Former Hygrade Polishing and Plating Co.
Queens COUNTY
Long Island City, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: C241148

Prepared for:

Stalingrad Ventures LLC

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West Babylon, NY 11704

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date
1	March 2025	Changes to Monitoring Scope and Schedule	N/A
2	October 2025	Changes following NYSDEC comments March 2025	N/A
3	July 2026	Changes following NYSDEC comments March 2026	
4			

OCTOBER 2020

UPDATED JUNE 2026

CERTIFICATION STATEMENT

I, Michael E. Hanscom, P.E., certify that I am currently a Professional Engineer as defined in 6 NYCRR Part 375 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).

Michael E. Hanscom PE LICENSE # 064360

July 15, 2020 DATE

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LIST OF ACRONYMS

AMEC	AMEC E&E, PC
AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BMW-#	Basement Monitoring Well
BTEX	A group of VOCs, including Benzene, Toluene, Ethylbenzene and Xylene.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
COCs	Contaminants of Concern
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
EHC	EHC Bioremediation Technology from Adventus Remediation Technologies, Inc. A family of remediation products used for the in-situ treatment of groundwater and saturated soil impacted by heavy metals and persistent organic compounds.
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
IRM	Interim Remedial Measures

LIST OF ACRONYMS Continued

IRT	Innovative Recycling Technologies, Inc.
MTBE	Methyl tert-butyl ether. A volatile organic compound.
MW-#	Monitoring Well
NYCDEP	New York City Department of Environmental Protection
NYCDOH&MH	New York City Department of Health and Mental Hygiene
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NY TOGS	New York Technical and Operational Guidance Series
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCBs	Polychlorinated biphenyls
PCE	Perchloroethylene
PID	Photoionization Detector
PFBS	Perfluorobutane Sulfonate
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PRP	Potentially Responsible Party
PRR	Periodic Review Report
PFAS	Per and Poly-Fluorinated Alkyl Substances
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RIWP	Remedial Investigation Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study

LIST OF ACRONYMS Continued

ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SB-#	Soil Boring
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
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
SVOC	Semi-volatile Organic Compound
TAL	Target Analyte List
TCE	Trichloroethene
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
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

This is an update of the of the October 2020 Site Management Plan (SMP) for this Site by AMEC E&E, PC. The items that changed are:

- Groundwater Monitoring is no longer required as the criteria to cease monitoring outlined in the SMP was achieved; and,

- Annual measurement of sub-slab vacuum at four vacuum monitoring points was added at the request of the NYSDEC.

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:

Site Identification: BCP Site No. C241148, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue Long Island City, NY 11101

Institutional Controls:	1. The property may be used for commercial or industrial use; 2. All Engineering Controls (EC) must be operated and maintained as specified in this SMP; 3. All ECs 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 New York City Department of Health and Mental Hygiene (NYCDOH&MH) 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 this SMP (groundwater monitoring is no longer required as of June 2024); 6. Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP; 7. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;

	8. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP; 9. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this 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 the Environmental Easement; 11. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 9, and any potential impacts that are identified must be monitored or mitigated; and 12. Vegetable gardens and farming on the site are prohibited.	
Engineering Controls:	1. A cover system consisting of an 8-inch thick concrete slab	
	2. A Sub-Slab Depressurization (SSD) System with a fan and vapor barrier below the concrete slab	
Inspections:		Frequency
1. Cover System		Annually
2. Sub-Slab Depressurization System		Annually
Monitoring:		
1. Groundwater Monitoring Wells MW-6S, MW-5, MW-6D, MW-E		Semi-Annually for 2 years after application of Plume Stop (applied in March 2020) and then annually for 1 year. (This monitoring period has been completed.)
2. Indoor air sampling in basement and inspection of fan and duct work		Annually

Maintenance:	
1. Cover System	As needed
2. SSD System	As needed
3. SSD System valves and alarms	As needed
Reporting:	
1. Groundwater Monitoring (to be provided with Periodic Review Report (PRR))	As needed
2. SSD System and Soil Vapor Extraction (SVE) pressure monitoring (to be provided with the Periodic Review Report)	Annually
3. Indoor air sampling results (to be provided with the PRR)	Annually
4. Periodic Review Report (PRR)	Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Former Hygrade Polishing and Plating Co. Site located in Long Island City, New York (hereinafter referred to as the "Site"). See Figure 1.

