:

A citizen participation plan program has been and will continue to be incorporated into all remedial alternatives, per NYSDEC Brownfield Program law and regulations. The Site development will include mixed-use multi-family/retail project with structured parking. The planned redevelopment of the Site consists of multi-story residential apartment building with ground floor retail and a basement level parking garage. The community should accept any of the remedies, however, the Track 1 or 2 remedy is likely preferable to the community since it will eliminate more of the contamination than a Track 4 remedy.

Land use:

All cleanup tracks would achieve remediation for the planned residential and commercial use of the Site. While remediation and redevelopment of the Site will create short term construction impacts, the creation of a new affordable housing project will provide significant community benefits in a high poverty/ high unemployment disadvantaged community.

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

Applicable comprehensive community master plans or land use plans: Implementation of all Tracks (with institutional controls) cleanup will facilitate the proposed commercial-residential development, which is consistent with current local land use plan.

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

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

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

Land use designations: A Track 1 remedy will not restrict any current or future land use designations. A restricted residential Track 2 will have very minimal restrictions on the future land use of the property. A Track 4 will have restrictions that will be managed in the SMP and via the environmental easement.

Population growth patterns: Any of the proposed remedies will not impact reasonably anticipated population growth patterns in the area other than to better accommodate growth by providing for new downtown, transit-oriented housing.

Accessibility to existing infrastructure: Access to existing infrastructure is present in the surrounding area. Some on-site utility infrastructure will likely have to be demolished and removed as part of the remediation. However, new infrastructure will be installed subsequent to the remediation as part of the redevelopment.

Proximity to natural resources: The closest surface water body is a pond within Captain Tilly Park, approximately 0.53 miles to the north. Storm water drainage patterns are generally consistent with the surrounding topography and primarily flow to the south.

Geography and geology of the Site: See Section 2.4 above.

Current Institutional Controls: There are no current institutional controls associated with the Site.

3.2 SELECTION OF THE PREFERRED REMEDY

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

3.3 SUMMARY OF SELECTED REMEDIAL ACTIONS

1. Excavation of soil/fill exceeding the Track 1 UUSCOs;
2. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
3. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 UUSCOs;
4. Appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
5. Import of materials to be used for backfill and cover in compliance with: (1) the chemical limits and other specifications included in NYCRR Sections 375-6.7(d) and 375-6.8 (b) and DER-10, (2) all Federal, State and local rules and regulations for handling and transport of material;
6. Post soil excavation groundwater monitoring well network to monitor the attainment of groundwater standards.
7. Installation of the elements of a sub-slab depressurization system (SSDS) underneath portions of the building foundation, if the sub-slab of the proposed building is not under the water table during the seasonal low. A soil vapor intrusion evaluation will be conducted to determine if the soil vapor (SV) levels constitute a vapor intrusion (VI) risk. Prior to conducting a VI evaluation, a work plan will be submitted to NYSDEC and NYDOH for review and approval. The elements of the SSDS will be turned into engineering control (EC) as an active SSDS if the soil vapor evaluation determines that vapor mitigation is needed.

8. Installation of a 20-MIL sealing vapor barrier under the proposed building's foundation. The vapor barrier will be a construction element and not an EC unless the Site achieves a Track 4 remedy.
9. If an unrestricted use remedy is not achieved at the time of certificate of completion issuance an Environmental Easement will be required to be recorded. The EE will remain effective until any required Engineering Controls (ECs) and Institutional Controls (ICs) are removed if an unconditional Track 1 remedy is accomplished within five (5) years. If the unconditional Track 1 remedy is not achieved in this timeframe as a result of any remaining on-Site conditions that do not meet the BCP Track 1 requirements, the EE will continue under a Track 2 remedy for any residual soil vapor contamination.
10. Publication of a Site Management Plan for long term management of residual contamination as required by the Environmental Easement, including plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;
11. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and local rules and regulations.

Remedial activities will be performed at the Site in accordance with this NYSDEC-approved RAWP and the NYSDEC-issued Decision Document. All deviations from the RAWP and/or Decision Document will be promptly reported to NYSDEC for approval and fully explained in the FER.

3.4 PRE-DESIGN INVESTIGATION

To further evaluate and delineate soil contamination three (3) additional soil borings will be advanced on the Site in the vicinity of prior RI borings RI-SV-5 and RI-SB-16 in the southeastern corner of the Site. The proposed boring locations are shown on **Figure 3.1**. The borings will be completed using direct-push or other drilling methods as needed as shown on **Table 3.1** below. Soil samples will be at a minimum of one sample per 5-foot depth interval based on field screening that includes visual observations, photoionization detector (PID) readings and olfactory observations. Based on the results from the mentioned field screening, samples will be biased

toward the highest indications of contamination. Boring logs documenting soil classifications, PID readings, and visual observations will be provided in the final report.

Soil samples collected from the boring locations will be analyzed by a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory for TCL + 30/TAL including VOCs by EPA Method 8260C, SVOCs and 1,4-dioxane by EPA Method 8270D, pesticides by EPA Method 8081B, PCBs by EPA Method 8082A, TAL metals by EPA Methods 6010D, 7471B, and 9010C/9012B. All samples taken before will also be analyzed for the 41 PFASs compounds by EPA Method 1633A. Category B deliverables will be requested on each sample chain of custody. SESI's field sampling procedures are described in the Quality Assurance Project Plan (QAPP) presented in **Appendix G**.

Quality Assurance/Quality Control (QA/QC) samples will be collected and analyzed as specified in the QAPP. The number of duplicate, spiked, and blank samples analyzed will be collected at a frequency of one (1) duplicate for every 20 samples. The inclusion and frequency of analysis of field blanks will be on the order of one per every 20 soil samples but not more than one (1) per day. Samples to be analyzed for volatile organic compounds will be accompanied by a field blank for all matrix types and trip blank for water matrices.

Table 3.1 Proposed Soil Boring and Sampling Protocol

BORING ID	SLEEVE INTERVAL (ft bgs)	ANALYSIS
RI-SB-101	0'-5'	TCL/TAL+30 1,4-Dioxane
	5'-10'	
	10'-15'	
	15'-20'	
	0'-5'	PFAS (EPA 1633A)
	5'-10'	
	10'-15'	
	15'-20'	
RI-SB-102	0'-5'	TCL/TAL+30 1,4-Dioxane
	5'-10'	
	10'-15'	
	15'-20'	
	0'-5'	PFAS (EPA 1633A)
	5'-10'	
	10'-15'	
	15'-20'	
RI-SB-103	0'-5'	TCL/TAL+30 1,4-Dioxane
	5'-10'	
	10'-15'	
	15'-20'	
	0'-5'	PFAS (EPA 1633A)
	5'-10'	
	10'-15'	
	15'-20'	

4.0 REMEDIAL ACTION PROGRAM

4.1 GOVERNING DOCUMENTS

4.1.1 GREEN AND SUSTAINABLE REMEDIATION AND CLIMATE RESILIENCY

During the course of the remedial action field activities, SESI will consider NYSDEC DER-31 “Green Remediation” implementation objectives. DER-31: Green Remediation provides the framework for DER’s approach to remediating sites in the context of the larger environment, a concept known as “Green Remediation”. Green Remediation (or greener cleanups) can be defined as “the practice of considering all environmental effects of remedy implementation and incorporating options to minimize the environmental footprint of cleanup actions.” It is intended to be a holistic approach which improves the overall sustainability of remedial cleanups by promoting the use of more sustainable practices and technologies. Such practices and technologies are less disruptive to the environment, generate less waste, increase reuse and recycling, and emit fewer pollutants, including greenhouse gases (GHGs), to the atmosphere. The approach also recognizes the potential for positive economic and social benefits of site reuse and supports coordination of site reuse and remediation to affect the most beneficial and sustainable reuse of the site. Please note that final end use is dictated by local zoning codes. NYSDEC’s role is to ensure that the remedy is protective for the intended end use. Green Remediation concepts and techniques considered during the remedial activities will include:

- Require a Green Remediation Implementation Plan submittal from the selected Contractor to detail procedures and tracking of these items;
- During construction activities and associated landscape alteration activities, green building strategies such as those outlined in the USGBC LEED should be considered;
- LEED includes guidelines and recommendations for new construction, and existing building operations and management that fall under six categories important for reducing the environmental impact of facilities of all types:
 - Sustainable sites
 - Water efficiency
 - Energy and atmosphere
 - Materials and resources
 - Indoor environmental quality
 - Innovation in operations

Other approaches or considerations may be approved by NYSDEC on a case-by-case basis.

- Prohibiting idling vehicles and equipment when possible to reduce emission of CO₂, N₂O, CH₄, and other greenhouse gases contributing to climate change;
- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term when choosing a site remedy;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development;
- Implementing the use of particulate detectors to monitor and minimize dust export of contaminants;
- Implementing the use of VOC detectors to monitor and minimize VOC exposures; and
- Coordinating sampling events to maximize on-site efforts while minimizing travel to/from the Site (economy of scale implementing multiple sampling events) and use of mass transit to access the project site.

4.1.2 SITE SPECIFIC HEALTH & SAFETY PLAN (HASP)

All remedial work performed under this plan will be in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

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

The Health and Safety Plan (HASP) and requirements defined in this Remedial Action Work Plan pertain to all remedial and invasive work performed at the Site until the issuance of a Certificate of Completion. The HASP is provided in **Appendix H**.

Confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses.

4.1.3 QUALITY ASSURANCE PROJECT PLAN (QAPP)

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

4.1.4 SOIL/MATERIALS MANAGEMENT PLAN (SOMP)

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

4.1.5 EROSION AND SEDIMENT CONTROL PLAN (ESCP)

A soil erosion and sediment control plan will be prepared prior to the start of remedial work. The erosion and sediment controls will be in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control.

4.1.6 COMMUNITY AIR MONITORING PLAN (CAMP)

A Community Air Monitoring Plan for the RAWP at the Site will be implemented in accordance with the requirements of DER-10 Appendix 1A. The objective of the CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that may arise during all ground intrusive activities, and potentially contaminated soil and material handling and staging. In addition, the CAMP is intended to ensure that dust and contaminants are not leaving the work zone. Special CAMP requirements may apply due to the proximity of the Site to adjacent properties within 20 feet of potentially exposed individual structures as specified in the CAMP.

The CAMP stations will be active and monitored during all ground intrusive activities and soil handling activities at the Site. The CAMP data will be submitted to NYSDEC and NYSDOH on a weekly basis, at a minimum, while ground intrusive and soil handling are taking place. In addition, the NYSDEC and NYSDOH will be notified as soon as possible and within one (1) business day

of monitoring results which exceed the action levels, including the duration and actions taken in response to exceedances.

Details of the air monitoring program including perimeter air monitoring objectives, proposed CAMP stations, methods, and actions levels are detailed in the CAMP that is provided in **Appendix I**.

4.1.7 CITIZEN PARTICIPATION PLAN

A certification of mailing will be sent by the Volunteer to the NYSDEC project manager following the distribution of all Fact Sheets and notices that includes: (1) certification that the Fact Sheets were mailed, (2) the date they were mailed; (3) a copy of the Fact Sheet, (4) a list of recipients (contact list); and (5) a statement that the repository was inspected and that it contained all of applicable project documents.

No changes will be made to approved Fact Sheets authorized for release by NYSDEC without written consent of the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

The approved Citizen Participation Plan for this project is attached in **Appendix F**.

Document repositories have been established at the following locations and contain all applicable project documents:

Queens Public Library at Central
Attn: Mahendra Indarjit, Branch Manager
89-11 Merrick Boulevard
Jamaica, NY 11432
Phone: (718) 990-0700

And

Queens Community Board 12
Attn: Yvonne Reddick, District Manager

Rev. Carlene O. Thorbs, Chairperson
Vishal Hardowar, Chairperson – Urban
Renewal (Land Use) Committee
90-28 161st Street
Jamaica, NY 11432
Phone: (718) 658-3308
Email: QN12@cb.nyc.gov

In addition, an electronic repository can be accessed via DECInfo Locator at the following link:
[Index of /data/DecDocs/C241283](#)

4.2 GENERAL REMEDIAL CONSTRUCTION INFORMATION

4.2.1 PROJECT ORGANIZATION

Table 4.1 Key Project Personnel

Role	Name	Telephone No.
Volunteer Contact	Mary Serafy; mserafy@brpcompanies.com	212-488-1742
Project Principal	Fuad Dahan, P.E., PhD; fd@sesi.org	973-808-9050 x249
Project Manager	Joe Scardino; js@sesi.org	973-808-9050 x267
Principal Engineer	Fuad Dahan, P.E., PhD; fd@sesi.org	973-808-9050 x249
Field Team Leader	TBD	TBD
Quality Assurance Officer	TBD	TBD
Field Personnel	TBD	TBD
Analytical Laboratory	TBD	TBD
Data Validator	TBD	TBD
NYSDEC Project Manager	Shawn Roberts	(518) 402-9799
NYSDOH Project Manager	Aaron Keegan Beei@health.ny.gov	(518) 408-1943

4.2.2 REMEDIAL ENGINEER

The Remedial Engineer for this project will be Fuad Dahan. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have

primary direct responsibility for implementation of the remedial program for the Archer Ave Auto Repair and Coal Yard Site (NYSDEC BCA Index No. C241283-06-24 Site No. C241283). The Remedial Engineer will certify in the Final Engineering Report that the remedial activities were observed by qualified environmental professionals under [his/her] supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with that Plan. Other Remedial Engineer certification requirements are listed later in this RAWP.

The Remedial Engineer will coordinate the work of other contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, air monitoring, emergency spill response services, import of back fill material, and management of waste transport and disposal. The Remedial Engineer will be responsible for all appropriate communication with NYSDEC and NYSDOH.

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

The Remedial Engineer will provide the certifications listed in Section 10.1 in the FER.

4.2.3 REMEDIAL ACTION CONSTRUCTION SCHEDULE

Table 4.2 Remedial Action Construction Schedule

Task	Date
Submit Draft RAWP	September 23, 2025
NYSDEC Review of RAWP	October 1, 2025
Start 45 Day Comment period	November 5, 2025
End 45 Comment Period	December 21, 2025
RAWP Approval and Decision Document	December 28, 2025
Start of Remedial Action	January 15, 2026
Complete Remedial Action	July 30, 2026
Submit EE	July 01, 2026
Submit SMP	June 01, 2026
Submit FER	August 30, 2026
COC	October, 2026

Note: dates listed above are subject to change.

4.2.4 WORK HOURS

The hours for operation of remedial construction will conform to the New York City Department of Buildings (DOB) construction code requirements or according to specific variances issued by that agency. NYSDEC will be notified by the Volunteer of any variances issued by DOB. NYSDEC reserves the right to deny alternate remedial construction hours.

4.2.5 SITE SECURITY

The Site will be secured with fences and locked gates when remediation is about to commence. The fence will be eight foot high fabric lined chain link construction. The gate will be locked during non-construction hours.

4.2.6 TRAFFIC CONTROL

Traffic control shall be the responsibility of the Volunteer and its Contractors. Traffic control must comply with all local, state, and federal regulations including but not limited to the City of Yonkers Department of Transportation, New York City Department of Transportation (NYSDOT) and the Manual on Uniform Traffic Control Devices (MUTCD).

4.2.7 WORKER TRAINING AND MONITORING

The required worker training and monitoring are presented in the HASP located in **Appendix H**.

4.2.8 AGENCY APPROVALS

The Volunteer has addressed all SEQRA requirements for this Site. All permits or government approvals required for remedial construction have been, or will be, obtained prior to the start of remedial construction.

The planned end use for the Site is in conformance with the current zoning for the property as determined by New York City Department of City Planning. A Certificate of Completion will not be issued for the project unless conformance with zoning designation is demonstrated.

All planned remedial or construction work in regulated wetlands and adjacent areas will be specifically approved by the NYSDEC Division of Natural Resources to ensure that it meets the

requirements for substantive compliance with those regulations prior to the start of construction. Nothing in the approved RAWP or its approval by NYSDEC should be construed as an approval for this purpose.

4.2.9 PRE-CONSTRUCTION MEETING WITH NYSDEC

A pre-construction meeting will be held with NYSDEC at least one week prior to the mobilization of major remedial construction activities.

4.2.10 EMERGENCY CONTACT INFORMATION

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

TABLE 4.3
Emergency and Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3-day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
Fuad Dahan – Remedial Engineer (SESI Consulting Engineers)	(973) 808-9050
Director of Construction - TBD	TBD

4.3 SITE PREPARATION

4.3.1 MOBILIZATION

Mobilization tasks will include:

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

4.3.2 MONITORING WELL / VAPOR PROBE DECOMMISSIONING

Existing groundwater monitoring wells will either be protected during remediation and development for use in post-remedial monitoring or will be properly decommissioned in accordance with NYSDEC Commissioners Policy CP-43. The only exception to this is if the full length of the well is to be excavated during remediation.

Similarly, existing soil vapor probes will be properly decommissioned unless they are to be fully removed during remediation or used for post-remedial monitoring.

4.3.3 EROSION AND SEDIMENTATION CONTROLS

Erosion and sediment control measures are outlined in Section 5.4.

4.3.4 STABILIZED CONSTRUCTION ENTRANCE(S)

A tracking pad sloped towards the interior of the Site will be required for any vehicles going off-site that have come in contact with on-site soils. The decontamination area construction and operational requirements are provided in the HASP. All vehicle tires must be washed before exiting the Site.

4.3.5 UTILITY MARKER AND EASEMENTS LAYOUT

The Volunteer and its contractors are solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RAWP. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and its contractors must obtain any local, State

or Federal permits or approvals pertinent to such work that may be required to perform work under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements.

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

4.3.6 SHEETING AND SHORING

Sheeting and shoring will be required to facilitate the Track 1 soil remediation remedy. Appropriate management of structural stability of on-Site or off-Site structures during on-Site activities include excavation is the sole responsibility of the Volunteer and its contractors. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and its contractors must obtain any local, State or Federal permits or approvals that may be required to perform work under this RAWP. Further, the Volunteer and its contractors are solely responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved RAWP.

4.3.7 EQUIPMENT AND MATERIAL STAGING

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

4.3.8 DECONTAMINATION AREA

Decontamination activities will include the removal of contaminated soil, debris and other miscellaneous materials from construction equipment and tools utilizing physical/mechanical agitation (brushing/scraping with hand tools) of soil may be utilized to minimize wastewater generation. When necessary the removal of contaminated soil, debris and other miscellaneous materials from construction equipment and tools will be accomplished using clean water supplied from the Site.

4.3.9 SITE FENCING

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

4.3.10 DEMOBILIZATION

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

4.4 REPORTING

All daily and monthly Reports will be included in the Final Engineering Report.

4.4.1 DAILY REPORTS

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by noon of each day following the reporting period and will include:

- An update of progress made during the reporting day;
- Locations of work and quantities of material imported and exported from the Site;
- References to alpha-numeric map for Site activities;
- A summary of any and all complaints with relevant details (names, phone numbers);
- A summary of CAMP finding, including excursions;
- Photographs of site activities;
- An explanation of notable Site conditions.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the RAWP or other sensitive or time critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the RAWP will be addressed directly to NYSDEC Project Manager via personal communication.

Daily Reports will include a description of daily activities keyed to an alpha-numeric map for the Site that identifies work areas. These reports will include a summary of CAMP results, odor and dust excursions and corrective actions, and all complaints received from the public.

The NYSDEC assigned project number will appear on all reports.

4.4.2 MONTHLY REPORTS

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers by the 10th day of each month following the reporting period and will include:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (e.g., tons/cubic yards of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable; and,
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.
- Tracking of Green Sustainable Remediation (GSR) metrics determined during the design process should be included in monthly reports.

4.4.3 OTHER REPORTING

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital (JPEG) format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the Site prior to any Remedial Actions will be provided. Representative photos will be provided of each contaminant source, source area and Site structures before, during and after remediation. Photos will be included in the daily reports as needed, and a comprehensive collection of photos will be included in the FER.

Progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the FER, including a comparison to the goals established during the remedial program. Regular updates to the metrics used (SEFA, SiteWise™ or otherwise approved method) should be included.

The Climate Screening process and results will be documented in the form of a completed checklist and brief letter report. If the Climate Screening results indicate that a Climate Vulnerability Assessment (CVA) is necessary, a complete CVA Report will be developed. The CVA Report will be included as an Appendix or Attachment in relevant documents and/or submitted as a standalone report.

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

4.4.4 COMPLAINT MANAGEMENT PLAN

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

4.4.5 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

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

- Reasons for deviating from the approved RAWP will be identified and communicated directly to the NYSDEC Project Manager;
- All deviations will be communicated verbally and in writing (by letter or email) to the

NYSDEC Project Manager;

- The deviations will be implemented based on verbal or written approval of the NYSDEC Project Manager. All verbal approvals will be followed-up in writing.
- The effect of the deviations on the overall remedy will be described/addressed in the FER.

5.0 REMEDIAL ACTION: MATERIAL REMOVAL FROM SITE

Removal of all contaminated soil under the Remedial Action for the Site will be implemented in accordance with the Site-specific QAPP (**Appendix G**). Soil exceeding the Track 1 UUSCOs extends to a depth of 17.5 ft-bgs based on the RI and prior investigations performed. A plan depicting the locations where the Track 1 remedial excavation activities will be carried out to planned depths of 19.5 ft-bgs is included as **Figure 5.1A** and on **Figure 5.1B** for a Track 2 remedy. The depth was determined based on the deepest exceedance of the Track 1 UUSCO documented during the RI plus two feet and the need to achieve the Track 1 remedy. The estimated excavation volume is approximately 13,000 cubic yards (cy) for the planned Track 1 remedial excavation or approximately 12,000 CYs for Track 2 alternative if Track 1 cannot be achieved. **Table 5.1** summarizes the depth at which contaminated soil exceeding the UUSCOs was encountered and the approximate elevation at each. The approximate elevations are used to define the depth of cleanup because some of the borings were advanced in cellar of former buildings and not the Site grade level.

Institutional and engineering controls may be implemented to address contamination in soil vapor for a conditional Track 1 remedy. Institutional and engineering controls (environmental easement, SSDS, ect) may be required if the Site does not achieve a Track 1 remedy. Groundwater remediation is not anticipated and will be monitored and are anticipated to reach asymptotic levels. Any minor residual contamination in the groundwater should naturally attenuate with time and is not anticipated to be a pathway for human health exposure since groundwater use is prohibited for drinking water purposes.

The soil vapor pathway will be addressed with precautionary elements of the SSDS piping (if the piping is not below the seasonal low groundwater table) and a vapor barrier. The vapor barrier will be a construction element and not an EC unless the Site achieves a Track 4 remedy. The SSDS could be made active as described herein pending future soil vapor sampling results. The

design for the proposed buildings has not been completed as of the time of writing this RAWP. Once the building envelope is completed with air handling systems in place, the soil vapor intrusion evaluation will be performed pursuant to the SMP. A workplan will be submitted to the NYSDEC and NYSDOH prior to the SVI evaluation.

5.1 SOIL CLEANUP OBJECTIVES

The Soil Cleanup Objectives for this Site are the Track 1 UUSCOs.

- The Soil Cleanup Objectives for this Site are Track 1 UUSCOs
- Soil and materials management on-Site and off-Site will be conducted in accordance with the Soil/Materials Management Plan as described below.
- A spider map that shows all soil samples that exceed the SCOs proposed for this Remedial Action is shown in **Figure 5.1**.
- UST closures will, at a minimum, conform to criteria defined in DER-10.

5.2 REMEDIAL PERFORMANCE EVALUATION (POST EXCAVATION END-POINT SAMPLING)

5.2.1 END-POINT SAMPLING FREQUENCY

For all excavations, post-excavation soil samples will be collected in accordance with Section 5.4 of DER-10 for laboratory analysis of TCL + 30/TAL compounds including VOCs by EPA Method 8260C, SVOCs by EPA Method 8270D, pesticides by EPA Method 8081B, PCBs by EPA Method 8082A, TAL metals by EPA Methods 6010C, 7471B, and 9012, 1,4-dioxane by EPA Method 8720, and for PFAS in accordance with the latest EPA Method 1633.

All Site soils will be removed down to some depths up 19.5 ft-bgs within the final SOE boundary as required to achieve the Track 1 remediation. Endpoint verification sampling will be implemented every 900 square feet (SF) at this depth, verified, and documented by field personnel. The proposed end-point sample locations and sample depths are depicted on **Figure 5.1C**. As shown on **Figure 5.1C** sidewall samples will be collected within the Site where adjacent grids are excavated to different depths (greater than 2 feet variance between grids). Sidewall samples will not be collected along the exterior property boundary per DER-10 requirements

because of the SOE that will be placed along the Site boundaries. Documentation will be presented in the FER. To the extent that any of the end-point sample results do not achieve Track 1 UUSCOs, excavation of additional of soil will be performed every two feet until the Track 1 UUSCOs are achieved to the extent feasible or until bedrock. Alternatively, the team may decide to revert to a Track 2 remedy to avoid over excavation.

5.2.2 GROUNDWATER SAMPLING

Groundwater sampling will be conducted after the soil remedial activities for the full suite TCL/TAL:+30, PFAS and 1,4-dioxane in order to verify that the remedy is effective. The goal of the remedy is to achieve the AWQSGV standards or to reach asymptotic levels. The proposed post remediation groundwater sample locations are depicted on **Figure 5.2**. A typical well construction diagram is provided in **Appendix J**.

5.2.3 VI MITIGATION AND EVALUATION SAMPLING

Precautionary installation of the elements of a sub-slab depressurization system (SSDS) underneath portions of the building foundation if the sub-slab of the proposed building is not under the water table including during the seasonal low, and a soil vapor barrier, will be implemented. An SSDS Remedial Design Document including the proposed communication testing locations, will be submitted to NYSDEC and NYSDOH for review prior to system implementation. The venting layer consists of six to eight inches of sand or crushed stone with a network of perforated pipes that act as transmission conduits for the contaminated soil gas. The perforated pipes are vented to the outside with risers. The system will be designed as passive with the possibility of switching it to active if active venting is needed to meet the VI indoor air objectives. The vapor barrier will be a construction element and not an EC unless the Site achieves a Track 4 remedy. The sealing methodology will consist of a vapor barrier comprised of 20-mils thickness of high or low-density polyethylene (H or LDPE) or an approved equal. The vapor barrier will be installed on top of the venting layer just below the slab to provide the required sealing layer as stated in the NYSDOH SVI Guidance. All the utility penetrations into the slab will also be sealed. Permanent soil vapor sampling ports will be built into the vapor barrier to prevent future sampling penetrations. The final sampling point locations will be submitted to NYSDEC and NYSDOH for approval.

The soil vapor evaluation will be described in the SMP. The SMP will be amended if SSDS operation and monitoring is required. Following installation of the SSDS elements, a soil vapor intrusion evaluation, in accordance with the NYSDOH SVI Guidance, will be conducted to determine if the SSDS needs to be made active, and thereafter if an active system is required, to determine the ongoing long-term presence or mitigation of SVI. If within the five-year period, the VOC concentrations in the sub slab and indoor air drop to levels below the mitigate threshold requirements, with NYSDEC and NYSDOH approval, the SSDS will cease to be an engineering control.

A soil vapor intrusion evaluation will be conducted after the lowest level is fully enclosed and with an operable HVAC system on the lowest level to assess the potential for soil vapor intrusion to affect indoor air quality. The elements of the SSDS will be turned into engineering control (EC) as an active SSDS if the soil vapor evaluation determines that vapor mitigation is needed. The proposed vapor sampling point locations are depicted on **Figure 5.3**.

5.2.4 METHODOLOGY

Soil samples will be collected in accordance with the QAPP using disposable gloves/trowels or dedicated, decontaminated stainless steel spoons. Groundwater samples will be collected in accordance with the QAPP using the low-flow purging and sampling method and associated decontamination and quality control procedures. Soil vapor samples will be collected in accordance with the NYSDOH SVI Guidance for Evaluating Sub-Slab vapor Intrusion.

5.2.5 REPORTING OF RESULTS

The samples will be submitted to a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory. The results will be reported in accordance with NYSDEC requirements for Category B data deliverables (as outlined in DER-10). In addition, all data collected during the remedial action will be submitted in the NYSDEC approved Electronic Data Deliverable format using the NYSDEC's Environmental Information Management System database software application EQUIS™.

5.2.6 QA/QC

Collection of quality assurance/quality control (QA/QC) samples to evaluate potential cross-contamination from sampling equipment and during shipment of samples and repeatability of

laboratory analytical practices will be in accordance with the QAPP included as **Appendix G**. Field blanks, trip blanks and duplicate samples associated with daily sampling activities will be collected as a part of the QA/QC practices.

5.2.7 DUSR AND EDDS

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

5.2.8 REPORTING OF END-POINT DATA IN FER

The FER will include a table of final soil and groundwater sample data with highlights or a summary of exceedances of the Track 1 UUSCOs and AWQSGV.

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

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

End point sampling, including bottom and side-wall sampling, will be performed in accordance with DER-10 sample frequency requirements. Side-wall samples will be collected a minimum of every 30 linear feet. Bottom samples will be collected at a rate of one for every 900 square feet from the base of the remedial excavation. The FER will provide a tabular and map summary of all end-point sample results and exceedances of SCOs.

5.3 ESTIMATED MATERIAL REMOVAL QUANTITIES

Source removal excavation activities will be implemented during the course of the remediation activities throughout the footprint of the Site. Based on the RI, the depth of contaminated fill/ soil ranges from grade to 17.5 ft-bgs. The entire Site within the SOE will be excavated to remove all soil exceedances in order to achieve a Track 1 remedy.

The estimated quantity of soil/fill to be removed from the Site is 13,000 cubic yards..

5.4 SOIL/MATERIALS MANAGEMENT PLAN

Material will be required to be excavated during remediation activities. Any required fill will consist of imported clean fill that meets the requirements per 6 NYCRR § 375-6.8(d) and the requirements for emerging contaminants sampling per the April 2023 DEC Guidance Document.

5.4.1 SOIL SCREENING METHODS

Visual, olfactory and PID soil screening and assessment will be performed by a qualified environmental professional or experienced field geologist under the direction of the Remedial Engineer during all remedial and development excavations into known or potentially contaminated material. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy and during development phase, such as excavations for foundations and utility work, prior to issuance of the COC.

All primary contaminant sources (including but not limited to tanks and hotspots) identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the FER.

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

5.4.2 STOCKPILE METHODS

Stockpiled material will be appropriately graded to control run-off and will be located at least 50 feet from the property boundaries where possible. Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. At a minimum, a storm event should be considered a rainfall of three inches or greater in 12 hours. Judgement should be used to evaluate water infiltration, nearby waterbodies where runoff is likely, and engineering controls that may be affected.

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

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

Water will be available on-site at suitable supply and pressure for use in dust control.

5.4.3 MATERIALS EXCAVATION AND LOAD OUT

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

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

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

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

Vehicles leaving the Site will not be overloaded. The Remedial Engineer's representative will make reasonable efforts to ensure that vehicles are not loaded beyond their NYSDOT weight rating and that all material is secured beneath the truck bed cover.

A truck wash sloped towards the center of the Site will be operated on-Site. The Remedial Engineer will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the remedial construction is complete.

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

The Remedial Engineer will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during Site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site -derived materials.

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

The Remedial Engineer will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this Remedial Action Work Plan. Each hotspot and structure to be remediated (USTs, vaults and associated piping, transformers, etc.) will be removed and end-point remedial performance sampling completed before excavations related to Site development commence proximal to the hotspot or structure.

Development-related grading cuts and fills will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this plan.

Mechanical processing of historical fill and contaminated soil on-Site is prohibited.

All primary contaminant sources (including but not limited to tanks and hotspots) identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be reported in the FER.

5.4.4 MATERIALS TRANSPORT OFF-SITE

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

Truck transport routes will be provided to NYSDEC prior to the start of remediation. All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes.

Proposed in-bound and out-bound truck routes to the Site will take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off- Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport; [(g) community input where necessary.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

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

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

All trucks will be washed prior to leaving the Site. Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

5.4.5 MATERIALS DISPOSAL OFF-SITE

The disposal locations are will be provided to NYSDEC prior to the start of remedial work. Disposal location established at a later date will be reported to the NYSDEC Project Manager. The total quantity of material expected to be disposed off-Site is anticipated to be 13,000 cubic yards.

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated

plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site is prohibited without formal NYSDEC approval.

Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360.15 Registration Facility).

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or BCP Volunteer to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported (including Site Characterization data); and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the FER.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360.2. The Remedial Engineer is responsible for assuring material is properly characterized and determining the appropriate disposal methods based on the characterization results.

Historical fill and contaminated soils from the Site are prohibited from being disposed at Part 360.15 Registration Facilities (also known as Soil Recycling Facilities).

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the NYSDEC Division of Materials Management (DMM) to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC DMM. This material is prohibited from being sent or redirected to a Part 360-15 Registration Facility. In this case, as dictated by DMM, special procedures will include, at a minimum, a letter to the C/D facility that provides a detailed

explanation that the material is derived from a DER remediation Site, that the soil material is contaminated and that it must not be redirected to on-Site or off-Site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

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

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

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

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

Waste characterization sampling will be performed exclusively for the purposes of off-Site soil disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws rules and regulations and facility-specific permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC associated with waste characterization activities will be reported in the FER. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt. Waste characterization data will be used solely for complying with requirements for off-site disposal. Waste Characterization sampling cannot be utilized for:

- Delineating the extent of contamination required for remediation at a Site.
- Replacing or substituting data collected as part of Site Characterization and/or Remedial Investigation.

- Replacing or substituting confirmation or documentation sampling as described in NYSDEC DER-10, Section 5.4.
- To modify remedial decisions as formalized in a NYSDEC approved Decision Document or Record of Decision.

5.4.6 MATERIALS REUSE ON-SITE

If On-Site material is suitable for reuse, the proposed materials for reuse on-Site will be sampled for full suite analytical parameters including PFAS and 1,4-dioxane. The sampling frequency will be in accordance with DER-10 Table 5.4(e)10 unless prior approval is obtained from the NYSDEC project manager for modification of the sampling frequency. The analytical results of soil/fill material testing must meet the Site use criteria presented in NYSDEC DER-10 Appendix 5 – Allowable Constituent Levels for Imported Fill or Soil for all constituents listed, and the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances [April 2023] guidance values. Approvals for modifications to the analytical parameters must be obtained from the NYSDEC project manager prior to the sampling event.

The Remedial Engineer will ensure that procedures defined for materials reuse in this RAWP are followed and that unacceptable material will not remain on-Site.

A “Request to Import/Reuse Fill Material” form will be filed with the NYSDEC project manager for review and approval prior to material reuse on the site. Acceptable demolition material proposed for reuse on-Site, if any, will be sampled for asbestos.

Concrete crushing or processing on-Site is prohibited, unless NYSDEC has specifically approved on-site processing and reuse of acceptable demolition material.

Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site is prohibited for reuse on-Site.

Contaminated on-Site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This will be expressed in the Site Management Plan (SMP).

5.4.7 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP. Dewatered fluids will not be recharged back to the land surface or subsurface of the Site. Dewatering fluids will be managed off-Site.

Discharge of water generated during remedial construction to surface waters (i.e. a local pond, stream, river and/or storm sewer) is prohibited without a SPDES permit.

5.4.8 BACKFILL FROM OFF-SITE SOURCES

Backfilling may be needed in certain of areas on the Site. The imported material, if needed, will be sampled in accordance with DER-10 Section 5.4 (e) Table 5.4 (e)10. The samples will be analyzed for target compound list (TCL) volatile organic compounds (VOCs), TCL Semi-Volatile Organic Compounds (SVOCs), pesticides, PCBs, and TAL metals, including cyanide. The soil may be used as cover material provided that all parameters meet the UUSCOs, per the NYSDEC regulatory requirements. In addition, composite samples will be collected for emerging contaminants in accordance with the NYSDEC Sampling, Analysis, and Assessment of Per-and-Polyfluoroalkyl Substances (April 2023).

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this RAWP prior to receipt at the Site.

Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site. The FER will include the following certification by the Remedial Engineer: "I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan".

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. These NYSDEC approved backfill or cover soil quality objectives are the lower of the protection of groundwater or the protection of public health soil cleanup objectives for unrestricted use as set forth in Table 375-6.8(b) of 6 NYCRR Part 375. Non-compliant soils will not be imported onto

the Site without prior approval by NYSDEC. Nothing in the approved RAWP or its approval by NYSDEC should be construed as an approval for this purpose.

Soils that meet 'general fill' requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Nothing in this RAWP should be construed as an approval for this purpose.

A "Request to Import/Reuse Fill Material" form will be filed with the NYSDEC project manager for review and approval prior to import to the site.

5.4.9 STORWATER POLLUTION PREVENTION

An erosion and sediment control plan will be prepared prior to the start of ground intrusive activities.

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the RAWP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the remedial construction area.

5.4.10 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during on-Site remedial excavation or development related construction, sampling will be performed on product, sediment and surrounding soils, etc. in accordance with DER-10. Chemical analytical work will be for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides, PCBs and PFAS). Analyses will not be otherwise limited without NYSDEC approval.

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

5.4.10.1 EXTREME STORM PREPAREDNESS AND RESPONSE CONTINGENCY PLAN

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the Volunteer will undertake the following steps for site preparedness prior to the event and response after the event.

Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from excavated areas, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, hay bales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to NYSDEC at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911.

Petroleum spills will be reported to NYSDEC within 2 hours of identification and consistent with State regulations. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed.

Dewatering is not anticipated to be required for this Site. However, if unexpected dewatering is required, it will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Stormwater control systems and structures will be inspected and maintained as necessary.

If soil or fill materials are discharged off site to adjacent properties, property owners and NYSDEC will be notified, and corrective measure plan designed to remove and clean dislocated material will be submitted to NYSDEC and implemented following approval by NYSDEC and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of NYSDEC.

If on-Site petroleum spills are identified, a qualified environmental professional will determine the nature and extent of the spill and report to NYSDEC's spill hotline at (800) 457-7362 within statutory defined timelines. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYSDEC.

Storm Response Reporting

A site inspection report will be submitted to NYSDEC at the completion of site inspection. An inspection report will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the NYSDEC project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number.

Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYSDEC; description of corrective actions; schedule for corrective actions.

This report should be completed and submitted to NYSDEC project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

5.4.11 COMMUNITY AIR MONITORING PLAN

A CAMP will be implemented during RAWP remedial actions in the field at the Site in accordance with the requirements of DER-10 Appendix 1A. The objective of the CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that may arise during all ground intrusive activities, and potentially contaminated soil and material handling and staging. In addition, the CAMP is intended to ensure that dust and contaminants are not leaving the work zone. Details of the air monitoring program including perimeter air monitoring objectives, methods, and actions levels are detailed in the CAMP is provided in **Appendix I**.

Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily Report.

5.4.12 ODOR, DUST AND NUISANCE CONTROL PLAN

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

5.4.12.1 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-Site. Specific odor control methods to be used on a routine basis will include spraying of water to control dust that may cause odors and modifying work practices or applying deodorizing or masking agents. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Volunteer's Remedial Engineer, who is responsible for certifying the FER.

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

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

5.4.12.2 DUST CONTROL PLAN

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

- Dust suppression will be achieved through the use of a dedicated on-Site water truck or hookup to the fire hydrant for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles. Dust control equipment will be accessible at all times during implementation of the RAWP. Workers will be trained in the operation of dust control equipment.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-Site roads will be limited in total area to minimize the area required for water spraying.

5.4.12.3 OTHER NUISANCES

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

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

6.0 RESIDUAL CONTAMINATION TO REMAIN ON-SITE

If after all soil exceeding the Track 1 UUSCOs have been removed, residual contamination [groundwater/soil vapor] exists beneath the Site, Engineering and Institutional Controls (ECs and ICs) are required to protect human health and the environment. These ECs and ICs are described hereafter. Long-term management of EC/ICs and of residual contamination will be executed under a Site specific Site Management Plan (SMP) that will be developed and included in the FER.

ECs will be implemented to protect public health and the environment by appropriately managing residual contamination.

The FER will report residual contamination on the Site in tabular and map form. This will include presentation of exceedances of both Track 1 and Track 4 sites.

7.0 ENGINEERING CONTROLS

7.1 SUB-SLAB DEPRESSURIZATION SYSTEM (SSDS)

Precautionary installation of the elements of a sub-slab depressurization system (SSDS) underneath portions of the building foundation, if the sub-slab of the proposed building is not under the water table during the seasonal low and a soil vapor barrier, will be implemented. The vapor barrier will be a construction element and not an EC unless the Site achieves a Track 4 remedy. A soil vapor intrusion evaluation will be conducted to determine if the SV levels constitute a VI risk. The elements of the SSDS will be turned into engineering control (EC) as an active SSDS if the soil vapor evaluation determines that vapor mitigation is needed.

If the system becomes active as an engineering control the SSDS will not be discontinued without written approval by NYSDEC and NYSDOH. A proposal to discontinue the active SSD system may be submitted by the property owner based on confirmatory data that justifies such request. Systems will remain in place and operational until permission to discontinue use is granted in writing by NYSDEC and NYSDOH.

7.2 MONITORING WELL NETWORK

Groundwater monitoring activities to assess the performance of the remedy, or natural attenuation following the removal of contaminant sources, will continue, as determined by NYSDOH and NYSDEC, until residual groundwater concentrations are found to be below NYSDEC standards or have become asymptotic over an extended period. Monitoring will continue until permission to discontinue is granted in writing by NYSDEC and NYSDOH. Monitoring activities will be outlined in the Monitoring Plan of the SMP. It is anticipated that, following remediation, a minimum of eight quarterly monitoring events will be performed.

8.0 INSTITUTIONAL CONTROLS

In the event that the remedy does not achieve Track 1 unrestricted use, institutional controls in the form of an environmental easement will be imposed.

8.1 ENVIRONMENTAL EASEMENT

An Environmental Easement (SSDS and vapor barrier), as defined in Article 71 Title 36 of the Environmental Conservation Law, is required when residual contamination is left on-Site after the Remedial Action is complete. As part of this remedy, an Environmental Easement approved by NYSDEC will be filed and recorded with the Queens County Office of the City Register. The Environmental Easement will be submitted as part of the Final Engineering Report.

The Environmental Easement renders the Site a Controlled Property. The Environmental Easement must be recorded with the Queens County Office of the City Register before the Certificate of Completion can be issued by NYSDEC. A series of Institutional Controls are required under this remedy to implement, maintain and monitor these Engineering Control systems, prevent future exposure to residual contamination by controlling disturbances of the subsurface soil and restricting the use of the Site to restricted residential use(s) only. These Institutional Controls are requirements or restrictions placed on the Site that are listed in, and required by, the Environmental Easement. Institutional Controls can, generally, be subdivided between controls that support Engineering Controls, and those that place general restrictions on Site usage or other requirements. Institutional Controls in both of these groups are closely integrated with the SMP, which provides all of the methods and procedures to be followed to comply with this remedy.

The Institutional Controls that support Engineering Controls are:

- Compliance with the Environmental Easement by the Grantee and the Grantee's successors and adherence of all elements of the SMP is required;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected and certified at a frequency and in a manner defined in the SMP;

- Groundwater, soil vapor, and other environmental or public health monitoring must be performed as defined in the SMP;
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in the SMP;
- On-Site environmental monitoring devices, including but not limited to, soil vapor probes, must be protected and replaced as necessary to ensure proper functioning in the manner specified in the SMP;
- Engineering Controls may not be discontinued without an amendment or extinguishment of the Environmental Easement.

Adherence to these Institutional Controls for the Site is mandated by the Environmental Easement and will be implemented under the SMP (discussed in the next section). The Controlled Property (Site) will also have a series of Institutional Controls in the form of Site restrictions and requirements. The Site restrictions that apply to the Controlled Property are:

- Vegetable gardens and farming on the Controlled Property are prohibited;
- Use of groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended purpose;
- All future activities on the Controlled Property that will disturb residual contaminated material are prohibited unless they are conducted in accordance with the soil management provisions in the SMP;
- The Controlled Property may be used for restricted residential use only, provided the long-term Engineering and Institutional Controls included in the SMP are employed;
- The Controlled Property may not be used for a higher level of use, such as [restricted residential] use without an amendment or extinguishment of this Environmental Easement;
- Grantor agrees to submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC

retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow. This statement must be certified by an expert that the NYSDEC finds acceptable.

8.2 SITE MANAGEMENT PLAN

Site Management is the last phase of remediation and begins with the approval of the FER and issuance of the Certificate of Completion (COC) for the Remedial Action. The SMP is submitted as part of the FER but will be written in a manner that allows its removal and use as a complete and independent document. Site Management continues in perpetuity or until released in writing by NYSDEC. The property owner is responsible to ensure that all Site Management responsibilities defined in the Environmental Easement and the SMP are performed.

The SMP should include methods to incorporate and track GSR. Measures should be taken to maintain a cost-effective, protective remedy that remains conscientious of the Site's environmental footprint. At a minimum, the following should be assessed: waste generation, energy usage, emissions, and water usage.

The SMP is intended to provide a detailed description of the procedures required to manage residual contamination left in place at the Site following completion of the Remedial Action in accordance with the BCA with the NYSDEC. This includes: (1) development, implementation, and management of all Engineering and Institutional Controls; (2) development and implementation of monitoring systems and a Monitoring Plan; (3) development of a plan to operate and maintain any treatment, collection, containment, or recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual); (4) submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of Site information to NYSDEC; and (5) defining criteria for termination of treatment system operation.

To address these needs, this SMP will include four plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems; and (4) a Site Management

Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC. The SMP will be prepared in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation and the guidelines provided by NYSDEC.

Site management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be annually. The SMP will be based on the certifying period relative to the date of issuance of the COC. The first submission will be due 16 months after the issuance of the COC, and annually (or at another frequency as approved by NYSDEC) thereafter.

The SMP in the FER will include a monitoring plan for groundwater at the down-gradient Site perimeter to evaluate Site-wide performance of the remedy. Appropriately placed groundwater monitor wells will also be installed immediately down-gradient of all source remediation areas for the purpose of evaluation of the effectiveness of the remedy that is implemented.

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

9.0 FINAL ENGINEERING REPORT

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

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

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

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

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

The FER will provide a thorough summary of all residual contamination that exceeds the SCOs defined for the Site in the RAWP and must provide an explanation for why the material was not removed as part of the Remedial Action. A table that shows residual contamination in excess of Site SCOs and a map that shows residual contamination in excess of Site SCOs will be included in the FER.

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

The FER must include a discussion of the green remediation practices/technologies employed throughout the remedial program. A final footprint analysis using a DER accepted model, and any

tracking methods used through the construction including restoration activities. Before approval of a FER and issuance of a COC, all project reports must be submitted in digital form on electronic media (PDF).

9.1 CERTIFICATIONS

The following certification will appear in front of the Executive Summary of the Final Engineering Report. The FER will be prepared, stamped and the following certification signed by an individual licensed or otherwise authorized in accordance with article 145 of the education law to practice the profession of engineering. The certification will include the following statements:

I, Fuad Dahan, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan.

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

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Fuad Dahan, of Sesi Consulting Engineers, am certifying as Owner's Designated Site Representative for the site.

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

Tables

REMEDIAL ACTION WORK PLAN
TABLE 2.2
SUMMARY OF REMEDIAL INVESTIGATION SAMPLE COLLECTION

C241283--Archer Ave Auto Repair and Coal Yard Site
Jamaica, NY

BORING ID	SLEEVE INTERVAL (5-FOOT)	SAMPLE ID	SAMPLE INTERVAL (6-INCH)	COLLECT DATE	LAB ORDER	ANALYSIS
SOIL						
RI-SB-01	0'-5'	RI-SB-01 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-01 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-01 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-01 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-01 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	PFAS (EPA 1633A)
	5'-10'	RI-SB-01 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-01 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-01 (17.5-18.0)	17.5-18.0			
RI-SB-02	0'-5'	RI-SB-02 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-02 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-02 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-02 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-02 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	PFAS (EPA 1633A)
	5'-10'	RI-SB-02 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-02 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-02 (17.5-18.0)	17.5-18.0			
RI-SB-03	0'-5'	RI-SB-03 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-03 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-03 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-03 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-03 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	PFAS (EPA 1633A)
	5'-10'	RI-SB-03 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-03 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-03 (17.5-18.0)	17.5-18.0			
RI-SB-04	0'-5'	RI-SB-04 (1.0-1.5)	1.0-1.5	8/13/2025	JE17019	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane
	5'-10'	RI-SB-04 (8.5-9.0)	8.5-9.0			
	10'-15'	RI-SB-04 (13.5-14.0)	13.5-14.0			
	15'-20'	RI-SB-04 (18.0-18.5)	18.0-18.5			
RI-SB-05	0'-5'	RI-SB-05 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-05 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-05 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-05 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-05 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	PFAS (EPA 1633A)
	5'-10'	RI-SB-05 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-05 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-05 (17.5-18.0)	17.5-18.0			
RI-SB-06	0'-5'	RI-SB-06 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-06 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-06 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-06 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-06 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	PFAS (EPA 1633A)
	5'-10'	RI-SB-06 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-06 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-06 (17.5-18.0)	17.5-18.0			
RI-SB-07	0'-5'	RI-SB-07 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-07 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-07 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-07 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-07 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	PFAS (EPA 1633A)
	5'-10'	RI-SB-07 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-07 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-07 (17.5-18.0)	17.5-18.0			
RI-SB-08	0'-5'	RI-SB-08 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-08 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-08 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-08 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-08 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	PFAS (EPA 1633A)
	5'-10'	RI-SB-08 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-08 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-08 (17.5-18.0)	17.5-18.0			
RI-SB-09	0'-5'	RI-SB-09 (2.5-3.0)	2.5-3.0	8/13/2025	JE17019	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane
	5'-10'	RI-SB-09 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-09 (12.0-12.5)	12.0-12.5			
	15'-20'	RI-SB-09 (17.0-17.5)	17.0-17.5			
RI-SB-10	0'-5'	RI-SB-10 (4.0-4.5)	4.0-4.5	8/13/2025	JE17019	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane
	5'-10'	RI-SB-10 (6.5-7.0)	6.5-7.0			
	10'-15'	RI-SB-10 (11.0-11.5)	11.0-11.5			
	15'-20'	RI-SB-10 (19.0-19.5)	19.0-19.5			
RI-SB-11	0'-5'	RI-SB-11 (0.5-1.0)	0.5-1.0	8/13/2025	JE17019	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane
	5'-10'	RI-SB-11 (5.0-5.5)	5.0-5.5			
	10'-15'	RI-SB-11 (10.0-10.5)	10.0-10.5			
	15'-20'	RI-SB-11 (15.0-15.5)	15.0-15.5			

REMEDIAL ACTION WORK PLAN
TABLE 2.2
SUMMARY OF REMEDIAL INVESTIGATION SAMPLE COLLECTION

BORING ID	SLEEVE INTERVAL (5-FOOT)	SAMPLE ID	SAMPLE INTERVAL (6-INCH)	COLLECT DATE	LAB ORDER	ANALYSIS
SOIL (Continued)						
RI-SB-12	0'-5'	RI-SB-12 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-12 (7.5-8.0)	7.5-8.0			
	0'-5'	RI-SB-12 (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	PFAS (EPA 1633A)
	5'-10'	RI-SB-12 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-12 (11.0-11.5)	11.0-11.5			TCL/TAL+30 PFAS (EPA 1633A)
	15'-20'	RI-SB-12 (17.5-18.0)	17.5-18.0			
RI-SB-12N	0'-5'	RI-SB-12N (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-12N (7.5-8.0)	7.5-8.0			Aroclor 1248, Zinc
	10'-15'	RI-SB-12N (11.0-11.5)	11.0-11.5			
	15'-20'	RI-SB-12N (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-12S	0'-5'	RI-SB-12S (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-12S (7.5-8.0)	7.5-8.0			Aroclor 1248, Zinc
	10'-15'	RI-SB-12S (11.0-11.5)	11.0-11.5			
	15'-20'	RI-SB-12S (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-12E	0'-5'	RI-SB-12E (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-12E (7.5-8.0)	7.5-8.0			Aroclor 1248, Zinc
	10'-15'	RI-SB-12E (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-12E (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-12W	0'-5'	RI-SB-12W (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-12W (7.5-8.0)	7.5-8.0			Aroclor 1248, Zinc
	10'-15'	RI-SB-12W (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-12W (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-13	0'-5'	RI-SB-13 (2.5-3.0)	2.5-3.0	8/8/2025	JE16734	TCL/TAL+30 1,4-Dioxane
	5'-10'	RI-SB-13 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-13 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-13 (17.5-18.0)	17.5-18.0			
	0'-5'	RI-SB-13 (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	PFAS (EPA 1633A)
	5'-10'	RI-SB-13 (7.5-8.0)	7.5-8.0			
	10'-15'	RI-SB-13 (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-13 (17.5-18.0)	17.5-18.0			
RI-SB-13N	0'-5'	RI-SB-13N (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-13N (7.5-8.0)	7.5-8.0			Zinc
	10'-15'	RI-SB-13N (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-13N (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-13S	0'-5'	RI-SB-13S (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-13S (7.5-8.0)	7.5-8.0			Zinc
	10'-15'	RI-SB-13S (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-13S (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-13E	0'-5'	RI-SB-13E (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-13E (7.5-8.0)	7.5-8.0			Zinc
	10'-15'	RI-SB-13E (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-13E (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-13W	0'-5'	RI-SB-13W (2.5-3.0)	2.5-3.0	8/14/2025	JE17104	Not Analyzed
	5'-10'	RI-SB-13W (7.5-8.0)	7.5-8.0			Zinc
	10'-15'	RI-SB-13W (12.5-13.0)	12.5-13.0			
	15'-20'	RI-SB-13W (17.5-18.0)	17.5-18.0			Not Analyzed
RI-SB-14	0'-5'	RI-SB-14 (2.0-2.5)	2.0-2.5	8/13/2025	JE17019	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane
	5'-10'	RI-SB-14 (6.0-6.5)	6.0-6.5			
	10'-15'	RI-SB-14 (10.5-11.0)	10.5-11.0			
	15'-20'	RI-SB-14 (16.0-16.5)	16.0-16.5			
RI-SB-15	0'-5'	RI-SB-15 (4.5-5.0)	4.5-5.0	8/12/2025	JE16953	TCL/TAL+30 PFAS (EPA 1633A)
	5'-10'	RI-SB-15 (7.0-7.5)	7.0-7.5	8/15/2025	JE17209	1,4-Dioxane
	10'-15'	RI-SB-15 (10.0-10.5)	10.0-10.5			
	15'-20'	RI-SB-15 (16.0-16.5)	16.0-16.5			
RI-SB-15N	0'-5'	RI-SB-15N (4.5-5.0)	4.5-5.0	8/12/2025	JE16953	Not Analyzed
	5'-10'	RI-SB-15N (7.0-7.5)	7.0-7.5			4,4'-DDE, Aroclor 1248, Zinc
	10'-15'	RI-SB-15N (10.0-10.5)	10.0-10.5	8/15/2025	JE17209	Not Analyzed
	15'-20'	RI-SB-15N (16.0-16.5)	16.0-16.5			
RI-SB-15S	0'-5'	RI-SB-15S (4.5-5.0)	4.5-5.0	8/12/2025	JE16953	Not Analyzed
	5'-10'	RI-SB-15S (7.0-7.5)	7.0-7.5			4,4'-DDE, Aroclor 1248, Zinc
	10'-15'	RI-SB-15S (10.0-10.5)	10.0-10.5			
	15'-20'	RI-SB-15S (15.5-16.0)	15.5-16.0			Not Analyzed
RI-SB-15E	0'-5'	RI-SB-15E (4.5-5.0)	4.5-5.0	8/12/2025	JE16953	Not Analyzed
	5'-10'	RI-SB-15E (7.0-7.5)	7.0-7.5			4,4'-DDE, Aroclor 1248, Zinc
	10'-15'	RI-SB-15E (10.0-10.5)	10.0-10.5	8/15/2025	JE17209	Not Analyzed
	15'-20'	RI-SB-15E (16.0-16.5)	16.0-16.5			
RI-SB-15W	0'-5'	RI-SB-15W (4.5-5.0)	4.5-5.0	8/12/2025	JE16953	Not Analyzed
	5'-10'	RI-SB-15W (7.0-7.5)	7.0-7.5			4,4'-DDE, Aroclor 1248, Zinc
	10'-15'	RI-SB-15W (10.0-10.5)	10.0-10.5	8/15/2025	JE17209	
	15'-20'	RI-SB-15W (16.0-16.5)	16.0-16.5			Not Analyzed

BORING ID	SLEEVE INTERVAL (5-FOOT)	SAMPLE ID	SAMPLE INTERVAL (6-INCH)	COLLECT DATE	LAB ORDER	ANALYSIS	
SOIL (Continued)							
RI-SB-16	0'-5'	RI-SB-16 (0.5-1.0)	0.5-1.0	8/12/2025	JE16953	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane	
	5'-10'	RI-SB-16 (8.5-9.0)	8.5-9.0				
	10'-15'	RI-SB-16 (11.5-12.0)	11.5-12.0	8/14/2025	JE17104		
	15'-20'	RI-SB-16 (15.5-16.0)	15.5-16.0				
RI-SB-16N	0'-5'	RI-SB-16N (0.5-1.0)	0.5-1.0	8/12/2025	JE16953	Not Analyzed	
	5'-10'	RI-SB-16N (8.5-9.0)	8.5-9.0				
	10'-15'	RI-SB-16N (11.5-12.0)	11.5-12.0	8/15/2025	JE17209	4,4'-DDE, Barium, Lead, Mercury, Zinc	
	15'-20'	RI-SB-16N (15.5-16.0)	15.5-16.0				
RI-SB-16S	0'-5'	RI-SB-16S (0.5-1.0)	0.5-1.0	8/12/2025	JE16953	Not Analyzed	
	5'-10'	RI-SB-16S (8.5-9.0)	8.5-9.0				
	10'-15'	RI-SB-16S (11.5-12.0)	11.5-12.0			4,4'-DDE, Barium, Lead, Mercury, Zinc	
	15'-20'	RI-SB-16S (15.5-16.0)	15.5-16.0				
RI-SB-16E	0'-5'	RI-SB-16E (0.5-1.0)	0.5-1.0	8/12/2025	JE16953	Not Analyzed	
	5'-10'	RI-SB-16E (8.5-9.0)	8.5-9.0				
	10'-15'	RI-SB-16E (11.5-12.0)	11.5-12.0	8/15/2025	JE17209	4,4'-DDE, Barium, Lead, Mercury, Zinc	
	15'-20'	RI-SB-16E (15.5-16.0)	15.5-16.0				
RI-SB-16W	0'-5'	RI-SB-16W (0.5-1.0)	0.5-1.0	8/12/2025	JE16953	Not Analyzed	
	5'-10'	RI-SB-16W (8.5-9.0)	8.5-9.0				
	10'-15'	RI-SB-16W (11.5-12.0)	11.5-12.0	8/14/2025	JE17104	4,4'-DDE, Barium, Lead, Mercury, Zinc	
	15'-20'	RI-SB-16W (15.5-16.0)	15.5-16.0				
RI-SB-17	0'-5'	RI-SB-17 (3.5-4.0)	3.5-4.0	8/13/2025	JE17019	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane	
	5'-10'	RI-SB-17 (5.5-6.0)	5.5-6.0				
	10'-15'	RI-SB-17 (12.5-13.0)	12.5-13.0	8/15/2025	JE17209		
	15'-20'	RI-SB-17 (17.5-18.0)	17.5-18.0				
RI-SB-18	0'-5'	RI-SB-18 (2.5-3.0)	2.5-3.0	8/18/2025	JE17282	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane	
	5'-10'	RI-SB-18 (7.5-8.0)	7.5-8.0				
	10'-15'	RI-SB-18 (12.5-13.0)	12.5-13.0				
	15'-20'	RI-SB-18 (17.5-18.0)	17.5-18.0				
GROUNDWATER							
RI-MW-1	-	RI-MW-1	-	8/20/2025	JE17552	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane (SIM)	
RI-MW-2		RI-MW-2					
RI-MW-3		RI-MW-3					
RI-MW-4		RI-MW-4					
RI-MW-5		RI-MW-5					
RI-MW-6		RI-MW-6					
SOIL VAPOR							
RI-SV-1	-	RI-SV-1	15.0	8/19/2025	JE17470	TO-15	
RI-SV-2		RI-SV-2					
RI-SV-3		RI-SV-3					
RI-SV-4		RI-SV-4					
RI-SV-5		RI-SV-5					
RI-SV-6		RI-SV-6					
RI-SV-7		RI-SV-7					
-		AA-1					-
QA/QC							
-	-	Field Blank	-	8/8/2025	JE16734	TCL/TAL+30 PFAS (EPA 1633A) 1,4-Dioxane	
		FB20250812		8/12/2025	JE16953		
		FB2025-08-13		8/13/2025	JE17019		
RI-SB-17	0'-5'	DUP(1)2025-08-13	3.5-4.0				
RI-SB-14	0'-5'	DUP(2)2025-08-13	2-2.5				
RI-SB-14	10'-15'	DUP(3)2025-08-13	10.5-11				
RI-SB-14	15'-20'	DUP(4)2025-08-13	16-16.5				
RI-SB-09	0'-5'	DUP(5)2025-08-13	2.5-3.0				
RI-SB-09	5'-10'	DUP(6)2025-08-13	7.5-8.0				
RI-SB-10	0'-5'	DUP(7)2025-08-13	4-4.5				
RI-SB-10	10'-15'	DUP(8)2025-08-13	11-11.5				
RI-SB-08	-	MS/MSD	-	8/14/2025	JE17104		
-		FB20250814			8/15/2025		JE17209
		FB20250815			8/18/2025		JE17282
		FB20250818					
RI-MW-6	-	DUP20250820	-	8/20/2025	JE17552		TCL VOCs
-	-	MS	-				
		MSD					
		FB20250820					
		TRIP BLANK					

Sample ID:			NY	NY	R1-SB-01 (2.5-3.0)	R1-SB-01 (7.5-8.0)	R1-SB-01 (12.5-13.0)	R1-SB-01 (17.5-18.0)	R1-SB-02 (2.5-3.0)	R1-SB-02 (7.5-8.0)	R1-SB-02 (12.5-13.0)	R1-SB-02 (17.5-18.0)	R1-SB-03 (2.5-3.0)	R1-SB-03 (7.5-8.0)	R1-SB-03 (12.5-13.0)	R1-SB-03 (17.5-18.0)		
Lab Order:	UNITS	RRSCO	UUSCO		JE16734-2	JE16734-3	JE16734-4	JE16734-5	JE16734-6	JE16734-7	JE16734-8	JE16734-9	JE16734-10	JE16734-11	JE16734-12	JE16734-13		
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL VOCs (SW846 8260D)																		
1,1,1-Trichloroethane	mg/kg	100	0.68		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
1,1,2-Trichloroethane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
1,1-Dichloroethane	mg/kg	26	0.27		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
1,1-Dichloroethene	mg/kg	100	0.33		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
1,2,3-Trichlorobenzene	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
1,2,4-Trichlorobenzene	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
1,2-Dibromoethane	mg/kg	NS	NS		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
1,2-Dichlorobenzene	mg/kg	100	1.1		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
1,2-Dichloroethane	mg/kg	3.1	0.02		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
1,2-Dichloropropane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
1,3-Dichlorobenzene	mg/kg	49	2.4		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
1,4-Dichlorobenzene	mg/kg	13	1.8		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
2-Butanone (MEK)	mg/kg	100	0.12		ND (0.014)	ND (0.012)	ND (0.011)	ND (0.01)	ND (0.013)	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.014)	ND (0.012)	ND (0.011)	ND (0.012)		
2-Hexanone	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Acetone	mg/kg	100	0.05		0.0068 J	ND (0.012)	ND (0.011)	0.0062 J	0.0086 J	ND (0.012)	ND (0.012)	ND (0.011)	0.0124 J	ND (0.012)	ND (0.011)	0.0054 J		
Benzene	mg/kg	4.8	0.06		ND (0.00071)	ND (0.00061)	ND (0.00055)	ND (0.00052)	ND (0.00065)	ND (0.00061)	ND (0.00059)	ND (0.00056)	ND (0.0007)	ND (0.00058)	ND (0.00057)	ND (0.00058)		
Bromochloromethane	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Bromodichloromethane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Bromoform	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Bromomethane	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Carbon disulfide	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Carbon tetrachloride	mg/kg	2.4	0.76		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Chlorobenzene	mg/kg	100	1.1		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Chloroethane	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Chloroform	mg/kg	49	0.37		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Chloromethane	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
cis-1,2-Dichloroethene	mg/kg	100	0.25		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
cis-1,3-Dichloropropene	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Cyclohexane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Dibromochloromethane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Dichlorodifluoromethane	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Ethylbenzene	mg/kg	41	1		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
Freon 113	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Isopropylbenzene	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
m,p-Xylene	mg/kg	100	0.26		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
Methyl Acetate	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Methyl Tert Butyl Ether	mg/kg	100	0.93		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
Methylcyclohexane	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Methylene chloride	mg/kg	100	0.05		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	0.0035 J	ND (0.007)	ND (0.0058)	0.0034 J	0.007		
o-Xylene	mg/kg	100	0.26		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
Styrene	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Tetrachloroethene	mg/kg	19	1.3		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Toluene	mg/kg	100	0.7		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
trans-1,2-Dichloroethene	mg/kg	100	0.19		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
trans-1,3-Dichloropropene	mg/kg	NS	NS		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Trichloroethene	mg/kg	21	0.47		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0012)		
Trichlorofluoromethane	mg/kg	NS	NS		ND (0.0071)	ND (0.0061)	ND (0.0055)	ND (0.0052)	ND (0.0065)	ND (0.0061)	ND (0.0059)	ND (0.0056)	ND (0.007)	ND (0.0058)	ND (0.0057)	ND (0.0058)		
Vinyl chloride	mg/kg	0.9	0.02		ND (0.0028)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0028)	ND (0.0023)	ND (0.0023)	ND (0.0023)		
Xylene (total)	mg/kg	100	0.26		ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (		

NOTES:

- Results are measured in mg/kg.
- Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
- Sample Depth is reported in feet below ground surface.

	= concentration exceeds USCO
	= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.
 USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
 RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).
 mg/kg = Miligrams per kilogram
 ND = Non-Detect

Sample ID:			NY	NY	RI-SB-04 (1-1.5)	RI-SB-04 (8.5-9)	RI-SB-04 (13.5-14)	RI-SB-04 (18-18.5)	R1-SB-05 (2.5-3.0)	R1-SB-05 (7.5-8.0)	R1-SB-05 (12.5-13.0)	R1-SB-05 (17.5-18.0)	R1-SB-06 (2.5-3.0)	R1-SB-06 (7.5-8.0)	R1-SB-06 (12.5-13.0)	R1-SB-06 (17.5-18.0)
Lab Order:		UNITS	RRSCO	UUSCO	JE17019-38	JE17019-37	JE17019-35	JE17019-36	JE16734-14	JE16734-15	JE16734-16	JE16734-17	JE16734-18	JE16734-19	JE16734-20	JE16734-21
Date:					8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL VOCs (SW846 8260D)																
1,1,1-Trichloroethane	mg/kg	100	0.68		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
1,1,2-Trichloroethane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
1,1-Dichloroethane	mg/kg	26	0.27		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
1,1-Dichloroethene	mg/kg	100	0.33		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
1,2,3-Trichlorobenzene	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
1,2,4-Trichlorobenzene	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
1,2-Dibromoethane	mg/kg	NS	NS		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
1,2-Dichlorobenzene	mg/kg	100	1.1		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
1,2-Dichloroethane	mg/kg	3.1	0.02		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
1,2-Dichloropropane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
1,3-Dichlorobenzene	mg/kg	49	2.4		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
1,4-Dichlorobenzene	mg/kg	13	1.8		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
2-Butanone (MEK)	mg/kg	100	0.12		ND (0.011)	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.013)	ND (0.013)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.01)	ND (0.012)	ND (0.01)
2-Hexanone	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Acetone	mg/kg	100	0.05		ND (0.011)	ND (0.011)	0.0216	ND (0.012)	ND (0.013)	ND (0.013)	0.0062 J	0.0052 J	0.0082 J	0.005 J	ND (0.012)	0.0055 J
Benzene	mg/kg	4.8	0.06		ND (0.00055)	ND (0.00056)	ND (0.00053)	ND (0.00061)	ND (0.00067)	ND (0.00066)	ND (0.0006)	ND (0.00053)	ND (0.00062)	ND (0.00051)	ND (0.00058)	ND (0.00052)
Bromochloromethane	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Bromodichloromethane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Bromoform	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Bromomethane	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Carbon disulfide	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Carbon tetrachloride	mg/kg	2.4	0.76		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Chlorobenzene	mg/kg	100	1.1		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Chloroethane	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Chloroform	mg/kg	49	0.37		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Chloromethane	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
cis-1,2-Dichloroethene	mg/kg	100	0.25		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
cis-1,3-Dichloropropene	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Cyclohexane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Dibromochloromethane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Dichlorodifluoromethane	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Ethylbenzene	mg/kg	41	1		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
Freon 113	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Isopropylbenzene	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
m,p-Xylene	mg/kg	100	0.26		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
Methyl Acetate	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Methyl Tert Butyl Ether	mg/kg	100	0.93		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
Methylcyclohexane	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Methylene chloride	mg/kg	100	0.05		ND (0.0055)	ND (0.0056)	0.0042 J	ND (0.0061)	ND (0.0067)	ND (0.0066)	0.0034 J	ND (0.0053)	ND (0.0062)	ND (0.0051)	0.0033 J	ND (0.0052)
o-Xylene	mg/kg	100	0.26		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
Styrene	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Tetrachloroethene	mg/kg	19	1.3		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Toluene	mg/kg	100	0.7		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
trans-1,2-Dichloroethene	mg/kg	100	0.19		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
trans-1,3-Dichloropropene	mg/kg	NS	NS		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Trichloroethene	mg/kg	21	0.47		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)
Trichlorofluoromethane	mg/kg	NS	NS		ND (0.0055)	ND (0.0056)	ND (0.0053)	ND (0.0061)	ND (0.0067)	ND (0.0066)	ND (0.006)	ND (0.0053)	ND (0.0062)	ND (0.0051)	ND (0.0058)	ND (0.0052)
Vinyl chloride	mg/kg	0.9	0.02		ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0027)	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0025)	ND (0.002)	ND (0.0023)	ND (0.0021)
Xylene (total)	mg/kg	100	0.26		ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.001)

NOTES:

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 mg/kg = Miligrams per kilogram
 ND = Non-Detect

Sample ID:				R1-SB-07 (2.5-3.0)	R1-SB-07 (7.5-8.0)	R1-SB-07 (12.5-13.0)	R1-SB-07 (17.5-18.0)	R1-SB-08 (2.5-3.0)	R1-SB-08 (7.5-8.0)	R1-SB-08 (12.5-13.0)	R1-SB-08 (17.5-18.0)	RI-SB-09 (2.5-3)	RI-SB-09 (7.5-8)	RI-SB-09 (12-12.5)	RI-SB-09 (17-17.5)
Lab Order:				JE16734-22	JE16734-23	JE16734-24	JE16734-25	JE16734-26	JE16734-27	JE16734-28	JE16734-29	JE17019-2	JE17019-4	JE17019-3	JE17019-1
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL VOCs (SW846 8260D)															
1,1,1-Trichloroethane	mg/kg	100	0.68	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
1,1,2-Trichloroethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
1,1-Dichloroethane	mg/kg	26	0.27	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
1,1-Dichloroethene	mg/kg	100	0.33	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
1,2,3-Trichlorobenzene	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
1,2,4-Trichlorobenzene	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
1,2-Dibromoethane	mg/kg	NS	NS	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
1,2-Dichlorobenzene	mg/kg	100	1.1	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
1,2-Dichloroethane	mg/kg	3.1	0.02	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
1,2-Dichloropropane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
1,3-Dichlorobenzene	mg/kg	49	2.4	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
1,4-Dichlorobenzene	mg/kg	13	1.8	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
2-Butanone (MEK)	mg/kg	100	0.12	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.015)	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.012)
2-Hexanone	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Acetone	mg/kg	100	0.05	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.015)	ND (0.012)	ND (0.012)	0.0108 J	0.0072 J	0.0147	ND (0.011)	ND (0.012)
Benzene	mg/kg	4.8	0.06	ND (0.00057)	ND (0.00053)	ND (0.00061)	ND (0.00057)	ND (0.00074)	ND (0.00062)	ND (0.00062)	ND (0.00065)	ND (0.00055)	ND (0.00053)	ND (0.00057)	ND (0.00059)
Bromochloromethane	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Bromodichloromethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Bromoform	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Bromomethane	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Carbon disulfide	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Carbon tetrachloride	mg/kg	2.4	0.76	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Chlorobenzene	mg/kg	100	1.1	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Chloroethane	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Chloroform	mg/kg	49	0.37	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Chloromethane	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
cis-1,2-Dichloroethene	mg/kg	100	0.25	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
cis-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Cyclohexane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Dibromochloromethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Dichlorodifluoromethane	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Ethylbenzene	mg/kg	41	1	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
Freon 113	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Isopropylbenzene	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
m,p-Xylene	mg/kg	100	0.26	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
Methyl Acetate	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Methyl Tert Butyl Ether	mg/kg	100	0.93	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
Methylcyclohexane	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Methylene chloride	mg/kg	100	0.05	ND (0.0057)	ND (0.0053)	ND (0.0061)	0.0037 J	ND (0.0074)	ND (0.0062)	ND (0.0062)	0.005 J	ND (0.0055)	ND (0.0053)	ND (0.0057)	0.0032 J
o-Xylene	mg/kg	100	0.26	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
Styrene	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Tetrachloroethene	mg/kg	19	1.3	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Toluene	mg/kg	100	0.7	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
trans-1,2-Dichloroethene	mg/kg	100	0.19	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
trans-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Trichloroethene	mg/kg	21	0.47	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)
Trichlorofluoromethane	mg/kg	NS	NS	ND (0.0057)	ND (0.0053)	ND (0.0061)	ND (0.0057)	ND (0.0074)	ND (0.0062)	ND (0.0062)	ND (0.0065)	ND (0.0055)	ND (0.0053)	ND (0.0057)	ND (0.0059)
Vinyl chloride	mg/kg	0.9	0.02	ND (0.0023)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.003)	ND (0.0025)	ND (0.0025)	ND (0.0026)	ND (0.0022)	ND (0.0021)	ND (0.0023)	ND (0.0024)
Xylene (total)	mg/kg	100	0.26	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0015)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.0012)

NOTES:

- Results are measured in mg/kg.
- Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
- Sample Depth is reported in feet below ground surface.

	= concentration exceeds USCO
	= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.

USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).

RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).

mg/kg = Milligrams per kilogram

ND = Non-Detect

Sample ID:				RI-SB-11 (0.5-1)	RI-SB-11 (5-5.5)	RI-SB-11 (10-10.5)	RI-SB-11 (15-15.5)	R1-SB-12 (2.5-3.0)	R1-SB-12 (7.5-8.0)	RI-SB-12 (11-11.5)	RI-SB-12 (17.5-18)	R1-SB-13 (2.5-3.0)	R1-SB-13 (7.5-8.0)	R1-SB-13 (12.5-13.0)	R1-SB-13 (17.5-18.0)
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE17019-42	JE17019-41	JE17019-39	JE17019-40	JE16734-30	JE16734-31	JE17104-7	JE17104-8	JE16734-32	JE16734-33	JE16734-34	JE16734-35
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/14/2025	8/14/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL VOCs (SW846 8260D)															
1,1,1-Trichloroethane	mg/kg	100	0.68	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
1,1,2-Trichloroethane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
1,1-Dichloroethane	mg/kg	26	0.27	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
1,1-Dichloroethene	mg/kg	100	0.33	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
1,2,3-Trichlorobenzene	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
1,2,4-Trichlorobenzene	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
1,2-Dibromoethane	mg/kg	NS	NS	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
1,2-Dichlorobenzene	mg/kg	100	1.1	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
1,2-Dichloroethane	mg/kg	3.1	0.02	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
1,2-Dichloropropane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
1,3-Dichlorobenzene	mg/kg	49	2.4	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
1,4-Dichlorobenzene	mg/kg	13	1.8	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
2-Butanone (MEK)	mg/kg	100	0.12	ND (0.012)	ND (0.013)	ND (0.013)	ND (0.01)	ND (0.013)	ND (0.013)	ND (0.012)	ND (0.012)	ND (0.015)	ND (0.017)	ND (0.014)	ND (0.013)
2-Hexanone	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Acetone	mg/kg	100	0.05	0.008 J	0.136	0.0434	0.0067 J	0.0055 J	0.0088 J	0.0054 J	ND (0.012)	0.0072 J	0.0123 J	ND (0.014)	ND (0.013)
Benzene	mg/kg	4.8	0.06	ND (0.0006)	ND (0.00066)	ND (0.00067)	ND (0.0005)	ND (0.00064)	ND (0.00063)	ND (0.00059)	ND (0.0006)	ND (0.00073)	ND (0.00087)	ND (0.00071)	ND (0.00063)
Bromochloromethane	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Bromodichloromethane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Bromoform	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Bromomethane	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Carbon disulfide	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Carbon tetrachloride	mg/kg	2.4	0.76	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Chlorobenzene	mg/kg	100	1.1	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Chloroethane	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Chloroform	mg/kg	49	0.37	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Chloromethane	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
cis-1,2-Dichloroethene	mg/kg	100	0.25	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
cis-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Cyclohexane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Dibromochloromethane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Dichlorodifluoromethane	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Ethylbenzene	mg/kg	41	1	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
Freon 113	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Isopropylbenzene	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
m,p-Xylene	mg/kg	100	0.26	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
Methyl Acetate	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Methyl Tert Butyl Ether	mg/kg	100	0.93	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
Methylcyclohexane	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Methylene chloride	mg/kg	100	0.05	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	0.0032 J	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
o-Xylene	mg/kg	100	0.26	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
Styrene	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	0.00088 J	ND (0.0035)	ND (0.0028)	ND (0.0025)
Tetrachloroethene	mg/kg	19	1.3	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Toluene	mg/kg	100	0.7	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
trans-1,2-Dichloroethene	mg/kg	100	0.19	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
trans-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Trichloroethene	mg/kg	21	0.47	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)
Trichlorofluoromethane	mg/kg	NS	NS	ND (0.006)	ND (0.0066)	ND (0.0067)	ND (0.005)	ND (0.0064)	ND (0.0063)	ND (0.0059)	ND (0.006)	ND (0.0073)	ND (0.0087)	ND (0.0071)	ND (0.0063)
Vinyl chloride	mg/kg	0.9	0.02	ND (0.0024)	ND (0.0026)	ND (0.0027)	ND (0.002)	ND (0.0026)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0029)	ND (0.0035)	ND (0.0028)	ND (0.0025)
Xylene (total)	mg/kg	100	0.26	ND (0.0012)	ND (0.0013)	ND (0.0013)	ND (0.001)	ND (0.0013)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0015)	ND (0.0017)	ND (0.0014)	ND (0.0013)

NOTES:

- Results are measured in mg/kg.
- Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
- Sample Depth is reported in feet below ground surface.

	= concentration exceeds USCO
	= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.

USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).

RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).

mg/kg = Milligrams per kilogram

ND = Non-Detect

Sample ID:				RI-SB-14 (2-2.5)	RI-SB-14 (6-6.5)	RI-SB-14 (10.5-11)	RI-SB-14 (16-16.5)	RI-SB-15 (4.5-5)	RI-SB-15 (7-7.5)	RI-SB-15 (10-10.5)	RI-SB-15 (16-16.5)	RI-SB-16 (0.5-1)	RI-SB-16 (8.5-9)	RI-SB-16 (11.5-12)	RI-SB-16 (15.5-16)	
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE17019-7	JE17019-8	JE17019-9	JE17019-10	JE16953-11	JE16953-12	JE17209-5	JE17209-6	JE16953-1	JE16953-2	JE17104-13	JE17104-14	
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/12/2025	8/12/2025	8/12/2025	8/12/2025	8/15/2025	8/12/2025	8/12/2025	8/14/2025	8/14/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL VOCs (SW846 8260D)																
1,1,1-Trichloroethane	mg/kg	100	0.68	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
1,1,2-Trichloroethane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
1,1-Dichloroethane	mg/kg	26	0.27	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
1,1-Dichloroethene	mg/kg	100	0.33	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
1,2,3-Trichlorobenzene	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
1,2,4-Trichlorobenzene	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
1,2-Dibromoethane	mg/kg	NS	NS	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
1,2-Dichlorobenzene	mg/kg	100	1.1	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
1,2-Dichloroethane	mg/kg	3.1	0.02	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
1,2-Dichloropropane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
1,3-Dichlorobenzene	mg/kg	49	2.4	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
1,4-Dichlorobenzene	mg/kg	13	1.8	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
2-Butanone (MEK)	mg/kg	100	0.12	ND (0.013)	ND (0.012)	ND (0.01)	ND (0.01)	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.012)	ND (0.0099)	ND (0.011)	ND (0.013)	
2-Hexanone	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Acetone	mg/kg	100	0.05	0.0084 J	0.007 J	0.0063 J	ND (0.01)	0.0095 J	0.006 J	ND (0.011)	ND (0.011)	0.0075 J	0.0057 J	0.0087 J	0.0075 J	
Benzene	mg/kg	4.8	0.06	ND (0.00066)	ND (0.00061)	ND (0.00052)	ND (0.00052)	ND (0.0006)	ND (0.0006)	ND (0.00054)	ND (0.00053)	ND (0.00059)	ND (0.0005)	ND (0.00053)	ND (0.00064)	
Bromochloromethane	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Bromodichloromethane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Bromoform	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Bromomethane	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Carbon disulfide	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	0.0011 J	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Carbon tetrachloride	mg/kg	2.4	0.76	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Chlorobenzene	mg/kg	100	1.1	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Chloroethane	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Chloroform	mg/kg	49	0.37	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Chloromethane	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
cis-1,2-Dichloroethene	mg/kg	100	0.25	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
cis-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Cyclohexane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Dibromochloromethane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Dichlorodifluoromethane	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Ethylbenzene	mg/kg	41	1	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
Freon 113	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Isopropylbenzene	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
m,p-Xylene	mg/kg	100	0.26	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
Methyl Acetate	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Methyl Tert Butyl Ether	mg/kg	100	0.93	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
Methylcyclohexane	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Methylene chloride	mg/kg	100	0.05	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	0.0032 J	0.0077	
o-Xylene	mg/kg	100	0.26	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
Styrene	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Tetrachloroethene	mg/kg	19	1.3	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Toluene	mg/kg	100	0.7	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
trans-1,2-Dichloroethene	mg/kg	100	0.19	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
trans-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Trichloroethene	mg/kg	21	0.47	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	
Trichlorofluoromethane	mg/kg	NS	NS	ND (0.0066)	ND (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.006)	ND (0.006)	ND (0.0054)	ND (0.0053)	ND (0.0059)	ND (0.005)	ND (0.0053)	ND (0.0064)	
Vinyl chloride	mg/kg	0.9	0.02	ND (0.0026)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0024)	ND (0.0024)	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0026)	
Xylene (total)	mg/kg	100	0.26	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.00099)	ND (0.0011)	ND (0.0013)	

NOTES:

- Results are measured in mg/kg.
- Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
- Sample Depth is reported in feet below ground surface.

	= concentration exceeds USCO
	= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.

USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).

RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).

mg/kg = Miligrams per kilogram

ND = Non-Detect

Sample ID:				RI-SB-17 (3.5-4)	RI-SB-17 (5.5-6)	RI-SB-17 (12.5-13)	RI-SB-17 (17.5-18)	RI-SB-18 (2.5-3)	RI-SB-18 (7.5-8)	RI-SB-18 (12.5-13)	RI-SB-18 (17.5-18)	DUP(1)2025-08-13	DUP(2)2025-08-13	DUP(3)2025-08-13	DUP(4)2025-08-13	
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE17019-6	JE17019-5	JE17209-13	JE17209-14	JE17282-2	JE17282-3	JE17282-4	JE17282-5	JE17019-11	JE17019-24	JE17019-25	JE17019-26	
Date:				8/13/2025	8/13/2025	8/15/2025	8/15/2025	8/18/2025	8/18/2025	8/18/2025	8/18/2025	8/18/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL VOCs (SW846 8260D)																
1,1,1-Trichloroethane	mg/kg	100	0.68	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
1,1,2-Trichloroethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
1,1-Dichloroethane	mg/kg	26	0.27	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
1,1-Dichloroethene	mg/kg	100	0.33	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
1,2,3-Trichlorobenzene	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
1,2,4-Trichlorobenzene	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
1,2-Dibromoethane	mg/kg	NS	NS	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
1,2-Dichlorobenzene	mg/kg	100	1.1	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
1,2-Dichloroethane	mg/kg	3.1	0.02	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
1,2-Dichloropropane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
1,3-Dichlorobenzene	mg/kg	49	2.4	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
1,4-Dichlorobenzene	mg/kg	13	1.8	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
2-Butanone (MEK)	mg/kg	100	0.12	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.011)	0.0039 J	ND (0.012)	ND (0.011)	ND (0.011)	ND (0.013)	ND (0.012)	ND (0.013)	ND (0.013)	
2-Hexanone	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Acetone	mg/kg	100	0.05	0.0166	ND (0.012)	ND (0.011)	ND (0.011)	0.0341	0.0067 J	0.0049 J	0.0055 J	0.0104 J	0.0092 J	0.0112 J	0.0439	
Benzene	mg/kg	4.8	0.06	ND (0.00059)	ND (0.0006)	ND (0.00056)	ND (0.00056)	ND (0.00049)	ND (0.00059)	ND (0.00053)	ND (0.00053)	ND (0.00065)	ND (0.00059)	ND (0.00066)	ND (0.00064)	
Bromochloromethane	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Bromodichloromethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Bromoform	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Bromomethane	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Carbon disulfide	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Carbon tetrachloride	mg/kg	2.4	0.76	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Chlorobenzene	mg/kg	100	1.1	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Chloroethane	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049) ^P	ND (0.0059) ^P	ND (0.0053) ^P	ND (0.0053) ^P	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Chloroform	mg/kg	49	0.37	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Chloromethane	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
cis-1,2-Dichloroethene	mg/kg	100	0.25	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
cis-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Cyclohexane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Dibromochloromethane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Dichlorodifluoromethane	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Ethylbenzene	mg/kg	41	1	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
Freon 113	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Isopropylbenzene	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
m,p-Xylene	mg/kg	100	0.26	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
Methyl Acetate	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Methyl Tert Butyl Ether	mg/kg	100	0.93	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
Methylcyclohexane	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Methylene chloride	mg/kg	100	0.05	0.0048 J	ND (0.006)	ND (0.0056)	0.0036 J	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0053)	ND (0.0065)	0.005 J	0.0058 J	ND (0.0064)	
o-Xylene	mg/kg	100	0.26	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
Styrene	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Tetrachloroethene	mg/kg	19	1.3	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Toluene	mg/kg	100	0.7	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
trans-1,2-Dichloroethene	mg/kg	100	0.19	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
trans-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Trichloroethene	mg/kg	21	0.47	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	
Trichlorofluoromethane	mg/kg	NS	NS	ND (0.0059)	ND (0.006)	ND (0.0056)	ND (0.0056)	ND (0.0049) ^P	ND (0.0059) ^P	ND (0.0053) ^P	ND (0.0053) ^P	ND (0.0065)	ND (0.0059)	ND (0.0066)	ND (0.0064)	
Vinyl chloride	mg/kg	0.9	0.02	ND (0.0023)	ND (0.0024)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0026)	ND (0.0024)	ND (0.0027)	ND (0.0026)	
Xylene (total)	mg/kg	100	0.26	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.00098)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0013)	

NOTES:

- Results are measured in mg/kg.
- Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
- Sample Depth is reported in feet below ground surface.

	= concentration exceeds USCO
	= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.

USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).

RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).

mg/kg = Milligrams per kilogram

ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	DUP(5)2025-08-13	DUP(6)2025-08-13	DUP(7)2025-08-13	DUP(8)2025-08-13	MS/MSD
Lab Order:				JE17019-27	JE17019-32	JE17019-33	JE17019-34	JE17019-47
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil
TCL VOCs (SW846 8260D)								
1,1,1-Trichloroethane	mg/kg	100	0.68	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
1,1,2,2-Tetrachloroethane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
1,1,2-Trichloroethane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
1,1-Dichloroethane	mg/kg	26	0.27	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
1,1-Dichloroethene	mg/kg	100	0.33	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
1,2,3-Trichlorobenzene	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
1,2,4-Trichlorobenzene	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
1,2-Dibromo-3-chloropropane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
1,2-Dibromoethane	mg/kg	NS	NS	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
1,2-Dichlorobenzene	mg/kg	100	1.1	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
1,2-Dichloroethane	mg/kg	3.1	0.02	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
1,2-Dichloropropane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
1,3-Dichlorobenzene	mg/kg	49	2.4	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
1,4-Dichlorobenzene	mg/kg	13	1.8	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
2-Butanone (MEK)	mg/kg	100	0.12	ND (0.011)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.011)
2-Hexanone	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
4-Methyl-2-pentanone(MIBK)	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Acetone	mg/kg	100	0.05	0.0302	0.0131	ND (0.011)	0.0106 J	ND (0.011)
Benzene	mg/kg	4.8	0.06	0.00059	ND (0.0006)	ND (0.00057)	ND (0.00061)	ND (0.00057)
Bromochloromethane	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Bromodichloromethane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Bromoform	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Bromomethane	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Carbon disulfide	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Carbon tetrachloride	mg/kg	2.4	0.76	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Chlorobenzene	mg/kg	100	1.1	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Chloroethane	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Chloroform	mg/kg	49	0.37	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Chloromethane	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
cis-1,2-Dichloroethene	mg/kg	100	0.25	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
cis-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Cyclohexane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Dibromochloromethane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Dichlorodifluoromethane	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Ethylbenzene	mg/kg	41	1	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
Freon 113	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Isopropylbenzene	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
m,p-Xylene	mg/kg	100	0.26	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
Methyl Acetate	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Methyl Tert Butyl Ether	mg/kg	100	0.93	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
Methylcyclohexane	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Methylene chloride	mg/kg	100	0.05	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
o-Xylene	mg/kg	100	0.26	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
Styrene	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Tetrachloroethene	mg/kg	19	1.3	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Toluene	mg/kg	100	0.7	0.00061 J	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
trans-1,2-Dichloroethene	mg/kg	100	0.19	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
trans-1,3-Dichloropropene	mg/kg	NS	NS	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Trichloroethene	mg/kg	21	0.47	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)
Trichlorofluoromethane	mg/kg	NS	NS	ND (0.0056)	ND (0.006)	ND (0.0057)	ND (0.0061)	ND (0.0057)
Vinyl chloride	mg/kg	0.9	0.02	ND (0.0022)	ND (0.0024)	ND (0.0023)	ND (0.0024)	ND (0.0023)
Xylene (total)	mg/kg	100	0.26	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0012)	ND (0.0011)

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO
 = concentration exceeds RRSCO

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mg/kg = Miligrams per kilogram
ND = Non-Detect

Sample ID:				R1-SB-01 (2.5-3.0)	R1-SB-01 (7.5-8.0)	R1-SB-01 (12.5-13.0)	R1-SB-01 (17.5-18.0)	R1-SB-02 (2.5-3.0)	R1-SB-02 (7.5-8.0)	R1-SB-02 (12.5-13.0)	R1-SB-02 (17.5-18.0)	R1-SB-03 (2.5-3.0)	R1-SB-03 (7.5-8.0)	R1-SB-03 (12.5-13.0)	R1-SB-03 (17.5-18.0)		
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE16734-2	JE16734-3	JE16734-4	JE16734-5	JE16734-6	JE16734-7	JE16734-8	JE16734-9	JE16734-10	JE16734-11	JE16734-12	JE16734-13		
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL SVOCs (SW846 8270E)																	
1,1'-Biphenyl	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
1,2,4,5-Tetrachlorobenzene	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
1,4-Dioxane	mg/kg	13	0.1	ND (0.036)	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.034)	ND (0.039)	ND (0.034)	ND (0.032)	ND (0.034)		
2,2'-Oxybis(1-chloropropane)	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
2,3,4,6-Tetrachlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
2,4,5-Trichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
2,4,6-Trichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
2,4-Dichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
2,4-Dimethylphenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
2,4-Dinitrophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
2,4-Dinitrotoluene	mg/kg	NS	NS	ND (0.036)	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.034)	ND (0.039)	ND (0.034)	ND (0.032)	ND (0.034)		
2,6-Dinitrotoluene	mg/kg	NS	NS	ND (0.036)	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.034)	ND (0.039)	ND (0.034)	ND (0.032)	ND (0.034)		
2-Chloronaphthalene	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
2-Chlorophenol	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
2-Methylnaphthalene	mg/kg	NS	NS	0.0084 J	ND (0.034)	ND (0.035)	ND (0.034)	0.0106 J	ND (0.033)	ND (0.034)	ND (0.034)	0.0102 J	ND (0.034)	ND (0.032)	ND (0.034)		
2-Methylphenol	mg/kg	100	0.33	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
2-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
2-Nitrophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
3&4-Methylphenol	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
3,3'-Dichlorobenzidine	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
3-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
4,6-Dinitro-o-cresol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
4-Bromophenyl phenyl ether	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
4-Chloro-3-methyl phenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
4-Chloroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
4-Chlorophenyl phenyl ether	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
4-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
4-Nitrophenol	mg/kg	NS	NS	ND (0.36)	ND (0.34)	ND (0.35)	ND (0.34)	ND (0.37)	ND (0.33)	ND (0.34)	ND (0.34)	ND (0.39)	ND (0.34)	ND (0.32)	ND (0.34)		
Acenaphthene	mg/kg	100	20	0.0125 J	ND (0.034)	ND (0.035)	ND (0.034)	0.0219 J	ND (0.033)	ND (0.034)	ND (0.034)	0.023 J	ND (0.034)	ND (0.032)	ND (0.034)		
Acenaphthylene	mg/kg	100	100	ND (0.036)	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.034)	ND (0.039)	ND (0.034)	ND (0.032)	ND (0.034)		
Acetophenone	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
Anthracene	mg/kg	100	100	0.033 J	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.034)	0.0652	ND (0.034)	ND (0.032)	ND (0.034)		
Atrazine	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
Benzaldehyde	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.16)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.16)	ND (0.17)		
Benzo(a)anthracene	mg/kg	1	1	0.135	ND (0.034)	0.0133 J	0.017 J	0.19	ND (0.033)	ND (0.034)	0.0101 J	0.196	0.0585	ND (0.032)	0.039		
Benzo(a)pyrene	mg/kg	1	1	0.121	ND (0.034)	ND (0.035)	ND (0.034)	0.173	ND (0.033)	ND (0.034)	ND (0.034)	0.18	0.0771	ND (0.032)	0.0355		
Benzo(b)fluoranthene	mg/kg	1	1	0.154	ND (0.034)	ND (0.035)	0.0171 J	0.223	ND (0.033)	ND (0.034)	ND (0.034)	0.24	0.0888	ND (0.032)	0.045		
Benzo(g,h,i)perylene	mg/kg	100	100	0.0983	ND (0.034)	ND (0.035)	ND (0.034)	0.122	ND (0.033)	ND (0.034)	ND (0.034)	0.141	0.0604	ND (0.032)	0.0257 J		
Benzo(k)fluoranthene	mg/kg	3.9	0.8	0.0577	ND (0.034)	ND (0.035)	ND (0.034)	0.077	ND (0.033)	ND (0.034)	ND (0.034)	0.0804	0.0334 J	ND (0.032)	0.0167 J		
bis(2-Chloroethoxy)methane	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
bis(2-Chloroethyl)ether	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
bis(2-Ethylhexyl)phthalate	mg/kg	NS	NS	0.0726	ND (0.068)	ND (0.069)	ND (0.068)	0.952	ND (0.065)	ND (0.068)	ND (0.069)	0.15	ND (0.069)	0.0474 J	ND (0.068)		
Butyl benzyl phthalate	mg/kg	NS	NS	0.238	ND (0.068)	ND (0.069)	ND (0.068)	0.0346 J	ND (0.065)	ND (0.068)	ND (0.069)	0.0664 J	ND (0.069)	ND (0.064)	ND (0.068)		
Caprolactam	mg/kg	NS	NS	ND (0.071)	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.075)	ND (0.065)	ND (0.068)	ND (0.069)	ND (0.078)	ND (0.069)	ND (0.064)	ND (0.068)		
Carbazole	mg/kg	NS	NS	0.0108 J	ND (0.068)	ND (0.069)	ND (0.068)	0.0195 J	ND (0.065)	ND (0.068)	ND (0.069)	0.023 J	0.0053 J	ND (0.064)	0.0064 J		
Chrysene	mg/kg	3.9	1	0.137	ND (0.034)	ND (0.035)	0.0148 J	0.186	ND (0.033)	ND (0.034)	ND (0.034)	0.201	0.0648	ND (0.032)	0.0381		
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	0.0272 J	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.034)	0.0311 J	0.0157 J	ND (0.032)	ND (0.034)		

Sample ID:				RI-SB-04 (1-1.5)	RI-SB-04 (8.5-9)	RI-SB-04 (13.5-14)	RI-SB-04 (18-18.5)	R1-SB-05 (2.5-3.0)	R1-SB-05 (7.5-8.0)	R1-SB-05 (12.5-13.0)	R1-SB-05 (17.5-18.0)	R1-SB-06 (2.5-3.0)	R1-SB-06 (7.5-8.0)	R1-SB-06 (12.5-13.0)	R1-SB-06 (17.5-18.0)		
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE17019-38	JE17019-37	JE17019-35	JE17019-36	JE16734-14	JE16734-15	JE16734-16	JE16734-17	JE16734-18	JE16734-19	JE16734-20	JE16734-21		
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL SVOCs (SW846 8270E)																	
1,1'-Biphenyl	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	0.0088 J	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
1,2,4,5-Tetrachlorobenzene	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
1,4-Dioxane	mg/kg	13	0.1	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.031)	ND (0.039)	ND (0.034)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.034)	ND (0.034)	ND (0.034)		
2,2'-Oxybis(1-chloropropane)	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
2,3,4,6-Tetrachlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
2,4,5-Trichlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
2,4,6-Trichlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
2,4-Dichlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
2,4-Dimethylphenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
2,4-Dinitrophenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
2,4-Dinitrotoluene	mg/kg	NS	NS	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.031)	ND (0.039)	ND (0.034)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.034)	ND (0.034)	ND (0.034)		
2,6-Dinitrotoluene	mg/kg	NS	NS	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.031)	ND (0.039)	ND (0.034)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.034)	ND (0.034)	ND (0.034)		
2-Chloronaphthalene	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
2-Chlorophenol	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
2-Methylnaphthalene	mg/kg	NS	NS	0.0184 J	ND (0.035)	ND (0.034)	ND (0.031)	0.0313 J	ND (0.034)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.034)	ND (0.034)	ND (0.034)		
2-Methylphenol	mg/kg	100	0.33	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
2-Nitroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
2-Nitrophenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
3&4-Methylphenol	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
3,3'-Dichlorobenzidine	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
3-Nitroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
4,6-Dinitro-o-cresol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
4-Bromophenyl phenyl ether	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
4-Chloro-3-methyl phenol	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
4-Chloroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
4-Chlorophenyl phenyl ether	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
4-Nitroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
4-Nitrophenol	mg/kg	NS	NS	ND (0.34)	ND (0.35)	ND (0.34)	ND (0.31)	ND (0.39)	ND (0.34)	ND (0.34)	ND (0.34)	ND (0.38)	ND (0.34)	ND (0.34)	ND (0.34)		
Acenaphthene	mg/kg	100	20	0.0189 J	ND (0.035)	ND (0.034)	ND (0.031)	0.0762	ND (0.034)	ND (0.034)	ND (0.034)	ND (0.038)	0.0282 J	ND (0.034)	ND (0.034)		
Acenaphthylene	mg/kg	100	100	ND (0.034)	ND (0.035)	ND (0.034)	ND (0.031)	0.0728	ND (0.034)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.034)	ND (0.034)	ND (0.034)		
Acetophenone	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
Anthracene	mg/kg	100	100	0.0636	ND (0.035)	ND (0.034)	ND (0.031)	0.266	ND (0.034)	ND (0.034)	ND (0.034)	0.0242 J	0.105	ND (0.034)	ND (0.034)		
Atrazine	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
Benzaldehyde	mg/kg	NS	NS	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.15)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)		
Benzo(a)anthracene	mg/kg	1	1	0.192	ND (0.035)	0.0257 J	ND (0.031)	0.792	ND (0.034)	0.0727	0.0295 J	0.0803	0.255	ND (0.034)	0.0206 J		
Benzo(a)pyrene	mg/kg	1	1	0.166	ND (0.035)	0.0223 J	ND (0.031)	0.731	ND (0.034)	0.0791	0.03 J	0.0728	0.23	ND (0.034)	0.0157 J		
Benzo(b)fluoranthene	mg/kg	1	1	0.218	ND (0.035)	0.0275 J	ND (0.031)	0.866	ND (0.034)	0.0824	0.0346	0.0877	0.275	ND (0.034)	0.0185 J		
Benzo(g,h,i)perylene	mg/kg	100	100	0.121	ND (0.035)	0.0218 J	ND (0.031)	0.443	ND (0.034)	0.059	0.0215 J	0.0504	0.154	ND (0.034)	ND (0.034)		
Benzo(k)fluoranthene	mg/kg	3.9	0.8	0.0691	ND (0.035)	ND (0.034)	ND (0.031)	0.321	ND (0.034)	0.0393	ND (0.034)	0.0309 J	0.128	ND (0.034)	ND (0.034)		
bis(2-Chloroethoxy)methane	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
bis(2-Chloroethyl)ether	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
bis(2-Ethylhexyl)phthalate	mg/kg	NS	NS	0.0355 J	ND (0.069)	ND (0.068)	ND (0.062)	0.0093 J	ND (0.068)	ND (0.068)	ND (0.067)	0.0141 J	ND (0.069)	ND (0.067)	ND (0.068)		
Butyl benzyl phthalate	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	0.225	ND (0.067)	ND (0.068)		
Caprolactam	mg/kg	NS	NS	ND (0.068)	ND (0.069)	ND (0.068)	ND (0.062)	ND (0.077)	ND (0.068)	ND (0.068)	ND (0.067)	ND (0.076)	ND (0.069)	ND (0.067)	ND (0.068)		
Carbazole	mg/kg	NS	NS	0.0248 J	ND (0.069)	ND (0.068)	ND (0.062)	0.0843	ND (0.068)	0.0068 J	ND (0.067)	0.0083 J	0.0663 J	ND (0.067)	ND (0.068)		
Chrysene	mg/kg	3.9	1	0.191	ND (0.035)	0.023 J	ND (0.031)	0.785	ND (0.034)	0.0737	0.0304 J	0.0765	0.253	ND (0.034)	0.015 J		
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	0.0288 J	ND (0.035)	ND (0.034)	ND (0.031)	0.123	ND (0.034)	ND (0.034)	ND (0.034)	ND (0.038)	0.0387	ND (0.034)	ND (0.034)		
Dibenzofuran																	

Sample ID:				R1-SB-07 (2.5-3.0)	R1-SB-07 (7.5-8.0)	R1-SB-07 (12.5-13.0)	R1-SB-07 (17.5-18.0)	R1-SB-08 (2.5-3.0)	R1-SB-08 (7.5-8.0)	R1-SB-08 (12.5-13.0)	R1-SB-08 (17.5-18.0)	RI-SB-09 (2.5-3)	RI-SB-09 (7.5-8)	RI-SB-09 (12-12.5)	RI-SB-09 (17-17.5)
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE16734-22	JE16734-23	JE16734-24	JE16734-25	JE16734-26	JE16734-27	JE16734-28	JE16734-29	JE17019-2	JE17019-4	JE17019-3	JE17019-1
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
TCL SVOCs (SW846 8270E)															
1,1'-Biphenyl	mg/kg	NS	NS	0.0128 J	ND (0.07)	0.0094 J	0.0088 J	0.0073 J	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	0.0146 J	ND (0.07)	0.0229 J
1,2,4,5-Tetrachlorobenzene	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
1,4-Dioxane	mg/kg	13	0.1	ND (0.037)	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	ND (0.037)	ND (0.037)	ND (0.035)	ND (0.034)
2,2'-Oxybis(1-chloropropane)	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
2,3,4,6-Tetrachlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
2,4,5-Trichlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
2,4,6-Trichlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
2,4-Dichlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
2,4-Dimethylphenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
2,4-Dinitrophenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
2,4-Dinitrotoluene	mg/kg	NS	NS	ND (0.037)	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	ND (0.037)	ND (0.037)	ND (0.035)	ND (0.034)
2,6-Dinitrotoluene	mg/kg	NS	NS	ND (0.037)	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	ND (0.037)	ND (0.037)	ND (0.035)	ND (0.034)
2-Chloronaphthalene	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
2-Chlorophenol	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
2-Methylnaphthalene	mg/kg	NS	NS	0.219	ND (0.035)	1.47	1.08	0.0233 J	ND (0.034)	ND (0.035)	0.0214 J	0.0423	0.0549	ND (0.035)	2.92
2-Methylphenol	mg/kg	100	0.33	0.0553 J	ND (0.07)	0.13	0.146	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	0.383
2-Nitroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
2-Nitrophenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
3&4-Methylphenol	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
3,3'-Dichlorobenzidine	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
3-Nitroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
4,6-Dinitro-o-cresol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
4-Bromophenyl phenyl ether	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
4-Chloro-3-methyl phenol	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
4-Chloroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
4-Chlorophenyl phenyl ether	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
4-Nitroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
4-Nitrophenol	mg/kg	NS	NS	ND (0.37)	ND (0.35)	ND (0.35)	ND (0.34)	ND (0.37)	ND (0.34)	ND (0.35)	ND (0.35)	ND (0.37)	ND (0.37)	ND (0.35)	ND (0.34)
Acenaphthene	mg/kg	100	20	0.0878	ND (0.035)	0.0257 J	0.0256 J	0.0431	ND (0.034)	ND (0.035)	0.0633	0.0219 J	0.0872	ND (0.035)	0.0567
Acenaphthylene	mg/kg	100	100	0.0684	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	0.02 J	0.0389	ND (0.035)	ND (0.034)
Acetophenone	mg/kg	NS	NS	0.018 J	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)
Anthracene	mg/kg	100	100	0.273	0.0226 J	ND (0.035)	ND (0.034)	0.107	ND (0.034)	ND (0.035)	0.191	0.0785	0.198	ND (0.035)	0.0279 J
Atrazine	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
Benzaldehyde	mg/kg	NS	NS	ND (0.19)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	0.0167 J
Benzo(a)anthracene	mg/kg	1	1	0.684	0.184	0.0837	0.043	0.326	0.0167 J	ND (0.035)	0.323	0.21	0.361	ND (0.035)	0.0518
Benzo(a)pyrene	mg/kg	1	1	0.572	0.321	0.0811	0.0382	0.293	0.0155 J	ND (0.035)	0.299	0.182	0.349	ND (0.035)	0.0418
Benzo(b)fluoranthene	mg/kg	1	1	0.713	0.371	0.0979	0.0479	0.363	0.0189 J	ND (0.035)	0.311	0.227	0.447	ND (0.035)	0.0548
Benzo(g,h,i)perylene	mg/kg	100	100	0.388	0.302	0.0635	0.0301 J	0.197	ND (0.034)	ND (0.035)	0.215	0.122	0.227	ND (0.035)	0.0335 J
Benzo(k)fluoranthene	mg/kg	3.9	0.8	0.247	0.137	0.0379	0.0195 J	0.114	ND (0.034)	ND (0.035)	0.0902	0.0862	0.105	ND (0.035)	0.0167 J
bis(2-Chloroethoxy)methane	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
bis(2-Chloroethyl)ether	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
bis(2-Ethylhexyl)phthalate	mg/kg	NS	NS	0.133	ND (0.07)	ND (0.071)	ND (0.069)	0.0565 J	ND (0.068)	ND (0.07)	ND (0.07)	0.114	0.0746	ND (0.07)	0.0395 J
Butyl benzyl phthalate	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	0.0295 J	ND (0.068)	ND (0.07)	ND (0.07)	0.0592 J	ND (0.073)	ND (0.07)	0.0285 J
Caprolactam	mg/kg	NS	NS	ND (0.075)	ND (0.07)	ND (0.071)	ND (0.069)	ND (0.075)	ND (0.068)	ND (0.07)	ND (0.07)	ND (0.075)	ND (0.073)	ND (0.07)	ND (0.068)
Carbazole	mg/kg	NS	NS	0.0921	0.012 J	ND (0.071)	ND (0.069)	0.0414 J	ND (0.068)	ND (0.07)	0.0342 J	0.0272 J	0.1	ND (0.07)	0.0081 J
Chrysene	mg/kg	3.9	1	0.657	0.181	0.0762	0.0414	0.325	0.014 J	ND (0.035)	0.289	0.191	0.346	ND (0.035)	0.0515
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	0.113	0.0719	0.0178 J	ND (0.034)	0.0504	ND (0.034)	ND (0.035)	0.0473	0.0303 J	0.0526	ND (0.035)	ND (0.034)
Dibenzofuran	mg/kg	59	7	0.0603 J	ND (0.07)	ND (0.071)	ND (0.069)	0.0306 J	ND (0.068)	ND (0.07)	0.0339 J	ND (0.075)	0.0681 J	ND (0.07)	ND (0.068)
Diethyl phthalate	mg/kg	NS	NS												

Sample ID:				RI-SB-10 (4.4-5)	RI-SB-10 (6.5-7)	RI-SB-10 (11-11.5)	RI-SB-10 (19-19.5)	RI-SB-11 (0.5-1)	RI-SB-11 (5-5.5)	RI-SB-11 (10-10.5)	RI-SB-11 (15-15.5)	R1-SB-12 (2.5-3.0)	R1-SB-12 (7.5-8.0)	RI-SB-12 (11-11.5)	RI-SB-12 (17.5-18)	
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE17019-28	JE17019-30	JE17019-31	JE17019-29	JE17019-41	JE17019-41	JE17019-39	JE17019-40	JE16734-30	JE16734-31	JE17104-7	JE17104-8	
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/14/2025	8/14/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL SVOCs (SW846 8270E)																
1,1'-Biphenyl	mg/kg	NS	NS	0.0053 J	ND (0.073)	ND (0.06)	ND (0.066)	0.0056 J	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
1,2,4,5-Tetrachlorobenzene	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
1,4-Dioxane	mg/kg	13	0.1	ND (0.035)	ND (0.036)	ND (0.03)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.035)	ND (0.031)	ND (0.037)	ND (0.036)	ND (0.035)	ND (0.034)	
2,2'-Oxybis(1-chloropropane)	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
2,3,4,6-Tetrachlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
2,4,5-Trichlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
2,4,6-Trichlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
2,4-Dichlorophenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
2,4-Dimethylphenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
2,4-Dinitrophenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
2,4-Dinitrotoluene	mg/kg	NS	NS	ND (0.035)	ND (0.036)	ND (0.03)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.035)	ND (0.031)	ND (0.037)	ND (0.036)	ND (0.035)	ND (0.034)	
2,6-Dinitrotoluene	mg/kg	NS	NS	ND (0.035)	ND (0.036)	ND (0.03)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.035)	ND (0.031)	ND (0.037)	ND (0.036)	ND (0.035)	ND (0.034)	
2-Chloronaphthalene	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
2-Chlorophenol	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
2-Methylnaphthalene	mg/kg	NS	NS	0.0186 J	0.0238 J	ND (0.03)	0.0209 J	0.0264 J	0.0252 J	0.0119 J	ND (0.031)	0.0232 J	0.0266 J	ND (0.035)	ND (0.034)	
2-Methylphenol	mg/kg	100	0.33	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
2-Nitroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
2-Nitrophenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
3&4-Methylphenol	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
3,3'-Dichlorobenzidine	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
3-Nitroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
4,6-Dinitro-o-cresol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
4-Bromophenyl phenyl ether	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
4-Chloro-3-methyl phenol	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
4-Chloroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
4-Chlorophenyl phenyl ether	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
4-Nitroaniline	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.16)	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
4-Nitrophenol	mg/kg	NS	NS	ND (0.35)	ND (0.36)	ND (0.3)	ND (0.33)	ND (0.33)	ND (0.33)	ND (0.35)	ND (0.31)	ND (0.37)	ND (0.36)	ND (0.35)	ND (0.34)	
Acenaphthene	mg/kg	100	20	0.0225 J	0.032 J	ND (0.03)	ND (0.033)	0.0295 J	0.0605	ND (0.035)	ND (0.031)	0.013 J	0.0969	ND (0.035)	ND (0.034)	
Acenaphthylene	mg/kg	100	100	0.0223 J	0.0212 J	ND (0.03)	ND (0.033)	0.0469	0.0247 J	ND (0.035)	ND (0.031)	ND (0.037)	ND (0.036)	ND (0.035)	ND (0.034)	
Acetophenone	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	0.0125 J	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	0.0156 J	ND (0.17)	ND (0.17)	
Anthracene	mg/kg	100	100	0.0667	0.346	ND (0.03)	ND (0.033)	0.111	0.134	0.0266 J	ND (0.031)	0.0405	0.123	ND (0.035)	ND (0.034)	
Atrazine	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
Benzaldehyde	mg/kg	NS	NS	ND (0.17)	ND (0.18)	ND (0.15)	ND (0.17)	0.0196 J	ND (0.16)	ND (0.17)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	
Benzo(a)anthracene	mg/kg	1	1	0.198	0.295	ND (0.03)	ND (0.033)	0.4	0.357	0.0976	ND (0.031)	0.132	0.0925	0.0229 J	ND (0.034)	
Benzo(a)pyrene	mg/kg	1	1	0.181	0.244	ND (0.03)	ND (0.033)	0.364	0.302	0.089	ND (0.031)	0.116	0.0828	0.023 J	ND (0.034)	
Benzo(b)fluoranthene	mg/kg	1	1	0.243	0.324	ND (0.03)	ND (0.033)	0.502	0.376	0.13	ND (0.031)	0.146	0.109	0.0301 J	ND (0.034)	
Benzo(g,h,i)perylene	mg/kg	100	100	0.127	0.158	ND (0.03)	ND (0.033)	0.249	0.198	0.0759	ND (0.031)	0.0874	0.069	0.0176 J	ND (0.034)	
Benzo(k)fluoranthene	mg/kg	3.9	0.8	0.0656	0.0973	ND (0.03)	ND (0.033)	0.139	0.133	0.0386	ND (0.031)	0.047	0.0353 J	ND (0.035)	ND (0.034)	
bis(2-Chloroethoxy)methane	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
bis(2-Chloroethyl)ether	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
bis(2-Ethylhexyl)phthalate	mg/kg	NS	NS	0.054 J	0.11	ND (0.06)	ND (0.066)	0.0305 J	0.0548 J	0.0084 J	ND (0.063)	0.0645 J	1.17	ND (0.069)	ND (0.068)	
Butyl benzyl phthalate	mg/kg	NS	NS	0.0273 J	0.147	ND (0.06)	0.0092 J	ND (0.065)	ND (0.066)	ND (0.07)	0.0172 J	ND (0.075)	ND (0.072)	0.0153 J	ND (0.068)	
Caprolactam	mg/kg	NS	NS	ND (0.07)	ND (0.073)	ND (0.06)	ND (0.066)	ND (0.065)	ND (0.066)	ND (0.07)	ND (0.063)	ND (0.075)	ND (0.072)	ND (0.069)	ND (0.068)	
Carbazole	mg/kg	NS	NS	0.0246 J	0.0497 J	ND (0.06)	ND (0.066)	0.0458 J	0.0558 J	0.0101 J	ND (0.063)	0.0154 J	0.0165 J	0.0056 J	ND (0.068)	
Chrysene	mg/kg	3.9	1	0.187	0.316	ND (0.03)	ND (0.033)	0.398	0.324	0.0999	ND (0.031)	0.12	0.0913	0.0257 J	ND (0.034)	
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	0.0298 J	0.0374	ND (0.03)	ND (0.033)	0.0663	0.0494	0.0178 J	ND (0.031)	0.0249 J	0.0172 J	ND (0.035)	ND (0.034)	
Dibenzofuran	mg/kg	59	7	0.0174 J	0.0242 J	ND (0.06)	ND (0.066)	0.0198 J	0.0378 J	ND (0.07)	ND (0.063)					

Sample ID:				R1-SB-13 (2.5-3.0)	R1-SB-13 (7.5-8.0)	R1-SB-13 (12.5-13.0)	R1-SB-13 (17.5-18.0)	RI-SB-13 (2-2.5)	RI-SB-13 (6-6.5)	RI-SB-13 (10.5-11)	RI-SB-14 (16-16.5)	RI-SB-15 (4-5.5)	RI-SB-15 (7-7.5)	RI-SB-15 (10-10.5)	RI-SB-15 (16-16.5)	
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE16734-32	JE16734-33	JE16734-34	JE16734-35	JE17019-7	JE17019-8	JE17019-9	JE17019-10	JE16953-11	JE16953-12	JE17209-5	JE17209-6	
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/12/2025	8/12/2025	8/15/2025	8/15/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL SVOCs (SW846 8270E)																
1,1'-Biphenyl	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
1,2,4,5-Tetrachlorobenzene	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
1,4-Dioxane	mg/kg	13	0.1	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.035)	
2,2'-Oxybis(1-chloropropane)	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
2,3,4,6-Tetrachlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
2,4,5-Trichlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
2,4,6-Trichlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
2,4-Dichlorophenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
2,4-Dimethylphenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
2,4-Dinitrophenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
2,4-Dinitrotoluene	mg/kg	NS	NS	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.035)	
2,6-Dinitrotoluene	mg/kg	NS	NS	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.034)	ND (0.038)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.035)	
2-Chloronaphthalene	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
2-Chlorophenol	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
2-Methylnaphthalene	mg/kg	NS	NS	0.0918	0.0213 J	ND (0.034)	ND (0.034)	ND (0.038)	0.0352 J	0.0274 J	ND (0.034)	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.035)	
2-Methylphenol	mg/kg	100	0.33	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
2-Nitroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
2-Nitrophenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
3&4-Methylphenol	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
3,3'-Dichlorobenzidine	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
3-Nitroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
4,6-Dinitro-o-cresol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
4-Bromophenyl phenyl ether	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
4-Chloro-3-methyl phenol	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
4-Chloroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
4-Chlorophenyl phenyl ether	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
4-Nitroaniline	mg/kg	NS	NS	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
4-Nitrophenol	mg/kg	NS	NS	ND (0.38)	ND (0.37)	ND (0.34)	ND (0.34)	ND (0.38)	ND (0.36)	ND (0.33)	ND (0.34)	ND (0.38)	ND (0.37)	ND (0.34)	ND (0.35)	
Acenaphthene	mg/kg	100	20	0.0188 J	0.038	ND (0.034)	ND (0.034)	0.0244 J	0.0157 J	ND (0.033)	ND (0.034)	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.035)	
Acenaphthylene	mg/kg	100	100	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.034)	0.0291 J	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.038)	ND (0.037)	ND (0.034)	ND (0.035)	
Acetophenone	mg/kg	NS	NS	0.0153 J	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
Anthracene	mg/kg	100	100	0.0467	0.0903	ND (0.034)	ND (0.034)	0.0735	0.0551	ND (0.033)	ND (0.034)	0.037 J	ND (0.037)	ND (0.034)	ND (0.035)	
Atrazine	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
Benzaldehyde	mg/kg	NS	NS	ND (0.19)	0.0095 J	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.19)	ND (0.19)	ND (0.17)	ND (0.18)	
Benzo(a)anthracene	mg/kg	1	1	0.149	0.362	0.0273 J	ND (0.034)	0.278	0.187	0.0127 J	ND (0.034)	0.136	0.0713	ND (0.034)	ND (0.035)	
Benzo(a)pyrene	mg/kg	1	1	0.136	0.253	0.0272 J	ND (0.034)	0.223	0.162	ND (0.033)	ND (0.034)	0.134	0.0716	ND (0.034)	ND (0.035)	
Benzo(b)fluoranthene	mg/kg	1	1	0.163	0.325	0.038	ND (0.034)	0.276	0.203	ND (0.033)	ND (0.034)	0.157	0.0853	ND (0.034)	ND (0.035)	
Benzo(g,h,i)perylene	mg/kg	100	100	0.103	0.19	0.0268 J	ND (0.034)	0.144	0.108	ND (0.033)	ND (0.034)	0.0995	0.0549	ND (0.034)	ND (0.035)	
Benzo(k)fluoranthene	mg/kg	3.9	0.8	0.0593	0.105	ND (0.034)	ND (0.034)	0.102	0.0765	ND (0.033)	ND (0.034)	0.0645	0.0364 J	ND (0.034)	ND (0.035)	
bis(2-Chloroethoxy)methane	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
bis(2-Chloroethyl)ether	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
bis(2-Ethylhexyl)phthalate	mg/kg	NS	NS	0.159	0.0728 J	ND (0.068)	ND (0.068)	0.0531 J	0.0383 J	ND (0.067)	ND (0.068)	0.0565 J	0.0487 J	ND (0.068)	ND (0.07)	
Butyl benzyl phthalate	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	0.0387 J	1.26	0.0127 J	ND (0.068)	0.131	0.0174 J	ND (0.068)	ND (0.07)	
Caprolactam	mg/kg	NS	NS	ND (0.076)	ND (0.073)	ND (0.068)	ND (0.068)	ND (0.076)	ND (0.072)	ND (0.067)	ND (0.068)	ND (0.076)	ND (0.074)	ND (0.068)	ND (0.07)	
Carbazole	mg/kg	NS	NS	0.0144 J	0.0404 J	ND (0.068)	ND (0.068)	0.0331 J	0.0233 J	ND (0.067)	ND (0.068)	0.0149 J	0.0095 J	ND (0.068)	ND (0.07)	
Chrysene	mg/kg	3.9	1	0.137	0.266	0.0278 J	ND (0.034)	0.255	0.173	ND (0.033)	ND (0.034)	0.138	0.073	ND (0.034)	ND (0.035)	
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	0.0236 J	0.0466	ND (0.034)	ND (0.034)	0.0374 J	0.0274 J	ND (0.033)	ND (0.034)	0.0228 J	ND (0.037)	ND (0.034)	ND (0.035)	
Dibenzofuran	mg/kg	59	7	ND (0.076)	0.0228 J	ND (0.0686										

Sample ID:				RI-SB-16 (0.5-1)	RI-SB-16 (8.5-9)	RI-SB-16 (11.5-12)	RI-SB-16 (15.5-16)	RI-SB-17 (3.5-4)	RI-SB-17 (5.5-6)	RI-SB-17 (12.5-13)	RI-SB-17 (17.5-18)	RI-SB-18 (2.5-3)	RI-SB-18 (7.5-8)	RI-SB-18 (12.5-13)	RI-SB-18 (17.5-18)	
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE16953-1	JE16953-2	JE17104-13	JE17104-13	JE17019-6	JE17019-5	JE17209-13	JE17282-2	JE17282-2	JE17282-4	JE17282-5		
Date:				8/12/2025	8/12/2025	8/14/2025	8/14/2025	8/13/2025	8/13/2025	8/15/2025	8/15/2025	8/18/2025	8/18/2025	8/18/2025	8/18/2025	8/18/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL SVOCs (SW846 8270E)																
1,1'-Biphenyl	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
1,2,4,5-Tetrachlorobenzene	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
1,4-Dioxane	mg/kg	13	0.1	ND (0.037)	ND (0.037)	ND (0.032)	ND (0.033)	ND (0.035)	ND (0.036)	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
2,2'-Oxybis(1-chloropropane)	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
2,3,4,6-Tetrachlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
2,4,5-Trichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
2,4,6-Trichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
2,4-Dichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
2,4-Dimethylphenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
2,4-Dinitrophenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
2,4-Dinitrotoluene	mg/kg	NS	NS	ND (0.037)	ND (0.037)	ND (0.032)	ND (0.033)	ND (0.035)	ND (0.036)	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
2,6-Dinitrotoluene	mg/kg	NS	NS	ND (0.037)	ND (0.037)	ND (0.032)	ND (0.033)	ND (0.035)	ND (0.036)	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
2-Chloronaphthalene	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
2-Chlorophenol	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
2-Methylnaphthalene	mg/kg	NS	NS	0.011 J	ND (0.037)	ND (0.032)	ND (0.033)	0.0363	0.0732	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
2-Methylphenol	mg/kg	100	0.33	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
2-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
2-Nitrophenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
3&4-Methylphenol	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
3,3'-Dichlorobenzidine	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
3-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
4,6-Dinitro-o-cresol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
4-Bromophenyl phenyl ether	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
4-Chloro-3-methyl phenol	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
4-Chloroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
4-Chlorophenyl phenyl ether	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
4-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
4-Nitrophenol	mg/kg	NS	NS	ND (0.37)	ND (0.37)	ND (0.32)	ND (0.33)	ND (0.35)	ND (0.36)	ND (0.34)	ND (0.34)	ND (0.35)	ND (0.33)	ND (0.33)	ND (0.34)	
Acenaphthene	mg/kg	100	20	0.0145 J	ND (0.037)	ND (0.032)	ND (0.033)	0.0136 J	0.0173 J	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
Acenaphthylene	mg/kg	100	100	ND (0.037)	ND (0.037)	ND (0.032)	ND (0.033)	ND (0.035)	0.019 J	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
Acetophenone	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
Anthracene	mg/kg	100	100	0.0761	ND (0.037)	ND (0.032)	ND (0.033)	0.0469	0.0654	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
Atrazine	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
Benzaldehyde	mg/kg	NS	NS	ND (0.18)	ND (0.18)	ND (0.16)	ND (0.17)	ND (0.18)	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.17)	ND (0.16)	ND (0.17)	
Benzo(a)anthracene	mg/kg	1	1	0.195	0.0886	ND (0.032)	0.0204 J	0.125	0.198	ND (0.034)	ND (0.034)	0.041	ND (0.033)	ND (0.033)	ND (0.034)	
Benzo(a)pyrene	mg/kg	1	1	0.189	0.0959	ND (0.032)	0.0212 J	0.105	0.195	ND (0.034)	ND (0.034)	0.0394	ND (0.033)	ND (0.033)	ND (0.034)	
Benzo(b)fluoranthene	mg/kg	1	1	0.212	0.118	ND (0.032)	0.0279 J	0.137	0.257	ND (0.034)	ND (0.034)	0.0589	ND (0.033)	ND (0.033)	ND (0.034)	
Benzo(g,h,i)perylene	mg/kg	100	100	0.131	0.0715	ND (0.032)	0.0185 J	0.0728	0.134	ND (0.034)	ND (0.034)	0.0342 J	ND (0.033)	ND (0.033)	ND (0.034)	
Benzo(k)fluoranthene	mg/kg	3.9	0.8	0.0914	0.0423	ND (0.032)	ND (0.033)	0.0373	0.0705	ND (0.034)	ND (0.034)	0.0199 J	ND (0.033)	ND (0.033)	ND (0.034)	
bis(2-Chloroethoxy)methane	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
bis(2-Chloroethyl)ether	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
bis(2-Ethylhexyl)phthalate	mg/kg	NS	NS	0.082	ND (0.074)	ND (0.065)	ND (0.066)	0.0564 J	0.056 J	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
Butyl benzyl phthalate	mg/kg	NS	NS	0.0094 J	ND (0.074)	ND (0.065)	ND (0.066)	0.0234 J	0.0247 J	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
Caprolactam	mg/kg	NS	NS	ND (0.073)	ND (0.074)	ND (0.065)	ND (0.066)	ND (0.071)	ND (0.072)	ND (0.069)	ND (0.068)	ND (0.07)	ND (0.067)	ND (0.066)	ND (0.068)	
Carbazole	mg/kg	NS	NS	0.0191 J	0.0113 J	ND (0.065)	ND (0.066)	0.015 J	0.023 J	ND (0.069)	ND (0.068)	0.007 J	ND (0.067)	ND (0.066)	ND (0.068)	
Chrysene	mg/kg	3.9	1	0.199	0.096	ND (0.032)	0.0232 J	0.12	0.195	ND (0.034)	ND (0.034)	0.0493	ND (0.033)	ND (0.033)	ND (0.034)	
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	0.03 J	0.0179 J	ND (0.032)	ND (0.033)	0.0184 J	0.0315 J	ND (0.034)	ND (0.034)	ND (0.035)	ND (0.033)	ND (0.033)	ND (0.034)	
Dibenzofuran	mg/kg	59	7	ND (0.073)	ND (0.074)	ND (										

Sample ID:				DUP(1)2025-08-13	DUP(2)2025-08-13	DUP(3)2025-08-13	DUP(4)2025-08-13	DUP(5)2025-08-13	DUP(6)2025-08-13	DUP(7)2025-08-13	DUP(8)2025-08-13	MS/MSD	
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE17019-11	JE17019-24	JE17019-25	JE17019-26	JE17019-27	JE17019-32	JE17019-33	JE17019-34	JE17019-47	
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCL SVOCs (SW846 8270E)													
1,1'-Biphenyl	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	0.0179 J	ND (0.07)	ND (0.074)	ND (0.068)	0.0094 J	ND (0.064)	
1,2,4,5-Tetrachlorobenzene	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
1,4-Dioxane	mg/kg	13	0.1	ND (0.036)	ND (0.035)	ND (0.033)	ND (0.035)	ND (0.035)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.032)	
2,2'-Oxybis(1-chloropropane)	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
2,3,4,6-Tetrachlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
2,4,5-Trichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
2,4,6-Trichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
2,4-Dichlorophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
2,4-Dimethylphenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
2,4-Dinitrophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
2,4-Dinitrotoluene	mg/kg	NS	NS	ND (0.036)	ND (0.035)	ND (0.033)	ND (0.035)	ND (0.035)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.032)	
2,6-Dinitrotoluene	mg/kg	NS	NS	ND (0.036)	ND (0.035)	ND (0.033)	ND (0.035)	ND (0.035)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.032)	
2-Chloronaphthalene	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
2-Chlorophenol	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
2-Methylnaphthalene	mg/kg	NS	NS	ND (0.036)	0.0273 J	ND (0.033)	2.34	0.0604	0.0147 J	ND (0.034)	0.0293 J	ND (0.032)	
2-Methylphenol	mg/kg	100	0.33	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
2-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
2-Nitrophenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
3&4-Methylphenol	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
3,3'-Dichlorobenzidine	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
3-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
4,6-Dinitro-o-cresol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
4-Bromophenyl phenyl ether	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
4-Chloro-3-methyl phenol	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
4-Chloroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
4-Chlorophenyl phenyl ether	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
4-Nitroaniline	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
4-Nitrophenol	mg/kg	NS	NS	ND (0.36)	ND (0.35)	ND (0.33)	ND (0.35)	ND (0.35)	ND (0.37)	ND (0.34)	ND (0.35)	ND (0.32)	
Acenaphthene	mg/kg	100	20	ND (0.036)	0.0189 J	ND (0.033)	0.0635	0.0183 J	0.0193 J	ND (0.034)	0.0856	ND (0.032)	
Acenaphthylene	mg/kg	100	100	ND (0.036)	0.0212 J	ND (0.033)	0.0306 J	0.0238 J	0.0236 J	ND (0.034)	0.0397	ND (0.032)	
Acetophenone	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	0.008 J	ND (0.16)	
Anthracene	mg/kg	100	100	ND (0.036)	0.0689	ND (0.033)	0.0975	0.0557	0.0623	ND (0.034)	0.299	ND (0.032)	
Atrazine	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Benzaldehyde	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	0.0094 J	ND (0.16)	
Benzo(a)anthracene	mg/kg	1	1	0.0701	0.256	0.0201 J	0.183	0.151	0.188	ND (0.034)	0.72	0.0144 J	
Benzo(a)pyrene	mg/kg	1	1	0.0556	0.218	ND (0.033)	0.164	0.14	0.18	ND (0.034)	0.673	0.0147 J	
Benzo(b)fluoranthene	mg/kg	1	1	0.0727	0.279	0.0197 J	0.207	0.189	0.232	ND (0.034)	0.828	0.0198 J	
Benzo(g,h,i)perylene	mg/kg	100	100	0.0428	0.142	ND (0.033)	0.106	0.1	0.123	ND (0.034)	0.444	ND (0.032)	
Benzo(k)fluoranthene	mg/kg	3.9	0.8	0.0265 J	0.104	ND (0.033)	0.0574	0.0516	0.0685	ND (0.034)	0.273	ND (0.032)	
bis(2-Chloroethoxy)methane	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
bis(2-Chloroethyl)ether	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
bis(2-Ethylhexyl)phthalate	mg/kg	NS	NS	0.0333 J	0.0606 J	0.0182 J	0.0323 J	0.0085 J	0.0433 J	ND (0.068)	0.0942	ND (0.064)	
Butyl benzyl phthalate	mg/kg	NS	NS	ND (0.072)	0.0388 J	0.0232 J	0.0183 J	0.0795	0.0109 J	ND (0.068)	ND (0.07)	ND (0.064)	
Caprolactam	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Carbazole	mg/kg	NS	NS	0.0068 J	0.0268 J	ND (0.066)	0.0313 J	0.0207 J	0.0236 J	ND (0.068)	0.0863	ND (0.064)	
Chrysene	mg/kg	3.9	1	0.0644	0.234	0.0164 J	0.17	0.144	0.192	ND (0.034)	0.675	0.0128 J	
Dibenzo(a,h)anthracene	mg/kg	0.33	0.33	ND (0.036)	0.0375	ND (0.033)	0.025 J	0.0226 J	0.0312 J	ND (0.034)	0.0961	ND (0.032)	
Dibenzofuran	mg/kg	59	7	ND (0.072)	0.0156 J	ND (0.066)	0.0256 J	ND (0.07)	0.0153 J	ND (0.068)	0.0557 J	ND (0.064)	
Diethyl phthalate	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Dimethyl phthalate	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Di-n-butyl phthalate	mg/kg	NS	NS	ND (0.072)	0.0257 J	ND (0.066)	ND (0.071)	ND (0.07)	0.0089 J	ND (0.068)	0.0083 J	ND (0.064)	
Di-n-octyl phthalate	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Fluoranthene	mg/kg	100	100	0.143	0.516	0.0342	0.461	0.325	0.431	ND (0.034)	1.72	0.0221 J	
Fluorene	mg/kg	100	30	ND (0.036)	ND (0.035)	ND (0.033)	0.0484	0.019 J	ND (0.037)	ND (0.034)	0.0848	ND (0.032)	
Hexachlorobenzene	mg/kg	1.2	0.33	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Hexachlorobutadiene	mg/kg	NS	NS	ND (0.036)	ND (0.035)	ND (0.033)	ND (0.035)	ND (0.035)	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.032)	
Hexachlorocyclopentadiene	mg/kg	NS	NS	ND (0.36)	ND (0.35)	ND (0.33)	ND (0.35)	ND (0.35)	ND (0.37)	ND (0.34)	ND (0.35)	ND (0.32)	
Hexachloroethane	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	0.5	0.0348 J	0.112	ND (0.033)	0.0846	0.0768	0.0949	ND (0.034)	0.367	ND (0.032)	
Isophorone	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Naphthalene	mg/kg	100	12	ND (0.036)	0.0283 J	ND (0.033)	0.666	0.0461	0.022 J	ND (0.034)	0.0406	ND (0.032)	
Nitrobenzene	mg/kg	15	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
N-Nitroso-di-n-propylamine	mg/kg	NS	NS	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
N-Nitrosodiphenylamine	mg/kg	NS	NS	ND (0.18)	ND (0.17)	ND (0.17)	ND (0.18)	ND (0.17)	ND (0.19)	ND (0.17)	ND (0.17)	ND (0.16)	
Pentachlorophenol	mg/kg	6.7	0.8	ND (0.14)	ND (0.14)	ND (0.13)	ND (0.14)	ND (0.14)	ND (0.15)	ND (0.14)	ND (0.14)	ND (0.13)	
Phenanthrene	mg/kg	100	100	0.06	0.211	0.0165 J	0.324	0.228	0.173	ND (0.034)	1	ND (0.032)	
Phenol	mg/kg	100	0.33	ND (0.072)	ND (0.07)	ND (0.066)	ND (0.071)	ND (0.07)	ND (0.074)	ND (0.068)	ND (0.07)	ND (0.064)	
Pyrene	mg/kg	100	100	0.121	0.482	0.0288 J	0.354	0.274	0.336	ND (0.034)	1.54	0.0207 J	
Total TIC, Semi-Volatile	mg/kg	NS	NS	0.2 J	2.21 J	0.14 J	45.95 J	13.05 J	2.6 J	0	9.33 J	0	

NOTES:

- Results are measured in mg/kg.
- Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
- Sample Depth is reported in feet below ground surface.

	= concentration exceeds USCO
	= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.

USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).

RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).

mg/kg = Milligrams per kilogram

ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	R1-SB-01 (2.5-3.0)	R1-SB-01 (7.5-8.0)	R1-SB-01 (12.5-13.0)	R1-SB-01 (17.5-18.0)	R1-SB-02 (2.5-3.0)	R1-SB-02 (7.5-8.0)	R1-SB-02 (12.5-13.0)	R1-SB-02 (17.5-18.0)	R1-SB-03 (2.5-3.0)	R1-SB-03 (7.5-8.0)	R1-SB-03 (12.5-13.0)	R1-SB-03 (17.5-18.0)
Lab Order:				JE16734-2	JE16734-3	JE16734-4	JE16734-5	JE16734-6	JE16734-7	JE16734-8	JE16734-9	JE16734-10	JE16734-11	JE16734-12	JE16734-13
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PESTICIDES (SW846 8081B)															
4,4'-DDD	mg/kg	13	0.0033	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
4,4'-DDE	mg/kg	8.9	0.0033	0.00072	ND (0.00065)	ND (0.00067)	ND (0.00065)	0.0068	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.0079	ND (0.00063)	ND (0.00066)	ND (0.00066)
4,4'-DDT	mg/kg	7.9	0.0033	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	0.0014	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.002	ND (0.00063)	ND (0.00066)	ND (0.00066)
Aldrin	mg/kg	0.097	0.005	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	0.0019	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.0428	ND (0.00063)	ND (0.00066)	ND (0.00066)
alpha-BHC	mg/kg	0.48	0.02	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
alpha-Chlordane	mg/kg	4.2	0.094	0.0019	ND (0.00065)	ND (0.00067)	0.00054 J	0.0133	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.01	ND (0.00063)	ND (0.00066)	ND (0.00066)
beta-BHC	mg/kg	0.36	0.036	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
delta-BHC	mg/kg	100	0.04	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
Dieldrin	mg/kg	0.2	0.005	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	0.0043	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.0164	ND (0.00063)	ND (0.00066)	ND (0.00066)
Endosulfan sulfate	mg/kg	24	2.4	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
Endosulfan-I	mg/kg	24	2.4	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
Endosulfan-II	mg/kg	24	2.4	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
Endrin	mg/kg	11	0.014	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
Endrin aldehyde	mg/kg	NS	NS	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	ND (0.00077)	ND (0.00063)	ND (0.00066)	ND (0.00066)
Endrin ketone	mg/kg	NS	NS	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	0.00073 J	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.0016	ND (0.00063)	ND (0.00066)	ND (0.00066)
gamma-BHC (Lindane)	mg/kg	1.3	0.1	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	ND (0.00074)	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.00091	ND (0.00063)	ND (0.00066)	ND (0.00066)
gamma-Chlordane	mg/kg	NS	NS	0.0024	ND (0.00065)	ND (0.00067)	0.00063 J	0.0138	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.0117	ND (0.00063)	ND (0.00066)	ND (0.00066)
Heptachlor	mg/kg	2.1	0.042	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	0.0016	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.0013	ND (0.00063)	ND (0.00066)	ND (0.00066)
Heptachlor epoxide	mg/kg	NS	NS	ND (0.00065)	ND (0.00065)	ND (0.00067)	ND (0.00065)	0.0014	ND (0.00064)	ND (0.00062)	ND (0.00067)	0.00069 J	ND (0.00063)	ND (0.00066)	ND (0.00066)
Methoxychlor	mg/kg	NS	NS	ND (0.0013)	ND (0.0013)	ND (0.0013)	ND (0.0013)	ND (0.0015)	ND (0.0013)	ND (0.0012)	ND (0.0013)	ND (0.0015)	ND (0.0013)	ND (0.0013)	ND (0.0013)
Toxaphene	mg/kg	NS	NS	ND (0.016)	ND (0.016)	ND (0.017)	ND (0.016)	ND (0.018)	ND (0.016)	ND (0.015)	ND (0.017)	ND (0.019)	ND (0.016)	ND (0.016)	ND (0.017)

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-04 (1-1.5)	RI-SB-04 (8.5-9)	RI-SB-04 (13.5-14)	RI-SB-04 (18-18.5)	R1-SB-05 (2.5-3.0)	R1-SB-05 (7.5-8.0)	R1-SB-05 (12.5-13.0)	R1-SB-05 (17.5-18.0)	R1-SB-06 (2.5-3.0)	R1-SB-06 (7.5-8.0)	R1-SB-06 (12.5-13.0)	R1-SB-06 (17.5-18.0)
Lab Order:				JE17019-38	JE17019-37	JE17019-35	JE17019-36	JE16734-14	JE16734-15	JE16734-16	JE16734-17	JE16734-18	JE16734-19	JE16734-20	JE16734-21
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PESTICIDES (SW846 8081B)															
4,4'-DDD	mg/kg	13	0.0033	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
4,4'-DDE	mg/kg	8.9	0.0033	0.0038	ND (0.00068)	ND (0.00068)	ND (0.00067)	0.0011	ND (0.00061)	ND (0.00064)	ND (0.00061)	0.0073	ND (0.00064)	ND (0.00066)	ND (0.00067)
4,4'-DDT	mg/kg	7.9	0.0033	0.0022	ND (0.00068)	ND (0.00068)	ND (0.00067)	0.0049	ND (0.00061)	ND (0.00064)	ND (0.00061)	0.00088	ND (0.00064)	ND (0.00066)	ND (0.00067)
Aldrin	mg/kg	0.097	0.005	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
alpha-BHC	mg/kg	0.48	0.02	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
alpha-Chlordane	mg/kg	4.2	0.094	0.0049	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	0.0061	ND (0.00064)	ND (0.00066)	ND (0.00067)
beta-BHC	mg/kg	0.36	0.036	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
delta-BHC	mg/kg	100	0.04	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
Dieldrin	mg/kg	0.2	0.005	0.0019	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	0.001	ND (0.00064)	ND (0.00066)	ND (0.00067)
Endosulfan sulfate	mg/kg	24	2.4	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
Endosulfan-I	mg/kg	24	2.4	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
Endosulfan-II	mg/kg	24	2.4	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
Endrin	mg/kg	11	0.014	0.00061 J	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
Endrin aldehyde	mg/kg	NS	NS	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
Endrin ketone	mg/kg	NS	NS	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
gamma-BHC (Lindane)	mg/kg	1.3	0.1	0.001	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
gamma-Chlordane	mg/kg	NS	NS	0.0037	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	0.0072	ND (0.00064)	ND (0.00066)	ND (0.00067)
Heptachlor	mg/kg	2.1	0.042	ND (0.00067)	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	0.00092	ND (0.00064)	ND (0.00066)	ND (0.00067)
Heptachlor epoxide	mg/kg	NS	NS	0.0013	ND (0.00068)	ND (0.00068)	ND (0.00067)	ND (0.0008)	ND (0.00061)	ND (0.00064)	ND (0.00061)	ND (0.00076)	ND (0.00064)	ND (0.00066)	ND (0.00067)
Methoxychlor	mg/kg	NS	NS	ND (0.0013)	ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0016)	ND (0.0012)	ND (0.0013)	ND (0.0012)	ND (0.0015)	ND (0.0013)	ND (0.0013)	ND (0.0013)
Toxaphene	mg/kg	NS	NS	ND (0.017)	ND (0.017)	ND (0.017)	ND (0.017)	ND (0.02)	ND (0.015)	ND (0.016)	ND (0.015)	ND (0.019)	ND (0.016)	ND (0.017)	ND (0.017)

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO
= concentration exceeds RRSCO

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).
mg/kg = Milligrams per kilogram
ND = Non-Detect

TABLE 5.1
SUMMARY OF SOIL SAMPLING RESULTS—PESTICIDES

Sample ID:				R1-SB-07 (2.5-3.0)	R1-SB-07 (7.5-8.0)	R1-SB-07 (12.5-13.0)	R1-SB-07 (17.5-18.0)	R1-SB-08 (2.5-3.0)	R1-SB-08 (7.5-8.0)	R1-SB-08 (12.5-13.0)	R1-SB-08 (17.5-18.0)	RI-SB-09 (2.5-3)	RI-SB-09 (7.5-8)	RI-SB-09 (12-12.5)	RI-SB-09 (17-17.5)
Lab Order:	UNITS	NY RRSCO	NY UUSCO	JE16734-22	JE16734-23	JE16734-24	JE16734-25	JE16734-26	JE16734-27	JE16734-28	JE16734-29	JE17019-2	JE17019-4	JE17019-3	JE17019-1
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PESTICIDES (SW846 8081B)															
4,4'-DDD	mg/kg	8.9	0.0033	0.0012	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	0.0013	ND (0.00066)	ND (0.00069)
4,4'-DDE	mg/kg	13	0.0033	0.0122	ND (0.00064)	0.00094	ND (0.00065)	0.0099	ND (0.00063)	0.0012	ND (0.00068)	0.0075	0.0099	ND (0.00066)	0.0062
4,4'-DDT	mg/kg	7.9	0.0033	0.0029	0.00072	0.00097	ND (0.00065)	0.0018	ND (0.00063)	ND (0.0007)	0.00069	0.0023	0.0034	ND (0.00066)	0.001
Aldrin	mg/kg	0.097	0.005	0.0054	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	0.0016	0.0024	ND (0.00066)	ND (0.00069)
alpha-BHC	mg/kg	0.48	0.02	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
alpha-Chlordane	mg/kg	4.2	0.094	0.0255	ND (0.00064)	0.0027	0.00075	0.0087	ND (0.00063)	ND (0.0007)	ND (0.00068)	0.0119	0.0302	ND (0.00066)	0.0042
beta-BHC	mg/kg	0.36	0.036	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
delta-BHC	mg/kg	100	0.04	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
Dieldrin	mg/kg	0.2	0.005	0.0062	ND (0.00064)	0.00093	ND (0.00065)	0.0022	ND (0.00063)	ND (0.0007)	ND (0.00068)	0.0028	0.0069	ND (0.00066)	0.001
Endosulfan sulfate	mg/kg	24	2.4	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
Endosulfan-I	mg/kg	24	2.4	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
Endosulfan-II	mg/kg	24	2.4	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
Endrin	mg/kg	11	0.014	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	0.0021	ND (0.00066)	ND (0.00069)
Endrin aldehyde	mg/kg	NS	NS	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
Endrin ketone	mg/kg	NS	NS	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	ND (0.00075)	ND (0.00071)	ND (0.00066)	ND (0.00069)
gamma-BHC (Lindane)	mg/kg	1.3	0.1	ND (0.00072)	ND (0.00064)	ND (0.00067)	ND (0.00065)	ND (0.00073)	ND (0.00063)	ND (0.0007)	ND (0.00068)	0.00096	ND (0.00071)	ND (0.00066)	ND (0.00069)
gamma-Chlordane	mg/kg	NS	NS	0.0214	ND (0.00064)	0.0021	0.00045 J	0.0081	ND (0.00063)	ND (0.0007)	ND (0.00068)	0.0117	0.0242	ND (0.00066)	0.0041
Heptachlor	mg/kg	2.1	0.042	0.0025	ND (0.00064)	ND (0.00067)	ND (0.00065)	0.0018	ND (0.00063)	ND (0.0007)	ND (0.00068)	0.0011	0.0012	ND (0.00066)	ND (0.00069)
Heptachlor epoxide	mg/kg	NS	NS	0.0017	ND (0.00064)	0.00049 J	ND (0.00065)	0.0019	ND (0.00063)	ND (0.0007)	ND (0.00068)	0.002	0.0023	ND (0.00066)	0.00091
Methoxychlor	mg/kg	NS	NS	ND (0.0014)	ND (0.0013)	ND (0.0013)	ND (0.0013)	ND (0.0015)	ND (0.0013)	ND (0.0014)	ND (0.0014)	ND (0.0015)	ND (0.0014)	ND (0.0013)	ND (0.0014)
Toxaphene	mg/kg	NS	NS	ND (0.018)	ND (0.016)	ND (0.017)	ND (0.016)	ND (0.018)	ND (0.016)	ND (0.017)	ND (0.017)	ND (0.019)	ND (0.018)	ND (0.017)	ND (0.017)

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-10 (4-4.5)	RI-SB-10 (6.5-7)	RI-SB-10 (11-11.5)	RI-SB-10 (19-19.5)	RI-SB-11 (0.5-1)	RI-SB-11 (5-5.5)	RI-SB-11 (10-10.5)	RI-SB-11 (15-15.5)	RI-SB-12 (2.5-3.0)	RI-SB-12 (7.5-8.0)	RI-SB-12 (11-11.5)	RI-SB-12 (17.5-18)
Lab Order:				JE17019-28	JE17019-30	JE17019-31	JE17019-29	JE17019-39	JE17019-41	JE17019-40	JE16734-30	JE16734-31	JE17104-7	JE17104-8	
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/14/2025	8/14/2025	
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
PESTICIDES (SW846 8081B)															
4,4'-DDD	mg/kg	13	0.0033	0.00074	ND (0.00072)	ND (0.00068)	ND (0.00068)	0.0013	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
4,4'-DDE	mg/kg	8.9	0.0033	0.0158	0.0101	ND (0.00068)	ND (0.00068)	0.0016	0.0111	0.0013	ND (0.00066)	ND (0.00069)	0.0029	ND (0.00064)	ND (0.00064)
4,4'-DDT	mg/kg	7.9	0.0033	0.005	0.0022	ND (0.00068)	ND (0.00068)	0.0039	0.0035	0.00096	ND (0.00066)	0.0013	0.00065 J	ND (0.00064)	ND (0.00064)
Aldrin	mg/kg	0.097	0.005	0.0012	0.00078	ND (0.00068)	ND (0.00068)	ND (0.00065)	0.0038	0.0017	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
alpha-BHC	mg/kg	0.48	0.02	ND (0.00072)	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
alpha-Chlordane	mg/kg	4.2	0.094	0.03	0.0241	ND (0.00068)	ND (0.00068)	0.0047	0.0333	0.0038	ND (0.00066)	0.0025	0.0048	ND (0.00064)	ND (0.00064)
beta-BHC	mg/kg	0.36	0.036	ND (0.00072)	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
delta-BHC	mg/kg	100	0.04	0.0015	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
Dieldrin	mg/kg	0.2	0.005	0.0057	0.0041	ND (0.00068)	ND (0.00068)	0.0014	0.0071	0.001	ND (0.00066)	ND (0.00069)	0.0011	ND (0.00064)	ND (0.00064)
Endosulfan sulfate	mg/kg	24	2.4	ND (0.00072)	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
Endosulfan-I	mg/kg	24	2.4	ND (0.00072)	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
Endosulfan-II	mg/kg	24	2.4	ND (0.00072)	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
Endrin	mg/kg	11	0.014	0.00096	ND (0.00072)	ND (0.00068)	ND (0.00068)	0.0017	0.002	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
Endrin aldehyde	mg/kg	NS	NS	ND (0.00072)	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
Endrin ketone	mg/kg	NS	NS	ND (0.00072)	ND (0.00072)	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
gamma-BHC (Lindane)	mg/kg	1.3	0.1	0.001	0.0011	ND (0.00068)	ND (0.00068)	ND (0.00065)	ND (0.00072)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
gamma-Chlordane	mg/kg	NS	NS	0.0286	0.021	ND (0.00068)	ND (0.00068)	0.0023	0.025	0.0031	ND (0.00066)	0.0019	0.0045	ND (0.00064)	ND (0.00064)
Heptachlor	mg/kg	2.1	0.042	0.0035	0.0035	ND (0.00068)	ND (0.00068)	ND (0.00065)	0.0042	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00069)	ND (0.00064)	ND (0.00064)
Heptachlor epoxide	mg/kg	NS	NS	0.0047	0.0026	ND (0.00068)	ND (0.00068)	0.00073	0.0025	ND (0.00072)	ND (0.00066)	0.00073	0.00078	ND (0.00064)	ND (0.00064)
Methoxychlor	mg/kg	NS	NS	ND (0.0014)	ND (0.0014)	ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0013)
Toxaphene	mg/kg	NS	NS	ND (0.018)	ND (0.018)	ND (0.017)	ND (0.017)	ND (0.016)	ND (0.018)	ND (0.018)	ND (0.017)	ND (0.017)	ND (0.017)	ND (0.016)	ND (0.016)

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO
= concentration exceeds RRSCO

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
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mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	R1-SB-13 (2.5-3.0)	R1-SB-13 (7.5-8.0)	R1-SB-13 (12.5-13.0)	R1-SB-13 (17.5-18.0)	RI-SB-14 (2-2.5)	RI-SB-14 (6-6.5)	RI-SB-14 (10.5-11)	RI-SB-14 (16-16.5)	RI-SB-15 (4.5-5)	RI-SB-15 (7-7.5)	RI-SB-15 (10-10.5)	RI-SB-15 (16-16.5)	
Lab Order:				JE16734-32	JE16734-33	JE16734-34	JE16734-35	JE17019-9	JE17019-8	JE17019-9	JE17019-10	JE16953-11	JE16953-12	JE17209-5	JE17209-6	
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/12/2025	8/12/2025	8/15/2025	8/15/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PESTICIDES (SW846 8081B)																8.9
4,4'-DDD	mg/kg	13	0.0033	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
4,4'-DDE	mg/kg	8.9	0.0033	0.0032	0.0021	ND (0.00066)	ND (0.00069)	0.0583	0.0046	0.0026	ND (0.00068)	0.0029	0.0037	ND (0.0007)	ND (0.00068)	
4,4'-DDT	mg/kg	7.9	0.0033	0.00088	0.0012	0.00092	ND (0.00069)	0.0059	0.0022	0.0056	ND (0.00068)	0.00078	0.00085	ND (0.0007)	ND (0.00068)	
Aldrin	mg/kg	0.097	0.005	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
alpha-BHC	mg/kg	0.48	0.02	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
alpha-Chlordane	mg/kg	4.2	0.094	0.0057	0.0035	ND (0.00066)	ND (0.00069)	0.0157	0.0074	ND (0.00069)	ND (0.00068)	0.0043	0.0057	ND (0.0007)	ND (0.00068)	
beta-BHC	mg/kg	0.36	0.036	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
delta-BHC	mg/kg	100	0.04	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Dieldrin	mg/kg	0.2	0.005	0.0015	0.00082	ND (0.00066)	ND (0.00069)	0.0021	0.0018	ND (0.00069)	ND (0.00068)	0.001	0.0011	ND (0.0007)	ND (0.00068)	
Endosulfan sulfate	mg/kg	24	2.4	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Endosulfan-I	mg/kg	24	2.4	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Endosulfan-II	mg/kg	24	2.4	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Endrin	mg/kg	11	0.014	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	0.0012	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Endrin aldehyde	mg/kg	NS	NS	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Endrin ketone	mg/kg	NS	NS	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
gamma-BHC (Lindane)	mg/kg	1.3	0.1	ND (0.00071)	ND (0.00072)	ND (0.00066)	ND (0.00069)	ND (0.00074)	ND (0.00072)	ND (0.00069)	ND (0.00068)	0.00089	0.00081	ND (0.0007)	ND (0.00068)	
gamma-Chlordane	mg/kg	NS	NS	0.0051	0.0017	ND (0.00066)	ND (0.00069)	0.0163	0.0069	ND (0.00069)	ND (0.00068)	0.0044	0.0068	ND (0.0007)	ND (0.00068)	
Heptachlor	mg/kg	2.1	0.042	0.0074	ND (0.00072)	ND (0.00066)	ND (0.00069)	0.0035	0.00076	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Heptachlor epoxide	mg/kg	NS	NS	0.001	0.00083	ND (0.00066)	ND (0.00069)	0.0013	0.0016	ND (0.00069)	ND (0.00068)	ND (0.00073)	ND (0.00069)	ND (0.0007)	ND (0.00068)	
Methoxychlor	mg/kg	NS	NS	ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0014)	ND (0.0015)	ND (0.0014)	ND (0.0014)	ND (0.0014)	ND (0.0015)	ND (0.0014)	ND (0.0014)	ND (0.0014)	
Toxaphene	mg/kg	NS	NS	ND (0.018)	ND (0.018)	ND (0.017)	ND (0.017)	ND (0.018)	ND (0.018)	ND (0.017)	ND (0.017)	ND (0.018)	ND (0.017)	ND (0.017)	ND (0.017)	

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-15N (7-7.5)	RI-SB-15S (7-7.5)	RI-SB-15E (7-7.5)	RI-SB-15W (7-7.5)	RI-SB-16 (0.5-1)	RI-SB-16 (8.5-9)	RI-SB-16 (11.5-12)	RI-SB-16 (15.5-16)	RI-SB-16N (15.5-16)	RI-SB-16S (15.5-16)	RI-SB-16E (15.5-16)	RI-SB-16W (15.5-16)		
Lab Order:				JE16953-14R	JE16953-16R	JE16953-20R	JE16953-22R	JE16953-1	JE16953-2	JE17104-13	JE17104-14	JE17209-2	JE16953-24R	JE17209-4	JE17104-16R		
Date:				8/12/2025	8/12/2025	8/12/2025	8/12/2025	8/12/2025	8/12/2025	8/14/2025	8/14/2025	8/15/2025	8/12/2025	8/15/2025	8/15/2025	8/14/2025	
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PESTICIDES (SW846 8081B)																	
4,4'-DDD	mg/kg	13	0.0033					ND (0.0007)	0.0007 J	ND (0.00067)	ND (0.00063)						
4,4'-DDE	mg/kg	8.9	0.0033	0.0036	0.0022	0.0041	0.0063	0.0081	0.00092	ND (0.00067)	ND (0.00063)	ND (0.00072)	ND (0.00069)	ND (0.00066)	ND (0.00067)		
4,4'-DDT	mg/kg	7.9	0.0033					0.0022	0.0016	ND (0.00067)	0.00083						
Aldrin	mg/kg	0.097	0.005					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
alpha-BHC	mg/kg	0.48	0.02					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
alpha-Chlordane	mg/kg	4.2	0.094					0.0111	ND (0.00071)	ND (0.00067)	ND (0.00063)						
beta-BHC	mg/kg	0.36	0.036					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
delta-BHC	mg/kg	100	0.04					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Dieldrin	mg/kg	0.2	0.005					0.0028	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Endosulfan sulfate	mg/kg	24	2.4					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Endosulfan-I	mg/kg	24	2.4					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Endosulfan-II	mg/kg	24	2.4					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Endrin	mg/kg	11	0.014					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Endrin aldehyde	mg/kg	NS	NS					0.0012	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Endrin ketone	mg/kg	NS	NS					ND (0.0007)	ND (0.00071)	ND (0.00067)	ND (0.00063)						
gamma-BHC (Lindane)	mg/kg	1.3	0.1					0.001	ND (0.00071)	ND (0.00067)	ND (0.00063)						
gamma-Chlordane	mg/kg	NS	NS					0.011	0.00039 J	ND (0.00067)	ND (0.00063)						
Heptachlor	mg/kg	2.1	0.042					0.00081	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Heptachlor epoxide	mg/kg	NS	NS					0.002	ND (0.00071)	ND (0.00067)	ND (0.00063)						
Methoxychlor	mg/kg	NS	NS					ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0013)						
Toxaphene	mg/kg	NS	NS					ND (0.018)	ND (0.018)	ND (0.017)	ND (0.016)						

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO
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mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-17 (3.5-4)	RI-SB-17 (5.5-6)	RI-SB-17 (12.5-13)	RI-SB-17 (17.5-18)	RI-SB-18 (2.5-3)	RI-SB-18 (7.5-8)	RI-SB-18 (12.5-13)	RI-SB-18 (17.5-18)	DUP(1)2025-08-13	DUP(2)2025-08-13	DUP(3)2025-08-13	DUP(4)2025-08-13	
Lab Order:				JE17019-6	JE17019-5	JE17209-13	JE17209-14	JE17282-2	JE17282-3	JE17282-4	JE17282-5	JE17019-11	JE17019-24	JE17019-25	JE17019-26	
Date:				8/13/2025	8/13/2025	8/15/2025	8/15/2025	8/18/2025	8/18/2025	8/18/2025	8/18/2025	8/18/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PESTICIDES (SW846 8081B)																
4,4'-DDD	mg/kg	13	0.0033	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	0.0084	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
4,4'-DDE	mg/kg	8.9	0.0033	0.0052	0.0046	ND (0.00064)	ND (0.00067)	0.004	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0085	0.0269	0.0012	0.0059	
4,4'-DDT	mg/kg	7.9	0.0033	0.0014	0.0018	ND (0.00064)	ND (0.00067)	0.00081	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0026	0.0036	0.0017	0.0021	
Aldrin	mg/kg	0.097	0.005	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0011	0.001	ND (0.00069)	ND (0.00071)	
alpha-BHC	mg/kg	0.48	0.02	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
alpha-Chlordane	mg/kg	4.2	0.094	0.0073	0.0092	ND (0.00064)	ND (0.00067)	0.0047	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0176	0.0111	ND (0.00069)	0.0125	
beta-BHC	mg/kg	0.36	0.036	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
delta-BHC	mg/kg	100	0.04	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
Dieldrin	mg/kg	0.2	0.005	0.002	0.0039	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0041	0.0047	ND (0.00069)	0.0032	
Endosulfan sulfate	mg/kg	24	2.4	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
Endosulfan-I	mg/kg	24	2.4	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
Endosulfan-II	mg/kg	24	2.4	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
Endrin	mg/kg	11	0.014	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	0.001	
Endrin aldehyde	mg/kg	NS	NS	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
Endrin ketone	mg/kg	NS	NS	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
gamma-BHC (Lindane)	mg/kg	1.3	0.1	ND (0.00072)	ND (0.00073)	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	ND (0.00072)	ND (0.00072)	ND (0.00069)	ND (0.00071)	
gamma-Chlordane	mg/kg	NS	NS	0.0072	0.0084	ND (0.00064)	ND (0.00067)	0.0061	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0152	0.0112	ND (0.00069)	0.0113	
Heptachlor	mg/kg	2.1	0.042	ND (0.00072)	0.0012	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0014	0.0027	ND (0.00069)	0.00098	
Heptachlor epoxide	mg/kg	NS	NS	0.0013	0.0014	ND (0.00064)	ND (0.00067)	ND (0.00069)	ND (0.00069)	ND (0.00065)	ND (0.00067)	0.0014	0.0012	ND (0.00069)	0.0014	
Methoxychlor	mg/kg	NS	NS	ND (0.0014)	ND (0.0015)	ND (0.0013)	ND (0.0013)	ND (0.0014)	ND (0.0014)	ND (0.0013)	ND (0.0013)	ND (0.0014)	ND (0.0014)	ND (0.0014)	ND (0.0014)	
Toxaphene	mg/kg	NS	NS	ND (0.018)	ND (0.018)	ND (0.016)	ND (0.017)	ND (0.017)	ND (0.017)	ND (0.016)	ND (0.017)	ND (0.018)	ND (0.018)	ND (0.017)	ND (0.018)	

Sample ID:	UNITS	NY RRSCO	NY UUSCO	DUP(5)2025-08-13	DUP(6)2025-08-13	DUP(7)2025-08-13	DUP(8)2025-08-13	MS/MSD
Lab Order:				JE17019-27	JE17019-32	JE17019-33	JE17019-34	JE17019-47
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil
PESTICIDES (SW846 8081B)								
4,4'-DDD	mg/kg	13	0.0033	ND (0.0007)	0.0012	ND (0.00066)	ND (0.00072)	ND (0.00064)
4,4'-DDE	mg/kg	8.9	0.0033	ND (0.0007)	0.0167	ND (0.00066)	0.0096	ND (0.00064)
4,4'-DDT	mg/kg	7.9	0.0033	0.0013	0.0065	ND (0.00066)	0.002	ND (0.00064)
Aldrin	mg/kg	0.097	0.005	ND (0.0007)	0.0017	ND (0.00066)	0.0014	ND (0.00064)
alpha-BHC	mg/kg	0.48	0.02	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
alpha-Chlordane	mg/kg	4.2	0.094	ND (0.0007)	0.0379	ND (0.00066)	0.025	ND (0.00064)
beta-BHC	mg/kg	0.36	0.036	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
delta-BHC	mg/kg	100	0.04	ND (0.0007)	0.0011	ND (0.00066)	ND (0.00072)	ND (0.00064)
Dieldrin	mg/kg	0.2	0.005	ND (0.0007)	0.0071	ND (0.00066)	0.0051	ND (0.00064)
Endosulfan sulfate	mg/kg	24	2.4	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
Endosulfan-I	mg/kg	24	2.4	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
Endosulfan-II	mg/kg	24	2.4	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
Endrin	mg/kg	11	0.014	ND (0.0007)	0.0025	ND (0.00066)	0.00071 J	ND (0.00064)
Endrin aldehyde	mg/kg	NS	NS	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
Endrin ketone	mg/kg	NS	NS	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
gamma-BHC (Lindane)	mg/kg	1.3	0.1	ND (0.0007)	ND (0.00074)	ND (0.00066)	ND (0.00072)	ND (0.00064)
gamma-Chlordane	mg/kg	NS	NS	ND (0.0007)	0.0349	ND (0.00066)	0.0229	ND (0.00064)
Heptachlor	mg/kg	2.1	0.042	ND (0.0007)	0.0031	ND (0.00066)	0.003	ND (0.00064)
Heptachlor epoxide	mg/kg	NS	NS	ND (0.0007)	0.0071	ND (0.00066)	0.0017	ND (0.00064)
Methoxychlor	mg/kg	NS	NS	ND (0.0014)	ND (0.0015)	ND (0.0013)	ND (0.0014)	ND (0.0013)
Toxaphene	mg/kg	NS	NS	ND (0.017)	ND (0.018)	ND (0.017)	ND (0.018)	ND (0.016)

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO
= concentration exceeds RRSCO

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).
mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	R1-SB-01 (2.5-3.0)	R1-SB-01 (7.5-8.0)	R1-SB-01 (12.5-13.0)	R1-SB-01 (17.5-18.0)	R1-SB-02 (2.5-3.0)	R1-SB-02 (7.5-8.0)	R1-SB-02 (12.5-13.0)	R1-SB-02 (17.5-18.0)	R1-SB-03 (2.5-3.0)	R1-SB-03 (7.5-8.0)	R1-SB-03 (12.5-13.0)	R1-SB-03 (17.5-18.0)
Lab Order:				JE16734-2	JE16734-3	JE16734-4	JE16734-5	JE16734-6	JE16734-7	JE16734-8	JE16734-9	JE16734-10	JE16734-11	JE16734-12	JE16734-13
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)															
Aluminum	mg/kg	NS	NS	6520	2920	3100	2720	7770	3560	2720	2520	9150	3700	2180	3280
Antimony	mg/kg	NS	NS	ND (2.2)	ND (2.0)	ND (2.0)	ND (2.1)	ND (2.2)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.3)	ND (2.1)	ND (2.0)	ND (2.1)
Arsenic	mg/kg	16	13	4.7	ND (2.0)	2.9	2.1	4.4	ND (2.0)	ND (2.0)	ND (2.0)	7.6	ND (2.1)	ND (2.0)	ND (2.1)
Barium	mg/kg	400	350	48.5	20.9	21.2	ND (21)	58.2	24.6	21.6	20.6	94.2	ND (21)	ND (20)	21.8
Beryllium	mg/kg	72	7.2	0.36	0.24	ND (0.20)	ND (0.21)	0.49	0.24	ND (0.20)	ND (0.20)	0.62	0.26	ND (0.20)	0.21
Cadmium	mg/kg	4.3	2.5	ND (2.7)	ND (0.50)	ND (0.51)	ND (0.51)	ND (2.8)	ND (0.49)	ND (0.50)	ND (0.51)	ND (2.8)	ND (0.52)	ND (0.49)	ND (0.52)
Calcium	mg/kg	NS	NS	66100	ND (500)	13600	10500	64400	2220	ND (500)	849	75900	866	ND (490)	2600
Chromium	mg/kg	NS	NS	18	11.7	18.4	11.6	20.8	11.2	7.2	16.9	17.6	10.4	6.5	17.3
Cobalt	mg/kg	NS	NS	ND (5.4)	ND (5.0)	ND (5.1)	ND (5.1)	ND (5.5)	ND (4.9)	ND (5.0)	ND (5.1)	ND (5.6)	ND (5.2)	ND (4.9)	ND (5.2)
Copper	mg/kg	270	50	16.3	8.8	14.6	7.9	18.2	9.7	7.2	6.8	24.6	9	5.7	11
Iron	mg/kg	NS	NS	10900	12800	9870	8490	9120	14400	12300	9900	9850	14700	9690	14500
Lead	mg/kg	400	63	26.6	2.2	4.7	4.8	36.1	3	ND (2.0)	2	48.4	5.4	ND (2.0)	3.5
Magnesium	mg/kg	NS	NS	7750	1060	1500	1200	6960	1510	924	862	7010	1220	850	1300
Manganese	mg/kg	2000	1600	209	254	158	145	280	257	273	177	384	237	173	255
Mercury	mg/kg	0.81	0.18	0.048	ND (0.028)	ND (0.031)	ND (0.029)	0.044	ND (0.027)	ND (0.032)	ND (0.030)	0.043	ND (0.032)	ND (0.026)	0.046
Nickel	mg/kg	310	30	11.8	7.4	6.8	6.3	13.4	10.2	7.1	6	11.5	9.1	4.9	8.5
Potassium	mg/kg	NS	NS	ND (1100)	ND (1000)	ND (1000)	ND (1000)	ND (1100)	ND (990)	ND (1000)	ND (1000)	ND (1100)	ND (1000)	ND (980)	ND (1000)
Selenium	mg/kg	180	3.9	ND (2.2)	ND (2.0)	ND (2.0)	ND (2.1)	ND (2.2)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.3)	ND (2.1)	ND (2.0)	ND (2.1)
Silver	mg/kg	180	2	ND (0.54)	ND (0.50)	ND (0.51)	ND (0.51)	ND (0.55)	ND (0.49)	ND (0.50)	ND (0.51)	ND (0.56)	ND (0.52)	ND (0.49)	ND (0.52)
Sodium	mg/kg	NS	NS	ND (1100)	ND (1000)	ND (1000)	ND (1000)	ND (1100)	ND (990)	ND (1000)	ND (1000)	ND (1100)	ND (1000)	ND (980)	ND (1000)
Thallium	mg/kg	NS	NS	ND (1.1)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.1)	ND (0.99)	ND (1.0)	ND (1.0)	ND (1.1)	ND (1.0)	ND (0.98)	ND (1.0)
Vanadium	mg/kg	NS	NS	18.8	10.5	12.7	10.9	19.5	10.5	10	9	17.8	13.4	8.4	13.8
Zinc	mg/kg	10000	109	54.2	12.6	20.1	14.9	66.5	15.5	11.7	10.9	94.1	17.5	9.3	16.5

