CARMAN PLACE

NASSAU COUNTY

HEMPSTEAD, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: C130250

Prepared for:

Carman Place Apartments, LLC

1000 University Avenue, Suite 500

Rochester, NY 14607

Prepared by:

LaBella Associates

45 Main Street, Suite 1018

Brooklyn, New York

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

NOVEMBER 2024

CERTIFICATION STATEMENT

I Daniel P. Noll certify that I am currently a NYS registered professional engineer and that this Site Management 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).

_____081996_____NYS PROFESSIONAL ENGINEER #

_____11/19/24_____DATE

_____SIGNATURE

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CARMAN PLACE

NASSAU COUNTY

HEMPSTEAD, NEW YORK

SITE MANAGEMENT PLAN

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List of Acronyms

AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CHFM	Contaminated Historic Fill Material
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Greenhouse Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
HVAC	Heating, Ventilation, and Air Conditioning
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCE	Tetrachloroethylene
P.E. or PE	Professional Engineer
PFAS	Per- and Polyfluoroalkyl Substances
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional

RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SRI	Supplemental Remedial Investigation
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCE	Trichloroethylene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan (SMP):

Site Identification: Carman Place Site, Site No. C130250
Hempstead, Nassau County

Institutional Controls:	1. The property may be used for unrestricted use, restricted residential use, commercial or industrial use
	2. Prohibition of the use of Groundwater
	3. Environmental Easement
	4. Soil Vapor Intrusion Evaluation
	5. SMP
Engineering Controls:	N/A

Inspections:	Frequency
N/A	
Monitoring:	
1. Soil Vapor Intrusion Evaluation for New Buildings	Anticipated to be performed in the First Quarter of 2026
Maintenance:	
N/A	
Reporting:	
1. Soil Vapor Intrusion (SVI) Evaluation	First Quarter of 2026

Further descriptions of the above requirements are provided in detail in the latter sections of this SMP.

It should be noted that this SMP is required since the Site has achieved a Conditional Track 1 Cleanup solely because a Soil Vapor Intrusion (SVI) Evaluation is needed because the building is currently under construction and an SVI Evaluation is required prior to occupancy to determine if an SVI condition is present. If the SVI

Evaluation performed once the lowest level of each building is fully enclosed and the Heating, Ventilation, and Air Conditioning (HVAC) system is operational in the first heating season indicates mitigation is not required, and New York State Department of Environmental Conservation (NYSDEC) approves the SVI Evaluation Report, then the Environmental Easement will be terminated, no Periodic Review Report (PRR) will be submitted, and this SMP will no longer be required. However, if the SVI Evaluation indicates mitigation is required, the Environmental Easement will stay in-place, a PRR will be submitted, any exceedances will be mitigated properly, and SVI re-testing to confirm mitigation measures are appropriate will be performed. The SMP will also be revised if the SVI evaluation indicates that mitigation is required.

As documented in the Remedial Investigation Report (RIR), the SVI testing on the prior buildings indicated no further action was required when the results were compared to the NYSDOH SVI Guidance (2006 with subsequent updates) Decision Matrices.

1.0 INTRODUCTION

1.1 General

This SMP is a required element of the remedial program for the Carman Place Site located in Hempstead, New York (hereinafter referred to as the "Site") solely to perform a SVI Evaluation. See Figure 1. The Site is currently in the New York State (NYS) Brownfield Cleanup Program (BCP), Site No. C130250, which is administered by NYSDEC.

Carman Place Apartments, LLC entered into a Brownfield Cleanup Agreement (BCA) on January 20th, 2023 with the NYSDEC to remediate 1.72398 acres of real estate described below.

Parcel Address	Tax Parcel Identification No.	Acreage
Bedell Street	34-195-135	0.11478
Columbia Street	34-195-138	1.0852
122 Bedell Street	34-195-130	0.046
126 Bedell Street	34-195-129	0.040
155-161 Main Street*	34-195-131 and 132	0.438

The first BCA amendment was executed on March 2, 2023 to add 0.451719 acres of real estate located at 177-179 Main Street (Tax Lots 34-195-8, 9 and 10) for a total revised lot acreage of 2.175699 acres after additional testing was conducted documenting contamination in these additional parcels, which were added to the Site. After additional sampling was completed, a second BCA Amendment was executed on March 29, 2023 to add the two remaining parcels totaling 0.35516 acres located at 163-169 Main Street (Tax Lot 34-195-111) and 177-179 Main Street (Tax Lot 35-195-116) for a total revised BCP Site acreage of 2.54 acres (the "site"). A third BCA Amendment was executed on August 21, 2024 stating that Carman Place Housing Development Fund Company, Inc. ("Carman HDFC") became the title owner of the entire BCP Site as of March 30, 2023. Carman HDFC was not added as a party to the BCA.

A figure showing the site location and boundaries of this Site is provided in Figure 2. The boundaries of the Site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix A.

After completion of the Track 1 unrestricted use remedial work there was no "remaining contamination" at the Site; however, as required by the NYSDEC Decision Document dated May 2023, a SVI Evaluation must be performed prior to occupancy to ensure protection of public health and the environment. Since the timing of development and building construction will not be completed before the end of this year when the Certificate of Completion (COC) will be earned, the Site achieved a Conditional Track 1 remediation, which requires an SVI evaluation post COC, and, as such, an Environmental Easement must be temporarily granted to the NYSDEC. The Environmental Easement has been created and recorded with instrument number 2024-68143, which requires compliance with this SMP and all ECs and ICs placed on the Site.

This SMP was prepared to address the SVI Evaluation and to manage the potential for remaining vapor contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the COC; and

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the BCA (Index #130250-12-22; Site # C130250) for the Site, and thereby subject to applicable penalties.

All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the Site is provided in Appendix B of this SMP.

This SMP was prepared by LaBella Associates, on behalf of Carman Place Apartments, LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010 (updated April 2019) and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the Site.

1.2 Revisions and Alterations

Revisions and alterations to this plan will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the SMP or request revisions from the remedial party. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. All approved alterations must conform with Article 145 Section 7209 of the Education Law regarding the application of professional seals and alterations. For example, any changes to as-built drawings must be stamped by a New York State Professional Engineer. In accordance with the Environmental Easement for the Site, the NYSDEC project manager will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

1. 60-day advance notice of any proposed changes in site use that are required under the terms of the BCA, 6 NYCRR Part 375 and/or Environmental Conservation Law.

2. 7-day advance notice of any field activity associated with the remedial program.

3. Notice within 48 hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

4. Notice within 48 hours of any non-routine maintenance activities.

5. Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

6. Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

7. At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the BCA, and all approved work plans and reports, including this SMP.

8. Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1 on the following page includes contact information for the above notifications. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table 1: Notifications*

Name	Contact Information	Required Notification**
Melissa Sweet, PE (NYSDEC Project Manager)	518-402-9614 melissa.sweet@dec.ny.gov	All Notifications
John Swartwout (NYSDEC Project Manager's Supervisor)	518-402-9570 John.swartwout@dec.ny.gov	All Notifications
Kelly Lewandowski (NYSDEC Site Control)	518-402-9569 Kelly.lewandowski@dec.ny.gov	Notifications 1 and 7
John Robinson (NYSDOH Project Manager)	518-402-7860 beei@health.ny.gov	Notifications 3, 5, and 6

* Note: Notifications are subject to change and will be updated as necessary.
** Note: Numbers in this column reference the numbered bullets in the notification list in this section.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The Site is located in the Village of Hempstead, Nassau County, New York and is identified as Section 34, Block 195, Lots 8, 9, 10, 111, 116, 129, 130, 131, 132, 135, and 138 on the Village of Hempstead Tax Map (see Figure 2). The Site is bounded by Bedell Street to the north, West Columbia Street to the south, Main Street to the east, and Franklin Avenue to the west (see Figure 2 – Site Layout Map. The boundaries of the Site are more fully described in Appendix A –Environmental Easement. The owner/operator of the site parcel(s) at the time of issuance of this SMP is/are:

Carman Place Housing Development Fund Company, Inc.

1000 University Avenue, Suite 500

Rochester, NY 14607

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: two residential apartment buildings which include 288 housing units, commercial space, and sub-grade mechanically ventilated parking. The Site is zoned commercial and is currently being developed as a 323,198 square foot (sqft) mixed-use complex that will include affordable housing units, commercial space, and sub-grade mechanically ventilated parking. The residential housing portion will consist of 288 units across two buildings (CP-I and CP-II). Site occupants in the future will include tenants of the under-construction housing complex and commercial tenants.

The surrounding properties consist of mixed-use commercial and residential properties. To the north is Bedell Street, commercial properties, and parking areas. To the south adjacent to the Site are commercial and residential properties. Located to the east is Main Street and commercial properties. Located to the west are residential properties, commercial properties, and a municipal parking lot.

2.2.2 Geology

Based on the Remedial Investigation, prior to remediation, on-Site soil generally consists of fill material from the surface to a depth of approximately 5 feet below ground surface (ft bgs). The non-native contaminated historic fill material (removed as part of the remedial work) consisted of medium to fine brown silty sands, asphalt, brick, wood, glass, ash, cinders, concrete, and other construction debris. Fill material was underlain by tan fine and medium-fine sand, with varying amounts gravel. Bedrock was not encountered during the RI. Bedrock is buried under glacial deposits. The bedrock is mapped on the Geologic

Map of New York as Mesozoic Upper Cretaceous consisting of unconsolidated sand, gravel, and clay.

The location of a stratigraphic cross-section on-Site is included in Figure 3. A geologic cross section is shown in Figure 3A. Site specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

Groundwater is at approximately 20 to 25 ft bgs across the Site. Groundwater flow direction on-Site is to the south-southwest. Based on a review of available information, including area topography, regional groundwater flow direction is to the south-southwest towards the Atlantic Ocean.

Municipal water supply is provided by the Water Department of Hempstead. Groundwater in the area is discharged from the subsurface system into Mill River and ultimately the Island Park Channel. The major water bearing units beneath the Site include: the Upper Glacial aquifer, the Magothy aquifer, and the Lloyd aquifer. There are no known private wells in the vicinity of the Site.

A groundwater contour map is shown in Figure 4. All groundwater wells were decommissioned and/or removed during construction.

2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 – References.

The Site has a long history of mixed-uses including a dry cleaner as well as a reported UST release that has been closed by NYSDEC. The Site was originally developed between 1904 and 1909. Sanborn maps from 1909 depict 14 two-story dwellings, a storage building, a plumbing shop, and a sign and paint shop. The residential buildings contained oil tanks. In 1919, the property was developed with a similar configuration to 1909, but the sign and paint shop was replaced by Newman Light and Heating. An automobile garage was also present in 1919. Four additional stores were present on the Site in 1925. Between 1925 and 1937, one dwelling and the Newman Light and Heating store were removed from the Site. A large parking lot is shown on the Site in maps beginning in 1937. Between 1950 and 1963, the Site was developed with 10 two-story dwellings, storage buildings, four stores, a new strip of stores and restaurants, automobile garages, and a parking lot. Sanborn maps from 1970 depict six two-story dwellings, eight stores, two restaurants, and two large parking lots on the Site. Aerial photographs from 1970 to the present generally depict a similar configuration.

October 2015 Phase I Environmental Site Assessment (ESA)

A Phase I ESA was prepared in October 2015 by NP&V. This report includes the portion of the property under Tax Number: Section 34, Block 195, Lots 8 through 9, 111, 116 and 131 on the southwest corner of Main Street and Bedell Street. At the time of the 2015 Phase I ESA, the Site was developed with a commercial retail center with an associated parking area. The retail center included several restaurants, a laundromat, a billiard parlor, a wireless store, a hair salon, and a check cashing service center, a vacant store front. A 1,000-gallon UST was reportedly removed from the northwestern portion of the property in 2015 with several tons of contaminated soil. According to the NYSDEC, approximately 68.86 tons of contaminated soil was removed, and endpoint samples confirmed the remaining soil was clean. A REC was identified for the Subject Property related to two floor drains on Site that discharge directly to the subsurface. A second REC was identified related to an open grate stormwater leaching pool located in the parking area. Additionally, one HREC was identified related to the closure of the UST as mentioned above. It was recommended that the stormwater leaching pools be sampled to ensure none of the structures are contaminated, and any floor drains suspected to have been impacted by former discharges should be sampled to ensure subsurface soils meet standards.

November 2015 Phase I Environmental Site Assessment (ESA)

A Phase I ESA was prepared in November 2015 by NP&V. This report includes the portion of the property under Tax Number: Section 34, Block 195, Lot 130 located on the south side of Bedell Street, approximately 150 feet west of Main Street. At the time of the 2015 Phase I ESA, the Site was developed with two residential homes. The western residential structure was noted to be heated with a fuel oil fired boiled, and a 275-gallon AST was observed in the basement of each building. A REC was identified related to floor drains, which discharge directly to the subsurface, that were observed in the basements located adjacent to the boilers. Additionally, suspect asbestos containing material (ACM) floor tiles were observed in both structures and was identified as a REC. If major renovation of demolition of any building is contemplated, a complete asbestos survey must be completed subject to Industrial Code 56.

November 2015 Limited Phase II Environmental Site Investigation (LESI)

A Limited Phase II Environmental Site Investigation (LESI) was performed by Nelson, Pope & Voorhis, LLC (NP&V) on November 5, 2015. This report includes the portion of the property under Tax Number: Section 34, Block 195, Lots 8 through 9, 111, 116, and 131. to address the potential impacts associated with two recognized environmental conditions (RECs) involving two on-Site floor drains and three stormwater leaching pools. No evidence of any storage tanks was observed during NP&V's site reconnaissance. Soil samples collected in the leaching pool area contained SVOCs at concentrations that exceeded applicable USCOs, and metals at concentrations that exceeded applicable UUSCOs. Soil samples collected in the floor drain areas contained SVOCs at concentrations that exceeded applicable RRSCOs and metals at concentrations that exceeded applicable UUSCOs.

December 2015 Limited Phase II ESI

A second LESI was performed by NP&V on December 3, 2015 to address potential impacts associated with the floor drains in the basement of the portion of the property identified as Section 34, Block 195, Lot 129 and Lot 130. Samples collected in the bottom soil of the floor drain in Lot 130 contained VOCs, SVOCs, and metals at concentrations that exceed applicable UUSCOs. Samples collected in the bottom soil of the floor drain in Lot 129 contained metals at concentrations that exceed applicable UUSCOs.

September 2016 Limited Phase II ESI

A third LESI was performed by NP&V on September 15, 2016 for the portion of the property identified as Section 34, Block 195, Lots 135 and 138 to address the potential impacts associated with the 3 stormwater leaching pools and stained soils in Lot 138. A ground penetrating radar (GPR) survey and soil sampling were completed in Lot 135 to determine if any subsurface structures associated with former buildings or contamination were present. The GPR survey did not identify any anomalies that would indicate that subsurface anomalies were present in Lot 135. Soil samples collected from the top 12 inches of the stormwater leaching pools in Lot 138 and Lot 135 contained SVOCs at concentrations that exceeded applicable UUSCOs and RRSCOs and metals at concentrations that exceeded applicable UUSCOs.

October 2018 Phase I Environmental Site Assessment (ESA)

A Phase I ESA update was prepared in October 2018 by EnviroScience for the portion of the property identified as Section 34, Block 195, Lots 8, 9, 10, 111, 116, 129, 130, 131, 135, and 138. At the time of the 2018 Phase I ESA, the Site was developed with a commercial building, two residential buildings, two large parking areas, and an automobile storage yard. One out-of-use 275-gallon aboveground storage tank (AST) was identified in the basement of the house located at 126 Bedell Street. The presence of the former dry cleaner known as Hempstead Valet Service located at 157A Main Street represented a vapor encroachment condition and was identified as a REC. The previous soil contamination identified beneath the floor drains of the residential buildings on the Site was also identified as a REC. EnviroScience concluded that the floor drains should be identified and investigation or documentation regarding their remediation should be obtained. EnviroScience also concluded that the Site has a moderate environmental risk due to the presence of a former dry cleaner on the Site and known soil contamination.

August 2019 Supplemental Site Investigation Report

A Supplemental Site Investigation (SSI) including additional soil, groundwater, and vapor intrusion investigation was completed in April and July 2019 by Paulus, Sokolowski and Sartor Engineering, PC (PS&S) to further characterize the portion of the property identified as Section 34, Block 195, Lots 8, 9, 10, 111, 116, 131, and 138. Soil samples collected across the aforementioned lots contained metals and VOCs in exceedance of applicable UUSCOs. Groundwater results indicated the presence of VOCs,

SVOCs, metals, PFAS, and 1,4 Dioxane. However, only two wells were installed, therefore not enough sample points were present to evaluate groundwater quality. as it relates to decision-making for the Site. SVI results indicated that no further action was recommended with regards to detections of PCE, TCE, and carbon tetrachloride in comparison with the NYSDOH matrices.

June 2022 Draft Remedial Investigation Report – Remedial Action Work Plan

The June 2022 Draft RIR – Remedial Action Work Plan (RIR-RAWP) was prepared by PS&S for the Site identified as Section 34, Block 195, Lots 8, 9, 10, 111, 116, 129, 130, 131, 132, 135, and 138, and presented the data collected as part of the 2019 SSI; however, no new data was presented. NYSDEC provided a comment letter stating that the RIR and the Remedial Action Work Plan (RAWP) must be submitted as two stand-alone documents and requested deficiencies in the RIR be addressed, including additional groundwater and soil investigation and additional sample analyses to include the full suite of analysis for soils and groundwater, a Conceptual Site Model, Qualitative Human Exposure Assessment, and a Fish and Wildlife Resources Impact Analysis, as well as conclusions for the Site. NYSDEC indicated that Lots 8, 9, 10, 111, and 116 were not admitted to the BCP but that they would review the results of any additional soil testing submitted to the NYSDEC.

March 2023 Supplemental Remedial Investigation Report

A Supplemental Remedial Investigation (SRI) was conducted by LaBella for the Site identified as Section 34, Block 195, Lots 8, 9, 10, 111, 116, 129, 130, 131, 132, 135, and 138, in January and February 2023 to address remedy-relevant data gaps identified by NYSDEC. The SRI consisted of advancing 15 soil borings at representative locations throughout the Site, including several targeted Areas of Concern. In addition to these 15 soil borings, a total of 36 soil samples (including duplicates) were collected from 6 soil borings, advanced to a depth of approximately 4 ft bgs, and 11 test pits, advanced to a depth of 6 ft bgs, as part of the investigation to evaluate potential BCP eligibility for the Northeastern Lots, which include Lots 8, 9, 10, 111, and 116.

AOC 1 – Contaminated Historic Fill Material

A total of 87 soil samples (including duplicates) were collected from 15 soil borings in connection with AOC-1 as part of the SRI. In addition to the SRI, soil samples were collected from Lots 8, 9, 10, 111 and 116 (the Northeastern Lots) as part of the investigation to evaluate BCP eligibility of these lots. Specifically, a total of 36 soil samples (including duplicates and one field equipment blank) were collected from 6 soil borings and 11 test pits in these lots. Subsequently these lots were determined eligible in the first and second BCA Amendments.

Soil boring and test pit logs confirm the presence of a layer of non-native historic fill material consisting of medium to fine brown silty sands, asphalt, brick, wood, glass, ash, cinders, concrete, and other construction debris to depths of up to 5 ft bgs. Both SRI borings and Northeastern lot borings indicated the presence of historic fill through

analytical results with SVOCs and metals exceeding respective USCOs and pesticides and polychlorinated biphenyls (PCBs) exceeding UUSCOs.

Based on analytical results, the remedial depth of the CHFM was approximately 4 ft bgs across the Site and 6 ft bgs in the vicinity of SB-01.

AOC 2 – Stormwater Leaching Pools and Storm Drains

Analytical results for soil borings advanced within the stormwater leaching pools (AOC-2) indicate exceedances of UUSCOs at SB-05 / LP-3 (8 to 10 ft bgs), SB-07 / SD-01 (6 to 8 ft bgs), SB-10 / LP-1 (8 to 10 ft bgs), and SB-15 / LP-2 (8 to 10 ft bgs). RRUSCOs and USCOs were exceeded at SB-05 / LP-3 (8 to 10 ft bgs) and SB-10 / LP-1 (8 to 10 ft bgs).

Based on analytical results, the remedial depth will be approximately 10 ft bgs at SB-07 / SD-01, SD-02, and SD-03 and approximately 10 ft bgs at SB-05 / LP-3, SB-10 / LP-1, and SB-15 / LP-2.

AOC 3 – Floor Drains

No additional soil samples were collected at AOC-3 as part of the SRI. Based on the CSM, the RIR concluded that COPCs at this AOC were not likely to have migrated further in the subsurface.

Based on analytical results, the remedial depth associated with the floor drains was determined to be approximately 10 ft bgs at FD-1 (Lot 130), FD-2 (Lot 129), and FD-1 and FD-2 (Lot 131).

AOC 4 – Suspected Underground Storage Tank

A geophysical survey confirmed the presence of the suspected UST in the vicinity of the border of lot 131 and 132. Based on the dimensions estimated from geophysical survey, the UST was assumed to be a 550-gallon tank. Soil boring SB-13 was advanced hydraulically downgradient of the UST; however, the RI findings did not reveal any evidence of a release of petroleum hydrocarbon material. Analytical results did not indicate exceedances of applicable SCOs in soil samples, there were no indications of VOCs based upon PID measurements, and there was no staining or odors were observed during the drilling of SB-13.

The RIR concluded that should petroleum contamination be encountered during remedial activities, spill reporting requirements will be followed, and the material would be characterized, handled, transported, and disposed according to applicable local, state, and federal regulations.

AOC 5 – Former Dry-Cleaning Operation

Analytical results for soil borings SB-11 and SB-14 advanced in connection with the former dry-cleaning facility located at 157A Main Street did not indicate the presence of CVOCs at concentrations that exceed applicable criteria. PCE was detected in shallow soil samples at concentrations of 0.0075 mg/kg (SB-11 (0-2)), 0.0031 mg/kg (SB-14 (0-2)), and 0.0013 mg/kg (SB-13 (2-4)), but at level which were below the UUSCO of 1.3 mg/kg.

In addition, the available data, including sub-slab soil vapor and indoor air sampling performed at Lots 131 and 111 in 2019, did not indicate the presence of COPCs in soil vapor at the Site at screening levels that required action according to the New York State Department of Health (NYSDOH) Guidance for Evaluating SVI in the State of New York (NYSDOH Guidance). Soil vapor sampling results from 4 locations sampled as part of the SRI did not indicate a concern regarding the potential for the off-Site migration of COPCs in soil vapor.

The RIR concluded that should CVOC contamination be encountered during remedial activities, spill reporting requirements will be followed, and the material will be characterized, handled, transported, and disposed according to applicable local, state, and federal regulations.

No further action was deemed warranted in connection with AOC-5.

Groundwater

The following constituents were detected in groundwater at concentrations that exceeded the NYSDEC AWQS, as summarized below:

- Two SVOCs were detected exceeding their respective NYSDEC AWQS, bis(2-ethylhexyl) phthalate was detected at a concentration of 17 ug/L in sample MW-2 and benzo(a)anthracene was detected at a concentration of 0.02 ug/L in sample MW-4
- One pesticide, dieldrin, was detected exceeding its NYSDEC AWQS in samples MW-1, MW-2, and MW-3 at concentrations of 0.005, 0.004, and 0.051 ug/L, respectively.
- PFOS and PFOA were detected exceeding their respective NYSDEC AWQS in all samples collected.

The RIR concluded that it is likely the limited groundwater impacts may be attributed to off-Site sources, regional groundwater quality, and/or sample turbidity. Based upon analytical data and discussions with NYSDEC, groundwater treatment was not recommended.

Soil Vapor

Sub-slab soil vapor and indoor air sampling performed at Lots 131 and 111 in 2019, did not indicate the presence of COPCs in soil vapor at the Site at screening levels that required action according to the NYSDOH Guidance for Evaluating SVI in the State of New York (NYSDOH Guidance).

Soil vapor sampling results from 4 locations sampled as part of the SRI also did not indicate a concern regarding the potential for the off-Site migration of COPCs in soil vapor. The laboratory analytical results were compared to the NYSDOH Air Guidelines Values and the USEPA BASE Database - 90th Percentile.

No further action was recommended in connection with soil vapor. However, an SVI Evaluation will be performed as part of this SMP to confirm no SVI mitigation is required.

May 2023 Remedial Action Work Plan

A Remedial Action Work Plan (RAWP) was submitted for the Site identified as Section 34, Block 195, Lots 8, 9, 10, 111, 116, 129, 130, 131, 132, 135, and 138, to the NYSDEC by LaBella in March 2023 and was approved by the NYSDEC on or about May 16, 2023. The Site was remediated in accordance with the 2023 RAWP and the May 2023 Decision Document as summarized below:

The selected remedy in the RAWP and Decision Document was a Track 1 Unrestricted use remedy which requires excavation to achieve the Unrestricted SCOs.

The elements of the selected remedy are as follows:

1. Remedial Design

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

2. Excavation

The existing on-site buildings will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy. Excavation and off-site disposal of contaminant source areas including:

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead; and
- excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Excavation and off-site disposal of all on-site soil which exceed unrestricted use soil cleanup objectives (UUSCOs), as defined by 6NYCRR Part 375-6.8. Remedial depths to achieve UUSCOs are four feet across the site. Leaching pools and similar structures will be excavated and removed to depths range four to ten feet below grade as necessary to achieve UUSCOs.

If a Track 1 unrestricted use cleanup is achieved, a Cover System will not be a required element of the remedy.

3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

4. Vapor Intrusion Evaluation

As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

5. Local Institutional Controls

If no EE or SMP is needed to achieve soil, groundwater, or soil vapor remedial action objectives, the following local use restriction will be relied upon to prevent ingestion of groundwater: Nassau County Public Health Ordinance, Article 4, which prohibits potable use of groundwater without prior approval.

Conditional Track 1

The intent of the remedy is to achieve Track 1 unrestricted use; therefore no environmental easement or site management plan is anticipated. If soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a Site Management Plan (SMP) and Environmental Easement (EE) will be required to address the SVI evaluation and implement actions as needed. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the Certificate of Completion (COC).

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required and the remedy will achieve a Track 2 restricted residential cleanup.

6. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental easement discussed in Paragraph 6 above.

This plan includes, but may not be limited to:

- description of the provisions of the environmental easement including any land use and/or groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of vapor intrusion to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any building on site, as may be required by the Institutional and Engineering Control Plan discussed above.

A summary of the remediation is detailed in the 2024 Final Engineering Report (FER).

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document dated May 2023 are as follows:

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.

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

2.5 Remaining Contamination

The Site has been remediated to achieve a Track 1 cleanup. Based upon the results of post-excavation confirmation soil sampling, there is no contamination remaining at the Site in exceedance of UUSCOs following completion of the remedial action.

The remedial excavation extended from ground surface to approximately 4 to 6 ft bgs site-wide, in the north and southeast portions to approximately 8 ft bgs, as well as several scattered hot spots across the Site up to 15 ft bgs. Remedial excavation extents are detailed in the Final Engineering Report (FER) and depicted in Figure 4 of the FER.

Clean soil was excavated to support development work from 4 to 15 ft bgs across the Site, with the exception of the northwest and southern portions of the Site which were excavated to depths of 4 to 10 ft bgs and several locations along the western and southern boundaries which were excavated to depths of 20 ft bgs for stormwater infrastructure. Clean soil excavated for development purposes was either removed from the Site for off-site disposal, or reused on-site. Development excavation depths are further detailed in the FER and depicted in Figure 5 of the FER.

Post-excavation confirmation soil samples were collected at a frequency of one sample per 900 square foot grid across the Site to confirm that UUSCOs were achieved. At

hotspot locations, an additional four sidewall samples were collected on the north, south, east, and west of each hotspot. At locations where post-excavation confirmation soil samples exceeded UUSCOs, remedial excavation extended an additional 2 ft bgs and an additional post-excavation confirmation sample was collected. This process was repeated until UUSCOs were achieved. A summary of post-excavation confirmation soil sampling is further detailed in the FER.

Groundwater was not significantly impacted, and final groundwater results did not indicate further remedial action was necessary. The site was not a source nor contributing to groundwater contamination.

3.0 INSTITUTIONAL CONTROL PLAN

3.1 General

Based upon the results of post-excavation confirmation soil sampling, there is no remaining contamination at the Site in exceedance of UUSCOs. Per the Decision Document, Institutional Controls (ICs) are required to protect human health and the environment until the SVI evaluation is completed. This IC Plan describes the procedures for the implementation and management of all ICs at the Site. The IC Plan is one component of the SMP and is subject to revision by the NYSDEC project manager.

This plan provides:

- A description of all ICs on the Site;
- The basic implementation and intended role of each IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review; and
- Any other provisions necessary to identify or establish methods for implementing the ICs required by the Site remedy, as determined by the NYSDEC project manager.

3.2 Institutional Controls

A series of ICs is required by the May 2023 Decision Document to: (1) implement, maintain and monitor Engineering Control systems; and (2) prevent future exposure to remaining contamination. Adherence to these ICs on the Site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are shown on Figure 5. These ICs are:

- The property has no use restrictions;
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;
- Soil vapor monitoring must be performed as defined in this SMP;

- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;

- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;

- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement; and

- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 5, and any potential impacts that are identified must be monitored or mitigated.

3.3 Engineering Controls

The remedy for the Site did not require the construction of engineering controls. A soil vapor barrier will be installed under each building as a green remedial precautionary measure.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC project manager. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the Site are included in the Quality Assurance Project Plan provided in Appendix D.

This Monitoring and Sampling Plan describes the methods to be used for:

- All appropriate media will be sampled and analyzed, including indoor air and sub-slab soil vapor.

- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly NYSDOH SVI Guidance; and

- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements; and
- Annual inspection and periodic certification.

See Section 4.3 below for details on the Sampling Plan. Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed at a minimum of once per year. These periodic inspections must be conducted when the ground surface is visible (i.e. no snow cover). Site-wide inspections will be performed by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State. Modification to the frequency or duration of the inspections will require approval from the NYSDEC project manager. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix E – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- Whether stormwater management systems, such as basins and outfalls, are working as designed;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date.

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC project manager must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as defined in 6 NYCCR Part 375. Written confirmation must be provided to the NYSDEC project manager within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public. The remedial party will submit follow-up status reports to the NYSDEC within 45 days of the event on actions taken to respond to any emergency event requiring ongoing responsive action, describing and documenting actions taken to restore the effectiveness of the ECs.

4.3 Post-Remediation Media Monitoring and Sampling

SVI testing will be completed prior to occupancy when the lowest level of the buildings are constructed, fully enclosed, and HVAC is operational in the heating season or when the lowest level of the building is enclosed and occupied even if outside of the heating season and is further detailed below. Currently, only one post-remediation sampling event is planned to assess SVI. In the event additional sampling is needed, the SMP will be updated (and approved by NYSDEC). Sampling locations, required analytical parameters, and schedule are provided in Table 2 below. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

Table 2: Post-Remediation Media Monitoring Schedule

Sampling Location	Analytical Parameters	Schedule
	VOCs (EPA Method TO-15)	
New Building Sub-Slab/Indoor Air	X	1st Quarter 2026

4.3.1 SVI Sampling

While there are no currently active sub-slab depressurization (SSD) systems operating at the Site, and none are planned to be installed and/or activated, the NYSDEC Decision Document requires assessing for, and if necessary, mitigation of, SVI into future buildings onsite, a workplan will be submitted for the design, installation, start-up, and follow-up monitoring of an SVI mitigation system

SVI sampling will be performed as a precautionary measure prior to building occupancy. The SVI evaluation plan will include the collection of five co-located sub-slab and indoor air samples along with one ambient air sample as presented on **Figure 6**. All sub-slab, indoor and outdoor air samples will be collected using 1-liter or 6-liter Summa Cannisters® that are equipped with pre-calibrated laboratory supplied flow regulators set for a sampling time of twenty-four (24) hours and analyzed according to EPA Method TO-

15 low level. A chemical inventory and building questionnaire will also be completed. The SVI may be performed prior to the heating season should the lowest level of occupied space be completed and fully enclosed and the HVAC is operation before the heating season begins. However, the testing may need to be repeated in the heating season pursuant to direction from the NYSDEC project manager. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager

Should DEC and DOH determine that there is the potential for SVI intrusion, a workplan will be submitted for the design, installation, start-up and follow-up monitoring of an SVI mitigation system.