The Site is currently in the New York State (NYS) Brownfield Cleanup Program BCP Site No. C241148 which is administered by New York State Department of Environmental Conservation (NYSDEC). A list of contacts for persons involved with the site is provided in Appendix A of this SMP.

Stalingrad Ventures LLC entered into a Brownfield Cleanup Agreement (BCA) on May 9, 2015 with the NYSDEC to remediate the site. 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 B.

After completion of the remedial work, some contamination was left at this site, which is hereafter referred to as "remaining contamination". Institutional Controls and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to the remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Queens County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

This SMP was prepared to manage remaining 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 Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA Index No. C241148-03-15, Site No. C241148 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.

This SMP was prepared by AMEC E&E, PC, (AMEC) on behalf of Stalingrad Ventures LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, 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

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. 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.

In accordance with the Environmental Easement for the site, the NYSDEC 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:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the BCA, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- 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.

- 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.

- 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:

- 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 Brownfield Cleanup Agreement (BCA), and all approved work plans and reports, including this SMP.

- 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 notification. 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 A.

Table 1: Notifications*

Name	**Contact Information**
Wendi Zheng NYSDEC Project Manager	(718) 482-7541 wendi.zheng@dec.ny.gov
Jane O'Connell NYSDEC Regional Remediation Engineer	(718) 482-4599 jane.oconnell@dec.ny.gov
Kelly A. Lewandowski NYSDEC Site Control Section Chief	(518) 402-8013 kelly.lewandowski@dec.ny.gov
Scarlett McLaughlin and Jim Sullivan NYSDOH Project Managers	(518) 402-7860 scarlett.mclaughlin@health.ny.gov jim.sullivan@health.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in Long Island City, Queens County, New York and is identified as Block 409 and Lot 6 on the Queens County Tax Map (see Figure 2).

The site is an approximately 0.06-acre (approximately 2,500 square feet) in area and is bounded by a commercial building to the north, 41st Avenue to the south, an electric supply company to the east, and a hotel to the west (see Figure 2 – Site Layout Map).

The land is currently improved with a four-story building and basement that covers the entire property. The building was recently renovated to convert the former factory into professional office space. The boundaries of the site are more fully described in Appendix B –Environmental Easement and Metes & Bounds. The owner(s) of the site parcel(s) at the time of issuance of this SMP is Stalingrad Ventures, LLC.

A figure showing the site boundary is provided in Appendix B – Environmental Easement and Metes & Bounds.

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: a four-story building with a full basement. The Site is zoned for commercial and industrial use and is currently utilized for commercial uses on the second and third floors. The basement, first and fourth floors are currently vacant. Site occupants include storage, sales and distribution of various consumer products.

The properties adjoining the Site and, in the neighborhood, surrounding the Site primarily include commercial properties. The properties immediately south of the Site include commercial properties; the properties immediately north of the Site include commercial properties; the properties immediately east of the Site include commercial properties; and the properties to the west of the Site include commercial properties.

2.2.2 Geology

The soil below the basement consists of a permeable sand and gravel fil up to a depth of approximately 5 feet below basement grade. The soils underlying the fill are Pleistocene age sediments composed primarily of gray clays and silts to a depth of approximately 12 to 16 feet below sidewalk grade followed by brown clayey sand. Based on work performed by the USGS, the Pleistocene deposits lie directly over crystalline bedrock (Julian Soren, 1978). The depth to bedrock is believed to be on the order of 32 to 25 feet below sidewalk grade.