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-04 (1-1.5)	RI-SB-04 (8.5-9)	RI-SB-04 (13.5-14)	RI-SB-04 (18-18.5)	R1-SB-05 (2.5-3.0)	R1-SB-05 (7.5-8.0)	R1-SB-05 (12.5-13.0)	R1-SB-05 (17.5-18.0)	R1-SB-06 (2.5-3.0)	R1-SB-06 (7.5-8.0)	R1-SB-06 (12.5-13.0)	R1-SB-06 (17.5-18.0)
Lab Order:				JE17019-38	JE17019-37	JE17019-35	JE17019-36	JE16734-14	JE16734-15	JE16734-16	JE16734-17	JE16734-18	JE16734-19	JE16734-20	JE16734-21
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)															
Aluminum	mg/kg	NS	NS	6130	2180	3500	3120	5850	3010	3640	2200	6760	4110	2180	3260
Antimony	mg/kg	NS	NS	ND (2.1)	ND (2.1)	ND (2.1)	ND (2.0)	ND (2.4)	ND (2.0)	ND (2.1)	ND (2.1)	ND (2.2)	ND (2.0)	ND (2.1)	ND (2.0)
Arsenic	mg/kg	16	13	3.6	ND (2.1)	ND (2.1)	ND (2.0)	8.9	ND (2.0)	ND (2.1)	ND (2.1)	4.4	2.2	ND (2.1)	ND (2.0)
Barium	mg/kg	400	350	49.9	ND (21)	30.2	ND (20)	142	24.8	38.3	ND (21)	54.8	25	ND (21)	21.1
Beryllium	mg/kg	72	7.2	0.31	ND (0.21)	0.23	ND (0.20)	0.41	0.22	0.23	ND (0.21)	0.36	0.23	ND (0.21)	0.21
Cadmium	mg/kg	4.3	2.5	ND (2.6)	ND (0.51)	ND (0.52)	ND (0.50)	ND (0.60)	ND (0.49)	ND (0.51)	ND (0.53)	ND (2.8)	ND (0.50)	ND (0.53)	ND (0.51)
Calcium	mg/kg	NS	NS	51900	ND (510)	6310	ND (500)	4300	ND (490)	3390	1470	89000	3060	ND (530)	3560
Chromium	mg/kg	NS	NS	21.1	6.2	17.3	7.1	18.2	10.1	17.6	10.7	13.6	10.8	6.4	16.6
Cobalt	mg/kg	NS	NS	ND (5.1)	ND (5.1)	ND (5.2)	ND (5.0)	6	ND (4.9)	5.8	ND (5.3)	ND (5.6)	ND (5.0)	ND (5.3)	ND (5.1)
Copper	mg/kg	270	50	16.4	7.4	13.3	12.3	55	9	13	7.4	24.6	17.2	6.8	10.2
Iron	mg/kg	NS	NS	12300	8680	17600	12800	20300	21100	18200	14300	9810	13000	15800	13000
Lead	mg/kg	400	63	39.2	ND (2.1)	5.8	ND (2.0)	243	ND (3.9)	9.5	2.5	37	28.4	ND (2.1)	7.9
Magnesium	mg/kg	NS	NS	4790	689	1340	826	1330	1080	1380	712	16700	1070	690	1390
Manganese	mg/kg	2000	1600	363	221	494	205	284	327	485	282	187	247	302	209
Mercury	mg/kg	0.81	0.18	0.24	ND (0.028)	ND (0.029)	ND (0.028)	1.5	ND (0.030)	ND (0.032)	ND (0.032)	0.036	0.041	ND (0.029)	ND (0.030)
Nickel	mg/kg	310	30	11.5	6.2	8.8	6.5	12.9	8	9.4	5.4	18.6	9.1	5.4	7.5
Potassium	mg/kg	NS	NS	ND (1000)	ND (1000)	ND (1000)	ND (990)	ND (1200)	ND (980)	ND (1000)	ND (1100)	ND (1100)	ND (1000)	ND (1100)	ND (1000)
Selenium	mg/kg	180	3.9	ND (2.1)	ND (2.1)	ND (2.1)	ND (2.0)	ND (2.4)	ND (3.9)	ND (2.1)	ND (2.1)	ND (2.2)	ND (2.0)	ND (2.1)	ND (2.0)
Silver	mg/kg	180	2	ND (0.51)	ND (0.51)	ND (0.52)	ND (0.50)	ND (0.60)	ND (0.98)	ND (0.51)	ND (0.53)	ND (0.56)	ND (0.50)	ND (0.53)	ND (0.51)
Sodium	mg/kg	NS	NS	ND (1000)	ND (1000)	ND (1000)	ND (990)	ND (1200)	ND (980)	ND (1000)	ND (1100)	ND (1100)	ND (1000)	ND (1100)	ND (1000)
Thallium	mg/kg	NS	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (0.99)	ND (1.2)	ND (2.0)	ND (1.0)	ND (1.1)	ND (1.1)	ND (1.0)	ND (1.1)	ND (1.0)
Vanadium	mg/kg	NS	NS	20	7.7	17.3	10.1	26	16.2	15	11.3	17.8	13.7	10.8	11.6
Zinc	mg/kg	10000	109	423	9.7	23.9	11.4	154	14	27	13.4	57.2	40.8	10.7	19.1

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO
= concentration exceeds RRSCO

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
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mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	R1-SB-07 (2.5-3.0)	R1-SB-07 (7.5-8.0)	R1-SB-07 (12.5-13.0)	R1-SB-07 (17.5-18.0)	R1-SB-08 (2.5-3.0)	R1-SB-08 (7.5-8.0)	R1-SB-08 (12.5-13.0)	R1-SB-08 (17.5-18.0)	RI-SB-09 (2.5-3)	RI-SB-09 (7.5-8)	RI-SB-09 (12-12.5)	RI-SB-09 (17-17.5)
Lab Order:				JE16734-22	JE16734-23	JE16734-24	JE16734-25	JE16734-26	JE16734-27	JE16734-28	JE16734-29	JE17019-2	JE17019-4	JE17019-3	JE17019-1
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)															
Aluminum	mg/kg	NS	NS	5460	4420	3380	2660	5400	3720	2560	3220	7020	6340	3020	5630
Antimony	mg/kg	NS	NS	ND (2.3)	ND (2.0)	ND (2.2)	ND (2.1)	ND (2.2)	ND (2.0)	ND (4.2)	ND (2.1)	ND (2.3)	ND (2.3)	ND (2.0)	ND (2.1)
Arsenic	mg/kg	16	13	6	2.1	ND (2.2)	ND (2.1)	3.6	ND (2.0)	ND (2.1)	ND (2.1)	4.5	5.1	ND (2.0)	2.5
Barium	mg/kg	400	350	56.2	29.4	24.5	ND (21)	46.6	30.8	21.6	21	49.1	69.3	51.6	34.6
Beryllium	mg/kg	72	7.2	0.39	0.24	ND (0.22)	0.24	0.5	0.2	0.27	0.23	0.36	0.37	0.4	0.28
Cadmium	mg/kg	4.3	2.5	ND (2.9)	ND (0.51)	ND (2.7)	ND (0.52)	ND (2.8)	ND (0.50)	ND (0.53)	ND (0.52)	ND (2.9)	ND (2.9)	ND (0.50)	ND (2.6)
Calcium	mg/kg	NS	NS	43000	6250	37800	2520	49700	582	ND (530)	16100	76700	52500	603	42300
Chromium	mg/kg	NS	NS	16.8	11.6	21.3	19.5	13.5	8.2	9	26.4	30.4	19.2	12.4	27.1
Cobalt	mg/kg	NS	NS	ND (5.7)	ND (5.1)	ND (5.4)	ND (5.2)	5.8	ND (5.0)	ND (5.3)	ND (5.2)	ND (5.8)	ND (5.8)	5	ND (5.1)
Copper	mg/kg	270	50	20.3	10.7	10.4	10	44.4	10	8	9.8	22.4	38.1	11.4	20.6
Iron	mg/kg	NS	NS	22100	13000	8910	16600	10500	13900	27800	15700	12000	12600	26800	14500
Lead	mg/kg	400	63	56.2	28.5	16.4	3.6	47.7	12	2.1	4.2	30.8	86.2	3.6	11.2
Magnesium	mg/kg	NS	NS	5600	1300	8220	1050	5750	1170	829	6970	4330	6200	980	3880
Manganese	mg/kg	2000	1600	233	253	146	279	185	240	471	261	204	233	1080	301
Mercury	mg/kg	0.81	0.18	0.12	0.063	0.035	ND (0.031)	0.048	ND (0.028)	ND (0.032)	ND (0.032)	0.037	0.12	ND (0.029)	ND (0.029)
Nickel	mg/kg	310	30	13.6	8.9	6.7	7.8	15.6	7.9	7.2	7.9	13	14.2	9.4	9.6
Potassium	mg/kg	NS	NS	ND (1100)	ND (1000)	ND (1100)	ND (1000)	ND (1100)	ND (1000)	ND (1100)	ND (1000)	ND (1200)	ND (1200)	ND (1000)	ND (1000)
Selenium	mg/kg	180	3.9	ND (2.3)	ND (2.0)	ND (2.2)	ND (2.1)	ND (2.2)	ND (2.0)	ND (4.2)	ND (2.1)	ND (2.3)	ND (2.3)	ND (4.0)	ND (2.1)
Silver	mg/kg	180	2	ND (0.57)	ND (0.51)	ND (0.54)	ND (0.52)	ND (0.55)	ND (0.50)	ND (1.1)	ND (0.52)	ND (0.58)	ND (0.58)	ND (1.0)	ND (0.51)
Sodium	mg/kg	NS	NS	ND (1100)	ND (1000)	ND (1100)	ND (1000)	ND (1100)	ND (1000)	ND (1100)	ND (1000)	ND (1200)	ND (1200)	ND (1000)	ND (1000)
Thallium	mg/kg	NS	NS	ND (1.1)	ND (1.0)	ND (1.1)	ND (1.0)	ND (1.1)	ND (1.0)	ND (2.1)	ND (1.0)	ND (1.2)	ND (1.2)	ND (2.0)	ND (1.0)
Vanadium	mg/kg	NS	NS	18.1	12.9	11.5	14.6	15.6	11.4	16	14.2	20.8	19.8	17.9	29.4
Zinc	mg/kg	10000	109	236	67.4	33	19.8	369	18.8	16.5	18.3	375	396	27.7	89.3

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-10 (4-4.5)	RI-SB-10 (6.5-7)	RI-SB-10 (11-11.5)	RI-SB-10 (19-19.5)	RI-SB-11 (0.5-1)	RI-SB-11 (5-5.5)	RI-SB-11 (10-10.5)	RI-SB-11 (15-15.5)	R1-SB-12 (2.5-3.0)	R1-SB-12 (7.5-8.0)	RI-SB-12 (11-11.5)	RI-SB-12 (17.5-18)
Lab Order:				JE17019-28	JE17019-30	JE17019-31	JE17019-29	JE17019-42	JE17019-41	JE17019-39	JE17019-40	JE16734-30	JE16734-31	JE17104-7	JE17104-8
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/14/2025	8/14/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)															
Aluminum	mg/kg	NS	NS	5910	5760	2610	2280	5360	5520	5460	2960	8410	6240	2920	3260
Antimony	mg/kg	NS	NS	ND (2.2)	ND (2.3)	ND (2.1)	ND (2.1)	ND (2.1)	ND (2.2)	ND (2.4)	ND (2.1)	ND (2.3)	ND (2.1)	ND (2.1)	ND (2.1)
Arsenic	mg/kg	16	13	5.6	4.9	ND (2.1)	ND (2.1)	4.8	5.8	2.5	ND (2.1)	3.1	3.6	ND (2.1)	ND (2.1)
Barium	mg/kg	400	350	62.5	52	ND (21)	21.2	69.2	59.3	44.1	21.1	62.2	41.2	ND (21)	26.1
Beryllium	mg/kg	72	7.2	0.31	0.28	ND (0.21)	0.27	0.35	0.27	0.27	ND (0.21)	0.54	0.3	ND (0.32)	ND (0.32)
Cadmium	mg/kg	4.3	2.5	ND (2.8)	ND (2.9)	ND (0.52)	ND (0.53)	ND (2.6)	ND (2.8)	ND (0.59)	ND (0.53)	ND (2.9)	ND (2.7)	ND (0.52)	ND (0.51)
Calcium	mg/kg	NS	NS	57500	53700	ND (520)	ND (530)	39300	54700	15000	928	82200	78400	ND (520)	4010
Chromium	mg/kg	NS	NS	17.7	22.3	7.5	8.3	21.6	22	15.7	22.3	25.3	20.9	7.6	14.8
Cobalt	mg/kg	NS	NS	ND (5.6)	ND (5.7)	ND (5.2)	ND (5.3)	ND (5.3)	ND (5.6)	ND (5.9)	ND (5.3)	ND (5.9)	ND (5.3)	ND (5.2)	ND (5.1)
Copper	mg/kg	270	50	20.1	24.9	9.7	8.2	22.7	22.2	18.4	11	15.8	15.9	6.8	9.2
Iron	mg/kg	NS	NS	8540	9550	13700	16200	13600	9020	13400	14300	10500	11400	14500	15200
Lead	mg/kg	400	63	53.7	49.9	2.2	2.7	96.7	52.3	45.4	2.6	25.9	32	7.4	4.7
Magnesium	mg/kg	NS	NS	6780	6990	745	679	7990	5650	2200	1030	6060	4220	911	1040
Manganese	mg/kg	2000	1600	181	176	307	327	301	182	236	261	329	170	257	278
Mercury	mg/kg	0.81	0.18	0.069	0.053	ND (0.028)	ND (0.031)	0.17	0.07	0.051	ND (0.030)	0.047	0.038	ND (0.028)	ND (0.034)
Nickel	mg/kg	310	30	11.6	11.3	6.5	5.4	12.8	11.2	11.2	7.3	9.6	8.8	6.7	7.7
Potassium	mg/kg	NS	NS	ND (1100)	ND (1100)	ND (1000)	ND (1100)	ND (1100)	ND (1100)	ND (1200)	ND (1100)	ND (1200)	ND (1100)	ND (1000)	ND (1000)
Selenium	mg/kg	180	3.9	ND (2.2)	ND (2.3)	ND (2.1)	ND (2.1)	ND (2.1)	ND (2.2)	ND (2.4)	ND (2.1)	ND (2.3)	ND (2.1)	ND (2.1)	ND (2.1)
Silver	mg/kg	180	2	ND (0.56)	ND (0.57)	ND (0.52)	ND (0.53)	ND (0.53)	ND (0.56)	ND (0.59)	ND (0.53)	ND (0.59)	ND (0.53)	ND (0.52)	ND (0.51)
Sodium	mg/kg	NS	NS	ND (1100)	ND (1100)	ND (1000)	ND (1100)	ND (1100)	ND (1100)	ND (1200)	ND (1100)	ND (1200)	ND (1100)	ND (1000)	ND (1000)
Thallium	mg/kg	NS	NS	ND (1.1)	ND (1.1)	ND (1.0)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.0)	ND (1.0)
Vanadium	mg/kg	NS	NS	16.5	17.6	11.9	11.5	18.3	18.3	18.3	11.7	17.1	18.3	11.4	15.9
Zinc	mg/kg	10000	109	127	68.8	13.1	15.9	105	84.3	113	14	452	1490 ^d	26	22.7

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO
= concentration exceeds RRSCO

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).
mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-12N (7.5-8)	RI-SB-12S (7.5-8)	RI-SB-12E (7.5-8)	RI-SB-12W (7.5-8)	R1-SB-13 (2.5-3.0)	R1-SB-13 (7.5-8.0)	R1-SB-13 (12.5-13.0)	R1-SB-13 (17.5-18.0)	RI-SB-13N (7.5-8)	RI-SB-13S (7.5-8)	RI-SB-13E (7.5-8)	RI-SB-13W (7.5-8)
Lab Order:				JE17104-4R	JE17104-10R	JE17104-30R	JE17104-26R	JE16734-32	JE16734-33	JE16734-34	JE16734-35	JE17104-35R	JE17104-18R	JE17104-39R	JE17104-43R
Date:				8/14/2025	8/14/2025	8/14/2025	8/14/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/14/2025	8/14/2025	8/14/2025	8/14/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)															
Aluminum	mg/kg	NS	NS	-	-	-	-	7260	7480	5540	1980	-	-	-	-
Antimony	mg/kg	NS	NS	-	-	-	-	ND (2.4)	ND (2.2)	ND (2.0)	ND (2.0)	-	-	-	-
Arsenic	mg/kg	16	13	-	-	-	-	3.8	4	2.4	ND (2.0)	-	-	-	-
Barium	mg/kg	400	350	-	-	-	-	56.2	66.5	33.1	ND (20)	-	-	-	-
Beryllium	mg/kg	72	7.2	-	-	-	-	0.4	0.44	0.3	ND (0.20)	-	-	-	-
Cadmium	mg/kg	4.3	2.5	-	-	-	-	ND (3.0)	ND (2.8)	ND (2.5)	ND (0.50)	-	-	-	-
Calcium	mg/kg	NS	NS	-	-	-	-	76000	75600	48900	ND (500)	-	-	-	-
Chromium	mg/kg	NS	NS	-	-	-	-	28.6	30.3	11.3	5.1	-	-	-	-
Cobalt	mg/kg	NS	NS	-	-	-	-	ND (5.9)	ND (5.6)	ND (5.1)	ND (5.0)	-	-	-	-
Copper	mg/kg	270	50	-	-	-	-	15.5	19.9	16	4.4	-	-	-	-
Iron	mg/kg	NS	NS	-	-	-	-	11500	12700	17900	7520	-	-	-	-
Lead	mg/kg	400	63	-	-	-	-	40.8	29.7	12.1	ND (2.0)	-	-	-	-
Magnesium	mg/kg	NS	NS	-	-	-	-	5210	11100	2440	722	-	-	-	-
Manganese	mg/kg	2000	1600	-	-	-	-	271	305	329	129	-	-	-	-
Mercury	mg/kg	0.81	0.18	-	-	-	-	0.039	0.037	ND (0.028)	ND (0.030)	-	-	-	-
Nickel	mg/kg	310	30	-	-	-	-	11.4	10.1	10.1	4.2	-	-	-	-
Potassium	mg/kg	NS	NS	-	-	-	-	ND (1200)	1120	ND (1000)	ND (1000)	-	-	-	-
Selenium	mg/kg	180	3.9	-	-	-	-	ND (2.4)	ND (2.2)	ND (2.0)	ND (2.0)	-	-	-	-
Silver	mg/kg	180	2	-	-	-	-	ND (0.59)	ND (0.56)	ND (0.51)	ND (0.50)	-	-	-	-
Sodium	mg/kg	NS	NS	-	-	-	-	ND (1200)	ND (1100)	ND (1000)	ND (1000)	-	-	-	-
Thallium	mg/kg	NS	NS	-	-	-	-	ND (1.2)	ND (1.1)	ND (1.0)	ND (1.0)	-	-	-	-
Vanadium	mg/kg	NS	NS	-	-	-	-	18.1	23.5	23	6	-	-	-	-
Zinc	mg/kg	10000	109	248	407	246	480	646	233	28.6	9	327	417	1330	123

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-14 (2-2.5)	RI-SB-14 (6-6.5)	RI-SB-14 (10.5-11)	RI-SB-14 (16-16.5)	RI-SB-15 (4.5-5)	RI-SB-15 (7-7.5)	RI-SB-15 (10-10.5)	RI-SB-15 (16-16.5)	RI-SB-15N (7-7.5)	RI-SB-15S (7-7.5)	RI-SB-15E (7-7.5)	RI-SB-15W (7-7.5)
Lab Order:				JE17019-7	JE17019-8	JE17019-9	JE17019-10	JE16953-11	JE16953-12	JE17209-5	JE17209-6	JE16953-14R	JE16953-16R	JE16953-20R	JE16953-22R
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/12/2025	8/12/2025	8/15/2025	8/15/2025	8/12/2025	8/12/2025	8/12/2025	8/12/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)															
Aluminum	mg/kg	NS	NS	5740	1870	3810	664	8020	7370	2210	2090	-	-	-	-
Antimony	mg/kg	NS	NS	ND (2.3)	ND (2.2)	ND (2.1)	ND (2.2)	ND (2.3)	ND (2.3)	ND (2.1)	ND (2.2)	-	-	-	-
Arsenic	mg/kg	16	13	4.1	3.7	ND (2.1)	ND (2.2)	7.9	4.1	ND (2.1)	ND (2.2)	-	-	-	-
Barium	mg/kg	400	350	52.5	ND (22)	21.7	ND (22)	49.3	49	ND (21)	ND (22)	-	-	-	-
Beryllium	mg/kg	72	7.2	0.31	ND (0.22)	ND (0.21)	ND (0.22)	0.43	0.33	ND (0.21)	ND (0.22)	-	-	-	-
Cadmium	mg/kg	4.3	2.5	ND (2.9)	ND (0.56)	ND (0.53)	ND (0.54)	ND (2.9)	ND (2.9)	ND (0.52)	ND (0.54)	-	-	-	-
Calcium	mg/kg	NS	NS	61900	17900	798	1680	82400	86900	3320	2250	-	-	-	-
Chromium	mg/kg	NS	NS	18.3	9.5	8.4	3.1	28	21.1	7.3	6.4	-	-	-	-
Cobalt	mg/kg	NS	NS	ND (5.9)	ND (5.6)	ND (5.3)	ND (5.4)	ND (5.8)	ND (5.8)	ND (5.2)	ND (5.4)	-	-	-	-
Copper	mg/kg	270	50	16.2	15.9	9.7	ND (2.7)	24.8	23.9	10.7	8.6	-	-	-	-
Iron	mg/kg	NS	NS	7840	17500	12200	2360	17800	15400	10800	6300	-	-	-	-
Lead	mg/kg	400	63	84.6	19.4	12.2	ND (2.2)	29.2	25.5	3.9	ND (2.2)	-	-	-	-
Magnesium	mg/kg	NS	NS	6940	1550	1320	ND (540)	5350	4770	680	571	-	-	-	-
Manganese	mg/kg	2000	1600	193	149	230	47	263	212	200	128	-	-	-	-
Mercury	mg/kg	0.81	0.18	0.059	0.055	ND (0.031)	ND (0.029)	ND (0.032)	0.17	ND (0.029)	ND (0.032)	-	-	-	-
Nickel	mg/kg	310	30	16.5	6.1	10.9	ND (4.3)	16.7	12.5	6.8	5.1	-	-	-	-
Potassium	mg/kg	NS	NS	ND (1200)	ND (1100)	ND (1100)	ND (1100)	ND (1200)	ND (1200)	ND (1000)	ND (1100)	-	-	-	-
Selenium	mg/kg	180	3.9	ND (2.3)	ND (2.2)	ND (2.1)	ND (2.2)	ND (2.3)	ND (2.3)	ND (2.1)	ND (2.2)	-	-	-	-
Silver	mg/kg	180	2	ND (0.59)	ND (0.56)	ND (0.53)	ND (0.54)	ND (0.58)	ND (0.58)	ND (0.52)	ND (0.54)	-	-	-	-
Sodium	mg/kg	NS	NS	ND (1200)	ND (1100)	ND (1100)	ND (1100)	ND (1200)	ND (1200)	ND (1000)	ND (1100)	-	-	-	-
Thallium	mg/kg	NS	NS	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.2)	ND (1.0)	ND (1.1)	-	-	-	-
Vanadium	mg/kg	NS	NS	16.8	7.1	12.4	ND (5.4)	19.2	23.2	8.8	6.6	-	-	-	-
Zinc	mg/kg	10000	109	193	360	22.5	6.5	289	239	36.5	17.7	204	595	321	225

NOTES:

1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO

= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).
mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-16 (0.5-1)	RI-SB-16 (8.5-9)	RI-SB-16 (11.5-12)	RI-SB-16 (15.5-16)	RI-SB-16N (15.5-16)	RI-SB-16S (15.5-16)	RI-SB-16E (15.5-16)	RI-SB-16W (15.5-16)	RI-SB-17 (3.5-4)	RI-SB-17 (5.5-6)	RI-SB-17 (12.5-13)	RI-SB-17 (17.5-18)
Lab Order:				JE16953-1	JE16953-2	JE17104-13	JE17104-14	JE17209-2	JE16953-24R	JE17209-4	JE17104-16R	JE17019-6	JE17019-5	JE17209-13	JE17209-14
Date:				8/12/2025	8/12/2025	8/14/2025	8/14/2025	8/15/2025	8/12/2025	8/15/2025	8/14/2025	8/13/2025	8/13/2025	8/15/2025	8/15/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)															
Aluminum	mg/kg	NS	NS	6960	5910	3070	4400	-	-	-	-	7790	5880	2970	2410
Antimony	mg/kg	NS	NS	ND (2.3)	ND (2.2)	ND (2.1)	ND (2.0)	-	-	-	-	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.0)
Arsenic	mg/kg	16	13	4.1	3.4	ND (2.1)	2.2	-	-	-	-	4.1	4.2	ND (2.2)	ND (2.0)
Barium	mg/kg	400	350	49.9	99.9	ND (21)	359	30.1	ND (21)	ND (21)	ND (22)	57.2	54	ND (22)	ND (20)
Beryllium	mg/kg	72	7.2	0.35	0.46	ND (0.32)	ND (0.30)	-	-	-	-	0.43	0.3	0.26	0.22
Cadmium	mg/kg	4.3	2.5	ND (2.9)	ND (0.56)	ND (0.53)	ND (0.50)	-	-	-	-	ND (2.8)	ND (2.9)	ND (0.54)	ND (0.50)
Calcium	mg/kg	NS	NS	68200	3400	ND (530)	1240	-	-	-	-	78400	64500	ND (540)	514
Chromium	mg/kg	NS	NS	25	15.6	9.1	11.9	-	-	-	-	26.3	23.2	8.8	9
Cobalt	mg/kg	NS	NS	ND (5.8)	ND (5.6)	ND (5.3)	ND (5.0)	-	-	-	-	ND (5.6)	ND (5.9)	ND (5.4)	ND (5.0)
Copper	mg/kg	270	50	19.4	36.5	6.3	15	-	-	-	-	21.5	19.3	10.3	7.7
Iron	mg/kg	NS	NS	12300	14500	10900	12700	-	-	-	-	13000	9920	21700	15200
Lead	mg/kg	400	63	34.1	215	2.1	1280	8.1	3.1	3.6	7	30.5	47.4	2.3	ND (2.0)
Magnesium	mg/kg	NS	NS	6610	1430	945	1190	-	-	-	-	5530	5450	1020	788
Manganese	mg/kg	2000	1600	199	334	219	232	-	-	-	-	359	224	480	290
Mercury	mg/kg	0.81	0.18	0.043	0.25	ND (0.027)	ND (0.030)	ND (0.031)	ND (0.029)	ND (0.030)	ND (0.032)	ND (0.033)	ND (0.034)	ND (0.029)	ND (0.028)
Nickel	mg/kg	310	30	12.1	12.1	9	11.1	-	-	-	-	11.2	11.9	8.2	6.1
Potassium	mg/kg	NS	NS	ND (1200)	ND (1100)	ND (1100)	ND (1000)	-	-	-	-	ND (1100)	ND (1200)	ND (1100)	ND (1000)
Selenium	mg/kg	180	3.9	ND (2.3)	ND (2.2)	ND (2.1)	ND (2.0)	-	-	-	-	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.0)
Silver	mg/kg	180	2	ND (0.58)	ND (0.56)	ND (0.53)	ND (0.50)	-	-	-	-	ND (0.56)	ND (0.59)	ND (0.54)	ND (0.50)
Sodium	mg/kg	NS	NS	ND (1200)	ND (1100)	ND (1100)	ND (1000)	-	-	-	-	ND (1100)	ND (1200)	ND (1100)	ND (1000)
Thallium	mg/kg	NS	NS	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.0)	-	-	-	-	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.0)
Vanadium	mg/kg	NS	NS	17.1	18.7	12.8	14.2	-	-	-	-	22.2	17.4	18.1	12.2
Zinc	mg/kg	10000	109	325	328	13.4	41.7	22.8	18.5	15.1	88.1	290	476	39.5	14.6

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-18 (2.5-3)	RI-SB-18 (7.5-8)	RI-SB-18 (12.5-13)	RI-SB-18 (17.5-18)	DUP(1)2025-08-13	DUP(2)2025-08-13	DUP(3)2025-08-13	DUP(4)2025-08-13	DUP(5)2025-08-13	DUP(6)2025-08-13	DUP(7)2025-08-13	DUP(8)2025-08-13	
Lab Order:				JE17282-2	JE17282-3	JE17282-4	JE17282-5	JE17019-11	JE17019-24	JE17019-25	JE17019-26	JE17019-27	JE17019-32	JE17019-33	JE17019-34	
Date:				8/18/2025	8/18/2025	8/18/2025	8/18/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TOTAL METALS (SW846 6010D)																
Aluminum	mg/kg	NS	NS	9250	3020	2660	2560	1670	5870	3670	7230	4270	6460	2300	6610	
Antimony	mg/kg	NS	NS	ND (2.2)	ND (2.1)	ND (1.9)	ND (2.0)	ND (2.3)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.0)	ND (2.1)	
Arsenic	mg/kg	16	13	6.4	ND (2.1)	ND (1.9)	ND (2.0)	ND (2.3)	4	ND (2.2)	4.3	2.2	6	ND (2.0)	5.5	
Barium	mg/kg	400	350	139	ND (21)	ND (19)	ND (20)	ND (23)	53.3	ND (22)	44.9	33	63.3	ND (20)	62.9	
Beryllium	mg/kg	72	7.2	0.49	ND (0.21)	ND (0.19)	ND (0.20)	ND (0.23)	0.38	ND (0.22)	0.34	0.23	0.31	ND (0.20)	0.37	
Cadmium	mg/kg	4.3	2.5	ND (0.54)	ND (0.51)	ND (0.49)	ND (0.50)	ND (0.58)	ND (2.9)	ND (0.55)	ND (2.8)	ND (0.54)	ND (2.9)	ND (0.51)	ND (2.6)	
Calcium	mg/kg	NS	NS	2070	ND (510)	ND (490)	555	15300	62100	10400	78100	10600	48800	ND (510)	56600	
Chromium	mg/kg	NS	NS	16.8	9.5	7.3	13.3	8.7	18.4	12	30.5	10.9	25.4	4.8	20.6	
Cobalt	mg/kg	NS	NS	8.7	ND (5.1)	ND (4.9)	ND (5.0)	ND (5.8)	ND (5.7)	ND (5.5)	ND (5.7)	ND (5.4)	ND (5.8)	ND (5.1)	ND (5.3)	
Copper	mg/kg	270	50	25.9	6.5	8.9	7.4	6.9	21.2	11.3	30.4	13.4	29.7	9.1	29.5	
Iron	mg/kg	NS	NS	17700	11500	10300	11500	4550	13600	12000	19800	11100	13100	7940	15600	
Lead	mg/kg	400	63	351	ND (2.1)	ND (1.9)	2	11.9	70.3	34	30.7	29.6	78.5	ND (2.0)	164	
Magnesium	mg/kg	NS	NS	2680	1230	1230	843	1220	9060	1460	4710	1350	4760	780	6120	
Manganese	mg/kg	2000	1600	232	198	198	220	71.1	283	199	258	218	233	143	263	
Mercury	mg/kg	0.81	0.18	0.45	ND (0.031)	ND (0.029)	ND (0.028)	0.059	0.039	ND (0.028)	0.041	ND (0.032)	0.083	ND (0.030)	0.076	
Nickel	mg/kg	310	30	24.2	6.8	6.3	5.8	ND (4.7)	12.7	8.3	16	8.9	14.9	5.3	15.2	
Potassium	mg/kg	NS	NS	ND (1100)	ND (1000)	ND (970)	ND (1000)	ND (1200)	ND (1100)	ND (1100)	ND (1100)	ND (1100)	ND (1200)	ND (1000)	ND (1100)	
Selenium	mg/kg	180	3.9	ND (2.2)	ND (2.1)	ND (1.9)	ND (2.0)	ND (2.3)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.0)	ND (2.1)	
Silver	mg/kg	180	2	ND (0.54)	ND (0.51)	ND (0.49)	ND (0.50)	ND (0.58)	ND (0.57)	ND (0.55)	ND (0.57)	ND (0.54)	ND (0.58)	ND (0.51)	ND (0.53)	
Sodium	mg/kg	NS	NS	ND (1100)	ND (1000)	ND (970)	ND (1000)	ND (1200)	ND (1100)	ND (1100)	ND (1100)	ND (1100)	ND (1200)	ND (1000)	ND (1100)	
Thallium	mg/kg	NS	NS	ND (1.1)	ND (1.0)	ND (0.97)	ND (1.0)	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.0)	ND (1.1)	
Vanadium	mg/kg	NS	NS	24.4	11.3	9.1	10.2	ND (5.8)	22.4	13.2	24	13.4	24.3	12.5	19.1	
Zinc	mg/kg	10000	109	182	13.6	10.4	11.3	78.8	289	33.6	500	48.8	319	8.2	271	

NOTES:

1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO

= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).
mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	MS/MSD
Lab Order:				JE17019-47
Date:				8/13/2025
Matrix:				Soil
TOTAL METALS (SW846 6010D)				
Aluminum	mg/kg	NS	NS	2770
Antimony	mg/kg	NS	NS	ND (2.0)
Arsenic	mg/kg	16	13	ND (2.0)
Barium	mg/kg	400	350	ND (20)
Beryllium	mg/kg	72	7.2	0.29
Cadmium	mg/kg	4.3	2.5	ND (0.50)
Calcium	mg/kg	NS	NS	2730
Chromium	mg/kg	NS	NS	8.3
Cobalt	mg/kg	NS	NS	ND (5.0)
Copper	mg/kg	270	50	11.3
Iron	mg/kg	NS	NS	13300
Lead	mg/kg	400	63	3.6
Magnesium	mg/kg	NS	NS	903
Manganese	mg/kg	2000	1600	189
Mercury	mg/kg	0.81	0.18	ND (0.033)
Nickel	mg/kg	310	30	6.8
Potassium	mg/kg	NS	NS	ND (1000)
Selenium	mg/kg	180	3.9	ND (2.0)
Silver	mg/kg	180	2	ND (0.50)
Sodium	mg/kg	NS	NS	ND (1000)
Thallium	mg/kg	NS	NS	ND (1.0)
Vanadium	mg/kg	NS	NS	9.5
Zinc	mg/kg	10000	109	20.6

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

	= concentration exceeds USCO
	= concentration exceeds RRSCO

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation.
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mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	R1-SB-01 (2.5-3.0)	R1-SB-01 (7.5-8.0)	R1-SB-01 (12.5-13.0)	R1-SB-01 (17.5-18.0)	R1-SB-02 (2.5-3.0)	R1-SB-02 (7.5-8.0)	R1-SB-02 (12.5-13.0)	R1-SB-02 (17.5-18.0)	R1-SB-03 (2.5-3.0)	R1-SB-03 (7.5-8.0)	R1-SB-03 (12.5-13.0)	R1-SB-03 (17.5-18.0)
Lab Order:				JE16734-2	JE16734-3	JE16734-4	JE16734-5	JE16734-6	JE16734-7	JE16734-8	JE16734-9	JE16734-10	JE16734-11	JE16734-12	JE16734-13
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)															
Aroclor 1016	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1221	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1232	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1242	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1248	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1254	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	0.0331 J	ND (0.032)	ND (0.031)	ND (0.034)	0.0309 J	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1260	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1262	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)
Aroclor 1268	mg/kg	1	0.1	ND (0.032)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.037)	ND (0.032)	ND (0.031)	ND (0.034)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.033)

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-04 (1-1.5)	RI-SB-04 (8.5-9)	RI-SB-04 (13.5-14)	RI-SB-04 (18-18.5)	R1-SB-05 (2.5-3.0)	R1-SB-05 (7.5-8.0)	R1-SB-05 (12.5-13.0)	R1-SB-05 (17.5-18.0)	R1-SB-06 (2.5-3.0)	R1-SB-06 (7.5-8.0)	R1-SB-06 (12.5-13.0)	R1-SB-06 (17.5-18.0)
Lab Order:				JE17019-38	JE17019-37	JE17019-35	JE17019-36	JE16734-14	JE16734-15	JE16734-16	JE16734-17	JE16734-18	JE16734-19	JE16734-20	JE16734-21
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)															
Aroclor 1016	mg/kg	1	0.1	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1221	mg/kg	1	0.1	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1232	mg/kg	1	0.1	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1242	mg/kg	1	0.1	0.138	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1248	mg/kg	1	0.1	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1254	mg/kg	1	0.1	0.0797	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1260	mg/kg	1	0.1	0.0609	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1262	mg/kg	1	0.1	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)
Aroclor 1268	mg/kg	1	0.1	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.04)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.038)	ND (0.032)	ND (0.033)	ND (0.034)

Sample ID:	UNITS	NY RRSCO	NY UUSCO	R1-SB-07 (2.5-3.0)	R1-SB-07 (7.5-8.0)	R1-SB-07 (12.5-13.0)	R1-SB-07 (17.5-18.0)	R1-SB-08 (2.5-3.0)	R1-SB-08 (7.5-8.0)	R1-SB-08 (12.5-13.0)	R1-SB-08 (17.5-18.0)	RI-SB-09 (2.5-3)	RI-SB-09 (7.5-8)	RI-SB-09 (12-12.5)	RI-SB-09 (17-17.5)
Lab Order:				JE16734-22	JE16734-23	JE16734-24	JE16734-25	JE16734-26	JE16734-27	JE16734-28	JE16734-29	JE17019-2	JE17019-4	JE17019-3	JE17019-1
Date:				8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)															
Aroclor 1016	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.036)	ND (0.033)	ND (0.033)
Aroclor 1221	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.036)	ND (0.033)	ND (0.033)
Aroclor 1232	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.036)	ND (0.033)	ND (0.033)
Aroclor 1242	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.036)	ND (0.033)	ND (0.033)
Aroclor 1248	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.036)	ND (0.033)	ND (0.033)
Aroclor 1254	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	0.0334 J	ND (0.032)	ND (0.035)	ND (0.034)	0.0417	0.0486	ND (0.033)	ND (0.033)
Aroclor 1260	mg/kg	1	0.1	0.0163 J	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	0.033 J	ND (0.033)	ND (0.033)
Aroclor 1262	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.036)	ND (0.033)	ND (0.033)
Aroclor 1268	mg/kg	1	0.1	ND (0.036)	ND (0.032)	ND (0.034)	ND (0.033)	ND (0.036)	ND (0.032)	ND (0.035)	ND (0.034)	ND (0.037)	ND (0.036)	ND (0.033)	ND (0.033)

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-10 (4-4.5)	RI-SB-10 (6.5-7)	RI-SB-10 (11-11.5)	RI-SB-10 (19-19.5)	RI-SB-11 (0.5-1)	RI-SB-11 (5-5.5)	RI-SB-11 (10-10.5)	RI-SB-11 (15-15.5)	R1-SB-12 (2.5-3.0)	R1-SB-12 (7.5-8.0)	RI-SB-12 (11-11.5)	RI-SB-12 (17.5-18)	
Lab Order:				JE17019-28	JE17019-30	JE17019-31	JE17019-29	JE17019-42	JE17019-41	JE17019-39	JE17019-40	JE16734-30	JE16734-31	JE17104-7	JE17104-8	
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/8/2025	8/8/2025	8/14/2025	8/14/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)																
Aroclor 1016	mg/kg	1	0.1	ND (0.036)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.035)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.035)	ND (0.032)	ND (0.032)	
Aroclor 1221	mg/kg	1	0.1	ND (0.036)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.035)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.035)	ND (0.032)	ND (0.032)	
Aroclor 1232	mg/kg	1	0.1	ND (0.036)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.035)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.035)	ND (0.032)	ND (0.032)	
Aroclor 1242	mg/kg	1	0.1	ND (0.036)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.035)	ND (0.037)	ND (0.033)	ND (0.034)	0.26	ND (0.032)	ND (0.032)	
Aroclor 1248	mg/kg	1	0.1	ND (0.036)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.035)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.035)	ND (0.032)	ND (0.032)	
Aroclor 1254	mg/kg	1	0.1	0.0534	0.0389	ND (0.034)	ND (0.033)	ND (0.032)	0.0573	ND (0.037)	ND (0.033)	0.045	ND (0.035)	ND (0.032)	ND (0.032)	
Aroclor 1260	mg/kg	1	0.1	0.0201 J	ND (0.036)	ND (0.034)	ND (0.033)	0.0429	0.0451	ND (0.037)	ND (0.033)	0.017 J	ND (0.035)	ND (0.032)	ND (0.032)	
Aroclor 1262	mg/kg	1	0.1	ND (0.036)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.035)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.035)	ND (0.032)	ND (0.032)	
Aroclor 1268	mg/kg	1	0.1	ND (0.036)	ND (0.036)	ND (0.034)	ND (0.033)	ND (0.032)	ND (0.035)	ND (0.037)	ND (0.033)	ND (0.034)	ND (0.035)	ND (0.032)	ND (0.032)	

NOTES:
1. Results are measured in mg/kg.
2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.
= concentration exceeds USCO
= concentration exceeds RRSCO

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation.
USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).
mg/kg = Milligrams per kilogram
ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-12N (7.5-8)	RI-SB-12S (7.5-8)	RI-SB-12E (7.5-8)	RI-SB-12W (7.5-8)	R1-SB-13 (2.5-3.0)	R1-SB-13 (7.5-8.0)	R1-SB-13 (12.5-13.0)	R1-SB-13 (17.5-18.0)	RI-SB-14 (2-2.5)	RI-SB-14 (6-6.5)	RI-SB-14 (10.5-11)	RI-SB-14 (16-16.5)	
Lab Order:				JE17104-4R	JE17104-10R	JE17104-30R	JE17104-26R	JE16734-32	JE16734-33	JE16734-34	JE16734-35	JE17019-7	JE17019-8	JE17019-9	JE17019-10	
Date:				8/14/2025	8/14/2025	8/14/2025	8/14/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)																
Aroclor 1016	mg/kg	1	0.1	-	-	-	-	ND (0.035)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	ND (0.037)	ND (0.031)	ND (0.033)	
Aroclor 1221	mg/kg	1	0.1	-	-	-	-	ND (0.035)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	ND (0.037)	ND (0.031)	ND (0.033)	
Aroclor 1232	mg/kg	1	0.1	-	-	-	-	ND (0.035)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	ND (0.037)	ND (0.031)	ND (0.033)	
Aroclor 1242	mg/kg	1	0.1	-	-	-	-	ND (0.035)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	ND (0.037)	ND (0.031)	ND (0.033)	
Aroclor 1248	mg/kg	1	0.1	ND (0.037)	ND (0.037)	ND (0.037)	ND (0.037)	ND (0.035)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	ND (0.037)	ND (0.031)	ND (0.033)	
Aroclor 1254	mg/kg	1	0.1	-	-	-	-	0.0221 J	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	0.0352 J	ND (0.031)	ND (0.033)	
Aroclor 1260	mg/kg	1	0.1	-	-	-	-	ND (0.035)	0.0194 J	ND (0.033)	ND (0.034)	ND (0.037)	0.0231 J	ND (0.031)	ND (0.033)	
Aroclor 1262	mg/kg	1	0.1	-	-	-	-	ND (0.035)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	ND (0.037)	ND (0.031)	ND (0.033)	
Aroclor 1268	mg/kg	1	0.1	-	-	-	-	ND (0.035)	ND (0.036)	ND (0.033)	ND (0.034)	ND (0.037)	ND (0.037)	ND (0.031)	ND (0.033)	

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-15 (4.5-5)	RI-SB-15 (7-7.5)	RI-SB-15 (10-10.5)	RI-SB-15 (16-16.5)	RI-SB-15N (7-7.5)	RI-SB-15S (7-7.5)	RI-SB-15E (7-7.5)	RI-SB-15W (7-7.5)	RI-SB-16 (0.5-1)	RI-SB-16 (8.5-9)	RI-SB-16 (11.5-12)	RI-SB-16 (15.5-16)
Lab Order:				JE16953-11	JE16953-12	JE17209-5	JE17209-6	JE16953-14R	JE16953-16R	JE16953-20R	JE16953-22R	JE16953-1	JE16953-2	JE17104-13	JE17104-14
Date:				8/12/2025	8/12/2025	8/15/2025	8/15/2025	8/12/2025	8/12/2025	8/12/2025	8/12/2025	8/12/2025	8/12/2025	8/14/2025	8/14/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)															
Aroclor 1016	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1221	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1232	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1242	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1248	mg/kg	1	0.1	0.174	0.14	ND (0.035)	ND (0.035)	ND (0.036)	ND (0.037)	ND (0.038)	ND (0.037)	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1254	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	0.028 J	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1260	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1262	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)
Aroclor 1268	mg/kg	1	0.1	ND (0.037)	ND (0.034)	ND (0.035)	ND (0.035)	-	-	-	-	ND (0.035)	ND (0.035)	ND (0.034)	ND (0.032)

Sample ID:	UNITS	NY RRSCO	NY UUSCO	RI-SB-17 (3.5-4)	RI-SB-17 (5.5-6)	RI-SB-17 (12.5-13)	RI-SB-17 (17.5-18)	RI-SB-18 (2.5-3)	RI-SB-18 (7.5-8)	RI-SB-18 (12.5-13)	RI-SB-18 (17.5-18)	DUP(1)2025-08-13	DUP(2)2025-08-13	DUP(3)2025-08-13	DUP(4)2025-08-13
Lab Order:				JE17019-6	JE17019-5	JE17209-13	JE17209-14	JE17282-2	JE17282-3	JE17282-4	JE17019-11	JE17019-24	JE17019-25	JE17019-26	
Date:				8/13/2025	8/13/2025	8/15/2025	8/15/2025	8/18/2025	8/18/2025	8/18/2025	8/18/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)															
Aroclor 1016	mg/kg	1	0.1	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	ND (0.036)	ND (0.035)	ND (0.034)	ND (0.035)
Aroclor 1221	mg/kg	1	0.1	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	ND (0.036)	ND (0.035)	ND (0.034)	ND (0.035)
Aroclor 1232	mg/kg	1	0.1	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	ND (0.036)	ND (0.035)	ND (0.034)	ND (0.035)
Aroclor 1242	mg/kg	1	0.1	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	ND (0.036)	ND (0.035)	ND (0.034)	ND (0.035)
Aroclor 1248	mg/kg	1	0.1	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	ND (0.036)	ND (0.035)	ND (0.034)	ND (0.035)
Aroclor 1254	mg/kg	1	0.1	0.0271 J	0.0241 J	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	0.0311 J	0.0387	ND (0.034)	0.0221 J
Aroclor 1260	mg/kg	1	0.1	ND (0.034)	0.0188 J	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	0.0186 J	ND (0.035)	ND (0.034)	ND (0.035)
Aroclor 1262	mg/kg	1	0.1	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	ND (0.036)	ND (0.035)	ND (0.034)	ND (0.035)
Aroclor 1268	mg/kg	1	0.1	ND (0.034)	ND (0.037)	ND (0.033)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.033)	ND (0.034)	ND (0.036)	ND (0.035)	ND (0.034)	ND (0.035)

Sample ID:	UNITS	NY RRSCO	NY UUSCO	DUP(5)2025-08-13	DUP(6)2025-08-13	DUP(7)2025-08-13	DUP(8)2025-08-13	MS/MSD
Lab Order:				JE17019-27	JE17019-32	JE17019-33	JE17019-34	JE17019-47
Date:				8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:				Soil	Soil	Soil	Soil	Soil
PCBs (SW846 8082A)								
Aroclor 1016	mg/kg	1	0.1	ND (0.034)	ND (0.034)	ND (0.033)	ND (0.035)	ND (0.033)
Aroclor 1221	mg/kg	1	0.1	ND (0.034)	ND (0.034)	ND (0.033)	ND (0.035)	ND (0.033)
Aroclor 1232	mg/kg	1	0.1	ND (0.034)	ND (0.034)	ND (0.033)	ND (0.035)	ND (0.033)
Aroclor 1242	mg/kg	1	0.1	ND (0.034)	ND (0.034)	ND (0.033)	ND (0.035)	ND (0.033)
Aroclor 1248	mg/kg	1	0.1	ND (0.034)	ND (0.034)	ND (0.033)	ND (0.035)	ND (0.033)
Aroclor 1254	mg/kg	1	0.1	ND (0.034)	0.129	ND (0.033)	0.0765	ND (0.033)
Aroclor 1260	mg/kg	1	0.1	ND (0.034)	0.0379	ND (0.033)	0.0311 J	ND (0.033)
Aroclor 1262	mg/kg	1	0.1	ND (0.034)	ND (0.034)	ND (0.033)	ND (0.035)	ND (0.033)
Aroclor 1268	mg/kg	1	0.1	ND (0.034)	ND (0.034)	ND (0.033)	ND (0.035)	ND (0.033)

NOTES:

1. Results are measured in mg/kg.

2. Results are compared to NYSDEC USCOs and NYSDEC RRSCOs.

3. Sample Depth is reported in feet below ground surface.

= concentration exceeds USCO

= concentration exceeds RRSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.

USCO = NYSDEC Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06).

RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives w/CP-51 (1/10) (6 NYCRR 375-6 12/06).

mg/kg = Milligrams per kilogram

ND = Non-Detect

Sample ID:	UNITS	NY RRSCO	NY UUSCO	NY PGWSCO	R1-SB-01 (2.5-3.0)	R1-SB-01 (7.5-8.0)	R1-SB-01 (12.5-13.0)	R1-SB-01 (17.5-18.0)	R1-SB-02 (2.5-3.0)	R1-SB-02 (2.5-3.0)	R1-SB-02 (7.5-8.0)	R1-SB-02 (12.5-13.0)	R1-SB-02 (17.5-18.0)	R1-SB-02 (17.5-18.0)	R1-SB-03 (2.5-3.0)	R1-SB-03 (2.5-3.0)	R1-SB-03 (7.5-8.0)
Lab Order:					SS4732-43	SS4732-44	SS4732-45	SS4732-46	SS4732-49RE2	WG375070-4RA	SS4732-50RERA	SS4732-51RE2	SS4732-52	WG374969-4	SS4732-53	SS4732-53RE	SS4732-54
Date:					8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PFAS																	
6:2 FTS	ppb	NS	NS	NS	ND (0.799)	ND (0.808)	ND (0.807)	ND (0.817)	ND (0.810)	ND (0.801)	ND (0.782)	ND (0.763)	ND (0.786)	ND (0.791)	ND (0.800)	ND (0.799)	ND (0.806)
8:2 FTS	ppb	NS	NS	NS	ND (0.799)	ND (0.808)	ND (0.807)	ND (0.817)	ND (0.810)	ND (0.801)	ND (0.782)	ND (0.763)	ND (0.786)	ND (0.791)	ND (0.800)	ND (0.799)	ND (0.806)
NEtFOSAA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.245	0.196 J	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	0.0960 J	0.0677 J	ND (0.201)
NMeFOSAA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.0846 J	ND (0.200)	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	ND (0.200)	ND (0.200)	ND (0.201)
PFBA	ppb	NS	NS	NS	ND (0.799)	ND (0.808)	ND (0.807)	ND (0.817)	ND (0.810)	ND (0.801)	ND (0.782)	ND (0.763)	ND (0.786)	ND (0.791)	ND (0.800)	ND (0.799)	ND (0.806)
PFBS	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.200)	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	ND (0.200)	ND (0.200)	ND (0.201)
PFDA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.143 J	0.123 J	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	0.814	0.647	ND (0.201)
PFDoA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.142 J	0.117 J	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	ND (0.200)	ND (0.200)	ND (0.201)
PFDS	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.0785 J	0.0561 J	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	ND (0.200)	ND (0.200)	ND (0.201)
PFHpA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.200)	ND (0.195)	ND (0.191)	0.0810 J	0.0848 J	0.0533 J	0.0583 J	ND (0.201)
PFHpS	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.200)	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	ND (0.200)	ND (0.200)	ND (0.201)
PFHxA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.200)	ND (0.195)	ND (0.191)	0.105 J	0.113 J	ND (0.200)	ND (0.200)	ND (0.201)
PFOS	ppb	44	0.88	1	0.104 J	ND (0.202)	ND (0.202)	ND (0.204)	0.708	0.730	ND (0.195)	ND (0.191)	0.0789 J	0.0819 J	0.384	0.337	0.148 J
PFOSA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.0578 J	0.0573 JL	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	0.0507 J	0.0486 J	ND (0.201)
PFPeA	ppb	NS	NS	NS	ND (0.400)	ND (0.404)	ND (0.404)	ND (0.408)	ND (0.405)	ND (0.401)	ND (0.391)	ND (0.382)	0.142 J	0.146 J	ND (0.400)	ND (0.400)	ND (0.403)
PFTeDA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.200)	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	ND (0.200)	ND (0.200)	ND (0.201)
PFTrDA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.218	0.152 J	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	0.0771 J	0.0954 J	ND (0.201)
PFUnA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.201 J	0.171 J	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	0.102 J	0.0900 J	ND (0.201)
Total PFHxS	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.200)	ND (0.195)	ND (0.191)	ND (0.196)	ND (0.198)	ND (0.200)	ND (0.200)	ND (0.201)
Total PFNA	ppb	NS	NS	NS	ND (0.200)	ND (0.202)	ND (0.202)	ND (0.204)	0.0463 J	0.0366 J	ND (0.195)	ND (0.191)	0.0349 J	0.0361 J	0.226	0.183 J	ND (0.201)
Total PFOA	ppb	33	0.66	0.8	ND (0.200)	ND (0.202)	0.0741 J	ND (0.204)	0.153 J	0.137 J	0.118 J	ND (0.191)	0.346	0.381	1.04	1.04	0.0741 J

Sample ID:	UNITS	NY RRSCO	NY UUSCO	NY PGWSCO	R1-SB-03 (12.5-13.0)	R1-SB-03 (17.5-18.0)	RI-SB-04 (1-1.5)	RI-SB-04 (8.5-9)	RI-SB-04 (13.5-14)	RI-SB-04 (18-18.5)	R1-SB-05 (2.5-3.0)	R1-SB-05 (7.5-8.0)	R1-SB-05 (12.5-13.0)	R1-SB-05 (17.5-18.0)	R1-SB-06 (2.5-3.0)	R1-SB-06 (2.5-3.0)	R1-SB-06 (7.5-8.0)
Lab Order:					SS4732-55	SS4732-56	SS4732-38RE	SS4732-37	SS4732-35	SS4732-36	SS4732-57	SS4732-58	SS4732-59	SS4732-60	SS4732-16RA	SS4732-16RE2	SS4732-17RA
Sample Date:					8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PFAS																	
6:2 FTS	ppb	NS	NS	NS	ND (0.792)	ND (0.796)	ND (0.790)	ND (0.785)	ND (0.789)	ND (0.787)	0.524 J	ND (0.805)	ND (0.788)	ND (0.802)	ND (0.622)	ND (0.791)	ND (0.705)
8:2 FTS	ppb	NS	NS	NS	ND (0.792)	ND (0.796)	ND (0.790)	ND (0.785)	ND (0.789)	ND (0.787)	ND (0.802)	ND (0.805)	ND (0.788)	ND (0.802)	ND (0.622)	ND (0.791)	ND (0.705)
NEtFOSAA	ppb	NS	NS	NS	0.0606 J	ND (0.199)	0.162 J	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	0.235	0.476	ND (0.176)
NMeFOSAA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	ND (0.156)	0.163 J	ND (0.176)
PFBA	ppb	NS	NS	NS	ND (0.792)	ND (0.796)	ND (0.790)	ND (0.785)	ND (0.789)	ND (0.787)	ND (0.802)	ND (0.805)	ND (0.788)	ND (0.802)	ND (0.622)	ND (0.791)	ND (0.705)
PFBS	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	ND (0.156)	ND (0.198)	ND (0.176)
PFDA	ppb	NS	NS	NS	0.0594 J	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	0.178	0.266	ND (0.176)
PFDoA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	0.105 J	0.307	ND (0.176)
PFDS	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	0.0764 J	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	0.0467 J	ND (0.197)	ND (0.200)	0.0473 J	0.190 J	ND (0.176)
PFHpA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	0.0419 J	0.0487 J	ND (0.176)
PFHpS	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	ND (0.156)	ND (0.198)	ND (0.176)
PFHxA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	ND (0.156)	ND (0.198)	ND (0.176)
PFOS	ppb	44	0.88	1	0.236	ND (0.199)	0.204	ND (0.196)	ND (0.197)	ND (0.197)	0.268	ND (0.201)	ND (0.197)	ND (0.200)	1.17	1.54	ND (0.176)
PFOSA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	0.0334 J	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	0.0768 J	0.172 J	ND (0.176)
PFPeA	ppb	NS	NS	NS	ND (0.396)	ND (0.398)	ND (0.395)	ND (0.392)	ND (0.395)	ND (0.393)	ND (0.401)	ND (0.402)	ND (0.394)	ND (0.401)	ND (0.311)	ND (0.395)	ND (0.352)
PFTeDA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	0.100 J	ND (0.197)	ND (0.200)	0.0747 J	0.208	ND (0.176)
PFTTrDA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	0.0936 J	ND (0.197)	ND (0.200)	0.103 J	0.382	ND (0.176)
PFUnA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	0.144 J	0.364	ND (0.176)
Total PFHxS	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.200)	ND (0.156)	ND (0.198)	ND (0.176)
Total PFNA	ppb	NS	NS	NS	ND (0.198)	ND (0.199)	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	0.0558 J	ND (0.201)	ND (0.197)	ND (0.200)	0.0756 J	0.109 J	ND (0.176)
Total PFOA	ppb	33	0.66	0.8	0.134 J	0.262	ND (0.198)	ND (0.196)	ND (0.197)	ND (0.197)	0.0997 J	0.0950 J	0.0936 J	0.0526 J	0.501	0.628	ND (0.176)

NOTES:

1. Results are measured in ppb.
2. Results are compared to NYSDEC UUSCOs, NYSDEC RSCO and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

= concentration exceeds UUSCO
 = concentration exceeds RRSCO
 = concentration exceeds PGWSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.
UUSCO = NYSDEC Unrestricted Use Soil Cleanup Objectives
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives
PGWSCO = NYSDEC Protection of Groundwater Soil Cleanup Objectives
ppb = Parts per billion
ND = Non-Detect
NS = No Standard

Sample ID:	UNITS	NY RRSCO	NY UUSCO	NY PGWSCO	R1-SB-06 (12.5-13.0)	R1-SB-06 (17.5-18.0)	R1-SB-07 (2.5-3.0)	R1-SB-07 (7.5-8.0)	R1-SB-07 (12.5-13.0)	R1-SB-07 (17.5-18.0)	R1-SB-08 (2.5-3.0)	R1-SB-08 (7.5-8.0)	R1-SB-08 (12.5-13.0)	R1-SB-08 (17.5-18.0)	RI-SB-09 (2.5-3)	RI-SB-09 (7.5-8)	RI-SB-09 (12-12.5)
Lab Order:					SS4732-18RA	SS4732-19	SS4732-20	SS4732-21	SS4732-22	SS4732-23	SS4732-12RE	SS4732-13RA	SS4732-14RA	SS4732-15RA	SS4732-2RE	SS4732-4RA	SS4732-3RA
Sample Date:					8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PFAS																	
6:2 FTS	ppb	NS	NS	NS	ND (0.719)	ND (0.809)	ND (0.800)	ND (0.803)	ND (0.787)	ND (0.803)	ND (0.801)	ND (0.683)	ND (0.764)	ND (0.729)	ND (0.811)	ND (0.812)	ND (0.690)
8:2 FTS	ppb	NS	NS	NS	ND (0.719)	ND (0.809)	ND (0.800)	ND (0.803)	ND (0.787)	ND (0.803)	ND (0.801)	ND (0.683)	ND (0.764)	ND (0.729)	ND (0.811)	ND (0.812)	ND (0.690)
NEtFOSAA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.198 J	0.0829 J	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	0.0631 J	ND (0.203)	ND (0.172)
NMeFOSAA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.248	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
PFBA	ppb	NS	NS	NS	ND (0.719)	ND (0.809)	ND (0.800)	ND (0.803)	ND (0.787)	ND (0.803)	ND (0.801)	ND (0.683)	ND (0.764)	ND (0.729)	ND (0.811)	ND (0.812)	ND (0.690)
PFBS	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
PFDA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.821	0.0725 J	0.0738 J	ND (0.201)	0.0528 J	ND (0.171)	ND (0.191)	ND (0.182)	0.0895 J	ND (0.203)	ND (0.172)
PFDoA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.767	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
PFDS	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.0994 J	0.0548 J	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
PFHpA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.0484 J	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	0.0431 J	ND (0.203)	ND (0.172)
PFHpS	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
PFHxA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
PFOS	ppb	44	0.88	1	ND (0.180)	0.0956 J	0.427	0.334	0.324	ND (0.201)	0.254	0.0641 J	0.0931 J	0.0919 J	0.378	0.187 J	ND (0.172)
PFOSA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.0358 J	ND (0.201)	0.0357 J	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	0.0410 J	ND (0.203)	ND (0.172)
PFPeA	ppb	NS	NS	NS	ND (0.360)	ND (0.405)	ND (0.400)	ND (0.401)	ND (0.393)	ND (0.402)	ND (0.400)	ND (0.342)	ND (0.382)	ND (0.364)	ND (0.406)	ND (0.406)	ND (0.345)
PFTeDA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.110 J	0.0945 J	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	0.157 J	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
PFTrDA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.569	0.0775 J	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	0.0790 J	ND (0.203)	ND (0.172)
PFUnA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.284	0.0382 J	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	0.0782 J	ND (0.203)	ND (0.172)
Total PFHxS	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	ND (0.200)	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	ND (0.203)	ND (0.203)	ND (0.172)
Total PFNA	ppb	NS	NS	NS	ND (0.180)	ND (0.202)	0.120 J	ND (0.201)	ND (0.197)	ND (0.201)	ND (0.200)	ND (0.171)	ND (0.191)	ND (0.182)	0.0649 J	ND (0.203)	ND (0.172)
Total PFOA	ppb	33	0.66	0.8	0.0682 J	0.0722 J	0.718	0.131 J	0.154 J	0.194 J	0.303	0.0405 J	0.0356 J	0.140 J	0.855	0.183 J	0.327

Sample ID:	UNITS	NY RRSCO	NY UUSCO	NY PGWSCO	RI-SB-09 (17-17.5)	RI-SB-10 (4-4.5)	RI-SB-10 (6.5-7)	RI-SB-10 (11-11.5)	RI-SB-10 (19-19.5)	RI-SB-11 (0.5-1)	RI-SB-11 (5-5.5)	RI-SB-11 (10-10.5)	RI-SB-11 (15-15.5)	R1-SB-12 (2.5-3.0)	R1-SB-12 (2.5-3.0)	R1-SB-12 (7.5-8.0)	RI-SB-12 (11-11.5)
Lab Order:					SS4732-1RERA	SS4732-28	SS4732-30	SS4732-31	SS4732-29	SS4732-42	SS4732-41RE	SS4732-39RE	SS4732-40RE	SS4760-1RE	SS4760-1RERA	SS4760-2	SS4760-7
Sample Date:					8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/14/2025	8/14/2025	8/14/2025	8/14/2025
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PFAS																	
6:2 FTS	ppb	NS	NS	NS	ND (0.788)	ND (0.810)	ND (0.786)	ND (0.807)	ND (0.784)	ND (0.809)	ND (0.796)	ND (0.784)	ND (0.759)	ND (0.773)	ND (0.773)	ND (0.751)	0.116 J
8:2 FTS	ppb	NS	NS	NS	ND (0.788)	ND (0.810)	ND (0.786)	ND (0.807)	ND (0.784)	ND (0.809)	ND (0.796)	ND (0.784)	ND (0.759)	ND (0.773)	ND (0.773)	ND (0.751)	ND (0.627)
NEtFOSAA	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
NMeFOSAA	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
PFBA	ppb	NS	NS	NS	ND (0.788)	ND (0.810)	ND (0.786)	ND (0.807)	ND (0.784)	ND (0.809)	ND (0.796)	ND (0.784)	ND (0.759)	ND (0.773)	ND (0.773)	ND (0.751)	ND (0.627)
PFBS	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
PFDA	ppb	NS	NS	NS	ND (0.197)	0.101 J	0.0725 J	ND (0.202)	ND (0.196)	ND (0.202)	0.0614 J	0.0748 J	ND (0.190)	0.127 J	0.116 J	0.0816 J	ND (0.157)
PFDoA	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
PFDS	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	0.0525 J	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
PFHpA	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	0.0626 J
PFHpS	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
PFHxA	ppb	NS	NS	NS	ND (0.197)	0.0511 J	0.0525 J	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	0.0577 J	0.0460 J	ND (0.193)	ND (0.193)	ND (0.188)	0.120 J
PFOS	ppb	44	0.88	1	0.0628 J	0.520	0.262	0.156 J	ND (0.196)	0.223	0.428	0.656	ND (0.190)	0.644	0.641	0.367	ND (0.157)
PFOSA	ppb	NS	NS	NS	ND (0.197)	0.0431 J	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	0.0352 J	0.0468 J	ND (0.190)	0.0629 JL	0.0669 JL	0.0462 J	ND (0.157)
PFPeA	ppb	NS	NS	NS	ND (0.394)	ND (0.405)	ND (0.393)	ND (0.404)	ND (0.392)	ND (0.404)	ND (0.398)	ND (0.392)	ND (0.380)	ND (0.386)	ND (0.386)	ND (0.375)	0.0665 J
PFTeDA	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
PFTrDA	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	ND (0.196)	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
PFUnA	ppb	NS	NS	NS	ND (0.197)	0.0495 J	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	0.0475 J	0.0463 J	ND (0.190)	0.0619 J	0.0648 J	0.0464 J	ND (0.157)
Total PFHxS	ppb	NS	NS	NS	ND (0.197)	ND (0.203)	ND (0.196)	ND (0.202)	ND (0.196)	ND (0.202)	ND (0.199)	0.0348 J	ND (0.190)	ND (0.193)	ND (0.193)	ND (0.188)	ND (0.157)
Total PFNA	ppb	NS	NS	NS	ND (0.197)	0.0534 J	0.0340 J	0.0478 J	ND (0.196)	ND (0.202)	0.0349 J	0.0425 J	ND (0.190)	0.0753 J	0.0729 J	0.0725 J	ND (0.157)
Total PFOA	ppb	33	0.66	0.8	0.334	0.396	0.344	0.0421 J	0.0659 J	ND (0.202)	0.235	0.299	0.136 J	0.478	0.494	0.596	0.0485 J

NOTES:

1. Results are measured in ppb.
2. Results are compared to NYSDEC UUSCOs, NYSDEC RSCO and NYSDEC RRSCOs.
3. Sample Depth is reported in feet below ground surface.

	= concentration exceeds UUSCO
	= concentration exceeds RRSCO
	= concentration exceeds PGWSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.
UUSCO = NYSDEC Unrestricted Use Soil Cleanup Objectives
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives
PGWSCO = NYSDEC Protection of Groundwater Soil Cleanup Objectives
ppb = Parts per billion
ND = Non-Detect
NS = No Standard

Sample ID:	UNITS	NY RRSCO	NY UUSCO	NY PGWSCO	RI-SB-12 (17.5-18)	R1-SB-13 (2.5-3.0)	R1-SB-13 (7.5-8.0)	R1-SB-13 (12.5-13.0)	R1-SB-13 (17.5-18.0)	RI-SB-14 (2-2.5)	RI-SB-14 (6-6.5)	RI-SB-14 (10.5-11)	RI-SB-14 (16-16.5)	RI-SB-14 (16-16.5)	RI-SB-15 (4.5-5)	RI-SB-15 (7-7.5)	RI-SB-15 (10-10.5)
Lab Order:					SS4760-8	SS4760-21	SS4760-22	SS4760-23	SS4760-24RE	SS4732-7RE	SS4732-8RE	SS4732-9RE	SS4732-10RE	WG374967-4	SS4691-11	SS4691-12	SS4788-5
Sample Date:					8/14/2025	8/8/2025	8/8/2025	8/8/2025	8/8/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/12/2025	8/12/2025	8/15/2025
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PFAS																	
6:2 FTS	ppb	NS	NS	NS	0.715	ND (0.728)	ND (0.672)	ND (0.675)	ND (0.775)	ND (0.798)	ND (0.802)	ND (0.807)	ND (0.795)	ND (0.794)	ND (0.703)	ND (0.703)	ND (0.651)
8:2 FTS	ppb	NS	NS	NS	ND (0.621)	ND (0.728)	ND (0.672)	ND (0.675)	ND (0.775)	ND (0.798)	ND (0.802)	ND (0.807)	ND (0.795)	ND (0.794)	ND (0.703)	ND (0.703)	ND (0.651)
NEtFOSAA	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
NMeFOSAA	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	0.0702 J	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
PFBA	ppb	NS	NS	NS	ND (0.621)	ND (0.728)	ND (0.672)	ND (0.675)	ND (0.775)	ND (0.798)	ND (0.802)	ND (0.807)	ND (0.795)	ND (0.794)	ND (0.703)	ND (0.703)	ND (0.651)
PFBS	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
PFDA	ppb	NS	NS	NS	ND (0.155)	0.110 J	0.0824 J	0.0465 J	ND (0.194)	ND (0.199)	0.102 J	ND (0.202)	ND (0.199)	ND (0.198)	0.0508 J	ND (0.176)	0.0806 J
PFDoA	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	0.0998 J
PFDS	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
PFHpA	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	0.0366 J	ND (0.169)	ND (0.194)	ND (0.199)	0.0439 J	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	0.0510 J	ND (0.163)
PFHpS	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
PFHxA	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	0.0429 J	0.0487 J	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	0.0641 J	ND (0.163)
PFOS	ppb	44	0.88	1	ND (0.155)	0.356	0.372	1.20	0.200	0.144 J	0.422	0.109 J	ND (0.199)	ND (0.198)	0.173 J	0.256	0.205
PFOSA	ppb	NS	NS	NS	ND (0.155)	0.0515 J	0.0441 J	ND (0.169)	ND (0.194)	ND (0.199)	0.0403 J	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	0.0420 J
PFPeA	ppb	NS	NS	NS	ND (0.310)	ND (0.364)	ND (0.336)	ND (0.337)	ND (0.388)	ND (0.399)	ND (0.401)	ND (0.403)	ND (0.398)	ND (0.397)	ND (0.352)	ND (0.351)	ND (0.325)
PFTeDA	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
PFTrDA	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	ND (0.169)	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
PFUnA	ppb	NS	NS	NS	ND (0.155)	0.0509 J	0.0416 J	ND (0.169)	ND (0.194)	ND (0.199)	0.0556 J	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	0.0535 J
Total PFHxS	ppb	NS	NS	NS	ND (0.155)	ND (0.182)	ND (0.168)	0.0322 J	ND (0.194)	ND (0.199)	ND (0.201)	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
Total PFNA	ppb	NS	NS	NS	0.0329 J	0.0785 J	0.0607 J	0.0743 J	ND (0.194)	ND (0.199)	0.0707 J	ND (0.202)	ND (0.199)	ND (0.198)	ND (0.176)	ND (0.176)	ND (0.163)
Total PFOA	ppb	33	0.66	0.8	0.504	0.685	0.591	0.278	0.290	0.0353 J	0.704	0.153 J	0.219	0.219	0.210	0.212	0.0443 J

Sample ID:	UNITS	NY RRSCO	NY UUSCO	NY PGWSCO	RI-SB-15 (16-16.5)	RI-SB-16 (0.5-1)	RI-SB-16 (8.5-9)	RI-SB-16 (11.5-12)	RI-SB-16 (15.5-16)	RI-SB-17 (3.5-4)	RI-SB-17 (3.5-4)	RI-SB-17 (5.5-6)	RI-SB-17 (12.5-13)	RI-SB-17 (17.5-18)	RI-SB-18 (2.5-3)	RI-SB-18 (7.5-8)	RI-SB-18 (12.5-13)
Lab Order:					SS4788-6	SS4691-1	SS4691-2RERA	SS4760-13	SS4760-14	SS4732-6RA	SS4732-6RERA2	SS4732-5RA	SS4788-13	SS4788-14	SS4816-2	SS4816-3	SS4816-4
Sample Date:					8/15/2025	8/12/2025	8/12/2025	8/14/2025	8/14/2025	8/13/2025	8/13/2025	8/13/2025	8/15/2025	8/15/2025	8/18/2025	8/18/2025	8/18/2025
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PFAS																	
6:2 FTS	ppb	NS	NS	NS	ND (0.674)	ND (0.654)	ND (0.772)	ND (0.647)	ND (0.640)	ND (0.751)	ND (0.807)	ND (0.852)	ND (0.678)	ND (0.683)	ND (0.700)	ND (0.651)	ND (0.661)
8:2 FTS	ppb	NS	NS	NS	ND (0.674)	ND (0.654)	ND (0.772)	ND (0.647)	ND (0.640)	ND (0.751)	ND (0.807)	ND (0.852)	ND (0.678)	ND (0.683)	ND (0.700)	ND (0.651)	ND (0.661)
NEtFOSAA	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	0.186 J	0.113 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
NMeFOSAA	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	ND (0.202)	0.108 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFBA	ppb	NS	NS	NS	ND (0.674)	ND (0.654)	ND (0.772)	ND (0.647)	ND (0.640)	ND (0.751)	ND (0.807)	ND (0.852)	ND (0.678)	ND (0.683)	ND (0.700)	ND (0.651)	ND (0.661)
PFBS	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	ND (0.202)	ND (0.213)	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFDA	ppb	NS	NS	NS	0.0908 J	0.0777 J	ND (0.193)	ND (0.162)	0.0643 J	0.104 J	0.126 J	0.0917 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFDoA	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	0.112 J	0.131 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFDS	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	0.0386 J	ND (0.188)	0.0583 J	0.0544 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFHpA	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	ND (0.202)	ND (0.213)	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFHpS	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	ND (0.202)	ND (0.213)	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFHxA	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	ND (0.202)	ND (0.213)	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFOS	ppb	44	0.88	1	0.232	0.282	0.114 J	0.234	0.180	0.420	0.709	0.206 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFOSA	ppb	NS	NS	NS	0.0484 J	0.0275 J	ND (0.193)	ND (0.162)	ND (0.160)	0.0455 J	0.0592 JL	0.0374 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFPeA	ppb	NS	NS	NS	ND (0.337)	ND (0.327)	ND (0.386)	ND (0.323)	ND (0.320)	ND (0.376)	ND (0.404)	ND (0.426)	ND (0.339)	ND (0.341)	ND (0.350)	ND (0.325)	ND (0.331)
PFTeDA	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	ND (0.202)	0.106 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFTrDA	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	0.0686 J	ND (0.188)	0.148 J	0.0841 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
PFUnA	ppb	NS	NS	NS	0.0690 J	0.0375 J	ND (0.193)	ND (0.162)	0.0592 J	0.0419 J	0.169 J	0.0777 J	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
Total PFHxS	ppb	NS	NS	NS	ND (0.169)	ND (0.164)	ND (0.193)	ND (0.162)	ND (0.160)	ND (0.188)	ND (0.202)	ND (0.213)	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
Total PFNA	ppb	NS	NS	NS	ND (0.169)	0.0505 J	ND (0.193)	0.0280 J	0.0322 J	0.0648 J	0.0402 J	ND (0.213)	ND (0.169)	ND (0.171)	ND (0.175)	ND (0.163)	ND (0.165)
Total PFOA	ppb	33	0.66	0.8	0.0696 J	0.259	0.0296 J	0.135 J	0.143 J	0.426	0.137 J	0.162 J	ND (0.169)	ND (0.171)	ND (0.175)	0.0596 J	ND (0.165)

NOTES:

- Results are measured in ppb.
- Results are compared to NYSDEC UUSCOs, NYSDEC RSCO and NYSDEC RRSCOs.
- Sample Depth is reported in feet below ground surface.

	= concentration exceeds UUSCO
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	= concentration exceeds PGWSCO

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ppb = Parts per billion
ND = Non-Detect
NS = No Standard

Sample ID:					RI-SB-18 (17.5-18)	DUP(1)2025-08-13	DUP(1)2025-08-13	DUP(1)2025-08-13	DUP(2)2025-08-13	DUP(3)2025-08-13	DUP(4)2025-08-13	DUP(5)2025-08-13	DUP(6)2025-08-13	DUP(7)2025-08-13	DUP(7)2025-08-13	DUP(8)2025-08-13	MS/MSD			
Lab Order:	UNITS	NY RRSCO	NY UUSCO	NY PGWSCO	SS4816-5	SS4732-11RA	SS4732-11RE2	WG375293-4	SS4732-24	SS4732-25	SS4732-26	SS4732-27	SS4732-32	SS4732-33	WG374968-4	SS4732-34RE	SS4732-47			
Sample Date:					8/18/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	8/13/2025	
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
PFAS																				
6:2 FTS	ppb	NS	NS	NS	ND (0.686)	ND (0.800)	ND (0.811)	ND (0.787)	ND (0.768)	ND (0.798)	ND (0.808)	ND (0.818)	ND (0.808)	ND (0.810)	ND (0.806)	ND (0.776)	0.121 J			
8:2 FTS	ppb	NS	NS	NS	ND (0.686)	ND (0.800)	ND (0.811)	ND (0.787)	ND (0.768)	ND (0.798)	ND (0.808)	ND (0.818)	ND (0.808)	ND (0.810)	ND (0.806)	ND (0.776)	ND (0.797)			
NEtFOSAA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	0.0611 J	0.0589 J	ND (0.200)	0.0745 J	ND (0.204)	0.171 J	ND (0.203)	ND (0.201)	0.0707 J	ND (0.199)			
NMeFOSAA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	0.0689 J	ND (0.200)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	0.120 J	ND (0.199)			
PFBA	ppb	NS	NS	NS	ND (0.686)	ND (0.800)	ND (0.811)	ND (0.787)	ND (0.768)	ND (0.798)	ND (0.808)	ND (0.818)	ND (0.808)	ND (0.810)	ND (0.806)	ND (0.776)	ND (0.797)			
PFBS	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
PFDA	ppb	NS	NS	NS	ND (0.172)	0.0909 J	0.0900 J	0.0988 J	0.0560 J	ND (0.200)	0.0950 J	0.0613 J	0.104 J	ND (0.203)	ND (0.201)	0.111 J	ND (0.199)			
PFDoA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	0.109 J	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
PFDS	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	0.0624 J	ND (0.204)	0.0853 J	ND (0.203)	ND (0.201)	0.0507 J	ND (0.199)			
PFHpA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
PFHpS	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
PFHxA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	ND (0.202)	0.0501 J	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
PFOS	ppb	44	0.88	1	ND (0.172)	0.324	0.334	0.312	0.191 J	0.120 J	0.391	0.317	0.525	0.125 J	0.0890 J	0.528	ND (0.199)			
PFOSA	ppb	NS	NS	NS	ND (0.172)	0.0378 J	0.0325 J	0.0318 J	ND (0.192)	ND (0.200)	0.0415 J	ND (0.204)	0.0330 J	ND (0.203)	ND (0.201)	0.0477 J	ND (0.199)			
PFPeA	ppb	NS	NS	NS	ND (0.343)	ND (0.400)	ND (0.405)	ND (0.394)	ND (0.384)	ND (0.399)	ND (0.404)	ND (0.409)	ND (0.404)	ND (0.405)	ND (0.403)	ND (0.388)	ND (0.398)			
PFTeDA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
PFTrDA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	0.0739 J	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
PFUnA	ppb	NS	NS	NS	ND (0.172)	0.0547 J	0.0639 J	0.0611 J	ND (0.192)	ND (0.200)	0.0857 J	ND (0.204)	0.0610 J	ND (0.203)	ND (0.201)	0.0746 J	ND (0.199)			
Total PFHxS	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	ND (0.202)	ND (0.204)	ND (0.202)	ND (0.203)	ND (0.201)	ND (0.194)	ND (0.199)			
Total PFNA	ppb	NS	NS	NS	ND (0.172)	ND (0.200)	ND (0.203)	ND (0.197)	ND (0.192)	ND (0.200)	0.0583 J	ND (0.204)	0.0352 J	ND (0.203)	ND (0.201)	0.0392 J	ND (0.199)			
Total PFOA	ppb	33	0.66	0.8	ND (0.172)	0.131 J	0.146 J	0.148 J	0.138 J	0.269	0.539	0.274	0.186 J	0.0778 J	0.0655 J	0.130 J	0.0337 J			

NOTES:

1. Results are measured in ppb.

2. Results are compared to NYSDEC UUSCOs, NYSDEC RSCO and NYSDEC RRSCOs.

3. Sample Depth is reported in feet below ground surface.

= concentration exceeds UUSCO

= concentration exceeds RRSCO

= concentration exceeds PGWSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.

UUSCO = NYSDEC Unrestricted Use Soil Cleanup Objectives

RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives

PGWSCO = NYSDEC Protection of Groundwater Soil Cleanup Objectives

ppb = Parts per billion

ND = Non-Detect

NS = No Standard

Sample ID:	UNITS	NYS AWQS	RI-MW-1	RI-MW-1	RI-MW-2	RI-MW-2	RI-MW-3	RI-MW-3	RI-MW-4	RI-MW-4	RI-MW-5	RI-MW-5	RI-MW-6	RI-MW-6	
Lab Order:			JE17552-2	JE19794-1	JE17552-3	JE19794-2	JE17552-4	JE19794-3	JE17552-5	JE19794-4	JE17552-6	JE19794-8	JE17552-7	JE19794	
Date:			8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/23/2025	8/20/2025	9/23/2025	
Matrix:			Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
VOCs (SW846 8260D)															
1,1,1-Trichloroethane	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,1,2,2-Tetrachloroethane	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,1,2-Trichloroethane	ug/l	1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,1-Dichloroethane	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,1-Dichloroethene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,2,3-Trichlorobenzene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,2,4-Trichlorobenzene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,2-Dibromo-3-chloropropane	ug/l	0.04	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
1,2-Dibromoethane	ug/l	0.0006	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,2-Dichlorobenzene	ug/l	3	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,2-Dichloroethane	ug/l	0.6	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,2-Dichloropropane	ug/l	1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,3-Dichlorobenzene	ug/l	3	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,4-Dichlorobenzene	ug/l	3	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
2-Butanone (MEK)	ug/l	50	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	
2-Hexanone	ug/l	50	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	
4-Methyl-2-pentanone(MIBK)	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	
Acetone	ug/l	50	ND (10)	15.1	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	
Benzene	ug/l	1	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	
Bromochloromethane	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Bromodichloromethane	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Bromoform	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Bromomethane	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Carbon disulfide	ug/l	60	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Carbon tetrachloride	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Chlorobenzene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Chloroethane	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Chloroform	ug/l	7	7.7	4.2	9.7	4.5	2.8	0.90 J	16.7	1.3	17.7	12	10.9	9	
Chloromethane	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
cis-1,2-Dichloroethene	ug/l	5	1.3	1.7	6.8	4.8	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
cis-1,3-Dichloropropene	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Cyclohexane	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	
Dibromochloromethane	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Dichlorodifluoromethane	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Ethylbenzene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Freon 113	ug/l	5	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	
Isopropylbenzene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
m,p-Xylene	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Methyl Acetate	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	
Methyl Tert Butyl Ether	ug/l	10	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Methylcyclohexane	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	
Methylene chloride	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
o-Xylene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Styrene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Tetrachloroethene	ug/l	5	5.3	4.9	11.9	7.3	ND (1.0)	0.92 J	ND (1.0)	0.67 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Toluene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
trans-1,2-Dichloroethene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
trans-1,3-Dichloropropene	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Trichloroethene	ug/l	5	ND (1.0)	0.54 J	0.82 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Trichlorofluoromethane	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	
Vinyl chloride	ug/l	2	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Xylene (total)	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Total TIC, Volatile	ug/l	NS	0	0	0	0	0	0	0	0	0	0	0	0	

NOTES:

- Results are measured in ug/l.
 - Results are compared to New York State Technical and Operational Guidance Series 1.1.1 Class GA Ambient Water Quality Standards and Guidance Values (June 1998, and addenda 2000, 2004, and 2023).
- = concentration exceeds AWQS

ABBREVIATIONS:

NYS = New York State
AWQS = Ambient Water Quality Standards
ug/l = Micrograms per liter
ND = Non-Detect

Sample ID:	UNITS	NYS AWQS	RI-MW-1	RI-MW-1	RI-MW-2	RI-MW-2	RI-MW-3	RI-MW-3	RI-MW-4	RI-MW-4	RI-MW-5	RI-MW-5	RI-MW-6	RI-MW-6
Lab Order:			JE17552-2	JE19794-1	JE17552-3	JE19794-2	JE17552-4	JE19794-3	JE17552-5	JE19794-4	JE17552-6	JE19794-8	JE17552-7	JE19794
Date:			8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/23/2025	8/20/2025	9/23/2025
Matrix:			Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
SVOCs (SW846 8270E)														
1,1'-Biphenyl	ug/l	5	ND (1.0)	0.40 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2,4,5-Tetrachlorobenzene	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
1,4-Dioxane	ug/l	0.35	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
1,4-Dioxane (1)	ug/l	0.35	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
2,2'-Oxybis(1-chloropropane)	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
2,3,4,6-Tetrachlorophenol	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
2,4,5-Trichlorophenol	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
2,4,6-Trichlorophenol	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
2,4-Dichlorophenol	ug/l	1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
2,4-Dimethylphenol	ug/l	1	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
2,4-Dinitrophenol	ug/l	1	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
2,4-Dinitrotoluene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
2,6-Dinitrotoluene	ug/l	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
2-Chloronaphthalene	ug/l	10	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
2-Chlorophenol	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
2-Methylnaphthalene	ug/l		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
2-Methylphenol	ug/l	NS	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
2-Nitroaniline	ug/l	5	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
2-Nitrophenol	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
3&4-Methylphenol	ug/l	NS	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
3,3'-Dichlorobenzidine	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
3-Nitroaniline	ug/l	5	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
4,6-Dinitro-o-cresol	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
4-Bromophenyl phenyl ether	ug/l	NS	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
4-Chloro-3-methyl phenol	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
4-Chloroaniline	ug/l	5	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
4-Chlorophenyl phenyl ether	ug/l	NS	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
4-Nitroaniline	ug/l	5	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
4-Nitrophenol	ug/l	NS	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Acenaphthene	ug/l	20	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Acenaphthylene	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Acetophenone	ug/l	NS	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Anthracene	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Atrazine	ug/l	7.5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Benzaldehyde	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzo(a)anthracene	ug/l	0.002	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Benzo(a)pyrene	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Benzo(b)fluoranthene	ug/l	0.002	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Benzo(g,h,i)perylene	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Benzo(k)fluoranthene	ug/l	0.002	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
bis(2-Chloroethoxy)methane	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
bis(2-Chloroethyl)ether	ug/l	1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
bis(2-Ethylhexyl)phthalate	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Butyl benzyl phthalate	ug/l	50	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Caprolactam	ug/l	NS	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Carbazole	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Chrysene	ug/l	0.002	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Dibenzo(a,h)anthracene	ug/l	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Dibenzofuran	ug/l	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Diethyl phthalate	ug/l	50	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Dimethyl phthalate	ug/l	50	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Di-n-butyl phthalate	ug/l	50	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Di-n-octyl phthalate	ug/l	50	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)

NOTES:

- Results are measured in ug/l.
- Results are compared to New York State Technical and Operational Guidance Series 1.1.1 Class GA Ambient Water Quality Standards and Guidance Values (June 1998, and addenda 2000, 2004, and 2023).