The sampling frequency may only be modified with the approval of the NYSDEC project manager. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC project manager.

Deliverables for the SVI sampling program are specified in Section 7.0 – Reporting Requirements.

4.3.3 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix E – Site Management Forms. The sampling log will serve as the inspection form for the monitoring network.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

The Site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP. In the event that SVI mitigation is required based on the post-remediation SVI evaluation, the SMP and this section, will be updated accordingly.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

This section is not included since there are no remedial systems. In the event that the post-remediation SVI evaluations indicate that institutional or engineering controls are required, the SMP will be updated and climate change vulnerability will be assessed.

6.2 Green Remediation Evaluation

This section is not included since there are no remedial systems. In the event that the post-remediation SVI evaluations indicate that institutional or engineering controls are required, the SMP will be updated and green remediation evaluation will be assessed.

6.3 Remedial System Optimization

This section is not included since there are no remedial systems. In the event that the post-remediation SVI evaluations indicate that institutional or engineering controls are required, the SMP will be updated and remedial system optimization will be assessed.

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix E. These forms are subject to NYSDEC revision. All site management inspection, maintenance, and monitoring events will be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State. The DEC and DOH will assess the data collected in the SVI evaluation testing of the buildings and make a determination as to the need for SVI mitigation, further monitoring, or no further action.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 3 and summarized in the Periodic Review Report.

Table 3: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Soil Vapor Intrusion Evaluation Report	Anticipated to be performed in the First Quarter of 2026
Periodic Review Report	Annually to the extent required, or as otherwise determined by the NYSDEC

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC project manager.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

In the event that the post-remediation SVI Evaluation indicates that engineering controls are not required, then the Environmental Easement will be terminated and no Periodic Review Report (PRR) will be submitted. However, if SVI Evaluation indicates that a SVI condition is present, the Environmental Easement will stay in-place, any exceedances will be mitigated properly, and a Periodic Review Report (PRR) will be submitted to the NYSDEC project manager beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the NYSDEC project manager or at another frequency as may be required by the NYSDEC project manager. In the event that the Site is subdivided into separate parcels with different ownership, a single PRR will be prepared that addresses the Site described in Appendix A -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the PRR. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the Site.
- Results of the required annual site inspections, fire inspections and severe condition inspections, if applicable.
- Description of any change of use, import of materials, or excavation that occurred during the certifying period.

- All applicable site management forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.

- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.

- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.

- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These tables and figures will include a presentation of past data as part of an evaluation of contaminant concentration trends, including but not limited to:

  – Trend monitoring graphs that present groundwater contaminant levels from before the start of the remedy implementation to the most current sampling data;

  – Trend monitoring graphs depicting system influent analytical data on a per event and cumulative basis;

  – O&M data summary tables;

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:

  – The compliance of the remedy with the requirements of the site-specific Remedial Action Work Plan (RAWP), ROD or Decision Document;

  – The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;

  – Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;

  – Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan;

- An update to the climate change vulnerability assessment if Site or external conditions have changed since the previous assessment, and recommendations to address vulnerabilities.

- A summary of the Green Remediation evaluation, including a quantitative and qualitative overview of a site's environmental impacts and recommendations to improve the remedy's environmental footprint. The PRR will include the completed Summary of Green Remediation Metrics form provided in Appendix E.

- An evaluation of trends in contaminant levels in the affected media to determine if the remedy continues to be effective in achieving remedial goals as specified by the RAWP, ROD or Decision Document; and

- The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional Controls

Following the last inspection of the reporting period, a Professional Engineer licensed to practice and registered in New York State will prepare, and include in the PRR, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:*

- *The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*

- *The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;*

- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*

- *Nothing has occurred that would constitute a violation or failure to comply with any SMP for this control;*

- *Access to the Site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*

- *If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document;*

- *Use of the Site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the Site remedial program and generally accepted engineering practices; and*
- *The information presented in this report is accurate and complete.*
- *No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary , if any, to indicate that the assumption made in the qualitative exposure assessment of off-site contamination are no longer valid and the assumption;*

Every five years the following certification will be added:

- *The assumptions in the qualitative exposure assessment remain valid.*

"I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Daniel Noll, of 300 State Street, Suite 201, Rochester, NY, am certifying as Owner's/Remedial Party's Designated Site Representative for the Site."

"I certify that the New York State Education Department has granted a Certificate of Authorization to provide Professional Engineering services to the firm that prepared this Periodic Review Report."

The signed certification will be included in the PRR.

The PRR will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager. The PRR may also need to be submitted in hard-copy format if requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control or failure to conduct site management activities, a Corrective Measures Work Plan will be submitted to the NYSDEC project manager for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC project manager.

8.0 REFERENCES

6 NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. NYSDEC, June 1998 (April 2000 addendum)

Draft Remedial Investigation Report – Remedial Action Work Plan, Paulus, Sokolowski and Sartor Engineering, PC, June 10, 2022.

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Limited Phase II Environmental Site Investigation, Nelson, Pope & Voorhis, LLC, November 5, 2015.

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Phase I Environmental Site Assessment, EnviroScience, October 2018.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation," May 2010 (Updated April 2019).

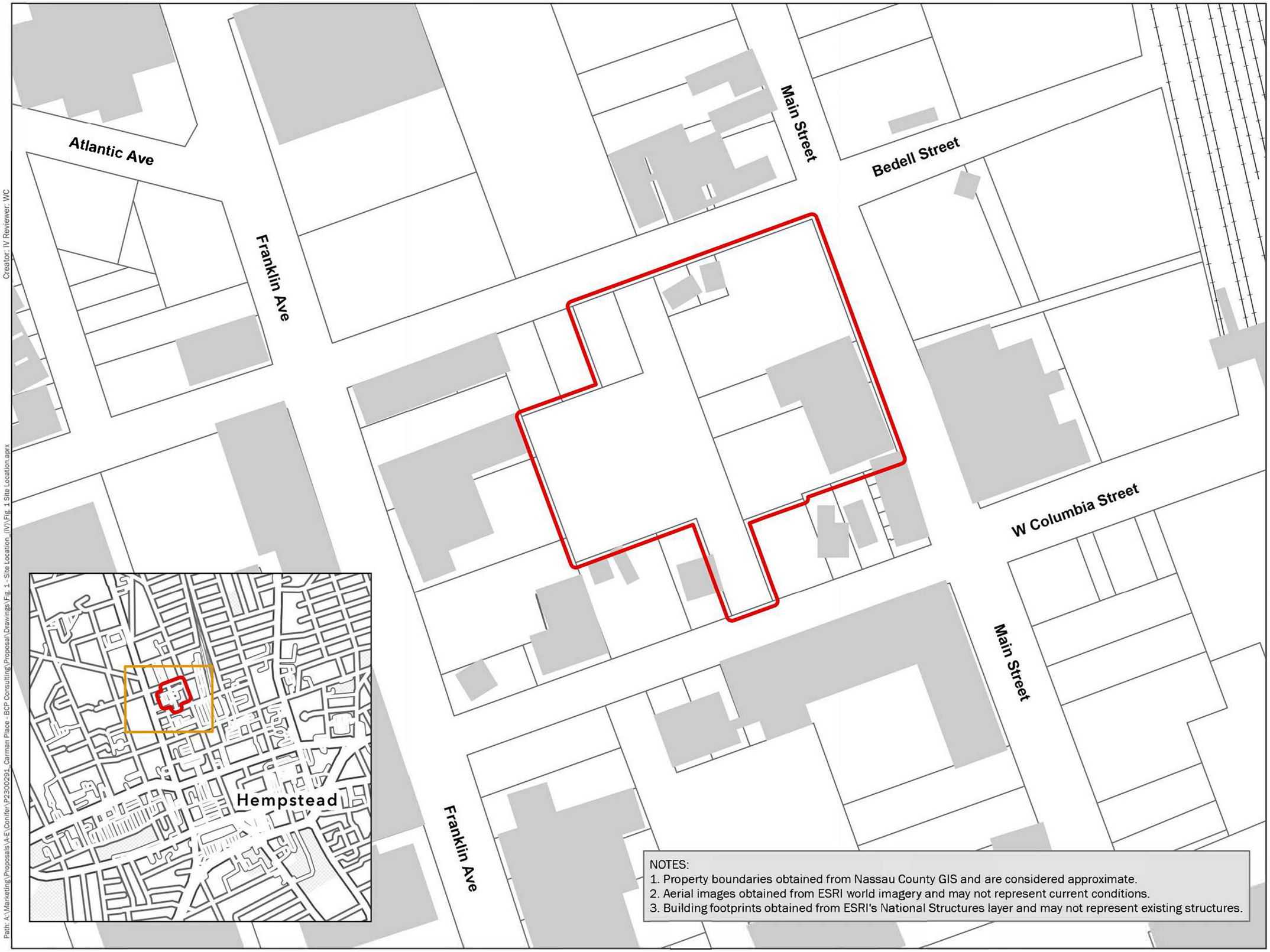
Remedial Action Work Plan, LaBella Associates, DPC, May 2023.

Supplemental Remedial Investigation Report, LaBella Associates, DPC, March 2023.

Supplemental Site Investigation Report, Paulus, Sokolowski and Sartor Engineering, PC, August 9, 2019.

Technical Guidance for Site Investigation and Remediation, NYSDEC DER-10, May 2010 (Updated April 2019).

FIGURES



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LaBella
Powered by partnership.

Carman Place Site
BCP No. C130250

157 Main Street
Hempstead, New York

Site Management Plan

N

0 120 ft

1 inch =120 feet

Site Boundary
Structures
Parcels
Railroad

Site Map

FIGURE 1

LaBella Project No: 2230824
Date: July 2024

Creator: IV Reviewer: RK

Path: A:\Marketing\Proposals\A-E\Conifer\P2300291_Carman Place - BCP Consulting\Proposal\Drawings\Fig. 2 Tax Map - Site Location\Fig. 2 Tax Map\Fig 2 Tax map.aprx

LaBella
Powered by partnership.

Carman Place Site
BCP No. C130250

157 Main Street
Hempstead, New York

Site Management Plan

N

0 50

1 inch = 50 feet

Legend

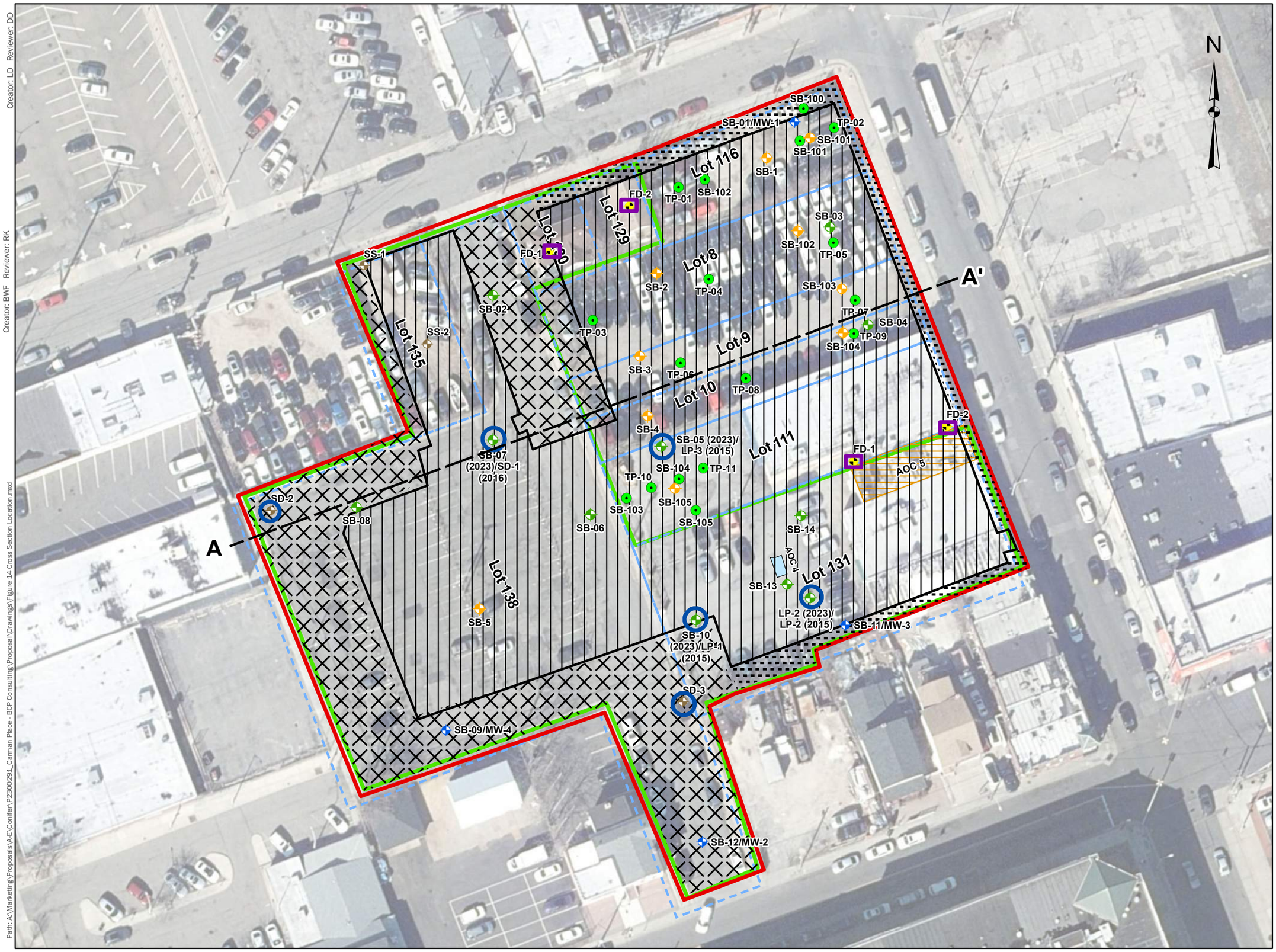
- BCP Site Boundary
- Tax Lots

Tax Map

FIGURE 2

LaBella Project No: 2230824
Date: July 2024

Creator: LD Reviewer: DD
Creator: BWF Reviewer: RK
Path: A:\Marketing\Proposals\A-E\Confer\P2300291_Carman Place - BCP Consulting\Proposal\Drawings\Figure 14 Cross Section Location.mxd



LaBella
Powered by partnership.

Carman Place Site
BCP No. C130250

157 Main Street
Hempstead, New York

Site Management Plan

Legend

- 2015 Floor Drain Sample Location
- 2016 Storm Drain Sample Location
- 2019 Soil Boring Location
- SRI Soil Boring/Monitoring Well Location
- SRI Soil Boring Location
- Proposed_Excavation to 4 ft bgs
- Excavation to 2 ft bgs
- Proposed Excavation to 14 ft bgs
- Northeastern Lots Test Pit/Boring Location
- Lot Boundary
- Non-BCP Site Boundary
- AOC 1 Historic Fill (Site Wide)
- AOC 4 Suspected UST Location
- AOC 5 Former Dry Cleaning Operation
- AOC 2 Leaching Pools & Storm Drains
- AOC 3 Floor Drains

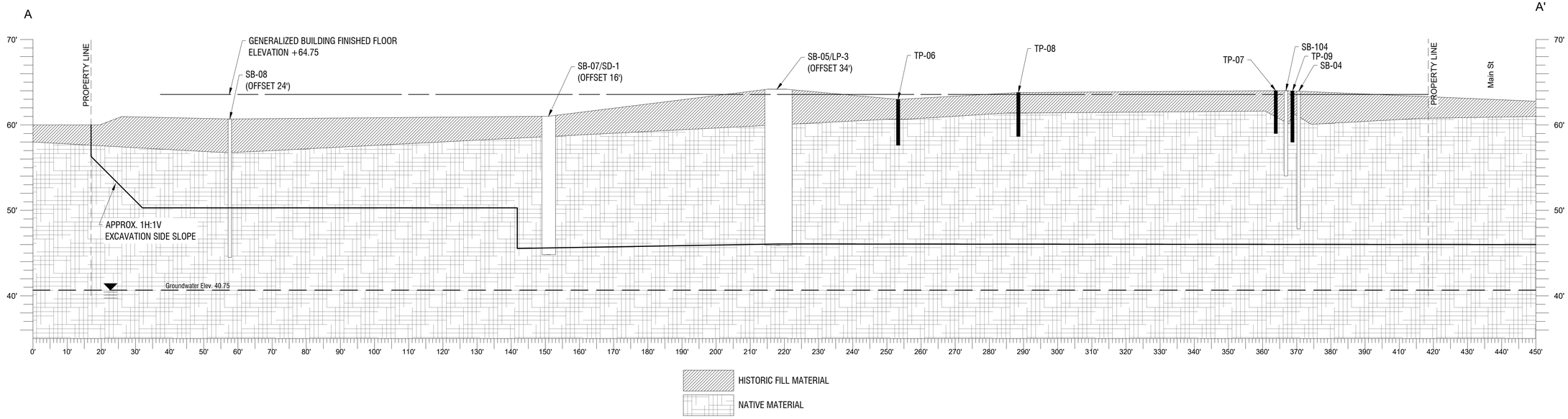
0 25 50 75 100
Feet

1 inch = 50 feet

Conceptual Site Plan
w/ Transect A-A'

FIGURE 3

LaBella Project No: 2230824
Date: February 2023



NOTES:

1. ELEVATIONS BASED OFF THE NORTH AMERICAN 1983 DATUM.
2. ELEVATIONS AND HORIZONTAL DISTANCES ARE DISPLAYED IN FEET.
3. THE VERTICAL EXAGGERATION BETWEEN ELEVATION AND HORIZONTAL DISTANCE IS 5:1.
4. STATIC WATER LEVELS WERE COLLECTED ON FEBRUARY 8TH 2023.
5. ACTUAL SOIL TYPES MAY VARY BETWEEN LOCATIONS.

NO.	REVISION	BY	DATE
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless they are acting under the direction of a licensed professional engineer or architect, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered, the altering engineer, architect or land surveyor must affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

LaBella
Powered by partnership.

PROJECT/CLIENT
SITE MANAGEMENT PLAN
CARMAN PLACE SITE
HEMPSTEAD, NASSAU COUNTY

DRAWING TITLE
CROSS SECTION A-A'

ISSUED FOR:
FINAL

DESIGNED BY: DN
DRAWN BY: DRP
REVIEWED BY: DN
DATE: FEBRUARY, 2023

PROJECT/DRAWING NUMBER
###

FIGURE 3A

Creator: LD Reviewer: DD

Creator: BWF Reviewer: RK

Path: A:\Marketing\Proposals\A-E\Conifer\P2300291_Carman Place - BCP Consulting\Proposal\Drawings\Figure 9 GW Flow.mxd

NOTES:
1. All Soil Borings were advanced to 16 ft-bgs.

LaBella
Powered by partnership.

Carman Place Site
BCP No. C130250

157 Main Street
Hempstead, New York

Site Management Plan

Legend

- BCP Site Boundary/Proposed Redevelopment
- AOC 4 Suspected UST Location
- SRI Soil Boring/Monitoring Well Location
- Lot Boundary

0 25 50 75 100
Feet

1 inch = 50 feet

Groundwater Contour & Flow Direction

FIGURE 4

LaBella Project No: 2230824
Date: February 2023

LaBella
Powered by partnership.

Carman Place Site
BCP No. C130250

157 Main Street
Hempstead, New York

Site Management Plan

N

0 50

1 inch = 50 feet

Legend

BCP Site Boundary

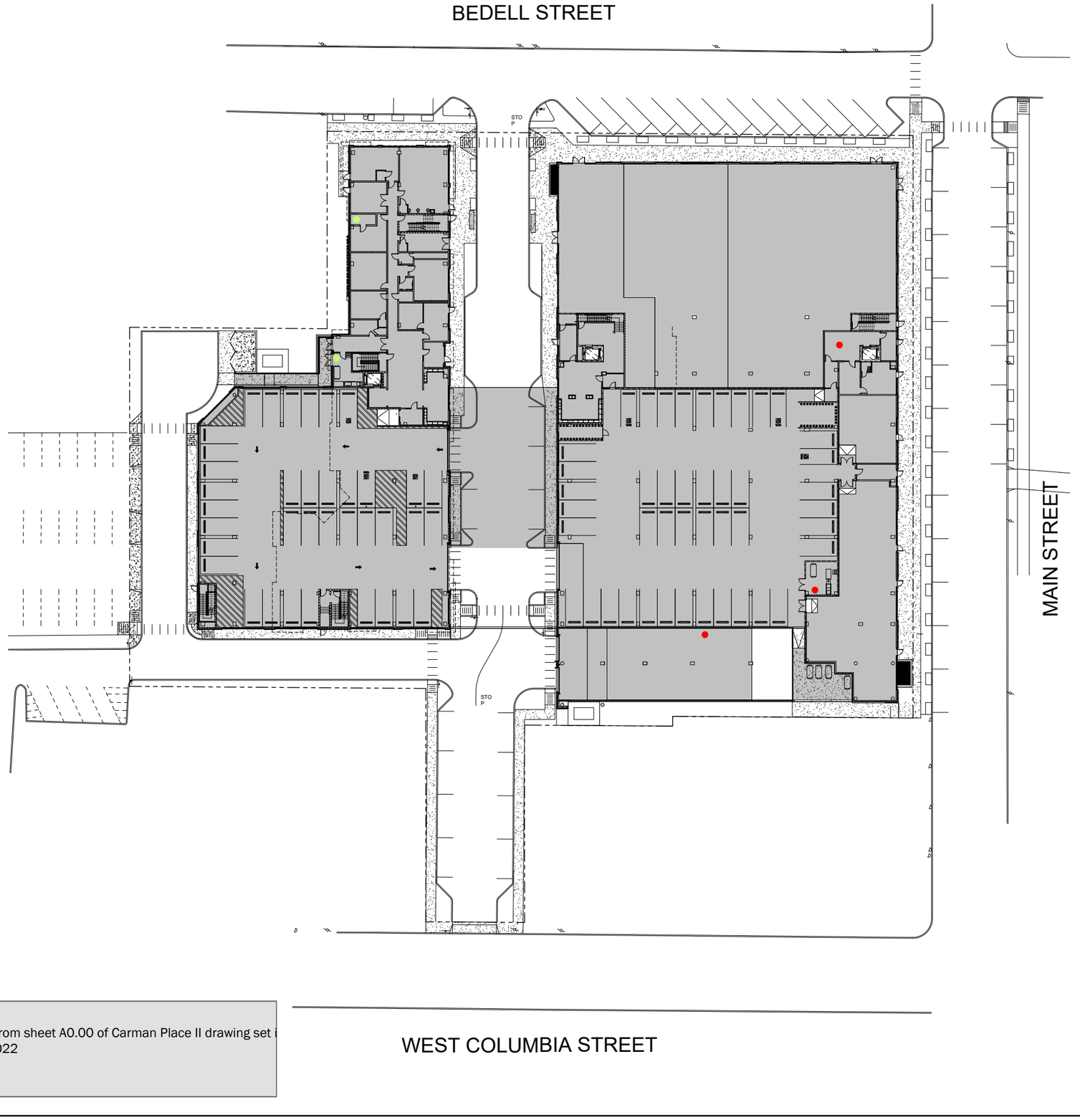
Institutional Control Boundaries

FIGURE 5

LaBella Project No: 2230824
Date: July 2024

Creator: EH Reviewer: CC
Path: A:\Marketing\Proposals\A-E\Conifer\P2300291_Carman Place - BCP Consulting\Proposal\Drawings\Fig_2 Tax Map - Site Location\Fig_2 Tax Map\Fig 2 Tax map.aprx

Creator: EH Reviewer: CC



NOTES:
1.Architectural site plan from sheet A0.00 of Carman Place II drawing set i
issued to HFA 10-10-2022

LaBella
Powered by partnership.

Carman Place Site
BCP No. C130250

157 Main Street
Hempstead, New York

Final Engineering Report

N

0 50

1 inch = 50 feet

Legend

- **Basement Level Sub Slab Soil Vapor Sampling Points**
- **Ground Level Sub Slab Soil Vapor Sampling Points**

Soil Vapor Intrusion Evaluation Plan Sampling Locations

FIGURE 6

LaBella Project No: 2230824
Date: October 2024

APPENDIX A

Environmental Easement
Metes and Bounds

**** Electronically Filed Document ****

Instrument Number: 2024-68143 Originator CORPORATION SERVICE COMPANY

Recorded As: EX-D06 - DEED AGREEM

Recorded On: November 01, 2024

Recorded At: 12:23:35 pm Receipt Number: 3347545

Number of Pages: 15 Processed By: 001 AAR

Book-VI/Pg: Bk-D VI-14557 Pg-383

Total Rec Fee(s): $415.00

** Examined and Charged as Follows **

06 - DEED AGREEMENT	$ 115.00	EX-Blocks - Deeds - $300	$ 300.00

	Tax Amount	Consid Amt	RS#/CS#		
Tax-Transfer HEMPSTEAD	$ 0	$ 0	RE 6560	Basic	$ 0.00
				Local NY CITY	$ 0.00
				Additional MTA	$ 0.00
				Spec ASST	$ 0.00
				Spec ADDL SONYMA	$ 0.00
				Transfer	$ 0.00
Tax Charge:	$ 0				

Property Information:

Section	Block	Lot	Unit	Town Name
34	195	10		HEMPSTEAD
34	195	111		HEMPSTEAD
34	195	116		HEMPSTEAD
34	195	129		HEMPSTEAD
34	195	130		HEMPSTEAD
34	195	131		HEMPSTEAD
34	195	132		HEMPSTEAD
34	195	135		HEMPSTEAD
34	195	138		HEMPSTEAD
34	195	8		HEMPSTEAD
34	195	9		HEMPSTEAD

**********THIS PAGE IS PART OF THE INSTRUMENT **********

Any provision herein which restricts the Sale, Rental or use of the described REAL PROPERTY because of color or race is invalid and unenforceable under federal law.

NASSAU COUNTY STATE OF NEW YORK

Maureen O'Connell

County Clerk Maureen O'Connell

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

P

THIS INDENTURE made AS OF this 16th day of October, 2024, between Owner(s), Carman Place Housing Development Fund Company, Inc. (the "Grantor Fee Owner") having an office at c/o Community Development Corporation of Long Island, Inc., 2100 Middle Country Road, Centereach, NY, County of Suffolk, Carman Place Apartments, LLC (the "Grantor Beneficial Owner") having an office at c/o Conifer Realty, LLC, 1000 University Ave., Ste 500, Rochester, NY, County of Monroe, State of New York (together with Grantor Fee Owner, collectively, the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

SEC: 34 Block: 195 Lots: 111, 8-10, 116, 129, 130, 131, 132, 135, 138

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located in the City of Hempstead, County of Nassau and State of New York, known and designated by the Nassau County Clerk as:

Tax ID	Address	Deed Date	Recording Inst.
34-195-111	163-169 Main Street	March 30, 2023	2023-26401
34-195-8, 9, 10, 116	173-175 Main Street		
34-195-129	126 Bedell Street		2023-56404
34-195-130	122 Bedell Street		
34-195-131 & 132	155-161 Main Street		2023-26402
34-195-135	Bedell Street		2023-26403
34-195-138	Columbia Street		

The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 2.541 +/- acres, and is hereinafter more fully described in the Land Title Survey dated February 2, 2023, and last revised September 25, 2024, prepared by Frank Galluzzo, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

WHEREAS, Grantor Beneficial Owner, is the owner of the beneficial interest in the Controlled Property being the same as the beneficial interest conveyed to Grantor Beneficial Owner by means of a Declaration of Interest and Nominee Agreement between Grantor Fee Owner and Grantor Beneficial Owner dated as of March 30, 2023 and recorded in the Nassau County Clerk's Office on May 4, 2023, as Instrument No. 2023-26405;

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C130250-12-22, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a

manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:
Site Number: C130250
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:
Site Control Section

Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor Fee Owner has caused this instrument to be signed in its name.

Carman Place Housing Development Fund Company, Inc.:

By: _____

Print Name: Gwen O'Shea

Title: President - CEO Date: 9/30/24

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Suffolk)

On the 30th day of September in the year 2024, before me, the undersigned, personally appeared Gwen O'Shea, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

MARITZA ARRIOLA-AVILA
Notary Public - State of New York
No. 01AR0013611
Qualified in Suffolk County
My Commission Expires 09/18/2027

IN WITNESS WHEREOF, Grantor Beneficial Owner has caused this instrument to be signed in its name.

Carman Place Apartments, LLC:
By: Carman Place managing member, LLC
By: Conifer Realty, LLC
By: Lisa M. Kaseman

Print Name: LISA M. Kaseman

Title: EVP Development & Acquistions Date: 10/1/24

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Monroe)

On the 1st day of October, in the year 2024, before me, the undersigned, personally appeared Lisa Kaseman, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Christine S Flynn
Notary Public - State of New York

CHRISTINE S FLYNN
NOTARY PUBLIC-STATE OF NEW YORK
No. 01FL6357511
Qualified in Monroe County
My Commission Expires 04-24-2026

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting by and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: Andrew Guglielmi
Andrew O. Guglielmi, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 16th day of October in the year 2024 before me, the undersigned, personally appeared Andrew O. Guglielmi, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public - State of New York

Cheryl A. Salem
Notary Public State of New York
Registration No. 01SA0002177
Qualified in Albany County
My Commission Expires March 3, 2027

SCHEDULE "A" PROPERTY DESCRIPTION

Environmental Easement Area:

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MAIN STREET WITH THE SOUTHERLY SIDE OF BEDELL STREET;

RUNNING THENCE ALONG THE WESTERLY SIDE OF MAIN STREET, SOUTH 11 DEGREES 55 MINUTES 00 SECONDS EAST, A DISTANCE OF 295.00 FEET TO A POINT;

THENCE SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 121.04 FEET TO POINT ON THE BOUNDARY LINE ESTABLISHED BY BOUNDARY LINE AGREEMENT MADE BY AND BETWEEN ANNA M. THOMAS, CHARLES L PETTIT AND MARY PETTIT AND RECORDED IN LIBER 961 OF DEEDS, PAGE 74;

THENCE ALONG SAID BOUNDARY LINE, SOUTH 11 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 5.00 FEET TO A POINT;

THENCE SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 75.70 FEET TO A POINT;

THENCE SOUTH 11 DEGREES 55 MINUTES 00 SECONDS EAST, A DISTANCE OF 100.00 FEET TO THE NORTHERLY SIDE OF WEST COLUMBIA STREET;

THENCE ALONG THE NORTHERLY SIDE OF WEST COLUMBIA STREET, SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 50.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 118.17 FEET TO A POINT;

THENCE SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 150.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 181.83 FEET TO A POINT;

THENCE NORTH 78 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 100.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 100.00 FEET TO THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE ALONG THE SOUTHERLY SIDE OF BEDELL STREET, NORTH 78 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 296.77 FEET TO THE CORNER FIRST ABOVE MENTIONED AT THE POINT OR PLACE OF BEGINNING.