A geologic cross section is shown in Figure 3. Site specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

Groundwater occurs at a depth of approximately 8 feet below sidewalk grade or 2 to 3 feet below the current basement floor. The property is situated approximately one-half mile east of the East River. Groundwater flows in a westerly direction towards the river based on a site-specific water table map prepared for this site included as Figure 4. The area is serviced by the NYC municipal water supply system which provides potable water derived from surface water reservoirs located in upstate New York. There are no known water supply wells in the vicinity of the site.

A groundwater contour map is shown in Figure 4. Groundwater elevation data is provided in Table 2. Groundwater monitoring well construction logs are provided in Appendix C.

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 property was improved with the four-story structure currently occupying the Site since the 1920s. Before the current on-site renovations began, Hygrade Polishing and Plating (Hygrade) -- also known as Double E Plating -- operated at the property since 1962. The property was previously occupied by Roto Metal Shop from 1939 to 1962 as a tenant at this location. Hygrade operated at this location as a metal polishing and electroplating facility from 1962 to 2012. The plating operations consisted of numerous tanks and barrels used to plate parts with chromium, brass (copper and zinc), nickel, and zinc on the first floor of the building. Metallic parts were prepared for plating using alkaline cleaners, acid etchant solutions, and/or stripping solutions (depending on the process at that time) and rinsed. Once the metallic parts were prepared, the parts were electroplated in process solutions that contained the required metals in solution followed by a parts rinse. The process generated wastewater was treated in an onsite unit located in the basement before discharging to the New York City combined sewer system under a permit from the New York City Department of Environmental Protection (NYCDEP).

Two reports were prepared by Innovative Recycling Technologies (IRT) that cover the decommissioning of the former electroplating facility. That work was followed by the preparation of a Remedial Investigation Work Plan and then by an Interim Remedial Measures Work Plan. After these two work plans were implemented, a Remedial

Investigation Report and an Interim Remedial Measures Construction Completion Report were prepared. Quarterly and annual monitoring of the groundwater and indoor air were also performed. The documents reviewed are summarized below.

2.3.1 Innovative Recycling Technologies, Inc. (IRT), Final Report for the Limited Remediation of the Former Double E Plating Facility, May 2013

Upon taking ownership, IRT was retained by Stalingrad Ventures for a facility decommissioning effort limited to the above-ground portions of the facility. The work was completed under a NYCDEP Commissioner's Order that had been issued to the Site's previous owner, Edward Byers and Double E Plating Corp. in 2012. Under the supervision of NYCDEP representative and periodic inspection of NYSDEC representatives the work was completed as follows:

The contents of the plating tanks, approximately 30, were pumped into 55-gallon closed head drums. In addition, 111 drums from previous operations were left at the Site when Stalingrad Ventures, LLC took title. Each drum was numbered and a composite sample collected to characterize the contents of the drums. The samples were analyzed by EQ Services of Farmingdale, NY (an ELAP certified laboratory). The drums were also inspected for structural integrity and fuming other extraordinary characteristics. Drums that were in DOT shippable condition were labeled and staged for ultimate disposal. The contents of drums that were not DOT shippable containers were transferred into DOT – approved containers prior to staging and ultimate disposal.

Floor solids were containerized into 55-gallon drums or cubic yard boxes. Once the solids were removed, the floors were pressures washed. The generated wastewater from this process was containerized in DOT-approved 55-gallon drums.

The effluent storage tanks in the basement were pumped from the basement directly into DOT-approved totes located in a box truck.

Water found in the elevator pit was sampled and tested. Laboratory analysis indicated the water in the elevator contained hazardous waste. This water was removed with a vacuum truck then transferred into DOT-approved totes.

The concrete floors in the basement and first floors were removed by a separate company. The foundation walls and first floor walls were mechanically cleaned to remove visible contamination. The concrete was shipped and disposed of at Stablex Canada, Inc. located in Quebec, Canada.