 = concentration exceeds AWQS

ABBREVIATIONS:

NYS = New York State
AWQS = Ambient Water Quality Standards
ug/l = Micrograms per liter
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Sample ID:	UNITS	NYS AWQS	RI-MW-1	RI-MW-1	RI-MW-2	RI-MW-2	RI-MW-3	RI-MW-3	RI-MW-4	RI-MW-4	RI-MW-5	RI-MW-5	RI-MW-6	RI-MW-6
Lab Order:			JE17552-2	JE19794-1	JE17552-3	JE19794-2	JE17552-4	JE19794-3	JE17552-5	JE19794-4	JE17552-6	JE19794-8	JE17552-7	JE19794
Date:			8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/23/2025	8/20/2025	9/23/2025
Matrix:			Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
SVOCs (SW846 8270E)														
Fluoranthene	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Fluorene	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Hexachlorobenzene	ug/l	0.04	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Hexachlorobutadiene	ug/l	0.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Hexachlorocyclopentadiene	ug/l	5	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Hexachloroethane	ug/l	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Indeno(1,2,3-cd)pyrene	ug/l	0.002	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Isophorone	ug/l	50	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Naphthalene	ug/l	10	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Nitrobenzene	ug/l	0.4	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-Nitroso-di-n-propylamine	ug/l	NS	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
N-Nitrosodiphenylamine	ug/l	50	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Pentachlorophenol	ug/l	1	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
Phenanthrene	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Phenol	ug/l	1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Pyrene	ug/l	50	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Total TIC, Semi-Volatile	ug/l	NS	0	0	18.2 J	0		0	0	0	0	0	6.8 J	0

NOTES:

1. Results are measured in ug/l.
2. Results are compared to New York State Technical and Operational Guidance Series 1.1.1 Class GA Ambient Water Quality Standards and Guidance Values (June 1998, and addenda 2000, 2004, and 2023).
= concentration exceeds AWQS

ABBREVIATIONS:

NYS = New York State
AWQS = Ambient Water Quality Standards
ug/l = Micrograms per liter
ND = Non-Detect

Sample ID:	UNITS	NYS AWQS	RI-MW-1	RI-MW-1	RI-MW-2	RI-MW-2	RI-MW-3	RI-MW-3	RI-MW-4	RI-MW-4	RI-MW-5	RI-MW-5	RI-MW-6	RI-MW-6
Lab Order:			JE17552-2	JE19794-1	JE17552-3	JE19794-2	JE17552-4	JE19794-3	JE17552-5	JE19794-4	JE17552-6	JE19794-8	JE17552-7	JE19794
Date:			8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/23/2025	8/20/2025	9/23/2025
Matrix:			Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
PESTICIDES (SW846 8081B)														
4,4'-DDD	ug/l	0.3	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
4,4'-DDE	ug/l	0.2	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
4,4'-DDT	ug/l	0.2	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Aldrin	ug/l	NS	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
alpha-BHC	ug/l	0.01	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
alpha-Chlordane	ug/l	NS	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
beta-BHC	ug/l	0.04	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
delta-BHC	ug/l	0.04	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Dieldrin	ug/l	0.004	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Endosulfan sulfate	ug/l	NS	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Endosulfan-I	ug/l	NS	0.066	ND (0.0050)	0.074	ND (0.0050)	0.021	ND (0.0050)	0.027	ND (0.0050)	0.027	ND (0.0050)	0.008	ND (0.0050)
Endosulfan-II	ug/l	NS	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Endrin	ug/l	NS	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Endrin aldehyde	ug/l	5	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Endrin ketone	ug/l	5	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
gamma-BHC (Lindane)	ug/l	0.05	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
gamma-Chlordane	ug/l	NS	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Heptachlor	ug/l	0.04	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Heptachlor epoxide	ug/l	0.03	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)
Methoxychlor	ug/l	35	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)
Toxaphene	ug/l	0.06	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)	ND (0.13)

NOTES:

- Results are measured in ug/l.
- Results are compared to New York State Technical and Operational Guidance Series 1.1.1 Class GA Ambient Water Quality Standards and Guidance Values (June 1998, and addenda 2000, 2004, and 2023).

 = concentration exceeds AWQS

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NYS = New York State
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Sample ID:	UNITS	NYS AWQS	RI-MW-1	RI-MW-1	RI-MW-2	RI-MW-2	RI-MW-3	RI-MW-3	RI-MW-4	RI-MW-4	RI-MW-5	RI-MW-5	RI-MW-6	RI-MW-6
Lab Order:			JE17552-2	JE19794-1	JE17552-3	JE19794-2	JE17552-4	JE19794-3	JE17552-5	JE19794-4	JE17552-6	JE19794-8	JE17552-7	JE19794
Date:			8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/23/2025	8/20/2025	9/23/2025
Matrix:			Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
PCBs (SW846 8082A)														
Aroclor 1016	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1221	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1232	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1242	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1248	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1254	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1260	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1262	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)
Aroclor 1268	ug/l	0.09	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.25)

NOTES:

1. Results are measured in ug/l.
2. Results are compared to New York State Technical and Operational Guidance Series 1.1.1 Class GA Ambient Water Quality Standards and Guidance Values (June 1998, and addenda 2000, 2004, and 2023).
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Sample ID:	UNITS	NYS AWQS	RI-MW-1	RI-MW-1	RI-MW-2	RI-MW-2	RI-MW-3	RI-MW-3	RI-MW-4	RI-MW-4	RI-MW-5	RI-MW-5	RI-MW-6	RI-MW-6
Lab Order:			SS4997-2	SS5684-3	SS4997-3	SS5684-4	SS4997-4	SS5684-5	SS4997-5	SS5684-6	SS4997-6	SS5684-9	SS4997-7	SS5684-10
Date:			8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/22/2025	8/20/2025	9/23/2025	8/20/2025	9/23/2025
Matrix:			Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
PFAS (EPA 1633A)														
6:2 FTS	ppt	NS	7.68	ND (7.43)	ND (7.38)	ND (7.23)	ND (7.78)	ND (7.30)	3.07	ND (7.37)	ND (8.23)	ND (7.70)	11.3	ND (7.44)
8:2 FTS	ppt	NS	ND (7.81)	ND (7.43)	ND (7.38)	ND (7.23)	ND (7.78)	ND (7.30)	ND (8.09)	ND (7.37)	ND (8.23)	ND (7.70)	ND (7.41)	ND (7.44)
NEtFOSAA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	ND (1.94)	ND (1.82)	ND (2.02)	ND (1.84)	ND (2.06)	ND (1.92)	ND (1.85)	ND (1.86)
NMeFOSAA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	ND (1.94)	ND (1.82)	ND (2.02)	ND (1.84)	ND (2.06)	ND (1.92)	ND (1.85)	ND (1.86)
PFBA	ppt	NS	12.7	13.7	7.47	6.97	16.7	13.7	8.39	13.3	8.51	9.16	7.1	7.73
PFBS	ppt	NS	8.90	7.57	5.57	5.66	14.1	13.4	8.10	10.8	7.86	9.1	7.02	8.83
PFDA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	4.48	2.84	1.29	2.62	1.19	1.16	1.85	ND (1.86)
PFDoA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	ND (1.94)	ND (1.82)	ND (2.02)	ND (1.84)	ND (2.06)	ND (1.92)	ND (1.85)	ND (1.86)
PFDS	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	ND (1.94)	ND (1.82)	ND (2.02)	ND (1.84)	ND (2.06)	ND (1.92)	ND (1.85)	ND (1.86)
PFHpA	ppt	NS	13.3	11.9	8.45	8.16	16.0	13.8	8.27	15.7	8.63	9.42	8.02	8.76
PFHpS	ppt	NS	0.935	1.02	0.603	0.0805	1.08	1.01	1.29	0.905	1.36	1.6	1.3	1.65
PFHxA	ppt	NS	21.3	19.7	11.5	11.9	27.6	29.4	13.3	23	13.8	15.5	11.8	15.3
Total PFHxS	ppt	NS	15.5	13.5	8.51	8.06	19.9	15.1	6.41	19	6.6	7.39	7.64	7.6
Total PFNA	ppt	NS	1.89 J	1.78	2.02	2.12	21.4	21.4	19.4	56.3	21.7	8.02	8.72	12.1
Total PFOA	ppt	6.7	34.4	34.7	30	28.5	41.6	40.1	35.7	62.0	37	37.8	37	46.1
PFOS	ppt	2.7	35.3	38.9	30.9	42.2	86.1	75.8	42.3	75.8	43.1	53.2	28.6	44.5
PFOSA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	ND (1.94)	ND (1.82)	ND (2.02)	ND (1.84)	ND (2.06)	ND (1.92)	ND (1.85)	ND (1.86)
PFPeA	ppt	NS	23.7	21.1	12.8	12.8	28.1	29.4	15.4	24.7	15.5	18.1	13	16.3
PFTeDA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	ND (1.94)	ND (1.82)	ND (2.02)	ND (1.84)	ND (2.06)	ND (1.92)	ND (1.85)	ND (1.86)
PFTTrDA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	ND (1.94)	ND (1.82)	ND (2.02)	ND (1.84)	ND (2.06)	ND (1.92)	ND (1.85)	ND (1.86)
PFUnA	ppt	NS	ND (1.95)	ND (1.86)	ND (1.84)	ND (1.81)	137	167	ND (2.02)	71.4	ND (2.06)	1.86	ND (1.85)	0.946

NOTES:

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 = concentration exceeds AWQS

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Client Sample ID:	Units	NYS Matrix A-F High	NYS Matrix A-F Low	RI-SV-1	RI-SV-7	RI-SV-5	RI-SV-3	RI-SV-4	RI-SV-2	RI-SV-6
Job:				JE17470	JE17470	JE17470	JE17470	JE17470	JE17470	JE17470
Sample Date:				8/19/2025	8/19/2025	8/19/2025	8/19/2025	8/19/2025	8/19/2025	8/19/2025
Matrix:				Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.	Soil Vapor Comp.
VOCs (TO-15)										
MATRIX A										
1,1-Dichloroethylene	ug/m3	60	6	ND (0.63)	ND (0.63)	ND (0.63)	ND (0.63)	ND (3.2)	ND (0.63)	ND (0.63)
Carbon tetrachloride	ug/m3	60	6	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (5.0)	ND (1.0)	ND (1.0)
Trichloroethylene	ug/m3	60	6	ND (0.86)	ND (0.86)	ND (0.86)	4.1	ND (4.3)	3.4	3.9
MATRIX B										
1,1,1-Trichloroethane	ug/m3	1000	100	18	17	14	3.9	ND (11)	6	4.9
Methylene chloride	ug/m3	1000	100	21	3.2	4.2	46.9	ND (14)	3.3	17
Tetrachloroethylene	ug/m3	1000	100	14	10	163	10	25	92.2	64
MATRIX C										
Vinyl chloride	ug/m3	60	6	ND (0.41)	ND (0.41)	ND (0.41)	ND (0.41)	ND (2.0)	ND (0.41)	ND (0.41)
MATRIX D										
1,3,5-Trimethylbenzene	ug/m3	600	60	ND (3.9)	2.1 J	2.5 J	ND (3.9)	ND (20)	2.0 J	ND (3.9)
2,2,4-Trimethylpentane	ug/m3	600	60	ND (3.7)	ND (3.7)	ND (3.7)	ND (3.7)	18 J	ND (3.7)	ND (3.7)
Benzene	ug/m3	600	60	ND (2.6)	ND (2.6)	3.1	ND (2.6)	ND (13)	1.8 J	1.3 J
Cyclohexane	ug/m3	600	60	ND (2.8)	ND (2.8)	ND (2.8)	ND (2.8)	ND (14)	ND (2.8)	ND (2.8)
Ethylbenzene	ug/m3	600	60	ND (3.5)	ND (3.5)	13	ND (3.5)	ND (17)	7.8	5.6
o-Xylene	ug/m3	NS	NS	2.8 J	3.4 J	16	2.4 J	ND (17)	10	7.8
MATRIX E										
Heptane	ug/m3	2000	200	ND (3.3)	ND (3.3)	4.1	ND (3.3)	12 J	1.7 J	ND (3.3)
Hexane	ug/m3	2000	200	23	3.2	3.5	33	15	2.5 J	18
m,p-Xylene	ug/m3	2000	200	8.3	10	45.6	6.5	ND (17)	29	20
MATRIX F										
Toluene	ug/m3	3000	300	2.1 J	2.5 J	40.7	2.1 J	7.5 J	19	12
NO MATRIX										
1,1,2,2-Tetrachloroethane	ug/m3	NS	NS	ND (2.7)	ND (2.7)	ND (2.7)	ND (2.7)	ND (14)	ND (2.7)	ND (2.7)
1,1,2-Trichloroethane	ug/m3	NS	NS	ND (2.2)	ND (2.2)	ND (2.2)	ND (2.2)	ND (11)	ND (2.2)	ND (2.2)
1,1-Dichloroethane	ug/m3	NS	NS	ND (3.2)	ND (3.2)	ND (3.2)	ND (3.2)	ND (16)	ND (3.2)	ND (3.2)
1,2,4-Trichlorobenzene	ug/m3	NS	NS	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (15)	ND (3.0)	ND (3.0)
1,2,4-Trimethylbenzene	ug/m3	600	60	12	14	11	7.9	ND (20)	9.8	6.9
1,2-Dibromoethane (EDB)	ug/m3	NS	NS	ND (3.1)	ND (3.1)	ND (3.1)	ND (3.1)	ND (15)	ND (3.1)	ND (3.1)
1,2-Dichloroethane	ug/m3	NS	NS	ND (3.2)	ND (3.2)	ND (3.2)	ND (3.2)	ND (16)	ND (3.2)	ND (3.2)
1,2-Dichloropropane	ug/m3	NS	NS	ND (3.7)	ND (3.7)	ND (3.7)	ND (3.7)	ND (18)	ND (3.7)	ND (3.7)
1,3-Butadiene	ug/m3	NS	NS	ND (1.8)	ND (1.8)	ND (1.8)	ND (1.8)	ND (8.8)	ND (1.8)	ND (1.8)
1,4-Dioxane	ug/m3	NS	NS	ND (2.9)	ND (2.9)	ND (2.9)	ND (2.9)	ND (14)	ND (2.9)	ND (2.9)
2-Chlorotoluene	ug/m3	NS	NS	ND (4.1)	ND (4.1)	ND (4.1)	ND (4.1)	ND (21)	ND (4.1)	ND (4.1)
2-Hexanone	ug/m3	NS	NS	ND (3.3)	ND (3.3)	ND (3.3)	ND (3.3)	270	ND (3.3)	ND (3.3)
3-Chloropropene	ug/m3	NS	NS	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (13)	ND (2.5)	ND (2.5)
4-Ethyltoluene	ug/m3	NS	NS	ND (3.9)	2.0 J	2.6 J	ND (3.9)	ND (20)	ND (3.9)	ND (3.9)
Acetone (2-Propanone)	ug/m3	NS	NS	14	13	39.9	14	2120	25.9	20
Benzyl Chloride	ug/m3	NS	NS	ND (10)	ND (10)	ND (10)	ND (10)	ND (52)	ND (10)	ND (10)
Bromodichloromethane	ug/m3	NS	NS	ND (2.7)	ND (2.7)	ND (2.7)	ND (2.7)	ND (13)	ND (2.7)	ND (2.7)
Bromoethene	ug/m3	NS	NS	ND (3.5)	ND (3.5)	ND (3.5)	ND (3.5)	ND (17)	ND (3.5)	ND (3.5)
Bromoform	ug/m3	NS	NS	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)	ND (8.3)	ND (1.7)	ND (1.7)
Bromomethane	ug/m3	NS	NS	ND (3.1)	ND (3.1)	ND (3.1)	ND (3.1)	ND (16)	ND (3.1)	ND (3.1)
Carbon disulfide	ug/m3	NS	NS	2.2 J	2.3 J	4	ND (2.5)	19	1.5 J	ND (2.5)
Chlorobenzene	ug/m3	NS	NS	ND (3.7)	ND (3.7)	ND (3.7)	ND (3.7)	ND (18)	ND (3.7)	ND (3.7)
Chloroethane	ug/m3	NS	NS	ND (2.1)	ND (2.1)	ND (2.1)	ND (2.1)	ND (11)	ND (2.1)	ND (2.1)
Chloroform	ug/m3	NS	NS	ND (3.9)	22	4.9	15	43	15	15
Chloromethane	ug/m3	NS	NS	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)	ND (8.3)	ND (1.7)	ND (1.7)
Dibromochloromethane	ug/m3	NS	NS	ND (3.4)	ND (3.4)	ND (3.4)	ND (3.4)	ND (17)	ND (3.4)	ND (3.4)
Dichlorodifluoromethane	ug/m3	NS	NS	4.9	ND (4.0)	4.9	ND (4.0)	ND (20)	3.5 J	3.7 J
Ethanol	ug/m3	NS	NS	4.3	ND (3.8)	124	4.5	98.2	64.1	49.4
Ethyl Acetate	ug/m3	NS	NS	6.5	ND (2.9)	12	ND (2.9)	14 J	7.6	ND (2.9)
Freon 113	ug/m3	NS	NS	ND (3.1)	ND (3.1)	ND (3.1)	ND (3.1)	ND (15)	ND (3.1)	ND (3.1)
Freon 114	ug/m3	NS	NS	ND (2.8)	ND (2.8)	ND (2.8)	ND (2.8)	ND (14)	ND (2.8)	ND (2.8)
Hexachlorobutadiene	ug/m3	NS	NS	ND (3.8)	ND (3.8)	ND (3.8)	ND (3.8)	ND (19)	ND (3.8)	ND (3.8)
Isopropyl Alcohol	ug/m3	NS	NS	4.2	5.9	30.2	7.9	10	20	17
Methyl Isobutyl Ketone	ug/m3	NS	NS	ND (3.3)	ND (3.3)	ND (3.3)	ND (3.3)	ND (16)	ND (3.3)	ND (3.3)
Methyl Tert Butyl Ether	ug/m3	NS	NS	ND (2.9)	ND (2.9)	ND (2.9)	ND (2.9)	ND (14)	ND (2.9)	ND (2.9)
Methyl ethyl ketone	ug/m3	NS	NS	1.4 J	2.4	7.4	ND (2.4)	2600	4.4	3.5
Methylmethacrylate	ug/m3	NS	NS	ND (3.3)	ND (3.3)	1.8 J	ND (3.3)	ND (16)	ND (3.3)	ND (3.3)
Propylene	ug/m3	NS	NS	6	6.7	5.2	7.6	340	9.6	8.2
Styrene	ug/m3	NS	NS	ND (3.4)	ND (3.4)	7.7	ND (3.4)	ND (17)	4	3.1 J
Tertiary Butyl Alcohol	ug/m3	NS	NS	4.2	4.5	18	ND (2.4)	ND (12)	10	7.6
Tetrahydrofuran	ug/m3	NS	NS	ND (2.4)	ND (2.4)	ND (2.4)	ND (2.4)	ND (12)	ND (2.4)	ND (2.4)
Trichlorofluoromethane	ug/m3	NS	NS	77	187	117	107	14	139	131
Vinyl Acetate	ug/m3	NS	NS	ND (2.8)	ND (2.8)	1.8 J	ND (2.8)	16	ND (2.8)	ND (2.8)
Xylenes (total)	ug/m3	NS	NS	11	13	61.6	8.9	ND (17)	39	28
cis-1,2-Dichloroethylene	ug/m3	60	6	ND (0.63)	ND (0.63)	ND (0.63)	ND (0.63)	ND (3.2)	ND (0.63)	ND (0.63)
cis-1,3-Dichloropropene	ug/m3	NS	NS	ND (3.6)	ND (3.6)	ND (3.6)	ND (3.6)	ND (18)	ND (3.6)	ND (3.6)
m-Dichlorobenzene	ug/m3	NS	NS	ND (2.4)	ND (2.4)	ND (2.4)	ND (2.4)	ND (12)	ND (2.4)	ND (2.4)
o-Dichlorobenzene	ug/m3	NS	NS	ND (0.96)	ND (0.96)	ND (0.96)	ND (0.96)	ND (4.8)	ND (0.96)	ND (0.96)
p-Dichlorobenzene	ug/m3	NS	NS	ND (2.4)	ND (2.4)	ND (2.4)	ND (2.4)	ND (12)	ND (2.4)	ND (2.4)
trans-1,2-Dichloroethylene	ug/m3	NS	NS	ND (3.2)	ND (3.2)	2.0 J	ND (3.2)	ND (16)	ND (3.2)	ND (3.2)
trans-1,3-Dichloropropene	ug/m3	NS	NS	ND (3.6)	ND (3.6)	ND (3.6)	ND (3.6)	ND (18)	ND (3.6)	ND (3.6)

NOTES:

1. Results are measured in ug/m³.

ABBREVIATIONS:

NYS = New York State

ug/m³ = micrograms per meter cubed

NYS Matrix A-F (Low) = NYS SV Guidance - Matrix A-F Soil Vap. Low (NYS SVI GUIDE 2/24)

NYS Matrix A-F (High) = NYS SV Guidance - Matrix A-F Soil Vap. High (NYS SVI GUIDE 2/24)

Guidance for Evaluating Soil Vapor Intrusion in The State of New York (2006) with updates (SVI Guidance)

and NYSDOH Soil Vapor/Indoor Air Matrices

Figures

ANALYTE	UNITS	NY RRSCO	NY UUSCO	NY POTGWSCO
PFAS (EPA 1633A)				
PFOS	ppb	44	0.88	1
Total PFOA	ppb	33	0.66	0.8
TCL VOCs (SW846 8260D)				
No Compounds Exceeding NYSDEC SCOs				
TCL SVOCs (SW846 8270E)				
No Compounds Exceeding NYSDEC SCOs				
PCBs (SW846 8082A)				
Aroclor 1242	mg/kg	1	0.1	NS
Aroclor 1248	mg/kg	1	0.1	NS
Aroclor 1254	mg/kg	1	0.1	NS
PESTICIDES (SW846 8081B)				
4,4'-DDE	mg/kg	8.9	0.0033	NS
4,4'-DDT	mg/kg	7.9	0.0033	NS
Aldrin	mg/kg	0.097	0.005	NS
Dieldrin	mg/kg	0.2	0.005	NS
TOTAL METALS (SW846 6010D)				
Barium	mg/kg	400	350	NS
Chromium	mg/kg	180*	30*	NS
Copper	mg/kg	270	50	NS
Lead	mg/kg	400	63	NS
Mercury	mg/kg	0.81	0.18	NS
Zinc	mg/kg	10000	109	NS

NOTES:

- Results are measured in mg/kg, with the exception of PFAS species which are measured in ppb.
 - Results are compared to NYSDEC UUSCOs, NYSDEC RRSCO and NYSDEC POTGWSCO.
 - Sample Depth is reported in feet below ground surface.
 - Chromium SCOs are based on trivalent chromium.
- = concentration exceeds UUSCO
■ = concentration exceeds RRSCO
■ = concentration exceeds PGWSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.
UUSCO = NYSDEC Unrestricted Use Soil Cleanup Objectives
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives
PGWSCO = NYSDEC Protection of Groundwater Soil Cleanup Objectives
PFAS = Per- and Polyfluoroalkyl Substances
PCBs = Polychlorinated Biphenyls
mg/kg = Milligram per kilogram
ppb = Parts per billion
ND = Non-Detect
NS = No Standard

Sample ID:	UNITS	R1-SB-02 (2.5-3.0)	R1-SB-02 (7.5-8.0)	R1-SB-02 (12.5-13.0)	R1-SB-02 (17.5-18.0)
Date:		8/8/2025	8/8/2025	8/8/2025	8/8/2025
4,4'-DDE	mg/kg	0.0068	ND (0.00064)	ND (0.00062)	ND (0.00067)

Sample ID:	UNITS	R1-SB-04 (1.1-1.5)	R1-SB-04 (8.5-9)	R1-SB-04 (13.5-14)	R1-SB-04 (18-18.5)
Date:		8/13/2025	8/13/2025	8/13/2025	8/13/2025
PCBs (SW846 8082A)					
Aroclor 1242	mg/kg	0.138	ND (0.033)	ND (0.033)	ND (0.033)
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0038	ND (0.00068)	ND (0.00068)	ND (0.00067)
TOTAL METALS (SW846 6010D)					
Mercury	mg/kg	0.24	ND (0.028)	ND (0.029)	ND (0.028)
Zinc	mg/kg	423	9.7	23.5	11.4

Sample ID:	UNITS	R1-SB-05 (2.5-3.0)	R1-SB-05 (7.5-8.0)	R1-SB-05 (12.5-13.0)	R1-SB-05 (17.5-18.0)
Date:		8/8/2025	8/8/2025	8/8/2025	8/8/2025
PESTICIDES (SW846 8081B)					
4,4'-DDT	mg/kg	0.0049	ND (0.00061)	ND (0.00064)	ND (0.00061)
TOTAL METALS (SW846 6010D)					
Copper	mg/kg	55	9	13	7.4
Lead	mg/kg	243	ND (3.9)	9.5	2.5
Mercury	mg/kg	1.5	ND (0.030)	ND (0.032)	ND (0.032)
Zinc	mg/kg	154	14	27	13.4

Sample ID:	UNITS	R1-SB-07 (2.5-3.0)	R1-SB-07 (7.5-8.0)	R1-SB-07 (12.5-13.0)	R1-SB-07 (17.5-18.0)
Date:		8/8/2025	8/8/2025	8/8/2025	8/8/2025
PFAS (EPA 1633)					
PFOA	ppb	0.718	0.131 J	0.154 J	0.194 J
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0122	ND (0.00064)	0.00094	ND (0.00065)
Aldrin	mg/kg	0.0054	ND (0.00064)	ND (0.00067)	ND (0.00065)
Dieldrin	mg/kg	0.0062	ND (0.00064)	0.00093	ND (0.00065)
TOTAL METALS (SW846 6010D)					
Zinc	mg/kg	236	67.4	33	19.8

Sample ID:	UNITS	R1-SB-08 (2.5-3.0)	R1-SB-08 (7.5-8.0)	R1-SB-08 (12.5-13.0)	R1-SB-08 (17.5-18.0)
Date:		8/8/2025	8/8/2025	8/8/2025	8/8/2025
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0099	ND (0.00063)	0.0012	ND (0.00068)
TOTAL METALS (SW846 6010D)					
Zinc	mg/kg	369	18.8	16.5	18.3

Sample ID:	UNITS	R1-SB-10 (4.4-5)	R1-SB-10 (8.5-9)	R1-SB-10 (11-11.5)	R1-SB-10 (15-15.5)
Date:		8/13/2025	8/13/2025	8/13/2025	8/13/2025
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0158	0.0101	ND (0.00068)	ND (0.00068)
4,4'-DDT	mg/kg	0.005	0.0022	ND (0.00068)	ND (0.00068)
Dieldrin	mg/kg	0.0057	0.0041	ND (0.00068)	ND (0.00068)
TOTAL METALS (SW846 6010D)					
Zinc	mg/kg	127	68.8	13.1	15.9

Sample ID:	UNITS	R1-SB-11 (6.5-7)	R1-SB-11 (10-10.5)	R1-SB-11 (15-15.5)	R1-SB-11 (19-19.5)
Date:		8/13/2025	8/13/2025	8/13/2025	8/13/2025
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0016	0.0111	0.0013	ND (0.00066)
4,4'-DDT	mg/kg	0.0039	0.0035	0.00096	ND (0.00066)
Aldrin	mg/kg	ND (0.00065)	0.0038	0.0017	ND (0.00066)
Dieldrin	mg/kg	0.0014	0.0071	0.001	ND (0.00066)
TOTAL METALS (SW846 6010D)					
Lead	mg/kg	96.7	52.3	45.4	2.6
Zinc	mg/kg	105	84.3	113	14

Sample ID:	UNITS	R1-SB-13 (2.5-3.0)	R1-SB-13 (7.5-8.0)	R1-SB-13 (12.5-13.0)	R1-SB-13 (17.5-18.0)
Date:		8/8/2025	8/8/2025	8/8/2025	8/8/2025
PFAS (EPA 1633)					
PFOS	ppb	0.356	0.372	1.20	0.200
PFOA	ppb	0.685	0.591	0.278	0.290
TOTAL METALS (SW846 6010D)					
Zinc	mg/kg	646	233	28.6	9

Sample ID:	UNITS	R1-SB-14 (2-2.5)	R1-SB-14 (6-6.5)	R1-SB-14 (10.5-11)	R1-SB-14 (16-16.5)
Date:		8/13/2025	8/13/2025	8/13/2025	8/13/2025
PFAS (EPA 1633)					
PFOA	ppb	0.0353 J	0.704	0.153 J	0.219
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0583	0.0046	0.0026	ND (0.00068)
4,4'-DDT	mg/kg	0.0059	0.0022	0.0056	ND (0.00068)
TOTAL METALS (SW846 6010D)					
Lead	mg/kg	84.6	19.4	12.2	ND (2.2)
Zinc	mg/kg	193	360	22.5	6.5

Sample ID:	UNITS	R1-SB-16N (15.5-16)
Date:		8/15/2025
PESTICIDES (SW846 8081B)		
4,4'-DDE	mg/kg	ND (0.00072)
TOTAL METALS (SW846 6010D)		
Barium	mg/kg	32.1
Lead	mg/kg	8.1
Mercury	mg/kg	ND (0.031)
Zinc	mg/kg	22.8

Sample ID:	UNITS	R1-SB-16W (15.5-16)
Date:		8/14/2025
PESTICIDES (SW846 8081B)		
4,4'-DDE	mg/kg	ND (0.00067)
TOTAL METALS (SW846 6010D)		
Barium	mg/kg	ND (22)
Lead	mg/kg	ND (0.032)
Mercury	mg/kg	ND (0.032)
Zinc	mg/kg	88.1

Sample ID:	UNITS	R1-SB-17 (3.5-4)	R1-SB-17 (5.5-6)	R1-SB-17 (12.5-13)	R1-SB-17 (17.5-18)
Date:		8/13/2025	8/13/2025	8/15/2025	8/15/2025
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0052	0.0046	ND (0.00064)	ND (0.00067)
TOTAL METALS (SW846 6010D)					
Zinc	mg/kg	290	476	39.5	14.6

Sample ID:	UNITS	R1-SB-16 (0.5-1)	R1-SB-16 (8.5-9)	R1-SB-16 (11.5-12)	R1-SB-16 (15.5-16)
Date:		8/12/2025	8/12/2025	8/14/2025	8/14/2025
PESTICIDES (SW846 8081B)					
4,4'-DDE	mg/kg	0.0081	0.00092	ND (0.00067)	ND (0.00063)
TOTAL METALS (SW846 6010D)					
Barium	mg/kg	49.9	99.9	ND (21)	359
Lead	mg/kg	34.1	215	2.1	1260
Mercury	mg/kg	0.043	0.25	ND (0.027)	ND (0.030)
Zinc	mg/kg	325	328	13.4	41.7

Sample ID:	UNITS	R1-SB-16S (15.5-16)
Date:		8/12/2025
PESTICIDES (SW846 8081B)		
4,4'-DDE	mg/kg	ND (0.00069)
TOTAL METALS (SW846 6010D)		
Barium	mg/kg	ND (21)
Lead	mg/kg	3.1
Mercury	mg/kg	ND (0.029)
Zinc	mg/kg	18.5

Sample ID:	UNITS	R1-SB-18 (2.5-3)	R1-SB-18 (7.5-8)	R1-SB-18 (12.5-13)	R1-SB-18 (17.5-18)
Date:		8/18/2025	8/18/2025	8/18/2025	8/18/2025
PESTICIDES (SW846 8081B)					
4,4'-DDD	mg/kg	0.0084	ND (0.00069)	ND (0.00065)	ND (0.00067)
4,4'-DDE	mg/kg	0.004	ND (0.00069)	ND (0.00065)	ND (0.00067)
TOTAL METALS (SW846 6010D)					
Lead	mg/kg	351	ND (2.1)	ND (1.9)	2
Mercury	mg/kg	0.45	ND (0.031)	ND (0.029)	ND (0.028)
Zinc	mg/kg	182	13.6	10.4	11.3

Sample ID:	UNITS	R1-SB-18E (15.5-16)
Date:		8/15/2025
PESTICIDES (SW846 8081B)		
4,4'-DDE	mg/kg	ND (0.00066)
TOTAL METALS (SW846 6010D)		
Barium	mg/kg	ND (21)
Lead	mg/kg	3.6
Mercury	mg/kg	ND (0.030)
Zinc	mg/kg	15.1

LEGEND:

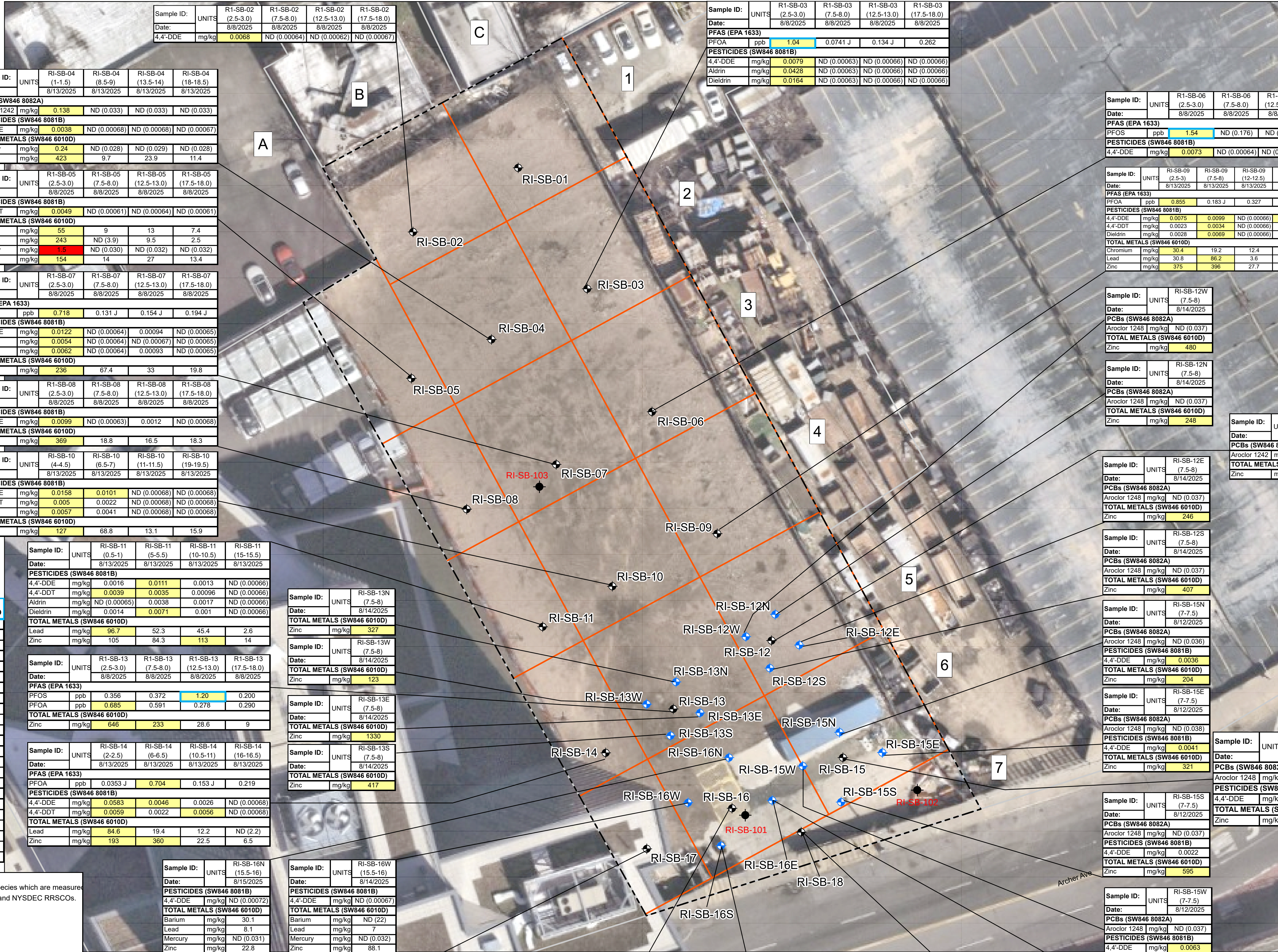
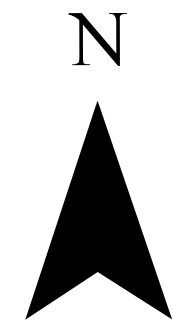
- RI-SB-12N SOIL BORING NO. AND APPROX. LOCATION (DELINEATION SAMPLE)
RI-SB-01 SOIL BORING NO. AND APPROX. LOCATION
RI-SB-101 PROPOSED EDI SAMPLE NO. AND APPROX. LOCATION

NOTE:

- THIS PLAN IS FOR LOCATING PROPOSED SOIL BORING LOCATIONS ONLY. OTHER SITE WORK SHOWN HERE NOT INTENDED FOR CONSTRUCTION.
- CONTINGENCY POINTS FOR 12, 13, AND 16N COULD NOT BE SURVEYED. THE POINTS SHOWN REPRESENT APPROXIMATE LOCATIONS.

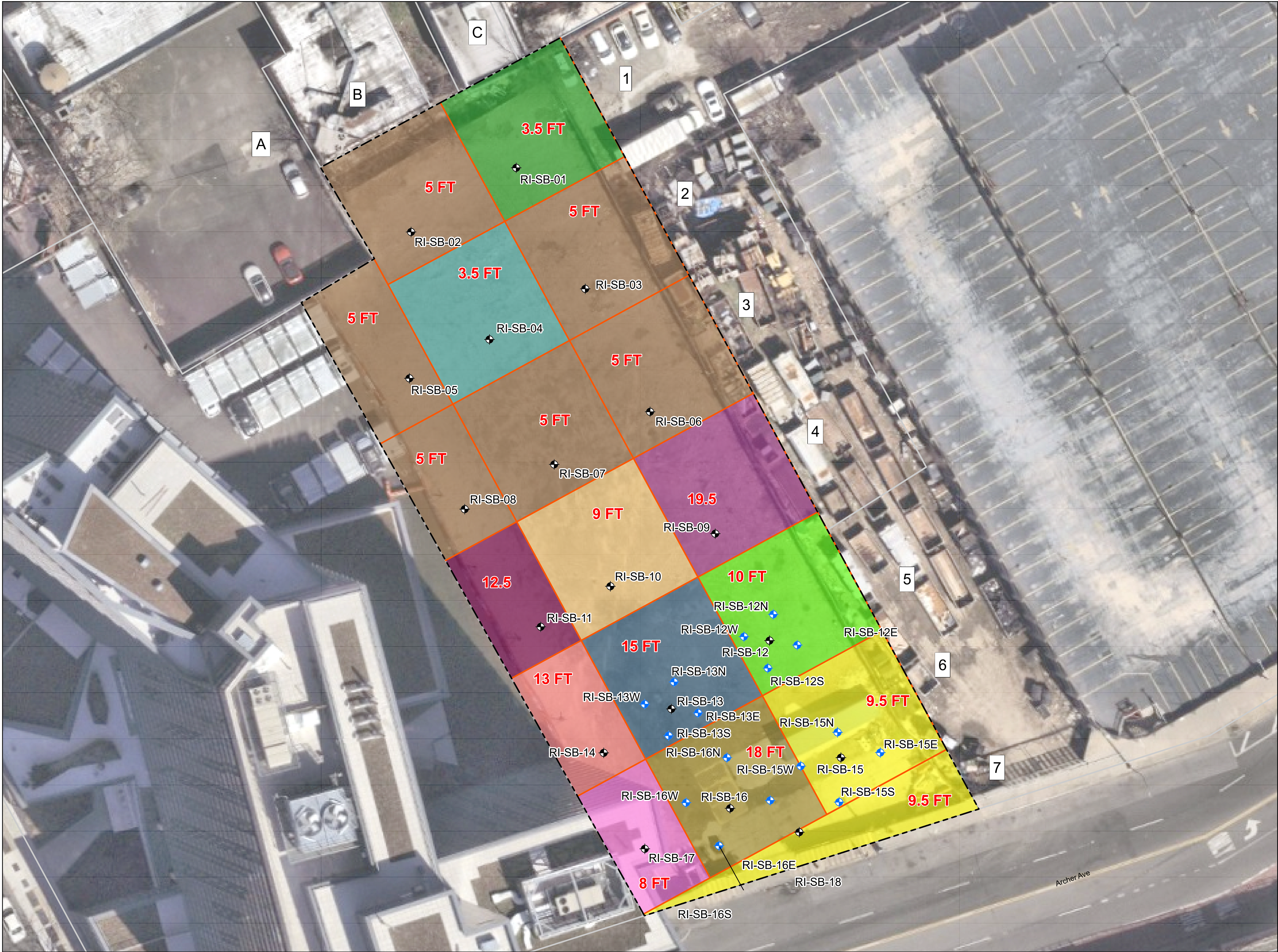
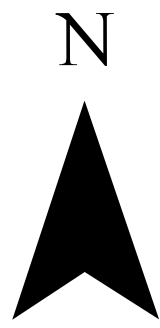
REFERENCE:

PARCELS: NYS OFFICE OF INFORMATION TECHNOLOGY SERVICES
GIS PROGRAM OFFICE, NYS DEPT OF TAXATION AND FINANCES
OFFICE OF REAL PROPERTY TAX SERVICES, AERIAL IMAGERY
TAKEN FROM NEARMAP, DATED APRIL 1, 2025.



SCALE: 1" = 20'
0 10 20 40 60 80 FEET

dwg by: KBV		chk by: MKC	scale: AS NOTED	date: 10/31/2025
SESI CONSULTING ENGINEERS GEOTECHNICAL ENVIRONMENTAL SITE CIVIL 959 route 48e, 3rd floor, passippany, nj 07054 ph: 973.808.9050				
REMEDIAL INVESTIGATION WORK PLAN 16305-16325 ARCHER AVENUE AUTO REPAIR AND COAL YARD SITE (N0241283) JAMAICA, NEW YORK				
FIG-3.1				



NOTE:
1. THIS PLAN IS FOR LOCATING PROPOSED SOIL BORING LOCATIONS ONLY. OTHER SITE WORK SHOWN HERE NOT INTENDED FOR CONSTRUCTION.
2. CONTINGENCY POINTS FOR 12, 13, AND 18N COULD NOT BE SURVEYED. THE POINTS SHOWN REPRESENT APPROXIMATE LOCATIONS.

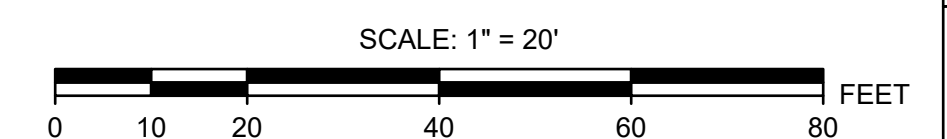
REFERENCE:
PARCELS: NYS OFFICE OF INFORMATION TECHNOLOGY SERVICES
- GIS PROGRAM OFFICE, NYS DEPT OF TAXATION AND FINANCE'S
OFFICE OF REAL PROPERTY TAX SERVICES; AERIAL IMAGERY
TAKEN FROM NEARMAP, DATED APRIL 1, 2025.

LEGEND:
SOIL BORING NO. AND APPROX. LOCATION (DELINATION SAMPLE)
SOIL BORING NO. AND APPROX. LOCATION
SITE LOCATION
NY TAX PARCELS
8 FT PROPOSED EXCAVATION DEPTH (FT)

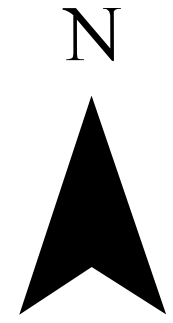
PROPOSED EXCAVATION GRID DEPTHS
3 FT
3.5 FT
5 FT
8 FT
9 FT
9.5 FT
10 FT
12.5 FT
13 FT
15 FT
18 FT
19.5 FT

SCALE: 1" = 20'
0 10 20 40 60 80 FEET

Project: REMEDIAL INVESTIGATION WORK PLAN 16305-16325 ARCHER AVENUE AUTO REPAIR AND COAL TARD SITE (NO C241283) JAMAICA, NEW YORK		Track: TRACK 1 SOIL EXCAVATION PLAN	
Job no.: 12914		Drawing no.: FIG-5.1A	
dwg by: KBV		chk by: MKC	
scale: AS NOTED		date: 11/3/2025	
rev:		description:	

FIG-5.1B

Y:\GIS\Project_Numbers\12914\FINAL_MAPS_103172025_456 PM_Kim VanderKelen_LAYOUT_FIG-5.1C



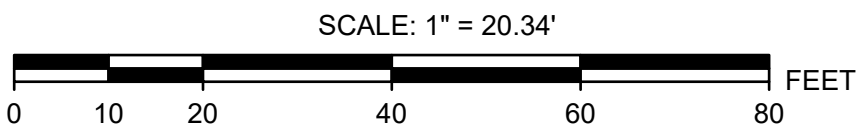
NOTE:
1. THIS PLAN IS FOR LOCATING PROPOSED SOIL BORING LOCATIONS ONLY. OTHER SITE WORK SHOWN HERE NOT INTENDED FOR CONSTRUCTION.
2. CONTINGENCY POINTS FOR 12, 13, AND 16N COULD NOT BE SURVEYED. THE POINTS SHOWN REPRESENT APPROXIMATE LOCATIONS.

LEGEND:
● PROPOSED END-POINT SAMPLE LOCATIONS
● PROPOSED SIDEWALL SAMPLE LOCATIONS
--- SITE LOCATION
□ NY TAX PARCELS

REFERENCE:
PARCELS: NYS OFFICE OF INFORMATION TECHNOLOGY SERVICES
- GIS PROGRAM OFFICE, NYS DEPT OF TAXATION AND FINANCE'S
OFFICE OF REAL PROPERTY TAX SERVICES, AERIAL IMAGERY
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Project: REMEDIAL INVESTIGATION WORK PLAN 16305-16525 ARCHER AVENUE AUTO REPAIR AND COAL YARD SITE (NO C241263) JAMAICA, NEW YORK		Title: END-POINT SOIL SAMPLING PLAN	
Job no.: 12914		Drawing no:	
FIG-5.1C			
dwg by: KBV		rev	
chk by: MKC		date	
scale: AS NOTED		description	
date: 10/31/2025			

Sample ID:	UNITS	RI-MW-01
Date:		8/20/2025
PFOS	ppt	35.3
PFOA	ppt	34.4

Sample ID:	UNITS	RI-MW-02
Date:		8/20/2025
PFOS	ppt	30.9
PFOA	ppt	30.0

Sample ID:	UNITS	RI-MW-03
Date:		8/20/2025
PFOS	ppt	86.1
PFOA	ppt	41.6

Sample ID:	UNITS	RI-MW-05
Date:		8/20/2025
PFOS	ppt	43.1
PFOA	ppt	37.0

Sample ID:	UNITS	RI-MW-06
Date:		8/20/2025
PFOS	ppt	28.6
PFOA	ppt	37.0



ANALYTE	UNITS	NY AWQGV
PFAS (EPA 1633A)		
PFOS	ppt	2.7
Total PFOA	ppt	6.7

NOTES:
1. Results are measured in ppt.
2. Results are compared to NYSDEC AWQGV.
= concentration exceeds AWQGV

ABBREVIATIONS:
NYSDEC = New York State Department of Environmental Conservation
AWQGV = Ambient Water Quality Guidance Values - Human Health Criteria [NYSDEC 4/2023])
ppt = Parts per trillion
ND = Non-Detect

Sample ID:	UNITS	RI-MW-04
Date:		8/20/2025
PFOS	ppt	42.3
PFOA	ppt	35.7

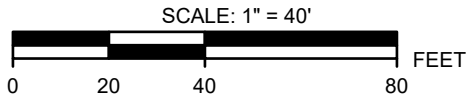
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OFFICE OF REAL PROPERTY TAX SERVICES; AERIAL IMAGERY
TAKEN FROM NEARMAP, DATED APRIL 1, 2025.

- LEGEND:**
- RI-MW-01 MONITORING WELL NO AND APPROX LOCATION
 - PROPOSED MONITORING WELL APPROX LOCATION
 - PROPERTY BOUNDARY
 - TAX PARCELS



dwg by: KBV
chk by: CM
scale: AS NOTED
date: 9/19/2025

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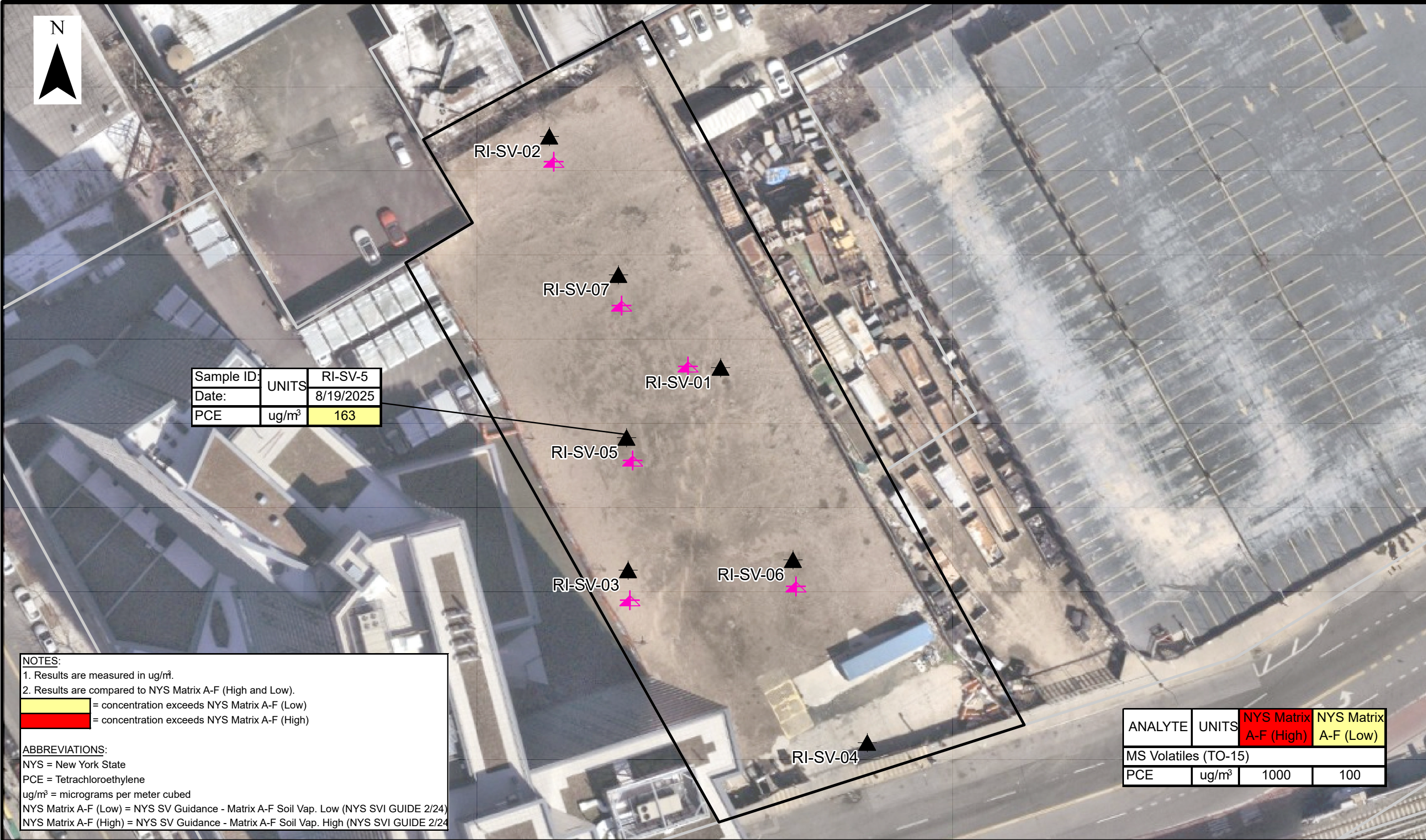
16305-16325 ARCHER AVENUE AUTO REPAIR
AND COAL YARD SITE (NO. C241283)
JAMAICA, NEW YORK

PROPOSED GROUNDWATER SAMPLING PLAN

job no.: 12914
drawing no:

FIG-5.2

Y:\GIS\Project_Numbers\12914\FINAL_MAPS, 9/19/2025 9:36 AM, Kim Vanderklein, LAYOUT: FIG-5.3



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

REFERENCE:
PARCELS: NYS OFFICE OF INFORMATION TECHNOLOGY SERVICES - GIS PROGRAM OFFICE, NYS DEPT OF TAXATION AND FINANCE'S OFFICE OF REAL PROPERTY TAX SERVICES; AERIAL IMAGERY TAKEN FROM NEARMAP, DATED APRIL 1, 2025.

dwg by: KBV
chk by: CM
scale: AS NOTED
date: 9/19/2025

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959 ROUTE 46E, 3RD FLOOR, PARSIPPANY, NJ 07054 PH: 973.808.9050

16305-16325 ARCHER AVENUE AUTO REPAIR
AND COAL YARD SITE (NO C241283)
JAMAICA, NEW YORK

**PROPOSED SUB-SLAB
VAPOR SAMPLING PLAN**

job no.: 12914
drawing no:

FIG-5.3

Appendix A:

Proposed Redevelopment Plans

KEY PLAN

629 FIFTH AVE, SUITE 204, PELHAM, NY, 10803

NOVEMBER 15, 2024

[illegible]

Architectural:
PERKINS EASTMAN ARCHITECTS
115 FIFTH AVENUE, 3RD FLOOR, NEW YORK, NY, 10003

Civil:
SULLIVAN GROUP DESIGN
56 PINE STREET, 16A, NEWYORK, NY, 10005

Geotech/SOE:
JZN ENGINEERING, PC
99 MORRIS AVENUE, SUITE 302, SPRINGFIELD, NJ, 07081

MEFPF:
DAGHER ENGINEERING, PLLC
29 BROADWAY, NEW YORK, NY, 10006

Sustainability/Accessibility:
STEVEN WINTER ASSOCIATES
 55 NORTH WATER STREET, SUITE 1, NORWALK, CT, 06851

Lighting Design:
GOLDSTICK STUDIO
629 FIFTH AVE, SUITE 204, PELHAM, NY, 10803

ARCHER TOWERS

PROJECT No: 89980

ARCHITECTURAL SITE
PLAN CELLAR & 1ST
FLOOR PARKING PLAN

A 002 00

CONSTRUCTION DOCUMENTS



PARKING SCHEDULE	
PARKING TYPE	PARKING SPACE CO.
CELLAR	
ADA PARKING SPACE	2
TYPICAL PARKING SPACE	29
LEVEL	
ADA PARKING SPACE	2
ADA VAN PARKING SPACE (UNROOFED)	1
COMPACT CAR PARKING SPACE	1
ELECTRICAL CAR PARKING SPACE	12
ELECTRICAL CAR PARKING SPACE ADA	1
TYPICAL PARKING SPACE- UNROOFED	18

BC1106.5 VAN SPACES
EVERY SIX OR FRACTION OF SIX ACCESSIBLE TO BE VAN
ACCESSIBLE PARKING

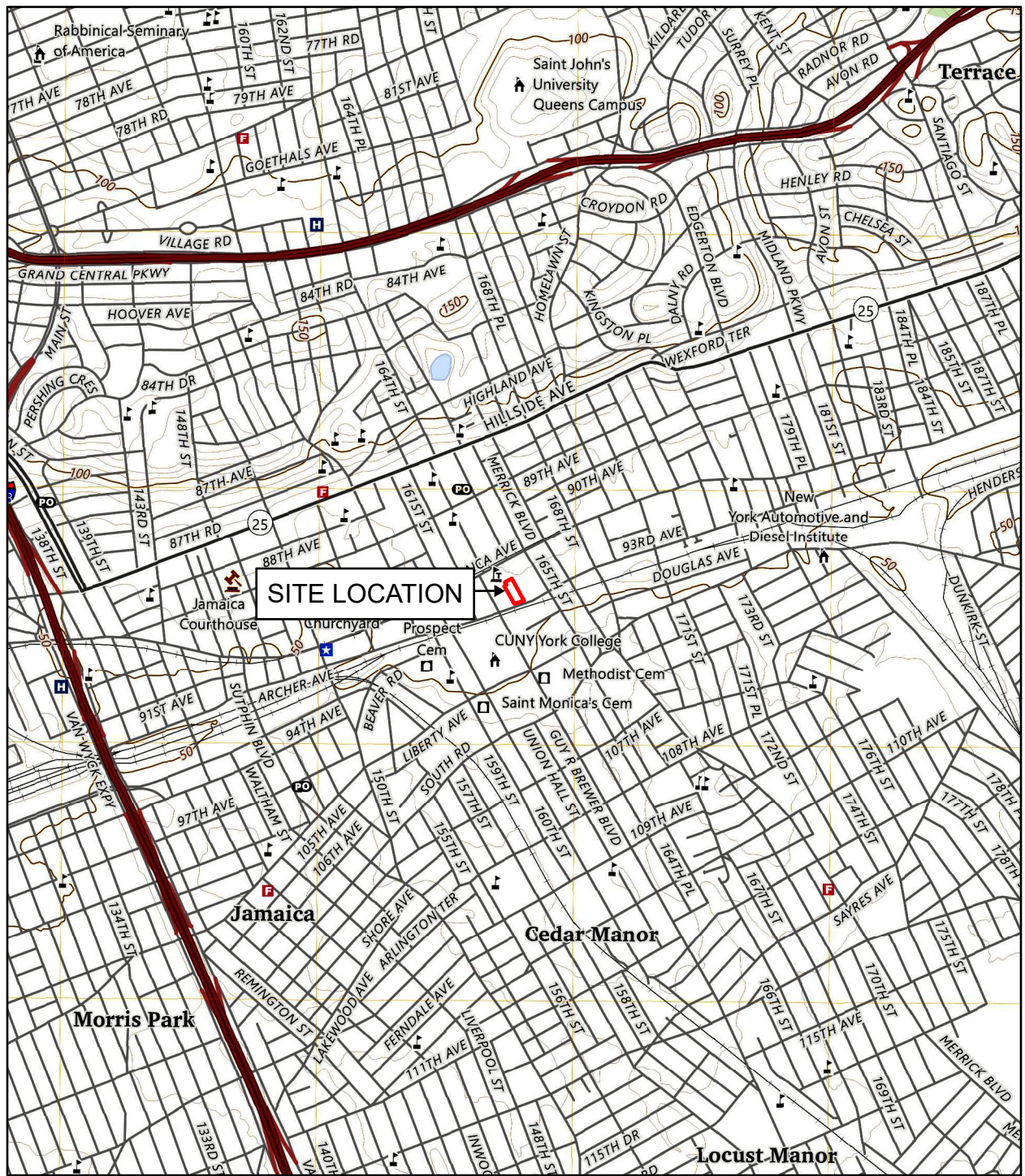
BC406.4.10 ELECTRIC VEHICLE CHARGING STATIONS
ELECTRICAL RACEWAY TO THE ELECTRICAL SUPPLY PAN

TOTAL	67 PROVIDED
REQ'D 20%	13
PROVIDED EV SPOTS	13 PROVIDED
PARKING SPACES	

Appendix B:

Remedial Investigation Figures

Y:\GIS\Project_Numbers\12914\FINAL_MAPS, 6/17/2025 12:50 PM, Kim Vanderklein, LAYOUT: FIG-1.2



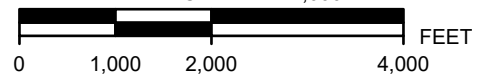
REFERENCE:

UNITED STATES GEOLOGICAL SURVEY (USGS)
JAMAICA, NY USGS QUADRANGLE - 2023

LEGEND:

 SITE LOCATION

SCALE: 1" = 2,000'



REMEDIAL INVESTIGATION WORK PLAN
C241283--ARCHER AVENUE AUTO REPAIR
AND COAL YARD SITE
JAMAICA, NEW YORK

SITE LOCATION MAP

SESI CONSULTING
ENGINEERS

GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL
959 ROUTE 46E, 3RD FLOOR, PARSIPPANY, NJ 07054 PH: 973.808.9050

FIG-1.1

DRAWN BY: KBV

CHECKED BY: CM

SCALE: AS NOTED

DATE: 6/17/2025

JOB NO: 12914

Y:\GIS\Project_Numbers\12914\FINAL_MAPS, 6/17/2025 12:59 PM, Kim Vanderklein, LAYOUT: FIG-2.1

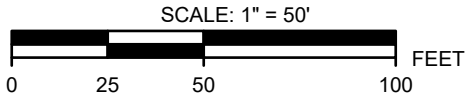


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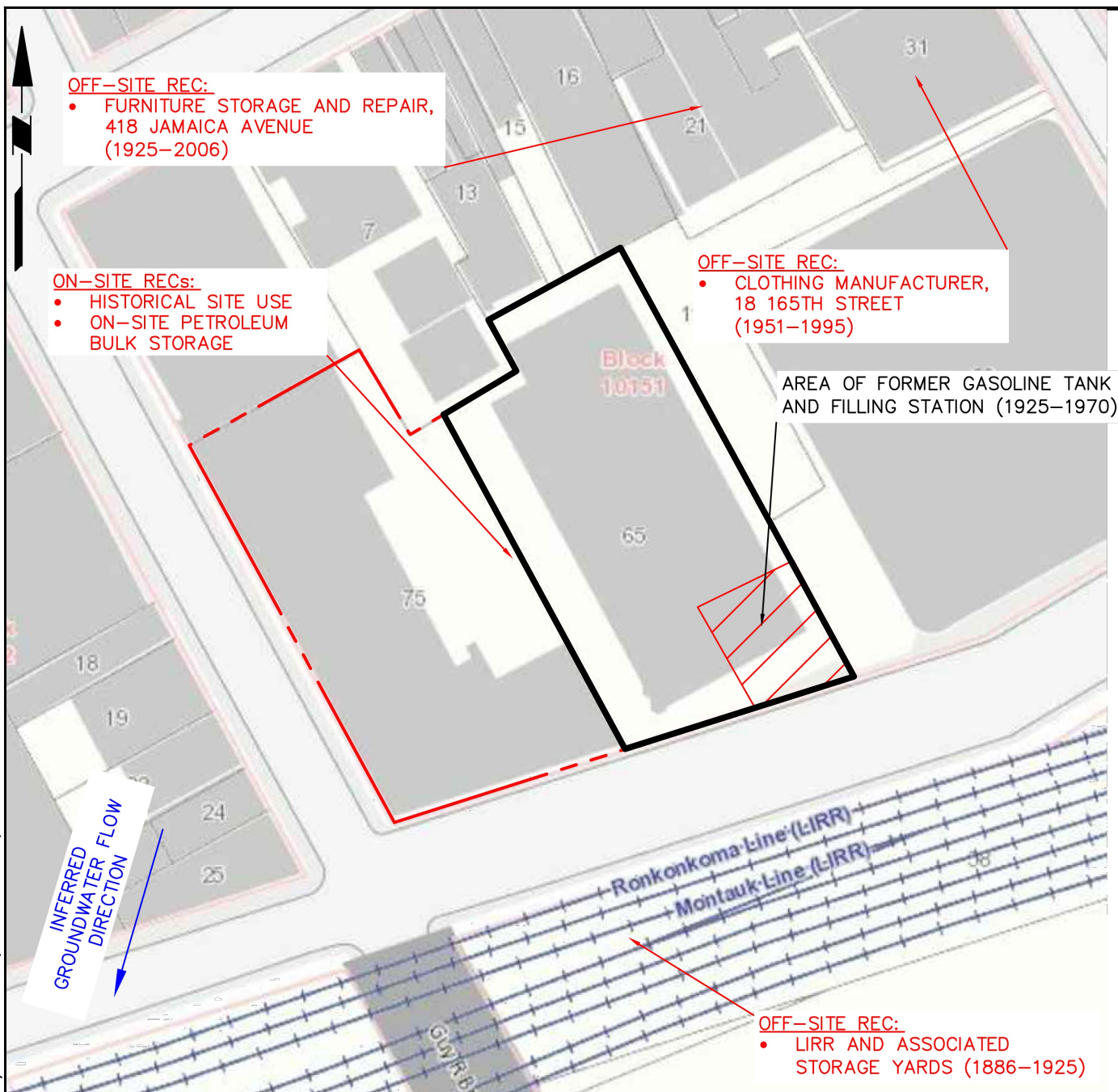
REFERENCE:
PARCELS: NYS OFFICE OF INFORMATION TECHNOLOGY SERVICES
- GIS PROGRAM OFFICE, NYS DEPT OF TAXATION AND FINANCE'S
OFFICE OF REAL PROPERTY TAX SERVICES

- LEGEND:**
- CURRENT AGGREGATE COVER
 - CURRENT CONCRETE COVER
 - PROPERTY BOUNDARY
 - NY TAX PARCELS



dwg by: KBV chk by: JM scale: AS NOTED date: 6/17/2025	
SESI CONSULTING ENGINEERS GEOTECHNICAL ENVIRONMENTAL SITE CIVIL 959 route 46e, 3rd floor, parsippany, nj 07054 ph: 973.808.9050	
project: REMEDIAL INVESTIGATION WORK PLAN C241283--ARCHER AVENUE AUTO REPAIR AND COAL YARD SITE JAMAICA, NEW YORK	title: CURRENT SITE PLAN
job no.: 12914 drawing no: FIG-2.1	

N:\ACAD\12914\CAD\ENVIRONMENTAL\12914.DWG.REC MAP.DWG 10/31/25 02:38:43PM, kim.vanderklein, LAYOUT:FIG 2.2



C241283--ARCHER AVE AUTO
REPAIR AND COAL YARD SITE
QUEENS, NEW YORK

REC LOCATION MAP

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ENGINEERS**

GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL
959 ROUTE 46E, 3RD FLOOR, PARSIPPANY, NJ 07054 PH: 973.808.9050

FIG 2.2

DRAWN BY: APG

CHECKED BY: JR

SCALE: AS NOTED

DATE: 10/31/2025

JOB NO.: 12914

Y:\GIS\Projects_Northern\2014\PMI_NAL_MAPS_10312025\14_PMI_Kim_Vanderkelen_LAYOUT_FIG-4.2

ANALYTE	UNITS	NY RRSCO	NY UUSCO	NY POTGWSCO
PFAS (EPA 1633A)				
PFOS	ppb	44	0.88	1
Total PFOA	ppb	33	0.66	0.8
TCL VOCs (SW846 8260D)				
No Compounds Exceeding NYSDEC SCOs				
TCL SVOCs (SW846 8270E)				
No Compounds Exceeding NYSDEC SCOs				
PCBs (SW846 8082A)				
Aroclor 1242	mg/kg	1	0.1	NS
Aroclor 1248	mg/kg	1	0.1	NS
Aroclor 1254	mg/kg	1	0.1	NS
PESTICIDES (SW846 8081B)				
4,4'-DDE	mg/kg	8.9	0.0033	NS
4,4'-DDT	mg/kg	7.9	0.0033	NS
Aldrin	mg/kg	0.097	0.005	NS
Dieldrin	mg/kg	0.2	0.005	NS
TOTAL METALS (SW846 6010D)				
Barium	mg/kg	400	350	NS
Chromium	mg/kg	180*	30*	NS
Copper	mg/kg	270	50	NS
Lead	mg/kg	400	63	NS
Mercury	mg/kg	0.81	0.18	NS
Zinc	mg/kg	10000	109	NS

NOTES:

- Results are measured in mg/kg, with the exception of PFAS species which are measured in ppb.
 - Results are compared to NYSDEC UUSCOs, NYSDEC RRSCO and NYSDEC POTGWSCO.
 - Sample Depth is reported in feet below ground surface.
 - Chromium SCOs are based on trivalent chromium.
- NS = concentration exceeds UUSCO
NS = concentration exceeds RRSCO
NS = concentration exceeds PGWSCO

ABBREVIATIONS:

NYSDEC = New York State Department of Environmental Conservation.
UUSCO = NYSDEC Unrestricted Use Soil Cleanup Objectives
RRSCO = NYSDEC Restricted Use Soil Cleanup Objectives
PGWSCO = NYSDEC Protection of Groundwater Soil Cleanup Objectives
PFAS = Per- and Polyfluoroalkyl Substances
PCBs = Polychlorinated Biphenyls
mg/kg = Milligram per kilogram
ppb = Parts per billion
ND = Non-Detect
NS = No Standard

NOTE:

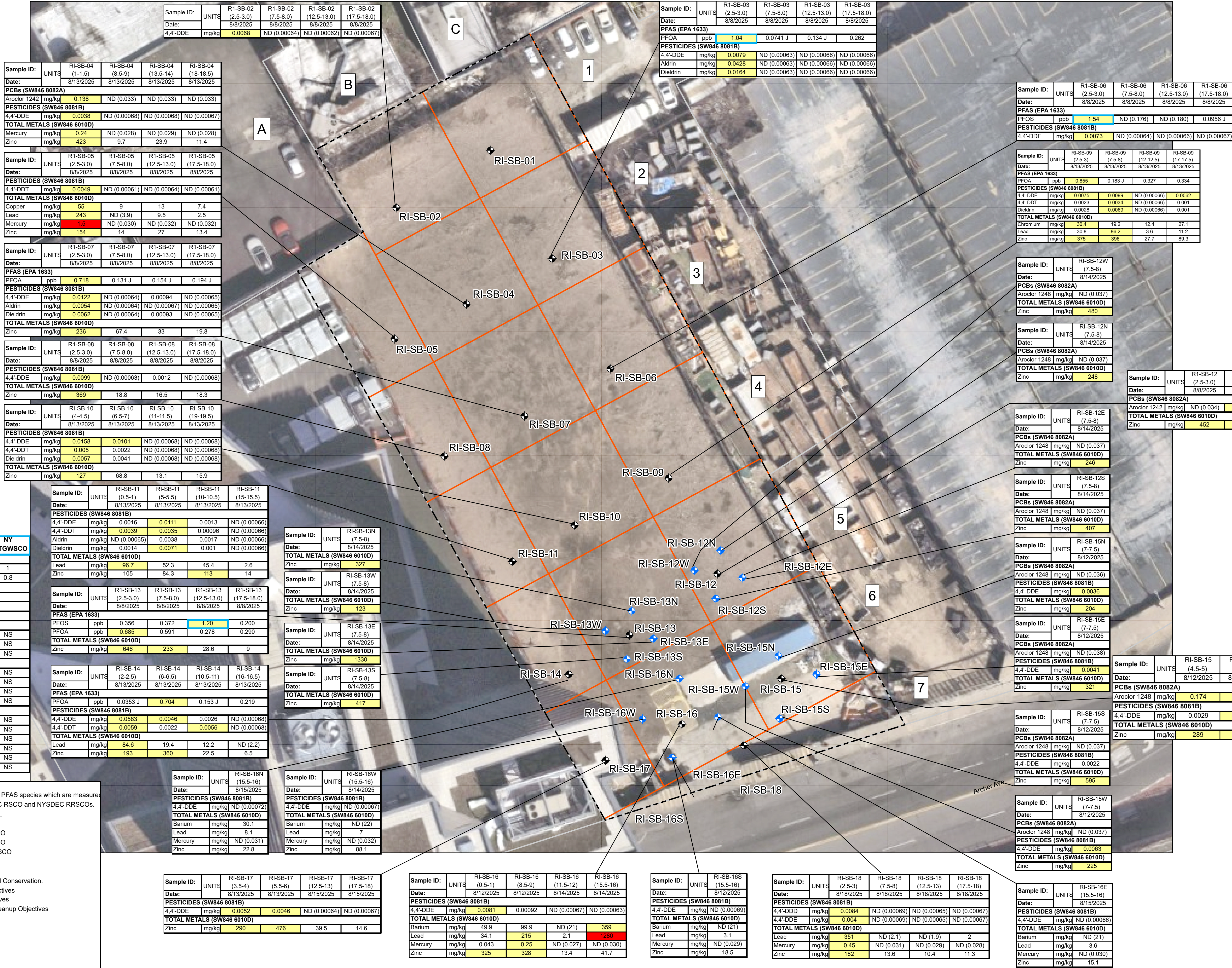
- THIS PLAN IS FOR LOCATING PROPOSED SOIL BORING LOCATIONS ONLY. OTHER SITE WORK SHOWN HERE NOT INTENDED FOR CONSTRUCTION.
- CONTINGENCY POINTS FOR 12, 13, AND 16N COULD NOT BE SURVEYED. THE POINTS SHOWN REPRESENT APPROXIMATE LOCATIONS.

REFERENCE:

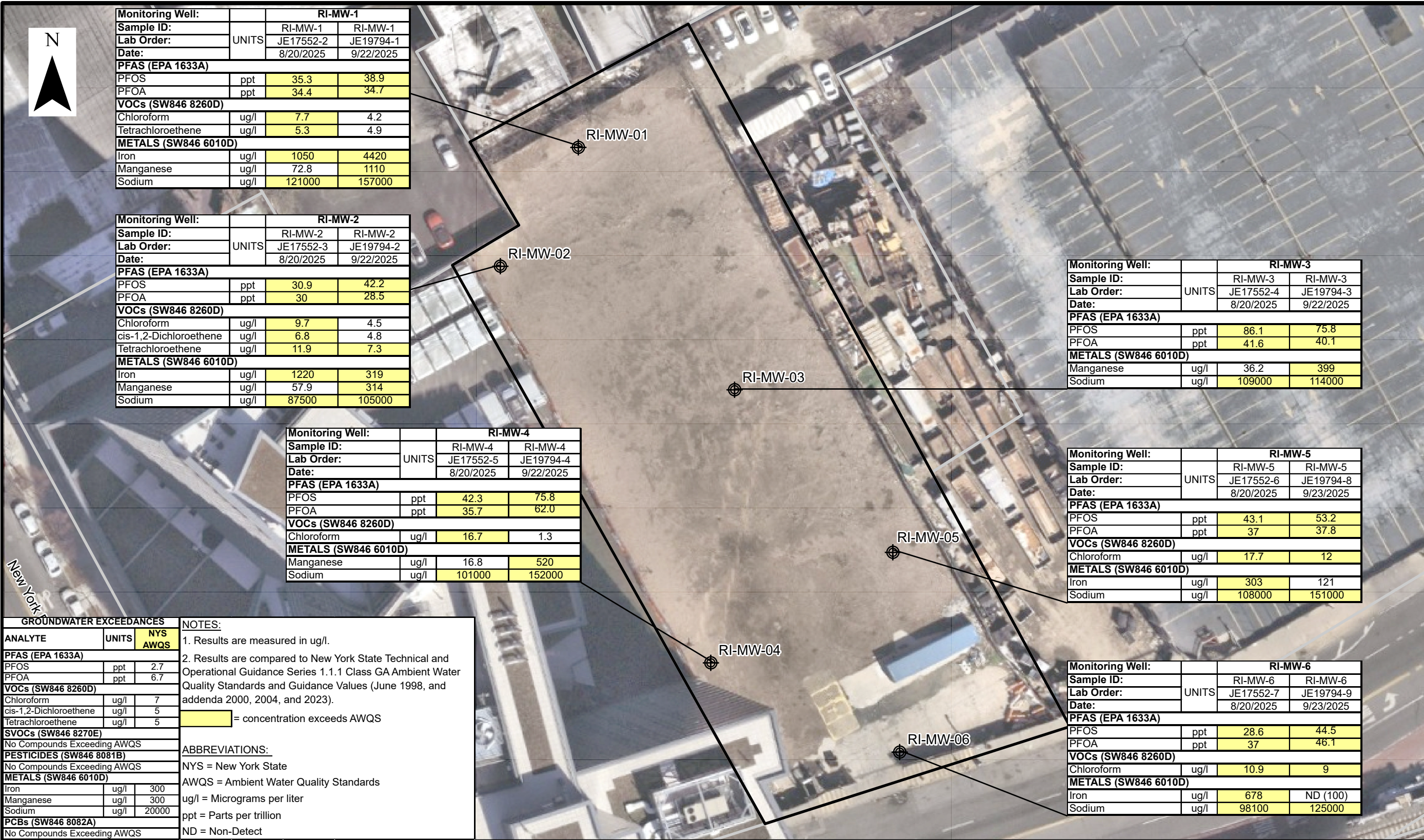
PARCELS: NYS OFFICE OF INFORMATION TECHNOLOGY SERVICES
GIS PROGRAM OFFICE, NYS DEPT OF TAXATION AND FINANCES
OFFICE OF REAL PROPERTY TAX SERVICES, AERIAL IMAGERY
TAKEN FROM NEARMAP, DATED APRIL 1, 2025.

LEGEND:

- SOIL BORING NO. AND APPROX. LOCATION (DELINEATION SAMPLE)
SOIL BORING NO. AND APPROX. LOCATION
SITE LOCATION



Y:\GIS\Project_Numbers\12914\FINAL_MAPS_10/31/2025 2:19 PM, Kim Vanderklein, LAYOUT: FIG-4.3



Monitoring Well:			RI-MW-1	
Sample ID:		UNITS	RI-MW-1	RI-MW-1
Lab Order:			JE17552-2	JE19794-1
Date:			8/20/2025	9/22/2025
PFAS (EPA 1633A)				
PFOS	ppt		35.3	38.9
PFOA	ppt		34.4	34.7
VOCs (SW846 8260D)				
Chloroform	ug/l		7.7	4.2
Tetrachloroethene	ug/l		5.3	4.9
METALS (SW846 6010D)				
Iron	ug/l		1050	4420
Manganese	ug/l		72.8	1110
Sodium	ug/l		121000	157000

Monitoring Well:			RI-MW-2	
Sample ID:		UNITS	RI-MW-2	RI-MW-2
Lab Order:			JE17552-3	JE19794-2
Date:			8/20/2025	9/22/2025
PFAS (EPA 1633A)				
PFOS		ppt	30.9	42.2
PFOA		ppt	30	28.5
VOCs (SW846 8260D)				
Chloroform		ug/l	9.7	4.5
cis-1,2-Dichloroethene		ug/l	6.8	4.8
Tetrachloroethene		ug/l	11.9	7.3
METALS (SW846 6010D)				
Iron		ug/l	1220	319
Manganese		ug/l	57.9	314
Sodium		ug/l	87500	105000

Monitoring Well:		RI-MW-4	
Sample ID:	UNITS	RI-MW-4	RI-MW-4
Lab Order:		JE17552-5	JE19794-4
Date:		8/20/2025	9/22/2025
PFAS (EPA 1633A)			
PFOS	ppt	42.3	75.8
PFOA	ppt	35.7	62.0
VOCs (SW846 8260D)			
Chloroform	ug/l	16.7	1.3
METALS (SW846 6010D)			
Manganese	ug/l	16.8	520
Sodium	ug/l	101000	152000

Monitoring Well:		RI-MW-3	
Sample ID:	UNITS	RI-MW-3	RI-MW-3
Lab Order:		JE17552-4	JE19794-3
Date:		8/20/2025	9/22/2025
PFAS (EPA 1633A)			
PFOS	ppt	86.1	75.8
PFOA	ppt	41.6	40.1
METALS (SW846 6010D)			
Manganese	ug/l	36.2	399
Sodium	ug/l	109000	114000

Monitoring Well:		RI-MW-5	
Sample ID:	UNITS	RI-MW-5	RI-MW-5
Lab Order:		JE17552-6	JE19794-8
Date:		8/20/2025	9/23/2025
PFAS (EPA 1633A)			
PFOS	ppt	43.1	53.2
PFOA	ppt	37	37.8
VOCs (SW846 8260D)			
Chloroform	ug/l	17.7	12
METALS (SW846 6010D)			
Iron	ug/l	303	121
Sodium	ug/l	108000	151000

Monitoring Well:		RI-MW-6	
Sample ID:	UNITS	RI-MW-6	RI-MW-6
Lab Order:		JE17552-7	JE19794-9
Date:		8/20/2025	9/23/2025
PFAS (EPA 1633A)			
PFOS	ppt	28.6	44.5
PFOA	ppt	37	46.1
VOCs (SW846 8260D)			
Chloroform	ug/l	10.9	9
METALS (SW846 6010D)			
Iron	ug/l	678	ND (100)
Sodium	ug/l	98100	125000

GROUNDWATER EXCEEDANCES			NOTES:
ANALYTE	UNITS	NYS AWQS	
PFAS (EPA 1633A)			1. Results are measured in ug/l. 2. Results are compared to New York State Technical and Operational Guidance Series 1.1.1 Class GA Ambient Water Quality Standards and Guidance Values (June 1998, and addenda 2000, 2004, and 2023). = concentration exceeds AWQS
PFOS	ppt	2.7	
PFOA	ppt	6.7	
VOCs (SW846 8260D)			
Chloroform	ug/l	7	
cis-1,2-Dichloroethene	ug/l	5	
Tetrachloroethene	ug/l	5	
SVOCs (SW846 8270E)			
No Compounds Exceeding AWQS			
PESTICIDES (SW846 8081B)			
No Compounds Exceeding AWQS			
METALS (SW846 6010D)			
Iron	ug/l	300	
Manganese	ug/l	300	
Sodium	ug/l	20000	
PCBs (SW846 8082A)			
No Compounds Exceeding AWQS			

ABBREVIATIONS:	
NYS = New York State	
AWQS = Ambient Water Quality Standards	
ug/l = Micrograms per liter	
ppt = Parts per trillion	
ND = Non-Detect	

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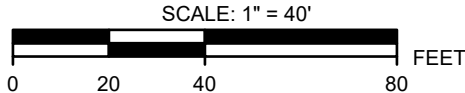
NOTE:
THIS PLAN IS FOR LOCATING MONITORING WELL LOCATIONS ONLY.
OTHER SITE WORK SHOWN HERE NOT INTENDED FOR CONSTRUCTION

REFERENCE:

PARCELS: NYS OFFICE OF INFORMATION TECHNOLOGY SERVICES
- GIS PROGRAM OFFICE, NYS DEPT OF TAXATION AND FINANCE'S
OFFICE OF REAL PROPERTY TAX SERVICES; AERIAL IMAGERY
TAKEN FROM NEARMAP, DATED APRIL 1, 2025.