Deed Description: Lot 8

ALL THAT CERTAIN plot, piece or parcel of land, situate, lying and being in the Incorporated Village of Hempstead, Town of Hempstead, County of Nassau and State of New York, bounded and described as follows:

Parcel A-1

BEGINNING at a point on the westerly side of Main Street, distant 50 feet southerly from the corner formed by the intersection of the westerly side of Main Street and the southerly side of Bedell Street;

THENCE South 77 degrees 44 minutes 30 seconds West, 196.77 feet;

THENCE South 12 degrees 40 minutes 30 seconds East, 50 feet;

THENCE North 77 degrees 44 minutes 30 seconds East, 196.77 feet to the westerly side of Main Street;

THENCE North 12 degrees 40 minutes West and along the westerly side of Main Street, 50 feet to the point or place of BEGINNING.

Being the same premises conveyed to Lau Investment Group by deed from 173-175 Main Street LLC dated January 4, 2011 and recorded on January 14, 2011 in the Office of the Clerk of the County of Nassau at Liber 12686 of Deeds at page 660.

Deed Description: Lot 9

BEGINNING at a point on the westerly side of Main Street, distant 100 feet southerly from the corner formed by the intersection of the westerly side of Main Street with the southerly side of Bedell Street;

RUNNING THENCE westerly at right angles parallel with Bedell Street distance 196.77 feet;

THENCE southerly parallel with Main Street distance 25.33 feet;

THENCE easterly parallel with Bedell Street distance 196.77 feet;

THENCE running northerly along the westerly side of Main Street, 25.33 feet to the point or place of BEGINNING.

Deed Description: Lot 10

BEGINNING at a point on the westerly side of Main Street, distance 125.33 feet southerly from the corner formed by the intersection of the westerly side of Main Street with the southerly side of Bedell Street;

RUNNING THENCE westerly at right angles parallel with Bedell Street, distance 196.77 feet;

THENCE southerly, parallel with Main Street, distance 24.77 feet;

THENCE easterly, parallel with Bedell Street, distance 196.77 feet;

THENCE running northerly along the westerly side of Main Street, distance 24.77 feet to the point or place of BEGINNING.

Deed Description: Lot 116

BEGINNING at the corner formed by the intersection of the southerly side of Bedell Street with the westerly side of Main Street;

RUNNING THENCE southerly along the westerly side of Main Street, 50 feet;

THENCE westerly at right angles to Main Street, 121.77 feet along land now or formerly of Mary E. Bedell;

THENCE northerly along land now or formerly of Martha McLean, 50 feet to Bedell Street;

THENCE easterly along the southerly side of Bedell Street, 121.77 feet to the corner aforesaid, the point or place of BEGINNING.

Deed Description: Lot 111

ALL THAT CERTAIN plot, piece or parcel of land with the buildings and improvements thereon erected, situate, lying and being in the Incorporated Village of Hempstead, Town of Hempstead, County of Nassau and State of New York, bounded and described as follows:

BEGINNING at a point on the westerly side of Main Street, distant 200 feet northerly from the corner formed by the intersection of the westerly side of Main Street with the northerly side of West Columbia Street;

RUNNING THENCE westerly and parallel with the northerly side of Columbia Street, a distance of 196.77 feet;

RUNNING THENCE northerly and parallel with the westerly side of Main Street, a distance of 50 feet;

THENCE easterly and again parallel with the northerly side of Columbia Street, a distance of 196.77 feet to a point in the westerly side of Main Street;

THENCE running southerly and along the westerly side of Main Street, 50 feet to the point or place of BEGINNING.

Deed Description: Lot 129

ALL THAT CERTAIN plot, piece or parcel of land, situate, lying and being in the Incorporated Village of Hempstead, Town of Hempstead, County of Nassau and State of New York, bounded and described as follows:

BEGINNING at a point on the southerly side of Bedell Street in said village, distant 121.77 feet westerly from the southwesterly corner of Main Street and Bedell Street;

RUNNING THENCE southerly along land of John R. McLean and parallel with the west side of Main Street, 50 feet to land of Mary E. Bedell;

THENCE westerly along said Bedell's land and parallel with the south side of Bedell Street, 35 feet;

THENCE northerly and again parallel with the west side of Main Street, 50 feet to the southerly side of Bedell Street;

THENCE easterly along the southerly side of Bedell Street, 35 feet to the point or place of BEGINNING.

Deed Description: Lot 130

ALL THAT CERTAIN plot, piece or parcel of land, situate, lying and being in the Incorporated Village of Hempstead, Town of Hempstead, County of Nassau and State of New York, bounded and described as follows:

BEGINNING at a point on the southerly side or line of Bedell Street in said Village, 156.77 feet westerly from the southwesterly corner of Main Street and Bedell Street;

RUNNING THENCE southerly along lands this day conveyed to Samuel Golden and parallel with the westerly side of Main Street, 50 feet to lands now or formerly of Mary E. Bedell;

THENCE westerly along said last mentioned lands and parallel with the southerly side of Bedell Street, 40 feet to lands now or formerly of Charles E. Whitehouse;

THENCE northerly along the last mentioned lands and again parallel with the westerly side of Main Street, 50 feet to the southerly side of Bedell Street;

THENCE easterly along the southerly side of Bedell Street, 40 feet to the point or place of BEGINNING.

Deed Descriptions: Lot 131 & 132 (Do not follow tax lot boundaries)

1. COMMENCING at a point on the westerly side of Main Street in said village, distant 105 feet northerly from the northerly side of Columbia Street; and

   RUNNING THENCE westerly, 125 feet deed (121.77 feet Actual) to land now or formerly of Bennett;

   THENCE running northerly along said Bennett's land, 45 feet to other land of Bernard J. Kelly;

   THENCE running easterly along said Kelly's land, 125 feet to the westerly side of Main Street; and;

   THENCE running southerly along the westerly side of Main Street, 45 feet to the point or place of BEGINNING.

2. BEGINNING at a point on the westerly side of Main Street in said village, distant 150 feet northerly from the northerly side of Columbia Street; and

   RUNNING THENCE westerly along land of Rachel Rushmore and land now or later of Bennett, 196.77 feet to land of Emma F. Harold;

   THENCE running northerly along said Emma F. Harold's land and land now or formerly of Smith, 50 feet to land of Williamson;

   THENCE running easterly along said Williamson's land, 196.77 feet to the westerly side of Main Street; and;

   THENCE running southerly along said westerly side of Main Street, 50 feet to the point or place of BEGINNING.

3. BEGINNING at a point on a line drawn parallel with and distant 121 feet deed (121.77 feet Actual) westerly from the westerly side of Main Street, which point is distance 100 feet northerly from the northerly side of Columbia Street;

   RUNNING THENCE northerly, parallel with Main Street and along the line of the land now or formerly of Julia S. Stoffel, 50 feet to the southerly line of the land now or formerly of Bernard Kelly;

   THENCE running westerly, parallel with Columbia Street and along the southerly line of the land now or formerly of Kelly, 75 feet to the land now or formerly of Franklin H. Mollineaux;

   THENCE southerly along the line of the land of Mollineaux and parallel with Main Street, 50 feet to a point distant 100 feet northerly from the northerly side of Columbia Street as measured along a line drawn parallel with said distant 196 feet westerly from the westerly side of Main Street; and
   THENCE easterly, parallel with Columbia Street, 75 feet to the point or place of BEGINNING.

Deed Description: Lot 135 & 138

ALL THAT CERTAIN plot, piece or parcel of land, situate, lying and being in the Incorporated Village of Hempstead, Town of Hempstead, County of Nassau and State of New York, bounded and described as follows:

BEGINNING at a point on the southerly side of Bedell Street distant 196.77 feet westerly along same from the corner formed by the intersection of said southerly side of Bedell Street the westerly side of Main Street;

RUNNING THENCE South 11 degrees 55 minutes 00 seconds East, a distance of 400.00 feet to the northerly side of West Columbia Street;

THENCE along the northerly side of West Columbia Street, South 78 degrees 30 minutes 00 seconds West, a distance of 50.00 feet to a point;

THENCE North 11 degrees 55 minutes 00 seconds West, a distance of 118.17 feet to a point;

THENCE South 78 degrees 30 minutes 00 seconds West, a distance of 150.00 feet to a point;

THENCE North 11 degrees 55 minutes 00 seconds West, a distance of 181.83 feet to a point;

THENCE North 78 degrees 30 minutes 00 seconds East, a distance of 100.00 feet to a point;

THENCE North 11 degrees 55 minutes 00 seconds West, a distance of 100.00 feet to the southerly side of Bedell Street;

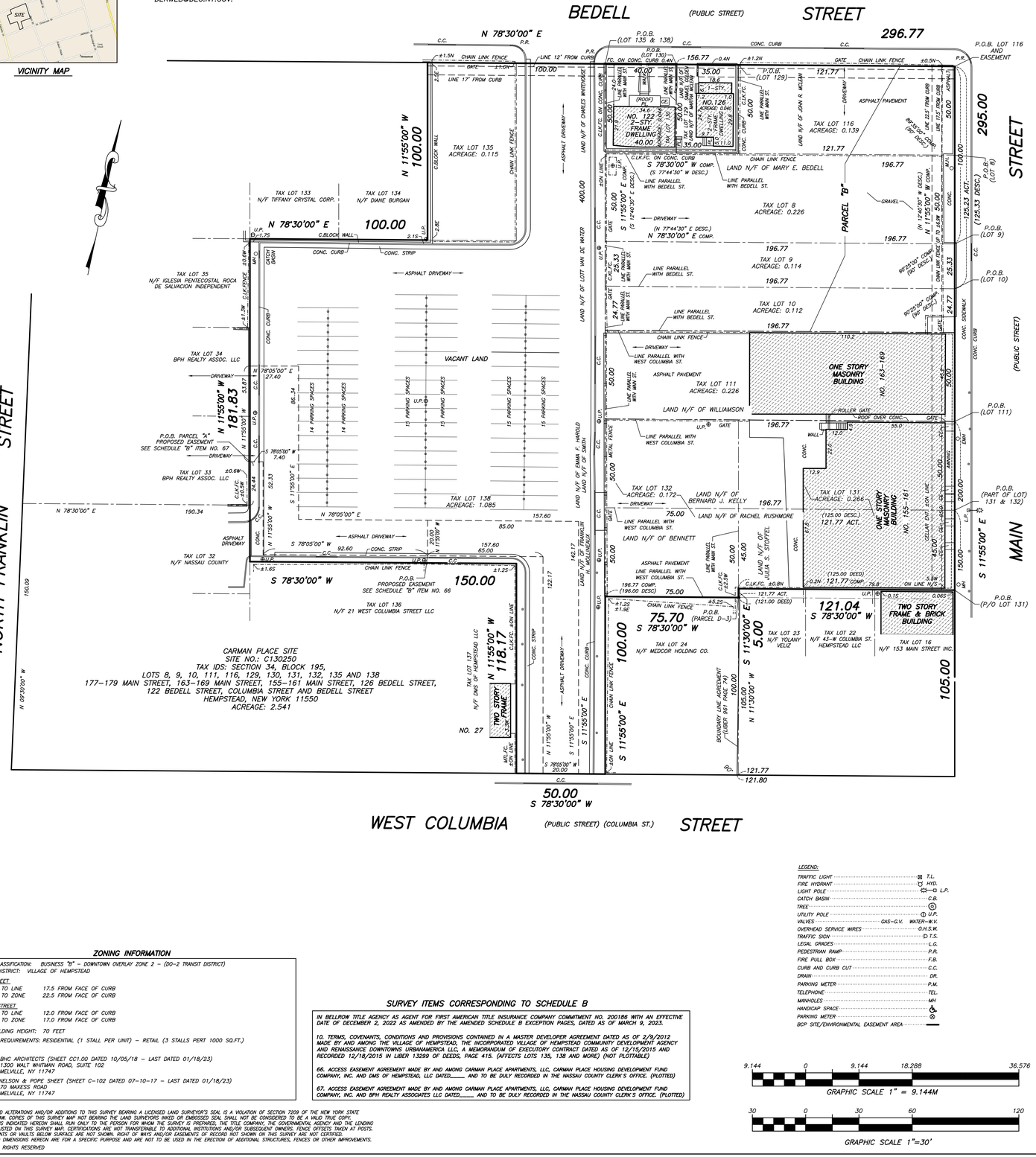
THENCE along the southerly side of Bedell Street, North 78 degrees 30 minutes 00 seconds East, a distance of 100.00 feet to the point or place of BEGINNING.

REF. NO. N34-195-8

VICINITY MAP

THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL EASEMENT HELD BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PURSUANT TO TITLE 36 OF ARTICLE 71 OF THE NEW YORK ENVIRONMENTAL CONSERVATION LAW. THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233 OR AT DERWEB@DEC.NY.GOV."

ENVIRONMENTAL EASEMENT SURVEY



LEGAL DESCRIPTION

LOTS 135 AND 138 DEED DESCRIPTION

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERLY SIDE OF BEDELL STREET DISTANT 196.77 FEET WESTERLY ALONG SAME FROM THE CORNER FORMED BY THE INTERSECTION OF SAID SOUTHERLY SIDE OF BEDELL STREET THE WESTERLY SIDE OF MAIN STREET;

RUNNING THENCE SOUTH 11 DEGREES 55 MINUTES 00 SECONDS EAST, A DISTANCE OF 400.00 FEET TO THE NORTHERLY SIDE OF WEST COLUMBIA STREET;

THENCE ALONG THE NORTHERLY SIDE OF WEST COLUMBIA STREET, SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 50.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 118.17 FEET TO A POINT;

THENCE SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 150.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 181.83 FEET TO A POINT;

THENCE NORTH 78 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 100.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 100.00 FEET TO THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE ALONG THE SOUTHERLY SIDE OF BEDELL STREET, NORTH 78 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 100.00 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 1.200

LOTS 8, 9, 10 AND 116 DEED DESCRIPTIONS

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

ACREAGE: 0.591

LOTS 8 DEED DESCRIPTION

BEGINNING AT A POINT ON THE WESTERLY SIDE OF MAIN STREET, DISTANT 50 FEET SOUTHERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MAIN STREET AND THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE SOUTH 77 DEGREES 44 MINUTES 30 SECONDS WEST, 196.77 FEET;

THENCE SOUTH 12 DEGREES 40 MINUTES 30 SECONDS EAST, 50 FEET;

THENCE NORTH 77 DEGREES 44 MINUTES 30 SECONDS EAST, 196.77 FEET TO THE WESTERLY SIDE OF MAIN STREET;

THENCE NORTH 12 DEGREES 40 MINUTES WEST AND ALONG THE WESTERLY SIDE OF MAIN STREET, 50 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.226

LOTS 9 DEED DESCRIPTION

BEGINNING AT A POINT ON THE WESTERLY SIDE OF MAIN STREET, DISTANT 100.00 FEET SOUTHERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MAIN STREET WITH THE SOUTHERLY SIDE OF BEDELL STREET;

RUNNING THENCE WESTERLY AT RIGHT ANGLES PARALLEL WITH BEDELL STREET, DISTANCE 196.77 FEET; THENCE SOUTHERLY, PARALLEL WITH MAIN STREET, DISTANCE 25.33 FEET;

THENCE EASTERLY, PARALLEL WITH BEDELL STREET, DISTANCE 196.77 FEET;

THENCE RUNNING NORTHERLY ALONG THE WESTERLY SIDE OF MAIN STREET, 25.33 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.114

LOT 10 DEED DESCRIPTION

BEGINNING AT A POINT ON THE WESTERLY SIDE OF MAIN STREET, DISTANT 125.33 FEET SOUTHERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MAIN STREET WITH THE SOUTHERLY SIDE OF BEDELL STREET;

RUNNING THENCE WESTERLY AT RIGHT ANGLES PARALLEL WITH BEDELL STREET, DISTANCE 196.77 FEET;

THENCE SOUTHERLY, PARALLEL WITH MAIN STREET, DISTANCE 24.77 FEET;

THENCE EASTERLY, PARALLEL WITH BEDELL STREET, DISTANT 196.77 FEET;

THENCE RUNNING NORTHERLY ALONG THE WESTERLY SIDE OF MAIN STREET, DISTANCE 24.77 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.112

LOT 116 DEED DESCRIPTION

BEGINNING AT THE CORNER FORMED BY THE INTERSECTION OF THE SOUTHERLY SIDE OF BEDELL STREET WITH THE WESTERLY SIDE OF MAIN STREET;

RUNNING THENCE SOUTHERLY ALONG THE WESTERLY SIDE OF MAIN STREET, 50 FEET;

THENCE WESTERLY AT RIGHT ANGLES TO MAIN STREET, 121.77 FEET ALONG LAND NOW OR FORMERLY OF MARY E. BEDELL;

THENCE NORTHERLY ALONG LAND NOW OR FORMERLY OF MARTHA MCLEAN, 50 FEET TO BEDELL STREET;

THENCE EASTERLY ALONG THE SOUTHERLY SIDE OF BEDELL STREET, 121.77 FEET TO THE CORNER AFORESAID, THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.140

LOT 111 DEED DESCRIPTION

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, WITH THE BUILDINGS AND IMPROVEMENTS THEREON ERECTED, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERLY SIDE OF MAIN STREET, DISTANT 200 FEET NORTHERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MAIN STREET WITH THE NORTHERLY SIDE OF WEST COLUMBIA STREET;

RUNNING THENCE WESTERLY AND PARALLEL WITH THE NORTHERLY SIDE OF COLUMBIA STREET, A DISTANCE OF 196.77 FEET;

THENCE RUNNING NORTHERLY AND PARALLEL WITH THE WESTERLY SIDE OF MAIN STREET, A DISTANCE OF 50 FEET;

THENCE EASTERLY AND AGAIN PARALLEL WITH THE NORTHERLY SIDE OF COLUMBIA STREET, A DISTANCE OF 196.77 FEET TO A POINT IN THE WESTERLY SIDE OF MAIN STREET;

THENCE RUNNING SOUTHERLY AND ALONG THE WESTERLY SIDE OF MAIN STREET, 50 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.226

LOT 131 AND 132 DEED DESCRIPTION

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

ACREAGE: 0.438

PART OF TAX LOT 131 DEED DESCRIPTION

COMMENCING AT A POINT ON THE WESTERLY SIDE OF MAIN STREET IN SAID VILLAGE, DISTANT 105 FEET NORTHERLY FROM THE NORTHERLY SIDE OF COLUMBIA STREET; AND

RUNNING THENCE WESTERLY, 125 FEET (121.77 FEET ACTUAL) TO LAND NOW OR FORMERLY OF BENNETT;

THENCE RUNNING NORTHERLY ALONG SAID BENNETT'S LAND, 45 FEET TO OTHER LAND OF BERNARD J. KELLY;

THENCE RUNNING EASTERLY ALONG SAID KELLY'S LAND, 125 FEET TO THE WESTERLY SIDE OF MAIN STREET;

THENCE RUNNING SOUTHERLY ALONG THE WESTERLY SIDE OF MAIN STREET, 45 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.126

PART OF TAX LOT 131 & 132 DEED DESCRIPTION

BEGINNING AT A POINT ON THE WESTERLY SIDE OF MAIN STREET IN SAID VILLAGE, DISTANT 150 FEET NORTHERLY FROM THE NORTHERLY SIDE OF COLUMBIA STREET; AND

RUNNING THENCE WESTERLY ALONG LAND OF RACHEL RUSHMORE AND LAND NOW OR LATER OF BENNETT, 196.77 FEET TO LAND OF EMMA F. HAROLD;

THENCE RUNNING NORTHERLY ALONG SAID EMMA F. HAROLD'S LAND AND LAND NOW OR FORMERLY OF SMITH, 50 FEET TO LAND OF WILLIAMSON;

THENCE RUNNING EASTERLY ALONG SAID WILLIAMSON'S LAND, 196.77 FEET TO THE WESTERLY SIDE OF MAIN STREET;

THENCE RUNNING SOUTHERLY ALONG SAID WESTERLY SIDE OF MAIN STREET, 50 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.226

PART OF TAX LOT 132 DEED DESCRIPTION

BEGINNING AT A POINT ON A LINE DRAWN PARALLEL WITH AND DISTANT 121 FEET (DEED) (121.77 FEET ACTUAL) WESTERLY FROM THE WESTERLY SIDE OF MAIN STREET, WHICH POINT IS DISTANT 100 FEET NORTHERLY FROM THE NORTHERLY SIDE OF COLUMBIA STREET;

RUNNING THENCE NORTHERLY, PARALLEL WITH MAIN STREET AND ALONG THE LINE OF THE LAND NOW OR FORMERLY OF JULIA S. STOFFEL, 50 FEET TO THE SOUTHERLY LINE OF THE LAND NOW OR FORMERLY OF BERNARD KELLY;

THENCE RUNNING WESTERLY, PARALLEL WITH COLUMBIA STREET AND ALONG THE SOUTHERLY LINE OF THE LAND NOW OR FORMERLY OF KELLY, 75 FEET TO THE LAND NOW OR FORMERLY OF FRANKLIN H. MOLLINEAUX;

THENCE SOUTHERLY ALONG THE LINE OF THE LAND OF MOLLINEAUX AND PARALLEL WITH MAIN STREET, 50 FEET TO A POINT DISTANT 100 FEET NORTHERLY FROM THE NORTHERLY SIDE OF COLUMBIA STREET AS MEASURED ALONG A LINE DRAWN PARALLEL WITH SAID DISTANT 196 FEET WESTERLY FROM THE WESTERLY SIDE OF MAIN STREET;

THENCE EASTERLY, PARALLEL WITH COLUMBIA STREET, 75 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.086

LOT 129 DEED DESCRIPTION

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERLY SIDE OF BEDELL STREET IN SAID VILLAGE, DISTANT 121.77 FEET WESTERLY FROM THE SOUTHWESTERLY CORNER OF MAIN STREET AND BEDELL STREET;

RUNNING THENCE SOUTHERLY ALONG LAND OF JOHN R. MCLEAN AND PARALLEL WITH THE WEST SIDE OF MAIN STREET, 50 FEET TO LAND OF MARY E. BEDELL;

THENCE WESTERLY ALONG SAID BEDELL'S LAND AND PARALLEL WITH THE SOUTH SIDE OF BEDELL STREET, 35 FEET;

THENCE NORTHERLY AND AGAIN PARALLEL WITH THE WEST SIDE OF MAIN STREET, 50 FEET TO THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE EASTERLY ALONG THE SOUTHERLY SIDE OF BEDELL STREET, 35 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.040

LOT 130 DEED DESCRIPTION

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERLY SIDE OF WEST COLUMBIA STREET DISTANT 156.77 FEET WESTERLY FROM THE SOUTHWESTERLY CORNER OF MAIN STREET AND BEDELL STREET;

RUNNING THENCE SOUTHERLY AND PARALLEL WITH THE WESTERLY SIDE OF MAIN STREET, 50 FEET TO THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE WESTERLY ALONG THE SOUTHERLY SIDE OF BEDELL STREET, 35 FEET;

THENCE NORTHERLY AND AGAIN PARALLEL WITH THE WEST SIDE OF MAIN STREET, 50 FEET TO THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE EASTERLY ALONG THE SOUTHERLY SIDE OF BEDELL STREET, 35 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.040

LOT 135 DEED DESCRIPTION

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERLY SIDE OF BEDELL STREET, 156.77 FEET WESTERLY FROM THE SOUTHWESTERLY CORNER OF MAIN STREET AND BEDELL STREET;

RUNNING THENCE SOUTHERLY ALONG LANDS THIS DAY CONVEYED TO SAMUEL GOLDEN AND PARALLEL WITH THE WESTERLY SIDE OF MAIN STREET, 50 FEET TO LANDS NOW OR FORMERLY OF MARY E. BEDELL;

THENCE WESTERLY ALONG SAID LAST MENTIONED LANDS AND PARALLEL WITH THE SOUTHERLY SIDE OF BEDELL STREET, 40 FEET TO LANDS NOW OR FORMERLY OF CHARLES E. WHITEHOUSE;

THENCE NORTHERLY ALONG THE LAST MENTIONED LANDS AND AGAIN PARALLEL WITH THE WESTERLY SIDE OF MAIN STREET, 50 FEET TO THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE EASTERLY ALONG THE SOUTHERLY SIDE OF BEDELL STREET, 40 FEET TO THE POINT OR PLACE OF BEGINNING.

ACREAGE: 0.046

BCP SITE/ENVIRONMENTAL EASEMENT AREA

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE INCORPORATED VILLAGE OF HEMPSTEAD, TOWN OF HEMPSTEAD, COUNTY OF NASSAU AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MAIN STREET WITH THE SOUTHERLY SIDE OF BEDELL STREET;

RUNNING THENCE ALONG THE WESTERLY SIDE OF MAIN STREET, SOUTH 11 DEGREES 55 MINUTES 00 SECONDS EAST, A DISTANCE OF 295.00 FEET TO A POINT;

THENCE SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 121.04 FEET TO THE POINT ON THE BOUNDARY LINE ESTABLISHED BY BOUNDARY LINE AGREEMENT MADE BY AND BETWEEN ANNA M. THOMAS, CHARLES L' PETTIT AND MARY PETTIT AND RECORDED IN LIBER 961 OF DEEDS, PAGE 74;

THENCE ALONG SAID BOUNDARY LINE, SOUTH 11 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 5.00 FEET TO A POINT;

THENCE SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 75.70 FEET TO A POINT;

THENCE SOUTH 11 DEGREES 55 MINUTES 00 SECONDS EAST, A DISTANCE OF 100.00 FEET TO THE NORTHERLY SIDE OF WEST COLUMBIA STREET;

THENCE ALONG THE NORTHERLY SIDE OF WEST COLUMBIA STREET, SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 50.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 118.17 FEET TO A POINT;

THENCE SOUTH 78 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 150.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 181.83 FEET TO A POINT;

THENCE NORTH 78 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 100.00 FEET TO A POINT;

THENCE NORTH 11 DEGREES 55 MINUTES 00 SECONDS WEST, A DISTANCE OF 100.00 FEET TO THE SOUTHERLY SIDE OF BEDELL STREET;

THENCE ALONG THE SOUTHERLY SIDE OF BEDELL STREET, NORTH 78 DEGREES 30 MINUTES 00 SECONDS EAST, A DISTANCE OF 296.77 FEET TO THE CORNER FIRST ABOVE MENTIONED AT THE POINT OR PLACE OF BEGINNING.

ACREAGE: 2.541

SURVEYORS NOTES

1. THE ACCOMPANYING SURVEY WAS MADE ON THE GROUND AND CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE ABOVE DESCRIBED PREMISES. ALL BUILDINGS ON THE SUBJECT PROPERTY WILL BE DEMOLISHED DURING CONSTRUCTION.

2. ALL UTILITIES SERVING THE PREMISES ENTER THROUGH ADJOINING PUBLIC STREETS AND/OR EASEMENTS OF RECORD. NO PHYSICAL UNDERGROUND UTILITY MARK OUT WAS FOUND AT THE TIME THE FIELD SURVEY WAS PERFORMED. ONLY VISIBLE SURFACE UTILITIES ARE SHOWN.

3. EXCEPT AS SHOWN, THERE ARE NO VISIBLE EASEMENTS OR RIGHT OF WAYS ACROSS SAID PREMISES.

4. THAT THE PROPERTY DESCRIBED HEREON IS THE SAME AS THE PROPERTY DESCRIBED IN BELLROW TITLE AGENCY AS AGENT FOR FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NO. 200186 WITH AN EFFECTIVE DATE OF DECEMBER 2, 2022 AS AMENDED BY THE AMENDED SCHEDULE B EXCEPTION PAGES, DATED AS OF MARCH 9, 2023 AND THAT ALL EASEMENTS, COVENANTS AND RESTRICTIONS REFERENCED IN SAID TITLE COMMITMENT, AND EASEMENTS WHICH THE UNDERSIGNED HAS BEEN ADVISED OR HAS KNOWLEDGE, HAVE BEEN PLOTTED HEREON OR OTHERWISE NOTED AS THEIR EFFECT ON THE SUBJECT PROPERTY.

5. THAT EXCEPT AS SHOWN, THERE ARE NO VISIBLE ENCROACHMENTS ONTO ADJOINING PREMISES, STREETS OR ALLEYS BY ANY BUILDING, STRUCTURES OR OTHER IMPROVEMENTS LOCATED ON THE PREMISES AND NO ENCROACHMENTS ONTO SAID PREMISES BY BUILDINGS, STRUCTURES OR OTHER IMPROVEMENTS SITUATED ON ADJOINING PREMISES. THERE ARE NO EXISTING PARTY WALLS WITHIN THE BUILDINGS.

6. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY AND IS IN ZONE "X" ON FLOOD INSURANCE RATE MAP NO. 36059C0210G, WITH A DATE OF IDENTIFICATION OF SEPTEMBER 11, 2009, FOR COMMUNITY NUMBER 361647, IN NASSAU COUNTY, STATE OF NEW YORK, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.

7. THE PROPERTY HAS DIRECT PHYSICAL ACCESS TO A PUBLIC STREET KNOWN AS WEST COLUMBIA STREET, BEDELL STREET AND MAIN STREET. THERE ARE NO CHANGES IN STREET RIGHT OF WAYS.

8. THERE ARE 88 STRIPED PARKING SPACES ON PREMISES TO REPORT.

9. THE RECORD DESCRIPTION OF THE PROPERTY FORMS A MATHEMATICALLY CLOSED FIGURE.

10. THERE IS NO VISIBLE EVIDENCE OF STREET OR SIDEWALK CONSTRUCTION, EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS AT THE PREMISES.

11. THERE IS NO VISIBLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

12. THERE IS NO VISIBLE EVIDENCE OF CEMETERIES.

13. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A WETLANDS AREA.

14. THE PARTIES LISTED BELOW ARE ENTITLED TO RELY ON THE SURVEY AND THE CERTIFICATES AS BEING TRUE AND ACCURATE.

ZONING INFORMATION

ZONING CLASSIFICATION: BUSINESS "B" - DOWNTOWN OVERLAY ZONE 2 - (D0-2 TRANSIT DISTRICT)
ZONING DISTRICT: VILLAGE OF HEMPSTEAD

MAIN STREET
BUILDING TO LINE 17.5 FROM FACE OF CURB
BUILDING TO ZONE 22.5 FROM FACE OF CURB

BEDELL STREET
BUILDING TO LINE 12.0 FROM FACE OF CURB
BUILDING TO ZONE 17.0 FROM FACE OF CURB

MAX. BUILDING HEIGHT: 70 FEET

PARKING REQUIREMENTS: RESIDENTIAL (1 STALL PER UNIT) - RETAIL (3 STALLS PERT 1000 SQ.FT.)

SOURCE: BHC ARCHITECTS (SHEET CC1.00 DATED 10/05/18 - LAST DATED 01/18/23)
1300 WALT WHITMAN ROAD, SUITE 102
MELVILLE, NY 11747

NELSON & POPE SHEET (SHEET C-102 DATED 07-10-17 - LAST DATED 01/18/23)
70 MARCUS ROAD
MELVILLE, NY 11747

SURVEY ITEMS CORRESPONDING TO SCHEDULE B

IN BELLROW TITLE AGENCY AS AGENT FOR FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NO. 200186 WITH AN EFFECTIVE DATE OF DECEMBER 2, 2022 AS AMENDED BY THE AMENDED SCHEDULE B EXCEPTION PAGES, DATED AS OF MARCH 9, 2023.