There were two (2) former #2 fuel oil tanks, 275 gallons each, in the basement encased in cement blocks. The cement blocks were removed to expose the tanks. It was discovered

that the two tanks were ¾ full of water with oily sludge in the bottom. The water and sludge were pumped into seven (7) open-head steel drums. The tanks were then cut into pieces with a reciprocating saw. The thick sludge and speedi-dry used to clean the tank were placed into the 7 drums. The remaining steel was sent to Gershow Recycling for recycling. The tanks weighed 600 pounds. The 7 drums were shipped to Republic Environmental Systems, Inc. (PA) located in Hatfield, PA.

All poly drums that were triple rinsed were cut and removed by Metro Environmental Contracting Corp and shipped to One World Recycling located in Lindenhurst, NY.

Disposal facilities used for hazardous waste disposal during this effort include:

- Republic Environmental Systems (PA), Inc. (PSC) 2869 Sandstone Drive Hatfield, PA 19440 EPA ID # PAD085690592 Telephone: 215-822-8996;
- EQ Detroit, Inc. 1923 Frederick Street Detroit, MI 48211 EPA ID # MID980991566 Telephone: 800-592-5489;
- Michigan Disposal Waste Treatment Plant 49350 North I-94 Service Drive Belleville, MI 48111 EPA ID # MID000724831 Telephone: 800-592-5489;
- Chemtron Corporation 35850 Schneider Court Avon, OH 44011 EPA ID # OHD066060609 Telephone: 440-937-6348;
- Stable Canada, Inc. 760 Industrial Boulevard Plainville, Quebec J7C3V4 EPA ID # NYD980756415 Telephone: 1-800-Stablex.

2.3.2 Innovative Recycling Technologies, Inc. (IRT), Summary Report of End-Point and Groundwater Samples for the Former Double E Plating Facility, August 2014

From October 11, 2013 to February 2, 2014, 338.99 tons of hazardous soil and 242.30 tons of non-hazardous soil were removed from the basement of the facility and transported to a permitted disposal facility under either hazardous or non-hazardous waste manifests. Excavation endpoint samples were collected from the bottom and from the sidewalls as it advanced. The excavation continued until the sample results indicated that the excavation bottom had achieved NYSDEC Part 375 Restricted Residential Soil Cleanup Objectives for VOCs, TCLP Metals, and TAL Metals.

On February 7, 2014, four (4) groundwater monitoring wells, identified as BMW-1 through BMW-4, were installed in the basement of the facility. A map illustrating the location of the Site wells is included on Figure 6 A-C.

Groundwater samples were collected on February 19, 2014 and March 27, 2014. The samples were analyzed for VOCs, SVOCs, Pesticides, and TAL Metals. Groundwater concentrations were found to exceed certain NYSDEC Technical & Operational Guidance Series (TOGS) groundwater quality standards for volatile organic compounds (VOCs), metals, and dissolved metals.

2.3.3 CA Rich Consultants, Inc., Remedial Investigation Work Plan (RIWP), June 2016

In June 2016, CA Rich Consultants, Inc. prepared and submitted a RIWP to the NYSDEC to address the findings from previous investigations. The objective of the Remedial Investigation activities was to delineate the extent of the contaminants of concern (COCs) at the Site in the soil, soil vapor and groundwater. The COCs were the Volatile Organic Compound (VOCs) cis-1,2 dichloroethene, methylene chloride, tetrachloroethene, toluene and trichloroethene and the metals (cadmium, chromium, copper, nickel, and zinc), cyanide.