LEGEND:

- RI-MW-01 MONITORING WELL NO AND APPROX LOCATION
- PROPERTY BOUNDARY
- TAX PARCELS



REMEDIAL INVESTIGATION WORK PLAN
C241283--ARCHER AVE AUTO REPAIR AND
COAL YARD SITE JAMAICA, NEW YORK

job no.: 12914
drawing no:

FIG-4.3

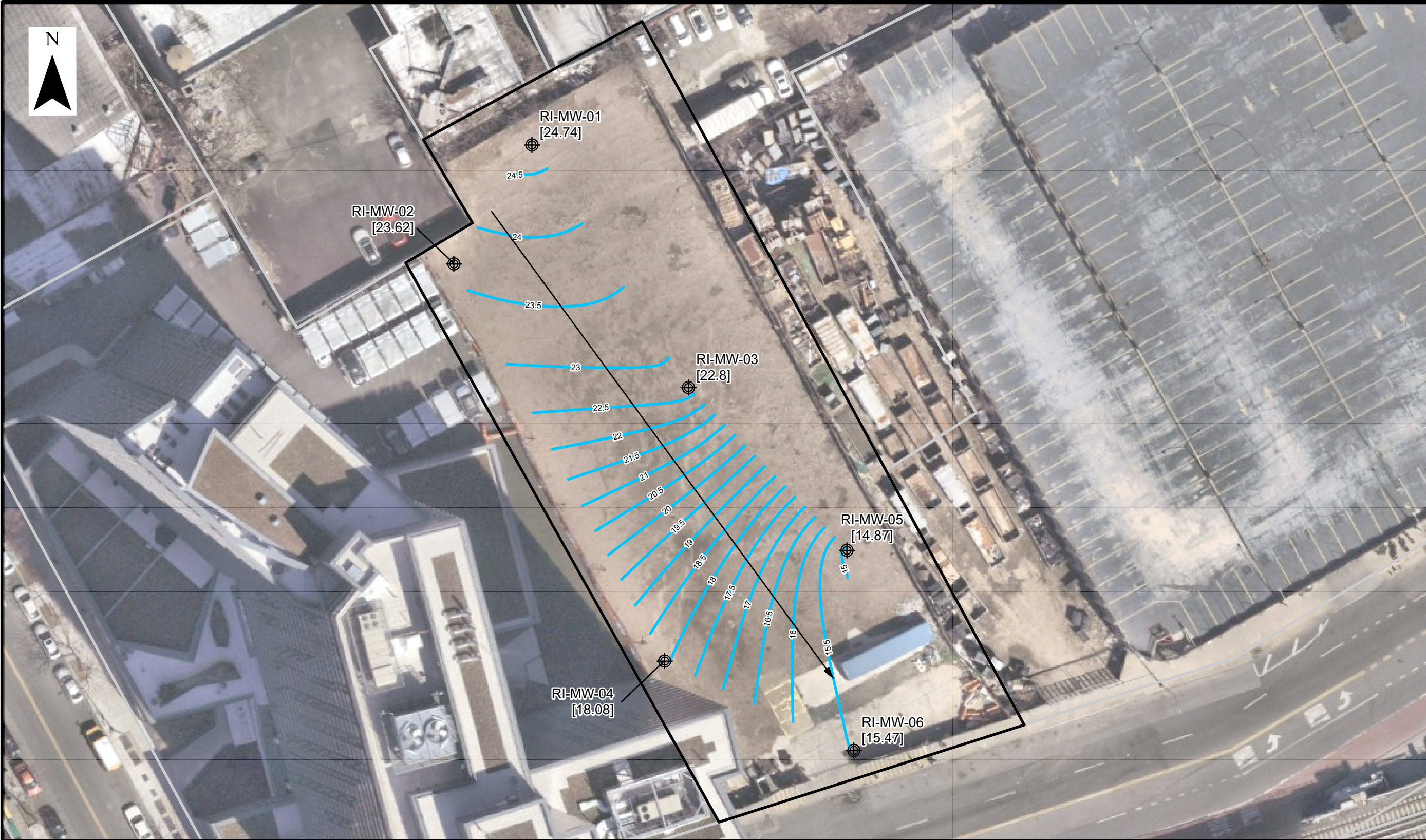
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SAMPLING LOCATION PLAN AND
CONTAMINANT DISTRIBUTION IN GROUNDWATER

dwg by: KBV
chk by: MKC
scale: AS NOTED
date: 10/31/2025

Y:\GIS\Project_Numbers\12914\FINAL_MAPS, 10/31/2025 2:32 PM, Kim Vanderklein, LAYOUT: FIG-4.4



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NOTE:

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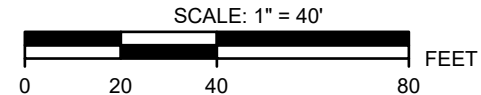
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LEGEND:

- RI-MW-01 MONITORING WELL NO AND APPROX LOCATION
- INTERPOLATED GROUNDWATER CONTOUR
- PROPERTY BOUNDARY
- TAX PARCELS



- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION AT MONITORING WELL (FT AMSL)
- GROUNDWATER CONTOUR ELEVATION (FT AMSL)
- ABOVE GROUND MEAN SEA LEVEL



project:

C241283--ARCHER AVE AUTO REPAIR AND
COAL YARD SITE
JAMAICA, NEW YORK

job no.: 12914
drawing no:

FIG-4.4

title:

GROUNDWATER CONTOUR PLAN

dwg by: KBV
chk by: MKC
scale: AS NOTED
date: 10/31/2025

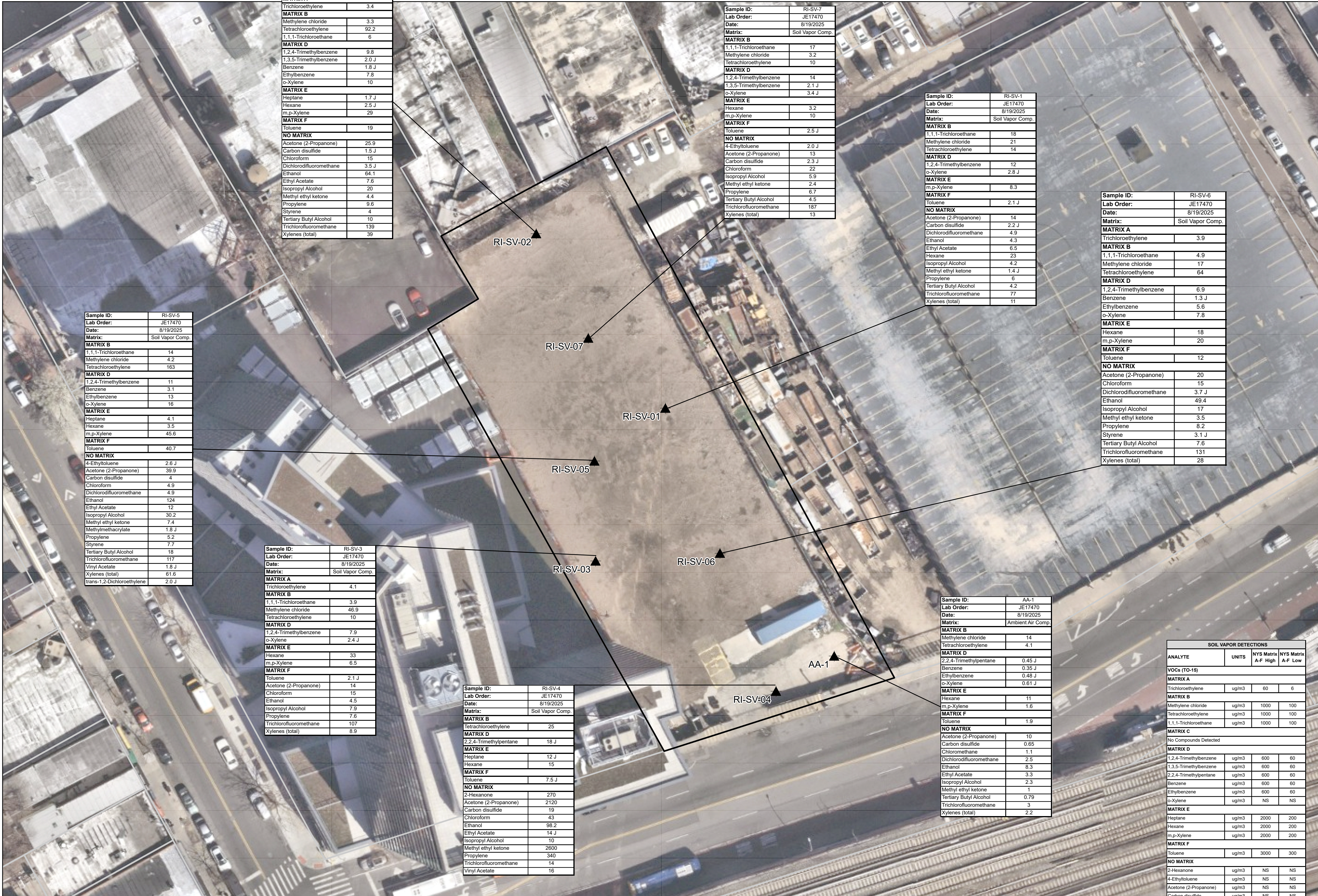
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NOTE:
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OFFICE OF REAL PROPERTY TAX SERVICES; AERIAL IMAGERY
TAKEN FROM NEARMAP, DATED APRIL 1, 2025.

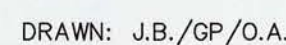
LEGEND:
RI-SV-01 ▲ SOIL VAPOR NO. AND APPROX. LOCATION
— SITE LOCATION
□ NY TAX PARCELS



SCALE: 1" = 30'
0 15 30 60 90 120 FEET

Appendix C:

Metes and Bounds Survey



CITY OF NEW YORK
COUNTY QUEENS
TAX BLOCK 10151
TAX LOTS 65 & 75
SCALE: 1" = 20'

Appendix D:

Fish and Wildlife Analysis

Appendix 3C Fish and Wildlife Resources Impact Analysis Decision Key		If YES Go to:	If NO Go to:
1.	Is the site or area of concern a discharge or spill event?	13	2
2.	Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas.	13	3
3.	Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	4	9
4.	Does the site contain habitat of an endangered, threatened or special concern species?	Section 3.10.1	5
5.	Has the contamination gone off-site?	6	14
6.	Is there any discharge or erosion of contamination to surface water or the potential for discharge or erosion of contamination?	7	14
7.	Are the site contaminants PCBs, pesticides or other persistent, bioaccumulable substances?	Section 3.10.1	8
8.	Does contamination exist at concentrations that could exceed ecological impact SCGs or be toxic to aquatic life if discharged to surface water?	Section 3.10.1	14
9.	Does the site or any adjacent or downgradient property contain any of the following resources? i. Any endangered, threatened or special concern species or rare plants or their habitat ii. Any DEC designated significant habitats or rare NYS Ecological Communities iii. Tidal or freshwater wetlands iv. Stream, creek or river v. Pond, lake, lagoon vi. Drainage ditch or channel vii. Other surface water feature viii. Other marine or freshwater habitat ix. Forest x. Grassland or grassy field xi. Parkland or woodland xii. Shrubby area xiii. Urban wildlife habitat xiv. Other terrestrial habitat	11	10
10.	Is the lack of resources due to the contamination?	3.10.1	14
11.	Is the contamination a localized source which has not migrated and will not migrate from the source to impact any on-site or off-site resources?	14	12
12.	Does the site have widespread surface soil contamination that is not confined under and around buildings or paved areas?	Section 3.10.1	12
13.	Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resource? (See #9 for list of potential resources. Contact DEC for information regarding endangered species.)	Section 3.10.1	14
14.	No Fish and Wildlife Resources Impact Analysis needed.		

Appendix E:

SEFA Remedial Alternatives Analysis and CVA

Remedial Action Work Plan Environmental Footprint Analysis

For:

C241283 - Archer Ave Auto Repair and Coal Yard Site
163-25 Archer Avenue
Jamaica, Queens County, NY
BCP No. C241283



Prepared for:
**Archer Towers
Development LLC**
November 4, 2025

SESI Contact:
Elizabeth De Smet, WPIT
Elizabeth.desmet@sesi.org

SESI Project No:
12914

TABLE OF CONTENTS

1.0	PURPOSE.....	1
2.0	RESULTS AND CONCLUSIONS.....	2

1.0 PURPOSE

This environmental footprint analysis (EFA) serves to quantitatively evaluate the potential environmental and social impacts, specifically accident risks, associated with the Remedial Action Work Plan (RAWP). This sustainability assessment utilized SiteWise version 3.2 (NAVFAC 2018), a specialized tool designed to measure various quantifiable sustainability metrics.

SiteWise operates through a series of Excel sheets, generating a detailed baseline assessment of sustainability metrics. These include greenhouse gases (GHGs), energy consumption, electricity usage from both renewable and non-renewable sources, criteria air pollutants such as sulfur oxides (SO_x), oxides of nitrogen (NO_x), and particulate matter (PM₁₀), water usage, resource consumption, and accident risk. The analysis considers several key inputs: (1) the production of all necessary materials for SMP activities; (2) the transportation of these materials, equipment, and personnel to and from the site; (3) all on-site activities, including equipment operation; and (4) the comprehensive management of waste generated by these activities. The quantitative metrics reported include GHGs in metric tons of carbon dioxide equivalents (CO₂e), water usage in gallons, energy usage in millions of British thermal units (MMBTU), criteria air pollutants in metric tons, and accident risk (risk of injury and fatality).

To ensure relevance, the sustainability footprint assessment for the SMP focused exclusively on elements with significant sustainability impacts, with a lower footprint indicating reduced negative effects on environmental and social metrics. The primary activities evaluated encompassed material production, transportation of personnel and equipment, equipment use for monitoring well installation, groundwater monitoring, and on-site labor hours to estimate accident risks during these operations. It is important to note that SiteWise calculates these footprints using industry averages, published emission factors, and generalized data sources, meaning the results may not precisely reflect actual emissions but are valuable for comparative analysis.

The assumptions used for the SiteWise evaluation are as follows:

- The environmental footprint for production of the equipment used, or the production of vehicles used for transportation, is not considered.
- Water use for consumable manufacturing is not included in this analysis. Therefore, the water use for the associated activities may be underestimated.
- Groundwater monitoring will be performed quarterly to assess the performance of the remedy. Sampling will occur until the results for all parameters show a bulk reduction in groundwater contamination to asymptotic levels to the Department's satisfaction per 6 NYCRR Part 375-3.8(e)(1)(iii)(b) for a Track 1 cleanup. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager. For the purposes of this EFA, a 5-year sampling period was assumed.
- Small amounts of clean deionized water (less than two [2] gallons per quarter) may be used for cleaning dedicated sampling equipment.
- Site monitoring will not disturb the land and/or ecosystems.
- The network of monitoring wells to monitor on-site and upgradient/downgradient groundwater conditions at the Site was installed prior to monitoring activities. Therefore, material production associated with monitoring well materials was not considered in this analysis.

Note that SiteWise calculates environmental and risk footprints based on industry averages, published emissions factors and generalized data sources. The footprint results may not be representative of actual emissions and may only be used for comparative purposes only.

2.0 RESULTS AND CONCLUSIONS

The quantitative assessment of the potential environmental impact and social impact (accident risks) of RAWP activities is summarized in Table 1 and Figures 1 through 8. Table 1 presents the environmental footprint summary of remedial activities. Green House Gas (GHG) emissions are mainly associated with excavation and SOE installation (99.0%), primarily due to equipment use and miscellaneous (analytical testing, on-site labor and activities) and residual handling. The energy used by the project is mostly from equipment use and residual handling, with excavation and SOE installation accounting for the majority (98.5%) of energy consumption. Excavation and SOE installation accounts for the majority of onsite NO_x (99.9%) and PM₁₀ (99.9%) emissions, primarily attributed to equipment use, while excavation and SOE accounts for the majority of onsite SO_x (80.9%) emissions from equipment use and miscellaneous. Excavation and SOE installation account for the majority of total NO_x (99.6%), SO_x (97.7%), and PM₁₀ (99.9%) emissions from equipment use and miscellaneous and residual handling. Accident risk (99.6%), for both fatality and injury, is attributed to excavation and SOE installation from equipment use and miscellaneous.

The results indicate that the excavation and SOE installation activities have the largest environmental footprint (GHG, energy use, NO_x, SO_x, PM₁₀) from the associated equipment use.

Groundwater monitoring activities to assess the effect of the remedial excavation on groundwater contamination mitigation will continue, as determined by the NYSDEC project manager in consultation with the NYSDOH project manager, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the site SCGs, or have become asymptotic at an acceptable level within 5-years. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, treatment and/or control measures will be evaluated and further groundwater remedial measures of the residual contamination may be considered.

Table 1: Environmental Footprint Summary

Phase	Activities	GHG Emissions	Total Energy Used	Water Consumption	Electricity Usage	Onsite NO _x Emissions	Onsite SO _x Emissions	Onsite PM ₁₀ Emissions	Total NO _x Emissions	Total SO _x Emissions	Total PM ₁₀ Emissions	Accident Risk Fatality	Accident Risk Injury
		metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton		
Excavation and Support of Excavation (SOE)	Consumables	654.39	8.7E+03	NA	NA	NA	NA	NA	1.9E+00	3.2E+00	6.4E-01	NA	NA
	Transportation-Personnel	316.47	4.1E+03	NA	NA	NA	NA	NA	9.9E-02	1.8E-03	8.8E-03	8.4E-03	6.8E-01
	Transportation-Equipment	21.91	2.9E+02	NA	NA	NA	NA	NA	6.9E-03	1.2E-04	6.1E-04	5.3E-05	4.2E-03
	Equipment Use and Misc	7,341.64	8.9E+04	1.0E+07	1.1E+03	4.8E+01	1.1E-02	4.6E+00	5.4E+01	6.3E+00	5.5E+00	4.0E-02	1.0E+01
	Residual Handling	7,387.99	1.3E+05	NA	NA	0.0E+00	0.0E+00	0.0E+00	3.0E+01	1.5E+01	8.2E+01	9.0E-03	7.2E-01
	Sub-Total	15,722.39	2.30E+05	1.02E+07	1.12E+03	4.82E+01	1.14E-02	4.62E+00	8.52E+01	2.49E+01	8.86E+01	5.79E-02	1.14E+01
Screening of excavated soil for contamination (visual, odor, PID)	Consumables	0.00	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA
	Transportation-Personnel	2.13	2.13	2.6E+01	NA	NA	NA	NA	NA	9.7E-04	1.8E-05	1.4E-04	5.3E-05
	Transportation-Equipment	0.14	0.14	1.9E+00	NA	NA	NA	NA	NA	4.4E-05	1.8E-06	3.6E-06	3.9E-07
	Equipment Use and Misc	0.02	0.02	3.7E-01	7.6E+01	5.0E-02	0.0E+00	0.0E+00	0.0E+00	1.6E-05	2.1E-05	1.2E-05	1.2E-05
	Residual Handling	0.00	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	2.28	2.28	2.83E+01	7.55E+01	5.00E-02	0.00E+00	0.00E+00	0.00E+00	1.03E-03	4.08E-05	1.57E-04	6.47E-05
Dewatering of contaminated groundwater during excavation	Consumables	82.30	2.7E+03	NA	NA	NA	NA	NA	1.7E-01	3.0E-01	4.4E-02	NA	NA
	Transportation-Personnel	0.19	2.3E+00	NA	NA	NA	NA	NA	8.6E-05	1.6E-06	1.3E-05	6.2E-06	5.0E-04
	Transportation-Equipment	0.17	2.2E+00	NA	NA	NA	NA	NA	5.4E-05	9.5E-07	4.8E-06	9.8E-07	7.8E-05
	Equipment Use and Misc	1.25	1.8E+01	1.2E+02	4.5E-02	8.0E-04	1.4E-04	8.6E-05	6.3E-03	4.3E-03	5.6E-04	1.2E-05	1.0E-03
	Residual Handling	1.02	1.6E+01	NA	NA	0.0E+00	0.0E+00	0.0E+00	2.7E-03	1.4E-03	7.3E-03	2.3E-06	1.9E-04
	Sub-Total	84.94	2.74E+03	1.23E+02	4.47E-02	8.01E-04	1.37E-04	8.62E-05	1.80E-01	3.08E-01	5.23E-02	2.17E-05	1.80E-03
Removal of any identified Underground Storage Tanks (USTs)	Consumables	3.81	5.9E+01	NA	NA	NA	NA	NA	1.9E-02	1.7E-02	5.6E-03	NA	NA
	Transportation-Personnel	0.57	7.0E+00	NA	NA	NA	NA	NA	2.6E-04	4.9E-06	3.8E-05	1.9E-05	1.5E-03
	Transportation-Equipment	0.48	6.2E+00	NA	NA	NA	NA	NA	1.5E-04	2.7E-06	1.3E-05	1.2E-06	9.4E-05
	Equipment Use and Misc	3.75	5.3E+01	9.6E+02	8.9E-01	1.0E-02	1.5E-03	1.1E-03	2.2E-02	1.0E-02	2.3E-03	2.8E-05	7.9E-03
	Residual Handling	0.08	1.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	5.4E-05	1.7E-05	9.3E-05	3.9E-07	3.1E-05
	Sub-Total	8.69	1.26E+02	9.56E+02	8.95E-01	1.00E-02	1.55E-03	1.10E-03	4.08E-02	2.79E-02	8.08E-03	4.79E-05	9.49E-03
Application of an oxygen releasing compound (ORC)	Consumables	58.67	6.7E+02	NA	NA	NA	NA	NA	1.3E-01	2.4E-01	5.5E-02	NA	NA
	Transportation-Personnel	0.56	6.8E+00	NA	NA	NA	NA	NA	2.9E-04	3.1E-06	3.4E-05	3.1E-05	2.5E-03
	Transportation-Equipment	0.34	4.4E+00	NA	NA	NA	NA	NA	1.1E-04	1.9E-06	9.4E-06	7.8E-07	6.3E-05
	Equipment Use and Misc	1.49	1.9E+01	1.1E+03	2.2E-01	6.8E-03	1.0E-03	7.6E-04	9.5E-03	3.0E-03	1.1E-03	8.0E-05	1.5E-02
	Residual Handling	0.19	2.8E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	3.0E-04	1.4E-04	7.3E-04	7.8E-07	6.3E-05
	Sub-Total	61.25	6.99E+02	1.11E+03	2.24E-01	6.78E-03	1.01E-03	7.57E-04	1.45E-01	2.40E-01	5.64E-02	1.13E-04	1.81E-02
Total		1.6E+04	2.3E+05	1.0E+07	1.1E+03	4.8E+01	1.4E-02	4.6E+00	8.6E+01	2.6E+01	8.9E+01	5.8E-02	1.1E+01

Figure 1: GHG Emissions

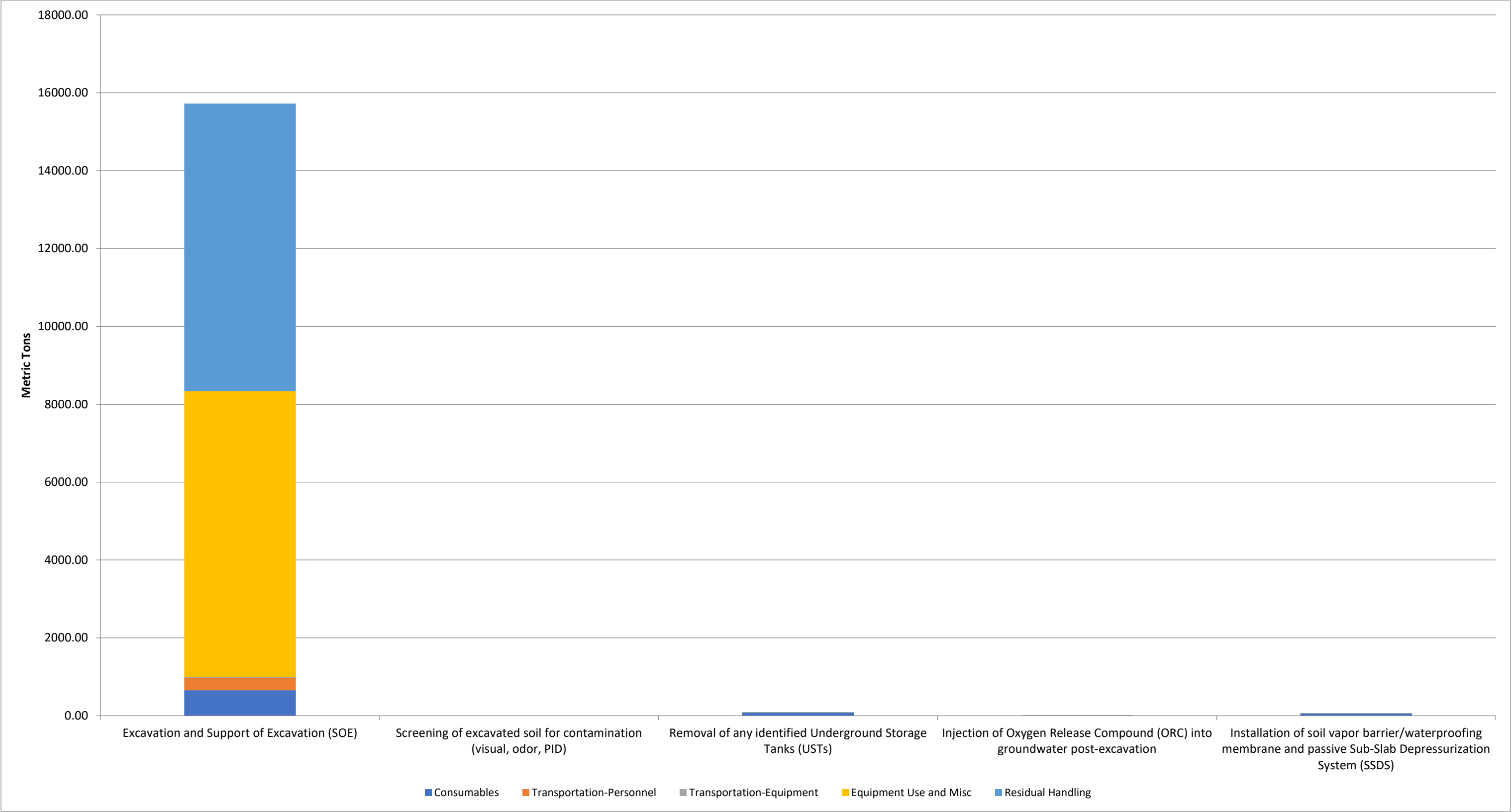


Figure 2: Total Energy Used

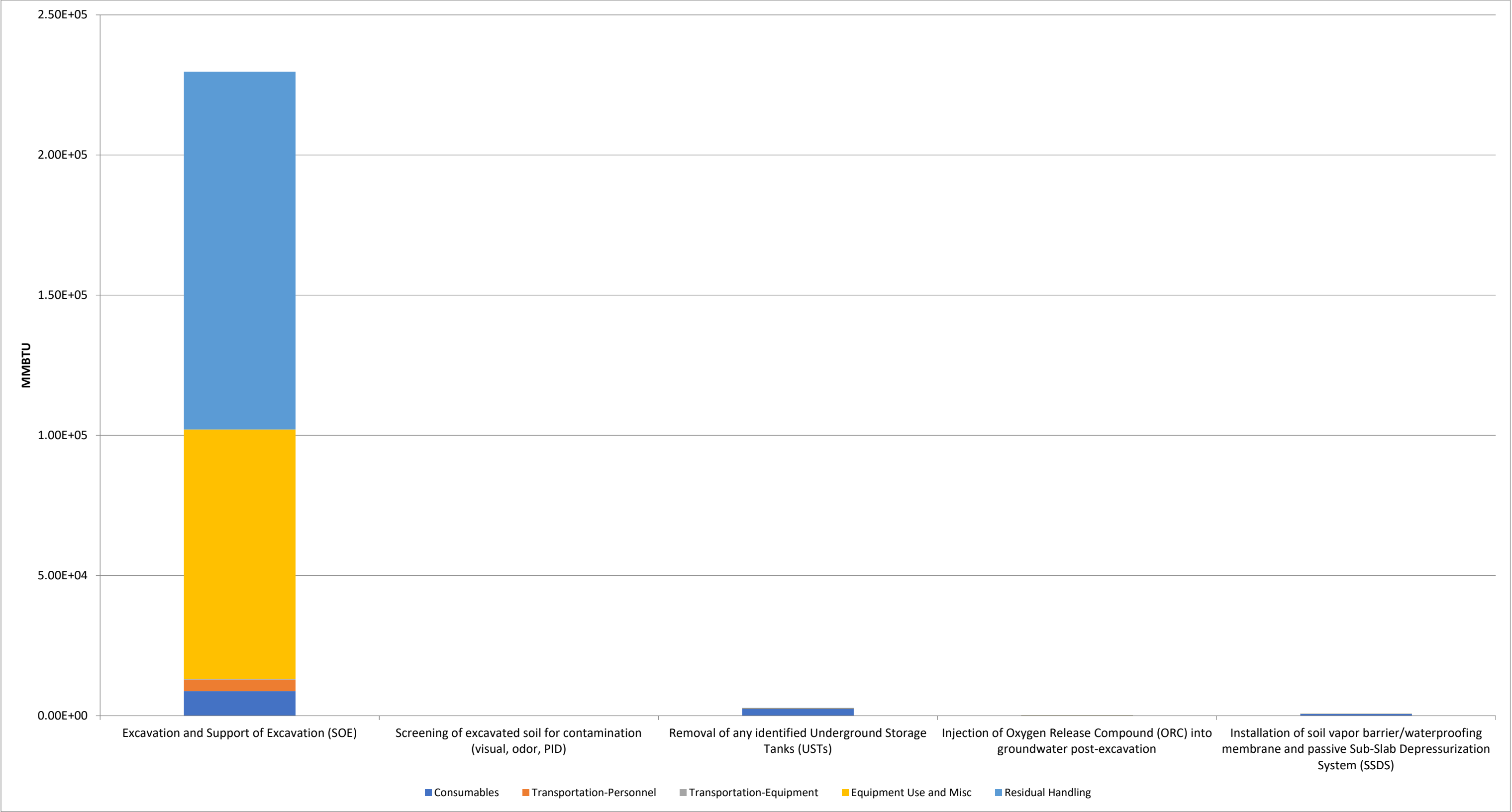


Figure 3: Total NO_x Emissions

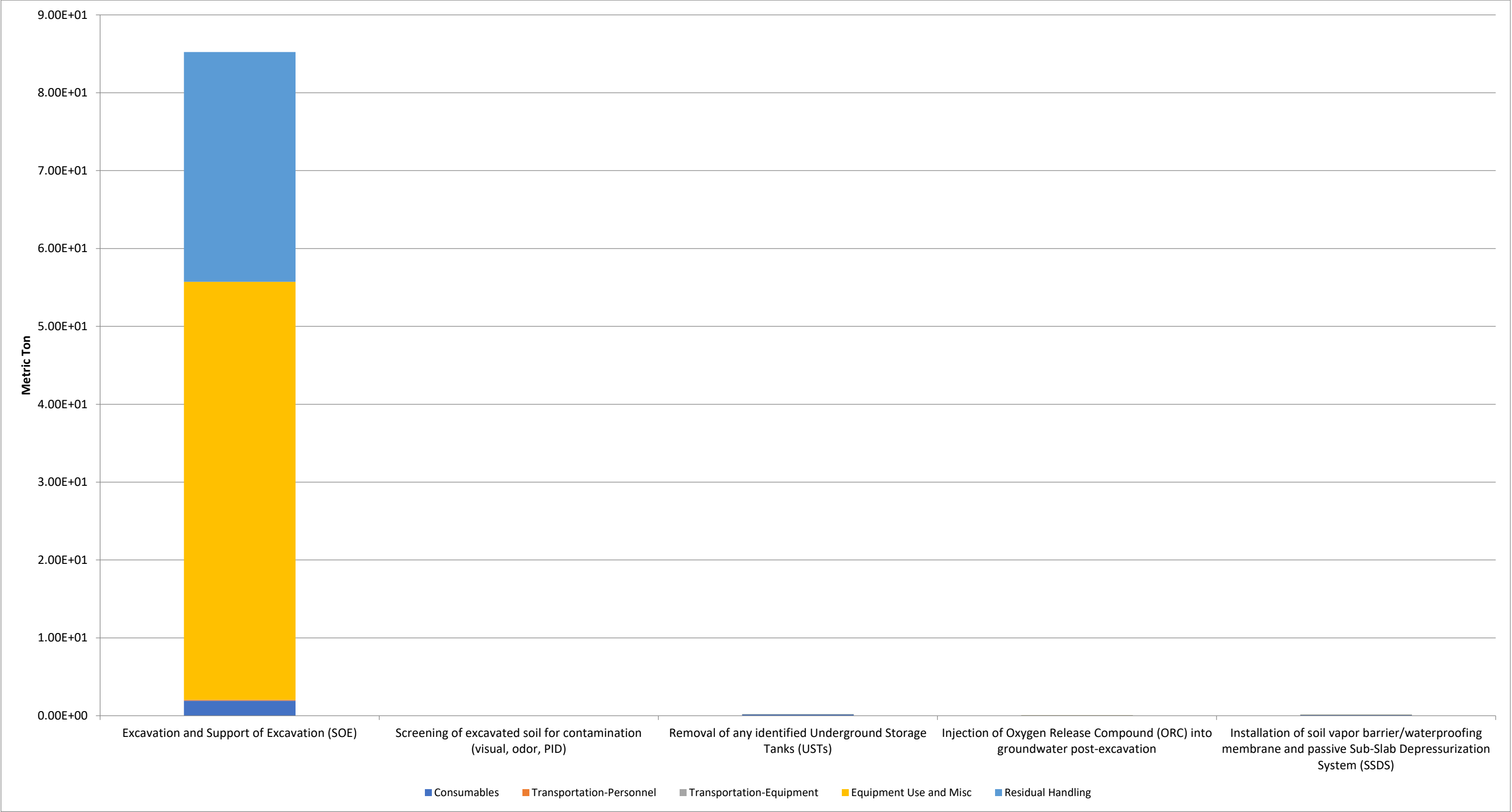


Figure 4: Total SO_x Emissions

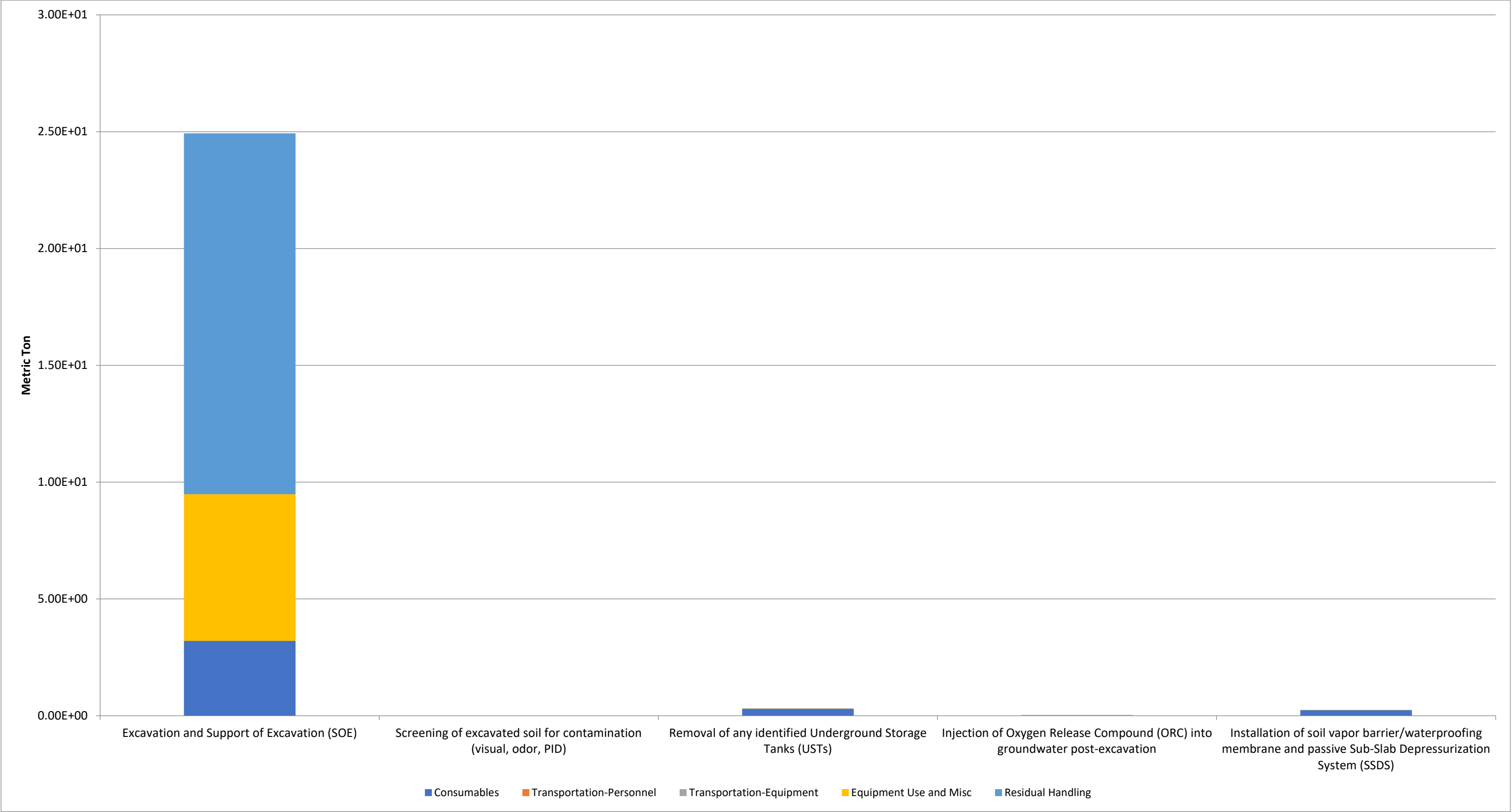


Figure 5: Total PM₁₀ Emissions

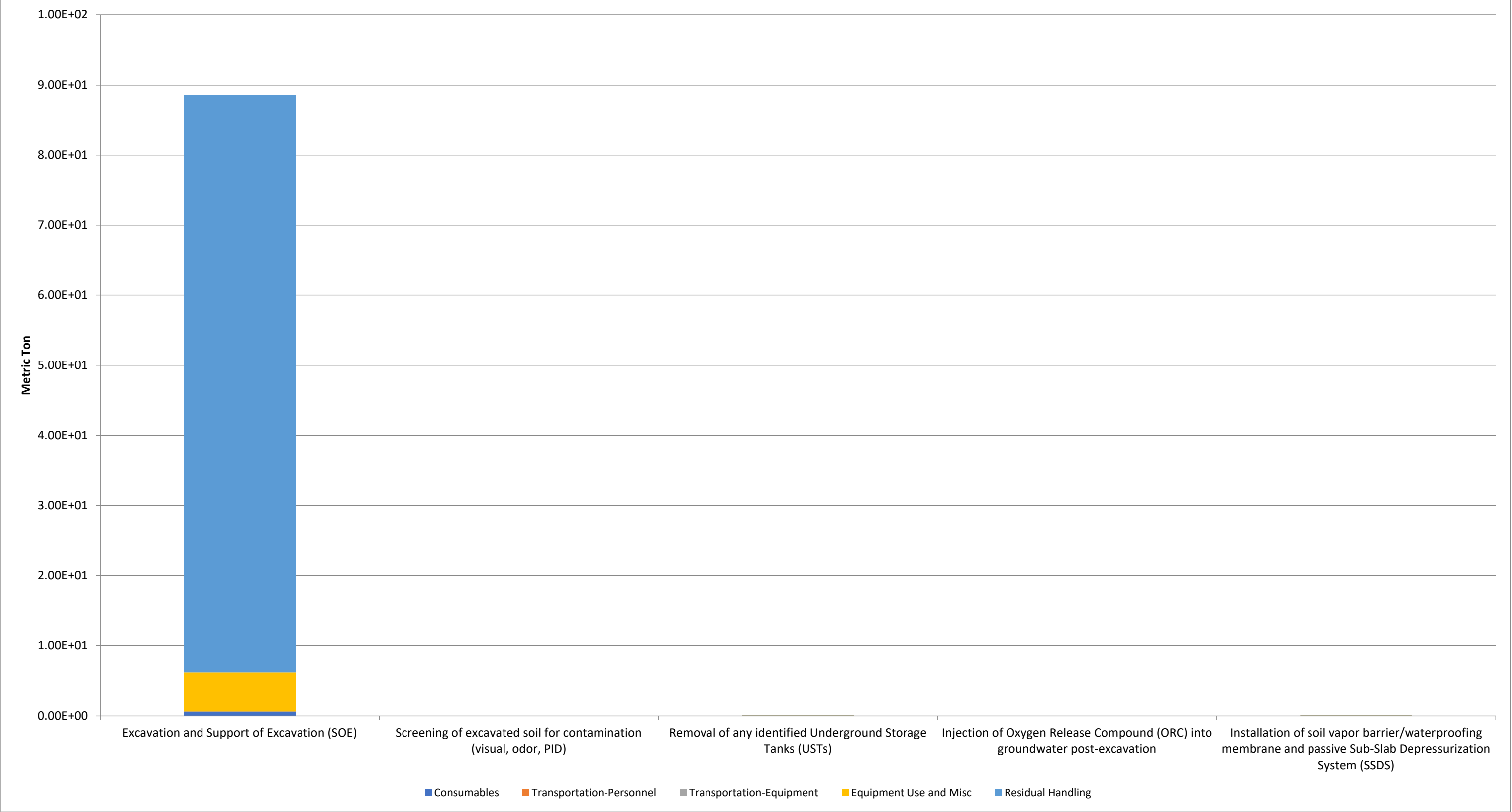


Figure 6: Accident Risk – Fatality

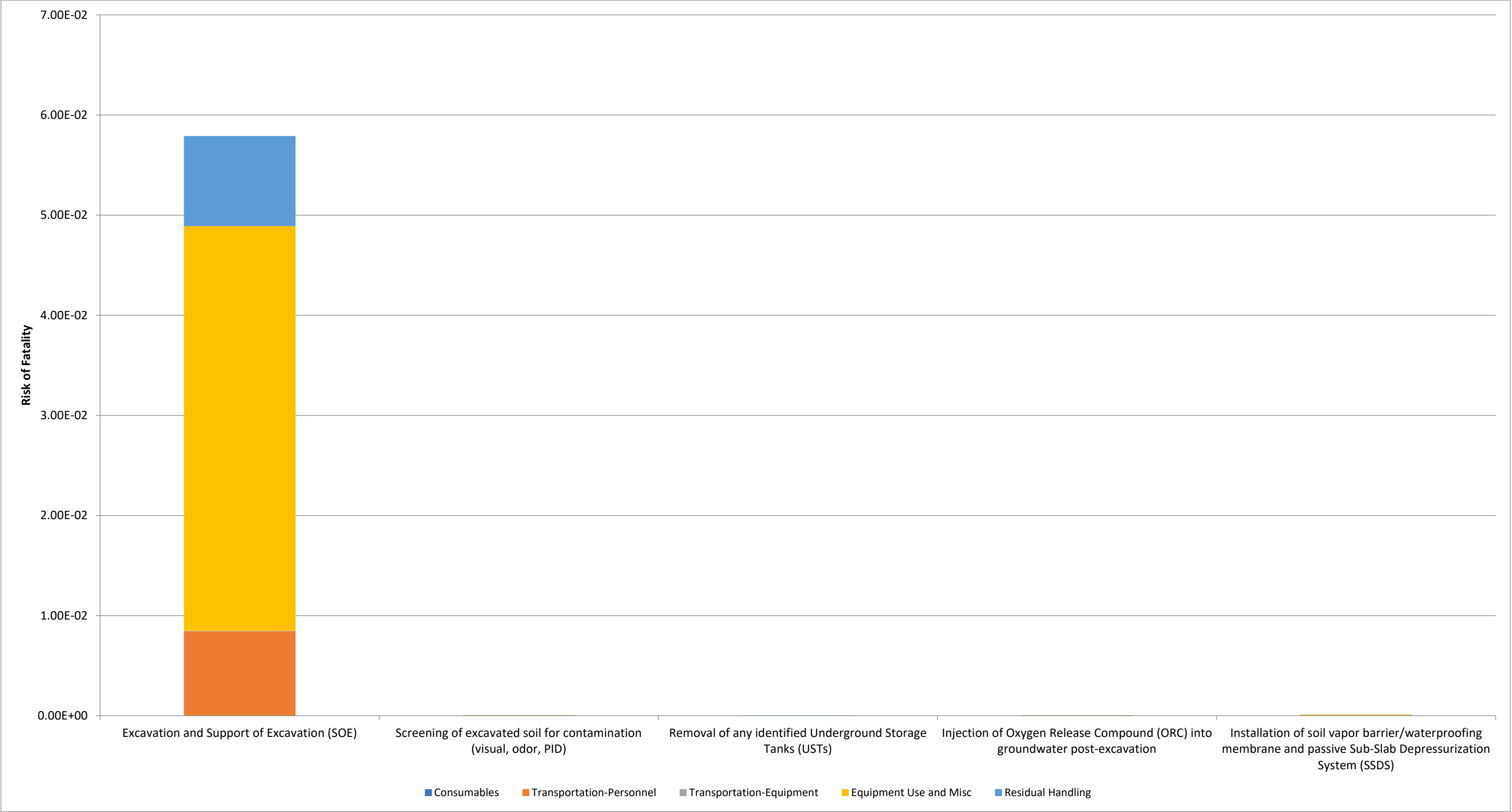


Figure 7: Accident Risk – Injury

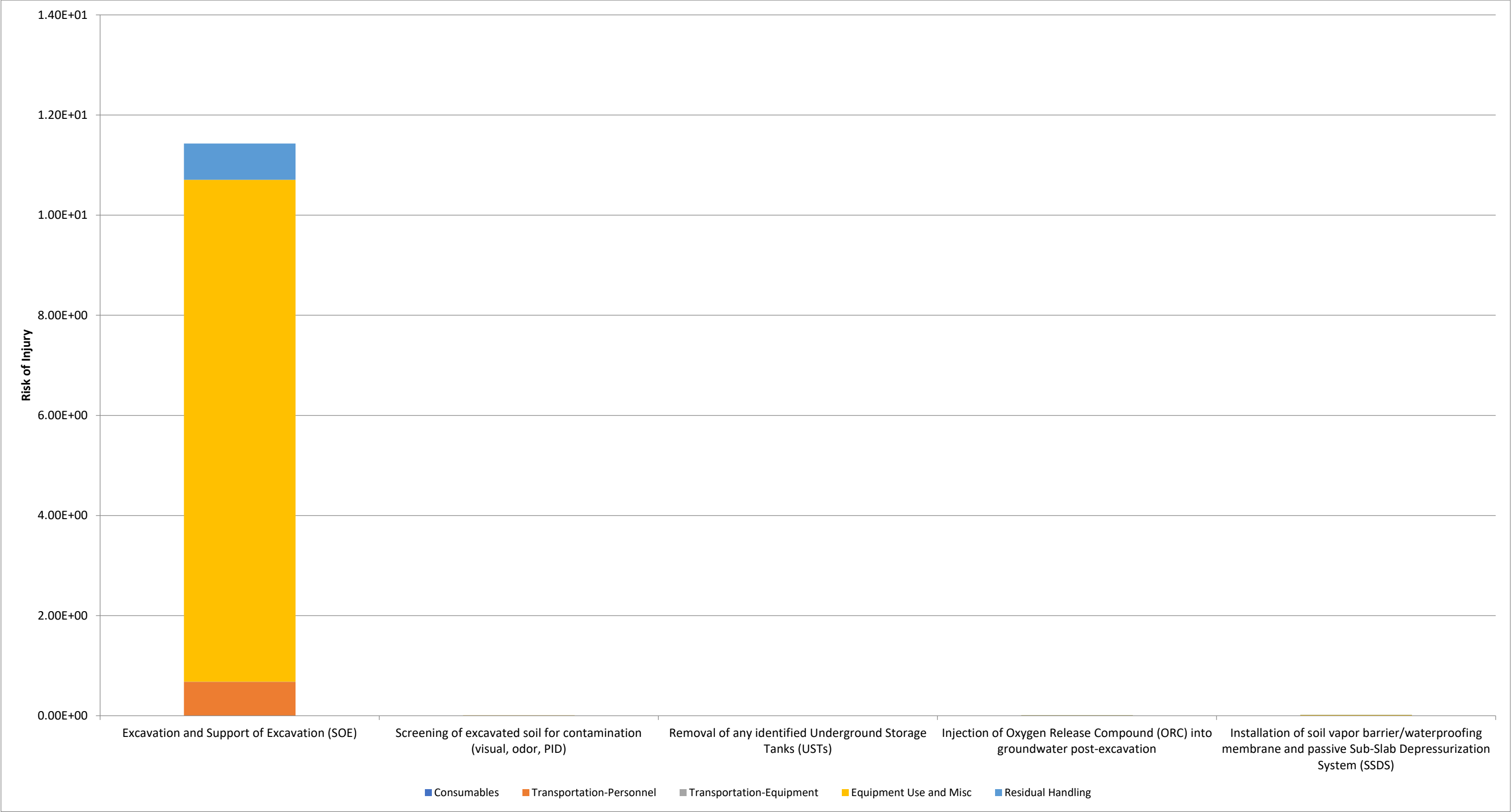
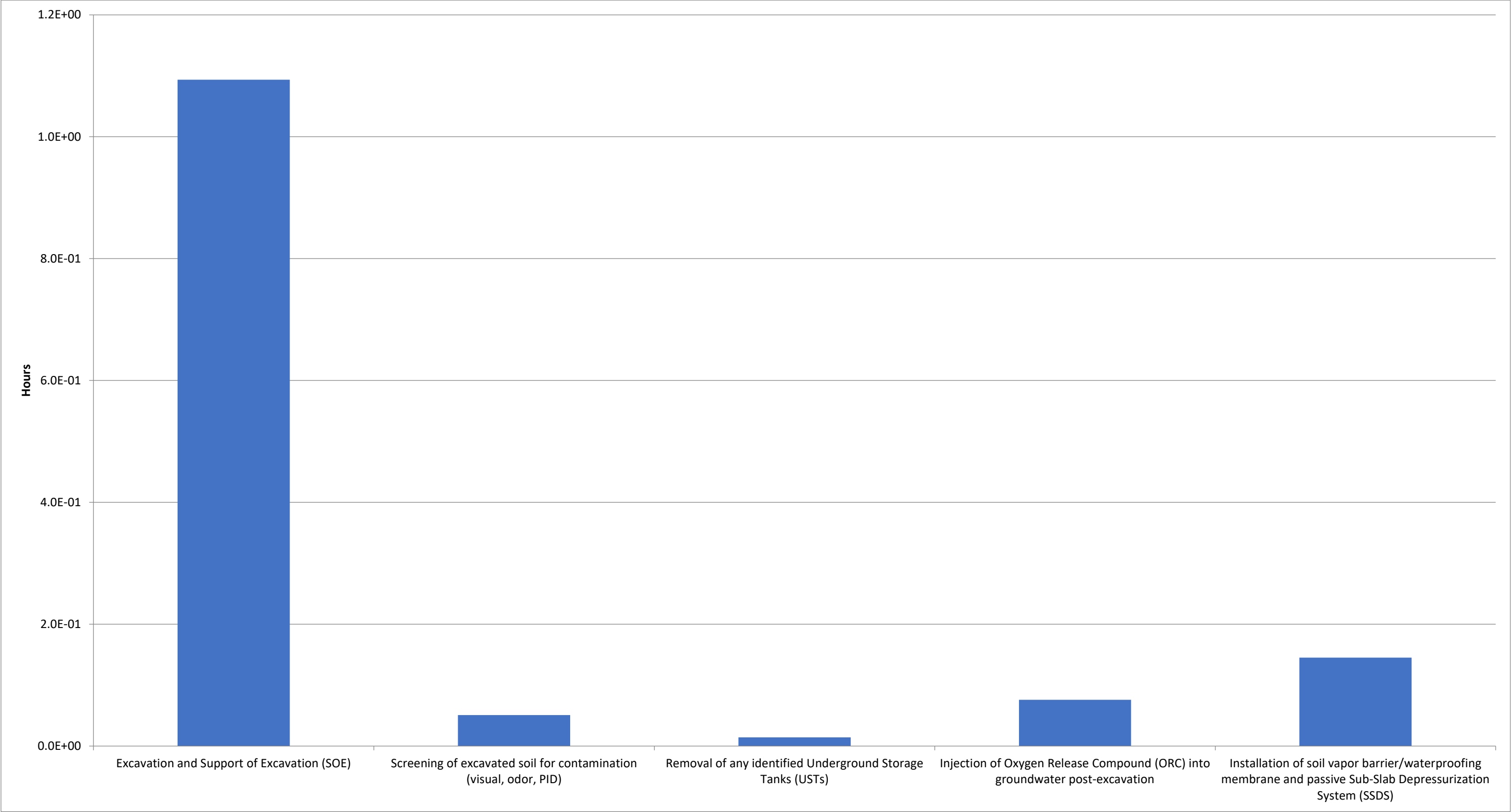


Figure 8: Lost Hours – Injury



Appendix F:

Citizen Participation Plan



Department of
Environmental
Conservation

Brownfield Cleanup Program

Citizen Participation Plan for

Archer Ave Auto Repair and Coal Yard Site

March 2025

Site # C241283
163-25 Archer Avenue
Jamaica, NY 11433

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* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **Archer Towers Development LLC (“Applicant”)**
Site Name: **Archer Ave Auto Repair and Coal Yard Site (“Site”)**
Site Address: **163-25 Archer Avenue, Jamaica, NY 11433**
Site County: **County of Queens**
Site Number: **C241283**

1. What is New York’s Brownfield Cleanup Program?

New York’s Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as “brownfields” so that they can be reused and developed. These uses include recreation, housing, and business.

A brownfield is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at:
<http://www.dec.ny.gov/chemical/8450.html>

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision-makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process
- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process
- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community
- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision-making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web-site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.

The site contact list includes, at a minimum:

- Chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- Residents, owners, and occupants of the site and properties adjacent to the site;
- The public water supplier which services the area in which the site is located;
- Any person who has requested to be placed on the site contact list;
- The administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- Location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See <http://www.dec.ny.gov/chemical/61092.html>

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.
- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at <https://dec.ny.gov/regulatory/regulations/technical-assistance-grant-tag-guidance-handbook-der-14>

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation Note: Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. Note: The two fact sheets are combined when possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

There will be areas on the Site where soil excavation is necessary. Therefore, once the remediation commences, there may be concerns regarding odors, noise or truck traffic coming from the site. However, these impacts will be mitigated through implementation of a Health and Safety Plan (HASP) and Soil Management Plan (SMP) approved by NYSDEC, which will be designed to minimize these impacts. A Community Air Monitoring Plan (CAMP) will also be implemented to monitor dust and vapors to ensure the community is not impacted. CAMP implementation involves the placement of air monitoring stations upwind and downwind of where work is occurring to capture both dust and vapor emissions. If dust or emissions exceed a set threshold established by NYSDEC and the New York State Department of Health (NYSDOH), then work must cease and the cause of the issue must be corrected before work can proceed. Typically implementation of these measures addresses any concerns of the public.

Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Environmental justice efforts focus on improving the environment in communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities.

The Site is located in an area with a sizable Hispanic-American population nearby, therefore all future fact sheets will be translated into Spanish.

For additional information, visit:

<https://statisticalatlas.com/zip/11433/Race-and-Ethnicity>

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

- Location - 163-25 Archer Avenue, Jamaica, NY
- Setting - urban
- Site size - 0.853 acres
- Adjacent properties – residential, commercial properties, mixed-use properties, 3-story parking structure and MTA rail lines

History of Site Use, Investigation, and Cleanup

Historic Sanborn maps revealed that in 1901 the Site was home to E.C. Hendrickson & Co. Lumber, Coal, and Wood Yard. This company primarily occupied the western portion of the site, and covered it with coal sheds, a fertilizer house, lime, cement, lumber piles, plastics storage, and a coal pocket with an electric motor. Beginning in 1912, and operating until 1925, Frank R. Smith Masons' Supplies and Coal Yard occupied the Site. This company maintained lime and cement storage, coal pockets with electric motor, coal sheds, plumber supplies, asphalt shingle storage. In 1925, a gasoline tank in the southwestern corner of the Site was visible on the Sanborn map. Beginning in 1942, the Site was used as a bus repair shop, which operated in the southeastern corner of the Site. The gas tank remained in place at this time. By 1963, the site's usage expanded to include a bus terminal with a lubritorium to lubricate engines with motor oil and filling station, while maintaining the repair shop. After 1967, the gas tank cannot be seen on the Sanborn maps. In 1971, a 9-deck parking garage was constructed on the Site for the former Gertz Department store. This garage was demolished in 2019 and the Site has remained vacant since that time.

Prior investigation reports from 2013 - 2019 did not reveal levels of contamination requiring remediation. However, the most recent investigations conducted have revealed contamination requiring remediation. Based on these recent investigations conducted, the primary contaminants of concern are semi-volatile organic compounds ("SVOCs") and heavy metals in soil, SVOCs and metals in groundwater, and volatile organic compounds ("VOCs") in soil vapor. The soil contamination exceeds the Restricted Residential Soil Cleanup Objectives, the groundwater exceedances applicable groundwater standards and several high hits of chlorinated volatile organic compounds and petroleum compounds are present in soil vapor. The nature of the contamination discovered likely derives from the Site's past use as a coal and lumber yard, a gasoline filling station, automotive repair facility, and bus terminal. Specifically, the high Semi-Volatile Organic Compounds (SVOCs) and lead can be traced back to the site's use as a coal yard and the chlorinated and petroleum related soil vapor exceedances can be traced to the site's use as a gasoline filling station, automotive repair facility, and bus terminal including a lubritorium to lubricate engines with motor oil.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential

exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for unrestricted purposes.

To achieve this goal, the Applicant will conduct investigation activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant will complete a full site investigation since the Brownfield Cleanup Agreement has now been executed by NYSDEC and the Applicant. The Applicant has submitted an Remedial Investigation Work Plan (RIWP) with the application to perform a full site investigation, which was subject to a thirty (30) day comment period with the application. NYSDEC will determine if the investigation goals and requirements of the BCP have been met or if additional work is needed before a remedy can be selected. This investigation will be performed with NYSDEC oversight.

The site investigation has several goals:

- 1) Define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
- 2) Identify the source(s) of the contamination;
- 3) Assess the impact of the contamination on public health and the environment; and
- 4) Provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a “significant threat,” it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a “Certificate of Completion” (described below) to the Applicant.

or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a “Remedial Work Plan”. The Remedial Work Plan describes the Applicant’s proposed remedy for addressing contamination related to the site.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The NYSDOH must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a Final Engineering Report (FER) that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the FER. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

**Appendix A -
Project Contacts and Locations of Reports and Information**

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Shawn T. Roberts
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
(518) 402-9799
shawn.roberts@dec.ny.gov

Thomas V. Panzone
Public Participation Specialist
Division of Communication, Education and Engagement
NYSDEC – Region 2
47-40 21st Street
Long Island City, NY 11101
Thomas.panzone@dec.ny.gov
718-482-4953

New York State Department of Health (NYSDOH):

Aaron Keegan
Project Manager
New York State Department of Health
Bureau of Environmental Exposure Investigation
Empire State Plaza
Corning Tower Room 1787
Albany, NY 12237
518-408-1943
beei@health.ny.gov

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Queens Public Library at Central
Attn: Mahendra Indarjit, Branch Manager
89-11 Merrick Boulevard
Jamaica, NY 11432
Phone: (718) 990-0700

BRANCH HOURS:

Sunday	12:00 pm – 5:00 pm
Monday	10:00 am – 8:00 pm
Tuesday	10:00 am – 1:00 pm
Wednesday	CLOSED
Thursday	10:00 am – 8:00 pm
Friday	10:00 am – 6:00 pm
Saturday	10:00 am – 5:00 pm

Queens Community Board 12
Attn: Yvonne Reddick, District Manager
Rev. Carlene O. Thorbs, Chairperson
Vishal Hardowar, Chairperson – Urban
Renewal (Land Use) Committee
90-28 161st Street
Jamaica, NY 11432
Phone: (718) 658-3308
Email: QN12@cb.nyc.gov

Hours of Operation:

Monday through Friday:	9 AM–5 PM
Saturday	Closed
Sunday	Closed

Appendix B - Site Contact List

GOVERNMENT / MUNICIPALITIES		
Hon. Eric Adams NYC Mayor City Hall New York, NY 10007	Hon. Brad Lander NYC Comptroller 1 Centre Street Room 517 New York, NY 10007	Hon. Jumaane D. Williams Public Advocate 1 Centre Street 15th Floor North New York, NY 10007
David Gold, Esq. Commissioner, NYC Dept. of City Planning 120 Broadway, 31st Floor New York, NY 10271	Shaminder Chawla, Acting Director NYC Office of Environmental Remediation 100 Gold Street - 2nd Floor New York, NY 10038	Hon. Donovan Richards, Jr. Queens Borough President 120-55 Queens Blvd. Kew Gardens, NY 11424
Shawn T. Roberts NYSDEC Project Manager 625 Broadway Albany, NY 12233	Thomas V. Panzone NYSDEC Public Participation Specialist 47-40 21st Street Long Island City, NY 11101	Christine Vooris NYSDOH Public Health Specialist Corning Tower, Room 1787 Albany, NY 12237
Hon Charles Schumer U.S. Senator 780 Third Avenue, Suite 2301 New York, NY 10017	Hon. Kirsten Gillibrand U.S. Senator 780 Third Avenue, Suite 2601 New York, NY 10017	Hon. Gregory Meeks U.S. House of Representatives 153-01 Jamaica Avenue, 2nd Floor Jamaica , NY 11432
Dr. Nantasha Williams NYC Councilmember 172-12 Linden Boulevard St. Albans, NY 11434	Hon. Leroy Comrie NYS Senator 113-43 Farmers Boulevard St. Albans, NY 11412	Hon. Alice Hyndman NYS Assemblymember 232-06A Merrick Blvd. Springfield Gardens, NY 11413
Hon. Vivian E. Cook NYS Assemblymember 142-15 Rockaway Blvd Jamaica , NY 11436	Yvonne Reddick, District Manager Queens Community Board 12 90-28 161st Street Jamaica , NY 11432	Rev. Carlene O. Thorbs, Chairperson Queens Community Board 12 90-28 161st Street Jamaica , NY 11432
Vishal Hardwar, Chairperson – Urban Renewal (Land Use) Committee Queens Community Board 12 90-28 161st Street Jamaica , NY 11432	Audrey I. Pheffer Queens County Clerk 8811 Sutphin Blvd #106 Jamaica , NY 11435	Richard David - Regional Director, Queens & Community Affairs Consolidated Edison Corporate Affairs 59-17 Junction Boulevard – 2nd Floor Flushing, NY 11373
President Erskine Williams 103rd NYPD Police Precinct Council 168-02 91st Ave Jamaica , NY 11432	BATTALION 50/ENGINE 298/LADDER 127 FDNY 153-11 HILLSIDE AVENUE Jamaica , NY 11432	
PUBLIC WATER UTILITIES		
Rohit Aggarwala Commissioner, NYC Dept. of Environmental Protection 59-17 Junction Boulevard Flushing, NY 11373	New York City Municipal Water Finance Authority Philip Wasserman - Executive Director 255 Greenwich Street, 6th Floor New York, NY 10007	New York City Water Board NYC Department of Environmental Protection 59-17 Junction Boulevard, 8th Floor Flushing, NY 11373

MEDIA		
Times-Ledger Newspapers Schneps Media 45-17 Marathon Parkway Douglaston, NY 11362	Queens Chronicle https://www.qchron.com/site/contact/ Atlas Park – 71-19 80th Street Suite 8- 201 Glendale, NY 11385	New York Daily News PO Box 7180 New York, NY 10008
New York Post 1211 Avenue of the Americas New York, NY 10036	Spectrum NY 1 News 75 Ninth Avenue New York, NY 10011	Hoy Nueva York Impremedia, 41 Flatbush Avenue 1st Floor Brooklyn , NY 11217
El Diario NY Impremedia, 41 Flatbush Avenue 1st Floor Brooklyn , NY 11217	Queens Daily Eagle 8900 Sutphin Boulevard, LL2 Jamaica , NY 11435	Queens Latino https://queenslatino.com/media-kit/
OWNERS / ADJACENT PROPERTY OWNERS		
Archer Towers Phase I Development LLC 163-05 Archer Avenue Jamaica, NY 11433	BRP Companies 100 Park Avenue, FL 36 New York, NY 10017	163-18 Jamaica Realty Corp 163-18 Jamaica Avenue Jamaica, NY 11432
163-30 Jamaica Realty LLC 163-30 Jamaica Avenue Jamaica, NY 11432	ACHS Management Corp, 1412 Broadway, 3rd Floor New York, NY 10018	16324 Jamaica Avenue LLC 163-22 Jamaica Avenue Jamaica, NY 11432
16324 Jamaica Avenue LLC 1185 6th Avenue, 10th Floor New York, NY 10036	163-28 Jamaica Avenue Holding LLC 163-28 Jamaica Avenue Jamaica, NY 11432	NYC Department of Transportation 92-18 Jamaica Avenue Jamaica, NY 11241
M&M of Jamaica, LLC 163-34 Jamaica Avenue Jamaica, NY 11432	Francmen 16402 LLC 164-02 Jamaica Avenue Jamaica, NY 11432	145-26/26A Liberty Ave., LLC 94-02 150th Street Jamaica, NY 11435
Jamaica First Parking LLC 92-02 165 Street, Jamaica, NY 11433	Jamaica First Parking LLC 90-04 161st Street, 7th Floor Jamaica, NY 11432	92-56 165th Street LLC 92-56 165 Street, Jamaica, NY 11433
92-56 165th Street LLC 92-56 165th Street Jamaica, NY 11433	Jamaica Religious Supplies 163-05 Archer Avenue Jamaica, NY 11433	Jamaica Religious Supplies 92-19 Guy R. Brewer Blvd Queens, NY 11433
MTA NYC Transit 2 Broadway New York, NY 10004	NYS Dormitory Authority 92-90 165 Street Jamaica, NY 11433	NYS Dormitory Authority 515 Broadway Albany, NY 12207
AGM Gas Station 163-18 Jamaica Avenue Jamaica, NY 11432	Portabella Men's Clothing 163-18 Jamaica Avenue Jamaica, NY 11432	The Child Center of NY 163-18 Jamaica Avenue Jamaica, NY 11432
Kingdom Jewelry 163-22 Jamaica Avenue Jamaica, NY 11432	Dunkin Donuts 163-18 Jamaica Avenue Jamaica, NY 11432	Allen School of Health Sciences 163-18 Jamaica Avenue 3rd Floor Queens, NY 11432
Digital Repair of NYC 163-34 Jamaica Avenue Jamaica, NY 11432	Digital Repair of NYC 163-40 Jamaica Avenue Jamaica, NY 11432	Cohen's Fashion Optical 163-28 Jamaica Avenue Jamaica, NY 11432
Super V 163-30 Jamaica Avenue Jamaica, NY 11432	All My Furniture inc. 164-02 Jamaica Avenue Jamaica, NY 11432	Five Below 163-34 Jamaica Avenue Jamaica, NY 11432
South Indian Psychic and Spiritual Healer 164-02 Jamaica Avenue Jamaica, NY 11432	Milton G. Bassin Performing Arts Center 92-90 165 Street Jamaica, NY 11433	Milton G. Bassin Performing Arts Center 94-45 Guy R. Brewer Blvd. Jamaica, NY 11433

Archer Halal Poultry 92-56 165 Street Queens, NY 11433	One Medical - Queens - Mobile Testing Center 92-90 165 Street, Jamaica, NY 11433	One Medical - Queens - Mobile Testing Center 95 Guy R. Brewer Blvd. Jamaica, NY 11451
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Local Schools and Daycare Centers:

Growing Up Green Charter School II - Elementary School

President/Executive Director/Principal

89-25 161st Street

Jamaica , NY 11432

347-642-4306 ext. 4

https://www.gugcs.org/apps/pages/index.jsp?uREC_ID=309885&type=d

PS 349 Magnet School for Leadership and Innovation through STEAM

President/Executive Director/Principal

88-08 164th Street

Jamaica , NY 11432

718-558-6220

<https://q349.echalksites.com/>

M.S. 358 – The Magnet School for STEAM Exploration and Experiential Learning

President/Executive Director/Principal

88-08 164th St,

Jamaica , NY 11432

718-558-6240

<https://www.ms358.org/>

P.S. 182Q Magnet School of Discovery and Applied Learning

President/Executive Director/Principal

153-27 88th Ave,

Jamaica , NY 11432

718-298-7700

<https://www.ps182q.org/contact-us.html>

P.S. 182Q Magnet School of Discovery and Applied Learning

President/Executive Director/Principal

88-13 Parsons Blvd

Jamaica , NY 11432

Phone: 718-523-8941

<https://www.ps182q.org/contact-us.html>

The Riverview School

President/Executive Director/Principal

88-08 164th St,

Jamaica , NY 11432

718 609-3320

Queens High School of the Sciences
President/Executive Director/Principal
94-50 159th St,
Jamaica , NY 11451
(718) 657-3181
<https://qhss.org/>

The Continuation of a Dream Daycare Center Inc.
President/Executive Director/Principal
153-11 90th Avenue
Jamaica , NY 11432
(718) 233-8250

Queens Satellite High School for Opportunity
President/Executive Director/Principal
162-02 Hillside Ave
Jamaica , NY 11432
718-883-1200
<https://www.qshso.org/apps/contact/>

Queens Educational Opportunity Center
President/Executive Director/Principal
158-29 Archer Avenue
Jamaica , NY 11433
718-725-3320
<https://www.queenseoc.net/>

New Dawn Charter High School II
President/Executive Director/Principal
89-25 161st St,
Jamaica , NY 11432
347-947-2580
<https://www.ndchsqueens.org/>

Early Bird II Educational Center
President/Executive Director/Principal
90-05 161st Street
Jamaica , NY 11432
718-739-0884 or 718-739-0886
<https://www.earlybirdeducationalcenter.org/locations>

Early Bird III Educational Center
President/Executive Director/Principal
89-14 163rd Street
Jamaica , NY 11432
718-739-0884 or 718-739-0886
<https://www.earlybirdeducationalcenter.org/locations>

Parentschoice Daycare
President/Executive Director/Principal
106-54 Guy R Brewer Blvd
Jamaica , NY 11433
(718) 480-6305

Ms. Selena's Daycare
President/Executive Director/Principal
106-30 159th St #2B,
Jamaica , NY 11433

Imagine Early Learning Centers @ Jamaica Kids
President/Executive Director/Principal
155-10 Jamaica Ave
Jamaica , NY 11432
(718) 557-5520

Child And Family Center
President/Executive Director/Principal
94-12 160th St,
Jamaica , NY 11433
(718) 262-2930

Colin Newell Headstart
President/Executive Director/Principal
161-06 89th Ave,
Jamaica , NY 11432
(718) 523-1888

Q381 District 29 Pre-K Center
President/Executive Director/Principal
168-42 Jamaica Ave
Jamaica , NY 11432
(718) 480-2540
<https://insideschools.org/school/29Z017>

York College
President/Executive Director/Principal
94-20 Guy R. Brewer Boulevard
Jamaica , NY 11451
<https://www.york.cuny.edu/>

NYCHA South Jamaica II Houses - DAY CARE CENTER
President/Executive Director/Principal
108-17 159TH STREET
Jamaica , NY 11433

ICNA Al-Markaz Hifz School
President/Executive Director/Principal
166-26 89th Ave,
Jamaica , NY 11432
718-739-7300
<https://icnamarkaz.org/>

Hearts and Minds Daycare LLC
President/Executive Director/Principal
153-11 90th Ave
Jamaica , NY 11432
929-719-2669
<https://www.hmdaycare.org/contact>

Whitney's foundation for children
President/Executive Director/Principal
105-17 169th St 1st floor
Jamaica , NY 11433
(718) 725-7482

Community, Civic, Religious and Other Environmental Organizations

Presentation of the Blessed Virgin Mary Parish
88-19 Parsons Blvd
Jamaica , NY 11432

The Universal Church
92-24 Merrick Blvd 1st Floor
Jamaica , NY 11433

Tabernacle of Prayer for All
90-07 Merrick Blvd
Jamaica , NY 11432

Tabernacle Of Glory NYC
103-19 Merrick Blvd
Jamaica , NY 11433

The Temple of Restoration
90-40 160th St
Jamaica , NY 11432

First Presbyterian Church in Jamaica
89-60 164th St
Jamaica , NY 11432

VITAL Church NYC
10419 165th St
Jamaica , NY 11433

Calvary A.M.E. Zion Church
106-16 Guy R Brewer Blvd,
Jamaica , NY 11433

Church of God of Jamaica
90-25 160th St
Jamaica , NY 11432

Deeper Life Bible Church
103-19 Merrick Blvd
Jamaica , NY 11433

All Nations Apostolic Tabernacle
89-28 Parsons Blvd,
Jamaica , NY 11432

Grace Episcopal Church
155-15 Jamaica Avenue
Jamaica , NY 11434

Peace Mission Church of Christ
104-04 164th St,
Jamaica , NY 11433

The United House of Prayer for All People
160-12 Tuskegee Airmen Way
Jamaica , NY 11433

The Church of Jesus Christ of Latter-day Saints
89-58 163rd St
Jamaica , NY 11432

The Church of God in Christ Jesus of The Apostles' Faith, Inc
15722 Tuskegee Airmen Way
South Jamaica, NY 11433

St. Stephen's Episcopal Church
8922 168th St
Jamaica , NY 11432

Faith Tabernacle Baptist Church
10645 160th St
Jamaica , NY 11433

Godian Fellowship
10603 Guy R Brewer Blvd
Jamaica , NY 11433

First Reformed Church of Jamaica
153-10 Jamaica Ave
Jamaica , NY 11432

Masjid Omar Ben Abdel-Aziz
88-29 161st St
Jamaica , NY 11432

Islamic Circle of North America (ICNA)
166-26 89th Ave
Jamaica , NY 11432

Islamic Foundation Inc
88-29 161st St,
Jamaica , NY 11432

Markazul Hikmah
165-23 Hillside Ave
Jamaica, NY 11432

Greater Jamaica Development Development Corporation
<https://gjdc.org/>
90-04 161st Street
Jamaica, NY 11432

Downtown Jamaica Partnership
<https://downtownjamaica.org/about-us>
161-10 Jamaica Avenue, Suite 419
Jamaica, NY 11432

Jamaica Service Program for Older Adults Inc
92-47 165th St
Jamaica, NY 11433

Majlis Ash-Shura: Islamic Leadership Council of New York
88-29 161st St
Jamaica, NY 11432

Catholic Charities Neighborhood Services Inc
161-10 Jamaica Ave
Jamaica, NY 11432

Allen Community International Tower Senior Center
90-20, 170th Street
Jamaica, NY 11432

New York City Housing Authority Shelton Senior Center
89-09 162nd Street
Jamaica, NY 11432

Jamaica Service Program for Older Adults 60 - Food Distribution Center
92-47 165th Street
Jamaica, NY 11433

New York City Housing Authority Conlon Lihfe Senior Center
92-33 170th Street
Jamaica, NY 11433

Theodora G. Jackson Adult Care - Food Distribution Center
92-47 165th Street,
Jamaica, NY 11405

UniversaCare of Queens
161-10 Jamaica Ave Suite 403
Jamaica, NY 11432

NYCHA Houses South Jamaica II
Development Management Office
106-62 160th Street
Jamaica, NY 11433

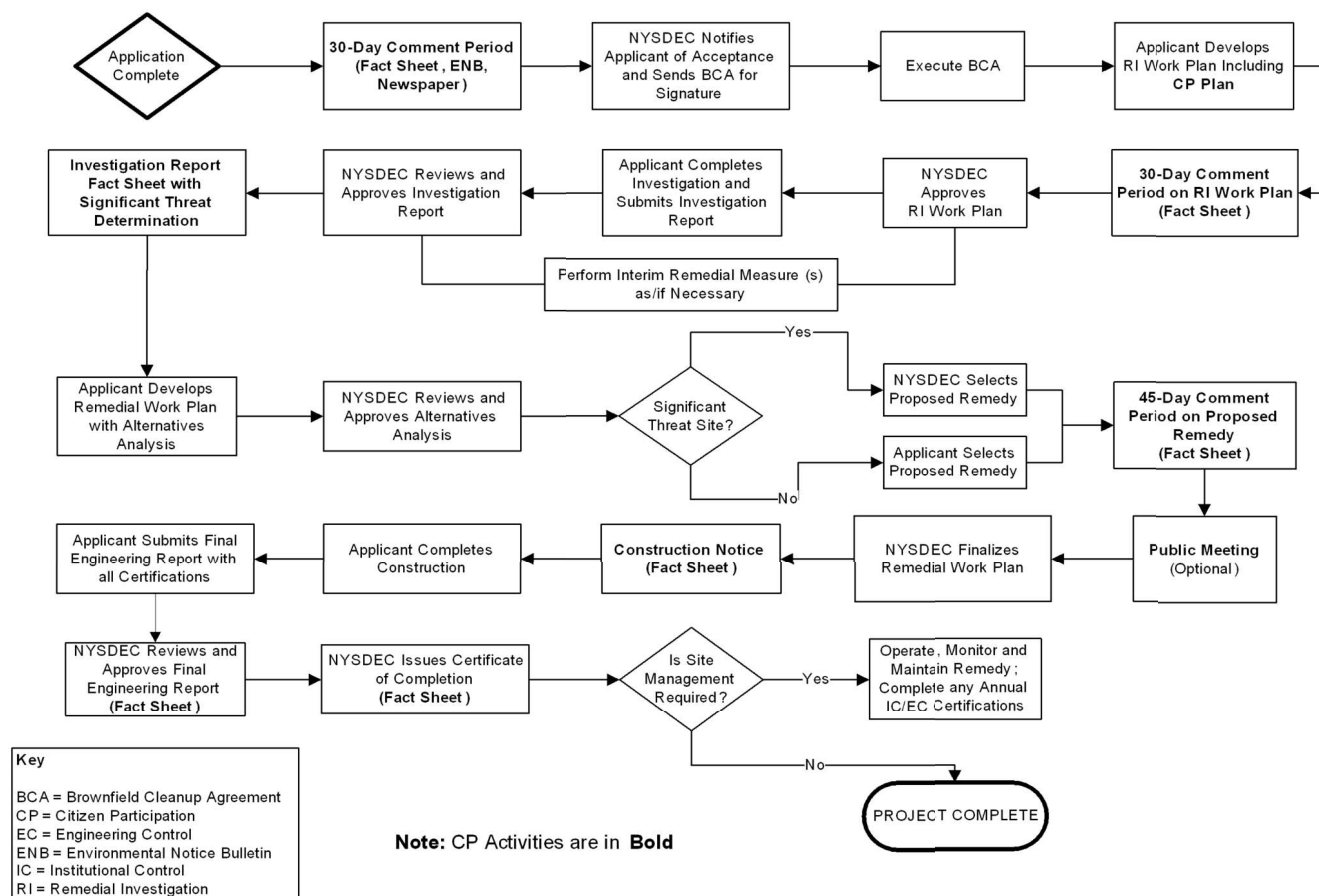
NYCHA Houses South Jamaica II
President – Resident Association
106-62 160th Street
Jamaica, NY 11433

NYCHA Houses South Jamaica II
Community Center
109-04 160th Street
Jamaica, NY 11433

Appendix C - Site Location Map



Appendix D - Brownfield Cleanup Program Process



Division of Environmental Remediation

**Remedial Programs
Scoping Sheet for Major Issues of Public Concern (see instructions)**

Site Name: Archer Ave Auto Repair and Coal Yard Site

Site Number: C241283

Site Address and County: 163-05 & 163-25 Archer Avenue, Jamaica, New York, County of Queens

Remedial Party(ies): Archer Towers Development LLC

Note: For Parts 1. – 3. the individuals, groups, organizations, businesses and units of government identified should be added to the site contact list as appropriate.

Part 1. List major issues of public concern and information the community wants. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and information needs.

Major issues of public concern are standards issues communities are concerned with in relation to brownfield site remediation projects.

How were these issues and/or information needs identified?

Concerns in relation to dust, noise and possible odors are standards issues of concern for communities with in relation to brownfield site remediation projects.

Part 2. List important information needed **from** the community, if applicable. Identify individuals, groups, organizations, businesses and/or units of government related to the information needed.

No information is needed at this time from the community.

How were these information needs identified?

N/A

Part 3. List major issues and information that need to be communicated **to** the community. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and/or information.

The major issues that need to be communicated to the community are summarized in this CPP. The community will receive periodic fact sheets that will update them in relation to the work being performed on the site so they can communicate any issues they may observed or may experience to the DEC or DOH.

How were these issues and/or information needs identified?

These issues and/or information needs are standard for all brownfield sites.

Part 4. Identify the following characteristics of the affected/interested community. This knowledge will help to identify and understand issues and information important to the community, and ways to effectively develop and implement the site citizen participation plan (mark all that apply):

a. Land use/zoning at and around site:

☒ **Residential** ☐ **Agricultural** ☐ **Recreational** ☒ **Commercial** ☐ **Industrial**

b. Residential type around site:

☒ **Urban** ☐ **Suburban** ☐ **Rural**

c. Population density around site:

☒ **High** ☐ **Medium** ☐ **Low**

d. Water supply of nearby residences:

☒ **Public** ☐ **Private Wells** ☐ **Mixed**

e. Is part or all of the water supply of the affected/interested community currently impacted by the site?

☐ **Yes** ☒ **No**

Provide details if appropriate:

[Click here to enter text.](#)

f. Other environmental issues significantly impacted/impacting the affected community?

☐ **Yes** ☒ **No**

Provide details if appropriate:

[Click here to enter text.](#)

g. Is the site and/or the affected/interested community wholly or partly in an Environmental Justice Area?

☒ **Yes** ☐ **No**

h. Special considerations:

☒ **Language** ☐ **Age** ☐ **Transportation** ☐ **Other**

Explain any marked categories in **h**:

The BCP documents will be translated to Spanish if requested by the Department.

Part 5. The site contact list must include, at a minimum, the individuals, groups, and organizations identified in Part 2. of the Citizen Participation Plan under 'Site Contact List'. Are *other* individuals, groups, organizations, and units of government affected by, or interested in, the site, or its remedial program? (Mark and identify all that apply, then adjust the site contact list as appropriate.)

☐ **Non-Adjacent Residents/Property Owners:** [Click here to enter text.](#)

☐ **Local Officials:** [Click here to enter text.](#)

☐ **Media:** [Click here to enter text.](#)

☐ **Business/Commercial Interests:** [Click here to enter text.](#)

☐ **Labor Group(s)/Employees:** [Click here to enter text.](#)

☐ **Indian Nation:** [Click here to enter text.](#)

☐ **Citizens/Community Group(s):** [Click here to enter text.](#)

☐ **Environmental Justice Group(s):** [Click here to enter text.](#)

☐ **Environmental Group(s):** [Click here to enter text.](#)

☐ **Civic Group(s):** [Click here to enter text.](#)

☐ **Recreational Group(s):** [Click here to enter text.](#)

☐ **Other(s):** [Click here to enter text.](#)

Prepared/Updated By: Linda Shaw, Esq.

Date: 3/14/2025

Reviewed/Approved By: [Click here to enter text.](#)

Date: [Click here to enter text.](#)

Appendix F:

Citizen Participation Plan



Department of
Environmental
Conservation

Brownfield Cleanup Program

Citizen Participation Plan for

Archer Ave Auto Repair and Coal Yard Site

March 2025

Site # C241283
163-25 Archer Avenue
Jamaica, NY 11433

Contents

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3. Major Issues of Public Concern	8
4. Site Information	8
5. Investigation and Cleanup Process	9
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Appendix D - Brownfield Cleanup Program Process	25

* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **Archer Towers Development LLC (“Applicant”)**
Site Name: **Archer Ave Auto Repair and Coal Yard Site (“Site”)**
Site Address: **163-25 Archer Avenue, Jamaica, NY 11433**
Site County: **County of Queens**
Site Number: **C241283**

1. What is New York’s Brownfield Cleanup Program?

New York’s Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as “brownfields” so that they can be reused and developed. These uses include recreation, housing, and business.

A brownfield is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at:
<http://www.dec.ny.gov/chemical/8450.html>

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision-makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process
- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process
- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community
- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision-making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web-site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.

The site contact list includes, at a minimum:

- Chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- Residents, owners, and occupants of the site and properties adjacent to the site;
- The public water supplier which services the area in which the site is located;
- Any person who has requested to be placed on the site contact list;
- The administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- Location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See <http://www.dec.ny.gov/chemical/61092.html>

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.
- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at <https://dec.ny.gov/regulatory/regulations/technical-assistance-grant-tag-guidance-handbook-der-14>

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation Note: Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. Note: The two fact sheets are combined when possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

There will be areas on the Site where soil excavation is necessary. Therefore, once the remediation commences, there may be concerns regarding odors, noise or truck traffic coming from the site. However, these impacts will be mitigated through implementation of a Health and Safety Plan (HASP) and Soil Management Plan (SMP) approved by NYSDEC, which will be designed to minimize these impacts. A Community Air Monitoring Plan (CAMP) will also be implemented to monitor dust and vapors to ensure the community is not impacted. CAMP implementation involves the placement of air monitoring stations upwind and downwind of where work is occurring to capture both dust and vapor emissions. If dust or emissions exceed a set threshold established by NYSDEC and the New York State Department of Health (NYSDOH), then work must cease and the cause of the issue must be corrected before work can proceed. Typically implementation of these measures addresses any concerns of the public.

Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Environmental justice efforts focus on improving the environment in communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities.

The Site is located in an area with a sizable Hispanic-American population nearby, therefore all future fact sheets will be translated into Spanish.