10. TERMS, COVENANTS, CONDITIONS AND PROVISIONS CONTAINED IN A MASTER DEVELOPER AGREEMENT DATED AS OF 2/9/2012 MADE BY AND AMONG THE VILLAGE OF HEMPSTEAD, THE INCORPORATED VILLAGE OF HEMPSTEAD COMMUNITY DEVELOPMENT AGENCY AND RENAISSANCE DOWNTOWNS URBANAMERICA LLC, A MEMORANDUM OF EXECUTORY CONTRACT DATED AS OF 12/15/2015 AND RECORDED 12/18/2015 IN LIBER 13299 OF DEEDS, PAGE 415. (AFFECTS LOTS 135, 138 AND MORE) (NOT PLOTTABLE)

66. ACCESS EASEMENT AGREEMENT MADE BY AND AMONG CARMAN PLACE APARTMENTS, LLC, CARMAN PLACE HOUSING DEVELOPMENT FUND COMPANY, INC. AND DMS OF HEMPSTEAD, LLC DATED_____ AND TO BE DULY RECORDED IN THE NASSAU COUNTY CLERK'S OFFICE. (PLOTTED)

67. ACCESS EASEMENT AGREEMENT MADE BY AND AMONG CARMAN PLACE APARTMENTS, LLC, CARMAN PLACE HOUSING DEVELOPMENT FUND COMPANY, INC. AND BPH REALTY ASSOCIATES LLC DATED_____ AND TO BE DULY RECORDED IN THE NASSAU COUNTY CLERK'S OFFICE. (PLOTTED)

LEGEND:

TRAFFIC LIGHT	T.L.
FIRE HYDRANT	HYD.
LIGHT POLE	L.P.
CATCH BASIN	C.B.
TREE	
UTILITY POLE	U.P.
VALVES	GAS-G.V. WATER-W.V.
OVERHEAD SERVICE WIRES	O.H.S.W.
TRAFFIC SIGN	T.S.
LEGAL GRADES	L.G.
PEDESTRIAN RAMP	P.R.
FIRE PULL BOX	F.B.
CURB AND CURB CUT	C.C.
DRAIN	DR.
PARKING METER	P.M.
TELEPHONE	TEL.
MANHOLES	MH
HANDICAP SPACE	
PARKING METER	
BCP SITE/ENVIRONMENTAL EASEMENT AREA	

9.144 0 9.144 18.288 36.576
GRAPHIC SCALE 1" = 9.144M

30 0 30 60 120
GRAPHIC SCALE 1"=30'

PARCEL ADDRESS	TAX PARCEL IDENTIFICATION NO.
BEDELL STREET	34-195-135
COLUMBIA STREET	34-195-138
122 BEDELL STREET	34-195-130
126 BEDELL STREET	34-195-129
177-179 MAIN STREET	34-195-8
163-169 MAIN STREET	34-195-111
155-161 MAIN STREET	34-195-131
177-179 MAIN STREET LOTS 8, 9, 10 & 116	(34-195-8)
155-161 MAIN STREET LOTS 131 & 132	(34-195-131)

NO.	DATE	REVISION
9.	SEPTEMBER 25, 2024	REVISED AS PER COMMENTS
8.	MAY 28, 2024	UPDATED TO ENVIRONMENTAL EASEMENT
7.	MARCH 25, 2023	PROPOSED CROSS EASEMENTS ADDED
6.	MARCH 22, 2023	REVISED AS PER COMMENTS
5.	MARCH 16, 2023	REVISED SCHEDULE "B" ITEMS AS PER UPDATED TITLE REPORT
4.	MARCH 10, 2023	ADDITIONAL CERTIFICATIONS ADDED
3.	FEBRUARY 6, 2023	PERIMETER DESCRIPTION ADDED
2.	FEBRUARY 6, 2023	REVISED AS PER TITLE COMPANY COMMENTS
1.	FEBRUARY 2, 2023	REVISED BEARING

MAP OF PROPERTY SITUATED IN
HEMPSTEAD
NASSAU COUNTY, N.Y.
TAX SECT.: 34 TAX BLOCK: 195
TAX LOT(S): 8, 9, 10, 111, 116, 129, 130, 131, 132, 135, 138

Empire State Land Surveyor, P.C.
Frank I. Galluzzo Professional Land Surveyor
Records of Albert A. Bianco - Robert B. Holzman
Stephen J. Reid - M. Berry Carman - G. W. Haviland
Vandewater & Lapp - Robert E. Carlin - William J. Daly
1005 Glen Cove Avenue, Glen Head, NY, 11545
empiresurveys@aol.com | (516)-240-6901

UNAUTHORIZED ALTERATIONS AND/OR ADDITIONS TO THIS SURVEY BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW. COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYORS INKED OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY. CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, THE TITLE COMPANY, THE GOVERNMENTAL AGENCY AND THE LENDING INSTITUTION LISTED ON THIS SURVEY MAP. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS AND/OR SUBSEQUENT OWNERS. FENCE OFFSETS TAKEN AT POSTS. ENCROACHMENTS OR VAULTS BELOW SURFACE ARE NOT SHOWN. RIGHT OF WAYS AND/OR EASEMENTS OF RECORD NOT SHOWN ON THIS SURVEY ARE NOT CERTIFIED. OFFSETS AND DIMENSIONS HEREON ARE FOR A SPECIFIC PURPOSE AND ARE NOT TO BE USED IN THE ERECTION OF ADDITIONAL STRUCTURES, FENCES OR OTHER IMPROVEMENTS.
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APPENDIX B

List of Site Contacts

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
Site Owner and Remedial Party: Roger Pine (Carman Place Apartments, LLC)	631-997-0014 rpine@coniferllc.com
Professional Engineer: Dan Noll, PE (LaBella Associates, DPC)	585-295-6611 dnoll@labellapc.com
Qualified Environmental Professional: Richard Kampf, PG (LaBella Associates, DPC)	917-280-6364 rkampf@labellapc.com
NYSDEC Project Manager Melissa Sweet, PE	518-402-9614 melissa.sweet@dec.nyc.gov
NYSDEC Project Manager's Supervisor John Swartwout	518-402-9570 john.swartwout@dec.nyc.gov
NYSDEC Site Control Kelly Lewandowski	518-402-9569 kelly.lewandowski@dec.nyc.gov
NYSDOH Project Manager John Robinson	518-402-7860 beei@health.nyc.gov

APPENDIX C

Soil Borings
Test Pit Logs

LaBella
Powered by partnership.

45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 01
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 116		TIME:	2:20 TO 2:35
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-2	MF brown sand, trace asphalt	0	Samples collected: 0-2 and 2-4
2					0	
3			2-6	VF light brown sand	0	
4					0	
5					0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

BGS = Below Ground Surface
NA = Not Applicable

and = 35 - 50%
some = 20 - 35%
little = 10 - 20%
trace = 1 - 10%

C = Coarse
M = Medium
F = Fine
VF = Very Fine

R = Rounded
A = Angular
SR = Subrounded
SA = Subangular

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 02
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 116		TIME:	2:05 TO 2:15
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-2	MF brown sand, trace asphalt, trace brick	0	
2					0	Samples collected: 0-2, 2-4, and 2-4 MS/MSD
3			2-3.5	MF brown sand, trace asphalt, little brick	0	
4			3.5-4.75	Wood	0	
5			4.75-6	VF light brown sand	0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 03
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 8		TIME:	9:05 TO 9:25
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-2	MF brown sand, little rocks, trace asphalt	0	Samples collected: 0-2 and 2-4
2					0	
3			2-4	MF brown sand	0	
4					0	
5			4-6	VF light brown sand	0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 04
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 8		TIME:	9:30 TO 9:50
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1	MF brown sand, little asphalt, little unkonwn fill	0	Samples collected: 0-2 and 2-4
1					0	
2			1-3.5	MF brown sand, trace asphalt	0	
3					0	
4			4-6	VF light brown sand	0	
5					0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 05
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 8		TIME:	9:05 TO 9:25
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1.5	MF brown sand, trace asphalt, trace bricks	0	Samples collected: 0-2 and 2-4
1					0	
2			1.5-2.5	VF light brown sand	0	
3			2.5-6	F brown sand	0	
4					0	
5					0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 06
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 9		TIME:	11:30 TO 11:55
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1	MF brown sand, little asphalt	0	Samples collected: 0-2 and 2-4
1					0	
2			1-2.5	MF brown sand	0	
3			2.5-2.75	Fill layer consisting of: metal, leather, glass, unknown white material	0	
4			2.75-6	VF light brown sand	0	
5					0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 07
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 9		TIME:	10:20 TO 10:30
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1.5	MF brown sand, some brick, some asphalt	0	Samples collected: 0-2 and 2-4
1					0	
2			1.5-2	Asphalt	0	
3			2-3.5	MF brown sand, trace asphalt	0	
4					0	
5			3.5-6	VF light brown sand	0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 08
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 10		TIME:	11:00 TO 11:25
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1	MF brown sand, little asphalt, little brick	0	Samples collected: 0-2 and 2-4
1			1-1.25	Fill layer consisting of: glass, wood, ceramics, asphalt, tiles, metal wires	0	
			1.25-2	MF brown sand		
2			2-6	VF light brown sand	0	
3					0	
4					0	
5					0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 09
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 10		TIME:	10:35 TO 10:55
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1	MF brown sand, little asphalt	0	
1					0	
			1-1.25	Asphalt		Samples collected: 0-2 and 2-4
2			1.25-2.75	MF brown sand, trace asphalt	0	
3					0	
4			2.75-6	VF light brown sand	0	
5					0	
6					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 10
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 111		TIME:	12:50 TO 1:30
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1	MF brown sand, trace asphalt	0	Samples collected: 0-2 and 2-4
1					0	
2			1-4	VF brown sand, some rocks	0	
3					0	
4					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

BGS = Below Ground Surface
NA = Not Applicable

and = 35 - 50%
some = 20 - 35%
little = 10 - 20%
trace = 1 - 10%

C = Coarse
M = Medium
F = Fine
VF = Very Fine

R = Rounded
A = Angular
SR = Subrounded
SA = Subangular

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: TP - 11
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Lakewood	BORING LOCATION: Lot 111		TIME:	12:00 TO 12:45
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/25/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Excavator
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-1	MF brown sand, trace asphalt	0	
1					0	
2			1-4	VF brown sand, some rocks	0	Samples collected: 0-2, 0-2 Duplicate, and 2-4
3					0	
4					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	6.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 01/MW-1
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 116		TIME:	8:15 TO 10:30
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 1/27/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-2.5	Dark brown CMF sand, some gravel, trace brick, trace tile		Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, and 14-16
2	48				0	
3			2.5-3.25	Brown silt, some sand		
4			3.25-5	Tan CM sand, some gravel	0	
5					0	
6						
7	50		5-10	Tan CM sand, some gravel	0	The monitoring well was drilled to a depth of approximately 32 ft bgs. Soil collection via macrocores stopped at 16ft bgs.
8					0	
9					0	
10					0	
11					0	
12			10-13.5	Tan CM sand, some gravel		
13	50				0	
14					0	
15			13.5-16	Tan MF sand, little gravel		
16					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Monitoring well installed, see monitoring well construction log
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 02
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 135		TIME:	11:00 TO 11:30
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/2/23	END DATE:	WEATHER:	Sunny
TYPE OF DRILL RIG: Geoprobe			DRIVE SAMPLER TYPE: Macrocore		
AUGER SIZE AND TYPE: NA			INSIDE DIAMETER: 2"		
OVERBURDEN SAMPLING METHOD: Direct Push			OTHER:		

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0	30		0-0.25	Asphalt	0	Samples collected: 0-2, 2-4, 4-6, 6-8, 10-12, and 14-16
1			0.25-2	MF brown sand trace brick and asphalt	0	
2						
			2-2.25	Brick		
3			2.25-4.5	MF brown sand trace brick and asphalt	0	
4						
5			4.5-5	Brick	0	
6	47		5-10	VF light brown sand	0	
7						
8					0	
9					0	
10					0	
11	42		10-16	VF light brown sand	0	
12						
13					0	
14					0	
15						
16					0	

WATER LEVEL DATA			DEPTH (FT) BOTTOM OF CASING	DEPTH (FT) BOTTOM OF BORING	DEPTH (FT) GROUNDWATER ENCOUNTERED
DATE	TIME	ELAPSED TIME			
			N/A	16.0	No

NOTES:

GENERAL NOTES

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 03
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR: Land Air Water Env
DRILLER:
LABELLA REPRESENTATIVE: OWEN

BORING LOCATION: Lot 8
GROUND SURFACE ELEVATION NA
START DATE: 2/2/23 END DATE:

TIME: 9:00 TO 9:25
DATUM: NA
WEATHER: Sunny

TYPE OF DRILL RIG: Geoprobe _____
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push

DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
1	38		2-4.5	MF brown sand trace asphalt	0	Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, and 14-16
2						
3					0	
4						
5			4.5-5	F brown sand	0	
6	39		5-7.5	F brown sand	0	
7						
8			7.5-10	VF light brown sand	0	
9					0	
10					0	
11	52		10-16	VF light brown sand	0	
12						
13					0	
14						
15					0	
16						

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 04
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 10		TIME:	9:30 TO 10:00
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/2/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
1	37		0.25-4	MF brown sand little asphalt	0	Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, and 14-16
2						
3					0	
4						
5			4-5	VF light brown sand	0	
6	42		5-10	VF light brown sand	0	
7						
8					0	
9					0	
10					0	
11	43		10-16	VF light brown sand	0	
12						
13					0	
14						
15					0	
16						

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 05/LP-3
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 111		TIME:	11:40 TO 11:55
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/6/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0				Leaching pool, no soil or sediment for first 8ft-bgs		
1						
2						
3						
4						
5						
6						
7						
8					0	
9	24		8-10	Dark grey sand	0	Samples collected: 8-10, 10-12, 12-14, and 14-16
10					0	
11					0	
12						
13	43		10-16	VF light brown sand	0	
14					0	
15						
16					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 06
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 138		TIME:	12:10 TO 12:45
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/2/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0	40		0-0.25	Asphalt	0	Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, and 14-16
1			0.25-1.5	MF brown sand little asphalt	0	
2			1.5-2	Fill layer consisting of asphalt, brick, white material		
3			2-4	MF brown sand trace asphalt	0	
4						
5			4-5	VF light brown sand	0	
6	51		5-10	VF light brown sand	0	
7						
8					0	
9					0	
10					0	
11	51		10-16	VF light brown sand	0	
12						
13					0	
14					0	
15						
16					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 07 / SD-1
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 138		TIME:	8:00 TO 8:30
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/6/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0				Storm drain, no soil or sediment for first 6 ft-bgs		
1						
2						
3						
4						
5						
6						
7			6-7.25	Saturated dark grey sand	0	
8	25				0	Samples collected: 6-8, 8-10, 10-12, 12-14, 14-16, and 14-16 Duplicate
9			7.25-10	VF light brown sand	0	
10					0	
11					0	
12						
13	51		10-15	VF light brown sand	0	
14						
15					0	
16						

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 08
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 138		TIME:	11:40 TO 12:00
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/2/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
1	34		0.25-4	MF brown sand trace asphalt	0	Samples collected: 0-2, 0-2 MS/MSD, 2-4, 2-4 Duplicate, 4-6, 6-8, 10-12, and 14-16
2						
3						
4					0	
5			4-5	VF light brown sand	0	
6	48		5-10	VF light brown sand	0	
7						
8					0	
9					0	
10					0	
11	46		10-16	VF light brown sand	0	
12						
13					0	
14						
15					0	
16						

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 09/MW-4
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 138		TIME:	1:15 TO 3:00
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 1/26/23	END DATE:	WEATHER:	Overcast

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-3.25	Grey CMF sand, some silt, trace gravel, trace asphalt		Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, 14-16, and 14-16 MS/MSD
2	47				0	
3						
4			3.25-5	Tan CMF sand, some gravel	0	
5					0	
6			5-6	Tan CMF sand, some gravel		
7	54		6-7.5	Brown F sand	0	The monitoring well was drilled to a depth of approximately 32 ft bgs. Soil collection via macrocores stopped at 16 ft bgs.
8					0	
9			7.5-10	Brown MF sand, some gravel	0	
10					0	
11					0	
12						
13	57		10-16	Tan MF sand, some gravel	0	
14					0	
15						
16					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Monitoring well installed, see monitoring well construction log
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 10/LP-1
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 131		TIME:	12:00 TO 12:25
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/6/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0				Leaching pool, no soil or sediment for first 8ft-bgs		
1						
2						
3						
4						
5						
6						
7						
8	28		8-9.5	Dark grey sand	0	Samples collected: 8-10, 10-12, 12-14, and 14-16
9					0	
10			9.5-10	F brown sand	0	
11	48		10-16	VF light brown sand	0	
12						
13					0	
14						
15					0	
16						

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

BGS = Below Ground Surface
NA = Not Applicable

and = 35 - 50%
some = 20 - 35%
little = 10 - 20%
trace = 1 - 10%

C = Coarse
M = Medium
F = Fine
VF = Very Fine

R = Rounded
A = Angular
SR = Subrounded
SA = Subangular

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 11/MW-3
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 131		TIME:	10:45 TO 12:45
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 1/26/23	END DATE:	WEATHER:	Overcast
TYPE OF DRILL RIG:	Geoprobe		DRIVE SAMPLER TYPE:	Macrocore	
AUGER SIZE AND TYPE:	NA		INSIDE DIAMETER:	2"	
OVERBURDEN SAMPLING METHOD:	Direct Push		OTHER:		

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					1	
1						Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, 14-16, and 14-16 Duplicate
2	48		0-3	Brown CMF sand, some gravel, little silt, trace asphalt, trace brick, trace wood	2.7	
3						
4			3-5	Tan CM sand, little gravel	1	
5					2	
6			5-6.25	Tan CM sand, some gravel	0	The monitoring well was drilled to a depth of approximately 32 ft bgs. Soil collection via macrocores stopped at 30 ft bgs.
7	52		6.25-7.25	Tan F sand, trace gravel	0	
8			7.25-10	Tan CMF sand, some gravel	0	
9					0	
10					0	
11			10-15	Brown MF sand, some gravel	0	
12						
13	57				0	
14					0	
15					0	
16			15-20	Brown and tan CMF sand, some gravel, trace silt	0	
17	54				0	
18						
19					0	
20					0	
21			20-25	Tan MF sand, little gravel	0	
22	52				0	
23						
24					0	
25					0	
26			25-30	Wet tan MF sand, trace gravel	0	
27	45				0	
28						
29					0	
30					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Monitoring well installed, see monitoring well construction log
			N/A	30.0	24.5	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 12/MW-2
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 138		TIME:	11:15 TO 1:45
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 1/27/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
0.5			0.25-0.75	Dark brown CMF sand, little silt, little gravel		
1			0.75-2.75	Brown silt, little sand		Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, 12-14 Duplicate, 14-16, and 14-16 MS/MSD
1.5	48				0	
2						
2.5			2.75-5	Tan CM sand, some gravel		
3					0	
3.5						
4						
4.5					0	
5						
5.5			5-7.5	Tan CM sand, some gravel	0	The monitoring well was drilled to a depth of approximately 32 ft bgs. Soil collection via macrocores stopped at 16ft bgs.
6						
6.5	45					
7						
7.5			7.5-10	Tan brown MF sand, little gravel	0	
8						
8.5					0	
9						
9.5					0	
10						
10.5			10-16	Tan MF sand, some gravel	0	
11						
11.5					0	
12						
12.5	48					
13					0	
13.5						
14						
14.5					0	
15						
15.5						
16					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Monitoring well installed, see monitoring well construction log
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 13
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 131		TIME:	10:45 TO 11:05
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/6/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0	42		0-0.25	Asphalt	0	Samples collected: 0-2, 2-4, 2-4 MS/MSD, 4-6, 8-10, 12-14, and 14-16
1			0.25-4	MF brown sand, little asphalt, little brick	0	
2						
3					0	
4						
5			4-5	VF light brown sand	0	
6	47		5-10	VF light brown sand	0	
7					0	
8						
9					0	
10					0	
11	48		10-16	VF light brown sand	0	
12						
13					0	
14						
15					0	
16						

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 14
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR: Land Air Water Env
DRILLER:
LABELLA REPRESENTATIVE: OWEN

BORING LOCATION: Lot 131
GROUND SURFACE ELEVATION NA
START DATE: 2/6/23 END DATE:

TIME: 1:45 TO 2:00
DATUM: NA
WEATHER: Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push

DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
1	40		0.25-2.5	MF brown sand trace asphalt	0	Samples collected: 0-2, 2-4, 4-6, 8-10, 12-14, and 14-16
2						
3			2.5-5	VF light brown sand	0	
4						
5					0	
6	47		5-10	VF light brown sand	0	
7						
8					0	
9					0	
10					0	
11	42		10-16	VF light brown sand	0	
12						
13					0	
14						
15					0	
16						

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB-15 / LP - 2
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 131		TIME:	10:25 TO 10:40
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:	OWEN	START DATE: 2/6/23	END DATE:	WEATHER:	Sunny

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0				Leaching pool, no soil or sediment for first 8 ft-bgs		
1						
2						
3						
4						
5						
6						
7						
8						
9	33		8-9	Saturated dark grey sand, little brick	0	
10			9-10	VF light brown sand	0	Samples collected: 8-10, 10-12, 12-14, and 14-16
11	47		10-16	VF light brown sand	0	
12						
13					0	
14						
15					0	
16						
					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	16.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 100
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 116		TIME:	8:15 TO 8:30
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 2/7/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE: SAMPLE RECOVERY (INCHES)	SAMPLE: SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
1						
2	44		0.25-3.75	MF brown sand, little asphalt, little brick	0	Samples collected: 0-2 and 2-4
3					0	
4			3.75-4	Brick	0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	4.0	No	

GENERAL NOTES

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 101
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 116		TIME:	8:45 TO 9:00
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 2/7/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 2"
OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-3	MF brown sand, little asphalt, little brick	0	Samples collected: 0-2 and 2-4
2	45					
3					0	
4			3-4	VF light brown sand	0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	4.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 102
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 116		TIME:	9:05 TO 9:25
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 2/7/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-3	MF brown sand, little asphalt		
2	38				0	Samples collected: 0-2 and 2-4
3					0	
4			3-4	VF light brown sand	0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	4.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 103
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 111		TIME:	10:30 TO 10:50
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 2/7/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0					0	
1			0-3	MF brown sand, trace asphalt		
2	36				0	Samples collected: 0-2, 2-4, and 2-4 MS/MSD
3					0	
4			3-4	VF light brown sand		
					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	4.0	No	

GENERAL NOTES

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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 104
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 111		TIME:	11:00 TO 11:10
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 2/7/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
1			0.25-2.5	MF brown sand, trace asphalt		
2	33				0	Samples collected: 0-2, 2-4, and 2-4 Duplicate
3			2.5-4	VF light brown sand	0	
4					0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	4.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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45 MAIN STREET, SUITE 1018, BROOKLYN, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Carman Place Site
157 Main Street, Hempstead, NY

BORING: SB - 105
SHEET 1 of 1
JOB:
CHKD BY:
DATE:

CONTRACTOR:	Land Air Water Env	BORING LOCATION: Lot 111		TIME:	11:15 TO 11:30
DRILLER:		GROUND SURFACE ELEVATION	NA	DATUM:	NA
LABELLA REPRESENTATIVE:		START DATE: 2/7/23	END DATE:	WEATHER:	Partly cloudy

TYPE OF DRILL RIG: Geoprobe — DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA — INSIDE DIAMETER: 2"
OVERBURDEN SAMPLING METHOD: Direct Push — OTHER:

DEPTH (FEET BGS)	SAMPLE RECOVERY (INCHES)	SAMPLE NO. AND DEPTH	STRATA CHANGE (FEET BGS)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0			0-0.25	Asphalt	0	
1						
2	35		0.25-3.5	MF brown sand, trace asphalt	0	Samples collected: 0-2 and 2-4
3					0	
4			3.5-4	VF light brown sand	0	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
			N/A	4.0	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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NA = Not Applicable

and = 35 - 50%
some = 20 - 35%
little = 10 - 20%
trace = 1 - 10%

C = Coarse
M = Medium
F = Fine
VF = Very Fine

R = Rounded
A = Angular
SR = Subrounded
SA = Subangular

APPENDIX D

Quality Assurance Project Plan

Quality Control Program (QCP)

Site Location:

Carman Place Apartments, LLC
1000 University Avenue, Suite 500
Rochester, NY 14607

March 2024

300 State Street, Suite 201 | Rochester, NY 14614 | p 585-454-6110 | f 585-454-3066
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1.0 Introduction

LaBella's Quality Control Program (QCP) is an integral part of its approach to environmental investigations. By maintaining a rigorous QC program, our firm is able to provide accurate and reliable data. This QCP should be followed during implementation of environmental investigation and remediation projects and should serve as a basis for quality control methods to be implemented during field programs. Project-specific requirements may apply.

The QC program contains procedures which allow for the proper collection and evaluation of data and documents that QC procedures have been followed during field investigations. The QC program presents the methodology and measurement procedures used in collecting quality field data. This methodology includes the proper use of equipment, documentation of sample collection, and sample handling procedures.

Procedures used in the firm's QC program are compatible with federal, state, and local regulations, as well as, appropriate professional and technical standards.

This QC program includes the following:

- QC Objectives and Checks
- Field Equipment, Handling, and Calibration
- Sampling and Logging Techniques
- Sample Handling, Packaging, and Shipping
- Laboratory Requirements and Deliverables

It should be noted that project-specific work plans (e.g., Remedial Investigation Work Plans) may have project specific details that will differ from the procedures in this QC program. In such cases, the project-specific work plan should be followed (subsequent to regulatory approval).

The characteristics of major importance for the assessment of generated data are accuracy, precision, completeness, representativeness, and comparability. Application of these characteristics to specific projects is addressed later in this document. The characteristics are defined below.

1.1 Accuracy

Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value and is a measure of bias in the system.

1.2 Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter.

1.3 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under correct normal conditions.

1.4 Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition

Careful choice and use of appropriate methods in the field will ensure that samples are representative. This is relatively easy with water or air samples since these components are homogeneously dispersed. In soil and sediment, contaminants are unlikely to be evenly distributed, and thus it is important for the sampler and analyst to exercise good judgment when removing a sample.

1.5 Comparability

Comparability expresses the confidence with which one data set can be compared to another. The data sets may be inter- or intra- laboratory.

2.0 Measurement of Data Quality

2.1 Accuracy

Accuracy of a particular analysis is measured by assessing its performance with "known" samples. These "knowns" take the form of EPA standard reference materials, or laboratory prepared solutions of target analytes spiked into a pure water or sample matrix. In the case of gas chromatography (GC) or GC/MS (mass spectrometry) analyses, solutions of surrogate compounds are used. These solutions can be spiked into every sample and are designed to mimic the behavior of target analytes without interfering with their determination.

In each case the recovery of the analyte is measured as a percentage, correcting for analytes known to be present in the original sample if necessary, as in the case of a matrix spike analysis. For EPA supplied known solutions, this recovery is compared to the published data that accompany the solution.

For the firm's prepared solutions, the recovery is compared to EPA-developed data or the firm's historical data as available. For surrogate compounds, recoveries are compared to EPA CLP acceptable recovery tables.

If recoveries do not meet required criteria, then the analytical data for the batch (or, in the case of surrogate compounds, for the individual sample) are considered potentially inaccurate. The analyst or his supervisor must initiate an investigation of the cause of the problem and take corrective action. This can include recalibration of the instrument, reanalysis of the QC sample, reanalysis of the samples in the batch, or flagging the data as suspect if the problems cannot be resolved. For highly contaminated samples, recovery of the matrix spike may depend on sample homogeneity. As a rule, analyses are not corrected for recovery of matrix spike or surrogate compounds.

2.2 Precision

Precision of a particular analysis is measured by assessing its performance with duplicate or replicate samples. Duplicate samples are pairs of samples taken in the field and transported to the laboratory as distinct samples. Their identity as duplicates is typically not known to the laboratory. For most purposes, precision is determined by the analysis of replicate pairs (i.e., two samples prepared at the laboratory from one original sample). Often in replicate analysis the sample chosen

for replication does not contain target analytes so that quantitation of precision is impossible. For EPA CLP analyses, replicate pairs of spiked samples, known as matrix spike/matrix spike duplicate samples, are used for precision studies. This has the advantage that two real positive values for a target analyte can be compared.

Precision is calculated in terms of Relative Percent Difference (RPD).

- Where X_1 and X_2 represent the individual values found for the target analyte in the two replicate analyses or in the matrix spike/matrix spike duplicate analyses.
- RPDs must be compared to the method RPD for the analysis. The analyst or his supervisor must investigate the cause of RPDs outside stated acceptance limits. This may include a visual inspection of the sample for non-homogeneity, analysis of check samples, etc. Follow-up action may include sample reanalysis or flagging of the data as suspect if problems cannot be resolved.
- During the data review and validation process, field duplicate RPDs are assessed as a measure of the total variability of both field sampling and laboratory analysis.

2.3 Completeness

Completeness for each parameter is calculated as follows:

- The firm's target value for completeness for all parameters is 100%. A completeness value of 95% will be considered acceptable. Incomplete results will be reported to the site managers. In planning the field sample collection, the site manager will plan to collect field duplicates from identified critical areas. This procedure should assure 100% completeness for these areas.

2.4 Representativeness

The characteristic of representativeness is not quantifiable. Subjective factors to be taken into account are as follows:

- The degree of homogeneity of a site;
- The degree of homogeneity of a sample taken from one point in a site; and
- The available information on which a sampling plan is based.

To maximize representativeness of results, sampling techniques and sample locations will be carefully chosen so that they provide laboratory samples representative of the site and the specific area. Within the laboratory, precautions are taken to extract from the sample bottle an aliquot representative of the whole sample. This includes premixing the sample and discarding pebbles from soil samples.

2.5 Comparability

Comparability of laboratory tests is ensured by utilizing only New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP)- certified laboratories. This certification is the basis for demonstrating proficiency in testing requirements. Using ELAP certified laboratories will result in consistency amongst analytical data within a specific project and across projects.

3.0 Quality Control Targets

Target values for detection limit, percent spike recovery and percent "true" value of known check standards, and RPD of duplicates/replicates are included in the QCP, Analytical Procedures. Note that tabulated values are not always attainable. Instances may arise where high sample concentrations, non-homogeneity of samples, or matrix interferences preclude achievement of target detection limits or other quality control criteria. In such instances, the firm will report reasons for deviations from these detection limits or noncompliance with quality control criteria.

4.0 Soil Boring Advancement & Monitoring Well Installation Procedures

Soil and groundwater sampling shall be conducted in accordance with NYSDEC Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation dated May 3, 2010 and any Site-specific work plans.

Prior to drilling, all drill sites will be cleared with appropriate utility companies to avoid potential accidents relating to underground utilities. Utility drawings will be reviewed, if available.

4.1 Drilling Equipment and Techniques

Direct Push Geoprobe Advanced Borings:

Soil borings and monitoring wells will be advanced with a Geoprobe direct push sampling system. The use of direct push technology allows for rapid sampling, observation, and characterization of relatively shallow overburden soils. The Geoprobe utilizes a four to five-foot macrocore sampler, with disposable polyethylene sleeves. Soil cores will be retrieved in four or five-foot sections, and can be easily cut from the polyethylene sleeves for observation and sampling. The macrocore sampler will be decontaminated between boring locations using an alconox and water solution.

Prior to initiating drilling activities, the Macrocores, drive rods, and pertinent equipment, will be steam cleaned or washed with an alconox and water solution. This cleaning procedure will also be used between each boring. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures (e.g., pallets, sawhorses) will be used.

Test borings will be advanced with 2-inch (or larger) inside diameter (ID) direct push Macrocore through overburden soils. Drilling fluids, other than potable water will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative.

During the drilling, a properly calibrated photoionization detector (PID) will be used to screen soil cores retrieved from the Macrocores.

Direct Push Geoprobe advanced groundwater-monitoring wells typically utilize minimum 1.25-inch threaded flush joint PVC pipe with 0.010-in. slotted screen or pre-packed well screens. PVC piping used for risers and screens will conform to the requirements of ASTM-D 1785 Schedule 40 pipe.. All materials used to construct the wells will be NSF/ASTM approved. Solvent PVC glue shall not be used at any time in the construction of the wells. The bottom of the screen shall be sealed with a treated cap or plug. No lead shot or lead wool is to be employed in sealing the bottom of the well or

for sealant at any point in the well. Stainless steel wells or pre-packed PVC wells may be used if specified in the work plan and approved by the NYSDEC.