2.3.4 Amec E&E, PC, Interim Remedial Measures Work Plan, May 2017

During the course of performing the RI, it became apparent that corrective actions were needed to address groundwater and soil vapor issues at the site. An Interim Remedial Measures (IRM) work plan was prepared to address the application of bio-remediation products to the groundwater and the construction of a Sub Slab Depressurization System to capture and remove vaporized VOCs from below the building slab. These activities were implemented as an IRM so the property owner count incorporate them in to the redevelopment of the property in a timely manner.

2.3.5 Amec E&E, PC, Remedial Investigation Report November 2017

During 2016 and 2017, a Remedial Investigation was completed. The scope of the investigation included RCRA-type rinsate samples collected from the first, second, third and fourth floors of the building. It also included the collection of six (6) soil vapor samples and six (6) soil borings from below the floor of the basement. In addition, groundwater was collected from a total of eight (8) monitoring wells at the site. The following is a summary of the RI results.

- On September 26, 2016, rinsate tests of the first, second, third, and fourth floors of the building were performed in accordance with the NYSDEC rinsate testing procedures. The results of the rinsate tests indicate that the existing concrete floors were properly decontaminated as part of the Closure of the facility.

- The soil below the basement consists of clean imported fill placed over native silt and fine sand. The silt grades into more permeable sand with depth. Weathered bedrock occurs at a depth of 33 to 35 feet below grade along the western side of the site.

- Six sub-slab soil vapor samples were taken beneath the basement at the locations illustrated on Figure 7. Results of the sub-slab vapor samples included detections of Perchloroethylene (PCE), Trichloroethene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE) and vinyl chloride in the 1 to 200 ug/m^3 range. Of these compounds, TCE was detected above the NYSDOH Matrix A, B and C mitigation guidance concentrations.

- Analysis of the soil samples collected in the basement revealed that there were no exceedances of the NYSDEC Part 375 Unrestricted Use Soil Cleanup Objective (SCO) for any of the soil samples collected.

- The direction of groundwater flow is westerly, towards the East River.

- Elevated levels of chlorinated VOCs were detected in the shallow monitoring wells located in the southern portion of the basement. The results of deeper groundwater samples collected within the basement footprint and off-site groundwater monitoring wells screened below 22nd Street were significantly lower suggesting that the bulk of the VOCs are adhered to the silts in the shallow soils situated below the basement.

- Elevated levels of the metals, cadmium, chromium and nickel were detected in the shallow monitoring wells located in the northern portion of the basement. The results of deeper groundwater samples collected within the basement footprint and off-site groundwater monitoring wells screened below 22nd Street where significantly lower suggesting that the bulk of the metals are also adhered to the silts in the shallow soils situated below the basement.

- 1,4 dioxane was not detected in any of the water samples collected at this site.

2.3.6 Amec E&E, PC, Interim Remedial Measures Construction Completion Report July 2018

The remedial action objectives for the interim remedial measures were two fold:

1) to remediate water containing concentrations of volatile organic compounds (VOCs) and heavy metals in excess of New York TOGS Groundwater standards using injected bioremediation products, and

2) install a Sub Slab Depressurization System to capture and remove vaporized VOCs from below the building slab. The following is a summary of the IRM activities.

An Interim Remedial Measure (IRM) including injection of bio-remediation agents and installation of a vapor barrier and SSD System followed.

This consisted of:

- Pneumatically fracturing six boreholes at depth intervals of 6 to 10 feet below the surface of the basement floor;

Inject 500 lbs. of EHC® bio-remediation solution or MetaFix®, in-situ chemical reduction agents (ISCR), into each of the six boreholes;

The installation of a 20-mil engineered vapor barrier; and

Construction of a Sub-Slab Depression system to address the detected VOCs in the soils above the water table.

2.3.7 CA RICH 2013 Closure Plan and AMEC E&E, PC 2018 Addendum

Decommissioning activities of this former electroplating facility were completed by IRT and are described in their reports dated May 2013 and August 2014. The Closure Plan, which followed the decommissioning process, included the following activities:

Rinsate sampling of the first through fourth floors of the building to confirm that they were properly cleaned;

- A visual inspection of the walls to confirm that staining created by the former plating operations were removed

- Drilling eight soil borings in the basement and the collection of soil samples for VOCs, SVOCs, metals plus cyanide, pesticides and PCBs.