For additional information, visit:

<https://statisticalatlas.com/zip/11433/Race-and-Ethnicity>

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

- Location - 163-25 Archer Avenue, Jamaica, NY
- Setting - urban
- Site size - 0.853 acres
- Adjacent properties – residential, commercial properties, mixed-use properties, 3-story parking structure and MTA rail lines

History of Site Use, Investigation, and Cleanup

Historic Sanborn maps revealed that in 1901 the Site was home to E.C. Hendrickson & Co. Lumber, Coal, and Wood Yard. This company primarily occupied the western portion of the site, and covered it with coal sheds, a fertilizer house, lime, cement, lumber piles, plastics storage, and a coal pocket with an electric motor. Beginning in 1912, and operating until 1925, Frank R. Smith Masons' Supplies and Coal Yard occupied the Site. This company maintained lime and cement storage, coal pockets with electric motor, coal sheds, plumber supplies, asphalt shingle storage. In 1925, a gasoline tank in the southwestern corner of the Site was visible on the Sanborn map. Beginning in 1942, the Site was used as a bus repair shop, which operated in the southeastern corner of the Site. The gas tank remained in place at this time. By 1963, the site's usage expanded to include a bus terminal with a lubritorium to lubricate engines with motor oil and filling station, while maintaining the repair shop. After 1967, the gas tank cannot be seen on the Sanborn maps. In 1971, a 9-deck parking garage was constructed on the Site for the former Gertz Department store. This garage was demolished in 2019 and the Site has remained vacant since that time.

Prior investigation reports from 2013 - 2019 did not reveal levels of contamination requiring remediation. However, the most recent investigations conducted have revealed contamination requiring remediation. Based on these recent investigations conducted, the primary contaminants of concern are semi-volatile organic compounds ("SVOCs") and heavy metals in soil, SVOCs and metals in groundwater, and volatile organic compounds ("VOCs") in soil vapor. The soil contamination exceeds the Restricted Residential Soil Cleanup Objectives, the groundwater exceedances applicable groundwater standards and several high hits of chlorinated volatile organic compounds and petroleum compounds are present in soil vapor. The nature of the contamination discovered likely derives from the Site's past use as a coal and lumber yard, a gasoline filling station, automotive repair facility, and bus terminal. Specifically, the high Semi-Volatile Organic Compounds (SVOCs) and lead can be traced back to the site's use as a coal yard and the chlorinated and petroleum related soil vapor exceedances can be traced to the site's use as a gasoline filling station, automotive repair facility, and bus terminal including a lubritorium to lubricate engines with motor oil.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential

exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for unrestricted purposes.

To achieve this goal, the Applicant will conduct investigation activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant will complete a full site investigation since the Brownfield Cleanup Agreement has now been executed by NYSDEC and the Applicant. The Applicant has submitted an Remedial Investigation Work Plan (RIWP) with the application to perform a full site investigation, which was subject to a thirty (30) day comment period with the application. NYSDEC will determine if the investigation goals and requirements of the BCP have been met or if additional work is needed before a remedy can be selected. This investigation will be performed with NYSDEC oversight.

The site investigation has several goals:

- 1) Define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
- 2) Identify the source(s) of the contamination;
- 3) Assess the impact of the contamination on public health and the environment; and
- 4) Provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a “significant threat,” it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a “Certificate of Completion” (described below) to the Applicant.

or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a “Remedial Work Plan”. The Remedial Work Plan describes the Applicant’s proposed remedy for addressing contamination related to the site.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The NYSDOH must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a Final Engineering Report (FER) that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the FER. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

**Appendix A -
Project Contacts and Locations of Reports and Information**

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Shawn T. Roberts
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
(518) 402-9799
shawn.roberts@dec.ny.gov

Thomas V. Panzone
Public Participation Specialist
Division of Communication, Education and Engagement
NYSDEC – Region 2
47-40 21st Street
Long Island City, NY 11101
Thomas.panzone@dec.ny.gov
718-482-4953

New York State Department of Health (NYSDOH):

Aaron Keegan
Project Manager
New York State Department of Health
Bureau of Environmental Exposure Investigation
Empire State Plaza
Corning Tower Room 1787
Albany, NY 12237
518-408-1943
beei@health.ny.gov

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Queens Public Library at Central
Attn: Mahendra Indarjit, Branch Manager
89-11 Merrick Boulevard
Jamaica, NY 11432
Phone: (718) 990-0700

BRANCH HOURS:

Sunday	12:00 pm – 5:00 pm
Monday	10:00 am – 8:00 pm
Tuesday	10:00 am – 1:00 pm
Wednesday	CLOSED
Thursday	10:00 am – 8:00 pm
Friday	10:00 am – 6:00 pm
Saturday	10:00 am – 5:00 pm

Queens Community Board 12
Attn: Yvonne Reddick, District Manager
Rev. Carlene O. Thorbs, Chairperson
Vishal Hardowar, Chairperson – Urban
Renewal (Land Use) Committee
90-28 161st Street
Jamaica, NY 11432
Phone: (718) 658-3308
Email: QN12@cb.nyc.gov

Hours of Operation:

Monday through Friday:	9 AM–5 PM
Saturday	Closed
Sunday	Closed

Appendix B - Site Contact List

GOVERNMENT / MUNICIPALITIES		
Hon. Eric Adams NYC Mayor City Hall New York, NY 10007	Hon. Brad Lander NYC Comptroller 1 Centre Street Room 517 New York, NY 10007	Hon. Jumaane D. Williams Public Advocate 1 Centre Street 15th Floor North New York, NY 10007
David Gold, Esq. Commissioner, NYC Dept. of City Planning 120 Broadway, 31st Floor New York, NY 10271	Shaminder Chawla, Acting Director NYC Office of Environmental Remediation 100 Gold Street - 2nd Floor New York, NY 10038	Hon. Donovan Richards, Jr. Queens Borough President 120-55 Queens Blvd. Kew Gardens, NY 11424
Shawn T. Roberts NYSDEC Project Manager 625 Broadway Albany, NY 12233	Thomas V. Panzone NYSDEC Public Participation Specialist 47-40 21st Street Long Island City, NY 11101	Christine Vooris NYSDOH Public Health Specialist Corning Tower, Room 1787 Albany, NY 12237
Hon Charles Schumer U.S. Senator 780 Third Avenue, Suite 2301 New York, NY 10017	Hon. Kirsten Gillibrand U.S. Senator 780 Third Avenue, Suite 2601 New York, NY 10017	Hon. Gregory Meeks U.S. House of Representatives 153-01 Jamaica Avenue, 2nd Floor Jamaica , NY 11432
Dr. Nantasha Williams NYC Councilmember 172-12 Linden Boulevard St. Albans, NY 11434	Hon. Leroy Comrie NYS Senator 113-43 Farmers Boulevard St. Albans, NY 11412	Hon. Alice Hyndman NYS Assemblymember 232-06A Merrick Blvd. Springfield Gardens, NY 11413
Hon. Vivian E. Cook NYS Assemblymember 142-15 Rockaway Blvd Jamaica , NY 11436	Yvonne Reddick, District Manager Queens Community Board 12 90-28 161st Street Jamaica , NY 11432	Rev. Carlene O. Thorbs, Chairperson Queens Community Board 12 90-28 161st Street Jamaica , NY 11432
Vishal Hardwar, Chairperson – Urban Renewal (Land Use) Committee Queens Community Board 12 90-28 161st Street Jamaica , NY 11432	Audrey I. Pheffer Queens County Clerk 8811 Sutphin Blvd #106 Jamaica , NY 11435	Richard David - Regional Director, Queens & Community Affairs Consolidated Edison Corporate Affairs 59-17 Junction Boulevard – 2nd Floor Flushing, NY 11373
President Erskine Williams 103rd NYPD Police Precinct Council 168-02 91st Ave Jamaica , NY 11432	BATTALION 50/ENGINE 298/LADDER 127 FDNY 153-11 HILLSIDE AVENUE Jamaica , NY 11432	
PUBLIC WATER UTILITIES		
Rohit Aggarwala Commissioner, NYC Dept. of Environmental Protection 59-17 Junction Boulevard Flushing, NY 11373	New York City Municipal Water Finance Authority Philip Wasserman - Executive Director 255 Greenwich Street, 6th Floor New York, NY 10007	New York City Water Board NYC Department of Environmental Protection 59-17 Junction Boulevard, 8th Floor Flushing, NY 11373

MEDIA		
Times-Ledger Newspapers Schneps Media 45-17 Marathon Parkway Douglaston, NY 11362	Queens Chronicle https://www.qchron.com/site/contact/ Atlas Park – 71-19 80th Street Suite 8- 201 Glendale, NY 11385	New York Daily News PO Box 7180 New York, NY 10008
New York Post 1211 Avenue of the Americas New York, NY 10036	Spectrum NY 1 News 75 Ninth Avenue New York, NY 10011	Hoy Nueva York Impremedia, 41 Flatbush Avenue 1st Floor Brooklyn , NY 11217
El Diario NY Impremedia, 41 Flatbush Avenue 1st Floor Brooklyn , NY 11217	Queens Daily Eagle 8900 Sutphin Boulevard, LL2 Jamaica , NY 11435	Queens Latino https://queenslatino.com/media-kit/
OWNERS / ADJACENT PROPERTY OWNERS		
Archer Towers Phase I Development LLC 163-05 Archer Avenue Jamaica, NY 11433	BRP Companies 100 Park Avenue, FL 36 New York, NY 10017	163-18 Jamaica Realty Corp 163-18 Jamaica Avenue Jamaica, NY 11432
163-30 Jamaica Realty LLC 163-30 Jamaica Avenue Jamaica, NY 11432	ACHS Management Corp, 1412 Broadway, 3rd Floor New York, NY 10018	16324 Jamaica Avenue LLC 163-22 Jamaica Avenue Jamaica, NY 11432
16324 Jamaica Avenue LLC 1185 6th Avenue, 10th Floor New York, NY 10036	163-28 Jamaica Avenue Holding LLC 163-28 Jamaica Avenue Jamaica, NY 11432	NYC Department of Transportation 92-18 Jamaica Avenue Jamaica, NY 11241
M&M of Jamaica, LLC 163-34 Jamaica Avenue Jamaica, NY 11432	Francmen 16402 LLC 164-02 Jamaica Avenue Jamaica, NY 11432	145-26/26A Liberty Ave., LLC 94-02 150th Street Jamaica, NY 11435
Jamaica First Parking LLC 92-02 165 Street, Jamaica, NY 11433	Jamaica First Parking LLC 90-04 161st Street, 7th Floor Jamaica, NY 11432	92-56 165th Street LLC 92-56 165 Street, Jamaica, NY 11433
92-56 165th Street LLC 92-56 165th Street Jamaica, NY 11433	Jamaica Religious Supplies 163-05 Archer Avenue Jamaica, NY 11433	Jamaica Religious Supplies 92-19 Guy R. Brewer Blvd Queens, NY 11433
MTA NYC Transit 2 Broadway New York, NY 10004	NYS Dormitory Authority 92-90 165 Street Jamaica, NY 11433	NYS Dormitory Authority 515 Broadway Albany, NY 12207
AGM Gas Station 163-18 Jamaica Avenue Jamaica, NY 11432	Portabella Men's Clothing 163-18 Jamaica Avenue Jamaica, NY 11432	The Child Center of NY 163-18 Jamaica Avenue Jamaica, NY 11432
Kingdom Jewelry 163-22 Jamaica Avenue Jamaica, NY 11432	Dunkin Donuts 163-18 Jamaica Avenue Jamaica, NY 11432	Allen School of Health Sciences 163-18 Jamaica Avenue 3rd Floor Queens, NY 11432
Digital Repair of NYC 163-34 Jamaica Avenue Jamaica, NY 11432	Digital Repair of NYC 163-40 Jamaica Avenue Jamaica, NY 11432	Cohen's Fashion Optical 163-28 Jamaica Avenue Jamaica, NY 11432
Super V 163-30 Jamaica Avenue Jamaica, NY 11432	All My Furniture inc. 164-02 Jamaica Avenue Jamaica, NY 11432	Five Below 163-34 Jamaica Avenue Jamaica, NY 11432
South Indian Psychic and Spiritual Healer 164-02 Jamaica Avenue Jamaica, NY 11432	Milton G. Bassin Performing Arts Center 92-90 165 Street Jamaica, NY 11433	Milton G. Bassin Performing Arts Center 94-45 Guy R. Brewer Blvd. Jamaica, NY 11433

Archer Halal Poultry 92-56 165 Street Queens, NY 11433	One Medical - Queens - Mobile Testing Center 92-90 165 Street, Jamaica, NY 11433	One Medical - Queens - Mobile Testing Center 95 Guy R. Brewer Blvd. Jamaica, NY 11451
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Local Schools and Daycare Centers:

Growing Up Green Charter School II - Elementary School

President/Executive Director/Principal

89-25 161st Street

Jamaica , NY 11432

347-642-4306 ext. 4

https://www.gugcs.org/apps/pages/index.jsp?uREC_ID=309885&type=d

PS 349 Magnet School for Leadership and Innovation through STEAM

President/Executive Director/Principal

88-08 164th Street

Jamaica , NY 11432

718-558-6220

<https://q349.echalksites.com/>

M.S. 358 – The Magnet School for STEAM Exploration and Experiential Learning

President/Executive Director/Principal

88-08 164th St,

Jamaica , NY 11432

718-558-6240

<https://www.ms358.org/>

P.S. 182Q Magnet School of Discovery and Applied Learning

President/Executive Director/Principal

153-27 88th Ave,

Jamaica , NY 11432

718-298-7700

<https://www.ps182q.org/contact-us.html>

P.S. 182Q Magnet School of Discovery and Applied Learning

President/Executive Director/Principal

88-13 Parsons Blvd

Jamaica , NY 11432

Phone: 718-523-8941

<https://www.ps182q.org/contact-us.html>

The Riverview School

President/Executive Director/Principal

88-08 164th St,

Jamaica , NY 11432

718 609-3320

Queens High School of the Sciences
President/Executive Director/Principal
94-50 159th St,
Jamaica , NY 11451
(718) 657-3181
<https://qhss.org/>

The Continuation of a Dream Daycare Center Inc.
President/Executive Director/Principal
153-11 90th Avenue
Jamaica , NY 11432
(718) 233-8250

Queens Satellite High School for Opportunity
President/Executive Director/Principal
162-02 Hillside Ave
Jamaica , NY 11432
718-883-1200
<https://www.qshso.org/apps/contact/>

Queens Educational Opportunity Center
President/Executive Director/Principal
158-29 Archer Avenue
Jamaica , NY 11433
718-725-3320
<https://www.queenseoc.net/>

New Dawn Charter High School II
President/Executive Director/Principal
89-25 161st St,
Jamaica , NY 11432
347-947-2580
<https://www.ndchsqueens.org/>

Early Bird II Educational Center
President/Executive Director/Principal
90-05 161st Street
Jamaica , NY 11432
718-739-0884 or 718-739-0886
<https://www.earlybirdeducationalcenter.org/locations>

Early Bird III Educational Center
President/Executive Director/Principal
89-14 163rd Street
Jamaica , NY 11432
718-739-0884 or 718-739-0886
<https://www.earlybirdeducationalcenter.org/locations>

Parentschoice Daycare
President/Executive Director/Principal
106-54 Guy R Brewer Blvd
Jamaica , NY 11433
(718) 480-6305

Ms. Selena's Daycare
President/Executive Director/Principal
106-30 159th St #2B,
Jamaica , NY 11433

Imagine Early Learning Centers @ Jamaica Kids
President/Executive Director/Principal
155-10 Jamaica Ave
Jamaica , NY 11432
(718) 557-5520

Child And Family Center
President/Executive Director/Principal
94-12 160th St,
Jamaica , NY 11433
(718) 262-2930

Colin Newell Headstart
President/Executive Director/Principal
161-06 89th Ave,
Jamaica , NY 11432
(718) 523-1888

Q381 District 29 Pre-K Center
President/Executive Director/Principal
168-42 Jamaica Ave
Jamaica , NY 11432
(718) 480-2540
<https://insideschools.org/school/29Z017>

York College
President/Executive Director/Principal
94-20 Guy R. Brewer Boulevard
Jamaica , NY 11451
<https://www.york.cuny.edu/>

NYCHA South Jamaica II Houses - DAY CARE CENTER
President/Executive Director/Principal
108-17 159TH STREET
Jamaica , NY 11433

ICNA Al-Markaz Hifz School
President/Executive Director/Principal
166-26 89th Ave,
Jamaica , NY 11432
718-739-7300
<https://icnamarkaz.org/>

Hearts and Minds Daycare LLC
President/Executive Director/Principal
153-11 90th Ave
Jamaica , NY 11432
929-719-2669
<https://www.hmdaycare.org/contact>

Whitney's foundation for children
President/Executive Director/Principal
105-17 169th St 1st floor
Jamaica , NY 11433
(718) 725-7482

Community, Civic, Religious and Other Environmental Organizations

Presentation of the Blessed Virgin Mary Parish
88-19 Parsons Blvd
Jamaica , NY 11432

The Universal Church
92-24 Merrick Blvd 1st Floor
Jamaica , NY 11433

Tabernacle of Prayer for All
90-07 Merrick Blvd
Jamaica , NY 11432

Tabernacle Of Glory NYC
103-19 Merrick Blvd
Jamaica , NY 11433

The Temple of Restoration
90-40 160th St
Jamaica , NY 11432

First Presbyterian Church in Jamaica
89-60 164th St
Jamaica , NY 11432

VITAL Church NYC
10419 165th St
Jamaica , NY 11433

Calvary A.M.E. Zion Church
106-16 Guy R Brewer Blvd,
Jamaica , NY 11433

Church of God of Jamaica
90-25 160th St
Jamaica , NY 11432

Deeper Life Bible Church
103-19 Merrick Blvd
Jamaica , NY 11433

All Nations Apostolic Tabernacle
89-28 Parsons Blvd,
Jamaica , NY 11432

Grace Episcopal Church
155-15 Jamaica Avenue
Jamaica , NY 11434

Peace Mission Church of Christ
104-04 164th St,
Jamaica , NY 11433

The United House of Prayer for All People
160-12 Tuskegee Airmen Way
Jamaica , NY 11433

The Church of Jesus Christ of Latter-day Saints
89-58 163rd St
Jamaica , NY 11432

The Church of God in Christ Jesus of The Apostles' Faith, Inc
15722 Tuskegee Airmen Way
South Jamaica, NY 11433

St. Stephen's Episcopal Church
8922 168th St
Jamaica , NY 11432

Faith Tabernacle Baptist Church
10645 160th St
Jamaica , NY 11433

Godian Fellowship
10603 Guy R Brewer Blvd
Jamaica , NY 11433

First Reformed Church of Jamaica
153-10 Jamaica Ave
Jamaica , NY 11432

Masjid Omar Ben Abdel-Aziz
88-29 161st St
Jamaica , NY 11432

Islamic Circle of North America (ICNA)
166-26 89th Ave
Jamaica , NY 11432

Islamic Foundation Inc
88-29 161st St,
Jamaica , NY 11432

Markazul Hikmah
165-23 Hillside Ave
Jamaica, NY 11432

Greater Jamaica Development Development Corporation
<https://gjdc.org/>
90-04 161st Street
Jamaica, NY 11432

Downtown Jamaica Partnership
<https://downtownjamaica.org/about-us>
161-10 Jamaica Avenue, Suite 419
Jamaica, NY 11432

Jamaica Service Program for Older Adults Inc
92-47 165th St
Jamaica, NY 11433

Majlis Ash-Shura: Islamic Leadership Council of New York
88-29 161st St
Jamaica, NY 11432

Catholic Charities Neighborhood Services Inc
161-10 Jamaica Ave
Jamaica, NY 11432

Allen Community International Tower Senior Center
90-20, 170th Street
Jamaica, NY 11432

New York City Housing Authority Shelton Senior Center
89-09 162nd Street
Jamaica, NY 11432

Jamaica Service Program for Older Adults 60 - Food Distribution Center
92-47 165th Street
Jamaica, NY 11433

New York City Housing Authority Conlon Lihfe Senior Center
92-33 170th Street
Jamaica, NY 11433

Theodora G. Jackson Adult Care - Food Distribution Center
92-47 165th Street,
Jamaica, NY 11405

UniversaCare of Queens
161-10 Jamaica Ave Suite 403
Jamaica, NY 11432

NYCHA Houses South Jamaica II
Development Management Office
106-62 160th Street
Jamaica, NY 11433

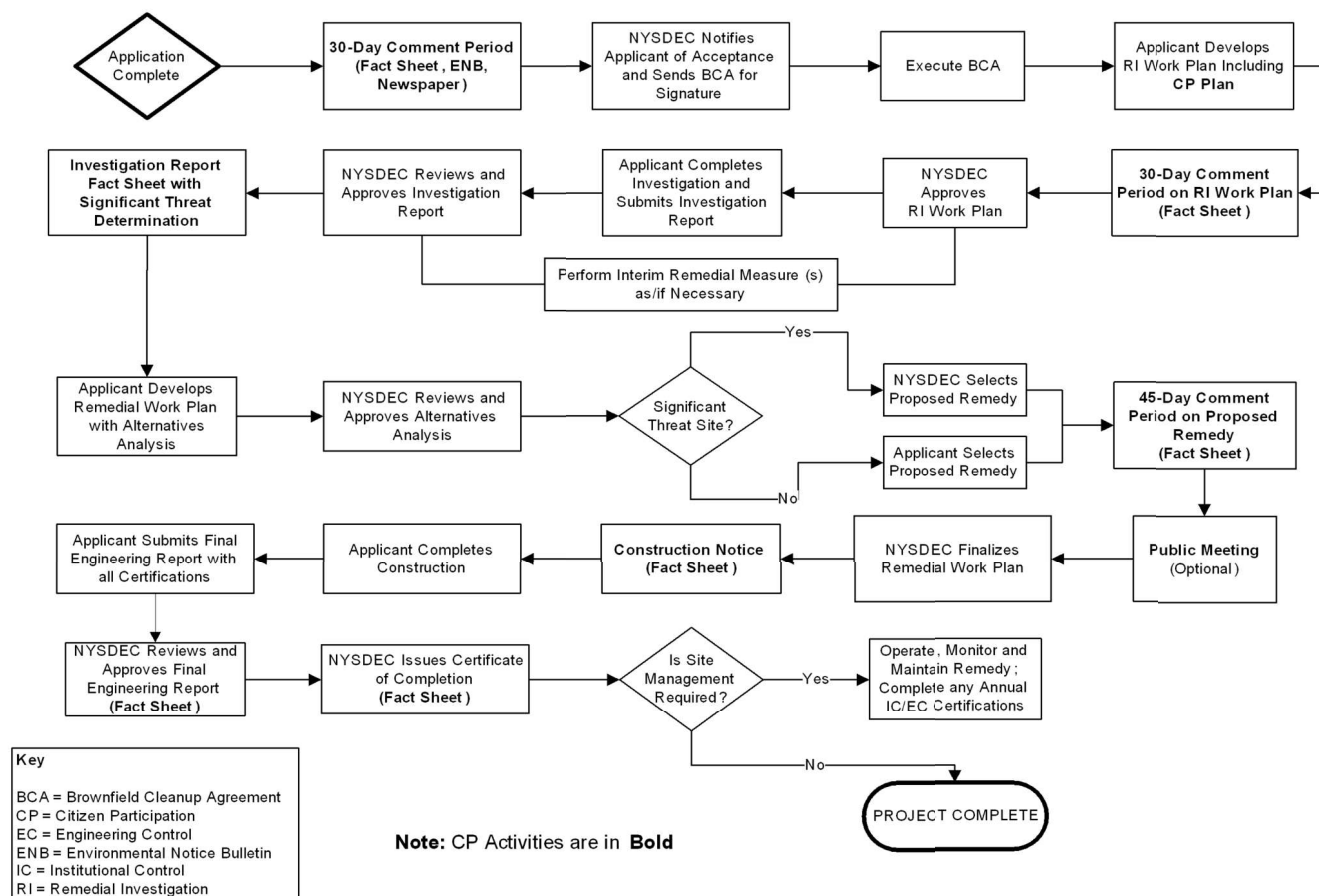
NYCHA Houses South Jamaica II
President – Resident Association
106-62 160th Street
Jamaica, NY 11433

NYCHA Houses South Jamaica II
Community Center
109-04 160th Street
Jamaica, NY 11433

Appendix C - Site Location Map



Appendix D - Brownfield Cleanup Program Process



Division of Environmental Remediation

**Remedial Programs
Scoping Sheet for Major Issues of Public Concern (see instructions)**

Site Name: Archer Ave Auto Repair and Coal Yard Site

Site Number: C241283

Site Address and County: 163-05 & 163-25 Archer Avenue, Jamaica, New York, County of Queens

Remedial Party(ies): Archer Towers Development LLC

Note: For Parts 1. – 3. the individuals, groups, organizations, businesses and units of government identified should be added to the site contact list as appropriate.

Part 1. List major issues of public concern and information the community wants. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and information needs.

Major issues of public concern are standards issues communities are concerned with in relation to brownfield site remediation projects.

How were these issues and/or information needs identified?

Concerns in relation to dust, noise and possible odors are standards issues of concern for communities with in relation to brownfield site remediation projects.

Part 2. List important information needed **from** the community, if applicable. Identify individuals, groups, organizations, businesses and/or units of government related to the information needed.

No information is needed at this time from the community.

How were these information needs identified?

N/A

Part 3. List major issues and information that need to be communicated **to** the community. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and/or information.

The major issues that need to be communicated to the community are summarized in this CPP. The community will receive periodic fact sheets that will update them in relation to the work being performed on the site so they can communicate any issues they may observed or may experience to the DEC or DOH.

How were these issues and/or information needs identified?

These issues and/or information needs are standard for all brownfield sites.

Part 4. Identify the following characteristics of the affected/interested community. This knowledge will help to identify and understand issues and information important to the community, and ways to effectively develop and implement the site citizen participation plan (mark all that apply):

a. Land use/zoning at and around site:

☒ **Residential** ☐ **Agricultural** ☐ **Recreational** ☒ **Commercial** ☐ **Industrial**

b. Residential type around site:

☒ **Urban** ☐ **Suburban** ☐ **Rural**

c. Population density around site:

☒ **High** ☐ **Medium** ☐ **Low**

d. Water supply of nearby residences:

☒ **Public** ☐ **Private Wells** ☐ **Mixed**

e. Is part or all of the water supply of the affected/interested community currently impacted by the site?

☐ **Yes** ☒ **No**

Provide details if appropriate:

[Click here to enter text.](#)

f. Other environmental issues significantly impacted/impacting the affected community?

☐ **Yes** ☒ **No**

Provide details if appropriate:

[Click here to enter text.](#)

g. Is the site and/or the affected/interested community wholly or partly in an Environmental Justice Area?

☒ **Yes** ☐ **No**

h. Special considerations:

☒ **Language** ☐ **Age** ☐ **Transportation** ☐ **Other**

Explain any marked categories in **h**:

The BCP documents will be translated to Spanish if requested by the Department.

Part 5. The site contact list must include, at a minimum, the individuals, groups, and organizations identified in Part 2. of the Citizen Participation Plan under 'Site Contact List'. Are *other* individuals, groups, organizations, and units of government affected by, or interested in, the site, or its remedial program? (Mark and identify all that apply, then adjust the site contact list as appropriate.)

☐ **Non-Adjacent Residents/Property Owners:** [Click here to enter text.](#)

☐ **Local Officials:** [Click here to enter text.](#)

☐ **Media:** [Click here to enter text.](#)

☐ **Business/Commercial Interests:** [Click here to enter text.](#)

☐ **Labor Group(s)/Employees:** [Click here to enter text.](#)

☐ **Indian Nation:** [Click here to enter text.](#)

☐ **Citizens/Community Group(s):** [Click here to enter text.](#)

☐ **Environmental Justice Group(s):** [Click here to enter text.](#)

☐ **Environmental Group(s):** [Click here to enter text.](#)

☐ **Civic Group(s):** [Click here to enter text.](#)

☐ **Recreational Group(s):** [Click here to enter text.](#)

☐ **Other(s):** [Click here to enter text.](#)

Prepared/Updated By: Linda Shaw, Esq.

Date: 3/14/2025

Reviewed/Approved By: [Click here to enter text.](#)

Date: [Click here to enter text.](#)

Appendix G:

Quality Assurance Project Plan



Geotechnical
Environmental
Site Civil

959 Route 46E, Fl 3, Ste 300
Parsippany, NJ 07054
973.808.9050
www.sesi.org

QUALITY ASSURANCE PROJECT PLAN

For

C241283 – Archer Ave Auto Repair and Coal Yard Site
163-25 Archer Avenue
Jamaica, New York
BCP. No C241283

Prepared for:

Archer Towers Development LLC

September 2025/Revised October 2025

SESI Project No:

12914

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ATTACHMENT 1	RESUMES OF THE KEY PROJECT PERSONNEL
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LIST OF ACRONYMS

Acronym	Definition
AAS	Absorption Spectroscopy
ASP	Analytical Service Protocol
BCP	Brownfield Cleanup Program
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Accreditation Program
GC/MS	Gas Chromatography/Mass Spectrometry
HAS	Hollow-stem Auger
HDPE	High-Density Polyethylene
LDPE	Low-density Polyethylene
LFPS	Low Flow Purging Sampling
MDL	Method Detection Limit
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyls
PFAS	Per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PPE	Personal Protective Equipment
PTFE	Polytetrafluoroethylene
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RAWP	Remedial Action Work Plan
SESI	SESI Consulting Engineers, Inc.
SVI Guidance	NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006) with updates
TIC	Tentatively Identified Compound
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency

1.0 PROJECT DESCRIPTION

This document presents the Quality Assurance Project Plan (QAPP) for the Remedial Action Work Plan (RAWP) for the proposed development at C241283--Archer Ave Auto Repair and Coal Yark Site in Jamaica, Queens, New York (the "Site"). The Site consists of approximately 0.853 acres. The Site is identified on the tax map as tax parcel Block 10151, Lot 65. The Site contains two (2) temporary office trailers and some storage containers with the surrounding unpaved areas.

The Subject Property is bound to the west by a residential development followed by Guy R. Brewer Boulevard, to the north by mixed-use commercial properties followed by Jamaica Avenue, to the east by a vacant lot followed by a three-story parking structure, and to the south by Archer Avenue followed by elevated Long Island Rail Road rail lines. The nearest surface water body is a pond within Captain Tilly Park, approximately 0.53 mile to the north. The topographic gradient at Site is generally flat. The Site is relatively level with regional topography gently sloping to the south.

SESI Consulting Engineers (SESI) prepared the RAWP for C241283 Archer Ave Auto Repair and Coal Yard Site, Jamaica, Queens, New York, dated September 2025/Revised October 2025, which describes the remedial actions to be conducted at the Site, as part of the Site's planned remediation.

2.0 PROJECT ORGANIZATION

The RAWP activities will be conducted by SESI and their qualified subcontractors, on behalf of BRP Companies. The organization of SESI's key project management and field staff, and respective areas of responsibility, is presented below (**Table 2.1**) along with the names of subcontractors. Resumes of the key project personnel are attached as **Attachment 1**.

Table 2.1—SESI Personnel and Subcontractors

Role	Name	Telephone No.
Project Principal	Fuad Dahan, P.E., PhD	973-808-9050 x249
Project Manager	Steven Gustems, PG	973-808-9050
Principal Engineer	Fuad Dahan, P.E., PhD	973-808-9050 x249
Field Team Leader	TBD	973-808-9050
Quality Assurance Officer	Joe Scardino	973-808-9050 x267
Field Personnel	TBD	973-808-9050
Analytical Laboratory	Alpha Analytical	201-847-9100
Data Validator	Amine Dahmani	860-942-2881
Driller	TBD	

2.1 PROJECT PRINCIPAL

Provides technical and administrative oversight and guidance throughout the project, assist in securing company resources, participate in technical review of deliverables, and attend key meetings as needed.

2.2 PRINCIPAL ENGINEER

Provides technical guidance and review of reports, analytical data. Will have key involvement in screening and development of remedial alternatives.

2.3 PROJECT MANAGER

Responsible for maintaining the day-to-day schedule for completing the fieldwork and deliverables according to Brownfield Cleanup Program (BCP) requirements and client expectations.

2.4 FIELD TEAM LEADER

Responsible for overseeing field work during the implementation of the RIWP, including observing subcontractors, maintaining field notes, and collecting samples of various environmental media.

2.5 QUALITY ASSURANCE OFFICER

Responsible for reviewing sampling procedures and certify that the data was collected and analyzed using the appropriate procedures.

3.0 QA/QC OBJECTIVES FOR MEASUREMENT OF DATA

In cases where NYSDOH ELAP Certification exists for a specific group or category of parameters, the laboratory performing analysis in connection with this project will have appropriate New York State Department of Health (NYSDOH) ELAP Certification. Alpha Analytical, an ELAP-certified lab, will be performing the sample analyses for the project. Analytical Service Protocol (ASP, June 2000) Category B deliverables are required for all samples. All data will be sent to a third party, Amine Dahmani, a data validator, for validation in accordance with NYSDEC BCP requirements.

Detection limits set by New York State Department of Environmental Conservation (NYSDEC) ASP will be used for all sample analyses unless otherwise noted. If NYSDEC-ASP-dictated detection limits prove insufficient to assess project goals (i.e., comparison to drinking water standards or attainment of Applicable or Relevant and Appropriate Requirements [ARARs]), then ASP Special Analytical Services (SAS) or other appropriate methods will be utilized.

The quality assurance/quality control (QA/QC) objectives for all measurement data include completeness, representativeness, comparability, precision, and accuracy.

3.1 COMPLETENESS

The analyses performed must be appropriate and inclusive. The parameters selected for analysis are chosen to meet the objectives of the study.

Completeness of the analyses will be assessed by comparing the number of parameters intended to be analyzed with the number of parameters successfully determined and validated. Data must meet QC acceptance criteria for 100 percent or more of requested determinations.

3.2 REPRESENTATIVENESS

Samples must be taken of the population and, where appropriate, the population will be characterized statistically to express the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or environmental condition.

Non-dedicated sampling devices will be cleaned between sampling points by washing and rinsing with pesticide-grade methanol, followed by a thorough rinse with distilled water. Specific cleaning techniques are described in the Field Sampling Procedure. Two types of blank samples will accompany each sample set where Target Compound List (TCL) volatiles are to be analyzed (water matrix only). A trip blank, consisting of a 40 ml VOA vial of organic-free water prepared by the laboratory, will accompany each set of sample bottles from the laboratory to the field and back. This bottle will remain sealed throughout the shipment and sampling process. This blank will be analyzed for TCL volatile organic compounds (VOCs) along with the groundwater samples to ensure that contamination with TCL volatile compounds has not occurred during the bottle preparation, shipment and sampling phase of the project. In order to check for contaminant carryover when non-dedicated sampling equipment is used, a rinsate blank will be submitted to the laboratory. This blank will also be analyzed for TCL volatile organic compounds. The TCL compounds are identified in the United States Environmental Protection Agency (USEPA) Contract Laboratory Program dated 10/2016 or as periodically updated.

The analysis results obtained from the determination of identical parameters in field duplicate samples can be used to further assess the representativeness of the sample data.

3.3 COMPARABILITY

Consistency in the acquisition, preparation, handling and analysis of samples is necessary in order for the results to be compared where appropriate. Additionally, the results obtained from analyses of the samples will be compared with the results obtained in previous studies, if available.

To ensure the comparability of analytical results with those obtained in previous or future testing, all samples will be analyzed by NYSDEC-approved methods. The NYSDEC-ASP mandated holding times for various analyses will be strictly adhered to.

3.4 PRECISION AND ACCURACY

The validity of the data produced will be assessed for precision and accuracy. Analytical methods which will be used include gas chromatography/mass spectrometry (GC/MS), gas chromatography, colorimetry, atomic spectroscopy, gravimetric and titrametric techniques. The following outlines the procedures for evaluating precision and accuracy, routine monitoring procedures, and corrective actions to maintain analytical quality control. All data evaluations will be consistent with NYSDEC-ASP procedures. Data will be 100 percent compliant with NYSDEC-

ASP requirements. Matrix spike and matrix spike duplicates will be collected to confirm accuracy and precision at a rate of one (1) per 20 soil and/or groundwater samples taken.

The number of duplicate, spiked and blank samples analyzed will be a minimum of one (1) duplicate for every 20 samples per each medium of groundwater and soil. The inclusion and frequency of analysis of field blanks will be on the order of one (1) per every 20 samples (soil). For the aqueous matrix field blanks will be collected at a frequency of one (1) per day. Samples to be analyzed for volatile organic compounds will be accompanied by a trip blank for each shipment and field blanks (water matrix) or field blanks (soil). An equipment blank for per- and polyfluoroalkyl substances (PFAS) will be collected once per day per matrix, regardless of whether equipment being used is disposable, at a frequency of one (1) per 20 samples taken for both soil and groundwater.

Quality assurance audit samples will be prepared and submitted by the laboratory QA manager for each analytical procedure used. The degree of accuracy and the recovery of analyte to be expected for the analysis of QA samples and spiked samples is dependent upon the matrix, method of analysis, and compound or element being determined. The concentration of the analyte relative to the detection limit is also a major factor in determining the accuracy of the measurement. The lower end of the analytical range for most analyses is generally accepted to be five (5) times the detection limit. At or above this level, the determination and spike recoveries for metals in water samples will be expected to range from 75 to 125 percent. The recovery of organic surrogate compounds and matrix spiking compounds determined by GC/MS will be compared to the guidelines for recovery of individual compounds as established by the United States Environmental Protection Agency Contract Laboratory Program dated 7/85 or as periodically updated.

The quality of results obtained for inorganic ion and demand parameters will be assessed by comparison of QC data with laboratory control charts for each test.

4.0 SAMPLING PROCEDURES

4.1 SAMPLING PROGRAM

The sampling program for this project will include soil, groundwater and soil vapor. Soil samples will be collected from split spoon sampling or macrocore devices retrieved from soil borings. Groundwater samples will be collected from groundwater monitoring wells using low flow purging techniques. A description of this method is shown on **Table 4.1**. Soil vapor samples will be collected from vapor points screened in the vadose zone using Summa Canisters. A summary of the sample containers, bottle types, preservatives and holding times is shown on **Table 4.2**.

4.2 DRILLING/SAMPLING PROCEDURES

Soil and groundwater samples will be collected by means of a soil boring program. Soil borings shall be completed using the hollow stem auger drilling methods, direct push methods, or rotary drilling methods, whichever methods are determined to be best suited to site conditions by the SESI project manager and SESI field team leader.

Soil samples will be collected from soil borings and analyzed in accordance with the NYSDEC-approved Work Plan. Monitoring wells for groundwater sample collection will be installed in select

completed soil borings. Either hollow stem auger (HSA) or direct push drilling methods may be utilized for monitoring well completion.

Soil samples shall be collected continuously during drilling so that a complete soil profile is examined and described by the SESI field geologist. The sampling method employed shall be ASTM D-1586/Split Barrel Sampling using a standard 2-foot long, 2-inch outside diameter split-spoon sampler with a 140-pound hammer, in cases where HSA methods are used. Upon retrieval of the sampling barrel, the collected sample shall be placed in glass jars and labeled, stored on site (on ice in a cooler if necessary), and transmitted to the appropriate testing laboratory or storage facility. Chain-of-custody procedures will be practiced following Section 15, EPA-600/4-82-029, Handbook for Sampling and Sample Preservation of Water and Waste Waters.

A geologist or engineer will be on Site during the drilling operations to fully describe each soil sample, following the New York State Soil Description Procedure, and to retain representative portions of each sample.

The drilling contractor will be responsible for obtaining accurate and representative samples, informing the geologist of changes in drilling pressure, keeping a separate general log of soils encountered including blow counts [i.e., the number of blows from a soil sampling drive weight (140 pounds)] required to drive the split-spoon sampler in 6-inch increments and installing monitoring wells to levels directed by the supervising geologist following specifications further outlined in this protocol.

4.3 MONITORING WELL COMPLETION

Monitoring wells will be constructed of 0.010-inch slot size PVC well screen and riser casing. Other materials utilized for completion will be washed silica sand (Q-Rock No. 4 or approved equivalent) bentonite grout, Portland cement, and a protective steel locking well casing and cap with locks. The depth of the wells will be determined based on the depth to water, type of contaminant and field conditions encountered.

The monitoring well installation method for wells installed within unconsolidated sediments shall be to place the screen and riser assembly into the casing once the screen interval has been selected. At that time, a washed silica sand pack will be placed around the well screen if required to prevent screen plugging. If a sand pack is not warranted, the auger string will be pulled back to allow the native aquifer material to collapse 2 to 3 feet above the top of the screen. Bentonite pellets will then be added to the annulus between the casing and the inside auger to insure proper sealing. Cement/bentonite grout will continue to be added during the extraction of the augers until the entire aquifer thickness has been sufficiently sealed off from horizontal and/or vertical flow above the screened interval. During placement of sand and bentonite pellets, frequent measurements will be made to check the height of the sand pack and thickness of bentonite layers by a weighted drop tape measure.

A bolt-down protective curb box will be installed, flush with the ground, or steel "stick-up" protective casing and secured by a Portland cement seal. The cement seal shall extend laterally at least 1 foot in all directions from the protective casing and shall slope gently away to drain water away from the well.

4.4 WELL DEVELOPMENT

All monitoring wells will be developed or cleared of all fine-grained materials and sediments that have settled in or around the well during installation so that the screen is transmitting representative portions of the groundwater. The development will be by one (1) of two (2) methods, pumping or bailing groundwater from the well until it yields relatively sediment-free water.

A decontaminated pump or bailer will be used and subsequently decontaminated after each use following procedures outlined in the Decontamination Protocol. Pumping or bailing will cease when the turbidity falls below 50 NTUs or until specific conductivity, pH, and temperature are stable (i.e., consecutive readings are within 10 percent with no overall upward or downward trends in measurements). Well development water will be disposed of on the ground surface at each well location.

4.5 DECONTAMINATION

All drilling equipment and associated tools including augers, drill rods, sampling equipment, wrenches and any other equipment or tools that have come in contact with contaminated materials will be decontaminated before any drilling on Site begins, between each well, and prior to removing any equipment from the Site. The preferred decontamination procedure will be to scrape the equipment from any residual soils and then rinse with water and Alconox®. Every effort will be made to minimize the generation of contaminated water. Any contaminated water generated will be drummed. The contaminated water drums will be disposed of at an appropriate facility after approval and sampling in accordance with the specific facility requirements.

4.6 PFAS SAMPLING CONSIDERATIONS

This section contains the materials limitations for Per- and polyfluoroalkyl substances sampling in accordance with the Draft NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (April 2023).

The groundwater samples will be analyzed for PFAS using USEPA Method 1633A. Reporting limits for PFOA and PFOS will not exceed 2 nanograms per liter (ng/L). Category B deliverables and an electronic data deliverable will be completed.

PFAS are very persistent in the environment and in the human body. Due to their presence in a variety of products, persistence in the environment and very low drinking water standards, care must be used when groundwater sampling for PFAS to avoid cross contamination from the sampling equipment and personal protective equipment (PPE).

No fabric softener will be used on clothing to be worn in field. Cosmetics, moisturizers, hand cream, unauthorized sunscreen, insect repellent or other related products will not be used the morning of sampling. The field samplers will wear powder-free nitrile gloves while filling and sealing the sample bottles. The sampling equipment components and sample containers will not come in contact with material that may potentially contain PFAS such as aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials will be avoided. Food and drink packaging materials will be avoided, as well.

Sampling will be performed using certified PFAS-free sampling materials such as stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate or polypropylene pump and tubing.

Rinse water must be laboratory-provided certified PFAS-free distilled or de-ionized water. Standard two step decontamination using Alconox® detergent and clean certified PFAS-free water rinse will be performed for equipment that does come in contact with PFAS materials.

No waterproof field books, plastic clipboards, binders, or spiral hard cover will be used for PFAS containers. No adhesives (i.e. Post-It® Notes), sharpies, or permanent markers will be used for PFAS containers. The PFAS containers will be labeled with ballpoint pens. PFAS samples will be stored in separate cooler filled with regular ice only with no chemical (blue) ice packs.

Pre-cleaned sample bottles with closures, coolers, sample labels and a chain of custody form will be provided by the laboratory.

4.7 GROUNDWATER SAMPLING PROGRAM

4.8 WELL EVACUATION

Prior to sampling a monitoring well, the static water level will be recorded. All well data will be recorded on a field sampling record. The wells will be sampled in accordance with the USEPA guidelines for the Low Flow Purging Sampling (LFPS). The purpose of LFPS is to collect groundwater samples from monitoring wells that are representative of ambient groundwater conditions in the aquifer. The LFPS method reduces turbidity which is needed particularly when sampling for metals.

4.9 SAMPLING PROCEDURE

The wells will be sampled using the USEPA LFPS technique. A flow rate of 100 ml to 250 ml per minute is used to purge the wells. Drawdown should not exceed 0.3 feet. The pump intake is lowered to the mid-point of the water column or as subsurface features such as bedrock fractures or more permeable zones warrant. At the initiation of low flow purging a water level is recorded as well as field parameters. Field parameters are then monitored every five (5) minutes during low flow purging using a flow through cell. When three (3) consecutive measurements of pH differ by 0.1 units or less, with ORP within 10 mv or less, turbidity varies 10 percent or less, conductivity differs by 3 percent or less and dissolved oxygen by 10 percent or less, sampling may begin. Flow through cells are used so continuous real time readings are made. When the parameters stabilize the flow through cell is disconnected and sample bottles are filled directly from the tubing. Low-flow sampling procedures are summarized on **Table 4.1**.

4.10 SOIL VAPOR SAMPLING

Soil vapor sampling will be conducted in accordance with NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006) with updates (SVI Guidance). Soil vapor samples will be collected in the vadose zone from shallow (five [5] feet) vapor points. Each vapor point will be installed in a shallow boring drilled either by hand-operated equipment (e.g. hand auger or percussion hammer drill), or by a small truck-mounted drill rig. Drilling equipment used shall be based on soil conditions, and the method that provides the most practical approach.

Each vapor point will consist of an inert sampling tube (polyethylene, stainless steel, or Teflon®) with a six (6)-inch screened section at the bottom through which soil vapors can be sampled. The screen slot size will be 0.0075 inches. A sampling zone will be created around the screened section by backfilling with one (1) to two (2) feet of porous coarse sand or glass beads, and at

least three (3) feet of bentonite will be placed above the porous sampling zone to form a seal from the surface. Native clean soil will be packed around the remaining annulus to the ground surface.

The regulator will be set to collect a soil vapor sample at a flow rate of less than 0.2 liters per minute. After the summa canister is filled, the valve will be closed.

Each canister will be listed according to a specific sample I.D. on a chain of custody form. Sample canisters will be delivered to the laboratory within 24 hours and analyzed for VOCs by method TO-15. The detection limit for VOCs will be 1 µg/m³ or less

The soil vapor sampling effort will include the use of inert helium tracer gas to verify that the soil vapor samples are not diluted by ambient air. The atmosphere around the sampling tube will be enriched with the tracer gas, and the soil vapor sample will be collected in the presence of the enriched tracer atmosphere. This will be accomplished by placing an inverted plastic pail over the sampling point and filling the pail with the tracer gas via a small tube penetrating the site of the pail. Refer to the SVI Guidance.

4.11 SAMPLE PRESERVATION AND SHIPMENT

Since all bottles will contain the necessary preservatives as shown in **Table 4.2**, they need only be filled. The 40 ml VOA vials must be filled brim full with no air bubbles. The other bottles should be filled to within about one (1) inch from the top.

The bottles will be sent from the laboratory in coolers which will be organized on a per site basis. Following sample collection, the bottles should be placed on ice in the shipping cooler. The samples will be cooled to 4°C, but not frozen.

Final packing and shipment of coolers will be performed in accordance with guidelines outlined in the ASP.

5.0 SAMPLE CUSTODY

The program for sample custody and sample transfer is in compliance with the NYSDEC-ASP, as periodically updated. If samples may be needed for legal purposes, chain-of-custody procedures, as defined by NEIC Policies and Procedures (USEPA-330/9-78-001-R, Revised June 1988) will be used. Sample chain-of-custody is initiated by the laboratory with selection and preparation of the sample containers. To reduce the chance for error, the number of personnel handling the samples should be minimized.

5.1 FIELD SAMPLE CUSTODY

A chain-of-custody record accompanies the samples from initial sample container selection and preparation at the laboratory, shipment to the field for sample containment and preservation, and return to the laboratory. Two (2) copies of this record follow the samples to the laboratory. The laboratory maintains one (1) file copy and the completed original is returned to the site inspection team. Individual sample containers provided by the laboratory are used for shipping samples. The shipping containers are insulated and ice is used to maintain samples at approximately 4°C until samples are returned and in the custody of the laboratory. All sample bottles within each shipping container are individually labeled and controlled. Samples are to be shipped to the laboratory within 24 to 48 hours of the day of collection depending on parameter holding times

Each sample shipping container is assigned a unique identification number by the laboratory. This number is recorded on the chain-of-custody record and is marked with indelible ink on the outside of the shipping container. The field sampler will indicate the sample designation/location number in the space provided on the appropriate chain-of-custody form for each sample collected. The shipping container is closed and a seal provided by the laboratory is affixed to the latch. This seal must be broken to open the container, and this indicates possible tampering if the seal is broken before receipt at the laboratory. The laboratory will contact the site investigation team leader and the sample will not be analyzed if tampering is apparent.

5.2 LABORATORY SAMPLE CUSTODY

The site investigation team leader or Project Quality Assurance Officer notifies the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The laboratory sample program meets the following criteria:

- The laboratory has designated a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.
- Upon receipt of the samples, the custodian will check the original chain-of-custody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-of-custody record and records the date and time received.
- Care is exercised to annotate any labeling or descriptive errors. In the event of discrepant documentation, the laboratory will immediately contact the site investigation team leader as part of the corrective action process. A qualitative assessment of each sample container is performed to note any anomalies, such as broken or leaking bottles.

This assessment is recorded as part of the incoming chain-of-custody procedure:

1. The samples are stored in a secured area at a temperature of approximately 4°C until analyses are to commence.
2. A laboratory chain-of-custody record accompanies the sample or sample fraction through final analysis for control.
3. A copy of the chain-of-custody form will accompany the laboratory report and will become a permanent part of the project records.

5.3 FINAL EVIDENCE FILES

Final evidence files include all originals of laboratory reports and are maintained under documented control in a secure area.

A sample or an evidence file is under custody if:

- It is in your possession; it is in your view, after being in your possession.
- It was in your possession and you placed it in a secure area.
- It is in a designated secure area.

6.0 CALIBRATION PROCEDURES

Instruments and equipment used to gather, generate or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the appropriate manufacturer's specifications or project specific requirements. The procedures for instrument calibration, calibration verification, and the frequency of calibrations are described in the ASP. The calibration of instruments used for the determination of metals will be as described in the appropriate CLP standard operating procedures.

Calibration of other instruments required for measurements associated with these analyses will be in accordance with the manufacturer's recommendations and the standard operating procedures of the laboratory.

7.0 ANALYTICAL PROCEDURES

Analytical procedures shall conform to the most recent revision of the NYSDEC-ASP (June 2005) and are summarized on **Tables 7.1** and **7.2**. In the absence of USEPA or NYSDEC guidelines, appropriate procedures shall be submitted for approval by NYSDEC prior to use.

The procedures for the sample preparation and analysis for organic compounds are as specified in the NYSDEC-ASP. Analytical cleanups are mandatory where matrix interferences are noted. No sample shall be diluted any more than a factor of five. The sample shall be either re-extracted, re-sonicated, re-stream distilled, etc. or be subjected to any one analytical cleanup noted in SW846 or a combination thereof. The analytical laboratory shall expend such effort and discretion to demonstrate good laboratory practice and demonstrate an attempt to best achieve the method detection limit.

7.1 VOLATILE ORGANICS

For the analysis of water samples for Target Compound List VOCs, no sample preparation is required. The analytical procedure for volatiles is detailed in NYSDEC-ASP (Volume I, Section D-I). A measured portion of the sample is placed in the purge and trap apparatus and the sample analysis is performed by gas chromatography/mass spectrometry for the first round. USEPA Method 8260 will be used, plus tentatively identified compounds (TICs). USEPA Methods 8010 or 8020 (gas chromatography with different detectors) will be used if subsequent rounds with lower limits of detection are warranted.

7.2 SEMI-VOLATILE ORGANIC COMPOUNDS

The extraction and analytical procedures used for preparation of water, soil and sediment samples for the analysis of the TCL semi-volatile organic compounds are described in NYSDEC-ASP Volume I, Section D-III. USEPA Method 8270 will be used, plus TICs.

Instrument calibration, compound identification, and quantitation are performed as described in Section 6 of this document and in the NYSDEC-ASP.

7.3 1,4-DIOXANE

The extraction and analytical procedures used for preparation of water, soil and sediment samples for the analysis of 1,4-dioxane are described in NYSDEC-ASP Volume I, Section D-III. USEPA Method 8270-SIM will be used.

Instrument calibration, compound identification, and quantitation are performed as described in Section 6 of this document and in the NYSDEC-ASP.

7.4 PESTICIDE AND PCB COMPOUNDS

The sample preservation procedures for gas chromatography for pesticides and polychlorinated biphenyls (PCBs) will be as described in the NYSDEC-ASP methods (Section D-IV). Pesticides will be analyzed by 8081B, and PCBs will be analyzed by 8082A. The analysis of standard mixes, blanks and spiked samples will be performed at the prescribed frequency with adherence to the 72-hour requirement described in the method.

7.5 METALS

Water, soil and waste samples will be analyzed for the metals listed in Table 7.1. For soil, sediment, and solid waste samples, metals will be analyzed by Method 6010D, 7471B for mercury, and 9010C/9012B for cyanide. For aqueous samples, metals will be analyzed by Method 6020B, 7470A for mercury, and 9010C/9012B for cyanide. The detection limits for these metals are as specified in the NYSDEC-ASP, Section D-V. The instrument detection limits will be determined using calibration standards and procedures specified in the NYSDEC-ASP. The detection limits for individual samples may be higher due to the sample matrix. The procedures for these analyses will be as described in the NYSDEC-ASP.

The analyses for metals will be performed by atomic absorption spectroscopy (AAS) or inductively-coupled plasma emission spectroscopy (ICPES), as specified in the ASP with regard to AAS flame analysis.

7.6 PER- AND POLYFLUOROALKYL SUBSTANCES

The NYSDEC has developed a list of 40 PFAS Analytes List on Table 7.2 for remedial programs. These are:

- Perfluorobutanesulfonic acid
- Perfluoropentanesulfonic acid
- Perfluorohexanesulfonic acid
- Perfluoroheptanesulfonic acid

- Perfluorooctanesulfonic acid
- Perfluorononanesulfonic acid
- Perfluorodecanesulfonic acid
- Perfluorododecanesulfonic acid
- Perfluorobutanoic acid
- Perfluoropentanoic acid
- Perfluorohexanoic acid
- Perfluoroheptanoic acid
- Perfluorooctanoic acid
- Perfluorononanoic acid
- Perfluorodecanoic acid
- Perfluoroundecanoic acid
- Perfluorododecanoic acid
- Perfluorotridecanoic acid
- Perfluorotetradecanoic acid
- Perfluorohexadecanoic acid
- Hexafluoropropylene oxide dimer acid
- 4,8-Dioxa-3H-perfluorononanoic acid
- Perfluoro-3-methoxypropanoic acid
- Perfluoro-4-methoxybutanoic acid
- Nonafluoro-3,6-dioxaheptanoic acid
- 4:2 Fluorotelomer sulfonic acid
- 6:2 Fluorotelomer sulfonate
- 8:2 Fluorotelomer sulfonate
- 3:3 Fluorotelomer carboxylic acid
- 5:3 Fluorotelomer carboxylic acid
- 7:3 Fluorotelomer carboxylic acid
- Perfluorooctane sulfonamide
- N-methylperfluorooctane sulfonamide
- N-ethylperfluorooctane sulfonamide
- N-methyl perfluorooctanesulfonamidoacetic acid
- N-ethyl perfluorooctanesulfonamidoacetic acid

- N-methylperfluorooctane sulfonamidoethanol
- N-ethylperfluorooctane sulfonamidoethanol
- 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)
- 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)
- Perfluoro(2-ethoxyethane) sulfonic acid

Currently, ELAP does not offer certification for PFAS compounds in matrices other than finished drinking water. Per the NYSDEC July 2023 memo on emergent contaminant sampling, the analytical procedure for soil and groundwater sampling of PFAS is EPA Method 1633. The reporting limit for PFAS in soil samples is 0.5 ug/kg. Reporting limits for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) in groundwater should not exceed 2 ng/L.

7.7 SITE SPECIFICITY OF ANALYSES

Work plans prepared for remedial actions for sites contain recommendations for the chemical parameters to be determined for each site. Thus, some or all of the referenced methods will apply to the analysis of samples collected at the individual waste sites. Analyses of TCL analytes will be performed on all samples.

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

TABLES

**TABLE 4.1--SAMPLING PROCEDURE FOR MONITORING WELLS USING LOW-
STRESS (LOW-FLOW) METHODS**

Step	Description	Details
1	Record initial static water level.	Device: electric contact probe accurate to the nearest 0.1 foot.
2	Lower sampling device into well. Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well.	Pump intake must be no less than 2 feet from the bottom of the well to prevent disturbance and resuspension of sediments which may be at the bottom of the well.
3	Measure water level again: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.	
4	Purge Well	Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing.
5	Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.	
6	Monitor Indicator Parameters	1. During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive

Step	Description	Details
		readings as follows (Puls and Barcelona, 1996): a. 0.1 for pH b. 3% for specific conductance (conductivity) c. 10 mv for redox potential d. 10% for DO and turbidity
7	The pump must not be removed from the well between purging and sampling.	Dissolved oxygen and turbidity usually require the longest time to achieve stabilization.
8	Collect Samples	Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.
9	Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary.	If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and equal volume of water (e.g., 40 ml). Groundwater purged from the well prior to sampling can be used for this purpose.
10	Remove Pump and Tubing	After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the

Step	Description	Details
		well for resampling by hanging the tubing inside the well.
11	Measure and record well depth.	
12	Close and lock the well.	
13	Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.	
14	All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.	Dedicated line is disposed of or left at well site.
15	Equipment/wash blanks are collected when non-dedicated sampling equipment is used.	
16	Chain-of-custody forms are completed in triplicate.	The original and one carbon copy are put into a zip-lock bag and placed into the cooler. The original will be returned following sample analysis. A second carbon copy is kept on file.
17	Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.	

TABLE 4.2--SAMPLE CONTAINERIZATION

PARAMETER & ANALYTICAL METHOD	NO. OF BOTTLES Per SAMPLE	BOTTLE TYPE	TOTAL NO. OF BOTTLES INCLUDING CONTINGENCY AND BLANKS	PRESERVATIVE ⁽¹⁾	HOLDING TIME
Aqueous Samples (Two Rounds)					
VOCs – USEPA 8260C	3	40 mL, glass vial with septum cap	54	Hydrochloric Acid to pH <2 Ice to 4°C	14 days
SVOCs (BNAs) and 1,4-Dioxane – USEPA 8270 SIM	2	1-liter amber glass bottle	32	Ice to 4°C	7 days (until extraction) 40 days (extracted)
Pesticides – USEPA 8081B	2	1-liter amber glass bottle	32	Ice to 4°C	7 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082A	2	1-liter amber glass bottle	32	Ice to 4°C	7 days (until extraction) 40 days (extracted)
Metals ⁽²⁾	1	1-liter, plastic bottle	16	Nitric acid to pH <2 NaOH for cyanide Ice to 4°C	180 days Cyanide: 14 days Mercury: 28 days
Cyanide – USEPA 9010C/9012B	1	1-liter, plastic	16	Sodium Hydroxide to pH >12 Ice to 4°C	14 days
PFAS Compounds – USEPA Modified Method 1633A	2	500 ml HDPE or Polypropyl ene with non-Teflon lid	32	None	14 days
Soil, Sediment, Solid Waste Samples:					

PARAMETER & ANALYTICAL METHOD	NO. OF BOTTLES Per SAMPLE	BOTTLE TYPE	TOTAL NO. OF BOTTLES INCLUDING CONTINGENCY AND BLANKS	PRESERVATIVE ⁽¹⁾	HOLDING TIME
VOCs – USEPA 8260C	3	5-gram EnCore samplers	108	Chilled to 0 - 6°C	14 days
SVOCs (BNAs) and 1,4-Dioxane – USEPA 8270D SIM if RL cannot be reached	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	14 days (until extraction, 40 days extracted)
Pesticides – USEPA 8081B	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	14 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082A	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	None
Metals ⁽³⁾	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	180 days Cyanide: 14 days Mercury: 28 days
PFAS Compounds – USEPA Modified Method 1633A	2	500 ml HDPE or Polypropylene with non-Teflon lid	72	None	28 days
Soil Vapor / Indoor Air Samples:					
VOCs – USEPA TO-15	1	Summa Canister	8	None	30 days

(1) All samples will be preserved with ice during collection and shipment.

(2) Metals refers to the 24 metals and cyanide in the Target Compound List (NYSDEC-CLP 11/87). Metals will be analyzed by Method 6020B, 7470A for mercury, and 9010C/9012B for cyanide

(3) Metals refers to the 24 metals and cyanide in the Target Compound List (NYSDEC-CLP 11/87). Metals will be analyzed by Method 6010D, 7471B for mercury, and 9010C/9012B for cyanide

(4) A complete list of compounds is provided on Table 7.1.

Table 7.1 PFAS Compound List and Reporting and Method Detection Limits for Soil and Groundwater

Method: EPA 1633A by LC-MS/MS			
	PFAS	Reporting Limit Groundwater (ng/l)	Method Detection Limit Groundwater (ng/l)
1	Perfluorobutanesulfonic acid (PFBS)	1.6	0.245
2	Perfluoropentanesulfonic acid (PFPeS)	1.6	0.204
3	Perfluorohexanesulfonic acid (PFHxS)	1.6	0.217
4	Perfluoroheptanesulfonic acid (PFHpS)	1.6	0.137
5	Perfluorooctanesulfonic acid (PFOS)	1.6	0.327
6	Perfluorononanesulfonic acid (PFNS)	1.6	0.303
7	Perfluorodecanesulfonic acid (PFDS)	1.6	0.334
8	Perfluorododecanesulfonic acid (PFDoS)	1.6	0.179
9	Perfluorobutanoic acid (PFBA)	6.4	0.330
10	Perfluoropentanoic acid (PFPeA)	3.2	0.196
11	Perfluorohexanoic acid (PFHxA)	1.6	0.318
12	Perfluoroheptanoic acid (PFHpA)	1.6	0.221
13	Perfluorooctanoic acid (PFOA)	1.6	0.302
14	Perfluorononanoic acid (PFNA)	1.6	0.221
15	Perfluorodecanoic acid (PFDA)	1.6	0.333
16	Perfluoroundecanoic acid (PFUnA)	1.6	0.264
17	Perfluorododecanoic acid (PFDoA)	1.6	0.379
18	Perfluorotridecanoic acid (PFTrDA)	1.6	0.238
19	Perfluorotetradecanoic acid (PFTeDA)	1.6	0.264
20	Hexafluoropropylene oxide dimer acid (HFPO-DA)	6.4	0.406

Method: EPA 1633A by LC-MS/MS			
21	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	6.4	0.779
22	Perfluoro-3-methoxypropanoic acid (PFMPA)	3.2	0.177
23	Perfluoro-4-methoxybutanoic acid (PFMBA)	3.2	0.117
24	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.2	1.384
25	4:2 Fluorotelomer sulfonic acid (4:2-FTS)	6.4	2.281
26	6:2 Fluorotelomer sulfonic acid (6:2-FTS)	6.4	3.973
27	8:2 Fluorotelomer sulfonic acid (8:2-FTS)	6.4	1.566
28	3:3 Fluorotelomer carboxylic acid (3:3 FTCA)	8.0	0.721
29	5:3 Fluorotelomer carboxylic acid (5:3 FTCA)	40	5.066
30	7:3 Fluorotelomer carboxylic acid (7:3 FTCA)	40	5.942
31	Perfluorooctane sulfonamide (PFOSA)	1.6	0.227
32	N-methylperfluorooctane sulfonamide (NMeFOSA)	1.6	0.196
33	N-ethylperfluorooctane sulfonamide (NEtFOSA)	1.6	0.585
34	N-methylperfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	1.6	0.586
35	N-ethylperfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	1.6	0.324
36	N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	16	1.191
37	N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	16	1.022
38	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major) (9CL-PF3ONS)	6.4	0.871
39	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor) (11CL-PF3OUDS)	6.4	0.819
40	Perfluoro(2-ethoxyethane) sulfonic acid (PFEEESA)	3.2	0.137
41	Perfluorohexadecanoic acid (PFHxDA) ¹	~	~
	1,4-dioxane		

Method: EPA 1633A**by LC-MS/MS**

	PFAS	Reporting Limit — Soil (ng/g)	Method Detection Limit — Soil (ng/g)
1	Perfluorobutanesulfonic acid (PFBS)	0.2	0.014
2	Perfluoropentanesulfonic acid (PFPeS)	0.2	0.015
3	Perfluorohexanesulfonic acid (PFHxS)	0.2	0.018
4	Perfluoroheptanesulfonic acid (PFHpS)	0.2	0.057
5	Perfluorooctanesulfonic acid (PFOS)	0.2	0.067
6	Perfluorononanesulfonic acid (PFNS)	0.2	0.046
7	Perfluorodecanesulfonic acid (PFDS)	0.2	0.040
8	Perfluorododecanesulfonic acid (PFDoS)	0.2	0.038
9	Perfluorobutanoic acid (PFBA)	0.8	0.401
10	Perfluoropentanoic acid (PFPeA)	0.4	0.021
11	Perfluorohexanoic acid (PFHxA)	0.2	0.020
12	Perfluoroheptanoic acid (PFHpA)	0.2	0.029
13	Perfluorooctanoic acid (PFOA)	0.2	0.037
14	Perfluorononanoic acid (PFNA)	0.2	0.086
15	Perfluorodecanoic acid (PFDA)	0.2	0.031
16	Perfluoroundecanoic acid (PFUnA)	0.2	0.033
17	Perfluorododecanoic acid (PFDoA)	0.2	0.059
18	Perfluorotridecanoic acid (PFTTrDA)	0.2	0.038
19	Perfluorotetradecanoic acid (PFTeDA)	0.2	0.032
20	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.8	0.136
21	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.8	0.057
22	Perfluoro-3-methoxypropanoic acid (PFMPA)	0.4	0.033

Method: EPA 1633A by LC-MS/MS			
23	Perfluoro-4-methoxybutanoic acid (PFMBA)	0.4	0.029
24	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.4	0.084
25	4:2 Fluorotelomer sulfonic acid (4:2-FTS)	0.8	0.282
26	6:2 Fluorotelomer sulfonic acid (6:2-FTS)	0.8	0.116
27	8:2 Fluorotelomer sulfonic acid (8:2-FTS)	0.8	0.225
28	3:3 Fluorotelomer carboxylic acid (3:3 FTCA)	1.0	0.060
29	5:3 Fluorotelomer carboxylic acid (5:3 FTCA)	5.0	0.363
30	7:3 Fluorotelomer carboxylic acid (7:3 FTCA)	5.0	0.308
31	Perfluorooctane sulfonamide (PFOSA)	0.2	0.068
32	N-methylperfluorooctane sulfonamide (NMeFOSA)	0.2	0.049
33	N-ethylperfluorooctane sulfonamide (NEtFOSA)	0.2	0.038
34	N-methylperfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	0.2	0.030
35	N-ethylperfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	0.2	0.044
36	N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	2.0	0.203
37	N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	2.0	0.247
38	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major) (9CL-PF3ONS)	0.8	0.038
39	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor) (11CL-PF3OUdS)	0.8	0.071
40	Perfluoro(2-ethoxyethane) sulfonic acid (PFEEESA)	0.4	0.018
41	Perfluorohexadecanoic acid (PFHxDA) ¹	~	~

Source: EPA Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS, Second Draft Method 1633, November 2022

Data for this table are derived from the single-laboratory validation study and are only provided as examples for this draft method. The data will be updated to reflect the interlaboratory study results in a subsequent revision. Therefore, these criteria will change after interlaboratory validation.

¹ This compound was not listed in the EPA Method 1633 2nd draft and currently no known values exist

TABLES

**TABLE 4.1--SAMPLING PROCEDURE FOR MONITORING WELLS USING LOW-
STRESS (LOW-FLOW) METHODS**

Step	Description	Details
1	Record initial static water level.	Device: electric contact probe accurate to the nearest 0.1 foot.
2	Lower sampling device into well. Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well.	Pump intake must be no less than 2 feet from the bottom of the well to prevent disturbance and resuspension of sediments which may be at the bottom of the well.
3	Measure water level again: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.	
4	Purge Well	Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing.
5	Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.	
6	Monitor Indicator Parameters	1. During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive

Step	Description	Details
		readings as follows (Puls and Barcelona, 1996): a. 0.1 for pH b. 3% for specific conductance (conductivity) c. 10 mv for redox potential d. 10% for DO and turbidity
7	The pump must not be removed from the well between purging and sampling.	Dissolved oxygen and turbidity usually require the longest time to achieve stabilization.
8	Collect Samples	Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.
9	Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary.	If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and equal volume of water (e.g., 40 ml). Groundwater purged from the well prior to sampling can be used for this purpose.
10	Remove Pump and Tubing	After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the

Step	Description	Details
		well for resampling by hanging the tubing inside the well.
11	Measure and record well depth.	
12	Close and lock the well.	
13	Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.	
14	All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.	Dedicated line is disposed of or left at well site.
15	Equipment/wash blanks are collected when non-dedicated sampling equipment is used.	
16	Chain-of-custody forms are completed in triplicate.	The original and one carbon copy are put into a zip-lock bag and placed into the cooler. The original will be returned following sample analysis. A second carbon copy is kept on file.
17	Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.	

TABLE 4.2--SAMPLE CONTAINERIZATION

PARAMETER & ANALYTICAL METHOD	NO. OF BOTTLES Per SAMPLE	BOTTLE TYPE	TOTAL NO. OF BOTTLES INCLUDING CONTINGENCY AND BLANKS	PRESERVATIVE ⁽¹⁾	HOLDING TIME
Aqueous Samples (Two Rounds)					
VOCs – USEPA 8260C	3	40 mL, glass vial with septum cap	54	Hydrochloric Acid to pH <2 Ice to 4°C	14 days
SVOCs (BNAs) and 1,4-Dioxane – USEPA 8270 SIM	2	1-liter amber glass bottle	32	Ice to 4°C	7 days (until extraction) 40 days (extracted)
Pesticides – USEPA 8081B	2	1-liter amber glass bottle	32	Ice to 4°C	7 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082A	2	1-liter amber glass bottle	32	Ice to 4°C	7 days (until extraction) 40 days (extracted)
Metals ⁽²⁾	1	1-liter, plastic bottle	16	Nitric acid to pH <2 NaOH for cyanide Ice to 4°C	180 days Cyanide: 14 days Mercury: 28 days
Cyanide – USEPA 9010C/9012B	1	1-liter, plastic	16	Sodium Hydroxide to pH >12 Ice to 4°C	14 days
PFAS Compounds – USEPA Modified Method 1633A	2	500 ml HDPE or Polypropyl ene with non-Teflon lid	32	None	14 days
Soil, Sediment, Solid Waste Samples:					

PARAMETER & ANALYTICAL METHOD	NO. OF BOTTLES Per SAMPLE	BOTTLE TYPE	TOTAL NO. OF BOTTLES INCLUDING CONTINGENCY AND BLANKS	PRESERVATIVE ⁽¹⁾	HOLDING TIME
VOCs – USEPA 8260C	3	5-gram EnCore samplers	108	Chilled to 0 - 6°C	14 days
SVOCs (BNAs) and 1,4-Dioxane – USEPA 8270D SIM if RL cannot be reached	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	14 days (until extraction, 40 days extracted)
Pesticides – USEPA 8081B	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	14 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082A	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	None
Metals ⁽³⁾	1	4-oz. glass jar with Teflon lid	36	Chilled to 0 - 6°C	180 days Cyanide: 14 days Mercury: 28 days
PFAS Compounds – USEPA Modified Method 1633A	2	500 ml HDPE or Polypropylene with non-Teflon lid	72	None	28 days
Soil Vapor / Indoor Air Samples:					
VOCs – USEPA TO-15	1	Summa Canister	8	None	30 days

(1) All samples will be preserved with ice during collection and shipment.

(2) Metals refers to the 24 metals and cyanide in the Target Compound List (NYSDEC-CLP 11/87). Metals will be analyzed by Method 6020B, 7470A for mercury, and 9010C/9012B for cyanide

(3) Metals refers to the 24 metals and cyanide in the Target Compound List (NYSDEC-CLP 11/87). Metals will be analyzed by Method 6010D, 7471B for mercury, and 9010C/9012B for cyanide

(4) A complete list of compounds is provided on Table 7.1.

Table 7.1 PFAS Compound List and Reporting and Method Detection Limits for Soil and Groundwater

Method: EPA 1633A by LC-MS/MS			
	PFAS	Reporting Limit Groundwater (ng/l)	Method Detection Limit Groundwater (ng/l)
1	Perfluorobutanesulfonic acid (PFBS)	1.6	0.245
2	Perfluoropentanesulfonic acid (PFPeS)	1.6	0.204
3	Perfluorohexanesulfonic acid (PFHxS)	1.6	0.217
4	Perfluoroheptanesulfonic acid (PFHpS)	1.6	0.137
5	Perfluorooctanesulfonic acid (PFOS)	1.6	0.327
6	Perfluorononanesulfonic acid (PFNS)	1.6	0.303
7	Perfluorodecanesulfonic acid (PFDS)	1.6	0.334
8	Perfluorododecanesulfonic acid (PFDoS)	1.6	0.179
9	Perfluorobutanoic acid (PFBA)	6.4	0.330
10	Perfluoropentanoic acid (PFPeA)	3.2	0.196
11	Perfluorohexanoic acid (PFHxA)	1.6	0.318
12	Perfluoroheptanoic acid (PFHpA)	1.6	0.221
13	Perfluorooctanoic acid (PFOA)	1.6	0.302
14	Perfluorononanoic acid (PFNA)	1.6	0.221
15	Perfluorodecanoic acid (PFDA)	1.6	0.333
16	Perfluoroundecanoic acid (PFUnA)	1.6	0.264
17	Perfluorododecanoic acid (PFDoA)	1.6	0.379
18	Perfluorotridecanoic acid (PFTrDA)	1.6	0.238
19	Perfluorotetradecanoic acid (PFTeDA)	1.6	0.264
20	Hexafluoropropylene oxide dimer acid (HFPO-DA)	6.4	0.406

Method: EPA 1633A by LC-MS/MS			
21	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	6.4	0.779
22	Perfluoro-3-methoxypropanoic acid (PFMPA)	3.2	0.177
23	Perfluoro-4-methoxybutanoic acid (PFMBA)	3.2	0.117
24	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	3.2	1.384
25	4:2 Fluorotelomer sulfonic acid (4:2-FTS)	6.4	2.281
26	6:2 Fluorotelomer sulfonic acid (6:2-FTS)	6.4	3.973
27	8:2 Fluorotelomer sulfonic acid (8:2-FTS)	6.4	1.566
28	3:3 Fluorotelomer carboxylic acid (3:3 FTCA)	8.0	0.721
29	5:3 Fluorotelomer carboxylic acid (5:3 FTCA)	40	5.066
30	7:3 Fluorotelomer carboxylic acid (7:3 FTCA)	40	5.942
31	Perfluorooctane sulfonamide (PFOSA)	1.6	0.227
32	N-methylperfluorooctane sulfonamide (NMeFOSA)	1.6	0.196
33	N-ethylperfluorooctane sulfonamide (NEtFOSA)	1.6	0.585
34	N-methylperfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	1.6	0.586
35	N-ethylperfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	1.6	0.324
36	N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	16	1.191
37	N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	16	1.022
38	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major) (9CL-PF3ONS)	6.4	0.871
39	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor) (11CL-PF3OUDS)	6.4	0.819
40	Perfluoro(2-ethoxyethane) sulfonic acid (PFEEESA)	3.2	0.137
41	Perfluorohexadecanoic acid (PFHxDA) ¹	~	~
	1,4-dioxane		

Method: EPA 1633A**by LC-MS/MS**

	PFAS	Reporting Limit — Soil (ng/g)	Method Detection Limit — Soil (ng/g)
1	Perfluorobutanesulfonic acid (PFBS)	0.2	0.014
2	Perfluoropentanesulfonic acid (PFPeS)	0.2	0.015
3	Perfluorohexanesulfonic acid (PFHxS)	0.2	0.018
4	Perfluoroheptanesulfonic acid (PFHpS)	0.2	0.057
5	Perfluorooctanesulfonic acid (PFOS)	0.2	0.067
6	Perfluorononanesulfonic acid (PFNS)	0.2	0.046
7	Perfluorodecanesulfonic acid (PFDS)	0.2	0.040
8	Perfluorododecanesulfonic acid (PFDoS)	0.2	0.038
9	Perfluorobutanoic acid (PFBA)	0.8	0.401
10	Perfluoropentanoic acid (PFPeA)	0.4	0.021
11	Perfluorohexanoic acid (PFHxA)	0.2	0.020
12	Perfluoroheptanoic acid (PFHpA)	0.2	0.029
13	Perfluorooctanoic acid (PFOA)	0.2	0.037
14	Perfluorononanoic acid (PFNA)	0.2	0.086
15	Perfluorodecanoic acid (PFDA)	0.2	0.031
16	Perfluoroundecanoic acid (PFUnA)	0.2	0.033
17	Perfluorododecanoic acid (PFDoA)	0.2	0.059
18	Perfluorotridecanoic acid (PFTTrDA)	0.2	0.038
19	Perfluorotetradecanoic acid (PFTeDA)	0.2	0.032
20	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.8	0.136
21	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.8	0.057
22	Perfluoro-3-methoxypropanoic acid (PFMPA)	0.4	0.033

Method: EPA 1633A by LC-MS/MS			
23	Perfluoro-4-methoxybutanoic acid (PFMBA)	0.4	0.029
24	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.4	0.084
25	4:2 Fluorotelomer sulfonic acid (4:2-FTS)	0.8	0.282
26	6:2 Fluorotelomer sulfonic acid (6:2-FTS)	0.8	0.116
27	8:2 Fluorotelomer sulfonic acid (8:2-FTS)	0.8	0.225
28	3:3 Fluorotelomer carboxylic acid (3:3 FTCA)	1.0	0.060
29	5:3 Fluorotelomer carboxylic acid (5:3 FTCA)	5.0	0.363
30	7:3 Fluorotelomer carboxylic acid (7:3 FTCA)	5.0	0.308
31	Perfluorooctane sulfonamide (PFOSA)	0.2	0.068
32	N-methylperfluorooctane sulfonamide (NMeFOSA)	0.2	0.049
33	N-ethylperfluorooctane sulfonamide (NEtFOSA)	0.2	0.038
34	N-methylperfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	0.2	0.030
35	N-ethylperfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	0.2	0.044
36	N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	2.0	0.203
37	N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	2.0	0.247
38	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major) (9CL-PF3ONS)	0.8	0.038
39	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor) (11CL-PF3OUdS)	0.8	0.071
40	Perfluoro(2-ethoxyethane) sulfonic acid (PFEEESA)	0.4	0.018
41	Perfluorohexadecanoic acid (PFHxDA) ¹	~	~

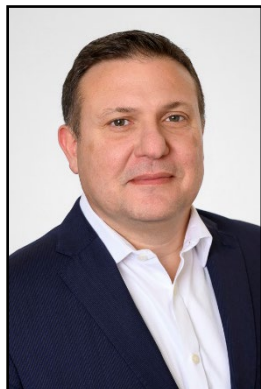
Source: EPA Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS, Second Draft Method 1633, November 2022

Data for this table are derived from the single-laboratory validation study and are only provided as examples for this draft method. The data will be updated to reflect the interlaboratory study results in a subsequent revision. Therefore, these criteria will change after interlaboratory validation.

¹ This compound was not listed in the EPA Method 1633 2nd draft and currently no known values exist

Attachment 1:

Resumes of Key Project Personnel

FUAD DAHAN, PhD, PE, LSRP**Principal****EDUCATION**

2002 - Ph.D. Environmental Engineering; Purdue University, W. Lafayette IN
1997 - M.S. Chemical Engineering; Drexel University, Philadelphia PA
1994 - B.S. Chemistry; American University of Beirut, Beirut Lebanon

PROFESSIONAL REGISTRATIONS

Professional Engineer - State of New Jersey (# 24GE05012100)
Professional Engineer - State of New York (# 090531)
Licensed Site Remediation Professional (# 629363)
Member of the American Society of Civil Engineers

EXPERIENCE

Dr. Fuad Dahan joined SESI in 2013 as a Senior Project Engineer. He has over 20 years of environmental engineering expertise and diverse experience including environmental treatment system applications, design, research, and monitoring. He has worked on federal, state, and private projects. He managed multi-million-dollar projects and programs for large corporations including Fortune 500 companies.

While at SESI, Dr. Dahan has managed several New York Brownfield Clean-up projects from initial site characterization through obtaining a Certificate of Completion (COC). He also manages New Jersey brownfield and landfill development projects. Dr. Dahan successfully completed more than 25 brownfield projects in NY and NJ. The clean-ups included light non aqueous phase liquid (LNAPL) in fissured rock, dense non aqueous phase liquid (DNAPL) in bedrock, in situ treatments of petroleum and chlorinated volatile organic compounds (CVOCs), bedrock characterization, vapor intrusion mitigation, manufactured gas plants (MGP), landfill closures, landfill gas management, and soil removals.

Prior to joining SESI, Dr. Dahan worked at Leidos (previously SAIC), where he was the company lead in green remediation. He was the lead environmental engineer on federal and private superfund sites where several in-situ remediation technologies were implemented. He also managed a multi-million-dollar program to treat industrial wastewater at federal facilities. Dr. Dahan worked at URS Corporation, now an AECOM Company, on the multiphase implementation of remedial action for a multi-million-dollar project that included the construction of several remedial systems.

Dr. Dahan received his bachelor's degree from American University of Beirut, his master's in Chemical Engineering from Drexel University and his Ph.D. in Environmental Engineering from Purdue University. He is a Licensed Professional Engineer in New Jersey and New York, as well as a Licensed Site Remediation Professional in New Jersey.

REPRESENTATIVE PROJECTS

Huguenot South (3Thirty3) – New Rochelle, NY: A NYS Brownfield Clean-up Project in the middle of the urban area of New Rochelle. The clean-up consisted of remediation of contaminated soils, bedrock characterization with downhole geophysics, in situ treatment of DNAPL in fracture d rock, in situ treatment of PFAS, and vapor intrusion mitigation. The site received a conditional Track 1 clean-up.

Joint Base - McGuire Dix Lakehurst, NJ: Instrumental in the remediation of three Operable Units at the Joint Base. The work included investigation of the three operable units to determine the nature and extent of remediation. It also included the design of remedial strategies that included in-situ remediation technologies, excavation, and ex-situ remediation.

Former Ossining Works Site – Ossining, NY: The New York State (NYS) Brownfield Cleanup project entails the design of a remediation program for an historic manufactured gas plant discharge near an ecologically sensitive area, specifically a waterbody that discharges into the Hudson River. The undertaking involves working closely with Con Edison and the developer to remediate the Site. The remedies considered were soil excavation and in situ stabilization (ISS). Ultimately, ISS was selected as the preferred method, and as the engineer of record, Dr. Dahan is overseeing the design of the system that will treat 17,000 cubic yards of contaminated soil.

Former Ludlow Street Works – Yonkers, NY: A former manufactured gas plant is being redeveloped with two residential buildings and an associated parking garage. The undertaking involves working closely with Con Edison and the developer to remediate the Site. Remedial options that were considered were ISS, excavation, surfactant flushing, thermal desorption, and in situ geo-chemical stabilization. Ultimately, ISS was selected as remedy, with bucket mix selected over auger mix, and as the engineer of record on the project, Dr. Dahan oversaw the remediation of the design. That design is currently being implemented at the site of the former MGP and will entail the treatment of 25,000 cubic yards of contaminated soil.

Eval Oil Terminal – Hackensack, NJ: A previous oil terminal located on the Hackensack River. The contamination consisted of petroleum related LNAPL resulting from aboveground storage tanks, underground storage tanks, and a gasoline station. The remediation consisted of extensive site-wide soil excavation followed by the injection of calcium peroxide to assist in the degradation of the LNAPL. The clean-up was completed in five months and resulted in significant time and financial savings. The site was developed into an operational self-storage building.

1510 Broadway, Brooklyn NY: An NYSBCP project than involved the clean-up of brownfield to be developed into an affordable housing building that helped revitalize the Bedford-Stuyvesant neighborhood in Brooklyn. The remediation include removal of hazardous soils and in situ treatment with chemical reduction of CVOCs. This project received the Big Apple Brownfield Award (BABA) from New York City Brownfield Partnership.

Runnells Landfill - Berkeley Heights, NJ: Led the environmental clean-up of the 6-acre construction and debris landfill, to develop the landfill into a hotel. The work included the removal and the disposal of the landfill material to bring the site to grade. It involved the design of a venting system that underlies the hotel building and the design of the new capping system in accordance with the NJDEP requirements.