Hollow-Stem Auger Advanced Borings:

The drilling and installation of soil borings and monitoring wells will be performed using a rotary drill rig which will have sufficient capacity to perform 4 1/4-inch inside diameter (ID) hollow-stem auger drilling in the overburden, retrieve Macrocore or split-spoon samples, and perform necessary rock coring using NX, NQ, HQ or core barrel size as specified in the project-specific work plan. The borehole may be reamed up to 5 1/2-inch diameter prior to monitoring well installation as cased hole in the bedrock, or may be left as open bedrock hole, with regulatory concurrence. Equipment sizes and diameters may vary based on project-specific criteria. Any investigative derived waste generated during the advancement of soil borings and monitoring well installations will be containerized and characterized for proper disposal.

Prior to initiating drilling activities, the augers, rods, Macrocore, split spoons, and other pertinent equipment will be steam cleaned or washed with an alconox and water solution. This cleaning procedure will also be used between each boring. Steam cleaning activities will be performed in a designated on-site decontamination area. During and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. Plastic sheeting and/or clean support structures (e.g., pallets, sawhorses) will be used.
Test borings will be advanced with 4 1/4-inch (ID) hollow stem augers through overburden, and cored with a NX, NQ, HQ or core barrel size as specified in the project-specific work plan sized diamond core barrels in competent rock, driven by truck-, track-, or trailer-mounted drilling equipment. Alternative methods of drilling or equipment may be allowed or requested for project-specific criteria, but must be approved by the NYSDEC. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative.

During the drilling, a (PID) will be used to screen soils retrieved from the split spoons or Macrocores. In the event that headspace field screening is required to determine the presence of VOCs in soil samples, the following procedure will be utilized:

- Soils from core will be inserted into an airtight glass jar and/or disposable polyethylene bag, and the container will be sealed immediately
- After sealing the container, the soils will be shaken or kneaded for 10-15 seconds to release volatiles into the headspace of the sealed container
- The PID inlet will be inserted into the headspace of the airtight container to screen soil samples for VOCs

During the drilling, visual screening will be utilized to identify any Non-Aqueous Phase Liquid (NAPL) in the soil cores.

Where bedrock wells are required, test borings shall be advanced into rock with NX, NQ, HR (or similar) coring tools. Only water from an approved source shall be used in rock coring. The consultant shall monitor and record the petrology, core recovery, fractures, rate of advance, and water lost or produced in each test boring. The Rock Quality Determination (RQD) value shall be calculated for each 5-foot core. Each core shall be screened with a PID upon extraction. All core samples shall be retained and stored by the consultant in an approved wooden core box for a period of not less than one year.

The method selected may be percussion or rotary drilling. The method and equipment selected must be capable of penetrating the bedrock at each well location to a depth required by the work plan.

Bedrock well installation will involve construction of a rock socket in the weathered bedrock. The socket will be drilled into the top of rock (typically 1-ft. to 5-ft. into the top of rock) at each bedrock well location to allow a permanent steel casing to be grouted securely in place prior to completion of the well. The purpose for this is to provide a seal at the overburden/bedrock interface and into the upper bedrock surface, to prevent the entrance of overburden water into the bedrock. After the grout and casing have set up for a minimum of 12 hours, the remaining bedrock can be NX (or similar) cored through the steel casing to a depth determined by the project-specific work plan.

Bedrock wells will either be open coreholes in the rock or consist of threaded, flush-joint PVC piping. Construction will vary depending on the project and as such, specific construction of the wells will be detailed in the project-specific work plan. Bedrock wells which do utilized PVC piping for risers and screens will conform to the requirements of ASTM-D 1785 Schedule 40 pipe. All materials used to construct the wells will be NSF/ASTM approved.

Screen and riser sections shall be joined by flush-threaded coupling to form watertight unions that retain 100% of the strength of the casing. Solvent PVC glue shall not be used at any time in the construction of the wells. The bottom of the screen shall be sealed with a treated cap or plug. No lead shot or lead wool is to be employed in sealing the bottom of the well or for sealant at any point in the well.

4.1.1 Artificial Sand Pack

When utilized, granular backfill will be chemically and texturally clean, inert, siliceous, and of appropriate grain size for the screen slot size and the host environment The sand pack will be installed using a tremie pipe, when possible (i.e., a tremie pipe may not fit into smaller, 2-in. diameter boreholes). When utilized, the well screen and casing will be installed, and the sand pack placed around the screen and casing to a depth extending at least 2-ft.. A pre-packed well screen may be used if pre-approved by the NYSDEC.

An artificial sand pack will not be utilized in bedrock wells without screens (i.e., open borehole wells).

4.1.2 Bentonite Seal

A minimum 2-ft. thick seal will be placed directly on top of the sand pack, and care will be taken to avoid bridging. In the event that Site geology does not allow for a 2-ft. seal (e.g., only 1-ft. of space remains between the top of the sand pack and ground surface), the remaining space in the annulus will be filled with bentonite.

4.1.3 Grout Mixture

Upon completion of the bentonite seal, the well may be grouted with a non-shrinking cement grout (e.g., Volclay^{R}) mix to be placed from the top of the bentonite seal to the ground surface. The cement grout shall consist of a mixture of Portland cement (ASTM C 150) and water, in the proportion of not more than 7 gallons of clean water per bag of cement (1 cubic foot or 94 pounds). Additionally, 3% by weight of bentonite powder may be added.

4.1.4 Surface Protection

At all times during the progress of the work, precautions shall be used to prevent tampering with or

the entrance of foreign material into the well. Upon completion of the well, a suitable cap shall be installed to prevent material from entering the well. Where permanent wells are to be installed, the well riser shall be protected by a flush mounted road box set into a concrete pad or locking well cap for stick-up wells. A concrete pad, sloped away from the well, shall be constructed around the flush mount road box or stick-up casing at ground level.

Any well that is to be temporarily removed from service or left incomplete due to delay in construction shall be capped with a watertight cap.

4.2 Surveying

Coordinates and elevations will be established for each monitoring well and sampling location. Elevations to the closest 0.01 foot shall be used for the survey. These elevations shall be referenced to a regional, local, or project-specific datum. The location, identification, coordinates, and elevations of the wells will be plotted on maps with a scale large enough to show their location with reference to other structures at each site.

4.3 Well Development

After completion of the well, but not sooner than 24 hours after grouting is completed, development will be accomplished using pumping, bailing, or surge blocking. No dispersing agents, acids, disinfectants, or other additives will be used during development or introduced into the well at any other time. During development, water will be removed throughout the entire water column by periodically lowering and raising the pump intake (or bailer stopping point).

Development water will be either properly contained and treated as waste until the results of chemical analysis of samples are obtained or discharged on Site as determined by the Site-specific work plans and/or consultation with the NYSDEC representatives on Site.

The development process will continue until removal of a minimum of 110% of the water lost during drilling, three well volumes; whichever is greater, or as specified in the work plan. In the event that limited recharge does not allow for the recovery of all drilling water lost in the well or three (3) well volumes, the well will be allowed to stabilize to conditions deemed representative of groundwater conditions. Stabilization periods will vary by project but will be confirmed with the NYSDEC prior to sampling.

4.4 PFAS Soil Sampling Procedure

PFAS sampling will be conducted in accordance with current NYSDEC PFAS Guidance. Soil samples for PFAS analysis will be collected using PFAS-Free equipment. Samples will be collected in bottleware provided by the laboratory. Because PFAS are found in numerous everyday items, the following special precautions will be taken during sampling activities:

- No use of Teflon®-containing materials (e.g., Teflon® tubing, bailers, tape, sample jar lid liners, plumbing paste).
- No use of low density polyethylene (LDPE)-containing materials.
- No Tyvek® clothing will be worn by samplers.
- Clothes treated with stain-resistant or rain-resistant coatings (e.g., Gortex®) will be not be worn by samplers.
- All clothing worn by sampling personnel must have been laundered multiple times.

- No fast food wrappers, disposable cups or microwave popcorn will be within the vicinity of the wells/ samples.
- There will be no use of chemical (blue) ice packs, aluminum foil, or Sharpies® within the vicinity of the wells/ samples.
- No use of sunscreen, insect repellants, cosmetic, lotions or moisturizers will be allowed by sampling personnel the day of sampling.
- If any of the above items are handled by the field personnel prior to sampling activities, field personnel will wash their hands thoroughly with soap and water prior to any sampling activities.
- Powder-free nitrile gloves will be worn during all sample collection activities.

Quality assurance/ quality control (QA/QC) samples for PFAS sampling will include one (1) field duplicate, one (1) matrix spike / matrix spike duplicates (MS/MSD) and one (1) equipment blank. The procedures and rationale for collecting these samples are described below.

- **Field duplicate** – Sample will be used to assess the variability in concentrations of samples from the same well due to the combined effects of sample processing in the field and laboratory as well as chemical analysis.

- **Matrix spike/matrix spike duplicate** – Sample will be used to provide information about the effect of the sample matrix on the design and measurement methodology used by the laboratory.

- **Equipment blank** – Sample will be collected to help identify possible contamination from sampling equipment (i.e., shovel, soil core, etc.).

PFAS samples will be submitted to an Environmental Laboratory Accreditation Program (ELAP) certified laboratory for analysis of the full PFAS target analyte list (21 compounds listed in the NYSDEC Guidance) via modified USEPA Method 537 with a method detection limit not to exceed 1 ug/kg. Note, the laboratory utilized will be ELAP certified for PFOA and PFOS in drinking water by EPA method 537 or ISO 25101 as ELAP does not currently offer certification for PFAS compounds in matrices other than finished drinking water.

5.0 Geologic Logging and Sampling

At each investigative location, borings will be advanced through overburden using either a drill rig and hollow-stem auger or direct push technology (split spoons or Macrocore). Soils will be evaluated for visual and olfactory evidence of impairment (i.e., staining, odors, and elevated PID readings) by a qualified individual. Sampling devices will be decontaminated according to procedures outlined in the Decontamination section of this document. When utilized, split-spoon samplers will be driven into the soil using a minimum 140-pound safety hammer and allowed to free-fall 30-inches, in accordance with ASTM-D 1586-84 specifications. The number of blows required to drive the sampler each 6-inches of penetration will be recorded. When required, samples will be stored in the appropriate bottleware (refer to Section 10) until analysis or deemed unnecessary.

In the event that maximum design depth of investigation is reached and hydrogeologic conditions are not suitable for well installation, the maximum drilling depth may be revised.

Boulders and bedrock encountered during well installation may be cored by standard diamond-core

drilling methods using an NX, NQ, HQ size core barrel or other if specified in the project-specific work plan. All rock cores recovered will be logged by a qualified individual, and stored in labeled wooden core boxes. The cores will be stored by the firm until the project is completed or for at least one year. Drilling logs will be prepared by a qualified individual who will be present during drilling operations. One copy of each field boring and well construction log and groundwater data, will typically be submitted as part of the investigation summary report (e.g., Remedial Investigation Report). The RQD value shall be calculated for each 5-foot section. Information provided in the logs shall include, but not be limited to, the following:

- Date(s), test hole identification, and project identification;
- Name of individual developing the log;
- Name of driller and assistant(s);
- Drill, make and model, auger size;
- Identification of alternative drilling methods used and justification thereof (e.g., rotary drilling with a specific bit type to remove material from within the hollow stem augers);
- Standard penetration test (ASTM D-1586) blow counts;
- Field diagram of each monitoring well installed with the depth to bottom of well/ screen, top of screen, length of riser, depth of steel casing, depths of sand pack, bentonite seal, grout, type of well completion etc.;
- Depth of each change of stratum;
- Identification of the material of which each stratum is composed, according to the USCS system or standard rock nomenclature, as appropriate;
- Depth interval from which each sample was taken, sample identification, and sample time;
- Depth at which hole diameters (bit sizes) change;
- Depth at which groundwater is encountered;
- Drilling fluid and quantity of water lost during drilling;
- Depth or location of any loss of tools or equipment;
- Depths of any fractures, joints, faults, cavities, or weathered zones

6.0 Groundwater Sampling Procedures

The groundwater in all new monitoring wells will be allowed to stabilize for at least 1week following development prior to sampling. Water levels will be measured to within 0.01 feet prior to purging and sampling. Sampling of each well will typically be accomplished in one of two ways; active or passive.

Active Sampling:

Active sampling includes bailing or pumping. Purging will be completed prior to active sampling if specified in the project-specific work plan. During purging, the following will be recorded in field books or groundwater sampling logs:

- date
- purge start time
- weather conditions
- presence of NAPL, if any, and approximate thickness
- pump rate
- pH
- dissolved oxygen
- temperature

- conductivity
- redox
- turbidity
- depth of well
- depth to water
- depth to pump intake
- purge end time
- volume of water purged

During low flow sampling, the water quality parameters including pH, conductivity, temperature, dissolved oxygen, redox, water level drawdown, and turbidity will be recorded at five (5) minute intervals. Samples will be collected after the parameters have stabilized for three (3) consecutive 5-minute intervals to within the specified ranges below:

- Water level drawdown (<0.3')
- Turbidity (+/- 10%, < 50-NTU for Metals Samples)
- pH (+/-0.1)
- Temperature (+/- 3%)
- Specific conductivity (+/- 3%)
- Dissolved Oxygen (+/- 10%)
- Oxidation reduction potential (+/- 10 millivolts)

Passive Sampling:

Groundwater samples will be collected via passive methods (i.e., no-purge) according to the following procedures and in the volumes specified in Table 10-1:

Samples will be collected via passive diffusion bag (PDB) samplers. PDB samplers are made of low-density polyethylene plastic tubing (typically 4 mil), filled with laboratory grade (ASTM Type II) deionized water and sealed at both ends.

- Pre-filled PDBs will not be stored for longer than 30 days and will be kept stored at room temperature in a sealed plastic bag until ready to use.
- PDBs filled in the field will be used immediately and not stored for future use.
- PDB samplers will only be used to collect groundwater samples which will be analyzed for VOCs.
- Mesh covers will be utilized for open rock holes as to not puncture the PDB and will be secured to the bag using zip-ties.
- PDB samplers will be deployed by hanging in the well at the depth(s) specified in the project-specific work plan. The depth at which the PDB is deployed will be recorded on the groundwater sampling form. The PDB samplers will be deployed at least 14 days prior to sampling;
- When transferring water from the PDB to sample containers, care will be taken to avoid agitating the sample, since agitation promotes the loss of volatile constituents;
- Gloves will be changed between collection of each PDB and tools used to open the PDB will be decontaminated with an alconox and potable water solution between each PDB;
- Any volume not used will be treated as investigation derived waste;
- Any observable physical characteristics of the groundwater (e.g., color, sheen, odor,

turbidity) at the time of sampling will be recorded; and

- Weather conditions (i.e., air temperature, sky condition, recent heavy rainfall, drought conditions) at the time of sampling will be recorded.

6.1 PFAS Groundwater Sampling Procedure

PFAS sampling will be conducted in accordance with current NYSDEC PFAS Guidance. Samples for PFAS analysis will be collected using PFAS-Free equipment, specifically a dedicated disposable high density polyethylene (HDPE) or PVC bailers, and/or low-flow sampling equipment with PFAS-Free components. Samples will be collected in bottleware provided by the laboratory. Because PFAS are found in numerous everyday items, the following special precautions will be taken during sampling activities:

- No use of Teflon®-containing materials (e.g., Teflon® tubing, bailers, tape, sample jar lid liners, plumbing paste).
- No use of low density polyethylene (LDPE)-containing materials.
- No Tyvek® clothing will be worn by samplers.
- Clothes treated with stain-resistant or rain-resistant coatings (e.g., Gortex®) will be not be worn by samplers.
- All clothing worn by sampling personnel must have been laundered multiple times.
- No fast food wrappers, disposable cups or microwave popcorn will be within the vicinity of the wells/ samples.
- There will be no use of chemical (blue) ice packs, aluminum foil, or Sharpies® within the vicinity of the wells/ samples.
- No use of sunscreen, insect repellants, cosmetic, lotions or moisturizers will be allowed by sampling personnel the day of sampling.
- If any of the above items are handled by the field personnel prior to sampling activities, field personnel will wash their hands thoroughly with soap and water prior to any sampling activities.
- Powder-free nitrile gloves will be worn during all sample collection activities.

Quality assurance/ quality control (QA/QC) samples for PFAS sampling will include one (1) field duplicate, one (1) matrix spike / matrix spike duplicates (MS/MSD) and one (1) equipment blank. The procedures and rationale for collecting these samples are described below.

- Field duplicate – Sample will be used to assess the variability in concentrations of samples from the same well due to the combined effects of sample processing in the field and laboratory as well as chemical analysis.

- Matrix spike/matrix spike duplicate – Sample will be used to provide information about the effect of the sample matrix on the design and measurement methodology used by the laboratory.

- Equipment blank – Sample will be collected to help identify possible contamination from sampling equipment (i.e., bailer). One equipment blank will be collected by pouring laboratory certified analyte-free deionized water over a bailer into the sample container.

PFAS samples will be submitted to an Environmental Laboratory Accreditation Program (ELAP) certified laboratory for analysis of the full PFAS target analyte list (21 compounds listed in the NYSDEC Guidance) via modified USEPA Method 537 with a method detection limit not to exceed 2 ng/L. Note, the laboratory utilized will be ELAP certified for PFOA and PFOS in drinking water by

EPA method 537 or ISO 25101 as ELAP does not currently offer certification for PFAS compounds in matrices other than finished drinking water.

7.0 Soil Vapor Intrusion Sampling Procedures

Soil vapor intrusion (SVI) sampling is to be conducted in accordance with the *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 and subsequent updates. Tracer gas testing is to be conducted for sub-slab sampling points to ensure concentrations of the tracer gas are not detected in the sub-slab at greater than 10% of the concentration detected in the atmosphere. An outdoor air sample is to be collected at an upwind direction as a control. A building inventory should be completed to document building construction information and identify products that may be contributing to the levels in indoor air.

8.0 Field Documentation

8.1 Daily Logs/ Field Notebook

Daily logs are necessary to provide sufficient data and observations to enable participants to reconstruct events that occurred during the project and to refresh the memory of the field personnel if called upon to give testimony during legal proceedings. Daily logs may be kept in a project-specific notebook labelled with the project name/ number and contact information.

The daily log is the responsibility of the field personnel and will include:

- Name of person making entry;
- Start and end time of work;
- Names of team members on-site;
- Changes in required levels of personnel protection:
  - Level of protection originally used;
  - Changes in protection, if required; and
  - Reasons for changes.
- Air monitoring locations, start and end times, and equipment identification numbers;
- Summary of tasks completed;
- Summary of samples collected including location, matrix, etc.;
- Field observations and remarks;
- Weather conditions, wind direction, etc.;
- Any deviations from the work plan;
- Initials/ signature of person recording the information.

As with any data logbooks, no pages will be removed for any reason. If corrections are necessary, these must be made by drawing a single line through the original entry (so that the original entry can still be read) and writing the corrected entry alongside. The correction must be initialed and dated. Corrected errors may require a footnote explaining the correction.

Sample documents, forms, or field notebooks are not to be destroyed or thrown away, even if they are illegible or contain inaccuracies that require a replacement document. If an error is made on a document assigned to one individual, that individual may make corrections simply by crossing a line

through the error and entering the corrected information. The incorrect information should not be obliterated. Any subsequent error discovered on a document should be corrected by the person who made the entry. All corrections must be initialed and dated.

8.2 Photographs

Photographs will be taken to document the work. Documentation of a photograph is crucial to its validity as a representation of an existing situation. Photographs should be documented with date, location, and description of the photograph.

9.0 Investigation Derived Waste

Purpose:

The purposes of these guidelines are to ensure the proper holding, storage, transportation, and disposal of materials that may contain hazardous wastes. Investigation-derived waste (IDW) included the following:

- Drill cuttings, drilling mud solids;
- Water produced during drilling;
- Well development and purge waters, unused PDB waters;
- Decontamination waters and associated solids;

IDW will be managed in substantial accordance with DER-10 and all applicable local, State and Federal regulations.

Procedure:

1. Contain all investigation-derived wastes in Department of Transportation (DOT)-approved 55-gallon drums, roll-off boxes, or other containers suitable for the wastes.
2. Place different media in separate drums (i.e., do not combine solids and liquids).
3. To the extent practicable, separate solids from drilling muds, decontamination waters, and similar liquids. Place solids within separate containers.
4. Transfer all waste containers to a staging area. Access to this area will be controlled. Waste containers must be transferred to the staging area as soon as practicable after the generating activity is complete.
5. Label all containers with regard to contents, origin, and date of generation. Use indelible ink for all labeling.
6. Collect samples for waste characterization purposes, use boring/well sample analytical data for characterization.
7. For wastes determined to be hazardous in character, be aware on accumulation time limitations. Coordinate the disposal of these wastes with the Owner and NYSDEC.
8. Dispose of investigation-derived wastes as follows;
    - Soil, water, and other environmental media for which analysis does not detect organic constituents, and for which inorganic constituents are at levels consistent

with background, may be spread on-site (pending NYSDEC approval) or otherwise treated as a non-waste material.

- Soils, water, and other environmental media in which organic compounds are detected or metals are present above background will be disposed as industrial waste or hazardous waste, as appropriate. Alternate disposition must be consistent with applicable State and Federal laws.
- Personal protective equipment, disposable bailers, and similar equipment may be disposed as municipal waste, unless waste characterization results mandate disposal as industrial wastes

9. If waste is determined to be listed hazardous waste, it must be handled as hazardous waste as described above, unless a contained-in determination is accepted by the NYSDEC.

10.0 Decontamination Procedures

Sampling methods and equipment have been chosen to minimize decontamination requirements and to prevent the possibility of cross-contamination. Decontamination of equipment will be performed between discrete sampling locations. Equipment used to collect samples between composite sample locations will not require decontamination between collection of samples. All drilling equipment will be decontaminated after the completion of each drilling location. Special attention will be given to the drilling assembly and augers.

Split spoons and other non-disposable equipment will be decontaminated between each sampling location. The sampler will be cleaned prior to each use, by one of the following procedures:

- Initially cleaned of all foreign matter;
- Sanitized with a steam cleaner;

OR

- Initially cleaned of all foreign matter;
- Scrubbed with brushes in alconox solution;
- Triple rinsed; and
- Allowed to air dry.

Other sampling equipment including but not limited to low-flow sampling pumps, surface soil sampling trowel, water level meters, etc. will be decontaminated between sample location using an alconox solution. Consumables including gloves, tubing, bailers, string, etc. will be dedicated to one sample location and will not be reused.

11.0 Sample Containers

The containers required for sampling activities are pre-washed and ordered directly from a laboratory, which has the containers prepared in accordance with USEPA bottle washing procedures. The following tables detail sample volumes, containers, preservation and holding time for typical analytes.

Table 11-1
Groundwater Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Holding Time Until Extraction/ Analysis
VOCs	40-ml glass vial with Teflon-backed septum	Two (2); fill completely, no headspace	Cool to 4° C (ice in cooler), Hydrochloric acid to pH <2	14 days
Semi-volatile Organic Compounds (SVOCs)	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Pesticides	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Polychlorinated biphenyls (PCBs)	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Metals	250-ml HDPE	One (1); fill completely	Cool to 4° C (ice in cooler) Nitric acid to pH <2	180 days (28 for mercury)
Cyanide	1,000-mL HDPE		Cool to 4° C (ice in cooler) Nitric acid to pH <2	14 days
1,4-Dioxane	40-ml glass vial with Teflon-backed septum	Three (3); fill completely, no headspace	Cool to 4° C (ice in cooler), Hydrochloric acid to pH <2	14 days
PFAS	250-mL HDPE, no Teflon	Two (2); fill completely	Cool to 4° C (ice in cooler), Trizma	14 days

Note:
All sample bottles will be prepared in accordance with USEPA bottle washing procedures.
Consult with laboratory as bottleware may vary by laboratory.
Holding time begins at the time of sample collection.

TABLE 11-2
Soil Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Holding Time Until Extraction/ Analysis
VOCs	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	14 days
VOCs via EPA 5035	40 mL vials with sodium bisulfate, methanol, and/or DI water	Three (3), 5 grams each	Cool to 4° C (ice in cooler)	2 days*
SVOCs	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	7/40 days
PCBs	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	7/40 days
Pesticides	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	14/40 days
Metals	4-oz. glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	180 days (28 for mercury)
Cyanide	4-oz, glass jar with Teflon-lined cap	One (1), fill as completely as possible	Cool to 4° C (ice in cooler)	14 days
1,4-Dioxane	40 mL vials with sodium bisulfate, methanol, and/or DI water	Three (3), 5 grams each	Cool to 4° C (ice in cooler)	2 days*
PFAS	8-oz HDPE, no Teflon	One (1); fill as completely as possible	Cool to 4° C (ice in cooler)	28 days

Note:
**Or freeze within holding time.*
All sample bottles will be prepared in accordance with USEPA bottle washing procedures.
Consult with laboratory as bottleware may vary by laboratory.
Holding time begins at the time of sample collection.

Table 11-3
Air Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Holding Time Until Extraction/ Analysis
VOCs	1 – Liter Summa® Canister	One (1) 1-Liter 1.4- Liter for MS/MSD	N/A	14 days

Note:
All sample bottles will be prepared in accordance with USEPA bottle washing procedures.
Consult with laboratory as bottleware may vary by laboratory.
Holding time begins at the time of sample collection.

12.0 Sample Custody and Shipment

12.1 Sample Identification

All containers of samples collected from the project will be identified using the following format on a label or tag fixed to the sample container:

AA-BB-CC-DD-EE

AA: This set of initials indicates an abbreviation for the Site from which the sample was collected.
BB This set of initials represents the type of sample (e.g., SB for soil boring and MW for monitoring well)
CC: These initials identify the unique sample location number.
DD: These initials identify the sample start depth (if soil sample)
EE These initials identify the sample end depth (if soil sample)

Each sample will be labeled, chemically preserved (if required) and sealed immediately after collection. To minimize handling of sample containers, labels will be filled out prior to sample collection when possible. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers. The sample label will give the following information:

- Date and time of collection
- Sample identification
- Analysis required
- Project name/number
- Preservation

Sample tags attached to or affixed around the sample container must be used to properly identify all samples collected in the field. The sample tags are to be placed on the bottles so as not to obscure any QC lot numbers on the bottles; sample information must be printed in a legible manner using waterproof ink. Field identification must be sufficient to enable cross-reference with the logbook. For chain-of-custody purposes, all QC samples are subject to exactly the same custodial procedures and documentation as "real" samples.

12.2 Chain of Custody

This section describes standard operating procedures for sample identification and chain-of-custody to be utilized for all field activities. The purpose of these procedures is to ensure that the quality of the samples is maintained during their collection, transportation, and storage through analysis. All chain-of-custody requirements comply with standard operating procedures indicated in USEPA sample handling protocol.

Sample identification documents must be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include:

- Field notebooks;
- Sample label; and
- Chain-of-custody records.

The primary objective of the chain-of-custody procedures is to provide an accurate written or computerized record that can be used to trace the possession and handling of a sample from collection to completion of all required analyses. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secured area that is restricted to authorized personnel.

As few persons as possible should handle samples. Sample bottles will be obtained pre-cleaned from the a laboratory. Sample containers should only be opened immediately prior to sample collection. The sample collector is personally responsible for the care and custody of samples collected until they are transferred to another person or dispatched properly under chain-of-custody rules. The sample collector will record sample data in the field notebook and/or field logs.

The chain-of-custody record must be fully completed in duplicate, using black carbon paper where possible, by the field technician who has been designated by the project manager as responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (e.g., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints on the chain of custody.

12.3 Transfer of Custody and Shipment

The coolers in which the samples are packed must be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them must sign, date, and note the time on the chain-of-custody record. This record documents sample custody transfer.

Shipping containers must be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information are entered on the chain-of-custody.

All shipments must be accompanied by the chain-of-custody record identifying their contents. The original record accompanies the shipment. The other copies are distributed appropriately to the site manager.

12.4 Custody Seals

Custody seals are preprinted adhesive-backed seals. Sample shipping containers (coolers,

cardboard boxes, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before shipment. On receipt at the laboratory, the custodian must check (and certify, by completing the package receipt log and LABMIS entries) that seals on boxes and bottles are intact. Strapping tape should be placed over the seals to ensure that seals are not accidentally broken during shipment.

12.5 Sample Packaging

Samples must be packaged carefully to avoid breakage or contamination and must be shipped to the laboratory at proper temperatures. The following sample packaging requirements will be followed:

- Sample bottle lids must never be mixed. All sample lids must stay with the original containers.
- The label should not cover any bottle preparation QC lot numbers.
- All sample bottles are placed in a plastic bag and/or individual bubble wrap sleeves to minimize the potential for cross-contamination and breaking.
- Shipping coolers must be partially filled with packing materials and ice when required, to prevent the bottles from moving during shipment.
- The sample bottles must be placed in the cooler in such a way as to ensure that they do not directly come in contact with other samples. Ice will be added to the cooler to ensure that the samples reach the laboratory at temperatures no greater than 4°C.
- Any remaining space in the cooler should be filled with inert packing material. Under no circumstances should material such as sawdust, sand, etc., be used.
- A chain of custody record must be placed in a plastic bag inside the cooler. Custody seals must be affixed to the sample cooler.

12.6 Sample Shipment

Shipping containers are to be custody-sealed for shipment as appropriate. The container custody seal will consist of tape wrapped around the package and custody seals affixed in such a way that access to the container can be gained only by cutting the filament tape and breaking the seal. Chain of custody seals shall be placed on the container, signed, and dated prior to taping the container to ensure the chain of custody seals will not be destroyed during shipment. In addition, the coolers must also be labeled and placarded in accordance with DOT regulations if shipping medium and high hazard samples.

Field personnel will make arrangements for transportation of samples to the lab. The lab must be notified as early as possible regarding samples intended for Saturday delivery. The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the United States DOT in the Code of Federal Regulation, 49 CFR 171 through 177. All samples will be delivered to the laboratory and analyzed within the holding times specified by the analytical method for that particular analyte.

All chain-of-custody requirements must comply with standard operating procedures in the USEPA

sample handling protocol.

12.7 Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample identification number matches that on the chain-of-custody record and traffic reports, if required. Pertinent information as to shipment, pickup, and courier is entered on the chain of custody or attached forms.

13.0 Deliverables

This section will describe laboratory requirement and procedures to be followed for laboratory analysis. Samples collected in New York State will be analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP)-certified laboratory. When required, analyses will be conducted in accordance with the most current NYSDEC Analytical Services Protocol (ASP). For example, ASP Category B reports will be completed by the laboratory for samples representing the final delineation of the Remedial Investigation, confirmation samples, samples to determine closure of a system, and correlation samples taken using field testing technologies analyzed by an ELAP-certified laboratory to determine correlation to field results. Data Usability Summary Reports will be completed by a third party for samples requiring ASP Category B format reports. Electronic data deliverables (EDDs) will also be generated by the laboratory in EQUIS format for samples requiring ASP Category B format reports.

NYSDEC DER-10 DUSR requirements are as follows:

a) Background. The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data with the primary objective to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

    1. The development of the DUSR must be carried out by an experienced environmental scientists, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. The DUSR is developed from:

        i. A DEC ASP Category B Data Deliverable; or
        ii. The *USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation.*

    2. The DUSR and the data deliverables package will be reviewed by DER staff. If full third party data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later data on the same data package used for the development of the DUSR.

b) Personnel Requirements. The person preparing the DUSR must be pre-approved by DER. The person must submit their qualifications to DER documenting experience in analysis and data validation. Data validator qualifications are available on DEC's website identified in the table of contents.
c) Preparation of a DUSR. The DUSR is developed by reviewing and evaluating the analytical data package. In order for the DUSR to be acceptable, during the course of this review the following questions applicable to the analysis being reviewed must be answered in the affirmative.