- Sampling of five existing monitoring wells and the installation & sampling of three additional monitoring wells with analysis for VOCs, SVOCs, metals plus cyanide, pesticides and PCBs.

- Collection of soil vapor samples from below the basement floor with analysis for VOCs.

After the Closure Plan was submitted, this site was entered into the NYS Brownfield Cleanup Program. Therefore, this work was completed and reported in the Remedial Investigation Report (AMEC, November 2017 Remedial Investigation Report).

2.3.8 Quarterly Monitoring

Quarterly groundwater monitoring was initiated after the IRM work plan was completed. Sampling from on-site wells BMW-1 through BMW-4 was performed from February 19, 2014 to January 15, 2019, but ceased once PlumeStop® was applied below the basement floor. Sampling from off-site wells MW-E, MW-5, MW-6S and MW-6D was performed from May 4, 2017 to March 1, 2023, and ceased once a "request to discontinue sampling" was approved by the NYSDEC.

A summary of the results, which were used to develop the October 2020 SMP, are provided below and on Figures 6 A-C.

Volatile Organic Compounds (VOCs) and TAL Metals:

The COCs have decreased significantly since the first round of sampling in February 2014. On December 11, 2017, groundwater samples were collected just prior to the injection program. The laboratory results for the groundwater sampling performed in April 2018 (after the injection program), displays a significant decrease in VOC concentration. Many of the COCs decreased to concentrations below the NY TOGS standard and some were not detected. For comparison, the groundwater from basement monitoring well BMW-3 had a concentration of 20,700 ug/l of PCE on March 27, 2014 and on January 15, 2019 at a concentration of 0.99 ug/l . This is a strong indication that natural bio-degradation of the VOCs has been occurring and was accelerated by the addition of EHC. Similarly, the groundwater from well BMW-2 had a Chromium concentration of 4,120 ug/l on March 27, 2014 and on January 15, 2019 had a value of 2.04 ug/l which is below the NY TOGS Standard. This data suggests that Metafix was successful in reducing the concentrations of these contaminants.

Per and Poly-Fluorinated Alkyl Substances (PFAS):

The April 2018 groundwater sampling event was the first time at this site where water samples were collected for the purposes of PFAS analysis. The analytical data revealed that PFAS is present in the groundwater below the site at concentrations above the EPA drinking water health advisory. Further, PFAS levels are highest underneath the basement and decrease in the direction of the downgradient wells. The laboratory analytical results for the sampling conducted in January 2019 display similar concentrations to those seen in the previous sampling event.

The EPA guidance value serves as an advisory for drinking water supplies. However, this area of Queens is serviced by the NYCDEP municipal water supply, which derives its water from reservoirs located in upstate New York. As such, there are no pathways for the PFAS in the groundwater to present a negative impact to human health or the environment. The

basement was recently finished with a new concrete slab that is 8-inchs thick. There are no known groundwater supply wells in the area of Queens.

Quarterly monitoring was discontinued as of July 2023. NYSDEC reviewed the data included in the 2022-2023 PRR and approved the request to discontinue future groundwater monitoring and decommission the wells on site. NYSDEC approval is summarized in the Site Management PRR Response Letter is included as Appendix L.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document dated January 9, 2020 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.

RAOs for Environmental Protection

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

Soil:

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure to contaminants volatilizing from contaminants in the 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, soil vapor intrusion into buildings at a site.