Science Applications International Corp (SAIC or Leidos) - Fairfield NJ: Led the remedial design for RCRA sites—which are part of an Air Force Base—that were impacted with chlorinated and petroleum VOCs, Metals, and SVOCs. Conducted the Feasibility Study that developed the remediation strategy for impacted soils, groundwater, and sediments. Conducted treatability study examining in situ chemical oxidation (ISCO) as treatment technology for soils and groundwater. The treatability study developed mass balances for the contaminants in the solid, water and gas phases to track the oxidation by-products. Conducted bench scale and pilot scale studies for industrial water treatment system. Scaled up the treatment system from a pilot to full-scale application. Developed a treatment strategy of benzene and chlorinated VOC co-mingled plumes.

Holston Army Base - Kingsport, TN: Project manager for the implementation of three innovative technologies to treat the industrial wastewater. Coordinated with researchers at the Stevens Institute of Technology to design bench and pilot scale tests to test the treatment technologies. Led the design of the full-scale implementation of the technologies.

TRAINING/CERTIFICATION

Advanced Tools for In-Situ Remediation
NJ DEP Soil Remediation Standards: Applications and Implications
Phytotechnologies - ITRC Internet-Based Training Course
Green Remediation: Environmental-Energy-Economics
OSHA Safety Training
OSHA Supervisor Safety Training



M. Amine Dahmani, Ph.D.

Principal- AMXconsult,LLC

Adjunct Professor- UCONN Civil & Environmental Engineering

EDUCATION

1986 - Ph.D. Petroleum Engineering with a Minor in Civil Engineering, Louisiana State University

1983 - M.S. Petroleum Engineering, Louisiana State University

1981 - B.S. Petroleum Engineering, Louisiana State University

EXPERIENCE

2025- on - Principal, AMXconsult, LLC

2017 - on – Adjunct Faculty, Civil & Environmental Engineering Department (CEE), University of Connecticut (UCONN)

October 2016- March 2025 - Senior Project Manager, SESI Consulting Engineers, Pine Brook, NJ

August 2015- October 2016 - Senior Project Manager, Remediation Technology Group, Langan Engineering, NJ

June 2008- August 2015 – Section Team Leader, Head of Research and Development and Forensics, Spectrum Analytical, Inc. Agawam, MA

June 2005- June 2008 - Section Team Leader, Research and Development, Spectrum Analytical, Inc. Agawam, MA

1990-May 2005 – Project Manager, Environmental Research Institute (now Center of Environmental Science and Engineering, CESE), University of Connecticut, Storrs, CT

Dr. Dahmani obtained a Ph.D. in Petroleum Engineering from LSU in 1986. After working in the oil industry for four years, he joined the Environmental Research Institute (now CESE) at the University of Connecticut (UCONN) in 1990 to work on environmental assessment, testing and remediation research and development. The institute had state-of-the-art laboratories that provided a full range of services in the development of analytical methods and in analytical testing (organics, metals, nutrients) to support research by faculty members as well as government and industry. Dr. Dahmani joined Spectrum Analytical (now Eurofins) in Massachusetts in 2005 to head the R&D and petroleum forensics teams. Spectrum Analytical provided a full range of analytical testing services for the private and government sectors. He joined Langan Engineering in 2015 as a Senior Manager in the Remediation Technology group before joining SESI as a Senior Project Manager in 2016. Dr. Dahmani currently develops remedial designs, conducts data quality assessments and data usability evaluations (DQA/DUE) for SESI NJ and CT projects, reviews Data Usability Summary Reports (DUSRs) for NY projects and conducts petroleum forensic evaluations. Dr. Dahmani is also an Adjunct Professor at the UCONN Civil & Environmental Engineering department and conducts treatability studies in the Geoenvironmental Laboratory at UCONN.

STEVEN GUSTEMS

Sr. Project Manager



EDUCATION

B.S. Resources Development, Soil & Water Resources – The University of Rhode Island, Kingston, Rhode Island

PROFESSIONAL REGISTRATIONS

Professional Geologist - State of New York, License No. 000429

EXPERIENCE

Steven Gustems has over 20 years of professional experience in the assessment and remediation of soil and groundwater contamination. He has established expertise in environmental due diligence, soil and groundwater investigations, leaking underground storage tank (UST) investigations, soil gas investigations, and vapor intrusion investigations. He has directed numerous Phase I and Phase II Environmental Site Assessments, Remedial Investigations, pilot testing and design of environmental remediation systems. In addition, Steven has established expertise in project and construction management and development of remedial action plans. He has also provided expert witness testimony in litigation situations.

REPRESENTATIVE PROJECTS

The Hit Factory, New York, New York – Steven directed a subsurface investigation and cleanup of free-phase No. 6 oil contamination discovered beneath the basement's concrete slab during installation of an elevator pit in the building's basement. He worked closely with the general contractor and the New York State Department of Environmental Conservation (NYSDEC) to facilitate the cleanup with minimal interruption to the site construction activities (which consisted of redeveloping a recording studio into luxury condominiums). He directed the removal of 60 tons of impacted soil and 13,800 gallons of oil and oil-impacted groundwater. The project received a "No Further Action" determination from the NYSDEC within two weeks of completion.

Eastover Shopping Center, Oxon Hill, Maryland – Steven directed a subsurface investigation to delineate the vertical and horizontal extent of chlorinated hydrocarbon contaminated soil and groundwater resulting from dry-cleaning establishments (four historic and one present-day). This project involved the installation, surveying, development, and sampling of temporary piezometers installed using Geoprobe® direct-push equipment. He prepared a Phase II Environmental Site Assessment Report and a voluntary cleanup program (VCP) application for submission to the Maryland Department of the Environment.

Warwick Hotel, Houston, Texas – Steven coordinated a subsurface investigation to delineate the vertical and horizontal extent of petroleum hydrocarbon and chlorinated hydrocarbon contamination beneath the sub-basement of a historic hotel. This project involved the installation, surveying, development, and sampling of monitoring wells installed using both hollow stem auger and Geoprobe® direct-push equipment. He completed an Affected Property Assessment Report for the client company, submitted to the Texas Commission of Environmental Quality, under the Texas Risk Reduction Program through the voluntary cleanup program.

Gasoline Service Stations, New York & Connecticut – Steven directed the investigation and remediation of soil and groundwater contamination at numerous gasoline stations throughout New York and Connecticut. These projects involved UST removal, soil and groundwater sampling, dissolved plume delineation and remedial system design and installations.

State of New York Office of General Services, Sparkill Well Field, Tappan, New York – Steven oversaw the investigation of dissolved phase petroleum contamination impacting a municipal well field. This project involved the design and installation of bedrock monitoring wells to 220 feet below grade. The wells were sampled at various depths, using a Baski pneumatic packer system, to determine the contaminant impact and mobility through various geologic formations.

Vacant Grand Union Warehouse, Mount Kisco, New York – Steven led a subsurface investigation to delineate the vertical and horizontal extent of petroleum hydrocarbon contaminated soil and groundwater resulting from leaking gasoline and diesel USTs. This project involved the installation, surveying, development, and sampling of monitoring wells installed using Geoprobe® pre-packed wells. He prepared a Remedial Action Work Plan (RAWP) under the directive of the Westchester County Department of Health (WCDOH) that involved the excavation of impacted soil to 14 feet below ground surface (11 feet below the water table). In total, the project led to the removal of 450 tons of impacted soil and 3,000 gallons of impacted groundwater. The site received a “No Further Action” determination from the WCDOH within two weeks of the project’s completion.

PepsiCo Headquarters, Purchase, New York – Steven directed a subsurface investigation to delineate the vertical and horizontal extent of petroleum hydrocarbon contaminated soil and groundwater resulting from a leaking fuel oil UST that had been improperly abandoned in-place. He oversaw the removal of the previously abandoned UST and prepared a Remedial Investigation Work Plan (RIWP) under the directive of the WCDOH. This project involved the installation, surveying, development, and sampling of monitoring wells installed using Geoprobe® pre-packed wells. He prepared a Remedial Investigation/Remedial Action Work Plan Report involving the use of dual phase high vacuum extraction for the removal of free-phase fuel oil. The site received a “No Further Action” determination from the WCDOH after successful remediation of the free-phase fuel oil and one year of post-remedial groundwater monitoring.

Roosevelt Building, Washington, DC – Steven oversaw a subsurface investigation to delineate the vertical and horizontal extent of petroleum hydrocarbon contaminated soil and groundwater resulting from a leaking fuel oil UST beneath the basement of a historic hotel in Washington DC. He prepared a Work Plan and conducted a Comprehensive Site Assessment under the directive of the District of Columbia Environmental Health Administration (DCEHA), Underground Storage Tank Management Division. This project involved the installation, surveying, development, and sampling of Geoprobe® pre-packed wells in the basement. After conducting a risk-based assessment, he negotiated a “No Further Action” determination from the DCEHA.

State of New York Office of General Services, Helen Hayes Hospital, West Haverstraw, New York – Steven directed investigation and remediation of petroleum hydrocarbon contaminated soil and groundwater. Under his supervision, two 20,000-gallon fuel oil USTs that had failed tightness testing were removed and closed. This project involved the delineation of soil and groundwater contamination, hydrogeologic aquifer testing, remedial pilot testing, and design and installation of a groundwater and free product recovery system.

State of New York Office of General Services, Harlem Valley Psychiatric Center, Wingdale, New York – Steven led the investigation of soil and groundwater contamination resulting from a hydraulic oil leak. This project involved delineation of a contaminant plume via a soil gas survey to determine contaminant “hot spots”. The soil gas survey “hot spots” were further investigated through soil and groundwater sampling via the installation and sampling of monitoring wells.

TRAINING/CERTIFICATION

Health and Safety at Hazardous Waste Sites, 29 CFR 1910.120 (e) (8), 40 Hours
OSHA HAZWOPER Supervisor Training

JOSEPH SCARDINO
Senior Project Manager**EDUCATION**

M.S. Environmental Science, New Jersey Institute of Technology – Newark, NJ
B.S. Environmental, Science University of Delaware – Newark, DE

EXPERIENCE

Joseph has been with SESI since 2013 and has over ten years of experience in the environmental industry, the majority of which has been in the field setting but more recently for project management. He has performed an extensive amount of environmental subsurface investigations and a limited number of geotechnical subsurface investigations at SESI. Joseph is experienced with the preparation of regulatory-based environmental reporting and has assisted with the completion of remediation projects during his tenure at SESI. He is also currently the Laboratory Manager at SESI, which has been a NJDEP-Certified Laboratory for five (5) "Analyze-Immediately" parameters since 2017.

REPRESENTATIVE PROJECTS

ePort Redevelopment – Perth Amboy, NJ – This project was a 100+ acre industrial development along the Arthur Kill that was comprised of 30+ acres of industrial buildings that once comprised the Dutch Boy Paint Factory, and 70 acres of previously tidal wetlands, which were filled in with industrial wastes. Joseph provided environmental and geotechnical engineering field oversight for the environmental remediation and geotechnical improvement activities for the Site. The environmental areas of concern which were remediated included PCBs, creosote, heavy metals (lead, arsenic, and antimony), oil-stained soils, magnesium waste, tar, battery casings, contaminated paint pigments, underground storage tanks, etc. Joseph also provided the geotechnical oversight that consisted of Deep Dynamic Compaction to densify the uncontrolled fills and the placement of surcharge soils to consolidate underlying soft, organic clay layers.

Former EVAL Oil Terminal – Hackensack, NJ – This project involved the remediation of an oil terminal with LNAPL along the bank of the Hackensack River. Joseph provided the remedial oversight of the LNAPL removal and assisted with the project management and reporting of the remediation phase of the project.

Harbor Square – Ossining, NY – This project involved the establishment of engineering controls including a slurry cut-off wall and LNAPL/DNAPL monitoring and recovery wells. Joseph has been directly involved with the NYSDEC coordination and annual reporting for the environmental sampling, testing, gauging, and inspection of the engineering controls for the Site, which has been redeveloped into a 12-story residential and commercial development along the Hudson River.

TRAINING/CERTIFICATION

OSHA: HAZWOPER 40-Hour Certification
OSHA HAZWOPER Supervisor Training
NRC: Nuclear Densometer Certified
NYSDEC 4-hour Erosion and Sediment Control Training

Appendix H:

Health and Safety Plan



Geotechnical
Environmental
Site Civil

959 Route 46E, Fl 3, Ste 300
Parsippany, NJ 07054
973.808.9050
www.sesi.org

Site Specific Health and Safety Plan

For:

C241283--Archer Ave Auto Repair and Coal Yard Site
163-25 Archer Avenue
Jamaica, New York
BCP No. C241283

Prepared for:
**Archer Towers
Development LLC**

SESI Project No:
12914

Date:
September 2025/Revised
October 2025

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Disclaimer: This Health and Safety Plan (HASP) is based upon information provided [and, if applicable, conditions discovered during a site visit], and is limited by the project scope.

The HASP should be periodically reviewed and updated based on a number of factors, including but not limited to: (1) changes in applicable governmental requirements; (2) changes in procedures at the site; and (3) site conditions which were unknown to SESI Consulting Engineers (SESI) as of the time the HASP was prepared.

This HASP has been prepared for the sole and exclusive use of Client listed above, and may not be relied upon by any other person without the express written consent and authorization of SESI.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

For:

**C241283 – Archer Ave Auto Repair
and Coal Yard Site
163-25 Archer Avenue
Jamaica, New York**

Prepared by: _____

Christopher Malvicini
SESI- Asst Project Manager

Approved by: _____

Fuad Dahan
SESI-Principal

LIST OF ACRONYMS

Acronym	Definition
ACGIH	American Conference of Governmental Industrial Hygienists
COC	Contaminants(s) of Concern
CRZ	Contamination Reduction Zone
EMS	Emergency Medical Services
EZ	Exclusion Zone
FS	Field Supervisor
GFCI	Ground Fault Circuit Interrupter
HASP	Health and Safety Plan
HSM	Health and Safety Manager
LEL	Lower Explosive Limit
MSDS	Material Safety Data Sheet
NIOSH	National Institute for Occupational Safety and Health
NRR	Noise Reduction Rating
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyls
PEL	Permissible Exposure Limit
PFD	Personal Flotation Device
PID	Photoionization Detector
PM	Project Manager
PO	Project Officer
PPE	Personal Protective Equipment
PVC	Polyvinyl Chloride
SESI	SESI Consulting Engineers
SSO	Site Safety Officer
SVOC	Semi-Volatile Organic Compound
SZ	Support Zone
TLV	Threshold Limit Value
USCG	United States Coast Guard

Acronym	Definition
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1.0 PROJECT DESCRIPTION

1.1 OBJECTIVE

The objective of this Health and Safety Plan (HASP) is to provide a mechanism for establishing safe working conditions during activities at the Site known as C241283—Archer Ave Auto Repair and Coal Yard Site, located at 163-25 Archer Avenue, Jamaica, Queens, New York (the Site). The safety organization, procedures, and protective equipment have been established based on an analysis of potential physical, chemical, and biological hazards. Specific hazard control methodologies have been evaluated and selected to minimize the potential of injury, illness, or other hazardous incidents.

The HASP was written to meet the requirements of all applicable Federal, State, and local health and safety regulations, including 29 CFR 1910.120. The HASP is based on current knowledge regarding the specific chemical and physical hazards that are known or anticipated at the Site. This HASP is a dynamic document, for which changes and/or revisions may be realized as changes in scope and/or Site conditions are encountered. Should revised documents be produced, said revised documents will refer to the specific changes and why they were made.

1.2 SITE AND FACILITY DESCRIPTION

The Subject Property is bound to the west by a residential apartment followed by Guy R. Brewer Boulevard, to the north by mixed-use commercial properties followed by Jamaica Avenue, to the east by a vacant lot followed by a three-story parking structure, and to the south by Archer Avenue followed by elevated Long Island Rail Road rail lines. The nearest surface water body is a pond within Captain Tilly Park, approximately 0.53 mile to the north.. The topographic gradient at Site is generally flat. The Site is relatively level with regional topography gently sloping to the south.

1.3 POLICY STATEMENT

The policy of SESI Consulting Engineers (SESI) is to provide a safe and healthful work environment. No aspect of operations is of greater importance than injury and illness prevention. A fundamental principle of safety management is that all injuries, illnesses, and incidents are preventable. SESI will take every reasonable step to eliminate or control hazards in order to minimize the possibility of injury, illness, or incident.

This HASP prescribes the procedures that must be followed by SESI personnel during activities at the Site. Operational changes that could affect the health and safety of personnel, the community, or the environment will not be made without the prior approval of the Project Manager (PM) and the Health and Safety Manager (HSM). This document will be reviewed periodically by the HSM to ensure that it is current and technically correct. Any changes in Site conditions and/or the scope of work will require a review and modification to this HASP. Such changes will be completed in the form of an addendum or a revision to the plan.

The provisions of this plan are mandatory for all SESI personnel and are advisory for all contractors, and subcontractors assigned to the project. ***Subcontractors will be responsible for preparing their own Site-specific HASPs that meet the basic requirements outlined in***

this HASP. All visitors to SESI work areas at the Site must abide by the requirements of this plan.

1.4 REFERENCES

This HASP complies with applicable Occupational Safety and Health Administration (OSHA) regulations, United States Environmental Protection Agency (USEPA) regulations, and SESI health and safety policies and procedures. This plan follows the guidelines established in the following:

- *Standard Operating Safety Guides*, USEPA (Publication 9285.1-03, June 1992).
- *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, NIOSH, OSHA, USCG, USEPA (86116, October 1985).
- *Title 29 of the Code of Federal Regulations (CFR)*, Part 1910.
- *Title 29 of the Code of Federal Regulations (CFR)*, Part 1926.
- *Pocket Guide to Chemical Hazards*, DHHS, PHS, CDC, NIOSH (2004).
- *Threshold Limit Values*, ACGIH (2005).
- *Guide to Occupational Exposure Values*, ACGIH (2005).
- *Quick Selection Guide to Chemical Protective Clothing*, Forsberg, K. and S.Z. Mansdorf, 2nd Ed. (1993).

1.5 DEFINITIONS

The following definitions (listed alphabetically) are applicable to this HASP:

- *Contamination Reduction Zone (CRZ)* - Area between the exclusion zone and support zone that provides a transition between contaminated and clean areas. Decontamination stations are located in this zone.
- *Exclusion Zone (EZ)* - Any portions of the site where hazardous substances are, or are reasonably suspected to be present, and pose an exposure hazard to on-Site personnel.
- *Incident* - All losses, including first aid cases, injuries, illnesses, spills/leaks, equipment and property damage, motor vehicle accidents, regulatory violations, fires, and business interruptions.
- *On-Site Personnel* - All SESI and subcontractors involved with the project.
- *Project* - All on-site work performed under the scope of work.
- *Site* - The area described in Section 1.2, Site and Facility Description, where the work is to be performed by SESI personnel and subcontractors.
- *Support Zone (SZ)* - All areas of the Site except the EZ and CRZ. The SZ surrounds the CRZ and EZ. Support equipment and break areas are located in this zone.
- *Subcontractor* - Includes contractor personnel hired by SESI.
- *Visitor* - All other personnel, except the on-Site personnel.

Work Area - The portion of the Site where work activities are actively being performed. This area may change daily as work progresses and includes the SZ, CRZ, and EZ. If the work area is located in an area on the Site that is not contaminated, or suspected of being contaminated, the entire work area may be a SZ.

2.0 PROJECT SCOPE OF WORK

This HASP contains information for the following tasks that SESI is anticipated to conduct at the Site. Should additional and/or different tasks be identified, amendments to this HASP will be required to address these changed items.

- Mobilization;
- Remedial investigation soil sampling;
- Soil vapor sampling;
- Excavation of Contaminated Soil;
- End Point Chemical Sampling of Soil;
- Installation of a Vapor Barrier for Buildings;
- Groundwater Sampling;
- Decontamination and Demobilization.

3.0 ROLES AND RESPONSIBILITIES

3.1 ALL PERSONNEL

All SESI project personnel must adhere to the procedures outlined in this HASP during the performance of their work. Each person is responsible for completing tasks safely and reporting any unsafe acts or conditions to their supervisor. No person may work in a manner that conflicts with these procedures. After due warnings, the PM will dismiss from the site any SESI employee or subcontractor who violates safety procedures.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. In addition, all SESI personnel will attend an initial hazard briefing prior to beginning work at the Site.

The roles of key safety personnel and subcontractors are outlined in the following sections. Key project personnel and contacts are summarized in **Table 3.1**.

3.2 KEY SAFETY PERSONNEL

3.2.1 PROJECT SAFETY OFFICER

The PO is responsible for providing resources to assure project activities are completed in accordance with this HASP, and for meeting all regulatory and contractual requirements.

3.2.2 PROJECT MANAGER (PM)

The PM is responsible for verifying that project activities are completed in accordance with the requirements of this HASP. The PM is responsible for confirming that the Field Supervisor (FS) has the equipment, materials, and qualified personnel to fully implement the safety requirements of this HASP, and/or that subcontractors assigned to this project meet the requirements established by SESI. It is also the responsibility of the PM to:

- Consult with the HSM on Site health and safety issues;
- Verify that subcontractors meet health and safety requirements prior to commencing work;
- Verify that all incidents are thoroughly investigated;
- Approve, in writing, addenda or modifications of this HASP; and
- Suspend work or modify work practices, as necessary, for personal safety, protection of property, and regulatory compliance.

3.2.3 HEALTH AND SAFETY MANAGER (HSM)

The HSM or his designee has overall responsibility for the technical health and safety aspects of the project, including review and approval of this HASP. Inquiries regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The HSM or his designee must approve changes or addenda to this HASP.

3.2.4 SITE SAFETY OFFICER (SSO)

The SSO is responsible for field health and safety issues, including the execution of this HASP. Questions in the field regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The SSO will advise the PM on health and safety issues and will establish and coordinate the project air-monitoring program if one is deemed necessary (see Section 5.1, Air Monitoring). The SSO is the primary Site contact on health and safety matters. It is the responsibility of the SSO to:

- Provide on-Site technical assistance, if necessary;
- Participate in all accident/incident reports and ensure that they are reported to the HSM, client, and PM within 24 hours;
- Coordinate Site and personal air monitoring as required, including equipment maintenance and calibration;
- Conduct Site safety orientation training and safety meetings;
- Verify that project personnel have received the required physical examinations and medical certifications;
- Review Site activities with respect to compliance with this HASP;
- Maintain required health and safety documents and records; and
- Assist the FS in instructing field personnel on project hazards and protective procedures.

3.2.5 FIELD SUPERVISOR (FS)

The FS is responsible for implementing this HASP, including communicating requirements to on-Site personnel and subcontractors. The FS will be responsible for informing the PM of changes in the work plan, procedures, or Site conditions so that those changes may be addressed in this HASP. Other responsibilities are to:

- Consult with the SSO on Site health and safety issues;
- Stop work, as necessary, for personal safety, protection of property, and regulatory compliance;

- Obtain a Site map and determine and post routes to medical facilities and emergency telephone numbers;
- Notify local public emergency representatives (as appropriate) of the nature of the Site operations, and post their telephone numbers (i.e., local fire department personnel who would respond for a confined space rescue);
- Observe on-Site project personnel for signs of ill health effects;
- Investigate and report any incidents to the SSO;
- Verify that all on-Site personnel have had applicable training;
- Verify that on-Site personnel are informed of the physical, chemical, and biological hazards associated with the Site activities, and the procedures and protective equipment necessary to control the hazards; and

Issue/obtain any required work permits (hot work, confined space, etc.)

3.3 SUBCONTRACTORS

Subcontractors and their personnel must understand and comply with applicable regulations and Site requirements established in this HASP. Subcontractors will prepare their own Site-specific HASP that must be consistent with the requirements of this HASP.

All subcontractor personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating Site activities. All subcontractor personnel will attend an initial hazard briefing prior to beginning work at the Site. Additionally, on-Site subcontractor personnel must conduct daily Site safety meetings.

Subcontractors must designate individuals to function as the PM, HSM, SSO, and FS. In some firms the HSM to be carried out by the PM. This is acceptable provided the PM has the required knowledge, training, and experience to properly address all hazards associated with the work, and to prepare, approve, and oversee the execution of the Site-specific HASP. A subcontractor may designate the same person to perform the duties of both the SSO and the FS. However, depending on the level of complexity of a contractor's scope of work, it may be infeasible for one person to perform both functions satisfactorily.

3.4 STOP WORK AUTHORITY

Every SESI employee and subcontractor is empowered, expected, and has the responsibility to stop the work of another co-worker if the working conditions or behaviors are considered unsafe.

3.5 ALL ON-SITE PERSONNEL

All on-Site SESI personnel (including SESI subcontractors) must read and acknowledge their understanding of their respective HASPs before commencing work and abide by the requirements of the plans. All on-Site SESI personnel shall sign their HASP Acknowledgement Form following their review of their HASP.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating Site

activities. In addition, all on-Site personnel will attend an initial hazard briefing provided by the SSO prior to beginning work at the Site and conduct daily safety meetings thereafter.

On-Site personnel will immediately report the following to the FS or SSO:

- Personal injuries and illnesses no matter how minor;
- Unexpected or uncontrolled release of chemical substances;
- Symptoms of chemical exposure;
- Unsafe or hazardous situations;
- Unsafe or malfunctioning equipment;
- Changes in site conditions that may affect the health and safety of project personnel;
- Damage to equipment or property; and

Situations or activities for which they are not properly trained.

3.6 VISITORS

All SESI personnel and subcontractors visiting the Site must check in with the FS. Visitors will be cautioned to avoid skin contact with surfaces, soils, groundwater, or other materials that may impacted or be suspected to be impacted by contaminants of concern (COCs).

Visitors requesting to observe work at the site must don appropriate personal protective equipment (PPE) prior to entry to the work area and must have the appropriate training and medical clearances to do so. If respiratory protective devices are necessary, visitors who wish to enter the work area must have been respirator-trained and fit tested for a respirator within the past 12 months.

Table 3.1 – Key Safety Personnel

SESI Personnel		
Role	Name	Telephone No.
Project Principal	Fuad Dahan, P.E., PhD	973-808-9050 x249
Project Manager	Steven Gustems, PG	973-808-9050
Principal Engineer	Fuad Dahan, P.E., PhD	973-808-9050 x249
Field Team Leader	TBD	973-808-9050
Quality Assurance Officer	Joe Scardino	973-808-9050 x267
Field Personnel	TBD	973-808-9050

4.0 PERSONAL PROTECTIVE EQUIPMENT

4.1 LEVELS OF PROTECTION

PPE is required to safeguard site personnel from various hazards. Varying levels of protection may be required depending on the levels of COCs and the degree of physical hazard. This section presents the various levels of protection and defines the conditions of use for each level. A summary of the levels is presented in **Table 4.1**.

4.1.1 LEVEL D PROTECTION

The minimum level of protection that will be required of project personnel at the site will be Level D, which will be worn when site conditions or air monitoring indicates no inhalation hazard exists. The following equipment will be used:

- Work clothing as prescribed by weather;
- Steel toe work boots, meeting American National Standards Institute (ANSI) Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Leather work gloves and/or nitrile surgical gloves;
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and

Personal floatation device (PFD) if working on or near the water.

4.1.2 MODIFIED LEVEL D PROTECTION

Modified Level D will be used when airborne contaminants are not present at levels of concern, but site activities present an increased potential for skin contact with contaminated materials. Modified Level D consists of:

- Nitrile gloves worn over nitrile surgical gloves;
- Latex/polyvinyl chloride (PVC) overboots when contact with COC-impacted media is anticipated;
- Steel toe work boots, meeting ANSI Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Face shield in addition to safety glasses or goggles when projectiles or splash hazards exist (e.g. during Power Washing activities);
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used);
- Tyvek® suit (polyethylene coated Tyvek® suits for handling liquids) when body contact with COC-impacted media is anticipated; and
- PFD if working on or near the water.

4.1.3 LEVEL C PROTECTION

Level C protection will be required when the airborne concentration of COC reaches one-half of the OSHA Permissible Exposure Limit or ACGIH TLV. The following equipment will be used for Level C protection:

- Full-face, air-purifying respirator with combination organic vapor/HEPA cartridges;
- Polyethylene-coated Tyvek® suit, with ankles and cuffs taped to boots and gloves;
- Nitrile gloves worn over nitrile surgical gloves;
- Steel toe work boots, meeting ANSI Z41;
- Chemical-resistant boots with steel toes or latex/PVC overboots over steel toe boots;
- Hard hat, meeting ANSI Z89;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and
- PFD if working on or near the water.

4.2 SELECTION OF PPE

Equipment for personal protection will be selected based on the potential for contact, site conditions, ambient air quality, and the judgment of supervising Site personnel and health and safety professionals. The PPE used will be chosen to be effective against the COCs present on the Site.

4.3 SITE RESPIRATOR PROTECTION PROGRAM

Respiratory protection is an integral part of employee health and safety at the Site due to potentially hazardous concentrations of airborne COCs. The Site respiratory protection program will consist of the following (as a minimum):

- All on-Site personnel who may use respiratory protection will have an assigned respirator.
- All on-Site personnel who may use respiratory protection will have been fit tested and trained in the use of a full-face air-purifying respirator within the past 12 months. Documentation of the fit test must be provided to the SSO prior to commencement of work.
- All on-Site personnel who may use respiratory protection must within the past year have been medically certified as being capable of wearing a respirator. Documentation of the medical certification must be provided to the SSO, prior to commencement of Site work.
- Only cleaned, maintained, NIOSH-approved respirators will be used.
- If respirators are used, the respirator cartridge is to be properly disposed of at the end of each work shift, or when load-up or breakthrough occurs.
- Contact lenses are not to be worn when a respirator is worn.
- All on-Site personnel who may use respiratory protection must be clean-shaven. Mustaches and sideburns are permitted, but they must not touch the sealing surface of the respirator.
- Respirators will be inspected, and a negative pressure test performed prior to each use.

After each use, the respirator will be wiped with a disinfectant, cleansing wipe. When used, the respirator will be thoroughly cleaned at the end of the work shift. The respirator will be stored in a clean plastic bag, away from direct sunlight in a clean, dry location, in a manner that will not distort the face piece.

4.4 USING PPE

Depending upon the level of protection selected, specific donning and doffing procedures may be required. The procedures presented in this section are mandatory if Modified Level D or Level C PPE is used. All personnel entering the EZ must put on the required PPE in accordance with the requirements of this HASP. When leaving the EZ, PPE will be removed in accordance with the procedures listed, to minimize the spread of COCs.

4.4.1 DONNING PROCEDURES

These procedures are mandatory only if Modified Level D or Level C PPE is used on the Site:

- Remove bulky outerwear. Remove street clothes and store in clean location;
- Put on work clothes or coveralls;
- Put on the required chemical protective coveralls;
- Put on the required chemical protective boots or boot covers;
- Tape the legs of the coveralls to the boots with duct tape;
- Put on the required chemical protective gloves;
- Tape the wrists of the protective coveralls to the gloves;
- Don the required respirator and perform appropriate fit check (Level C);
- Put hood or head covering over-head and respirator straps and tape hood to facepiece (Level C); and
- Don remaining PPE, such as safety glasses or goggles and hard hat.

When these procedures are instituted, one person must remain outside the work area to ensure that each person entering has the proper protective equipment.

4.4.2 DOFFING PROCEDURES

The following procedures are only mandatory if Modified Level D or Level C PPE is required for the Site. Whenever a person leaves the work area, the following decontamination sequence will be followed:

- Upon entering the CRZ, rinse contaminated materials from the boots or remove contaminated boot covers;
- Clean reusable protective equipment;
- Remove protective garments, equipment, and respirator (Level C). All disposable clothing should be placed in plastic bags, which are labeled with contaminated waste labels;
- Wash hands, face, and neck (or shower if necessary);
- Proceed to clean area and dress in clean clothing; and

- Clean and disinfect respirator for next use.

All disposable equipment, garments, and PPE must be bagged in plastic bags, labeled for disposal. See Section 6.2, Decontamination, for detailed information on decontamination stations.

4.5 SELECTION MATRIX

The level of personal protection selected will be based on air monitoring of the work environment and an assessment by the FS and SSO of the potential for skin contact with COCs. The PPE selection matrix is presented in **Table 4.1** below. This matrix is based on information available at the time this plan was written. The Airborne Contaminant Action Levels in **Table 5.1**, Airborne Contaminant Action Levels, should be used to verify that the PPE prescribed in these matrices is appropriate.

Table 4.1 – PPE Selection Matrix

Task	Anticipated Level of Protection
Mobilization	Level D
Subsurface Intrusive Activities (Excavation, Drilling)	Modified Level D/Level C
Earthwork/Grading	Level D
Chemical Sampling / Delineation	Modified Level D/Level C
Decontamination	Modified Level D
Demobilization	Level D

5.0 AIR AND NOISE MONITORING

5.1 AIR MONITORING

Air monitoring, sampling, and testing will be conducted to determine employee exposure to airborne constituents. The monitoring results will dictate work procedures and the selection of PPE. The SESI SSO will be responsible for defining appropriate air monitoring procedures and for utilizing the air monitoring results to determine appropriate procedures and PPE for project personnel. Air monitoring results should be recorded in field notebooks or on an air monitoring log (see Attachment 1 for a copy of the Air Monitoring Log). Any deviations from the procedures listed here should be documented and explained in the Air Monitoring Log.

The monitoring devices to be used are a PDR1000 particulate monitor (or equivalent) and a Rae Systems MultiRAE detector (PID with a 11.7 eV lamp/oxygen/LEL/hydrogen sulfide sensors). Colorimetric detector tubes may be utilized to estimate airborne concentrations of benzene and

should be onsite during any activities that may result in elevated PID readings including drilling, excavating, and groundwater sampling.

Air monitoring will be conducted continuously with the LEL/Oxygen meter during drilling in areas where flammable vapors or gases are suspect. All work activity must stop where tests indicate the concentration of flammable vapors exceeds 10% of the LEL at a location with a potential ignition source. Such an area must be ventilated to reduce the concentration to an acceptable level.

5.2 NOISE MONITORING

Noise monitoring may be conducted as required. Hearing protection is mandatory for all employees in noise hazardous areas, such as around heavy equipment. As a general rule, sound levels that cause speech interference at normal conversation distance should require the use of hearing protection.

5.3 MONITORING EQUIPMENT MAINTENANCE AND CALIBRATION

All direct-reading instrumentation calibrations should be conducted under the approximate environmental conditions the instrument will be used. Instruments must be calibrated before and after use, noting the reading(s) and any adjustments that are necessary. All air monitoring equipment calibrations, including the standard used for calibration, must be documented on a calibration log or in the field notebook. All completed health and safety documentation/forms must be reviewed by the SSO and maintained by the FS.

All air monitoring equipment will be maintained and calibrated in accordance with the specific manufacturer's procedures. Preventive maintenance and repairs will be conducted in accordance with the respective manufacturer's procedures. When applicable, only manufacturer-trained and/or authorized personnel will be allowed to perform instrument repairs or preventive maintenance.

If an instrument is found to be inoperative or suspected of giving erroneous readings, the SSO must be responsible for immediately removing the instrument from service and obtaining a replacement unit. If the instrument is essential for safe operation during a specific activity, that activity must cease until an appropriate replacement unit is obtained. The SSO will be responsible for ensuring a replacement unit is obtained and/or repairs are initiated on the defective equipment.

5.4 ACTION LEVELS

Table 5.1 below presents airborne contaminant action levels that will be used to determine the procedures and protective equipment necessary based on conditions as measured at the Site.

Table 5.1 – Airborne Contaminant Action Levels

Parameter	Reading	Action
Total Hydrocarbons	0 ppm to $\leq$ 1 ppm	Normal operations; continue hourly breathing zone monitoring
	> 1 ppm to 5 ppm	Increase monitoring frequency to every 15 minutes and use benzene detector tube to screen for the presence of benzene
	$\geq$ 5 ppm to $\leq$ 50 ppm	Upgrade to Level C PPE; continue screening for benzene
	> 50 ppm	Stop work; investigate cause of reading
	At any reading > 5 ppm	Monitor perimeter per CAMP
Benzene	$\geq$ 1 ppm to 5 ppm	Upgrade to Level C PPE
	> 5 ppm	Stop work; investigate cause of reading
Dust	0 to .05 mg/m ³	Normal operations
	0.05 to 0.1 mg/m ³	Begin soil wetting procedure (Level C protection would be needed beyond this point)
	> 0.15 mg/m ³	Stop work, fully implement dust control plan
Oxygen	$\leq$ 19.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
	> 19.5% to < 23.5%	Normal operations
	$\geq$ 23.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Carbon Monoxide	0 ppm to $\leq$ 20 ppm	Normal operations
	> 20 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Hydrogen Sulfide	0 ppm to $\leq$ 5 ppm	Normal operations
	> 5 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area

Parameter	Reading	Action
Flammable Vapors (LEL)	< 10% LEL	Normal operations
	≥ 10% LEL	Stop work, ventilate area, investigate source of vapors

6.0 WORK ZONES AND DECONTAMINATION

6.1 WORK ZONES

6.1.1 AUTHORIZATION TO ENTER

Only personnel with the appropriate training and medical certifications (if respirators are required) will be allowed to work at the project Site. The FS will maintain a list of authorized persons; only personnel on the authorized persons list will be allowed to enter the Site work areas.

6.1.2 SITE ORIENTATION AND HAZARD BRIEFING

No person will be allowed in the work area during Site operations without first being given a Site orientation and hazard briefing. This orientation will be presented by the FS or SSO and will consist of a review of this HASP. This review must cover the chemical, physical, and biological hazards, protective equipment, safe work procedures, and emergency procedures for the project. Following this initial meeting, daily safety meetings will be held each day before work begins.

All people entering the Site work areas, including visitors, must document their attendance at this briefing, as well as the daily safety meetings on the forms included with this plan.

6.1.3 CERTIFICATION DOCUMENTS

A training and medical file may be established for the project and kept on Site during all Site operations. Specialty training, such as first aid/cardiopulmonary resuscitation (CPR) certificates, as well as current medical clearances for all project field personnel required to wear respirators, will be maintained within that file. All project personnel must provide their training and medical documentation to the SSO prior to starting work.

6.1.4 ENTRY LOG

A log-in/log-out sheet will be maintained at the Site by the FS. Personnel must sign in and out on a log sheet as they enter and leave the work area, and the FS may document entry and exit in the field notebook.

6.1.5 ENTRY REQUIREMENTS

In addition to the authorization, hazard briefing, and certification requirements listed above, no person will be allowed in any SESI work area unless they are wearing the minimum PPE as described in Section 4.0.

6.1.6 EMERGENCY ENTRANCE AND EXIT

People who must enter the work area on an emergency basis will be briefed of the hazards by the FS or SSO. All activities will cease in the event of an emergency. People exiting the work area because of an emergency will gather in a designated safe area for a head count. The FS is responsible for ensuring that all people who entered the work area have exited in the event of an emergency.

6.1.7 CONTAMINATION CONTROL ZONES

Contamination control zones are maintained to prevent the spread of contamination and to prevent unauthorized people from entering hazardous areas.

6.1.8 EXCLUSION ZONE (EZ)

An EZ may consist of a specific work area or may be the entire area of potential contamination. All employees entering an EZ must use the required PPE and must have the appropriate training and medical clearance for hazardous waste work. The EZ is the defined area where there is a possible respiratory and/or contact health hazard. Cones, caution tape, or a posted Site diagram will identify the location of each EZ.

6.1.9 CONTAMINATION REDUCTION ZONE

The CRZ or transition area will be established, if necessary, to perform decontamination of personnel and equipment. All personnel entering or leaving the EZ will pass through this area to prevent any cross-contamination. Tools, equipment, and machinery will be decontaminated in a specific location. The decontamination of all personnel will be performed on Site adjacent to the EZ. Personal protective outer garments and respiratory protection will be removed in the CRZ and prepared for cleaning or disposal. This zone is the only appropriate corridor between the EZ and the support zone discussed below.

6.1.10 SUPPORT ZONE (SZ)

The SZ is a clean area outside the CRZ located to prevent employee exposure to hazardous substances. Eating and drinking will be permitted in the support area only after proper decontamination. Smoking may be permitted in the SZ, subject to Site requirements.

6.1.11 POSTING

Work areas will be prominently marked and delineated using cones, caution tape, or a posted Site diagram.

6.2 DECONTAMINATION

6.2.1 PERSONNEL DECONTAMINATION

All personnel wearing Modified Level D or Level C protective equipment in the EZ must undergo personal decontamination prior to entering the SZ. The personnel decontamination area will consist of the following stations at a minimum:

- *Station 1:* Personnel leaving the contaminated zone will remove the gross contamination from their outer clothing and boots.
- *Station 2:* Personnel will remove their outer garment and gloves and dispose of it in properly labeled containers. Personnel will then decontaminate their hard hats, and boots with an aqueous solution of detergent or other appropriate cleaning solution. These items are then hand carried to the next station.
- *Station 3:* Personnel will thoroughly wash their hands and face before leaving the CRZ. Respirators will be sanitized and then placed in a clean plastic bag.

6.2.2 EQUIPMENT DECONTAMINATION

All vehicles that have entered the EZ will be decontaminated at the decontamination pad prior to leaving the zone. If the level of vehicle contamination is low, decontamination may be limited to rinsing of tires and wheel wells with water. If the vehicle is significantly contaminated, steam cleaning or pressure washing of vehicles and equipment may be required.

6.2.3 PERSONAL PROTECTIVE EQUIPMENT DECONTAMINATION

Where and whenever possible, single-use, external protective clothing must be used for work within the EZ or CRZ. This protective clothing must be disposed of in properly labeled containers. Reusable protective clothing will be rinsed at the Site with detergent and water. The rinsate will be collected for disposal.

When removed from the CRZ, the respirator will be thoroughly cleaned with soap and water. The respirator face piece, straps, valves, and covers must be thoroughly cleaned at the end of each work shift, and ready for use prior to the next shift. Respirator parts may be disinfected with a solution of bleach and water (mixed at 2% bleach by volume), or by using a spray disinfectant.

7.0 TRAINING AND MEDICAL SURVEILLANCE

7.1 TRAINING

7.1.1 GENERAL

All on-Site project personnel who work in areas where they may be exposed to Site contaminants must be trained as required by OSHA Regulation 29 CFR 1910.120 (HAZWOPER). Field employees also must receive a minimum of three (3) days of actual field experience under the direct supervision of a trained, experienced supervisor. Personnel who completed their initial training more than 12 months prior to the start of the project must have completed an eight (8)-hour refresher course within the past 12 months. The FS must have completed an additional eight (8) hours of supervisory training and must have a current first-aid/CPR certificate (See Attachment 2).

7.1.2 BASIC 40-HOUR COURSE

The following is a list of the topics typically covered in a 40-hour HAZWOPER training course:

- General safety procedures;
- Physical hazards (fall protection, noise, heat stress, cold stress);
- Names and job descriptions of key personnel responsible for site health and safety;
- Safety, health, and other hazards typically present at hazardous waste sites;
- Use, application, and limitations of PPE;
- Work practices by which employees can minimize risks from hazards;
- Safe use of engineering controls and equipment on site;
- Medical surveillance requirements;
- Recognition of symptoms and signs which might indicate overexposure to hazards;
- Worker right-to-know (Hazard Communication OSHA 1910.1200);
- Routes of exposure to contaminants;
- Engineering controls and safe work practices;
- Components of a health and safety program and a site-specific HASP;
- Decontamination practices for personnel and equipment;
- Confined-space entry procedures; and
- General emergency response procedures.

7.1.3 SUPERVISOR COURSE

Management and supervisors must receive an additional eight (8) hours of training, which typically includes:

- General Site safety and health procedures;
- PPE programs; and
- Air monitoring techniques

7.1.4 SITE-SPECIFIC TRAINING

Site-specific training will be accomplished by on-Site personnel reading this HASP, and through a thorough site briefing by the PM, FS, or SSO on the contents of this HASP before work begins. The review must include a discussion of the chemical, physical, and biological hazards; the protective equipment and safety procedures; and emergency procedures.

7.1.5 DAILY SAFETY MEETINGS

Daily safety meetings will be held to cover the work to be accomplished, the hazards anticipated, the PPE and procedures required to minimize site hazards, and emergency procedures. The FS or SSO should present these meetings prior to beginning the day's fieldwork. No work will be performed in an EZ before a daily safety meeting has been held. An additional safety meeting must also be held prior to new tasks, or if new hazards are encountered. The daily safety meetings will be logged in the field notebook.

7.1.6 FIRST AID AND CPR

At least one (1) employee current in first aid/CPR will be assigned to the work crew and will be on the Site during operations. Site records will document the presence of this individual. Refresher training in first aid (triennially) and CPR (annually) is required to keep the certificate

current. These individuals must also receive training regarding the precautions and protective equipment necessary to protect against exposure to blood-borne pathogens.

7.2 MEDICAL SURVEILLANCE

7.2.1 MEDICAL EXAMINATION

All personnel who are potentially exposed to Site contaminants must participate in a medical surveillance program as defined by OSHA at 29 CFR 1910.120 (f).

7.2.2 PRE-PLACEMENT MEDICAL EXAMINATION

All potentially exposed personnel must have completed a comprehensive medical examination prior to assignment, and periodically thereafter as defined by applicable regulations. The pre-placement and periodic medical examinations typically include the following elements:

- Medical and occupational history questionnaire;
- Physical examination;
- Complete blood count, with differential;
- Liver enzyme profile;
- Chest X-ray, at a frequency determined by the physician;
- Pulmonary function test;
- Audiogram;
- Electrocardiogram for persons older than 45 years of age, or if indicated during the physical examination;
- Drug and alcohol screening, as required by job assignment;
- Visual acuity; and
- Follow-up examinations, at the discretion of the examining physician or the corporate medical director.

The examining physician provides the employee with a letter summarizing his findings and recommendations, confirming the worker's fitness for work and ability to wear a respirator. Documentation of medical clearance will be available for each employee during all project Site work.

Subcontractors will certify that all their employees have successfully completed a physical examination by a qualified physician. The physical examinations must meet the requirements of 29 CFR 1910.120 and 29 CFR 1910.134. Subcontractors will supply copies of the medical examination certificate for each on-site employee.

7.2.3 OTHER MEDICAL EXAMINATIONS

In addition to pre-employment, annual, and exit physicals, personnel may be examined:

- At employee request after known or suspected exposure to toxic or hazardous materials; and
- At the discretion of the SSO, HSM, or occupational physician in anticipation of, or after known or suspected exposure to toxic or hazardous materials.

7.2.4 PERIODIC EXAM

Following the placement examination, all employees must undergo a periodic examination, similar in scope to the placement examination. For employees potentially exposed over 30 days per year, the frequency of periodic examinations will be annual. For employees potentially exposed less than 30 days per year, the frequency for periodic examinations will be 24 months.

7.2.5 MEDICAL RESTRICTION

When the examining physician identifies a need to restrict work activity, the employee's supervisor must communicate the restriction to the employee and the SSO. The terms of the restriction will be discussed with the employee and the supervisor.

8.0 GENERAL SAFETY PRACTICES

8.1 GENERAL SAFETY RULES

General safety rules for site activities include, but are not limited to, the following:

- At least one copy of this HASP must be in a location at the Site that is readily available to personnel, and all project personnel shall review the plan prior to starting work.
- Consume or use food, beverages, chewing gum, and tobacco products only in the SZ or other designated area outside the EZ and CRZ. Cosmetics shall not be applied in the EZ or CRZ.
- Wash hands before eating, drinking, smoking, or using toilet facilities.
- Wear all PPE as required and stop work and replace damaged PPE immediately.
- Secure disposable coveralls, boots, and gloves at the wrists and legs and ensure closure of the suit around the neck.
- Upon skin contact with materials that may be impacted by COCs, remove contaminated clothing and wash the affected area immediately. Contaminated clothing must be changed. Any skin contact with materials potentially impacted by COCs must be reported to the FS or SSO immediately. If needed, medical attention should be sought.
- Practice contamination avoidance. Avoid contact with surfaces either suspected or known to be impacted by COCs, such as standing water, mud, or discolored soil. Equipment must be stored on elevated or protected surfaces to reduce the potential for incidental contamination.
- Remove PPE as required in the CRZ to limit the spread of COC-containing materials.
- At the end of each shift or as required, dispose of all single-use coveralls, soiled gloves, and respirator cartridges in designated receptacles designated for this purpose.
- Removing soil containing Site COCs from protective clothing or equipment with compressed air, shaking, or any other means that disperses contaminants into the air is prohibited.
- Inspect all non-disposable PPE for contamination in the CRZ. Any PPE found to be contaminated must be decontaminated or disposed of appropriately.

- Recognize emergency signals used for evacuation, injury, fire, etc.
- Report all injuries, illnesses, and unsafe conditions or work practices to the FS or SSO.
- Use the “buddy system” during all operations requiring Level C PPE, and when appropriate, during Modified Level D operations.
- Obey all warning signs, tags, and barriers. Do not remove any warnings unless authorized to do so.
- Use, adjust, alter, and repair equipment only if trained and authorized to do so, and in accordance with the manufacturer’s directions.
- Personnel are to perform only tasks for which they have been properly trained and will advise their supervisor if they have been assigned a task for which they are not trained.
- The presence or consumption of alcoholic beverages or illicit drugs during the workday, including breaks, is strictly prohibited. Notify your supervisor if you must take prescription or over-the-counter drugs that indicate they may cause drowsiness or, that you should not operate heavy equipment.
- Remain upwind during site activities whenever possible.

8.2 BUDDY SYSTEM

On-Site personnel must use the buddy system as required by operations. Use of the “buddy system” is required during all operations requiring Level C to Level A PPE, and when appropriate, during Level D operations. Crewmembers must observe each other for signs of chemical exposure, and heat or cold stress. Indications of adverse effects include, but are not limited to:

- Changes in complexion and skin coloration;
- Changes in coordination;
- Changes in demeanor;
- Excessive salivation and pupillary response; and
- Changes in speech pattern.

Crewmembers must also be aware of the potential exposure to possible safety hazards, unsafe acts, or non-compliance with safety procedures.

Field personnel must inform their partners or fellow crewmembers of non-visible effects of exposure to toxic materials that they may be experiencing. The symptoms of such exposure may include, but are not limited to:

- Headaches;
- Dizziness;
- Nausea;
- Blurred vision;
- Cramps; and
- Irritation of eyes, skin, or respiratory tract.

If protective equipment or noise levels impair communications, prearranged hand signals must be used for communication. Personnel must stay within line of sight of another team member.

8.3 HEAT STRESS

Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, etc., as well as the physical and conditioning characteristics of the individual. Since heat stress is one of the most common illnesses associated with heavy outdoor work conducted with direct solar load and, in particular, because wearing PPE can increase the risk of developing heat stress, workers must be capable of recognizing the signs and symptoms of heat-related illnesses. Personnel must be aware of the types and causes of heat-related illnesses and be able to recognize the signs and symptoms of these illnesses in both themselves and their co-workers.

Heat rashes are one of the most common problems in hot work environments. Commonly known as prickly heat, a heat rash is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

Heat cramps are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused both by too much or too little salt.

Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution (plus or minus 0.3% NaCl), excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.

Under extreme conditions, such as working for six (6) to eight (8) hours in heavy protective gear, a loss of sodium may occur. Drinking commercially available carbohydrate electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

Heat exhaustion occurs from increased stress on various body organs due to inadequate blood circulation, cardiovascular insufficiency, or dehydration. Signs and symptoms include pale, cool, moist skin; heavy sweating; dizziness; nausea; headache, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment.

Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, which is a medical emergency.

Workers suffering from heat exhaustion should be removed from the hot environment, be given fluid replacement, and be encouraged to get adequate rest.

Heat stroke is the most serious form of heat stress. Heat stroke occurs when the body's system of temperature regulation fails and the body's temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of workload and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The worker should be placed in a shady area and the outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

Regardless of the worker's protestations, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

Proper training and preventive measures will help avert serious illness and loss of work productivity. Preventing heat stress is particularly important because once someone suffers from heat stroke or exhaustion, that person may be predisposed to additional heat injuries.

8.4 HEAT STRESS SAFETY PRECAUTIONS

Heat stress monitoring and work rest cycle implementation should commence when the ambient adjusted temperature exceeds 72°F. A minimum work rest regimen and procedures for calculating ambient adjusted temperature are described in **Table 8.1** below.

Table 8.1 – Work/Rest Schedule

Adjusted Temperature ^b	Work/Rest Regimen Normal Work Ensemble ^c	Work/Rest Regimen Impermeable Ensemble
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5° - 90°F (30.8°-32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5° - 87.5°F (28.1° - 30.8°C)	After each 90 minutes of work	After each 60 minutes of work

Adjusted Temperature ^b	Work/Rest Regimen Normal Work Ensemble ^c	Work/Rest Regimen Impermeable Ensemble
77.5° - 82.5°F (25.3° - 28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5° - 77.5°F (30.8° - 32.2°C)	After each 150 minutes of work	After each 120 minutes of work

a. For work levels of 250 kilocalories/hour (Light-Moderate Type of Work)

- b. Calculate the adjusted air temperature (ta adj) by using this equation: $ta\ adj\ ^\circ F = ta\ ^\circ F + (13 \times \% \text{ sunshine})$. Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)
- c. A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.
- d. The information presented above was generated using the information provided in the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) Handbook.

In order to determine if the work rest cycles are adequate for the personnel and specific Site conditions, additional monitoring of individual heart rates will be conducted during the rest cycle. To check the heart rate, count the radial pulse for 30 seconds at the beginning of the rest period. If the heart rate exceeds 110 beats per minute, shorten the next work period by one third and maintain the same rest period.

Additionally, one or more of the following control measures can be used to help control heat stress and are mandatory if any Site worker has a heart rate (measure immediately prior to rest period) exceeding 115 beats per minute:

- Site workers will be encouraged to drink plenty of water and electrolyte replacement fluids throughout the day.
- On-Site drinking water will be kept cool (50 to 60°F).
- A work regimen that will provide adequate rest periods for cooling down will be established, as required.
- All personnel will be advised of the dangers and symptoms of heat stroke, heat exhaustion, and heat cramps.
- Cooling devices, such as vortex tubes or cooling vests, should be used when personnel must wear impermeable clothing in conditions of extreme heat.
- Employees should be instructed to monitor themselves and co-workers for signs of heat stress and to take additional breaks as necessary.
- A shaded rest area must be provided. All breaks should take place in the shaded rest area.
- Employees must not be assigned to other tasks during breaks.
- Employees must remove impermeable garments during rest periods. This includes white Tyvek-type garments.

All employees must be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress disorders.

8.5 COLD STRESS

Cold stress normally occurs in temperatures at or below freezing, or under certain circumstances, in temperatures of 40°F. Extreme cold for a short time may cause severe injury to exposed body surfaces or result in profound generalized cooling, causing death. Areas of the body that have high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. Two (2) factors influence the development of a cold weather injury: ambient temperature and the velocity of the wind. For instance, 10°F with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at -18°F. An equivalent chill temperature chart relating the actual dry bulb temperature and wind velocity is presented in **Table 8.2** below.

Table 8.2– Wind Chill Temperature Chart

Estimated Wind Speed (in mph)	Actual Temperature Reading (°F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	Equivalent Chill Temperature (°F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind speeds greater than 40 mph have little additional effect.)	LITTLE DANGER Maximum danger of false sense of security.				INCREASING DANGER Danger from freezing of exposed flesh within one minute.			GREAT DANGER Flesh may freeze within 30 seconds.				
	Trench foot and immersion foot may occur at any point on this chart.											

[This chart was developed by the U.S. Army Research Institute of Environmental Medicine, Natick, MA (Source: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents)].

Local injury resulting from cold is included in the generic term frostbite. There are several degrees of tissue damage associated with frostbite. Frostbite of the extremities can be categorized into:

- *Frost Nip or Incipient Frostbite* - characterized by sudden blanching or whitening of skin.
- *Superficial Frostbite* - skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.
- *Deep Frostbite* - tissues are cold, pale, and solid; extremely serious injury.

Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperature. It can be fatal. Its symptoms are usually exhibited in five stages: 1) shivering; 2) apathy, listlessness, sleepiness, and (sometimes) rapid cooling of the body to less than 95°F; 3) unconsciousness, glassy stare, slow pulse, and slow respiratory rate; 4) freezing of the extremities; and 5) death. Trauma sustained in freezing or sub-zero conditions requires special attention because an injured worker is predisposed to secondary cold injury. Special provisions must be made to prevent hypothermia and secondary freezing of damaged tissues in addition to providing for first aid treatment. To avoid cold stress, site personnel must wear protective clothing appropriate for the level of cold and physical activity. In addition to protective clothing, preventive safe work practices, additional training, and warming regimens may be utilized to prevent cold stress.

8.6 SAFETY PRECAUTIONS FOR COLD STRESS PREVENTION

For air temperature of 0°F or less, mittens should be used to protect the hands. For exposed skin, continuous exposure should not be permitted when air speed and temperature results in a wind chill temperature of -25°F.

At air temperatures of 36°F or less, field personnel who become immersed in water or whose clothing becomes wet must be immediately provided with a change of clothing and be treated for hypothermia.

If work is done at normal temperature or in a hot environment before entering the cold, the field personnel must ensure that their clothing is not wet as a consequence of sweating. Wet field personnel must change into dry clothes prior to entering the cold area.

If the available clothing does not give adequate protection to prevent hypothermia or frostbite, work must be modified or suspended until adequate clothing is made available or until weather conditions improve.

Field personnel handling evaporative liquid (e.g., gasoline, alcohol, or cleaning fluids) at air temperatures below 40°F must take special precaution to avoid soaking of clothing or gloves with the liquids because of the added danger of cold injury due to evaporative cooling.

8.7 SAFE WORK PROCEDURES

Direct contact between bare skin and cold surfaces (< 20°F) should be avoided. Metal tool handles and/or equipment controls should be covered by thermal insulating material.

For work performed in a wind chill temperature at or below 10°F, workers should be under constant protective observation (buddy system). The work rate should be established to prevent heavy sweating that will result in wet clothing. For heavy work, rest periods must be taken in heated shelters and workers should be provided with an opportunity to change into dry clothing if needed.

Field personnel should be provided the opportunity to become accustomed to cold-weather working conditions and required protective clothing. Work should be arranged in such a way that sitting or standing still for long periods is minimized.

During the warming regimen (rest period), field personnel should be encouraged to remove outer clothing to permit sweat evaporation or to change into dry work clothing. Dehydration, or loss of body fluids, occurs insidiously in the cold environment and may increase susceptibility to cold injury due to a significant change in blood flow to the extremities. Fluid replacement with warm, sweet drinks and soups is recommended. The intake of coffee should be limited because of diuretic and circulatory effects.

8.8 BIOLOGICAL HAZARDS

Biological hazards may include poison ivy, snakes, thorny bushes and trees, ticks, mosquitoes, spiders, and other pests.

8.8.1 TICK BORNE DISEASES

Lyme Disease - The disease commonly occurs in summer and is transmitted by the bite of infected ticks. "Hot spots" in the United States include New York, New Jersey, Pennsylvania, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

Erlchiosis - The disease also commonly occurs in summer and is transmitted by the bite of infected ticks. "Hot spots" in the United States include New York, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

These diseases are transmitted primarily by the deer tick, which is smaller and redder than the common wood tick. The disease may be transmitted by immature ticks, which are small and hard to see. The tick may be as small as a period on this page.

Symptoms of Lyme disease include a rash or a peculiar red spot, like a bull's eye, which expands outward in a circular manner. The victim may have headache, weakness, fever, a stiff neck, and swelling and pain in the joints, and eventually, arthritis. Symptoms of erlichiosis include muscle and joint aches, flu-like symptoms, but there is typically no skin rash.

Rocky Mountain Spotted Fever (RMSF) - This disease is transmitted via the bite of an infected tick. The tick must be attached 4 to 6 hours before the disease-causing organism (*Rickettsia rickettsii*) becomes reactivated and can infect humans. The primary symptom of RMSF is the

sudden appearance of a moderate-to-high fever. The fever may persist for two to three weeks. The victim may also have a headache, deep muscle pain, and chills. A rash appears on the hands and feet on about the third day and eventually spreads to all parts of the body. For this reason, RMSF may be confused with measles or meningitis. The disease may cause death, if untreated, but if identified and treated promptly, death is uncommon.

Control - Tick repellent containing diethyltoluamide (DEET) should be used when working in tick-infested areas, and pant legs should be tucked into boots. In addition, workers should search the entire body every three or four hours for attached ticks. Ticks should be removed promptly and carefully without crushing, since crushing can squeeze the disease-causing organism into the skin. A gentle and steady pulling action should be used to avoid leaving the head or mouth parts in the skin. Hands should be protected with surgical gloves when removing ticks.

8.8.2 POISONOUS PLANTS

Poisonous plants may be present in the work area. Personnel should be alerted to its presence and instructed on methods to prevent exposure.

Control - The main control is to avoid contact with the plant, cover arms and hands, and frequently wash potentially exposed skin. Particular attention must be given to avoiding skin contact with objects or protective clothing that have touched the plants. Treat every surface that may have touched the plant as contaminated, and practice contamination avoidance. If skin contact is made, the area should be washed immediately with soap and water and observed for signs of reddening.

8.8.3 SNAKES

The possibility of encountering snakes exists, specifically for personnel working in wooded/vegetated areas. Snake venoms are complex and include proteins, some of which have enzymatic activity. The effects produced by venoms include neurotoxic effects with sensory, motor, cardiac, and respiratory difficulties; cytotoxic effects on red blood cells, blood vessels, heart muscle, kidneys, and lungs; defects in coagulation; and effects from local release of substances by enzymatic actions. Other noticeable effects of venomous snakebites include swelling, edema, and pain around the bite, and the development of ecchymosis (the escape of blood into tissues from ruptured blood vessels).

Control - To minimize the threat of snakebites, all personnel walking through vegetated areas must be aware of the potential for encountering snakes, and the need to avoid actions potentiating encounters, such as turning over logs, etc. If a snakebite occurs, an attempt should be made to safely identify the snake via size and markings. The victim must be transported to the nearest hospital within 30 minutes; first aid consists of applying a constriction band and washing the area around the wound to remove any unabsorbed venom.

8.8.4 SPIDERS

Personnel may encounter spiders during work activities.

Two spiders are of concern: the black widow and the brown recluse. Both prefer dark sheltered areas such as basements, equipment sheds and enclosures, and around woodpiles or other scattered debris. The black widow is shiny black, approximately one inch long, and has a distinctive red hourglass marking on the underside of its body. The black widow is found throughout the United States. The bite of a black widow is seldom fatal to healthy adults, but effects include respiratory distress, nausea, vomiting, and muscle spasms. The brown recluse is smaller than the black widow and gets its name from its brown coloring and behavior. It has a distinctive violin shape on the top of its body. The brown recluse is more prevalent in the southern United States. The bite of the brown recluse is painful and the bite site ulcerates and takes many weeks to heal completely.

Control - To minimize the threat of spider bites, all personnel walking through vegetated areas must be aware of the potential for encountering these arachnids. Personnel need to avoid actions that may result in encounters, such as turning over logs, and placing hands in dark places such as behind equipment or in corners of equipment sheds or enclosures. If a spider bite occurs, the victim must be transported to the nearest hospital as soon as possible; first aid consists of applying ice packs and washing the area around the wound to remove any unabsorbed venom.

8.9 NOISE

Exposure to noise over the OSHA action level can cause temporary impairment of hearing; prolonged and repeated exposure can cause permanent damage to hearing. The risk and severity of hearing loss increases with the intensity and duration of exposure to noise. In addition to damaging hearing, noise can impair voice communication, thereby increasing the risk of accidents on site.

Control - All personnel must wear hearing protection, with a Noise Reduction Rating (NRR) of at least 20, when noise levels exceed 85 dBA. When it is difficult to hear a co-worker at normal conversation distance, the noise level is approaching or exceeding 85 dBA, and hearing protection is necessary. All site personnel who may be exposed to noise must also receive baseline and annual audiograms and training as to the causes and prevention of hearing loss. Noise monitoring is discussed in Section 5.2, Noise Monitoring.

Whenever possible, equipment that does not generate excessive noise levels will be selected for this project. If the use of noisy equipment is unavoidable, barriers or increased distance will be used to minimize worker exposure to noise, if feasible.

All personnel must take every precaution to minimize the potential for spills during site operations. All on-Site personnel shall immediately report any discharge, no matter how small, to the FS.

Spill control equipment and materials will be located on the Site at locations that present the potential for discharge. All sorbent materials used for the cleanup of spills will be containerized and labeled appropriately. In the event of a spill, the FS will follow the provisions in Section 10.0, Emergency Procedures, to contain and control released materials and to prevent their spread to off-Site areas.

8.10 SPILL CONTROL

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8.11 SANITATION

Site sanitation will be maintained according to OSHA requirements.

8.11.1 BREAK AREA

Breaks must be taken in the SZ, away from the active work area after Site personnel go through decontamination procedures. There will be no smoking, eating, drinking, or chewing gum or tobacco in any area other than the SZ.

8.11.2 POTABLE WATER

The following rules apply to all field operations:

- An adequate supply of potable water will be provided at each project site. Potable water must be kept away from hazardous materials or media, and contaminated clothing or equipment.
- Portable containers used to dispense drinking water must be capable of being tightly closed and must be equipped with a tap dispenser. Water must not be consumed directly from the container (drinking from the tap is prohibited) nor may it be removed from the container by dipping.
- Containers used for drinking water must be clearly marked and shall not be used for any other purpose.
- Disposable drinking cups must be provided. A sanitary container for dispensing cups and a receptacle for disposing of used cups is required.

8.11.3 SANITARY FACILITIES

Access to facilities for washing before eating, drinking, or smoking, or alternate methods such as waterless hand-cleaner and paper towels will be provided.

8.11.4 LAVATORY

If permanent toilet facilities are not available, an appropriate number of portable chemical toilets will be provided. This requirement does not apply to mobile crews or to normally unattended Site locations so long as employees at these locations have transportation immediately available to nearby toilet facilities.

8.12 EMERGENCY EQUIPMENT

Adequate emergency equipment for the activities being conducted on site and as required by applicable sections of 29 CFR 1910 and 29 CFR 1926 will be on Site prior to the commencement of project activities. Personnel will be provided with access to emergency equipment, including, but not limited to, the following:

- Fire extinguishers of adequate size, class, number, and location as required by applicable sections of 29 CFR 1910 and 1926;
- Industrial first aid kits of adequate size for the number of personnel on site; and
- Emergency eyewash and/or shower if required by operations being conducted on Site.

8.13 LOCKOUT/TAGOUT PROCEDURES

Only fully qualified and trained personnel will perform maintenance procedures. Before maintenance begins, lockout/tagout procedures per OSHA 29 CFR 1910.147 will be followed.

Lockout is the placement of a device that uses a positive means, such as lock, to hold an energy or material-isolating device such that the equipment cannot be operated until the lockout device is removed. If a device cannot be locked out, a tagout system shall be used. Tagout is the placement of a warning tag on an energy or material isolating device indicating that the equipment controls may not be operated until the personnel who attached the tag remove the tag.

8.14 ELECTRICAL SAFETY

Electricity may pose a particular hazard to Site workers due to the use of portable electrical equipment. If wiring or other electrical work is needed, a qualified electrician must perform it.

General electrical safety requirements include:

- All electrical wiring and equipment must be a type listed by Underwriters Laboratories (UL), Factory Mutual Engineering Corporation (FM), or other recognized testing or listing agency.
- All installations must comply with the National Electrical Safety Code (NESC), the National Electrical Code (NEC), or USCG regulations.
- Portable and semi-portable tools and equipment must be grounded by a multi-conductor cord having an identified grounding conductor and a multi-contact polarized plug-in receptacle.
- Tools protected by an approved system of double insulation, or its equivalent, need not be grounded. Double insulated tools must be distinctly marked and listed by UL or FM.
- Live parts of wiring or equipment must be guarded to prevent persons or objects from touching them.
- Electric wire or flexible cord passing through work areas must be covered or elevated to protect it from damage by foot traffic, vehicles, sharp corners, projections, or pinching.

- All circuits must be protected from overload.
- Temporary power lines, switchboxes, receptacle boxes, metal cabinets, and enclosures around equipment must be marked to indicate the maximum operating voltage.
- Plugs and receptacles must be kept out of water unless of an approved submersible construction.
- All extension cord outlets must be equipped with ground fault circuit interrupters (GFCI).
- Attachment plugs or other connectors must be equipped with a cord grip and be constructed to endure rough treatment.
- Extension cords or cables must be inspected prior to each use and replaced if worn or damaged. Cords and cables must not be fastened with staples, hung from nails, or suspended by bare wire.
- Flexible cords must be used only in continuous lengths without splice, with the exception of molded or vulcanized splices made by a qualified electrician.

8.15 LIFTING SAFETY

Using proper lifting techniques may prevent back strain or injury. The fundamentals of proper lifting include:

- Consider the size, shape, and weight of the object to be lifted. A mechanical lifting device or additional persons must be used to lift an object if it cannot be lifted safely alone.
- The hands and the object should be free of dirt or grease that could prevent a firm grip.
- Gloves must be used, and the object inspected for metal slivers, jagged edges, burrs, or rough or slippery surfaces.
- Fingers must be kept away from points that could crush or pinch them, especially when putting an object down.
- Feet must be placed far enough apart for balance. The footing should be solid and the intended pathway should be clear.
- The load should be kept as low as possible, close to the body with the knees bent.
- To lift the load, grip firmly and lift with the legs, keeping the back as straight as possible.
- A worker should not carry a load that he or she cannot see around or over.
- When putting an object down, the stance and position are identical to that for lifting; the legs are bent at the knees, and the back is straight as the object is lowered.

8.16 LADDER SAFETY

When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least three (3) feet (9 m) above the upper landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder. In no case shall the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support.

- Ladders shall be maintained free of oil, grease, and other slipping hazards.
- Ladders shall not be loaded beyond the maximum intended load for which they were built, or beyond their manufacturer's rated capacity.
- Ladders shall be used only for the purpose for which they were designed.

- Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).
- Wood job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one-eighth the working length of the ladder.
- Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal, as measured to the back side of the ladder.
- Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement.
- Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement. Slip-resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces, including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery.
- Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder.
- The area around the top and bottom of ladders shall be kept clear.
- The top of a non-self-supporting ladder shall be placed with the two rails supported equally unless it is equipped with a single support attachment.
- Ladders shall not be moved, shifted, or extended while occupied.
- Ladders shall have non-conductive side rails if they are used where the employee or the ladder could contact exposed energized electrical equipment.
- The top, top step, or the step labeled that it or any step above it should not be used as a step.
- Cross-bracing on the rear section of stepladders shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- Ladders shall be inspected by the HSM for visible defects on a daily basis and after any occurrence that could affect their safe use.
- Portable ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; corroded components; or other faulty or defective components shall either be immediately marked in a manner that readily identifies them as defective or be tagged with "Do Not Use" or similar language and shall be withdrawn from service.
- Fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; or corroded components; shall be withdrawn from service.
- Ladder repairs shall restore the ladder to a condition meeting its original design criteria, before the ladder is returned to use.
- Single-rail ladders shall not be used.
- When ascending or descending a ladder, the user shall face the ladder.
- Each employee shall use at least one hand to grasp the ladder when progressing up and/or down the ladder.
- An employee shall not carry any object or load that could cause the employee to lose balance and fall.

8.17 TRAFFIC SAFETY

The project Site may be located adjacent to a public roadway where exposure to vehicular traffic is likely. Traffic may also be encountered as vehicles enter and exit the area. To minimize the likelihood of project personnel and activities being affected by traffic, the following procedures will be implemented.

Cones must be placed along the shoulder of the roadway starting 100 feet from the work area to alert passing motorists to the presence of personnel and equipment. A “Slow” or “Men Working” sign must be placed at the first cone. Barricades with flashing lights should be placed between the roadway and the work area.

During activities along a roadway, equipment will be aligned parallel to the roadway to the extent feasible, facing into the oncoming traffic so as to place a barrier between the work crew and the oncoming traffic. All crewmembers must remain behind the equipment and the traffic barrier.

All Site personnel who are potentially exposed to vehicular traffic must wear an outer layer of orange warning garments, such as vests, jackets, or shirts. If work is performed in hours of dusk or darkness, workers will be outfitted with reflective garments either orange, white (including silver-coated reflective coatings or elements that reflect white light), yellow, fluorescent red-orange, or fluorescent yellow-orange.

The flow of traffic into and out of the adjacent business must be assessed, and precautions taken to warn motorists of the presence of workers and equipment. Where possible, vehicles should be aligned to provide physical protection of people and equipment.

9.0 SITE-SPECIFIC HAZARDS AND CONTROL MEASURES

9.1 EVALUATION OF HAZARDS

The evaluation of hazards is provided as a quick reference as to the known conditions for the Site, wherein the level of detail for each of the subsections is identified.

9.1.1 HAZARD CHARACTERISTICS

Existing information for Site:

 X Detailed Preliminary None

Hazardous/Contaminated Material Form(s):

 X Solid X Liquid Sludge Gas X Vapor

Containment Type(s):

 Drum Tank Pit Debris
 Pond Lagoon Other: None known

Hazardous Material Characteristics:

☒ Volatile ☐ Corrosive ☐ Reactive
☐ Radioactive
☐ Ignitable ☒ Toxic ☒ Unknown

Routes of Exposure:

☒ Oral ☐ Dermal ☒ Eye ☒ Respiratory

9.1.2 POTENTIAL HEALTH AND SAFETY HAZARDS

☒ Heat ☒ Congested areas
☒ Cold ☒ General Construction
☐ Confined space entry ☒ Physical injury
☐ Oxygen depletion ☒ Electrical hazards
☐ Asphyxiation ☒ Handling and product transfer
☒ Excavation ☒ Fire
☒ Cave-ins ☒ Explosion
☒ Falls, slippage ☒ Biological Hazards
☒ Plants – Poison Ivy, Poison Oak
☒ Insects – Ticks
☒ Insects – Mosquitoes
☒ Insects – Bees and Wasps
☒ Rats and Mice
☒ Heavy equipment ☐ Non-ionizing Radiation (i.e. UV, IR, etc.)
☐ Other: Potential Ignition Hazard

9.2 FIELD ACTIVITIES, HAZARDS AND CONTROL PROCEDURES

The following task-specific safety analyses identify potential health, safety, and environmental hazards associated with each type of field activity. Because of the complex and changing nature of field projects, supervisors must continually inspect the Site to identify hazards that may affect on-Site personnel, the community, or the environment. The FS must be aware of these changing conditions and discuss them with the PM whenever these changes impact employee health, safety, the environment, or performance of the project. The FS will keep on-Site personnel informed of the changing conditions, and the PM will write and/or approve addenda or revisions to this HASP as necessary.

9.2.1 MOBILIZATION/CONSTRUCTION STAKEOUT

Description of Tasks

Site mobilization will include establishing excavation locations, determining the location of utilities and other installations, and establishing work areas. Mobilization will also include setting up equipment and establishing a temporary Site office. A break area will be set up outside of regulated work areas. Mobilization may involve clearing areas for the SZ and CRZ. During this initial phase, project personnel will walk the Site to confirm the existence of anticipated hazards and identify safety and health issues that may have arisen since the writing of this plan.

Hazard Identification

The hazards of this phase of activity are associated with heavy equipment operation, manual materials handling, installation of temporary on-site facilities, and manual site preparation.

Manual materials handling and manual site preparation may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Installation of temporary field office and support facilities may expose personnel to electrical hazards, underground and overhead utilities, and physical injury due to the manual lifting and moving of materials. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat- or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

Controls

Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

9.2.2 DEMOLITION/SITE-CLEARING

Description of Tasks

Site clearance will involve manual or mechanical removal of objects impeding access to the construction footprint. These obstructions are both natural and man-made items and will include, but not be limited to, fabricated metal and concrete structures, trees, vegetation, rubble, and miscellaneous trash/debris.

Hazard Identification

Hazards associated with demolition and site clearance include personnel working in and around potentially unstable structures, or locations of potential contact with hazardous chemicals, utilities, and/or falling objects. This task will involve manual, as well as mechanical demolition/clearance efforts so exertion and equipment hazards exist.

Controls

PPE – Personnel shall be protected from hazards of irritant and toxic plants and suitably instructed in the first aid treatment available.

Preparatory Operations – Prior to permitting employees to start demolition operations, an engineering survey shall be made, by a licensed Professional Engineer, of the structure to determine the stability of the structure. Any adjacent structure shall where personnel may be exposed shall also be similarly checked. The PO shall have in writing evidence that such a survey has been performed. All structural instabilities shall be shored or braced, under the supervision of a licensed Professional Engineer, prior to access by an FP.

Utilities – All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company that is involved shall be notified in advance. If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary.

Hazardous Substances – It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

Falling Debris/Objects – No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected. Access to the area where falling objects/debris may be encountered must be gated and controlled.

Structural Collapse – Structural or load supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load. Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are not of sufficient strength to support the imposed load.

Rollover Guards – All equipment used in site clearing operations shall be equipped with rollover guards meeting the applicable requirements. In addition, rider-operated equipment shall be equipped with an overhead and rear canopy guard meeting the applicable requirements.

Inspections – During demolition, continuing inspections by a licensed Professional Engineer shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, walls, or loosened material. No FP shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

9.2.3 EXCAVATION AND CUT/FILL OPERATIONS

9.2.3.1 EXCAVATION TRENCHING

Description of Tasks

This task includes the excavation of contaminated soils and superficial debris. Excavation depths vary across the Site.

Hazard Identification

The hazards of this activity are associated with heavy equipment operation, subsurface intrusion, manual materials handling, stockpiling, and disposal. Subsurface intrusion presents hazards associated with negotiating buried utilities, cave-ins of the excavated areas, and regress methods for personnel working inside the excavated areas. Disruption of contaminated soil also presents a health hazard.

Controls

Underground Utilities – The estimated locations of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during the excavation work, shall be determined prior to opening an excavation. Utility companies or owners shall be contacted (“Call Before You Dig”) within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means. While the excavation is open, underground installations shall be protected, supported, or removed, as necessary, to safeguard site personnel.

Cave-Ins – Project personnel in an excavation shall be protected from cave-ins by an adequate protective system, except when:

- Excavations are made entirely in stable rock or excavations are less than five feet in depth and examination of the ground by the SSO provides no indication of a potential cave-in.
- Protective systems shall have the capacity to resist, without failure, all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

Project personnel shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

Daily inspections of excavations, the adjacent areas, and protective systems shall be made by the SSO for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the SSO prior to the start of work and as needed throughout operations. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when project personnel exposure can be reasonably anticipated.

Where the SSO finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed personnel shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

Excavation Egress – A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet or lateral travel for project personnel.

9.2.3.2 HEAVY EQUIPMENT OPERATION

Description of Tasks

Heavy equipment to be used for this task include, but are not limited to, excavators, dozers, dump trucks, and water sprayers (if required).

Hazard Identification

The most common type of accident that occurs in material handling operations is the “caught between” situation when a load is being handled and an object gets caught between two moving parts of the equipment. Operation of the heavy construction equipment may produce harmful noise.

Controls

Equipment Inspection – All vehicles in use shall be checked prior to operation to ensure that all parts, equipment, and accessories that affect safe operations are in proper operating condition and free from defects. All defects shall be corrected before the vehicle is placed in service.

Ground Guides – No personnel shall use any motor vehicle, earthmoving, or compacting equipment having an obstructed view to the rear, unless:

- The vehicle has a reverse signal alarm distinguishable from the surrounding noise level;
or
- The vehicle is backed up only when an observer signals that it is safe to do so.

Blocking – Heavy machinery, equipment, or parts thereof that are suspended or held aloft shall be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

Noise – Control measures for noise are addressed in Section 8.9.

Traffic – Control measures for traffic are addressed in Section 8.17.

9.2.3.3 DISTURBANCE/HANDLING OF CONTAMINATED MATERIAL

Description of Tasks

After the contaminated soil is excavated from below the Site's surface, the material will be stockpiled, dried, and either transported off Site or relocated and backfilled on Site.

Hazard Identification

The hazards associated with materials handling include contact of the contaminated material with project personnel, or cross contamination with other site soil.

Controls

Cross Contamination – Following excavation, contaminated soil stockpiles will be placed on a structure constructed to separate the material from the site soil and collect any groundwater leachate. The material shall be covered to prevent storm water erosion or migration of contaminants through storm water.

Air Monitoring – Air and particulate monitoring will be conducted during soil excavation activities to assess the potential for exposure to airborne COCs. If the results of air monitoring indicate the presence of organic vapors or particulates in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. Air monitoring protocols are also presented in the Community Air Monitoring Plan (Appendix G of this RAWP). A description of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

Traffic – Control measures for traffic are addressed in Section 8.17.

9.2.4 DRILLING/SUBSURFACE INTRUSION ACTIVITIES

Description of Tasks

Site mobilization will include establishing excavation locations, determining the location of utilities and other installations, and establishing work areas. Mobilization will also include setting up equipment and establishing a temporary Site office. A break area will be set up outside of regulated work areas. Mobilization may involve clearing areas for the SZ and CRZ. During this

initial phase, project personnel will walk the Site to confirm the existence of anticipated hazards and identify safety and health issues that may have arisen since the writing of this plan.

Hazard Identification

The primary physical hazards for this activity are associated with the use of soil boring and grouting equipment. The equipment is hydraulically powered and uses static force and dynamic percussion force to advance sampling and penetrating tubes.

Accidents can occur as a result of improperly placing the equipment on uneven or unstable terrain or failing to adequately secure the equipment prior to the start of operations. Overhead utility lines can create hazardous conditions if contacted by the equipment. Underground installations such as electrical lines, conduit, and product lines pose a significant hazard if contacted.

Controls

Geoprobe and Drill Rig Safety Procedures - The operator of the equipment must possess required state or local licenses to perform such work. All members of the crew shall receive Site-specific training prior to beginning work.

The operator is responsible for the safe operation of the rig, as well as the crew's adherence to the requirements of this HASP. The operator must ensure that all safety equipment is in proper condition and is properly used. The members of the crew must follow all instructions of the operator, wear all personal protective equipment, and be aware of all hazards and control procedures. The operator and crew must participate in the Daily Safety Meetings and be aware of all emergency procedures.

Equipment Inspection - Each day, prior to the start of work, the rig and associated equipment must be inspected by the operator. The following items must be inspected:

- Vehicle condition;
- Proper storage of equipment;
- Condition of all hydraulic lines;
- Fire extinguisher; and
- First aid kit.

Equipment Set Up - The drill rig must be properly blocked and leveled prior to raising the derrick. The wheels which remain on the ground must be chocked. The leveling jacks shall not be raised until the derrick is lowered. The rig shall be moved only after the derrick has been lowered.

All well sites will be inspected by the driller prior to the location of the rig to verify a stable surface exists. This is especially important in areas where soft, unstable terrain is common.

The drill rig must be properly blocked and leveled prior to raising the derrick. Blocking provides a more stable drilling structure by evenly distributing the weight of the rig. Proper blocking ensures that differential settling of the rig does not occur.

When the ground surface is soft or otherwise unstable, wooden blocks, at least 24" by 24" and 4" to 8" thick shall be placed between the jack swivels and the ground. The emergency brake shall be engaged, and the wheels that are on the ground shall be chocked.

Rules for Intrusive Activity - Before beginning any intrusive activity, the existence and location of underground pipe, conduit, electrical equipment, and other installations will be determined. This will be done, if possible, by contacting the appropriate client representative to mark the location of the lines. "Call Before You Dig" will verify the potential for encountering subsurface utilities. If the client's knowledge of the area is incomplete, an appropriate device, such as a magnetometer, will be used to locate the line.

Combustible gas readings of the general work area will be made regularly in areas where and/or during operations when the presence of flammable vapors or gases is suspected, such as during intrusive activities (see Section 5.1). Operations must be suspended and corrective action taken if the airborne flammable concentration reaches 10% of the LEL in the immediate area (a one-foot radius) of the point of drilling, or near any other ignition sources.

Overhead Electrical Clearances - If equipment is operated in the vicinity of overhead power lines, the power to the lines must be shut off or the equipment must be positioned and blocked such that no part, including cables, can come within the minimum clearances as indicated on **Table 8.2** below:

Table 8.3— Voltage versus Required Clearance

Nominal Voltage	System	Minimum Clearance	Required
0-50kV		10 feet	
51-100kV		12 feet	
101-200kV		15 feet	
201-300kV		20 feet	
301-500kV		25 feet	
501-750kV		35 feet	
751-1,000kV		45 feet	

When the drill rig is in transit, with the boom lowered and no load, the equipment clearance must be at least four (4) feet for voltages less than 50kV, 10 feet for voltages of 50 kV to 345 kV, and 16 feet for voltages above 345 kV.

Hoisting Operations - Drillers should never engage the rotary clutch without watching the rotary table, and ensuring it is clear of personnel and equipment.

Unless the drawworks is equipped with an automatic feed control, the brake should not be left unattended without first being tied down.

Drill pipe, auger strings or casing should be picked up slowly. Drill pipe should not be hoisted until the driller is sure that the pipe is latched in the elevator, or the derrickman has signaled that he may safely hoist the pipe.

During instances of unusual loading of the derrick or mast, such as when making an unusually hard pull, only the driller should be on the rig floor; no one else should be on the rig or derrick.

The brakes on the drawworks of the drill rig should be tested by the driller each day. The brakes should be thoroughly inspected by a competent individual each week.

A hoisting line with a load imposed should not be permitted to be in direct contact with any derrick member or stationary equipment, unless it has been specifically designed for line contact.

Workers should never stand near the borehole whenever any wire line device is being run.

Hoisting control stations should be kept clean and controls labeled as to their functions.

Catline Operations - Only experienced workers will be allowed to operate the cathead controls. The kill switch must be clearly labeled and operational prior to operation of the catline. The cathead area must be kept free of obstructions and entanglements.