1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?
2. Have all holding times been met?
3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?
4. Have all of the data been generated using established and agreed upon analytical protocols?
5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?
7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

d) Documenting the validation process in the DUSR. Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters, including data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed.

14.0 Equipment Calibration

All instruments and equipment used during sampling and analysis will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations as well as criteria set forth in the applicable analytical methodology references. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Section 11 lists the major instruments to be used for sampling and analysis. In addition, brief descriptions of calibration procedures for major field and laboratory instruments follow.

14.1 Photovac/MiniRae Photoionization Detector (PID)

Standard operating procedures for the PID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers. All calibration procedures will follow the manufacturer recommendations.

14.2 Conductance, Temperature, and pH Tester

Temperature and conductance instruments are factory calibrated. Temperature accuracy can be checked against an NBS certified thermometer prior to field use if necessary. Conductance accuracy may be checked with a solution of known conductance and recalibration can be instituted, if necessary.

14.3 0_2/Explosimeter

The specific meter used at the time of work shall be calibrated in accordance with manufacturer recommendations. The model 260 O_2/ Explosimeter is described below.

The primary maintenance item of the Model 260 is the rechargeable 2.4 volt (V) nickel cadmium battery. The battery is recharged by removing the screw cap covering receptacle and connecting one end of the charging cable to the instrument and the other end to a 115V AC outlet.

The battery can also be recharged using a 12V DC source. An accessory battery charging cable is available, one end of which plugs into the Model 260 while the other end is fitted with an automobile cigarette lighter plug.

Recommended charging time is 16 hours.

Before the calibration of the combustible gas indicator can be checked, the Model 260 must be in operating condition. Calibration check-adjustment is made as follows:

1. Attach the flow control to the recommended calibration gas tank.
2. Connect the adapter-hose to the flow control.
3. Open flow control valve.
4. Connect the adapter-hose fitting to the inlet of the instrument; after about 15 seconds the LEL meter pointer should be stable and within the range specified on the calibration sheet accompanying the calibration equipment. If the meter pointer is not in the correct range, stop the flow; remove the right hand side cover. Turn on the flow and adjust the "S" control with a small screwdriver to obtain a reading as specified on the calibration sheet.
5. Disconnect the adapter-hose fitting from the instrument.
6. Close the flow control valve.
7. Remove the adapter-hose from the flow control.
8. Remove the flow control from the calibration gas tank.
9. Replace the side cover on the Model 260.

CAUTION: Calibration gas tank contents are under pressure. Use no oil, grease, or flammable solvents on the flow control or the calibration gas tank. Do not store calibration gas tank near heat or fire or in rooms used for habitation. Do not throw in fire, incinerate, or puncture. Keep out of reach of children. It is illegal and hazardous to refill this tank. Do not attach the calibration gas tank to any other apparatus than described above. Do not attach any gas tank other than MSA calibration tanks to the regulator.

14.4 Nephelometer (Turbidity Meter)

LaMotte 2020WE Turbidity Meter is calibrated before each use. The default units are set to NTU and the default calibration curve is formazin. A 0 NTU Standard (Code 1480) is included with the meter. To calibrate, rinse a clean tube three times with the blank. Fill the tube to the fill line with the blank. Insert the tube into the chamber, close the lid, and select “scan blank”.

TABLE 14-4
List of Major Instruments
for Sampling and Analysis

- MSA 360 0_2 /Explosimeter
- Geotech Geopump II AC/DC Peristaltic Pump
- QED MP50 Controller and QED Sample Pro MicroPurge Bladder Pimp
- Horiba U-53 Multi-Parameter Water Quality Meter
- LaMotte 2020WE Turbidity Meter
- EM-31 Geomics Electromagnetic Induction Device
- Mini Rae Photoionization Detectors (3,000, ppbRAE, etc.)

15.0 Internal Quality Control Checks

QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of field equipment. Field-based QC will comprise at least 10% of each data set generated and will consist of standards, replicates, spikes, and blanks. Field duplicates and field blanks will be analyzed by the laboratory as samples and will not necessarily be identified to the laboratory as duplicates or blanks. For each matrix, field duplicates will be provided at a rate of one per 10 samples collected or one per shipment, whichever is greater. Field blanks which may consist of trip, routine field, and/or rinsate blanks will be provided at a rate of one per 20 samples collected for each media, or one per shipment, whichever is greater. Frequency of QC data may vary from project to project; refer to the project-specific work plan for QC requirements.

Calculations will be performed for recoveries and standard deviations along with review of retention times, response factors, chromatograms, calibration, tuning, and all other QC information generated. All QC data, including split samples, will be documented in the site logbook and/or appropriate field logs. QC records will be retained and results reported with sample data.

15.1 Field Blanks

Various types of blanks are used to check the cleanliness of field handling methods. The following types of blanks may be used: the trip blank, the routine field blank, and the field equipment blank. They are analyzed in the laboratory as samples, and their purpose is to assess the sampling and transport procedures as possible sources of sample contamination. Field staff may add blanks if field circumstances are such that they consider normal procedures are not sufficient to prevent or control sample contamination, or at the direction of the project manager. Rigorous documentation of all blanks in the site logbooks is mandatory.

- **Routine Field Blanks** or bottle blanks are blank samples prepared in the field to access ambient field conditions. They will be prepared by filling empty sample containers with deionized water and any necessary preservatives. They will be handled like a sample and shipped to the laboratory for analysis.
- **Trip Blanks** are similar to routine field blanks with the exception that they are **not**

exposed to field conditions. Their analytical results give the overall level of contamination from everything except ambient field conditions. For the RI/FS, one trip blank will be collected with every shipment of water samples for VOC analysis. Each trip blank will be prepared by filling a 40-ml vial with deionized water prior to the sampling trip, transported to the site, handled like a sample, and returned to the laboratory for analysis without being opened in the field. Trip blanks may be provided by the laboratory, shipped with the bottleware, and kept with the sampling containers until analysis.

- Field Equipment Blanks are blank samples (sometimes called transfer blanks or rinsate blanks) designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use, and that cleaning procedures between samples are sufficient to minimize cross contamination. If a sampling team is familiar with a particular site, they may be able to predict which areas or samples are likely to have the highest concentration of contaminants. Unless other constraints apply, these samples should be taken last to avoid excessive contamination of sampling equipment.

15.2 Duplicates

Duplicate samples are collected to check the consistency of sampling and analysis procedures. The following types of duplicates may be collected.

- Blind duplicate samples consist of a set of two samples collected independently at a sampling location during a single sampling event. Blind duplicates are designed to assess the consistency of the overall sampling and analytical system. Blind duplicate samples should not be distinguishable by the person performing the analysis.
- Matrix Spike and Matrix Spike Duplicates (MS/MSDs) consist of a set of three samples collected independently at a sampling location during a single sampling event. These samples are for laboratory quality control checks.

APPENDIX E

Site Management Forms

Summary of Green Remediation Metrics for Site Management

Site Name: _____ Site Code: _____
Address: _____ City: _____
State: _____ Zip Code: _____ County: _____

Initial Report Period (Start Date of period covered by the Initial Report submittal)
Start Date: _____

Current Reporting Period
Reporting Period From: _____ To: _____

Contact Information
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____

I. Energy Usage: Quantify the amount of energy used directly on-site and the portion of that derived from renewable energy sources.

	Current Reporting Period	**Total to Date**
Fuel Type 1 (e.g. natural gas (cf))		
Fuel Type 2 (e.g. fuel oil, propane (gals))		
Electricity (kWh)		
Of that Electric usage, provide quantity:		
Derived from renewable sources (e.g. solar, wind)		
Other energy sources (e.g. geothermal, solar thermal (Btu))		

Provide a description of all energy usage reduction programs for the site in the space provided on Page 3.

II. Solid Waste Generation: Quantify the management of solid waste generated on-site.

	Current Reporting Period (tons)	**Total to Date (tons)**
Total waste generated on-site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off-site to landfills		
Transported off-site to other disposal facilities		
Transported off-site for recycling/reuse		
Reused on-site		

Provide a description of any implemented waste reduction programs for the site in the space provided on Page 3.

III. Transportation/Shipping: Quantify the distances travelled for delivery of supplies and lab-supplied bottles, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	**Total to Date (miles)**
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service (bottle and sample delivery)		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the site in the space provided on Page 3. Include specifically any local vendor/services utilized that are within 50 miles of the site.

IV. Water Usage: Quantify the volume of water used on-site from various sources.

	Current Reporting Period (gallons)	**Total to Date (gallons)**
Total quantity of water used on-site (not including treated water)		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
On-site groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the site in the space provided on Page 3.

V. Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	**Total to Date (acres)**
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the site in the space provided on Page 3.

Description of green remediation programs reported above (Attach additional sheets if needed)
Energy Usage:
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Recommendations/Other:

CONTRACTOR CERTIFICATION
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of _____ (**Contractor Name**), which is responsible for the work documented on this form. According to my knowledge and belief, all of the information provided in this form is accurate and the site management program complies with the DER-10, DER-31, and CP-49 policies. _____ **Date** **Contractor**

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No._____

Purpose of Investigation_____

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors_____ Building age_____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

_____

_____

_____

Airflow near source

_____

_____

_____

Outdoor air infiltration

_____

_____

_____

Infiltration into air ducts

_____

_____

_____

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other _____
c. Basement floor:	concrete	dirt	stone	other _____
d. Basement floor:	uncovered	covered	covered with _____	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with _____	
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: _____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

_____

_____

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other_____
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

_____

_____

_____

_____

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	_____
1st Floor	_____
2nd Floor	_____
3rd Floor	_____
4th Floor	_____

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / N

b. Does the garage have a separate heating unit? Y / N / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA Please specify_____

d. Has the building ever had a fire? Y / N When?_____

e. Is a kerosene or unvented gas space heater present? Y / N Where? _____

f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____

g. Is there smoking in the building? Y / N How frequently? _____

h. Have cleaning products been used recently? Y / N When & Type? _____

i. Have cosmetic products been used recently? Y / N When & Type? _____

j. Has painting/staining been done in the last 6 months? Y / N Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____

l. Have air fresheners been used recently? Y / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / N If yes, where vented?_____

n. Is there a bathroom exhaust fan? Y / N If yes, where vented?_____

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When & Type?_____

Are there odors in the building? Y / N
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply:	Public Water	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	Public Sewer	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

First Floor:

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e) and 6NYCRR Part 360.13. Use of this form is not a substitute for reading the applicable regulations and Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that passes a size 100 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

_____ _____

Signature Date

_____

Print Name

_____

Firm

Revised April 2023

LaBella
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45 MAIN STREET, SUITE 1018
BROOKLYN, NY 11201

Soil Vapor Intrusion Testing Log

Project/Location

Project Name:
Project No:
Sampled By
Date:
Weather/ Wind:

Sample ID:		Sample ID:		Sample ID:	
Sub-Slab Pressure: "wc		Sub-Slab Pressure: "wc		Sub-Slab Pressure: "wc	
Tracer gas in dome (% of atmosphere):		Tracer gas in dome (% of atmosphere):		Tracer gas in dome (% of atmosphere):	
Sample Type: Sub-Slab/Indoor Air/Outdoor Air		Sample Type: Sub-Slab/Indoor Air/Outdoor Air		Sample Type: Sub-Slab/Indoor Air/Outdoor Air	
Time	Vacuum Reading "wc	Time	Vacuum Reading "wc	Time	Vacuum Reading "wc

Notes/Activities:

APPENDIX F

Health and Safety Plan

Construction Site Health and Safety Plan

Location:
Carman Place Site (BCP No.: C130250)
122 & 126 Bedell St, 155-161 Main St, Columbia St,
Hempstead, Nassau County, New York 11550

Prepared For:
Roger Pine
Carman Place Apartments, LLC
1000 University Avenue
Rochester, NY 14607

LaBella Project No. 2230824

October 2024

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1.0 STATEMENT OF COMMITMENT

This Construction Site Health and Safety Plan (CHASP) has been prepared to reduce worker exposure to chemical, biological, and physical hazards during implementation of a Remedial Action Work Plan being performed at the Brownfield Cleanup Program (BCP) Site, Carman Place Site, located at 122 & 126 Bedell St, 155-161 Main St, Columbia St, Hempstead, Nassau County, New York 11550 (BCP No.: C130250). LaBella Associates, DPC (LaBella) policy is to minimize the possibility of work-related exposure through awareness and qualified supervision, health and safety training, medical monitoring, use of appropriate personal protective equipment (PPE), and the following activity-specific safety protocols contained in this CHASP.

This CHASP, which applies to LaBella personnel present at the site actually or potentially exposed to health or safety hazards, describes emergency response procedures for actual and potential physical, biological, and chemical hazards. This CHASP is also intended to inform and guide LaBella personnel entering the work area or exclusion zone. LaBella personnel are to acknowledge that they understand the potential hazards and the contents of this construction site health and safety plan.

2.0 INTRODUCTION

2.1 Purpose

This CHASP addresses the minimum health and safety practices that will be employed by LaBella site workers participating in implementation of the Remedial Action Work (RAWP) activities taking place at the Carman Place Site, located at 122 & 126 Bedell St, 155-161 Main St, Columbia St, Hempstead, Nassau County, New York 11550 (BCP No.: C130250) property.

The CHASP takes into account the specific hazards inherent to the site and presents the minimum requirements which are to be met by LaBella in order to avoid and, if necessary, protect against health and/or safety hazards. LaBella sub-contractors will have the option of adopting this CHASP or developing their own site-specific document. If a subcontractor chooses to prepare their own CHASP, it must meet the minimum requirements as detailed in this CHASP and must be made available to LaBella for its approval.

Activities performed under this CHASP will comply with applicable parts of the Occupational Safety and Health Administration (OSHA) Regulations, primarily 29 Code of Federal Regulations (CFR) Parts 1910 and 1926 and all other applicable

federal, state, and local regulations. Modifications to the CHASP may be made with the approval of the LaBella Director of Health & Safety (DHS) and/or Project Manager (PM). A copy of this CHASP will be maintained on-site during all work activities.

Refusal to comply with the CHASP or violation of any health and safety procedures by field personnel may result in their immediate removal from the site following consultation with the DHS and the Field Team Leader (FTL).

2.2 Scope

This CHASP addresses the potential hazards related to implementation of the remedial investigation work plan. The primary investigation activities may include the following:

- Site Mobilization/Demobilization;
- Soil Excavation;
- Possible underground storage tank removals;
- Drilling, and;
- Soil, Groundwater, and Soil Vapor Sampling

The potential hazards associated with this scope are listed below and are discussed in more detail in this CHASP after the project organization and responsibilities section.

- Chemical hazards;
- Biological hazards; and
- Physical hazards.

2.3 Application

The CHASP applies solely to LaBella Associates personnel involved in the above tasks who wish to gain access to active work areas.

3.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

This section specifies the project organization and responsibilities.

3.1 Project Manager

- Participates in major incident investigations;
- Ensures that the CHASP has all of the required approvals before site work is conducted; and

- Has the overall project responsibility for project health and safety.

3.2 Field Team Leader / Site Health and Safety Officer (SHSO)

- Ensures that the CHASP is implemented;
- Ensures that fieldwork is scheduled with adequate equipment to complete the job safely;
- Enforces site health and safety rules;
- Ensures that proper PPE is utilized;
- Ensures that the procedure modifications are implemented;
- Investigates incidents;
- Conducts the site safety briefing;
- Reports to NYSDEC to provide summaries of field operations and progress; and
- Acts as the emergency coordinator.

3.3 Director of Health & Safety

- Provides for the development of the CHASP;
- Serves as the primary contact to review health and safety matters that may arise;
- Approves individuals who are assigned SHSO responsibilities;
- Coordinates revisions of this CHASP with field personnel; and
- Assists in the investigation of major accidents.

3.4 Site Personnel

- Report any unsafe or potentially hazardous conditions to the FTL/SHSO;
- Maintain knowledge of the information, instructions and emergency response actions contained in this CHASP; and
- Comply with rules, regulations, and procedures as set forth in this CHASP and any revisions.

Title/Project Responsibility	Name	Email	Mobile/Other Phone
Project Personnel			
Program Director/Manager	Richard Kampf	rkampf@labellapc.com	917-280-6364
Remedial Engineer	Daniel Noll	dnoll@labellapc.com	585-301-8458
Field Operations Leader and on-site Health & Safety Representative	Wilson Corella	wcorella@labellapc.com	929-340-1716
Health & Safety Officer	Catherine Monian	cmonian@labellapc.com	845-486-1557

4.0 SITE HISTORY AND PROJECT DESCRIPTION

4.1 Project Background

This CHASP has been prepared by LaBella, on behalf of Carman Place Apartments Apartments, LLC. Previous investigations have identified, semi-volatile organic compounds (SVOCs,) metals, and 1,4-dioxane and PFOS above standards in soil.

4.2 Site Description

The Site is located at the above parcels in a mixed residential and commercial area of Hempstead, New York. The Site is (±)2.53-acre property and comprised of six tax lots separated. The Site consists of the following: two residential apartment buildings which include 288 housing units, commercial space, and sub-grade mechanically ventilated parking. Prior uses of the Site have included residential, commercial, and a dry cleaners.

4.3 Site History

The Site has historically been a mixed use property with both residential and commercial occupants. The northern half of the Site is currently used as a parking area for overstock vehicles for a nearby automobile dealership, and the southeastern part of the property is occupied by a commercial retail strip center. The strip center is occupied by several restaurants, a laundromat, a billiard parlor, a wireless store, a hair salon, a check cashing service center, and a vacant store front. The southwestern part of the property is occupied by an asphalt parking lot associated with the commercial strip center. The surrounding properties consist of mixed-use commercial and residential properties. The Long Island Railroad Hempstead Depot is located approximately 0.088 miles from the Site.

4.4 Site Features

The Site elevation is approximately 60 feet above mean sea level (amsl). The Site is currently being developed as a 323,198 square foot (sqft) mixed-use complex that will include affordable housing units, commercial space, and sub-grade mechanically ventilated parking.

4.5 Current and Future Site Use

The Site is currently being developed as a 323,198 sqft mixed-use complex that will include affordable housing units, commercial space, and sub-grade mechanically ventilated parking. The residential housing portion will consist of 288 units across two buildings (CP-I and CP-II).

5.0 POTENTIAL HAZARDS OF THE SITE

This section presents an assessment of the chemical, biological, and physical hazards that may be encountered during the tasks specified under Section 2.2. Additional information can be found in **Appendix A** - Safety Data Sheets, or in **Appendix B** - Task Hazard Analysis.

Potential Hazards at the Site

Hazard Type	Hazard Anticipated	Associated Investigative Activities	Comments	Hazard Control Methods
Chemical	Chemicals of Concern (COCs) in Soil including VOCs, SVOCs, and Metals	Drilling with Geoprobe®, installation of soil borings, soil excavation, UST removals, soil sample collection, XRF screening, PID headspace screening	Considered minimal	PPE, Training on Identification of COCs Safety Training & Standard Safety Operations
Physical	Slip, Trip & Fall, Heavy machinery, excavations	Any site work	Construction and Industrial equipment, irregular surfaces	Safety Training & Standard Safety Operations
Biological	Tick, insect bites, poisonous plants, heat/ cold-related disorders	Any site work	Considered minimal	Safety Training & Standard Safety Operations
Electrical	Working around utilities	Drilling, soil sample collection, excavation	Considered minimal to moderate	Utility Mark Out in planned boring locations, Safety Training & Standard Safety Operations

5.1 Chemical Hazards

A review of historical information indicates that the soil, soil vapor, and / or groundwater at the Site may include, but is not limited to, the following regulated constituents:

- VOCs
- SVOCs
- Pesticides
- Metals

Specific information on each chemical may be found on the Safety Data Sheets included in **Appendix A.**

5.1.1 *Biological Hazards*

Work will be performed in an urban environment; however, during the project there is potential for workers to come into contact with biological hazards such as animals, insects, and plants. The Task Hazard Analysis found in **Appendix B** includes specific hazards and control measures for each task, if applicable.

5.1.2 *Animals*

The Site is located in a predominantly urban area. It is possible that dogs, cats, rats, and mice may be present. Workers shall use discretion and avoid all contact with animals.

5.1.3 *Insects*

Insects, such as mosquitoes, bees, and wasps may be present during certain times of the year. Workers will be encouraged to wear repellents and PPE, if deemed necessary, when working in areas where insects are expected to be present.

5.1.4 *Tick-Borne Disease*

Ticks can carry a number of diseases. In the United States, these diseases include:

- Lyme Disease
- Ehrlichiosis
- Rocky Mountain Spotted Fever (throughout the United States but most prevalent in the east)

Lyme Disease - The disease commonly occurs in New York State in the spring and summer and is transmitted during extended attachment (minimum 24 hours) of an infected tick. Symptoms of Lyme disease usually emerge approximately two weeks after exposure and may include a rash or a peculiar red spot, like a bull's eye, which expands outward in a circular manner. The victim may have recurring headaches, weakness, a stiff neck, swelling and pain in the joints, and eventually, arthritis. Ehrlichiosis - The disease also commonly occurs in New York State in the summer and is similarly transmitted by the bite of infected ticks.

Symptoms of ehrlichiosis include more immediate muscle aches, fever, joint aches, and flu-like symptoms, but there is typically no skin rash.

Rocky Mountain Spotted Fever (RMSF) - This disease is also transmitted via the extended 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 2 to 3 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.

The best way to prevent tick borne diseases is to avoid tick bites. Preventative measures to reduce the potential for tick bites include, but are not limited to, the following:

- Where possible, land scheduled for eventual clearing should be cleared of brush and overgrown vegetation in advance of environmental investigation.
- Wearing long pants and long sleeved shirts
- Tucking shirts into pants. Tucking pants into socks or boots, or using tape to close the opening where they meet.
- Using an EPA approved insect repellant or arachnicide (pesticide) which is effective for ticks, such as DEET (N,N-diethyl-m-toluamide) or pyrethrin. Be sure to heed all precautionary information, and be aware that some people are sensitive to these chemicals.
- Wearing light colored clothing so that a tick can be seen more easily.
- Changing clothes when you return from an area where ticks may be located.
- Showering to wash off any loose ticks, followed by self-examination for ticks.
- Throughout the work day, perform Tick Checks and Removal Procedures as follows:
- Check clothing for ticks. If you find a tick, do a more thorough tick check.

- Inspect parts that bend (back of knee, between fingers and toes, underarms), pressure points where clothing presses against skin (underwear elastic, belts, neck); other common areas (belly button, around or in ear, hairline, and top of head).
- Once indoors, do a final tick check and change clothes.
- If you are in a tick infested area or an area known to have disease carrying ticks, perform checks on a more regular basis
- Remove unattached ticks promptly.
- Remove attached ticks are removed using fine pointed tweezers:
  - The mouth parts of the tick are grasped with the tweezers as close to the skin as possible
  - Apply firm steady pressure upward until the tick releases - do not jerk, twist, squash or squeeze the tick
  - Clean the wound and the tweezers with an antiseptic. Do not use petroleum jelly, nail polish remover, or prick or burn the tick. These actions can cause infected secretions to enter the wound.

5.1.5 *Plants*

Poisonous plants, such as poison ivy and sumac, maybe present on the site and present a hazard for site personnel. Signs and symptoms of exposure to such poisonous plants include itching, burning, redness, rash, blistering and swelling.

Preventative measures will be implemented to avoid contact with poisonous plants on the site property. These measures will include, but are not limited to, the following activities:

- Wear clothing that covers arms and hands if possible
- Frequently wash exposed skin
- Avoid 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.

5.2 Physical Hazards

Most safety hazards are discussed in the THAs in **Appendix B** for the different phases of the project. In addition to the THAs, general work rules and other safety procedures are described in Section 10 of this CHASP.

5.2.1 *Temperature Extremes*

Heat Stress

Heat stress is a significant potential hazard, which is greatly exacerbated by the use of PPE in hot environments. The potential hazards of working in hot environments include dehydration, cramps, heat rash, heat exhaustion, and heat stroke.

Cold Stress

At certain times of the year, workers may be exposed to the hazards of working in cold environments. Potential hazards in cold environments include frostbite, trench foot or immersion foot, and hypothermia, as well as slippery surfaces, brittle equipment, and poor judgment.

5.2.2 *Steam, Heat, and Splashing*

Exposure to steam/heat/splashing hazards can occur during steam cleaning activities. Splashing can also occur during well development and sampling activities. Exposure to steam/heat/splashing can result in scalding/burns, eye injury, and puncture wounds.

5.2.3 *Noise*

Noise is a potential hazard associated with the operation of heavy equipment, drill rigs, pumps, and engines. Workers will wear hearing protection while in the work zone when these types of machinery are operating.

5.2.4 *Fire and Explosion*

When conducting drilling activities, the opportunity of encountering fire and explosion hazards may exist from encountering underground utilities, from the use of diesel engine equipment, and other potential ignition sources. During dry periods there is an increased chance of brush fires starting at the job site. If these conditions occur, no smoking will be permitted at the site and all operations involving potential ignition sources will be monitored continuously (fire watch).

5.2.5 *Manual Lifting/Material Handling*

Manual lifting of heavy objects may be required. Failure to follow proper lifting techniques can result in back injuries and strains. Back injuries are a serious concern, as they are the most common workplace injury, often resulting in lost or restricted work time, and long treatment and recovery periods.

5.2.6 *Slips, Trips, and Falls*

Working in and around the site will pose slip, trip, and fall hazards due to slippery surfaces that may be oil-covered; or from rough terrain, surfaces that are steep inclines; surfaced debris; or surfaces that are wet from rain or ice. Falls may result in twisted ankles, broken bones, head trauma, or back injuries.

5.2.7 *Heavy Equipment Operation*

A drill rig will be used to install borings where required. Working with or near heavy equipment poses many potential hazards, including electrocution, fire/explosion, being struck-by or -against, or pinched/caught/ crushed by, and can result in serious physical harm.

5.2.8 *Electrocution & Electrical Hazards*

Encountering underground utilities may pose electrical hazards to workers. Additionally, overhead electrical lines can be a concern during drilling operations. Potential adverse effects of electrical hazards include burns and electrocution, which could result in death. Drill rigs will be used on the site to install soil borings and excavators will be used to dig soil. The presence of overhead utilities and underground obstacles poses a hazard if equipment contacts them. As indicated in Table 1, electrical hazards are considered to be a concern for the installation of borings on the site.

5.2.9 *Pandemic Preparedness Plan*

LaBella has developed a Pandemic Preparedness policy to outline means by which LaBella will respond to a pandemic, considering guidance from This section includes safe work practices in the event of a pandemic.

LaBella Pandemic Preparedness Plan can be found in **Appendix C**.

6.0 TASK HAZARD ANALYSES

The Task Hazard Analysis is a systematic way of identifying the potential health and safety hazards associated with major phases of work on the project and the methods to avoid, control, and mitigate those hazards. The THAs will be used to train work crews in proper safety procedures during phase preparatory meetings.

THAs have been developed by LaBella for the following phases of work:

- Site mobilization/demobilization;
- Concrete removal and replacement;
- Sealing Cracks;
- Drilling, and;
- Sub-slab, soil, and soil-vapor sampling.
- Copies of these Task Hazard Analysis are included in **Appendix B** of this CHASP.

7.0 PERSONAL PROTECTIVE EQUIPMENT

The PPE specified in **Table 7-1** represents the hazard analysis and PPE selection required by 29 CFR 1910.132. Specific information on known potential hazards can be found under Section 4.0 and **Appendix B** – Task Hazard Analysis. For the purposes of PPE selection, the DHS and FTL/SHSO are considered competent persons. The signatures on the approval page of the CHASP constitute certification of the hazard assessment. For activities not covered by **Table 7-1**, the FTL/SHSO will conduct the hazard assessment, select the PPE, and document changes in the appropriate field logs. PPE selection will be made in consultation with the DHS.

Modifications for initial PPE selection may also be made by the FTL/SHSO in consultation with the DHS and changes documented accordingly. If major modifications occur, the DHS will notify the PM.

7.1 PPE Abbreviations

HEAD PROTECTION

HH = hard hat

HEARING PROTECTION

EP = earplugs EM = ear muffs

HAND PROTECTION

Cot = cotton But = Butyl

LWG = Leather Work Gloves Neo = Neoprene

Nit = Nitrile Sur = Surgical

BODY PROTECTION

WC = work clothes

Cot Cov = Cotton Coveralls Poly = Polyethylene coated Tyvek® coveralls

Saran = Saranex-coated coveralls

Tyvek® = Uncoated Tyvek® coveralls

EYE/FACE PROTECTION

APR = Full Face Air-Purifying Respirator

MFS = Mesh Face shield PFS =Plastic Face shield

SG = ANSI-approved safety glasses with side shields

FOOT PROTECTION

Neo = Neoprene OB = Overboot

Poly = polyethylene-coated boot Rub = rubber slush boots

STB = Leather work boots with safety toe

RESPIRATORY PROTECTION

APR = Full-face air-purifying respirator with organic vapor cartridges

ASR = Full face air-supplied respirator with escape bottle SCBA = Self-contained breathing apparatus.

7.2 Hazard Assessment for Selection of Personal Protective Equipment

The initial selection of personal protective equipment for each task was done by performing a hazard assessment taking into consideration the following:

- Potential chemical and physical hazards present;
- Work operations to be performed;
- Potential routes of exposure;
- Concentrations of contaminants present; and
- Characteristics, capabilities, and limitations of PPE; and any hazard that

the PPE presents or magnifies.

A review of the analytical data from previous sampling events indicates that VOCs and metals identified in Section 5.1 are the primary contaminants of concern.

The exposure routes for these chemicals are inhalation, skin absorption, skin/eye contact, and ingestion. Chemical protective gloves will be required for all activities that involve sample-handling and the likelihood of skin contact. The proper use of PPE and strict adherence to decontamination and personal hygiene procedures will effectively minimize skin contact and ingestion as potential routes of exposure.

Table 7-1

Personal Protective Equipment Selection

TASK	HEAD	EYE/FACE	FEET	HANDS	BODY	HEARING
Mobilization/ Demobilization	HH	SG	STB	WG	WC	None
Drilling Activities	HH	SG	STB	WG	WC	EM or EP
Environmental sampling	HH	SG	STB	WG, Nit & Sur as needed	WC, Tyvek® as needed	None
Decontamination	HH	SG	STB	Nit + Sur	WC, Tyvek® as needed	None

7.3 Respirator Cartridge Change-Out Schedule

A respirator cartridge change-out schedule has been developed in order to comply with 29 CFR 1910.134. If the use of respirators is necessary, the respirator cartridge change-out schedule for this project will be as follows:

- Cartridges shall be removed and disposed of at the end of each shift, when cartridges become wet, or wearer experiences a breakthrough, whichever occurs first; and
- If the humidity exceeds 85%, then cartridges shall be removed and disposed of after 4 hours of use.

Respirators shall not be stored at the end of the shift with contaminated cartridges left on them. Cartridges shall not be worn on the second day, no matter how short of a time period they were used the day before.

The schedule was developed based on the following scientific information and assumptions:

- Analytical data that is available regarding site contaminants;
- Using the rule of thumb provided by the THA;
- All of the chemicals have boiling points greater than 70^{o}C;
- Total airborne concentration of contaminants is anticipated to be less than 200 ppm;
- The humidity is expected to be less than 85%; and
- Desorption of the contaminants (including those with poor warning properties) after partial use of the chemical cartridge can occur after a short period (hours) without use (e.g., overnight) and result in a non-use exposure.

The following is a partial list of factors that may affect the usable cartridge service life and/or the degree of respiratory protection attainable under actual workplace conditions. These factors have been considered when developing the cartridge change-out schedule.