2.5 Remaining Contamination

2.5.1 Soil

Based on the results of the Remedial Investigation (AMEC, November 2017 Remedial Investigation Report), there were no detections of contaminants in the on-site soils in excess of Track 1 soil cleanup objectives. Samples were collected from borings that advance to 9 feet below grade. Soil samples were analyzed for VOCs using EPA method 8260C. As shown on Table 3, there were no exceedances of the NYSDEC Part 375 Unrestricted Use Soil Cleanup Objective (SCO) for any of the soil samples collected. In addition to the samples collected for analysis of VOCs, composite samples were collected from the entire 7-foot depth of the boreholes at locations SB-2 and SB-6. These samples were analyzed for SVOCs using EPA method 8270, TAL metals using SW 6010C and 7471B, Pesticides using EPA method 8081 and PCBs using EPA method 8082. The site is underlain with imported quarry sand and gravel to the approximate depth of the water table (approximately 8 feet below sidewalk grade).

Tables 3A through 3E summarize the results of all soil samples collected, none of which exceeded the Unrestricted Use SCO. Figure 5 presents the location of the soil borings.

2.5.2 Sediment

There were no sediment issues at this site that required the sampling and analysis of sediment samples.

2.5.3 Groundwater

The COCs in the groundwater below the Site are the VOCs which are identified as tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2 dichloroethene (cis 1,2-DCE), and vinyl chloride. With respect to metals, the COCs at the Site are identified as Cadmium, Chromium, and to a lesser degree, Nickel.

The laboratory analytical results were tabulated and compared to the NYSDEC Technical Operational TOGS Ambient Water Quality Standards (NY TOGS standard). The following sections summarize the results:

Volatile Organic Compounds

On-Site Basement Sample Locations – The post IRM laboratory report indicated that the site-related VOCs contaminants were still present in the basement, but at significantly lower concentrations than before the bio-remediation injection program. PCE, TCE, cis 1,2-DCE and vinyl chloride were detected in the water samples collected from the four basement monitoring wells. However, the detections of PCE in three of the four wells were below NY TOGS groundwater standards in January 2019. The remaining three VOC COCs were detected above the NY TOGS standards in three of the four basement monitoring wells. There were no exceedances of the TOGS Standards in one of the wells. The following summarizes the concentrations of VOC contaminants for the basement monitoring wells. The January 2019 laboratory results for VOCS are tabulated on Table 4A. A map depicting the concentrations of contaminants of concern for VOCs at each monitoring well location is included as Figure 6A.

- PCE was detected in water samples collected from wells BMW-1, BMW-2 and BMW-3 in January 2019 at concentrations below the NY TOGS standard of 5 ug/l and was 5.8 ug/l in BMW-4 (AMEC, April 2019 Annual Monitoring Report). For comparison, the groundwater from basement monitoring well BMW-3 had a concentration of 3,300 ug/l of PCE on November 10, 2016 (AMEC, November 2017 Remedial Investigation Report) and on January 15, 2019 had a value of 0.99 ug/l (AMEC, April 2019 Annual Monitoring Report).

- TCE was detected in wells BMW-1, BMW-2, BMW-3 and BMW-4, with detections exceeding the NY TOGS standard of 5 ug/l in only one well, the water sample collected from well BMW-3. That sample displayed a concentration of 5.2 ug/l. For comparison, the groundwater from well BMW-3 had a concentration of 290 ug/l of TCE on November 10, 2016 (AMEC, November 2017 Remedial Investigation Report) and on January 15, 2019 had a value of 5.2 ug/l (AMEC, April 2019 Annual Monitoring Report).

- Cis 1,2-DCE was detected in water samples collected from all four basement monitoring wells with exceedances above the NY TOGS standard of 5 ug/l. For comparison, the groundwater from well BMW-3 had a cis 1,2-DCE concentration of 450 ug/l on November 10, 2016 (AMEC, November 2017 Remedial Investigation Report) and on January 15, 2019 had a value of 180 ug/l (AMEC, April 2019 Annual Monitoring Report).