The operator should not use more wraps than necessary to pick up the load. More than one layer of wrapping is not permitted.

Personnel should not stand near, step over, or go under a cable or catline which is under tension.

Employees rigging loads on catlines shall:

- Keep out from under the load;
- Keep fingers and feet where they will not be crushed;
- Be sure to signal clearly when the load is being picked;

- Use standard visual signals only and not depend on shouting to coworkers; and
- Make sure the load is properly rigged, since a sudden jerk in the catline will shift or drop the load.

Wire Rope - When two wires are broken or rust or corrosion is found adjacent to a socket or end fitting, the wire rope shall be removed from service or re-socketed. Special attention shall be given to the inspection of end fittings on boom support, pendants, and guy ropes.

Wire rope removed from service due to defects shall be cut up or plainly marked as being unfit for further use as rigging.

Wire rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope; the clip nuts shall be re-tightened immediately after initial load carrying use and at frequent intervals thereafter.

When a wedge socket fastening is used, the dead or short end of the wire rope shall have a clip attached to it or looped back and secured to itself by a clip; the clip shall not be attached directly to the live end.

Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

Except for eye splices in the ends of wires and for endless wire rope slings, wire rope used in hoisting, lowering, or pulling loads, shall consist of one continuous piece without knot or splice.

An eye splice made in any wire rope shall have not less than five full tucks.

Wire rope shall not be secured by knots. Wire rope clips shall not be used to splice rope.

Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire clips or knots.

Pipe/Auger Handling - Pipe and auger sections shall be transported by cart or carried by two persons. Individuals should not carry auger or pipe sections without assistance.

Workers should not be permitted on top of the load during loading, unloading, or transferring of pipe or rolling stock.

Employees should be instructed never to try to stop rolling pipe or casing; they should be instructed to stand clear of rolling pipe.

Slip handles should be used to lift and move slips. Employees are not permitted to kick slips into position.

When pipe is being hoisted, personnel should not stand where the bottom end of the pipe could whip and strike them.

Pipe and augers stored in racks, catwalks or on flatbed trucks should be secured to prevent rolling.

9.2.5 SUBSURFACE CHEMICAL SAMPLE/COLLECTION ANALYSIS

Description of Tasks

This sub-task consists of the collection of soil samples for subsequent field and laboratory analysis. The physical hazards of soil sampling are primarily associated with the sample collection methods, procedures utilized, and the environment itself.

Hazard Identification

Incidental contact with COCs is the primary hazard associated with sampling the stabilized material. This contact may occur through the manipulation of sample media and equipment, manual transfer of media into sample containers, and proximity of operations to the breathing zone. The primary hazards associated with these sampling procedures are not potentially serious; however, other operations in the area, or the conditions under which samples must be collected, may present chemical and physical hazards. The hazards directly associated with sampling procedures are generally limited to strains/sprains and potential eye hazards. Potential chemical hazards may include contact with media containing Site COCs and potential contact with chemicals used for equipment decontamination.

Controls

PPE – To control dermal exposure during sampling activities, a minimum of Level D protection will be worn. If necessary, based on field observations and site conditions, air monitoring may be conducted during sediment sampling activities. If the results of air monitoring indicate the presence of airborne contaminants in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. Air monitoring protocols are also presented in the Community Air Monitoring Plan (Appendix G of this RAWP). A description of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

9.2.6 UST CLOSURE

9.2.6.1 WORKING IN CONFINED SPACES

Description of Tasks

The project may involve the closure of several underground storage tanks (USTs).

Hazard Identification

Closure activities may require the entrance into confined spaces to facilitate cleaning and removal of the USTs.

Controls

All personnel required to enter confined or enclosed spaces must be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment. The PO shall comply with all specific regulations that apply to work in dangerous or potentially dangerous areas. All personnel entering the confined space will have achieved the appropriate OSHA training and the operation will be permitted, as necessary.

9.2.6.2 WORKING WITH COMPRESSED AIR

Description of Tasks

The proposed method of purging the USTs includes the injection of compressed gas into the tank and attached piping network.

Hazard Identification

Uncontrolled release of the highly pressured air can cause injury to FP during this task. Cylinders must also be properly managed to ensure they are not compromised during storage and/or use.

Controls

Pressure Regulation – Compressed air used for cleaning purposes shall be reduced to less than 30 pounds per square inch and then only with effective chip guarding and personal protective equipment.

Cylinder Storage – Valve protection caps shall be in place and secured when compressed gas cylinders are transported, moved, or stored. Cylinder valves shall be closed when work is finished and when cylinders are empty or are moved. Compressed gas cylinders shall be secured in an upright position at all times, except if necessary for short periods of time when cylinders are actually being hoisted or carried. Cylinders shall be placed in a location where they cannot become part of an electrical circuit.

9.2.7 DECONTAMINATION

All equipment will be decontaminated before leaving the Site. Personnel involved in decontamination activities may be inadvertently exposed to skin contact with contaminated materials and chemicals brought from the EZ. Personnel involved in decontamination activities must wear PPE that is, at a minimum, one level below the level worn by personnel working in the EZ.

9.2.8 DEMOBILIZATION

Demobilization involves the removal of all tools, equipment, supplies, and vehicles brought to the site. The hazards of this phase of activity are associated with heavy equipment operation and manual materials handling.

Manual materials handling may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Heavy equipment operation presents noise and vibration hazards, and hot surfaces, to operators. Personnel in the vicinity of heavy equipment operation may be exposed to physical hazards resulting in fractures, contusions, and lacerations and may be exposed to high noise levels. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat-or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

9.3 CHEMICAL HAZARDS

The chemical hazards associated with Site operations are related to inhalation, ingestion, and skin exposure to Site COCs. Concentrations of airborne COCs during Site tasks may be measurable and will require air monitoring during certain operations. Air monitoring requirements for Site tasks are outlined in Section 5.1. Air monitoring protocols are also presented in the Community Air Monitoring Plan (Appendix E of the RIWP).

COCs at the Site include VOCs, SVOCs, pesticides, metals, and PFAS.

The potential for inhalation of site COCs is low. The potential for dermal contact with soils containing Site COCs during remedial operations is moderate. **Table 9.1** lists the primary contaminants that have been identified at the Site and the media in which they are present.

Table 9.1 – List of Primary Contaminants

Media: Soil		
Metals	Maximum Concentration (mg/kg)	Applicable Monitoring Instrument
Barium	359	Not Applicable
Copper	55	Not Applicable
Lead	1280	Not Applicable
Mercury	1.5	Not Applicable
Zinc	1490	Not Applicable
Pesticides	Maximum Concentration (mg/kg)	Applicable Monitoring Instrument
Aldrin	0.0428	N/A
Dieldrin	0.0164	N/A
4,4'-DDE	0.0583	N/A
4,4'-DDT	0.0059	N/A
PCBs	Maximum Concentration (mg/kg)	Applicable Monitoring Instrument
Aroclor 1242	0.26	N/A
Aroclor 1248	0.174	N/A
Aroclor 1254	0.129	N/A
PFAS	Maximum Concentration (mg/kg)	Applicable Monitoring Instrument
PFOS	1.54	N/A
PFOA	1.04	N/A

Media: Groundwater		
PFAS	Maximum Concentration (ug/L)	Applicable Monitoring Instrument
PFOS	86.1	NA
PFOA	41.6	NA

Media: Soil Vapor		
Contaminants	Maximum Concentration (ug/m³)	Applicable Monitoring Instrument
TO-15: tetrachloroethylene	163	PID

10.0 EMERGENCY PROCEDURES

10.1 GENERAL

Prior to the start of operations, the work area will be evaluated for the potential for fire, contaminant release, or other catastrophic event. Unusual conditions or events, activities, chemicals, and conditions will be reported to the FS/SSO immediately.

The FS/SSO will establish evacuation routes and assembly areas for the Site. All personnel entering the Site will be informed of this route and the assembly area.

10.2 EMERGENCY RESPONSE

If an incident occurs, the following steps will be taken:

- The FS/SSO will evaluate the incident and assess the need for assistance and/or evacuation;

- The FS/SSO will call for outside assistance as needed;
- The FS/SSO will ensure the PM is notified promptly of the incident; and
- The FS/SSO will take appropriate measures to stabilize the incident scene.

10.2.1 FIRE

In the case of a fire at the Site, the FS/SSO will assess the situation and direct fire-fighting activities. The FS/SSO will ensure that the PM is immediately notified of any fires. Site personnel will attempt to extinguish the fire with available extinguishers, if safe to do so. In the event of a fire that Site personnel are unable to safely extinguish with one (1) fire extinguisher, the local fire department will be summoned.

10.2.2 CONTAMINANT RELEASE

In the event of a contaminant release, the following steps will be taken:

- Notify FS/SSO immediately;
- Evacuate immediate area of release;
- Conduct air monitoring to determine needed level of PPE; and
- Don required level of PPE and prepare to implement control procedures.

The FS/SSO has the authority to commit resources as needed to contain and control released material and to prevent its spread to off-Site areas.

10.3 MEDICAL EMERGENCY

All employee injuries must be promptly reported to the SSO/FS, who will:

- Ensure that the injured employee receives prompt first aid and medical attention;
- In emergency situations, the worker is to be transported by appropriate means to the nearest urgent care facility (normally a hospital emergency room); and
- If the injured person is a SESI employee, notify SESI at 973-808-9050.

10.3.1 EMERGENCY CARE STEPS

Survey the scene. Determine if it is safe to proceed. Try to determine if the conditions that caused the incident are still a threat. Protect yourself from exposure before attempting to rescue the victim.

- Do a primary survey of the victim. Check for airway obstruction, breathing, and pulse. Assess likely routes of chemical exposure by examining the eyes, mouth, nose, and skin of the victim for symptoms.
- Phone Emergency Medical Services (EMS). Give the location, telephone number used, caller's name, what happened, number of victims, victim's condition, and help being given.

- Maintain airway and perform rescue breathing as necessary.
- Perform CPR as necessary.
- Do a secondary survey of the victim. Check vital signs and do a head-to-toe exam.

Treat other conditions as necessary. If the victim can be moved, take him/her to a location away from the work area where EMS can gain access.

10.4 FIRST AID GENERAL

All persons must report any injury or illness to their immediate supervisor or the FS. Trained personnel will provide first aid. Injuries and illnesses requiring medical treatment must be documented. The FS and SSO must fill out an accident/incident report as soon as emergency conditions no longer exist and first aid and/or medical treatment has been ensured. The report must be completed and submitted to the PM within 24 hours after the incident.

If first-aid treatment is required, first aid kits are kept at the CRZ. If treatment beyond first aid is required, the injured person(s) should be transported to the medical facility. If the injured person is not ambulatory or shows any sign of not being in a comfortable and stable condition for transport, then an ambulance/paramedics should be summoned. If there is any doubt as to the injured worker's condition, it is best to let the local paramedic or ambulance service examine and transport the worker.

10.4.1 FIRST AID—INHALATION

Any employee complaining of symptoms of chemical overexposure as described in Section 4, General Site Safety Procedures, will be removed from the work area and transported to the designated medical facility for examination and treatment.

10.4.2 FIRST AID—INGESTION

Call EMS and consult a poison control center for advice. If available, refer to the MSDS for treatment information. If the victim is unconscious, keep them on their side and clear the airway if vomiting occurs.

10.4.3 FIRST AID—SKIN CONTACT

Project personnel who have had skin contact with contaminants will, unless the contact is severe, proceed through the CRZ, to the wash area. Personnel will remove any contaminated clothing, and then flush the affected area with water for at least 15 minutes. The worker should be transported to the medical facility if he/she shows any sign of skin reddening, irritation, or if he/she requests a medical examination.

10.4.4 FIRST AID—EYE CONTACT

Project personnel who have had contaminants splashed in their eyes or who have experienced eye irritation while in the EZ, must immediately proceed to the eyewash station in the CRZ. Do

not decontaminate prior to using the eyewash. Remove whatever protective clothing is necessary to use the eyewash. Flush the eye with clean running water for at least 15 minutes. Arrange prompt transport to the designated medical facility.

10.5 REPORTING INJURIES, ILLNESSES, AND SAFETY INCIDENTS

Injuries and illnesses, however minor, will be reported to the FS immediately. The FS will complete an injury report and submit it to the HSM, and the PM by end of shift.

10.6 EMERGENCY INFORMATION

he means to summon local public response agencies such as police, fire, and ambulance will be reviewed in the daily safety meeting. These agencies are identified in **Table 10.1** below.

Table 10.1 – Emergency Contacts

Local Emergency Contacts	Telephone No.
EMERGENCY	911
Queens Hospital Center	(718) 883-3090
Police Emergency	911
Fire Emergency	911
Rescue Squad	911
Ambulance	911
Miscellaneous Contacts	Telephone No.
N.Y. Poison Control Center	(800) 222-1222
National Response Center and Terrorist Hotline	(800) 424-8802
Center for Disease Control	(800) 311-3435
Utility Mark-Out	(800) 962-7962

10.6.1 DIRECTIONS TO HOSPITAL

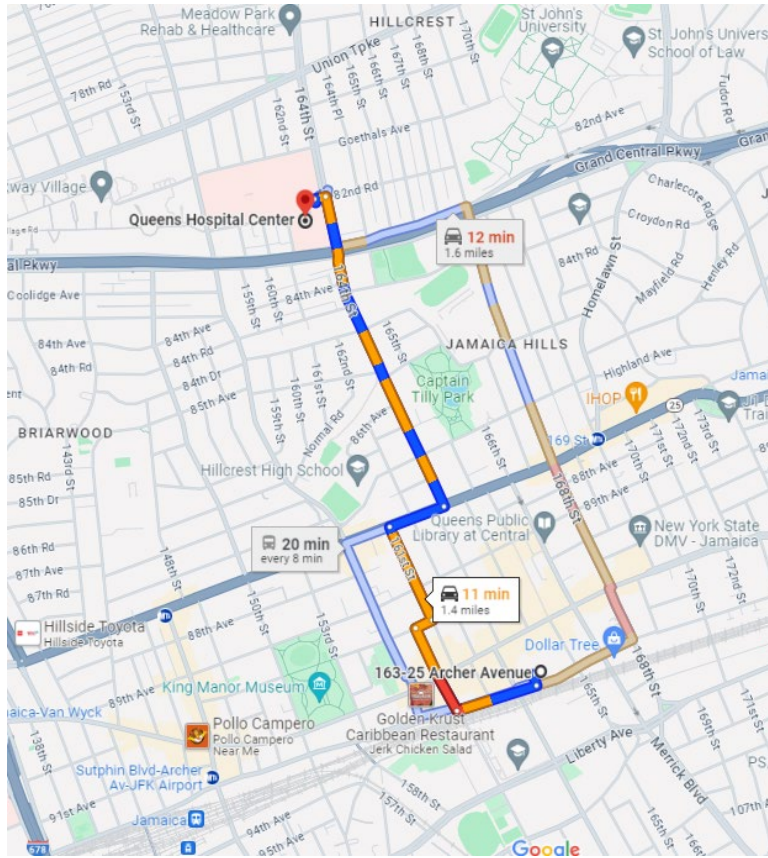
Queens Hospital Center

82-68 164th Street, Queens, NY

(718) 883-3090

Directions to Hospital:

Figure 10.1



163-25 Archer Ave

Jamaica, NY 11433

- ↑ Head south toward Archer Ave
7 sec (125 ft)
- ➔ Turn right onto Archer Ave
1 min (0.2 mi)
- Follow 160th St and 161st St to Hillside Ave.
5 min (0.4 mi)
- Take 164th St to 82nd Rd
5 min (0.8 mi)
- Continue on 82nd Rd to your destination
29 sec (161 ft)

Queens Hospital Ctr

82-68 164th St, Queens, NY 11432

Queens Hospital Center is depicted on **Figure 10.1**

11.0 LOGS, REPORTS, AND RECORDKEEPING

11.1 HASP AND FIELD CHANGE REPORT

The following is a summary of required health and safety logs, reports, and record keeping for the operations at the subject Site. The field change request form is presented as Attachment 3.

11.2 MEDICAL AND TRAINING RECORDS

The HSM must obtain and keep a log of personnel meeting appropriate training and medical qualifications for the site work. The log will be kept in the project file. Each company's Human Resources Department will maintain medical records, in accordance with 29 CFR 1910.1020.

11.3 EXPOSURE RECORDS

Any personnel monitoring results, laboratory reports, calculations, and air sampling data sheets are part of an employee exposure record. These records will be kept in accordance with 29 CFR 1910.1020. For SESI employees, the originals will be sent to the Human Resources Manager. For subcontractor employees, the original file will be sent to the subcontractor employer with a copy maintained in the SESI project file.

11.4 ACCIDENT/INCIDENT REPORT

Any accident/incident reports must be completed following procedures given in Section 10.5 of this HASP. The originals will be sent to the HSM for maintenance. A copy of the forms will be kept in the project file. (See Attachment 4).

11.5 OSHA FORM 200

An OSHA Form 200 (Log of Occupational Injuries and Illnesses) will be kept at the project Site. All recordable injuries or illnesses will be recorded on this form. At the end of the project, the original will be sent to the Human Resources Manager for maintenance. Subcontractor employees must also meet the requirements of maintaining an OSHA 200 Form. The accident/incident report meets the requirements of OSHA Form 101 (Supplemental Record), which must be maintained with the OSHA Form 200 for all recordable injuries or illnesses.

11.6 ON-SITE HEALTH AND SAFETY FIELD LOGBOOK

The HSM or designee will maintain an on-Site health and safety logbook in which daily Site conditions, activities, personnel, and significant events will be recorded. Calibration records and personnel monitoring results, if available, will also be recorded in the field logbook. The original logbook will be kept in the project file.

Whenever any personnel monitoring is conducted onsite, the monitoring results will be noted in the filed logbook. These will become part of the exposure records file and will be maintained by the HSM.

A signatory page is included (See Attachment 5) and is to be signed by those working on and/or visiting the Site.

11.7 SAFETY DATA SHEETS

Safety Data Sheets (SDS) will be obtained and kept on file at the project site for each hazardous chemical brought to, use, or stored at the Site (See Attachment 6).

12.0 COVID RESPONSE ACTION PLAN

SESI is concerned with the safety and well-being of its employees, vendors, subcontractors, and others with access to its offices and job sites, with particular emphasis on the unique challenges posed by COVID-19.

SESI has established the following protocols in keeping with the recommendations of the CDC and other sources including State Governor Executive Orders for work taking place on construction sites.

We request that all SESI employees, vendors, and subcontractors help with our prevention efforts while at work.

In order to minimize the spread of COVID-19, we must all cooperate in doing the following:

- Frequently wash your hands with soap and water for at least 20 seconds. When soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol. Always wash hands that are visibly soiled.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
- Discourage handshaking, avoid touching your eyes, nose, or mouth with unwashed hands.
- Limit the sharing of tools, machinery, equipment, phones, desks, and computers.
- Wear cloth face coverings on all construction sites.
- Avoid close contact with people who are sick.
- Employees who have symptoms (i.e., fever, cough, or shortness of breath) should notify their supervisor and stay home—DO NOT GO TO WORK.
- Sick employees should follow CDC-recommended steps. Employees should not return to work until the criteria to discontinue home isolation are met, in consultation with healthcare providers and state and local health departments.

The following are the specific jobsite protocols and response actions to be taken in the event someone on Site has been in contact with, or has themselves, the COVID-19 virus:

OFFICE/JOBSITE PROTOCOL

- If an employee/worker exhibits COVID-19 symptoms, the employee/worker must remain at home until he or she is symptom free for 72 hours (three [3] full days) without the use of fever-reducing or other symptom-altering medicines (e.g. acetaminophen, cough suppressants). SESI will similarly require an employee or worker that reports to work with symptoms to return home until they are symptom free for 72 hours (three [3] full days).
- Limit person to person contact, and when unavoidable, maintain CDC distancing guidelines.
- Avoid eating lunch in groups.
- Avoid in-person meetings if possible. If an in-person meeting is necessary, conduct it in a well-ventilated area with enough space for attendees to distance themselves from one another. Field jobsite meetings should be conducted in smaller group meetings (no more than five [5] persons when possible) versus one large meeting.
- Only workers necessary to the execution of the work should be at the jobsites. No non-essential visitors should be permitted at the worksite.

RESPONSE ACTION TRIGGER EVENTS:

- an employee/worker at work has tested positive for COVID-19
- an employee/worker at work has suspected, but unconfirmed, case of COVID-19
- an employee/worker self-reported that they came in contact with someone who had a presumptive positive case of COVID-19
- an employee/worker has been exposed to the virus but only found out after they have interacted with others

RESPONSE ACTIONS:

- Upon occurrence of any of the Trigger Events above, employees/subcontractors shall notify SESI Management about the suspected employee/worker infected with, or exposed to, COVID-19.
- SESI Management will investigate the incident to confirm the report is valid.
- Employees/Subcontractors shall investigate their respective infected employee(s) and report the following to SESI Management and HR:
 - Identify all individuals who worked in proximity (six feet) of the infected employee/worker,
 - Employee(s)/Worker(s) infected with the COVID-19 virus, and employee(s)/worker(s) that came in contact with the infected employee/worker shall be sent home for a period of 14 days,
 - Do not identify the infected employee/worker by name to avoid violation of privacy/confidentiality laws, and,
 - Keep SESI Management informed of progress and updates.
- If an infected person was in the office, SESI will clean and disinfect common areas and surfaces, in accordance with CDC recommendations.
- SESI Management will notify affected employees/workers of the Trigger Event and instruct them to take the response actions above.

- **SESI Management policy requires written documentation from a health care professional that confirmed infected employees can return to work.**

Except for circumstances in which SESI is legally required to report workplace occurrences of communicable disease, the confidentiality of all medical conditions will be maintained in accordance with applicable law and to the extent practical under the circumstances. When required, the number of persons who will be informed of an employee's/worker's condition will be kept at the minimum needed to appropriately notify other potentially affected employees/workers of Trigger Events and to attempt to minimize the potential for transmission of the virus.

ATTACHMENT 1
AIR MONITOR LOG

Air Monitoring: Sample Collection and Analysis

Date & Time of Monitoring	Task / Operation Being	Substance(s)/ Hazard(s) Being	Monitoring Location	Type/Method of Monitoring (separate lines for	Monitoring Results	Exposure Limits	Required Action

ATTACHMENT 2

OSHA POSTER

Job Safety and Health

It's the law!



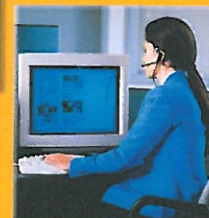
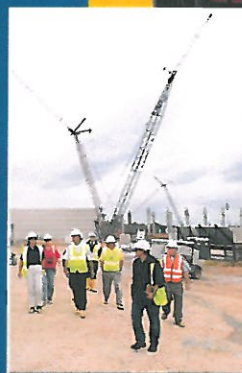
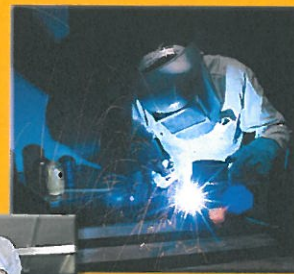
EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act*.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the *OSH Act* that apply to your own actions and conduct on the job.

EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the *OSH Act*.

This free poster available from OSHA –
The Best Resource for Safety and Health



Free assistance in identifying and correcting hazards or complying with standards is available to employers, without citation or penalty, through OSHA-supported consultation programs in each state.

1-800-321-OSHA (6742)
www.osha.gov

OSHA 3165-02 2012R



ATTACHMENT 3
FILED CHANGE REQUEST FORM

HEALTH & SAFETY PLAN CHANGE NOTICE

Pages ____ of ____

Project: _____ H&S-CN

1) HASP VERSION: _____ SECTION: _____ PAGE (s): _____

RE: --- Change to existing HASP Anticipated Revision Date: _____

--- Addition to existing HASP

--- Other: _____
_____ CONT. _____

2) PROPOSED CHANGE: _____

3) REASON FOR PROPOSED CHANGE(s):

--- Required by SPEC or Change Order --- Other: _____

--- Disposition of Deficiency _____ CONT. _____

--- Change in Regulatory or Other Requirements

--- Operational Experience

4) EXHIBITS ATTACHED ____ NO ____ YES (If YES, describe) _____
_____ CONT. _____

5) PMK APPROVALS PROJECT MANAGER: _____ Date: _____
SITE MANAGER: _____ Date: _____
H&S MANAGER: _____ Date: _____

Client Approval Required: ____ NO ____ YES (If YES, date submitted) _____

6) CLIENT APPROVAL ____ APPROVED ____ REMANDED ____ REJECTED

Comments: _____

_____ CONT. _____

Client Representative: _____ Date: _____

7) DISTRIBUTION AFTER APPROVAL

X HASP UPDATE LIST --- OTHER: _____

X CLIENT _____

X PROJECT FILES _____

8) PREPARED BY: _____ Date: _____
Title: _____

ATTACHMENT 4
INJURY REPORT FORM

OSHA's Form 301

Injury and Illness Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Information about the employee

- 1) Full name _____
- 2) Street _____
City _____ State _____ ZIP _____
- 3) Date of birth ____/____/____
- 4) Date hired ____/____/____
- 5) ☐ Male
☐ Female

Information about the physician or other health care professional

- 6) Name of physician or other health care professional _____

- 7) If treatment was given away from the worksite, where was it given?
Facility _____
Street _____
City _____ State _____ ZIP _____

- 8) Was employee treated in an emergency room?
☐ Yes
☐ No

- 9) Was employee hospitalized overnight as an inpatient?
☐ Yes
☐ No

Information about the case

- 10) Case number from the *Log* _____ (Transfer the case number from the *Log* after you record the case.)
- 11) Date of injury or illness ____/____/____
- 12) Time employee began work ____ AM / PM
- 13) Time of event ____ AM / PM ☐ Check if time cannot be determined

- 14) **What was the employee doing just before the incident occurred?** Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. *Examples:* "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."

- 15) **What happened?** Tell us how the injury occurred. *Examples:* "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

- 16) **What was the injury or illness?** Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or "sore." *Examples:* "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."

- 17) **What object or substance directly harmed the employee?** *Examples:* "concrete floor"; "chlorine"; "radial arm saw." *If this question does not apply to the incident, leave it blank.*

- 18) **If the employee died, when did death occur?** Date of death ____/____/____

Completed by _____
Title _____
Phone (____) _____ Date ____/____/____

Log of Work-Related Injuries and Illnesses

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Establishment name _____
City _____ State _____

Identify the person

Describe the case

Classify the case

(A) Case no.

(B) Employee's name

(C) Job title (e.g., Welder)

(D) Date of injury or onset of illness

(E) Where the event occurred (e.g., Loading dock north end)

(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., Second degree burns on right forearm from acetylene torch)

Enter the number of days the injured or ill worker was:

Check the "injury" column or choose one type of illness:

(G) Death

(H) Days away from work

(I) Job transfer or restriction

(J) Other recordable cases

(K) Away from work

(L) On job transfer or restriction

(M) Injury

(N) Skin disorder

(O) Respiratory condition

(P) Poisoning

(Q) Hearing loss

(R) All other illnesses

(S) Injury

(T) Skin disorder

(U) Respiratory condition

(V) Poisoning

(W) Hearing loss

(X) All other illnesses

(Y) Injury

(Z) Skin disorder

(AA) Respiratory condition

(AB) Poisoning

(AC) Hearing loss

(AD) All other illnesses

(AE) Injury

(AF) Skin disorder

(AG) Respiratory condition

(AH) Poisoning

(AI) Hearing loss

(AJ) All other illnesses

(AK) Injury

(AL) Skin disorder

(AM) Respiratory condition

(AN) Poisoning

(AO) Hearing loss

(AP) All other illnesses

(AQ) Injury

(AR) Skin disorder

(AS) Respiratory condition

(AT) Poisoning

(AU) Hearing loss

(AV) All other illnesses

(AW) Injury

(AX) Skin disorder

(AY) Respiratory condition

(AZ) Poisoning

(BA) Hearing loss

(BB) All other illnesses

(BC) Injury

(BD) Skin disorder

(BE) Respiratory condition

(BF) Poisoning

(BG) Hearing loss

(BH) All other illnesses

(BI) Injury

(BJ) Skin disorder

(BK) Respiratory condition

(BL) Poisoning

(BM) Hearing loss

(BN) All other illnesses

(BO) Injury

(BP) Skin disorder

(BQ) Respiratory condition

(BR) Poisoning

(BS) Hearing loss

(BT) All other illnesses

(BU) Injury

(BV) Skin disorder

(BW) Respiratory condition

(BX) Poisoning

(BY) Hearing loss

(BZ) All other illnesses

(CA) Injury

(CB) Skin disorder

(CC) Respiratory condition

(CD) Poisoning

(CE) Hearing loss

(CF) All other illnesses

(CG) Injury

(CH) Skin disorder

(CI) Respiratory condition

(CJ) Poisoning

(CK) Hearing loss

(CL) All other illnesses

(CM) Injury

(CN) Skin disorder

(CO) Respiratory condition

(CP) Poisoning

(CQ) Hearing loss

(CR) All other illnesses

(CS) Injury

(CT) Skin disorder

(CU) Respiratory condition

(CV) Poisoning

(CW) Hearing loss

(CX) All other illnesses

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search existing data sources, gathering the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about this estimate or any other aspect of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3514, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Page totals: _____
Be sure to transfer these totals to the Summary Page (Form 300A) before you post it.

Page ____ of ____

Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entire from every page of the Log. If you had no cases, write "0."

Employers, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
(g) _____	(h) _____	(i) _____	(j) _____

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
(k) _____	(l) _____

Injury and Illness Types

Total number of ... (m) _____	
(1) Injuries _____	(4) Poisonings _____
(2) Skin disorders _____	(5) Hearing loss _____
(3) Respiratory conditions _____	(6) All other illnesses _____

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name _____

Street _____

City _____ State _____ ZIP _____

Industry description (e.g., *Manufacture of motor truck trailers*) _____

Standard Industrial Classification (SIC), if known (e.g., 3715) _____

OR

North American Industrial Classification (NAICS), if known (e.g., 336212) _____

Employment information (If you don't have these figures, see the Worksheet on the back of this page to estimate.)

Annual average number of employees _____

Total hours worked by all employees last year _____

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive _____ Title _____
() _____ / /
Phone _____ Date _____

ATTACHMENT 5
SIGNATORY PAGE

Attachment 5 – Site-Specific Health and Safety Orientation Signatory Page
HEALTH AND SAFETY PLAN

Title	Name	Signature
Project Manager:	TBD	
Health and Safety Manager:	TBD	

I have read the attached Health and Safety Plan (HASP) and have received site-specific information and orientation regarding the identified physical, chemical, and biological hazards anticipated at this site. My signature certifies that I understand the procedures, equipment, and restrictions applicable to this project site and agree to abide by them.

Signature	Printed Name	Company	Date

Attachment 4 – Health and Safety Orientation Signatory Page (continued)

[illegible]

ATTACHMENT 6

Material Safety Data Sheets

SAFETY DATA SHEET

Version 5.6
Revision Date 05/07/2018
Print Date 01/21/2019

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 4,4'-DDT

Product Number : 31041
Brand : Sigma-Aldrich
Index-No. : 602-045-00-7

CAS-No. : 50-29-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 3), H301
Acute toxicity, Dermal (Category 3), H311
Carcinogenicity (Category 2), H351
Specific target organ toxicity - repeated exposure, Oral (Category 1), H372
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H301 + H311 : Toxic if swallowed or in contact with skin.
H351 : Suspected of causing cancer.
H372 : Causes damage to organs through prolonged or repeated exposure if swallowed.
H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 : Obtain special instructions before use.
P202 : Do not handle until all safety precautions have been read and

	understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P281	Use personal protective equipment as required.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : 1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane
1,1-Bis(4-chlorophenyl)-2,2,2-trichloroethane

Formula : C₁₄H₉Cl₅
Molecular weight : 354.49 g/mol
CAS-No. : 50-29-3
EC-No. : 200-024-3
Index-No. : 602-045-00-7

Hazardous components

Component	Classification	Concentration
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane		
	Acute Tox. 3; Carc. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301 + H311, H351, H372, H410	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

- 4.3 Indication of any immediate medical attention and special treatment needed**
No data available

5. FIREFIGHTING MEASURES

- 5.1 Extinguishing media**
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**
No data available
- 5.3 Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.
- 5.4 Further information**
No data available

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.
- 6.2 Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**
For disposal see section 13.

7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects
- 7.3 Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	TWA	1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Liver damage Confirmed animal carcinogen with unknown relevance to humans		

		TWA	0.5 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		PEL	1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eyeface protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance Form: solid

b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: 107 - 110 °C (225 - 230 °F) - lit.
f) Initial boiling point and boiling range	260.0 °C (500.0 °F)
g) Flash point	72.0 - 77.0 °C (161.6 - 170.6 °F)
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	0.0000021 hPa (0.0000016 mmHg) at 20.0 °C (68.0 °F)
l) Vapour density	No data available
m) Relative density	0.99 g/cm ³
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	log Pow: 6.91
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Oxidizing agents, Iron and iron salts.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 87.0 mg/kg

Inhalation: No data available

LD50 Dermal - Rabbit - 300.0 mg/kg

Remarks: Behavioral:Tremor. Behavioral:Muscle weakness. Behavioral:Ataxia.

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC: 2A - Group 2A: Probably carcinogenic to humans (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

IARC: 2A - Group 2A: Probably carcinogenic to humans (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Ingestion - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Additional Information

RTECS: KJ3325000

CNS stimulation.

Pancreas. -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 0.01 mg/l - 96.0 h
	LC50 - Lepomis macrochirus (Bluegill) - 0.01 mg/l - 96.0 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.003400 mg/l - 96.0 h
	LOEC - Oncorhynchus mykiss (rainbow trout) - 150 mg/l - 3.0 d
	NOEC - Oncorhynchus mykiss (rainbow trout) - 113 mg/l - 3.0 d
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 0.00108 mg/l - 48 h
Toxicity to algae	LC100 - Scenedesmus quadricauda (Green algae) - > 20 mg/l - 7 d

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 20 d - 0.001 mg/l
	Bioconcentration factor (BCF): 46,670

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)
Reportable Quantity (RQ): 1 lbsMarine pollutant:yes
Poison Inhalation Hazard: No

IMDG

UN number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)
Marine pollutant:yes

IATA

UN number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

Pennsylvania Right To Know Components

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

New Jersey Right To Know Components

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H301	Toxic if swallowed.
H301 + H311	Toxic if swallowed or in contact with skin.
H311	Toxic in contact with skin.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	2
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.6

Revision Date: 05/07/2018

Print Date: 01/21/2019

SAFETY DATA SHEET

Version 5.6

Revision Date 05/07/2018

Print Date 06/22/2019

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 4,4'-DDT

Product Number : 386340
Brand : Aldrich
Index-No. : 602-045-00-7

CAS-No. : 50-29-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USATelephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Dermal (Category 3), H311

Carcinogenicity (Category 2), H351

Specific target organ toxicity - repeated exposure, Oral (Category 1), H372

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H301 + H311

Toxic if swallowed or in contact with skin.

H351

Suspected of causing cancer.

H372

Causes damage to organs through prolonged or repeated exposure if swallowed.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and

	understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P281	Use personal protective equipment as required.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	: 1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane 1,1-Bis(4-chlorophenyl)-2,2,2-trichloroethane
Formula	: C ₁₄ H ₉ Cl ₅
Molecular weight	: 354.49 g/mol
CAS-No.	: 50-29-3
EC-No.	: 200-024-3
Index-No.	: 602-045-00-7

Hazardous components

Component	Classification	Concentration
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane		
	Acute Tox. 3; Carc. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301 + H311, H351, H372, H410	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

- 4.3 Indication of any immediate medical attention and special treatment needed**
No data available

5. FIREFIGHTING MEASURES

- 5.1 Extinguishing media**
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**
No data available
- 5.3 Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.
- 5.4 Further information**
No data available

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.
- 6.2 Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**
For disposal see section 13.

7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects
- 7.3 Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	TWA	1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Liver damage Confirmed animal carcinogen with unknown relevance to humans		

		TWA	0.5 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		PEL	1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eyeface protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance Form: solid

b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: 107 - 110 °C (225 - 230 °F) - lit.
f) Initial boiling point and boiling range	260.0 °C (500.0 °F)
g) Flash point	72.0 - 77.0 °C (161.6 - 170.6 °F)
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	0.0000021 hPa (0.0000016 mmHg) at 20.0 °C (68.0 °F)
l) Vapour density	No data available
m) Relative density	0.99 g/cm ³
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	log Pow: 6.91
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Oxidizing agents, Iron and iron salts.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 87.0 mg/kg

Inhalation: No data available

LD50 Dermal - Rabbit - 300.0 mg/kg

Remarks: Behavioral:Tremor. Behavioral:Muscle weakness. Behavioral:Ataxia.

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC: 2A - Group 2A: Probably carcinogenic to humans (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

IARC: 2A - Group 2A: Probably carcinogenic to humans (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Ingestion - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Additional Information

RTECS: KJ3325000

CNS stimulation.

Pancreas. -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 0.01 mg/l - 96.0 h
	LC50 - Lepomis macrochirus (Bluegill) - 0.01 mg/l - 96.0 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.003400 mg/l - 96.0 h
	LOEC - Oncorhynchus mykiss (rainbow trout) - 150 mg/l - 3.0 d
	NOEC - Oncorhynchus mykiss (rainbow trout) - 113 mg/l - 3.0 d
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 0.00108 mg/l - 48 h
Toxicity to algae	LC100 - Scenedesmus quadricauda (Green algae) - > 20 mg/l - 7 d

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 20 d - 0.001 mg/l
	Bioconcentration factor (BCF): 46,670

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)
Reportable Quantity (RQ): 1 lbsMarine pollutant:yes
Poison Inhalation Hazard: No

IMDG

UN number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)
Marine pollutant:yes

IATA

UN number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
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1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

Pennsylvania Right To Know Components

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
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1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

New Jersey Right To Know Components

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 1993-02-16
---	--------------------	-----------------------------

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No. 50-29-3	Revision Date 2008-06-17
---	--------------------	-----------------------------

1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H301	Toxic if swallowed.
H301 + H311	Toxic if swallowed or in contact with skin.
H311	Toxic in contact with skin.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	2
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.6

Revision Date: 05/07/2018

Print Date: 06/22/2019

SAFETY DATA SHEET

Version 4.9
Revision Date 01/06/2018
Print Date 11/10/2018

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Aldrin

Product Number : 49000-U

Brand : Supelco

Index-No. : 602-048-00-3

CAS-No. : 309-00-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 2), H300

Acute toxicity, Dermal (Category 1), H310

Carcinogenicity (Category 2), H351

Specific target organ toxicity - repeated exposure (Category 1), H372

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H300 + H310 : Fatal if swallowed or in contact with skin.

H351 : Suspected of causing cancer.

H372 : Causes damage to organs through prolonged or repeated exposure.

H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 : Obtain special instructions before use.

P202 : Do not handle until all safety precautions have been read and understood.

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P302 + P350 + P310	IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	: $C_{12}H_8Cl_6$
Molecular weight	: 364.91 g/mol
CAS-No.	: 309-00-2
EC-No.	: 206-215-8
Index-No.	: 602-048-00-3

Hazardous components

Component	Classification	Concentration
Aldrin	Acute Tox. 2; Acute Tox. 1; Carc. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310, H351, H372, H410	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Store at room temperature.

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Aldrin	309-00-2	TWA	0.050000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Liver damage Kidney damage Confirmed animal carcinogen with unknown relevance to humans		

		Danger of cutaneous absorption		
		TWA	0.250000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A Potential for dermal absorption		
		TWA	0.250000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.05 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Liver damage Kidney damage Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.25 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A Potential for dermal absorption		
		TWA	0.25 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		PEL	0.25 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

a) Appearance	Form: solid Colour: colourless
b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	96.0 - 98.0 °C (204.8 - 208.4 °F)
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	1.60 g/cm ³ at 20.00 °C (68.00 °F)
n) Water solubility	insoluble
o) Partition coefficient: n-octanol/water	log Pow: 6.50
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY**10.1 Reactivity**

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - 39.0 mg/kg

Inhalation: No data available

LD50 Dermal - Rabbit - 15.0 mg/kg

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Olfaction:Other changes.

Behavioral:Convulsions or effect on seizure threshold. Behavioral:Excitement.

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Additional Information

RTECS: IO2100000

Nausea, Vomiting, Headache, Tremors, Incoordination., Dizziness, Cyanosis, Seizures., Unconsciousness

Kidney -

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 0.01 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.03 mg/l - 48 h

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Bioaccumulation Leuciscus idus (Golden orfe) - 3 d
- 0.002 mg/l

Bioconcentration factor (BCF): 3,700

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN number: 2811 Class: 6.1 Packing group: I
Proper shipping name: Toxic solids, organic, n.o.s. (Aldrin)
Reportable Quantity (RQ): 1 lbsMarine pollutant:yes
Poison Inhalation Hazard: No

IMDG

UN number: 2811 Class: 6.1 Packing group: I EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Aldrin)
Marine pollutant:yes

IATA

UN number: 2811 Class: 6.1 Packing group: I

Proper shipping name: Toxic solid, organic, n.o.s. (Aldrin)

15. REGULATORY INFORMATION

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Aldrin	309-00-2	2007-07-01

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aldrin	309-00-2	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aldrin	309-00-2	2007-07-01

	CAS-No.	Revision Date
Aldrin	309-00-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aldrin	309-00-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

	CAS-No.	Revision Date
Aldrin	309-00-2	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H300	Fatal if swallowed.
H300 + H310	Fatal if swallowed or in contact with skin.
H310	Fatal in contact with skin.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.9

Revision Date: 01/06/2018

Print Date: 11/10/2018

SAFETY DATA SHEET

Version 4.8
Revision Date 10/27/2017
Print Date 06/28/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Aroclor 1242

Product Number : 48585
Brand : Supelco
Index-No. : 602-039-00-4

CAS-No. : 53469-21-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Specific target organ toxicity - repeated exposure (Category 1), H372

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H372

H410

Causes damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260

P264

P270

P273

P314

P391

P501

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Get medical advice/ attention if you feel unwell.
Collect spillage.
Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

CAS-No. : 53469-21-9
Index-No. : 602-039-00-4

Hazardous components

Component	Classification	Concentration
Aroclor 1242		
	STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H372, H410	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): 12: Non Combustible Liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Aroclor 1242	53469-21-9	TWA	1.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye irritation Liver damage Chloracne Danger of cutaneous absorption		
		TWA	0.001000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Eye irritation Liver damage Chloracne Danger of cutaneous absorption		
		TWA	0.001 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		PEL	1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: liquid
b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	No data available
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition	No data available

temperature

- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 4,250 mg/kg

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Chromodacryorrhea. Diarrhoea Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

No data available

Aspiration hazard

No data available

Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 0.015 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates LC50 - Daphnia magna (Water flea) - 0.23 mg/l - 48 h

Toxicity to algae LC50 - Algae - 0.006 mg/l - 28 h

12.2 Persistence and degradability

Biodegradability Result: - According to the results of tests of biodegradability this product is not readily biodegradable.
Remarks: No data available

12.3 Bioaccumulative potential

Bioaccumulation Pimephales promelas (fathead minnow) - 8.5 Months
- 0.86 µg/l

Bioconcentration factor (BCF): 274,000

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2315 Class: 9 Packing group: II

Proper shipping name: Polychlorinated biphenyls, liquid

Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID
Marine pollutant: yes

IATA

UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid

15. REGULATORY INFORMATION**SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

	CAS-No.	Revision Date
Aroclor 1242	53469-21-9	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Aroclor 1242	53469-21-9	2008-08-01

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Aroclor 1242	53469-21-9	2008-08-01

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3.**

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.
STOT RE Specific target organ toxicity - repeated exposure

HMIS Rating

Health hazard: 1
Chronic Health Hazard:
Flammability: 0
Physical Hazard 0

NFPA Rating

Health hazard: 0
Fire Hazard: 0
Reactivity Hazard: 0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.8

Revision Date: 10/27/2017

Print Date: 06/28/2019

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.0 Revision Date 31.03.2016

Print Date 17.07.2019

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Aroclor 1248 solution

Product Number : 44807

Brand : Supelco

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 2), H225

Skin irritation (Category 2), H315

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

Specific target organ toxicity - repeated exposure (Category 2), H373

Aspiration hazard (Category 1), H304

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word : Danger

Hazard statement(s)

H225

Highly flammable liquid and vapour.

H304

May be fatal if swallowed and enters airways.

H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P501	Dispose of contents/ container to an approved waste disposal plant.
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Molecular weight : 114.23 g/mol

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
2,2,4-Trimethylpentane			
CAS-No.	540-84-1	Flam. Liq. 2; Skin Irrit. 2; STOT SE 3; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H225, H315, H336, H304, H400, H410 M-Factor - Aquatic Acute: 10	>= 90 - <= 100 %
EC-No.	208-759-1		
Index-No.	601-009-00-8		
Aroclor 1248			
CAS-No.	12672-29-6	STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H373, H400, H410 Concentration limits: >= 0.005 %: STOT RE 2, H373; >= 0.005 %: STOT RE 2, H373; M-Factor - Aquatic Acute: 10	>= 0.1 - < 0.25 %
Index-No.	602-039-00-4		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form: liquid |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: -107 °C |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 6 %(V)
Lower explosion limit: 1 %(V) |
| k) Vapour pressure | 88 mmHg at 37.8 °C |

l) Vapour density	No data available
m) Relative density	No data available
n) Water solubility	insoluble
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	396 °C
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

Solubility in other solvents	Ether - soluble
------------------------------	-----------------

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information**12.1 Toxicity**

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information**14.1 UN number**

ADR/RID: 1262

IMDG: 1262

IATA: 1262

14.2 UN proper shipping name

ADR/RID: OCTANES,SOLUTION

IMDG: OCTANES,SOLUTION

IATA: Octanes,SOLUTION

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: yesyes

IMDG Marine pollutant: yes

IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3.**

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

SAFETY DATA SHEET

Version 5.3
Revision Date 05/24/2016
Print Date 06/28/2019

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Aroclor 1254

Product Number : 48586
Brand : Supelco
Index-No. : 602-039-00-4

CAS-No. : 11097-69-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302
Specific target organ toxicity - repeated exposure (Category 2), H373
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P314	Rinse mouth.
P391	Get medical advice/ attention if you feel unwell.
P501	Collect spillage.
	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

CAS-No. : 11097-69-1
Index-No. : 602-039-00-4

Hazardous components

Component	Classification	Concentration
Aroclor 1254		
	Acute Tox. 4; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H373, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): Non Combustible Liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Aroclor 1254	11097-69-1	TWA	0.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	Skin designation		
		TWA	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Liver damage Chloracne Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Liver damage Chloracne Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		

		TWA	0.5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		
		TWA	0.001000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		PEL	0.5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|-------------------|
| a) Appearance | Form: liquid |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |

k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 1,010 mg/kg

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Rat

Liver

Unscheduled DNA synthesis

Rat

Liver

DNA damage

Mouse

fibroblast

Morphological transformation.

Rat

Morphological transformation.

Rat

DNA damage

Rat

DNA damage

Carcinogenicity

Carcinogenicity - Rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Gastrointestinal: Tumors.

Carcinogenicity - Rat - Oral

Tumorigenic: Carcinogenic by RTECS criteria. Liver: Tumors.

Carcinogenicity - Mouse - Skin

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

Tumorigenic: Tumors at site of application.

Carcinogenicity - Rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Gastrointestinal: Tumors.

Carcinogenicity - Mouse - Oral

Tumorigenic: Neoplastic by RTECS criteria. Liver: Tumors.

Carcinogenicity - Mouse - Intraperitoneal

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Tumorigenic Effects: Uterine tumors. Lungs, Thorax, or Respiration: Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Reproductive toxicity - Rabbit - Oral

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Effects on Fertility: Abortion. Effects on Embryo or Fetus: Fetal death.

Reproductive toxicity - Rabbit - Oral

Effects on Newborn: Biochemical and metabolic.

Reproductive toxicity - Rat - Oral

Effects on Newborn: Biochemical and metabolic.

Reproductive toxicity - Rat - Oral

Effects on Newborn: Behavioral.

Reproductive toxicity - Rat - Oral
Effects on Newborn: Delayed effects.

Reproductive toxicity - Rat - Intraperitoneal
Maternal Effects: Other effects. Effects on Newborn: Biochemical and metabolic.

Reproductive toxicity - Mouse - Oral
Effects on Newborn: Behavioral.

Reproductive toxicity - Mammal - Oral
Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

No data available

Developmental Toxicity - Rat - Oral
Specific Developmental Abnormalities: Hepatobiliary system.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - *Oncorhynchus mykiss* (rainbow trout) - 0.22 µg/l - 96.0 h

Toxicity to algae LC50 - Algae - 0.015 mg/l - 28 h

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Bioaccumulation Pimephales promelas (fathead minnow) - 8 Months
- 1.8 µg/l

Bioconcentration factor (BCF): 238,000

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID
Marine pollutant: yes

IATA

UN number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aroclor 1254	11097-69-1	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aroclor 1254	11097-69-1	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aroclor 1254	11097-69-1	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Aroclor 1254	11097-69-1	1990-06-30

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Aroclor 1254	11097-69-1	1990-06-30

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.
STOT RE Specific target organ toxicity - repeated exposure

HMIS Rating

Health hazard: 1
Chronic Health Hazard: *
Flammability: 0
Physical Hazard 0

NFPA Rating

Health hazard: 1
Fire Hazard: 0
Reactivity Hazard: 0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.3

Revision Date: 05/24/2016

Print Date: 06/28/2019

SAFETY DATA SHEET

Version 6.1
Revision Date 05/28/2017
Print Date 06/28/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Barium

Product Number : 474711

Brand : Aldrich

CAS-No. : 7440-39-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Substances and mixtures, which in contact with water, emit flammable gases (Category 2), H261

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H261

In contact with water releases flammable gases.

Precautionary statement(s)

P223

Do not allow contact with water.

P231 + P232

Handle under inert gas. Protect from moisture.

P280

Wear protective gloves/ eye protection/ face protection.

P335 + P334

Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.

P370 + P378

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P402 + P404
P501

Store in a dry place. Store in a closed container.
Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : Ba
Molecular weight : 137.33 g/mol
CAS-No. : 7440-39-3
EC-No. : 231-149-1

Hazardous components

Component	Classification	Concentration
Barium		
	Water-react. 2; H261	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Dry powder

5.2 Special hazards arising from the substance or mixture

Barium oxide

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Further processing of solid materials may result in the formation of combu formation should be taken into consideration before additional processing

Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Never allow product to get in contact with water during storage.

Store under inert gas.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Barium	7440-39-3	TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye, skin, & Gastrointestinal irritation Muscular stimulation Not classifiable as a human carcinogen		
		TWA	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Eye irritation Muscular stimulation Skin irritation Gastrointestinal irritation Not classifiable as a human carcinogen		
		TWA	0.500000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Eye irritation Muscular stimulation Skin irritation Gastrointestinal irritation Not classifiable as a human carcinogen		

		TWA	0.5 mg/m ³	USA. NIOSH Recommended Exposure Limits
--	--	-----	-----------------------	--

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eyeface protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industria situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|--|--|
| a) Appearance | Form: Pieces
Colour: grey |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: 725 °C (1337 °F) - lit. |
| f) Initial boiling point and boiling range | 1,640 °C (2,984 °F) - lit. |
| g) Flash point | ()Not applicable |
| h) Evaporation rate | No data available |

- | | | |
|----|--|--|
| i) | Flammability (solid, gas) | No data available |
| j) | Upper/lower flammability or explosive limits | No data available |
| k) | Vapour pressure | No data available |
| l) | Vapour density | No data available |
| m) | Relative density | 3.6 g/cm ³ at 25 °C (77 °F) |
| n) | Water solubility | No data available |
| o) | Partition coefficient: n-octanol/water | No data available |
| p) | Auto-ignition temperature | No data available |
| q) | Decomposition temperature | No data available |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | No data available |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Reacts violently with water.

10.4 Conditions to avoid

Exposure to moisture

10.5 Incompatible materials

Oxidizing agents, Water, acids, Oxygen, Chlorinated solvents, Carbon dioxide (CO₂), Halogens, Halogenated hydrocarbon, Alcohols, Sulphur compounds, Hydrogen sulfide gas

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Barium oxide

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No data available Barium

Inhalation: No data available (Barium)

Dermal: No data available (Barium)

No data available (Barium)

Skin corrosion/irritation

No data available (Barium)

Serious eye damage/eye irritation

No data available (Barium)

Respiratory or skin sensitisation

No data available(Barium)

Germ cell mutagenicity

No data available(Barium)

Carcinogenicity

This product is or contains a component that is not classifiable as to its classification.(Barium)
(Barium)
(Barium)

Reproductive toxicity

No data available(Barium)

No data available(Barium)

Specific target organ toxicity - single exposure

No data available(Barium)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available(Barium)

Additional Information

RTECS: CQ8370000

Stomach/intestinal disorders, Nausea, Vomiting, Drowsiness, Dizziness, Gastrointestinal disturbance, Weakness, Tremors, Seizures.(Barium)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Barium)

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 500 mg/l - 96 h(Barium)
	LC50 - Cyprinodon variegatus (sheepshead minnow) - > 500 mg/l - 96 h(Barium)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available(Barium)

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium
Reportable Quantity (RQ) : 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1400 Class: 4.3 Packing group: II EMS-No: F-G, S-O
Proper shipping name: BARIUM

IATA

UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

SARA 311/312 Hazards

Reactivity Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H261 In contact with water releases flammable gases.
Aldrich- 474711

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	1

NFPA Rating

Health hazard:	0
Fire Hazard:	3
Reactivity Hazard:	1
Special hazard.I:	W

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 6.1

Revision Date: 05/28/2017

Print Date: 06/28/2019

SAFETY DATA SHEET

Version 6.1
Revision Date 03/12/2019
Print Date 06/22/2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Copper

Product Number : 31284
Brand : Aldrich
CAS-No. : 7440-50-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none**SECTION 3: Composition/information on ingredients****3.1 Substances**

Formula : Cu
Molecular weight : 63.55 g/mol
CAS-No. : 7440-50-8
EC-No. : 231-159-6

Component	Classification	Concentration
-----------	----------------	---------------

Copper,		
		<= 100 %

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Copper oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Store under inert gas. Air sensitive.

Storage class (TRGS 510): 13: Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Copper,	7440-50-8	TWA	1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Irritation Gastrointestinal metal fume fever		
		TWA	0.2 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Irritation Gastrointestinal metal fume fever		

		TWA	1 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		PEL	0.1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

No special environmental precautions required.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

a) Appearance	Form: Wire Colour: light red
b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: 1,083.4 °C (1,982.1 °F)
f) Initial boiling point and boiling range	2,567 °C 4,653 °F
g) Flash point	()No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	8.940 g/cm ³
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong acids, Strong oxidizing agents, Acid chlorides, Halogens

10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Copper oxides

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal - Mouse - 3.5 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: GL5325000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information**12.1 Toxicity**

No data available

12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information**DOT (US)**

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

No SARA Hazards

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Copper,	CAS-No. 7440-50-8	Revision Date 1993-02-16
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Copper,	CAS-No. 7440-50-8	Revision Date 1993-02-16
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New Jersey Right To Know Components

Copper,	CAS-No. 7440-50-8	Revision Date 1993-02-16
---------	----------------------	-----------------------------

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Version: 6.1

Revision Date: 03/12/2019

Print Date: 06/22/2019

SAFETY DATA SHEET

Version 6.0
Revision Date 03/14/2018
Print Date 07/18/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Dieldrin

Product Number : 33491
Brand : Sigma-Aldrich
Index-No. : 602-049-00-9

CAS-No. : 60-57-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 2), H300

Acute toxicity, Dermal (Category 1), H310

Carcinogenicity (Category 2), H351

Specific target organ toxicity - repeated exposure, Oral (Category 1), H372

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word	Danger
Hazard statement(s)	
H300 + H310	Fatal if swallowed or in contact with skin
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P302 + P350 + P310	IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	: 1,2,3,4,10,10-Hexachloro-1,4,4a,5,6,7,8,8a-octahydro-6,7-epoxy-1,4:5,8-dimethanonaphthalene
Formula	: C ₁₂ H ₈ Cl ₆ O
Molecular weight	: 380.91 g/mol
CAS-No.	: 60-57-1
EC-No.	: 200-484-5
Index-No.	: 602-049-00-9

Hazardous components

Component	Classification	Concentration
Dieldrin		
	Acute Tox. 2; Acute Tox. 1; Carc. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310, H351, H372, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Dieldrin	60-57-1	TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Liver damage Reproductive effects Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.250000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A Potential for dermal absorption		
		TWA	0.250000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Liver damage Reproductive effects Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.25 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A Potential for dermal absorption		
		TWA	0.25 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.25 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		
		PEL	0.25 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|---|
| a) Appearance | Form: solid |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: 143 - 144 °C (289 - 291 °F) - lit. |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | No data available |
| n) Water solubility | No data available |
| o) Partition coefficient: n-octanol/water | No data available |
| p) Auto-ignition temperature | No data available |

- | | |
|------------------------------|-------------------|
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | No data available |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 38.3 mg/kg

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Ingestion - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Additional Information

RTECS: IO1750000

Discomfort, Headache, Nausea, Vomiting, Dizziness, Tremors, tonic convulsions, clonic spasms, Coma., respiratory failure, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Blood - Irregularities - Based on Human Evidence

Blood - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish mortality LC50 - *Carassius auratus* (goldfish) - 1.6 µg/l - 96.0 h(Dieldrin)

Toxicity to daphnia and Immobilization EC50 - *Daphnia magna* (Water flea) - 79.5 µg/l - 48 h(Dieldrin)
other aquatic
invertebrates

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available(Dieldrin)

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN number: 2811 Class: 6.1 Packing group: I

Proper shipping name: Toxic solids, organic, n.o.s. (Dieldrin)

Reportable Quantity (RQ) : 1 lbs

Marine pollutant: no no
Poison Inhalation Hazard: No

IMDG

UN number: 2811 Class: 6.1 Packing group: I EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Dieldrin)
Marine pollutant : yes

IATA

UN number: 2811 Class: 6.1 Packing group: I
Proper shipping name: Toxic solid, organic, n.o.s. (Dieldrin)
IATA Passenger: Not permitted for transport
A5

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dieldrin	60-57-1	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dieldrin	60-57-1	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dieldrin	60-57-1	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Dieldrin	60-57-1	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H300	Fatal if swallowed.
H300 + H310	Fatal if swallowed or in contact with skin
H310	Fatal in contact with skin.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	0
Reactivity Hazard:	0

Further information

Copyright 2016 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956
Version: 6.0

Revision Date: 03/14/2018

Print Date: 07/18/2019

SAFETY DATA SHEET

Version 4.11
Revision Date 10/12/2018
Print Date 06/28/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Lead

Product Number : 391352
Brand : Aldrich

CAS-No. : 7439-92-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302

Carcinogenicity (Category 2), H351

Reproductive toxicity (Category 2), H361

Specific target organ toxicity - repeated exposure (Category 2), H373

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H302

Harmful if swallowed.

H351

Suspected of causing cancer.

H361

Suspected of damaging fertility or the unborn child.

H373

May cause damage to organs through prolonged or repeated exposure.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	: Pb
Molecular weight	: 207.20 g/mol
CAS-No.	: 7439-92-1
EC-No.	: 231-100-4

Hazardous components

Component	Classification	Concentration
Lead		
	Acute Tox. 4; Carc. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H302, H351, H372, H410	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	See 1910.1025		
Lead	7439-92-1	TWA	0.05 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Confirmed animal carcinogen with unknown relevance to humans		
		TWA	0.05 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Hematologic effects Peripheral Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		

		TWA	0.05 mg/m ³	USA. NIOSH Recommended Exposure Limits
		See Appendix C		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
	-	Lead	200 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
	Remarks	Not critical			

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eyeface protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---------------|-------------------|
| a) Appearance | Form: powder |
| b) Odour | No data available |

c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: 327.4 °C (621.3 °F) - lit.
f) Initial boiling point and boiling range	1,740 °C (3,164 °F) - lit.
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	No data available
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong acids

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Lead oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Rat

Cytogenetic analysis

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Lead)

NTP: RAHC - Reasonably anticipated to be a human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Lead)

OSHA: OSHA specifically regulated carcinogen (Lead)

Reproductive toxicity

Reproductive toxicity - Rat - Inhalation

Effects on Newborn: Biochemical and metabolic.

Reproductive toxicity - Rat - Oral

Effects on Newborn: Behavioral.

Reproductive toxicity - Mouse - Oral

Effects on Fertility: Female fertility index (e.g., # females pregnant per females mated). Effects on Fertility: Pre-implantation mortality (e.g., reduction in numbe corpora lutea).

May damage fertility. May damage the unborn child.

Developmental Toxicity - Rat - Inhalation

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Developmental Toxicity - Rat - Oral

Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Developmental Toxicity - Rat - Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Developmental Toxicity - Mouse - Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Additional Information

RTECS: OF7525000

anemia

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality LOEC - Oncorhynchus mykiss (rainbow trout) - 1.19 mg/l - 96.0 h
	LC50 - Micropterus dolomieu - 2.2 mg/l - 96.0 h
	mortality NOEC - Salvelinus fontinalis - 1.7 mg/l - 10.0 d
Toxicity to daphnia and other aquatic invertebrates	mortality LOEC - Daphnia (water flea) - 0.17 mg/l - 24 h
	mortality NOEC - Daphnia (water flea) - 0.099 mg/l - 24 h
Toxicity to algae	mortality EC50 - Skeletonema costatum - 7.94 mg/l - 10 d

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Bioaccumulation	Oncorhynchus kisutch - 2 Weeks - 150 µg/l
	Bioconcentration factor (BCF): 12

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Lead)
Reportable Quantity (RQ): 10 lbs
Poison Inhalation Hazard: No

IMDG

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead)
Marine pollutant: yes

IATA

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Lead)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Lead	7439-92-1	2015-11-23

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Lead	7439-92-1	2015-11-23

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Lead	7439-92-1	2015-11-23

	CAS-No.	Revision Date
Lead	7439-92-1	2015-11-23

New Jersey Right To Know Components

	CAS-No.	Revision Date
Lead	7439-92-1	2015-11-23

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

	CAS-No.	Revision Date
Lead	7439-92-1	2009-02-01

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

	CAS-No.	Revision Date
Lead	7439-92-1	2009-02-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H302	Harmful if swallowed.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.11

Revision Date: 10/12/2018

Print Date: 06/28/2019

SAFETY DATA SHEET

Version 3.15
Revision Date 03/05/2018
Print Date 06/28/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Mercury

Product Number : 215457
Brand : Sigma-Aldrich
Index-No. : 080-001-00-0

CAS-No. : 7439-97-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Inhalation (Category 2), H330
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H330 Fatal if inhaled.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	: Hg
Molecular weight	: 200.59 g/mol
CAS-No.	: 7439-97-6
EC-No.	: 231-106-7
Index-No.	: 080-001-00-0

Hazardous components

Component	Classification	Concentration
Mercury		
	Acute Tox. 2; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H330, H360, H372, H410	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. In some instances, a mercury spill kit may be used. Please consult with your site EHS representative to determine the most appropriate clean up method. Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas.

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Mercury	7439-97-6	C	0.1 mg/m ³	USA. NIOSH Recommended Exposure Limits
	Remarks	Potential for dermal absorption		
		CEIL	1.0mg/10m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	0.05 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		

		TWA	0.025 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	0.05 mg/m ³	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eyeface protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---------------|---------------------------------------|
| a) Appearance | Form: liquid
Colour: silver, white |
|---------------|---------------------------------------|

b) Odour	odourless
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: -38.87 °C (-37.97 °F) - lit.
f) Initial boiling point and boiling range	356.6 °C (673.9 °F) - lit.
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	< 0.01 hPa (< 0.01 mmHg) at 20 °C (68 °F) 1 hPa (1 mmHg) at 126 °C (259 °F)
l) Vapour density	6.93 - (Air = 1.0)
m) Relative density	13.55 g/cm ³ at 25 °C (77 °F)
n) Water solubility	0.00006 g/l at 25 °C (77 °F)
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density 6.93 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents, Ammonia, Azides, Nitrates, Chlorates, Copper

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Mercury/mercury oxides.

Other decomposition products - No data available

In the event of fire: see section 5

11.1 Information on toxicological effects

No data available

LC50 Inhalation - Rat - male - 2 h - < 27 mg/m3

Dermal: No data available

No data available

No data available

No data available

No data available

No data available

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Presumed human reproductive toxicant

No data available

Causes damage to organs through prolonged or repeated exposure.

No data available

RTECS: OV4550000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

12.1 Toxicity

Toxicity to fish mortality LC50 - *Cyprinus carpio* (Carp) - 0.160 mg/l - 96 h

No data available

Bioaccumulation Carassius auratus (goldfish) - 1,789 d
- 0.25 µg/l

Bioconcentration factor (BCF): 155,986

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2809 Class: 8 (6.1) Packing group: III
Proper shipping name: A. W. Mercury
Reportable Quantity (RQ): 1 lbs
Poison Inhalation Hazard: No

IMDG

IATA

UN number: 2809 Class: 8 (6.1) Packing group: III
Proper shipping name: Mercury

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Mercury	CAS-No. 7439-97-6	Revision Date 2015-11-23
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Pennsylvania Right To Know Components

Mercury	CAS-No. 7439-97-6	Revision Date 2015-11-23
---------	----------------------	-----------------------------

Mercury	CAS-No. 7439-97-6	Revision Date 2015-11-23
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New Jersey Right To Know Components

Mercury	CAS-No. 7439-97-6	Revision Date 2015-11-23
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California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
Mercury

CAS-No.
7439-97-6

Revision Date
2013-12-20

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H330	Fatal if inhaled.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Repr.	Reproductive toxicity

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.15

Revision Date: 03/05/2018

Print Date: 06/28/2019

SAFETY DATA SHEET

Version 3.4
Revision Date 06/27/2014
Print Date 06/28/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Heptadecafluorooctanesulfonic acid solution

Product Number : 77283

Brand : Aldrich

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Skin corrosion (Category 1B), H314

Serious eye damage (Category 1), H318

Carcinogenicity (Category 2), H351

Reproductive toxicity (Category 1B), H360

Effects on or via lactation, H362

Specific target organ toxicity - repeated exposure (Category 1), H372

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H362	May cause harm to breast-fed children.
H372	Causes damage to organs through prolonged or repeated exposure.

H411	Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P263	Avoid contact during pregnancy/ while nursing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.
P321	Specific treatment (see supplemental first aid instructions on this label).
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : $C_8HF_{17}O_3S$
Molecular Weight : 500.13 g/mol

Hazardous components

Component	Classification	Concentration
Heptadecafluorooctane-1-sulphonic acid		
CAS-No. 1763-23-1	Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Carc. 2; Repr. 1B; Lact. ; STOT RE 1; Aquatic Acute 2; Aquatic Chronic 2; H302 + H332, H314, H351, H360, H362, H372, H411	30 - 60 %
EC-No. 217-179-8		
Index-No. 607-624-00-8		

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Sulphur oxides, Hydrogen fluoride

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: clear, liquid Colour: light red
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	no data available
f) Initial boiling point and boiling range	no data available
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	1.250 g/cm ³
n) Water solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available

- | | |
|------------------------------|-------------------|
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |
| s) Explosive properties | no data available |
| t) Oxidizing properties | no data available |

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

no data available

Inhalation: no data available

Dermal: no data available

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a

carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available
no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

RTECS: Not available

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3265 Class: 8 Packing group: II
Proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Heptadecafluorooctane-1-sulphonic acid)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 3265 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Heptadecafluorooctane-1-sulphonic acid)
Marine pollutant: No

IATA

UN number: 3265

Class: 8

Packing group: II

Proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Heptadecafluorooctane-1-sulphonic acid)

15. REGULATORY INFORMATION**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
Heptadecafluorooctane-1-sulphonic acid	1763-23-1	2009-07-17

New Jersey Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
Heptadecafluorooctane-1-sulphonic acid	1763-23-1	2009-07-17

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3.**

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H362	May cause harm to breast-fed children.
H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
Lact.	Effects on or via lactation

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	3
Fire Hazard:	0

Reactivity Hazard: 0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.4

Revision Date: 06/27/2014

Print Date: 06/28/2019

SAFETY DATA SHEET

Version 6.1
Revision Date 03/12/2019
Print Date 06/28/2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Perfluorooctanoic acid

Product Number : 171468
Brand : Aldrich
CAS-No. : 335-67-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Serious eye damage (Category 1), H318
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 1B), H360
Effects on or via lactation, H362
Specific target organ toxicity - repeated exposure (Category 1), Liver, H372

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)	
H302 + H332	Harmful if swallowed or if inhaled.
H318	Causes serious eye damage.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H362	May cause harm to breast-fed children.
H372	Causes damage to organs (Liver) through prolonged or repeated exposure.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P263	Avoid contact during pregnancy/ while nursing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : Pentadecafluorooctanoic acid
Perfluorocaprylic acid
Perfluorooctanoic acid

Formula : C₈HF₁₅O₂
Molecular weight : 414.07 g/mol
CAS-No. : 335-67-1
EC-No. : 206-397-9

Component	Classification	Concentration
Pentadecafluorooctanoic acid		
	Acute Tox. 4; Eye Dam. 1; Carc. 2; Repr. 1B; Lact. ; STOT RE 1; H302, H332, H318, H351, H360, H362, H372	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen fluoride

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|--|---|
| a) Appearance | Form: flakes
Colour: colourless |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | 2.6 at 1 g/l |
| e) Melting point/freezing point | Melting point/range: 55 - 56 °C (131 - 133 °F) - lit. |
| f) Initial boiling point and boiling range | 189 °C 372 °F at 981 hPa - lit. |

g) Flash point	()No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	0.69 hPa at 25 °C (77 °F)
l) Vapour density	No data available
m) Relative density	0.900 g/cm ³
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Bases, Oxidizing agents, Reducing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen fluoride

Other decomposition products - No data available

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal - Rat - 189 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Rat

DNA damage

Rat

DNA damage

Carcinogenicity

Suspected human carcinogens

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Pentadecafluorooctanoic acid)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

Effects on or via lactation

Presumed human reproductive toxicant

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure. - Liver

Aspiration hazard

No data available

Additional Information

RTECS: RH0781000

Cough, Shortness of breath, Headache, Nausea, Vomiting

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 3261 Class: 8

Packing group: III

Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Pentadecafluorooctanoic acid)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 3261 Class: 8

Packing group: III

EMS-No: F-A, S-B

Proper shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.
(Pentadecafluorooctanoic acid)

IATA

UN number: 3261 Class: 8

Packing group: III

Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Pentadecafluorooctanoic acid)

SECTION 15: Regulatory information

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Pentadecafluorooctanoic acid	CAS-No. 335-67-1	Revision Date
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Pentadecafluorooctanoic acid	CAS-No. 335-67-1	Revision Date
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New Jersey Right To Know Components

Pentadecafluorooctanoic acid	CAS-No. 335-67-1	Revision Date
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California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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SAFETY DATA SHEET

Version 4.11

Revision Date 06/28/2017

Print Date 06/22/2019

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Tetrachloroethylene

Product Number : 371696
Brand : Sigma-Aldrich
Index-No. : 602-028-00-4

CAS-No. : 127-18-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USATelephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Skin sensitisation (Category 1), H317

Carcinogenicity (Category 2), H351

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	: Perchloroethylene PCE
Formula	: C ₂ Cl ₄
Molecular weight	: 165.83 g/mol
CAS-No.	: 127-18-4
EC-No.	: 204-825-9
Index-No.	: 602-028-00-4

Hazardous components

Component	Classification	Concentration
Tetrachloroethylene		
	Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Carc. 2; STOT SE 3; Aquatic Acute 2; Aquatic Chronic 2; H315, H317, H319, H336, H351, H411	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Tetrachloroethylene	127-18-4	TWA	25.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		STEL	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		Potential Occupational Carcinogen Minimize workplace exposure concentrations. See Appendix A		
		See Table Z-2		
		TWA	100.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		CEIL	200.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Peak	300.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	25 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		STEL	100 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		Potential Occupational Carcinogen Minimize workplace exposure concentrations. See Appendix A		
		See Table Z-2		

		TWA	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		CEIL	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Peak	300 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	25 ppm 170 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	100 ppm 685 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		C	300 ppm	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	25 ppm 170 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Tetrachloroethylene	127-18-4	Tetrachloroethylene	3ppm	In end-exhaled air	ACGIH - Biological Exposure Indices (BEI)
	Remarks	Prior to shift (16 hours after exposure ceases)			
		Tetrachloroethylene	0.5000 mg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		Prior to shift (16 hours after exposure ceases)			
		Tetrachloroethylene	3ppm	In end-exhaled air	ACGIH - Biological Exposure Indices (BEI)
		Prior to shift (16 hours after exposure ceases)			
		Tetrachloroethylene	0.5 mg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		Prior to shift (16 hours after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 49 min

Material tested: Dermatrill® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form: liquid, clear
Colour: colourless |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: -22 °C (-8 °F) - lit. |
| f) Initial boiling point and boiling range | 121 °C (250 °F) - lit. |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | 25.3 hPa (19.0 mmHg) at 25.0 °C (77.0 °F)
17.3 hPa (13.0 mmHg) at 20.0 °C (68.0 °F) |
| l) Vapour density | No data available |
| m) Relative density | 1.623 g/cm ³ at 25 °C (77 °F) |
| n) Water solubility | 0.15 g/l at 25 °C (77 °F) |
| o) Partition coefficient: n-octanol/water | log Pow: 2.53 at 23 °C (73 °F) |
| p) Auto-ignition temperature | No data available |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |

t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 32.1 mN/m at 20 °C (68 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents, Strong bases

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - 3,385 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Mild eye irritation - 24 h

Respiratory or skin sensitisation

- Mouse

Result: May cause sensitisation by skin contact.
(OECD Test Guideline 429)

Germ cell mutagenicity

Hamster

ovary

Result: negative

OECD Test Guideline 474

Mouse - male

Result: negative

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC: 2A - Group 2A: Probably carcinogenic to humans (Tetrachloroethylene)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (Tetrachloroethylene)
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity Mouse - female - Oral - LOAEL : 390 mg/kg

RTECS: KX3850000

narcosis, Liver injury may occur., Kidney injury may occur.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 5 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 7.50 mg/l - 48 h

Toxicity to algae static test EC50 - Skeletonema costatum - > 16 mg/l - 7 h

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d
Result: 11 % - Not readily biodegradable.
(OECD Test Guideline 301C)

12.3 Bioaccumulative potential

Bioaccumulation Lepomis macrochirus (Bluegill) - 21 d
- 0.00343 mg/l

Bioconcentration factor (BCF): 49

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1897 Class: 6.1 Packing group: III
Proper shipping name: Tetrachloroethylene
Reportable Quantity (RQ): 100 lbs Reportable Quantity (RQ): 100 lbs
Poison Inhalation Hazard: No

IMDG

UN number: 1897 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TETRACHLOROETHYLENE
Marine pollutant: yes

IATA

UN number: 1897 Class: 6.1 Packing group: III
Proper shipping name: Tetrachloroethylene

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Tetrachloroethylene	127-18-4	2007-07-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Reportable Quantity : D039 lbs

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Tetrachloroethylene	127-18-4	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Tetrachloroethylene	127-18-4	2007-07-01

	CAS-No.	Revision Date
Tetrachloroethylene	127-18-4	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Tetrachloroethylene	127-18-4	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Tetrachloroethylene	127-18-4	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity

Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.11

Revision Date: 06/28/2017

Print Date: 06/22/2019

SAFETY DATA SHEET

Version 6.0
Revision Date 05/28/2017
Print Date 06/28/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Zinc

Product Number : 324930
Brand : Aldrich
Index-No. : 030-001-00-1

CAS-No. : 7440-66-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Pyrophoric solids (Category 1), H250
Self-heating substances and mixtures (Category 1), H251
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H250 Catches fire spontaneously if exposed to air.
H251 Self-heating: may catch fire.
H260 In contact with water releases flammable gases which may ignite spontaneously.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P222	Do not allow contact with air.
P223	Do not allow contact with water.
P231 + P232	Handle under inert gas. Protect from moisture.
P235 + P410	Keep cool. Protect from sunlight.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P402 + P404	Store in a dry place. Store in a closed container.
P407	Maintain air gap between stacks/ pallets.
P413	Store bulk masses greater than .? kg/ .? lbs at temperatures not exceeding .? °C/ .? °F.
P420	Store away from other materials.
P422	Store contents under inert gas.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	: Zn
Molecular weight	: 65.39 g/mol
CAS-No.	: 7440-66-6
EC-No.	: 231-175-3
Index-No.	: 030-001-00-1

Hazardous components

Component	Classification	Concentration
Zinc powder (pyrophoric)		
	Pyr. Sol. 1; Self-heat. 1; Water-react. 1; Aquatic Acute 1; Aquatic Chronic 1; H250, H251, H260, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Dry powder

5.2 Special hazards arising from the substance or mixture

Zinc/zinc oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Further processing of solid materials may result in the formation of combu formation should be taken into consideration before additional processing

Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Never allow product to get in contact with water during storage.

Keep in a dry place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eyeface protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Protective gloves against thermal risks

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industria situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|--|---|
| a) Appearance | Form: powder
Colour: grey |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: 420 °C (788 °F) - lit. |
| f) Initial boiling point and boiling range | 907 °C (1665 °F) - lit. |
| g) Flash point | ()No data available |
| h) Evaporation rate | No data available |

- | | |
|---|---|
| i) Flammability (solid, gas) | May form combustible dust concentrations in air. |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | 1 hPa at 487 °C (909 °F) |
| l) Vapour density | No data available |
| m) Relative density | 7.133 g/mL at 25 °C (77 °F) |
| n) Water solubility | No data available |
| o) Partition coefficient: n-octanol/water | log Pow: 5 |
| p) Auto-ignition temperature | The substance or mixture is classified as self heating with the category 1.,
The substance or mixture is pyrophoric with the category 1. |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | No data available |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Reacts violently with water.

10.4 Conditions to avoid

Exposure to moisture

10.5 Incompatible materials

Strong acids and oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Zinc/zinc oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No data available Zinc powder (pyrophoric)

Inhalation: No data available (Zinc powder (pyrophoric))

Dermal: No data available (Zinc powder (pyrophoric))

No data available (Zinc powder (pyrophoric))

Skin corrosion/irritation

No data available (Zinc powder (pyrophoric))

Serious eye damage/eye irritation

No data available (Zinc powder (pyrophoric))

Respiratory or skin sensitisation

Did not cause sensitisation on laboratory animals.(Zinc powder (pyrophoric))

Germ cell mutagenicity

No data available(Zinc powder (pyrophoric))

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available(Zinc powder (pyrophoric))

No data available(Zinc powder (pyrophoric))

Specific target organ toxicity - single exposure

No data available(Zinc powder (pyrophoric))

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available(Zinc powder (pyrophoric))

Additional Information

RTECS: ZG8600000

chills, dry throat, sweet taste, Fever, Cough, Nausea, Vomiting, Weakness(Zinc powder (pyrophoric))

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Zinc powder (pyrophoric))

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish LC50 - Cyprinus carpio (Carp) - 450.0 µg/l - 96.0 h(Zinc powder (pyrophoric))

Toxicity to daphnia and other aquatic invertebrates LC50 - Daphnia magna (Water flea) - 0.068 mg/l - 48 h(Zinc powder (pyrophoric))

mortality NOEC - Daphnia (water flea) - 0.101 - 0.14 mg/l - 7 d(Zinc powder (pyrophoric))

12.2 Persistence and degradability**12.3 Bioaccumulative potential**

Bioaccumulation Algae - 7 d
at 16 °C - 5 µg/l(Zinc powder (pyrophoric))

Bioconcentration factor (BCF): 466

12.4 Mobility in soil

No data available(Zinc powder (pyrophoric))

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1436 Class: 4.3 (4.2) Packing group: II
Proper shipping name: Zinc powder
Reportable Quantity (RQ) : 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1436 Class: 4.3 (4.2) Packing group: II EMS-No: F-G, S-O
Proper shipping name: ZINC POWDER
Marine pollutant : yes

IATA

UN number: 1436 Class: 4.3 (4.2) Packing group: II
Proper shipping name: Zinc powder

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Zinc powder (pyrophoric)	7440-66-6	1993-04-24

SARA 311/312 Hazards

Reactivity Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Zinc powder (pyrophoric)	7440-66-6	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Zinc powder (pyrophoric)	7440-66-6	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Zinc powder (pyrophoric)	7440-66-6	1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H250	Catches fire spontaneously if exposed to air.
H251	Self-heating: may catch fire.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	1

NFPA Rating

Health hazard:	0
Fire Hazard:	3
Reactivity Hazard:	1
Special hazard.I:	W

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956
Version: 6.0

Revision Date: 05/28/2017

Print Date: 06/28/2019

Appendix I:

Community Air Monitoring Plan

Community Air Monitoring Plan

For:

C241283--Archer Ave Auto Repair and Coal Yard

Site

163-25 Archer Avenue

Jamaica, New York

BCP No. C241283

Prepared for:

**Archer Towers
Development LLC**

SESI Project No:

12914

Date:

September 2025/Revised

October 2025

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LIST OF ACRONYMS

Acronym	Definition
CAMP	Community Air Monitoring Plan
IRM	Interim Remedial Measure
mcg/m ³	micrograms per cubic meter
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PID	Photoionization Detector
PM-10	Less than 10 micrometers
ppm	Parts Per Million
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This document presents a Community Air Monitoring Plan (CAMP) for the remedial action at the Site known as C241283—Archer Ave Auto Repair and Coal Yard Site, located at 163-25 Archer Avenue in Jamaica, Queens, New York (the “Site”).

The Site consists of 0.853 acres. The Site is identified on the tax map as tax parcel Block 10151, Lot 65. The Site contains two (2) temporary offices and some storage containers with the surrounding unpaved areas.

The Subject Property is bound to the west by a residential apartment followed by Guy R. Brewer Boulevard, to the north by mixed-use commercial properties followed by Jamaica Avenue, to the east by a vacant lot followed by a three-story parking structure, and to the south by Archer Avenue followed by elevated Long Island Rail Road rail lines. The nearest surface water body is a pond within Captain Tilly Park, approximately 0.53 mile to the north. The topographic gradient at Site is generally flat. The Site is relatively level with regional topography gently sloping to the south.

2.0 OBJECTIVES

The objective of the CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that may arise during all ground intrusive activities, and potentially contaminated soil and material handling and staging. In addition, the CAMP is intended to ensure that dust and contaminants are not leaving the work zone.

3.0 METHODS

The CAMP will include continuous monitoring for particulate matter (e.g., airborne “dust”) and volatile organic compounds (VOCs) during the planned remedial investigation activities. Any CAMP exceedances will be reported to the NYSDEC and NYSDOH on the same business day and as soon as possible. Notification of the exceedance will be sent via email along with the reason for the exceedance, the measure(s) taken to address the exceedance, and if the exceedance was resolved.

3.1 CONTINUOUS MONITORING

Continuous monitoring for particulates and volatile organic compounds (VOCs) will be conducted during all ground intrusive activities including soil borings, monitoring well installations, and soil vapor probe installations.

3.2 PERIODIC MONITORING

Periodic monitoring for VOCs will be conducted during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection consists of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, 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.

4.0 VOC MONITORING, RESPONSE LEVELS, AND ACTIONS

VOC Monitoring, Response Levels, and Actions Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using a photoionization detector (PID) equipped with a 10.6 ev lamp. The equipment will 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 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less

than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.
- All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

5.0 PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS

Particulate 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 capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 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.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.
- Notification of CAMP action level exceedances and/or any corrective measures taken will be provided to the NYSDEC and NYSDOH within 24 hours.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

6.0 SPECIAL REQUIREMENTS FOR WORK WITHIN 20 FEET OF POTENTIALLY EXPOSED INDIVIDUAL STRUCTURES

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.
- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m^3 , work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m^3 or less at the monitoring point.
- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Appendix J:

Typical Monitoring Well Construction Log

	PROJECT NAME:				MONITORING WELL NO.			
	PROJECT LOCATION:				JOB NO.			
					GROUND ELEVATION:			
BORING BY:	DATE STARTED				DEVELOPMENT PERIOD			
INSPECTOR:	DATE COMPLETED				DEVELOPMENT METHOD			
NJ DEP PERMIT NO.:	DATE DEVELOPED				DEVELOPMENT RATE		# gpm	INITIAL WATER LEVEL (ft):

WELL CONSTRUCTION	DEPTH (ft)	Sample	Blows on Spoon				REC	SOIL DESCRIPTION AND STRATIFICATION	P.I.D.
			0/6	6/12	12/18	18/24	(in)		
Depth (feet below grade)	0								
Top of Casing #									
Ground Surface #									
Top of Riser #									
	45								
Well Cap:									
Top of Seal #									
Grout Type:									
Top of Sand Pack #									
Well Key:									
	50								
Riser Pipe:									
	55								
Top of Screen #									
	60								
Sand/Gravel Pack Size: #2 Sand									
	65								
Screen Size:									
	70								
Bottom of Screen #									
Bottom of Boring #									
Remarks									
	75								

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

The subsurface information shown hereon was obtained for the design and estimating purposes for our client. It is made available to authorized users only that they may have access to the same information available to our client. It is presented in good faith, but it is not intended as a substitute for investigations, interpretations or judgment of such authorized users. Information on the logs should not be relied upon without the geotechnical engineers recommendations contained in the report from which these logs were extracted. Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.