- Type of contaminant(s);
- Contaminant concentration;
- Relative humidity;
- Breathing rate;
- Temperature;
- Changes in contaminant concentration, humidity, breathing rate, and temperature;
- Mixtures of contaminants;
- Accuracy in the determination of the conditions;
- The contaminant concentration in the workplace can vary greatly. Consideration must be given to the quality of the estimate of the workplace concentration;
- Storage conditions between multiple uses of the same respirator cartridges. It is recommended that the chemical cartridges be replaced after each work shift. Contaminants adsorbed on a cartridge can migrate through the carbon bed without airflow;
- Age of the cartridge;
- Condition of the cartridge and respirator;
- Respirator and cartridge selection respirator fit;
- Respirator assembly, operation, and maintenance;

- User training, experience, and medical fitness;
- Warning properties of the contaminant; and
- The quality of the warning properties should be considered when establishing the chemical cartridge change schedule. Good warning properties may provide a secondary or back-up indication for cartridge change-out.

8.0 AIR MONITORING

Air monitoring for volatile organic compounds and particulates will be periodically performed in the work area breathing zone during outdoor site activities. Monitoring will be performed with a hand-held PID and particulate meter. Results will be compared to exposure values listed in Table 2 and appropriate responsive action taken, as needed, including moving to upwind locations, reducing scale or pace of work advance, or adjustments of PPE.

Periodic air monitoring will also be conducted as described in the CAMP in **Appendix D**, to document ambient concentrations of particulates and VOCs at the downwind perimeter of the work zone and at an upwind location.

9.0 ZONES, PROTECTION, AND COMMUNICATION

9.1 Site Control

Site zones are intended to control the potential spread of contamination throughout the site and to assure that only authorized individuals are permitted into potentially hazardous areas. A three-zone approach will be utilized. It shall include an Exclusion Zone (EZ), a Contamination Reduction Zone (CRZ), and a Support Zone (SZ). Specific zones shall be established on the worksite when operations begin.

The zones are based upon current knowledge of proposed site activities. It is possible that the zone configurations may be altered due to work plan revisions. Should this occur, the work zone will be adjusted accordingly and documented through the use of a field-change request form.

The following shall be used for guidance in revising these preliminary zone designations, if necessary.

Support Zone - The SZ is an uncontaminated area that will be the field support area for most operations. The SZ provides for field team communications and

staging for emergency response. Appropriate safety and rescue equipment will be located in this zone. Potentially contaminated personnel/materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples.

Contamination Reduction Zone - The CRZ is established between the EZ and the SZ. The CRZ contains the contamination reduction corridor and provides for an area for decontamination of personnel and portable hand-held equipment, tools, and heavy equipment. A personnel decontamination area will be prepared at each exclusion zone. The CRZ will be used for EZ entry and egress in addition to access for heavy equipment and emergency support services.

Exclusion Zone - All activities, which may involve exposure to site contaminants, hazardous materials, and/or conditions, should be considered an EZ. The FTL/SHSO may establish more than one EZ where different levels of protection may be employed or different hazards exist. The size of the EZ shall be determined by the SHSO allowing adequate space for the activity to be completed, field members, and emergency equipment.

9.2 Contamination Control

Decontamination areas will be established for the following activities.

- Drilling/Sampling Activities
- Excavation

All personnel and portable equipment used in the EZ shall be subject to a thorough decontamination process, as deemed necessary by the FTL/SHSO. Sampling equipment shall be decontaminated. As necessary, all boots and gloves will be decontaminated using soap and water solution and scrub brushes or simple removal and disposal. All used respiratory protective equipment will be decontaminated daily and sanitized with appropriate sanitizer solution.

All drums generated as a result of sampling and decontamination activities will be marked and stored at a designated area at the site until the materials can be property disposed of off-site.

All non-expendable sampling equipment will be decontaminated. This usually entails the use of Alconox, solvent and distilled/deionized water rinses to eliminate contaminants.

9.2.1 Personnel Decontamination Station

All personnel and portable equipment used in the EZ shall be subject to a thorough decontamination process, as deemed necessary by the FTL/SHSO. Sampling equipment shall be decontaminated or properly disposed of. As necessary, all boots and gloves will be decontaminated using soap and water solution and scrub brushes or simple removal and disposal. All used respiratory protective equipment will be decontaminated daily and sanitized with an appropriate sanitizer solution.

All drums generated as a result of sampling and decontamination activities will be marked and stored at a designated area at the site until the materials can be properly disposed of off-site.

All non-expendable sampling equipment will be decontaminated, if necessary. This usually entails the use of Alconox, solvent, and distilled/deionized water rinses to eliminate contaminants.

9.3 Communication

Each team member will have a cell phone for communication with the PM, SHSO, and other team members during field activities.

Hand Signals - Hand signals shall be used by field teams, along with the buddy system. The entire field team shall know them before operations commence and their use covered during site-specific training. Typical hand signals are the following:

SIGNAL	MEANING
Hand gripping throat	Out of air, can't breathe
Grip on a partner's wrist or placement of both hands around a partner's waist.	Leave the area immediately, no debate.
Hands on top of head	Need assistance
Thumbs up	Okay, I'm all right, I understand.
Thumbs down	No, negative

10.0 MEDICAL SURVEILLANCE PROCEDURES

All contractor and subcontractor personnel performing fieldwork where potential exposure to contaminants exists at the site are required to have passed a complete medical

surveillance examination in accordance with 29 CFR 1910.120(f).

10.1 Medical Surveillance Requirements

A physician's medical release for work will be confirmed by the DHS before an employee can work in the exclusion zone. The examination will be taken annually at a minimum and upon termination of hazardous waste site work if the last examination was not taken within the previous six months. Additional medical testing may be required by the DHS in consultation with the Corporate Medical Consultant and the FTL/SHSO if an over-exposure or accident occurs, if an employee exhibits symptoms of exposure, or if other site conditions warrant further medical surveillance.

11.0 SAFETY CONSIDERATIONS

11.1 The Buddy System

At a minimum, employees shall work in groups of two in such a manner that they can observe each other and maintain line-of-sight for each employee within the workgroup. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

11.2 Sample Handling

Personnel responsible for the handling of samples should wear the prescribed level of protection. Samples should be identified as to their hazard and packaged to prevent spillage or breakage. Sample containers shall be decontaminated in the CRZ or EZ before entering a clean SZ area. Any unusual sample conditions, odors, or real-time readings should be noted. Laboratory personnel should be advised of the sample hazard level and the potential contaminants present. This can be accomplished by a phone call to the lab coordinator and/or including a written statement with the samples reviewing lab safety procedures in handling to assure that the practices are appropriate for the suspected contaminants in the sample.

11.3 Drill Rigs

When conducting drilling activities, the opportunity of encountering fire and explosion hazards exists from underground utilities and gases. The locations of underground utilities will be verified prior to performing any intrusive activities. Additionally, because of the inherently hazardous nature of drilling operations,

safety and accident prevention are crucial when drilling operations are performed. Most drilling accidents occur as a direct result of lack of training and supervision, improper handling of equipment, and unsafe work practices. Hazards include assembling and disassembling rigs, rotary and auger drilling, and grouting. The drilling contractor shall perform drilling in accordance with its own Health & Safety Program for Drill Rig Safety.

11.4 Safety During Drilling Operations

- Safety requires the attention and cooperation of every worker and site visitor.
- Do not drive the drill rig from hole to hole with the mast (derrick) in the raised position.
- Before raising the mast (derrick), look up to check for overhead obstructions.
- Maintain a minimum of 15 feet clearance from all overhead electric lines.
- Before raising the mast (derrick), all drill rig personnel (with the exception of the operator) and visitors shall be cleared from the areas immediately to the rear and the sides of the mast. All drill rig personnel and visitors shall be informed that the mast is being raised prior to raising it.
- Before the mast (derrick) of a drill rig is raised and drilling is commenced, the drill rig must first be leveled and stabilized with leveling jacks and/or solid cribbing. Lower the mast (derrick) only when the leveling jacks are down and do not raise the leveling jack pads until the mast (derrick) is lowered completely.
- The operator of a drill rig shall only operate a drill rig from the position of the controls.
- Throwing or dropping tools shall not be permitted. All tools shall be carefully passed by hand between personnel or a hoist line shall be used.
- Do not consume alcoholic beverages or other depressants or chemical stimulants prior to starting work on a drill rig or while on the job.
- All unattended boreholes must be adequately covered or otherwise protected to prevent drill rig personnel, site visitors, or animals form stepping or falling into the hole.
- Terminate drilling operations during an electrical storm and move the entire crew away from the drill rig.

12.0 DISPOSAL PROCEDURES

All discarded materials, waste materials, or other objects shall be handled in such a way as to preclude the potential for spreading contamination, creating a sanitary hazard or causing litter to be left on-site.

All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary, labeled, and segregated for disposal. All non-contaminated materials will be collected and bagged for appropriate disposal as non-hazardous solid waste. Additional waste disposal procedures may be developed as applicable.

13.0 EMERGENCY RESPONSE PLAN

Support procedures that are addressed in the following subsections include communications, local emergency support units, preparation for medical emergencies, first aid for injuries incurred on- This section establishes procedures and provides information for use during a project emergency. Emergencies happen unexpectedly and quickly, and require an immediate response; therefore, contingency planning and advanced training of staff are essential. Specific elements of emergency site, record keeping, and emergency site evacuation procedures.

13.1 Responsibilities

13.1.1 *Director of Health & Safety (DHS)*

The DHS oversees and approves the Emergency Response/Contingency Plan and performs audits to determine that the plan is in effect and that all pre-emergency requirements are met. The DHS acts as a liaison to applicable regulatory agencies and notifies OSHA of reportable accidents.

13.1.2 *Field Team Leader/Site Health and Safety Officer (FOL/SHSO)*

The FTL/SHSO is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop-work order or evacuation. The FTL/SHSO is required to immediately notify the DHS of any fatalities or catastrophes (three or more workers injured and hospitalized) so that the DHS can ensure that OSHA is notified within the required time frame. The DHS will be notified of all OSHA recordable injuries, fires, spills, releases, or equipment damage exceeding $500 within 24 hours.

13.1.3 *Emergency Coordinator (EC)*

The Emergency Coordinator for the project is the FTL/SHSO.

The Emergency Coordinator shall make contact with Local Emergency Response personnel prior to beginning work on site. In these contacts the emergency coordinator will inform interested parties about the nature and duration of work expected on the site and the type of contaminants and possible health or safety effects of emergencies involving these contaminants. The emergency coordinator will locate emergency phone numbers and identify hospital routes prior to beginning work on site. The emergency coordinator shall make the necessary arrangements to be prepared for any emergencies that could occur.

The Emergency Coordinator will implement the Emergency Response/Contingency Plan whenever conditions at the site warrant such action.

13.1.4 *Site Personnel*

Site personnel are responsible for knowing the Emergency Response/Contingency Plan and the procedures contained herein. Personnel are expected to notify the Emergency Coordinator of situations that could constitute a site emergency.

13.2 Communication

A variety of communication systems may be utilized during emergencies. These are discussed in the following sections.

13.2.1 *Hand Signals*

Downrange field teams will employ hand signals where necessary for communication during emergencies. Hand signals are found in Section 8.3.

13.2.2 *Field Radios and Cell Phones*

LaBella field personnel are provided cellular phones for site communication and emergency use.

13.3 Local Emergency Support Units

A route map from the site to the nearest hospital is provided in section 13.7. This map will be placed with the above emergency telephone numbers in all on-site vehicles.

13.4 Pre-Emergency Planning

Before the start of the project, LaBella will communicate directly with administrative personnel from the emergency room at the hospital to determine whether the hospital has the facilities and personnel needed to treat cases of trauma resulting from exposure to any of the contaminants expected to be found on the site. Instructions for finding the appropriate hospital will be posted conspicuously in the site office and in each site vehicle.

Table 13-1
Emergency Telephone Numbers

Contact	Firm or Agency	Telephone Number
Police	Hempstead Police Department	911
Fire	Hempstead Fire Department	911
Hospital	Mercy Medical Center	(516) 705-1211
Project Director	Richard T. Kampf, PG, LaBella	(917) 280-6364
Health and Safety Manager	Catherine Monian, LaBella	(845) 486-1557
Project Manager/ Health & Safety Officer	Richard T. Kampf, PG, LaBella	(917) 280-6364
Field Team Leader	Wilson Corella	(929) 340-1716
NYSDEC Site Contact	Melissa Sweet, PE	(518) 402-9614
Poison Control Center	NYC Department of Health and Mental Hygiene	(800) 222-1222
Chemtrec		(800) 424-9300

13.5 Emergencency Medical Treatment

- The procedures and rules in this CHASP are designed to prevent employee injury. However, should an injury occur, no matter how slight, it will be reported to the FTL/SHSO immediately. First aid equipment will be available on-site at the following locations:
- First Aid Kit: Support Zone (or designated by FTL/SHSO upon arrival)

- Emergency Eye Wash:Support Zone (or designated by FTL/SHSO upon arrival)

During site-specific training, project personnel will be informed of the location of the first aid station(s) that has been set up. Unless they are in immediate danger, severely injured persons will not be moved until paramedics can attend to them. Some injuries, such as severe cuts and lacerations or burns, may require immediate treatment. Any first aid instructions that can be obtained from doctors or paramedics, before an emergency-response squad arrives at the site or before the injured person can be transported to the hospital, will be followed closely.

There will be at least one person with current First Aid and CPR certification on each active work shift. When personnel are transported to the hospital, the FTL/SHSO will provide a copy of the Medical Data Sheet to the paramedics and treating physicians.

Only in non-emergency situations will an injured person be transported to the hospital by means other than an ambulance. A map and directions to the hospital can be found in section 13.7.

13.6 Emergency Site Evacuation Routes and Procedures

In order to mobilize the manpower resources and equipment necessary to cope with a fire or other emergency, a clear chain of authority will be established. The EC will take charge of all emergency response activities and dictate the procedures that will be followed for the duration of the emergency. The EC will report immediately to the scene of the emergency, assess the seriousness of the situation, and direct whatever efforts are necessary until the emergency response units arrive. At his/her discretion, the EC also may order the closure of the site for an indefinite period.

All project personnel will be instructed on proper emergency response procedures and locations of emergency telephone numbers during the initial site safety meeting. If an emergency occurs, including but not limited to fire, explosion, or significant release of toxic gas into the atmosphere, an air horn will be sounded on the site. The horn will sound continuously for one blast, signaling that immediate evacuation of all personnel is necessary due to an immediate or impending danger. All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at the evacuation meeting point, which will be determined upon arrival at the site by the FTL/SHSO, prior to work

beginning. This will then be conveyed to all crew members during the site-specific briefing.

The EC will give directions for implementing whatever actions are necessary. Any project team member may be assigned to be in charge of emergency communications during an emergency. He/she will attend the site telephone specified by the EC from the time the alarm sounds until the emergency has ended.

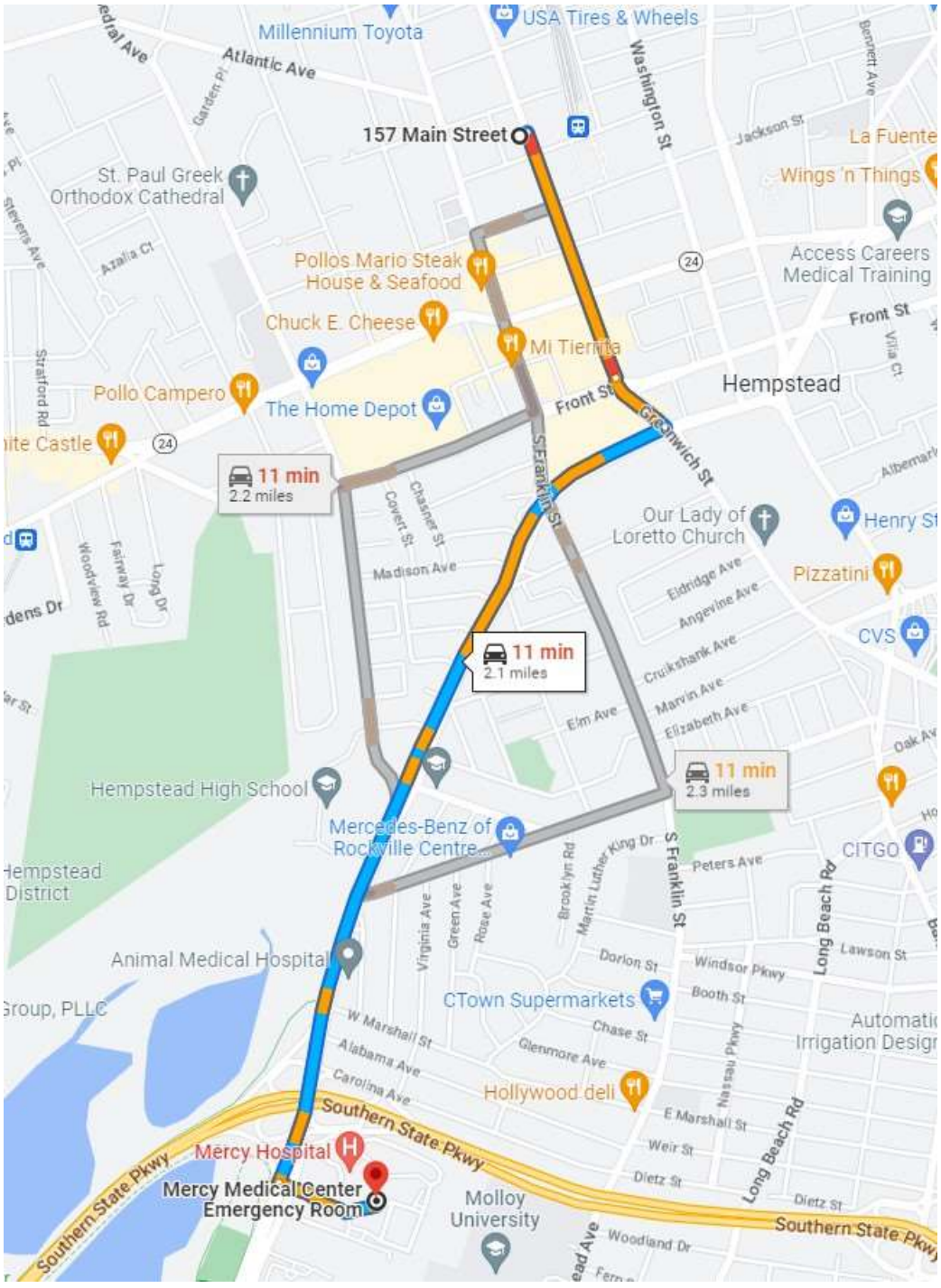
After sounding the alarm and initiating emergency response procedures, the EC will check and verify that access roads are not obstructed. If traffic control is necessary, as in the event of a fire or explosion, a project team member, who has been trained in these procedures and designated at the site safety meeting, will take over these duties until local police and firefighters arrive.

The EC will remain at the site to provide any assistance requested by emergency-response squads as they arrive to deal with the situation. A map showing evacuation routes, meeting places, and the location of emergency equipment will be posted in all trailers and used during site-specific training.

13.7 Hospital Route

Mercy Medical Center l is located approximately 2.1 miles from the Site. The travel time from the Site to Mercy Medical Center is approximately ten minutes. Directions are provided below and a route plan map is shown on the following page.

1.	Head south on Main Street toward West Columbia St	0.4 miles
2.	Continue onto Greenwich St	0.1 miles
3.	Turn right onto Peninsula Rd	1.4 miles
4.	Turn left	121 feet
5.	Continue straight	489 feet
6.	Turn left. Hospital will be on left hand side.	253 feet
	Total estimated time = 10 minutes	2.1 miles


Millennium Toyota
USA Tires & Wheels
Atlantic Ave
Washington St
157 Main Street
St. Paul Greek Orthodox Cathedral
Jackson St
La Fuente
Wings 'n Things
Access Careers Medical Training
Pollos Mario Steak House & Seafood
Chuck E. Cheese
Mi Tierra
Front St
Hempstead
Pollo Campero
The Home Depot
Front St
Greenwich St
S Franklin St
11 min
2.2 miles
Our Lady of Loretto Church
Henry St
Pizzatini
CVS
Madison Ave
11 min
2.1 miles
Elm Ave
11 min
2.3 miles
Hempstead High School
Mercedes-Benz of Rockville Centre
CITGO
Peters Ave
Hempstead District
Animal Medical Hospital
CTown Supermarkets
Dorion St
Windsor Pkwy
Booth St
Lawson St
Long Beach Rd
Chase St
Glenmore Ave
Hollywood deli
E Marshall St
Weir St
Dietz St
Southern State Pkwy
Mercy Hospital
Mercy Medical Center Emergency Room
Molloy University
Woodland Dr

13.7.1 Fire Prevention and Protection

In the event of a fire or explosion, procedures will include immediately evacuating the site (air horn will sound for a single continuous blast), and notification of local fire and police departments. No personnel will fight a fire beyond the stage where it can be put out with a portable extinguisher (incipient stage).

13.7.2 Fire Prevention

Adhering to the following precautions will prevent fires:

- Good housekeeping and storage of materials;
- Storage of flammable liquids and gases away from oxidizers;
- No smoking in the exclusion zone or any work area;
- No hot work without a properly executed hot work permit;
- Shutting off engines to refuel;
- Grounding and bonding metal containers during transfer of flammable liquids;
- Use of UL approved flammable storage cans;
- Fire extinguishers rated at least 10 pounds ABC located on all heavy equipment, in all trailers and near all hot work activities; and
- Monthly inspections of all fire extinguishers.

13.8 Overt Chemical Exposure

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Safety Data Sheet or recommended by the Corporate Medical Consultant will be followed, when necessary.

SKIN AND EYE CONTACT: Use copious amounts of soap and water. Wash/rinse affected areas thoroughly, and then provide appropriate medical attention. Eyes should be rinsed for 15 minutes upon chemical contamination. Skin should also be rinsed for 15 minutes if contact with caustics, acids or hydrogen peroxide occurs.

INHALATION: Move to fresh air. Decontaminate and transport to hospital or local medical provider.

INGESTION: Decontaminate and transport to emergency medical facility. Do NOT cause vomiting, unless the SDS instructs to do so.

PUNCTURE WOUND OR LACERATION: Decontaminate and transport to emergency medical facility.

13.9 Decontamination during Medical Emergencies

If emergency life-saving first aid and/or medical treatment is required, normal decontamination procedures may need to be abbreviated or postponed. The FTL/SHSO or designee will accompany contaminated victims to the medical facility to advise on matters involving decontamination, when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment, or aggravate the problem. Respiratory equipment must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safely removed on-site, a plastic barrier placed between the injured individual and clean surfaces should be used to help prevent contamination of the inside of ambulances and/or medical personnel. Outer garments may then be removed at the medical facility. No attempt will be made to wash or rinse the victim if his/her injuries are life-threatening, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life to emergency response personnel. For minor medical problems or injuries, the normal decontamination procedures will be followed.

13.10 Accident/Incident Reporting

As soon as first aid and/or emergency response needs have been met, the following parties are to be contacted by telephone:

- FTL/SHSO
- DHS;
- PM; and
- The employer of any injured worker who is not a LaBella employee.

Written confirmation of verbal reports is to be completed by the FTL/SHSO using the Incident Report Form and submitted within 24 hours. The incident report and investigation form is found in **Appendix E**. If the employee involved is not a LaBella employee, his employer will receive a copy of the report.

13.11 Adverse Weather Conditions

In the event of adverse weather conditions, the FTL/SHSO will determine if work can continue without potentially risking the safety of all field workers. Some of

the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries;
- Potential for cold stress and cold-related injuries;
- Treacherous weather-related working conditions (hail, rain, snow, ice, high winds);
- Limited visibility (fog);
- Potential for electrical storms;
- Earthquakes; and
- Other major incidents.

Site activities will be limited to daylight hours, or when suitable artificial light is provided, and acceptable weather conditions prevail. The FTL/SHSO will determine the need to cease field operations or observe daily weather reports and evacuate, if necessary, in case of severe inclement weather conditions.

13.12 Spill Control and Response

All small hazardous spills/environmental releases shall be contained as close to the source as possible. Whenever possible, the SDS will be consulted to assist in determining the best means of containment and cleanup. For small spills, sorbent materials such as sand, sawdust, or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid spills should be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. Drains or drainage areas should be blocked. All spill containment materials will be properly disposed of. An exclusion zone of 50 to 100 feet around the spill area should be established depending on the size of the spill. The following seven steps should be taken by the Emergency Coordinator:

- Determine the nature, identity, and amounts of major spill components;
- Make sure all unnecessary persons are removed from the spill area;
- Notify appropriate response teams and authorities;
- Use proper PPE in consultation with the FTL/SHSO;
- If a flammable liquid, gas or vapor is involved, remove all ignition sources and use non-sparking and/or explosive proof equipment to contain or clean up the spill (diesel only vehicles, air-operated pumps, etc.);
- If possible, try to stop the leak with appropriate material; and,
- Remove all surrounding materials that can react or compound with the spill.

Should an equipment release occur from a vehicle or equipment being used on the Site, the spill will be reported to the NYSDEC Spill Hotline within 48 hours, unless the spill is:

- Less than 5 gallons,
- Contained and controlled;
- Not impacting water or land, AND
- Cleaned within 2 hours

13.13 Emergency Equipment

The following minimum emergency equipment shall be kept and maintained on-site:

- Industrial first aid kit;
- Burn kit and portable eye washes (one per field team);
- Fire extinguishers (one per work area); and
- Absorbent material /spill kit.

14.0 TRAINING

14.1 General Health and Safety Training

In accordance with LaBella corporate policy, and pursuant to 29 CFR 1910.120, hazardous waste site workers shall, at the time of job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations unless otherwise (HAZWOPER) noted in the above reference. At a minimum, the training shall have consisted of instruction in the topics outlined in the standard. Personnel who have not met the requirements for initial training shall not be allowed to work in any site activities in which they may be exposed to hazards (chemical or physical).

14.1.1 *Three Day Supervised on the Job Training*

In addition to the required 40-hour initial hazardous waste operations training, each employee shall have received three days of directly supervised on-the-job training. This training will address the duties the employees are expected to perform.

14.2 Annual Eight-Hour Refresher Training

Annual eight-hour HAZWOPER refresher training will be required of all hazardous waste site field personnel in order to maintain their qualifications for fieldwork.

The training will cover a review of 1910.120 requirements and related company programs and procedures.

14.2.1 *Site-Specific Training*

Prior to commencement of field activities, all field personnel assigned to the project will have completed training that will specifically address the activities, procedures, monitoring, and equipment used in the site operations. It will include site and facility layout, hazards and emergency services at the site, and will highlight all provisions contained within this CHASP. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity.

14.3 On-Site Safety Briefings

14.3.1 *Start of the Shift*

At the start of each shift, project personnel and visitors will be given on-site health and safety briefings daily by the FTL/SHSO to assist site personnel in safely conducting their work activities. A copy of the Daily Tailgate Meeting Form is contained in **Appendix F**. The briefings will include information on new operations to be conducted, changes in work practices or changes in the site's environmental conditions, as well as periodic reinforcement of previously discussed topics. The briefings will also provide a forum to facilitate conformance with safety requirements and to identify performance deficiencies related to safety during daily activities or as a result of safety inspections. The meetings will also be an opportunity to periodically update the crews on monitoring results. Prior to starting any new activity, a training session using the Task Hazard Analysis will be held for crew members involved in the task.

14.3.2 *End of the Shift*

At the end of each shift, project personnel will hold a de-brief to discuss lessons learned from any near-misses and any other health and safety matters that will help with planning the next day's activities.

14.4 First Aid and CPR

The DHS will identify those individuals requiring first aid and CPR training to ensure that emergency medical treatment is available during field activities. It is

required that a minimum of one field person on-site at any one time will have first aid and CPR training. The training will be consistent with the requirements of the American Red Cross Association or American Heart Association. If none are available on-site, then the DHS shall be notified.

14.5 Supervisory Training

Supervisors and health and safety personnel shall have completed an additional eight hours of specialized HAZWOPER training in accordance with 29 CFR 1910.120.

15.0 LOGS, REPORTS AND RECORDKEEPING

Changes to the CHASP will be documented in the Health and Safety logbook and as appropriate, the DHS and/or PM will be notified. Daily tailgate meetings will be documented in the H&S logbook as well as personnel on-site. The daily tailgate meeting form can be found in **Appendix F**.

15.1 Medical and Training Records

Copies or verification of training (40-hour, 8-hour, supervisor, site-specific training and documentation of three day OJT) and medical clearance for hazardous waste site work and respirator use will be maintained on-site. Records for all subcontractor employees will also be kept on-site.

15.2 Incident Report and Investigation Form

The incident report and investigation form is to be completed for all accidents and incidents, including near misses. The form can be found in **Appendix E**.

15.3 and Safety Logbooks

The FTL/SHSO will maintain a logbook during site work. The daily site conditions, personnel, monitoring results and significant events will be recorded. The original logbooks will become part of the exposure records file

16.0 FIELD PERSONNEL REVIEW

This form serves as documentation that field personnel have read, or have been informed of, and understand the provisions of the CHASP. It is maintained on site by the FTL/SHSO as a project record. Each field team member shall sign this section after site-specific training is completed and before being permitted to work on site.

I have read, or have been informed of, the CHASP and understand the information presented. I will comply with the provisions contained therein.

Name (Print and Sign)	Date

APPENDIX A

Safety Data Sheets

Lead

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/15/2014 Revision date: 12/15/2014 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance

CAS No : 7439-92-1

Formula : Pb

Synonyms : C.I. 77575, in massive state / elemental lead, in massive state / glover, in massive state

BIG no : 10073

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Solder
Battery: component
Construction
Electrodes

1.3. Details of the supplier of the safety data sheet

GSC International, Inc.
1747 N. Deffer Drive
Nixa,
MO 65714
United States of America

Tel: 417-374-7431
Fax: 417-374-7442
Email: info@gscinternationalinc.com

1.4. Emergency telephone number

Country	Organization/Company	Address	Emergency number
MEXICO	Servicio de Informacion Toxicologica Sintox	Tintoreto #32 Edif. a Desp. Col. Nochebuena Mixcoac México, D.F.	1 800 009 2800 +52 55 5611 2634 /+52 55 5598 9095
UNITED STATES OF AMERICA	American Association of Poison Control Centers		1-800-222-1222

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 4 (Oral)	H302
Acute Tox. 4 (Inhalation)	H332
Carc. 1B	H350
Repr. 1A	H360
STOT RE 2	H373
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS07 GHS08 GHS09

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H302+H332 - Harmful if swallowed or if inhaled
H350 - May cause cancer
H360 - May damage fertility or the unborn child
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

Precautionary statements (GHS-US) : 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
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	Classification (GHS-US)
Lead (Main constituent)	(CAS No) 7439-92-1	> 99,9	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Carc. 1B, H350 Repr. 1A, H360 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice. IF exposed or concerned: Get medical advice/attention. Call a poison center/doctor/physician if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Not applicable. Call a poison center/doctor/physician if you feel unwell.

First-aid measures after skin contact : Not applicable. Wash skin with plenty of water.

First-aid measures after eye contact : Not applicable. Rinse eyes with water as a precaution.

First-aid measures after ingestion : Not applicable. Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : No effects known.

Symptoms/injuries after skin contact : No effects known.

Symptoms/injuries after eye contact : No effects known.

Symptoms/injuries after ingestion : No effects known.

Chronic symptoms : No effects known.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment.

Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD. Non combustible.

Explosion hazard	:	DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.
Reactivity	:	On burning: formation of metallic fumes. Oxidizes on exposure to air.

5.3. Advice for firefighters

Precautionary measures fire	:	Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to heat: have neighborhood close doors and windows.
Firefighting instructions	:	Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	:	Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	:	Gloves. Protective clothing. See "Material-Handling" to select protective clothing.
Emergency procedures	:	Mark the danger area. No naked flames.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	:	Not applicable. Collect spillage.
Methods for cleaning up	:	Recover mechanically the product. Pick-up the material. Take collected spill to manufacturer/competent authority. Notify authorities if product enters sewers or public waters.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Meet the legal requirements. Do not discharge the waste into the drain. Handle unclean empty containers as full ones. Observe strict hygiene. Measure the concentration in the atmosphere. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fume. Use only outdoors or in a well-ventilated area. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly.
Hygiene measures	:	Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Does not require any specific or particular technical measures. Comply with applicable regulations.
Storage conditions	:	Store locked up. Store in a well-ventilated place. Keep cool.
Incompatible materials	:	Strong acids, strong bases and oxidation agents.
Heat-ignition	:	KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	:	KEEP SUBSTANCE AWAY FROM: oxidizing agents. Strong acids. Strong bases.
Storage area	:	Meet the legal requirements.
Special rules on packaging	:	SPECIAL REQUIREMENTS: closing. correctly labeled. meet the legal requirements. Secure fragile packaging in solid containers.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Lead (7439-92-1)		
ACGIH	ACGIH TWA (mg/m³)	0,05 mg/m³
ACGIH	Remark (ACGIH)	CNS & PNS impair
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Ensure good ventilation of the work station.

Personal protective equipment : Protective goggles. Gloves.

Materials for protective clothing : GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: butyl rubber. PVC. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.

Hand protection : protective gloves.

Eye protection : Safety glasses.

Skin and body protection : Not required for normal conditions of use.

Respiratory protection : Wear respiratory protection.

Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Metal.

Molecular mass : 207,20 g/mol

Color : White to blue-grey

Odor : Odorless

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : 327 °C

Freezing point : No data available

Boiling point : 1740 °C

Flash point : Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : < 0,1 hPa

Relative vapor density at 20 °C : No data available

Relative density : 11,3

Specific gravity / density : 11340 kg/m³

Solubility : insoluble in water. Substance sinks in water. Soluble in nitric acid. Insoluble in organic solvents. Water: < 0,1 g/100ml

Log Pow : 0,73 (Estimated value)

Log Kow : No data available

Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

VOC content : Not applicable (inorganic)

SECTION 10: Stability and reactivity

10.1. Reactivity

On burning: formation of metallic fumes. Oxidizes on exposure to air.

10.2. Chemical stability

Unstable on exposure to air.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Acids. Bases.

10.6. Hazardous decomposition products

Thermal decomposition generates : fume.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Inhalation: Harmful if inhaled.

Lead (\f)7439-92-1	
LD50 oral rat	> 2000 mg/kg body weight (Rat; Weight of evidence)
LD50 dermal rat	> 2000 mg/kg body weight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)
ATE US (oral)	500,000 mg/kg body weight
ATE US (gases)	4500,000 ppmV/4h
ATE US (vapors)	11,000 mg/l/4h
ATE US (dust, mist)	1,500 mg/l/4h
Additional information	Lead massive metal is not considered to be acutely toxic. It is not easily inhaled or ingested, and if it is accidentally ingested normally passes through the gastrointestinal system without significant absorption into the body. Lead is not easily absorbed through the skin.

Skin corrosion/irritation : Not classified
(Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified
(Based on available data, the classification criteria are not met)

Respiratory or skin sensitization : Not classified
(Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified
(Based on available data, the classification criteria are not met)

Carcinogenicity : May cause cancer.

Lead (7439-92-1)	
Additional information	There is some evidence that inorganic lead compounds may have a carcinogenic effect, and they have been classified by IARC as probably carcinogenic to humans. However, it is considered that this classification does not apply to lead in articles, given the very low bioavailability of metallic lead. Carcinogenicity studies of lead metal powder have been negative. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. IARC has concluded that lead metal is possibly carcinogenic to humans (Group aB).
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : May damage fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified

(Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.

Lead (7439-92-1)	
Additional information	Lead is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Although inhalation and ingestion of lead in massive form are unlikely, poor hygiene practises may result in hand to mouth transfer which maybe significant over a prolonged period of time. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the haemotopoetic (blood) system, kidney function, reproductive function and the central nervous system.

Aspiration hazard : Not classified

(Based on available data, the classification criteria are not met)

Symptoms/injuries after inhalation : No effects known.

Symptoms/injuries after skin contact : No effects known.

Symptoms/injuries after eye contact : No effects known.

Symptoms/injuries after ingestion : No effects known.

Chronic symptoms : No effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Dangerous for the environment. Very toxic to aquatic life with long lasting effects.

Ecology - air : Not dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.2/II.

Ecology - water : No water pollutant (surface water). Maximum concentration in drinking water: 0.010 mg/l (lead) (Directive 98/83/EC). Highly toxic to aquatic organisms.

Lead (7439-92-1)	
LC50 fish 1	2,8 (0,44 - 542) mg/l (96h) Coughlan, D.J., S.P. Gloss, and J. Kubota 1986. Acute and Sub-Chronic Toxicity of Lead to the Early Life Stages of Small mouth Bass (Micropterus dolomieui). Water Air Soil Pollut. 28(3/4):265-275
EC50 Daphnia 1	4,46 (0,53 - 5,1) mg/l (48h) Govindarajan, S., C.P. Valsaraj, R. Mohan, V. Hariprasad, and R. Ramasubramanian 1993. Toxicity of Heavy Metals in Aquaculture Organisms: Penaeus indicus, Perna viridis, Artemia salina and Skeletonema costatum. Pollut.Res. 12(3):187-189

12.2. Persistence and degradability

Lead (7439-92-1)	
Persistence and degradability	Biodegradability: Not applicable. No (test)data available on mobility of the substance.
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

Lead (7439-92-1)	
Log Pow	0,73 (Estimated value)
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer :

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Reuse or recycle following decontamination. Remove to an authorized dump (Class I). Do not discharge into surface water (2000/60/EC, Council decision 2455/2001/EC, O.J. L331 of 15/12/2001).

Additional information : LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN3077 Environmentally hazardous substances, solid, n.o.s. Lead(7439-92-1), 9, III

UN-No.(DOT) : UN3077

Proper Shipping Name (DOT) : Environmentally hazardous substances, solid, n.o.s.
Lead(7439-92-1)

Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)

DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102)	:	8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description “Other regulated substances, liquid or solid, n.o.s.”, as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as “Environmentally hazardous substances, solid, n.o.s,” UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging. A112 - Notwithstanding the quantity limits shown in Column (9A) and (9B) for this entry, the following IBCs are authorized for transportation aboard passenger and cargo-only aircraft. Each IBC may not exceed a maximum net quantity of 1,000 kg: a. Metal: 11A, 11B, 11N, 21A, 21B and 21N b. Rigid plastics: 11H1, 11H2, 21H1 and 21H2 c. Composite with plastic inner receptacle: 11HZ1, 11HZ2, 21HZ1 and 21HZ2 d. Fiberboard: 11G e. Wooden: 11C, 11D and 11F (with inner liners) f. Flexible: 13H2, 13H3, 13H4, 13H5, 13L2, 13L3, 13L4, 13M1 and 13M2 (flexible IBCs must be sift-proof and water resistant or must be fitted with a sift-proof and water resistant liner). B54 - Open-top, sift-proof rail cars are also authorized. IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. N20 - A 5M1 multi-wall paper bag is authorized if transported in a closed transport vehicle. T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	155
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	213
DOT Packaging Bulk (49 CFR 173.xxx)	:	240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	No limit
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

UN-No. (IMDG)	:	3077
Proper Shipping Name (IMDG)	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Class (IMDG)	:	9 - Miscellaneous dangerous compounds
Packing group (IMDG)	:	III - substances presenting low danger

Air transport

UN-No.(IATA)	:	3077
Proper Shipping Name (IATA)	:	Environmentally hazardous substance, solid, n.o.s.
Class (IATA)	:	9 - Miscellaneous Dangerous Goods
Packing group (IATA)	:	III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Lead (7439-92-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313 Not listed on the United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	10 lb

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Repr. 1A	H360Df
Acute Tox. 4 (Inhalation)	H332
Acute Tox. 4 (Oral)	H302
STOT RE 2	H373
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Repr.Cat.1; R61
Repr.Cat.3; R62
Xn; R20/22
R33
N; R50/53

Full text of R-phrases: see section 16

15.2.2. National regulations

Lead (7439-92-1)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program)

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date	:	12/15/2014

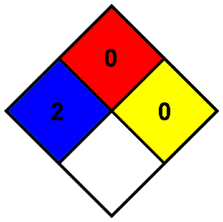
Full text of H-phrases:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Carc. 1B	Carcinogenicity Category 1B
Repr. 1A	Reproductive toxicity Category 1A
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
H302	Harmful if swallowed
H332	Harmful if inhaled
H350	May cause cancer
H360	May damage fertility or the unborn child
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

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : * Chronic Hazard - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

Personal Protection : B

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Lead Metal Sheet

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : **Lead Metal Sheet**

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: **S25383A**

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:

Irritant
Acute toxicity (oral, dermal, inhalation), category 4

Health hazard
Reproductive toxicity, category 1A
Specific target organ toxicity following repeated exposure, category 2

Environmentally Damaging
Acute hazards to the aquatic environment, category 1
Chronic hazards to the aquatic environment, category 1

Acute Tox. 4
Repr. 1A
STOT RE 2
Aquatic Acute 1
Aquatic Chronic 1
Hazards Not Otherwise Classified - Combustible Dust

Signal word :Danger

Hazard statements:
Harmful if swallowed
Harmful if inhaled
May damage fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

Precautionary statements:
If medical advice is needed, have product container or label at hand

Keep out of reach of children
Read label before use
Wash skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid release to the environment
Avoid breathing dust/fume/gas/mist/vapours/spray
Use only outdoors or in a well-ventilated area
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not eat, drink or smoke when using this product
Rinse mouth
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF exposed or concerned: Get medical advice/attention
Store locked up
Dispose of contents and container to an approved waste disposal plant

Combustible Dust Hazard: :
May form combustible dust concentrations in air (during processing).

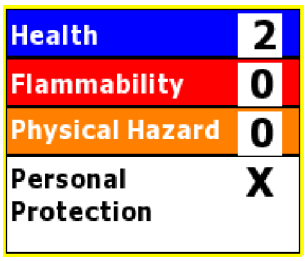
Other Non-GHS Classification:

WHMIS

D2A

NFPA/HMIS

NFPA SCALE (0-4)



HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 7439-92-1	Lead	100 %
		Percentages are by weight

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Loosen clothing as necessary and position individual in a comfortable position.Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen.Get medical assistance if cough or other symptoms appear.

After skin contact: Rinse/flush exposed skin gently using soap and water for 15-20 minutes.Seek medical advice if discomfort or irritation persists.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation, Nausea,Headache, Shortness of breath.;

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician.Physician should treat symptomatically.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:

Lead oxides.Combustion products may include carbon oxides or other toxic vapors.Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment: Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions): Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.Use spark-proof tools and explosion-proof equipment.Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols.Avoid contact with skin, eyes, and clothing.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Use spark-proof tools and explosion-proof equipment.Ensure that air-handling systems are operational.Ensure adequate ventilation.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Should not be released into environment.

Methods and material for containment and cleaning up:

Keep in suitable closed containers for disposal.Wear protective eyeware, gloves, and clothing. Refer to Section 8.Always obey local regulations.Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect solids in powder form using vacuum with (HEPA filter). Evacuate personnel to safe areas.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Minimize dust generation and accumulation. Follow good hygiene procedures when handling chemical materials. Refer to Section 8.Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities:

Store away from incompatible materials.Protect from freezing and physical damage.Keep away from food and beverages.Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store in cool, dry conditions in well sealed containers. Store with like hazards

SECTION 8 : Exposure controls/personal protection



Control Parameters: 7439-92-1, Lead, ACGIH TLV TWA 0.05 mg/m3
7439-92-1, Lead, NIOSH TWA 0.05 mg/m3

Appropriate Engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling.It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment.Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).Use under a fume hood

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.When necessary use NIOSH approved breathing equipment.

Protection of skin: Select glove material impermeable and resistant to the substance.Select glove material based on rates of diffusion and degradation.Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves.Wear protective clothing.

Eye protection: Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).Safety glasses or goggles are appropriate eye protection.

General hygienic measures: Perform routine housekeeping.Wash hands before breaks and at the end of work.Avoid contact with skin, eyes, and clothing.Before wearing wash contaminated clothing.

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	Bluish white, silver gray solid	**Explosion limit lower**: **Explosion limit upper**:	Not Determined Not Determined
Odor:	Not Determined	**Vapor pressure**:	1.3 mm Hg @970 C

Odor threshold:	Not Determined	**Vapor density**:	Not Determined
pH-value:	Not Determined	**Relative density**:	11.3
Melting/Freezing point:	327.4 C	**Solubilities**:	Insoluble in water.
Boiling point/Boiling range:	1740 C	**Partition coefficient (n-octanol/water)**:	Not Determined
Flash point (closed cup):	Not Determined	**Auto/Self-ignition temperature**:	Not Determined
Evaporation rate:	Not Determined	**Decomposition temperature**:	Not Determined
Flammability (solid,gaseous):	Not Determined	**Viscosity**:	a. Kinematic:Not Determined b. Dynamic: Not Determined
Density: Not Determined			

SECTION 10 : Stability and reactivity

Reactivity: Nonreactive under normal conditions.
Chemical stability: Stable under normal conditions.
Possible hazardous reactions: None under normal processing
Conditions to avoid: Incompatible Materials.
Incompatible materials: Strong acids, Strong oxidizing agents.Strong acids.Strong bases.Oxidizing agents.
Hazardous decomposition products: Lead oxides.

SECTION 11 : Toxicological information

Acute Toxicity: No additional information.	
Chronic Toxicity: No additional information.	
Corrosion Irritation: No additional information.	
Sensitization:	No additional information.
Single Target Organ (STOT):	No additional information.
Numerical Measures:	No additional information.
Carcinogenicity:	IARC: 2B : Possibly carcinogenic to humans (Lead) NTP: Reasonably anticipated to be a human carcinogen (Lead)
Mutagenicity:	No additional information.
Reproductive Toxicity:	Reproductive toxicity - rat - Inhalation Effects on Newborn: Biochemical and metabolic.Reproductive toxicity - rat - Oral Effects on Newborn: Behavioral.

SECTION 12 : Ecological information

Ecotoxicity

LC50 - Micropterus dolomieui : 2.2 mg/l - 96.0 h

EC50 - Skeletonema costatum: 7.94 mg/l - 10 d

Persistence and degradability:
Bioaccumulative potential:
Mobility in soil:
Other adverse effects:

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material.Dispose of empty containers as unused product.It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11).Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14 : Transport information

UN-Number

3077

UN proper shipping name

Environmentally hazardous substance, solid, n.o.s. (Lead)

Transport hazard class(es)

Class:
9 Miscellaneous dangerous substances and articles

Packing group:III
Environmental hazard:
Transport in bulk:
Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic

SARA Section 313 (Specific toxic chemical listings):

7439-92-1 Lead

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

7439-92-1 Lead 10 lbs.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients is listed

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.Note:. The responsibility to provide a safe workplace remains with the user.The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.The information contained herein is, to the best of our knowledge and belief, accurate.However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material.It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods
PNEC: Predicted No-Effect Concentration (REACH)
CFR: Code of Federal Regulations (USA)
SARA: Superfund Amendments and Reauthorization Act (USA)
RCRA: Resource Conservation and Recovery Act (USA)
TSCA: Toxic Substances Control Act (USA)
NPRI: National Pollutant Release Inventory (Canada)
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)

Effective date : 02.11.2015
Last updated : 03.19.2015

SAFETY DATA SHEET

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

1. Identification

Product Name **Tetrachloroethylene**

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

CAS-No 127-18-4
Synonyms Perchloroethylene

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

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

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

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

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

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

Label Elements

Signal Word
Danger

Hazard Statements

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

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Toxic to aquatic life with long lasting effects
WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Tetrachloroethylene	127-18-4	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

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

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

call a physician.

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

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

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

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode when heated.

Hazardous Combustion Products
Chlorine. Phosgene. Hydrogen chloride gas.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	0	0	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment as required. Ensure adequate ventilation.
Environmental Precautions Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Tetrachloroethylene	TWA: 25 ppm STEL: 100 ppm	(Vacated) TWA: 25 ppm (Vacated) TWA: 170 mg/m³ Ceiling: 200 ppm TWA: 100 ppm	IDLH: 150 ppm	TWA: 25 ppm STEL: 100 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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

9. Physical and chemical properties

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

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

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

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

Hazardous Decomposition Products Chlorine, Phosgene, Hydrogen chloride gas

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

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

Toxicologically Synergistic Products No information available

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

Irritation Irritating to eyes and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Tetrachloroethylene	127-18-4	Group 2A	Reasonably Anticipated	A3	X	A3

IARC (International Agency for Research on Cancer)

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

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

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS)

STOT - repeated exposure Kidney Liver Blood

Aspiration hazard No information available

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

Endocrine Disruptor Information

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

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

12. Ecological information

Ecotoxicity

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

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

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

Bioaccumulation/ Accumulation No information available.

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

Component	log Pow
Tetrachloroethylene	2.88

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

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

14. Transport information

DOT

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

TDG

UN-No UN1897

Proper Shipping Name TETRACHLOROETHYLENE
Hazard Class 6.1
Packing Group III

IATA

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

IMDG/IMO

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

15. Regulatory information

United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Tetrachloroethylene	127-18-4	X	ACTIVE	-

Legend:
TSCA - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Tetrachloroethylene	127-18-4	X	-	204-825-9	X	X	X	X	KE-33294

U.S. Federal Regulations

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Tetrachloroethylene	127-18-4	>95	0.1

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

CWA (Clean Water Act)

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

Clean Air Act

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

OSHA - Occupational Safety and Health Administration Not applicable

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

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

California Proposition 65 This product contains the following Proposition 65 chemicals.

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

U.S. State Right-to-Know Regulations

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

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant Y
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

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

Creation Date 10-Dec-2009
Revision Date 23-Jan-2018
Print Date 23-Jan-2018
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

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

1. Identification

Product Name **Trichloroethylene**

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

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

Recommended Use Laboratory chemicals.
Uses advised against

Details of the supplier of the safety data sheet

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

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

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

Label Elements

Signal Word
Danger

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

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Harmful to aquatic life with long lasting effects
WARNING! This product contains a chemical known in the State of California to cause cancer, birth defects or other reproductive harm.

3. Composition / information on ingredients

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

4. First-aid measures

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

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

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

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

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

5. Fire-fighting measures

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

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

Hazardous Combustion Products
Hydrogen chloride gas Chlorine Phosgene Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	0	N/A

6. Accidental release measures

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

7. Handling and storage

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

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Trichloroethylene	TWA: 10 ppm STEL: 25 ppm	(Vacated) TWA: 50 ppm (Vacated) TWA: 270 mg/m³ Ceiling: 200 ppm (Vacated) STEL: 200 ppm (Vacated) STEL: 1080 mg/m³ TWA: 100 ppm	IDLH: 1000 ppm	TWA: 100 ppm TWA: 535 mg/m³ STEL: 200 ppm STEL: 1080 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Long sleeved clothing.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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

9. Physical and chemical properties

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

Molecular Formula C2 H Cl3
Molecular Weight 131.39

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Light sensitive.

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

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

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

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information

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

Toxicologically Synergistic Products No information available

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

Irritation Irritating to eyes and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Trichloroethylene	79-01-6	Group 1	Reasonably Anticipated	A2	X	Not listed

IARC: (International Agency for Research on Cancer)

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

NTP: (National Toxicity Program)

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

ACGIH: (American Conference of Governmental Industrial Hygienists)

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

Mutagenic Effects Mutagenic effects have occurred in humans.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

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

Aspiration hazard No information available

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

Endocrine Disruptor Information No information available

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

12. Ecological information

Ecotoxicity

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

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

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

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

Component	log Pow
Trichloroethylene	2.4

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

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

14. Transport information

DOT

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

TDG

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

IATA

UN-No UN1710
Proper Shipping Name TRICHLOROETHYLENE

Hazard Class 6.1
Packing Group III

IMDG/IMO

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

15. Regulatory information

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

International Inventories

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

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

Component	TSCA 12(b)
Trichloroethylene	Section 5

SARA 313

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

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

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

Clean Air Act

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

OSHA Occupational Safety and Health Administration
Not applicable

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

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

California Proposition 65 This product contains the following proposition 65 chemicals

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

U.S. State Right-to-Know Regulations

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

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

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

Creation Date 03-Feb-2010
Revision Date 14-Jul-2016
Print Date 14-Jul-2016
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

APPENDIX B

Task Hazard Analysis

Task Hazard Analysis Form

Project: Carman Place	**Date:** TBD	**Superintendent:**
Description of Work: Soil Vapor Sampling		
THA Title: Soil Vapor Sampling		**Revision Number: 0**

Safety and Health Considerations – Check Yes or No								
HAZARD	**YES**	**NO**	**HAZARD**	**YES**	**NO**	**HAZARD**	**YES**	**NO**
Falls, Slips, Trips	X		Excavation/Trenching		X	Line Breaking		X
Falling Objects		X	Confined Space(s)		X	Lockout/Tagout		X
Struck By		X	Cranes/Rigging		X	Asbestos, Lead, Silica		X
Caught Between		X	Scaffolding		X	Material Handling		X
Electrical Shock / Arc		X	Scissor/Aerial Lift Use		X	Ergonomic / Lifting		X
Chemical, Dust, Fume	X		Ladder Use		X	Public Exposure		X
Fire / Hot Work / Burns		X	Working Over Water		X	Hazardous Materials/Waste		X

Work Activity – Break the job down into steps	**Hazards Associated with Each Step**	**Actions Required to Eliminate or Control the Hazard**
Install SV probes	Trips	Steel toe safety shoes
Collect samples	Dust	Steel toe safety shoes, level d ppe, and nitrile gloves

APPENDIX C

LaBella Pandemic Preparedness Plan

1.23 PANDEMIC PREPAREDNESS

Purpose
At LaBella Associates DPC, our highest priority is protecting the health and safety of our employees and their families, our partners, and the communities where we practice and provide services.

The purpose of this Pandemic Preparedness policy is to outline the means by which LaBella will respond to a pandemic. Our inability to predict when a pandemic might strike and with what severity, makes it imperative that we consider multiple pandemic measures to be implemented as we strive to continue to provide our clients with quality deliverables. In developing this Policy LaBella identified the need to have a variety of pandemic mitigation measures and to create a team of individuals (the Business Continuation Plan committee) who would monitor the pandemic and lead development of pandemic-specific Health and Safety Plans (HASPs).

All employees must follow this Policy and any pandemic-specific HASP. However, LaBella Associates is also committed to complying with our essential business partners' pandemic plans. Essential field and construction employees are instructed to actively seek out site specific health and safety guidance from our business partners and comply while on their properties. Where LaBella policies are more restrictive, LaBella policies shall be followed.

This Policy will:

- Be made available to all employees and be used for training at the time of hire, and yearly.
- Be updated as needed to reflect new developments and/or information related to a pandemic, our business. our employees and shall be conveyed to all affected parties when updated.
- Consider guidance from World Health Organization (WHO), Occupational Safety and Health Administration (OSHA), Center for Disease Control (CDC), Department of Health (DOH), and other agencies as appropriate and applicable.
- Be used as a resource when a pandemic occurs to generate a pandemic-specific Health and Safety Plan.

The Business Continuity Planning (BCP) Team will:

- Monitor pandemic conditions and regulatory requirements.
- Meet on a weekly or as-needed basis during a pandemic to discuss office operations and pandemic policies and procedures.
- Obtain feedback from managers and employees on work conditions and pandemic concerns.
- Communicate policies to employees.
- Include the following individuals:

CEO:	Steve Metzger	(585) 295-6223
President:	Jeff Roloson	(585) 295-6224
Sr. VP Operations:	Sue Matzat	(585) 295-6617
HR Director:	Michele Ebenhoch	(585) 402-7085
Safety Manager:	Catherine Monian	(845) 486-1557
General Counsel:	Bob Attardo	(585) 770-2555

Procedures in the Event of a Pandemic
Specific measures to be incorporated into a pandemic-specific HASP will depend on the characteristics of the pandemic and local, state and federal requirements but may include.

- Hold weekly/as-needed BCP Team meetings.
- Communicate necessary information to employees via video conference, email, phone or text through the Emergency Alert System.
- Train on Illness prevention, transmission of contagions, and policies for reporting illness.
- Implement use of face masks.
- Increase frequency of periodic cleaning/sanitizing at offices and jobsites.
- Post pandemic/illness prevention flyers at offices/jobsites.
- Encourage employees to be vaccinated appropriately.
- Implement a health screening policy.
- Employ physical distancing at offices and jobsites.
- Create flexible work hours/staggered shifts to promote physical distancing.
- Add partitions to workspaces where physical distancing is not possible.
- Suspend work-related non-essential travel.
- Allow essential travel only when approved by division director and when precautionary measures can be met.
- Meet by video conference, email, phone or text.
- Limit the number of attendees at essential gatherings or suspending in-person meetings.
- Clean/sanitize commonly touched surfaces before and after gatherings.
- Update all Health and Safety Plans (HASPs) to include pandemic information.
- Include pandemic information in Task Hazard Analysis (THA) and daily safety briefings.
- Stockpile and make readily available to employees, all related PPE and hygiene materials including:
    - Latex/nitrile gloves
    - Face masks, both surgical style and N95
    - Sanitizing sprays, gels, and wipes comprised of at least 60% alcohol
- Provide and maintain handwashing facilities for offices and jobsites.
- Confine use of vehicles, machines and tools to one person to the extent possible. Where this is not possible, clean/sanitize equipment before and after use.
- Have employees that feel ill or are known to be infected not report to work and immediately contact Human Resources for further instructions.
- Have employees that have been in close contact with or are caring for a person who is ill or known to be infected due to the pandemic not report to work and immediately contact Human Resources for further instructions.
- Pay employees sick leave mandated by law resulting from the pandemic.
- Handle work remotely to the extent possible during a pandemic, including work in essential business sectors, to reduce risk of infection.
- Enhance information technology and infrastructure, and cyber-security to handle increased demands of remote workers.
- Review Plan deficiencies following the pandemic and develop plans for corrective action.

This plan has now been tested and proven during the 2019 Coronavirus Pandemic, known as COVID-19. See also Human Resources Employee Handbook Section 6.18 - Airborne Infectious Disease Exposure Prevention Plan.

APPENDIX D

CAMP

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

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

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

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

Periodic monitoring for VOCs will be required 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 might reasonably consist 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.

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, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

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

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.

1. 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.

2. 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.

3. All readings should be provided on a weekly basis with all exceedances reported to NYSDEC and NYSDOH the same day or next business day if after hours along with the reason for exceedance, what was done to correct it, and if it was effective.

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX E

Incident Report Form

INCIDENT REPORT FORM

Accident / Incident Investigation		
Date of Incident:	Time of Event/Exposure:	Office:
Date First Reported:	To whom reported:	

Project Information	
Project Name:	Project #
Project Location:	Project Manager:

Employee	
Employees Full Name: ☐ M ☐ F	Employee Number:
Time Employee began work:	Contact Number:
Employment Status: ☐ Regular ☐ Part Time	How long in present job?
Business Practice:	

Personnel immediately involved in or witness to incident

Name	**Employer**	**Role at Site**

Description of Incident / Near Miss: (Describe what happened and how it happened.) ☐ **Near Miss Incident**

Where did the incident / near miss occur? (number, street, city, state, zip):

Injury or Illness or Near-Miss Information: **Was Work Care Called:** ☐ **No** ☐ **Yes**

Was treatment given away from the injury site: ☐ No ☐ Yes, if yes:

Name of Facility or Physician:	Address:
Treated in Emergency/Urgent Care Room: ☐ No ☐ Yes	Overnight Hospitalization: ☐ No ☐ Yes,
To whom reported:	Other workers injured / made ill in this event? ☐ Yes ☐ No
Fatality: ☐ Yes ☐ No	Did employee miss any time away from work? Describe the specific injury or illness:

Motor Vehicle Accident (MVA) ☐ N/A		
Company Vehicle? ☐Yes ☐ No	Leased/Rented Vehicle? ☐ Yes ☐ No	Personal Vehicle? ☐ Yes ☐ No
Seat Belt Worn? ☐Yes ☐No ☐NA	Lease/Rental Company:	
Anyone else injured? ☐ Yes ☐ No	Cell Phone in use at time of accident ☐ Yes ☐ No	

Signatures	
Form Completed By (print/sign):	Date:
Employee Involved (print/sign):	Date:

Section B1 – Levels of Incidents Definitions:

Level 1: First Aid, "less significant" near miss, and asset damage (includes MVAs)
Level 2: Professional Medical Advice or Treatment (Includes incidents in which WorkCare is called)
Level 3: Overnight hospitalization, fatality, or "significant near miss"

Section B2 – Levels of Incidents and Supervisor Reporting Requirements:

Supervisor reports to the Safety Director and client (as required) ASAP but no later than outlined below:
Level 1 – No later than the end of the same business day in which the incident was reported
Level 2 – By the end of the same business day in which the incident was reported
Level 3 – Immediately, but no later than 2 hours from the initial report

Section B3 – Investigation Team Members/Signed Initials

Name	**Job Title**	**Date**

Section B4 – Investigation Team Description of Incident

Incident Level Determination (Final determination made by Investigative Team)	Level 1 ☐ Level 2 ☐ Level 3 ☐
Estimated Cost of Incident (including labor and expenses)	

Section B5 – Additional Motor Vehicle (MVA) Accident Information ☐ N/A

Vehicle Towed?	☐ Yes ☐ No	Other Vehicle Towed?	☐ Yes ☐ No	# Vehicles Towed:		# of Injuries:

Section B6 – Spill ☐N/A

Material Spilled:	Quantity:	Source:
Agency Notifications:		

Section B7 – Third Party Incidents ☐ N/A			
Name of Owner:		Address:	Telephone:
Description of Damage/Injury:			
Witness Name:		Address:	Telephone:
Witness Name:		Address:	Telephone:

#	Section B8 – Contributing Factors: Conclusion (Describe in Detail Why Incident / Near Miss Occurred)
1	
2	
3	
4	
5	
6	

Section B9 – Root Cause(s) Analysis (RCA)-the Causative Factors

Personal Factors:

1. Lack of skill or knowledge (Worker does not understand task procedures or acceptable practices and/or have proficiency in task).
2. Doing the job according to procedures or acceptable practices takes more time/effort.
3. Short-cutting procedures or acceptable practices are positively reinforced or tolerated.
4. In past, did not follow procedures or acceptable practices and no incident occurred (injury, product quality incident, equipment damage, regulatory assessment or production delay).

Job Factors:

5. Lack of or inadequate procedures (changing procedures across organization outside of supervisor, workers control).
6. Inadequate communication of expectations regarding procedures or acceptable practices.
7. Inadequate tools or equipment (available, operable & safely maintained; proper task & workplace design).

External Factors:

8. An uncontrollable factor cause or contribute to the incident or questionable work activity or condition.

Section B10 – Root Cause(s) Analysis (RCA)-the Preventative Actions

#	RCA #	Solution(s): How to Prevent Incident / Near Miss From Reoccurring	Person Responsible	Due Date	Closure Date
1					
2					
3					
4					
5					

Section B11 – Results of Solution Verification and Validation		
Reviewed By		
Name/Initials	**Job Title**	**Date**

APPENDIX F

Daily Tailgate Safety Form

Tailgate/Toolbox Meeting Form

Location: _____ Date: _____ Client: _____

Other trades on site: _____

Minutes		Attendees	
		Print name	Signature
Review Incident/ Close Calls			
Activities of Day Discussed			
Employee Suggestions			
Corrective Action			

Safety & Environmental Hazard Assessment		
Identity Specific Tasks	Identify Hazards (Chemical, Physical, Biological, Ergonomic)	Recommended Controls or Corrective Actions

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