- Vinyl Chloride was detected in water samples collected from all four basement monitoring wells with exceedances above the NY TOGS standard for BMW-3, and BMW-4. For comparison, the groundwater from well BMW-3 had a concentration of

140 ug/l of VC on November 10, 2016 (AMEC, November 2017 Remedial Investigation Report) and on January 15, 2019 had a value of 72 ug/l (AMEC, April 2019 Annual Monitoring Report).

Off-Site Sidewalk Sample Locations – The site-related VOCs contaminants, PCE, TCE, and cis 1.2-DCE, were detected on January 15, 2019 in the water sample from the downgradient monitoring well MW-6S (located in the sidewalk) at concentrations in the 14 to 32 ug/l range and below the NY TOG Standards in wells MW-5 and MW-6D (AMEC, April 2019 Annual Monitoring Report). Vinyl chloride was not detected in any of the downgradient sidewalk monitoring wells. The VOCs PCE, TCE, and cis 1,2-DCE, were detected at concentrations exceeding the NY TOGS Standard for the sample collected from well MW-6S. There were no detections above the NY TOGS standards for the upgradient monitoring well, MW-E.

Sampling of the off-site sidewalk wells for VOCs continued after the March 2020 PlumeStop® injection program in the basement was completed. The off-site wells were last sampled on March 15, 2023. In three of four wells, VOC concentrations were either stable or trending downward and had no exceedance of the groundwater standard. MW-6D, which has historically had the highest concentration of VOCs, showed fluctuations in VOC levels since 2018. The highest VOC detections were in well MW-6D.

The following Site-related COCs were detected in the March 15, 2023 sampling round: PCE at 45 ug/L; TCE at 17 ug/L and cis 1,2 DCE at 27 ug/L. Vinyl chloride was not detected. MTBE was detected in this well at 230 ug/L but is believed to be the result of petroleum related releases from upgradient gasoline filling stations. The data collected from the March 2023 sampling round is included in Table 10.

Metals

On-Site Basement Sample Locations – The laboratory data indicates site-related metal contaminants are still present in the groundwater, but at significantly lower concentrations than before the bio-remediation injection program. Cadmium was only detected in excess of the NY TOGS standard of 5 ug/l in the water sample collected on January 15, 2019 from well BMW-2 (AMEC, April 2019 Annual Monitoring Report).

Chromium was not detected in excess of the NY TOGS of 50 ug/l in any of the water samples collected from the basement monitoring wells. For comparison, the groundwater from well BMW-2 had a Chromium concentration of 775.1 ug/l on October 10, 2016 (AMEC, November 2017 Remedial Investigation Report) and on January 15, 2019 had a value of 2.04 ug/l (AMEC, April 2019 Annual Monitoring Report).

The naturally occurring metals iron, magnesium, manganese, and sodium were detected at concentrations in excess of the NY TOGS standards in the water samples collected from the basement monitoring wells. This is typical in urban areas like Queens.

Off-Site Sidewalk Sample Locations – The same naturally occurring metals detected above NY TOGS standards in the water samples collected from the basement monitoring wells – iron, magnesium, manganese and sodium -- were also detected in the wells located in the sidewalk. The site-related metal contaminants, cadmium, chromium and nickel, were not detected above the NY TOGS standards in the samples collected from the downgradient and upgradient sidewalk wells.

The January 2019 laboratory results for TAL metals are tabulated on Table 4B. A map depicting the concentrations of contaminants of concern for TAL Metals at each monitoring well location is included as Figure 6B.

Sampling of the off-site sidewalk wells for metals continued after the March 2020 PlumeStop® injection program in the basement was completed. The off-site wells were last sampled on March 15, 2023. Overall, the site-related metals displayed a steady decrease compared to post-remediation groundwater monitoring events completed after the December 2017 and March 2020 injection programs. None of the COC metals, cadmium, chromium and nickel, exceeded the groundwater standards.

The highest dissolved Cadmium detection was in well MW-6S at 0.24 ug/L and was undetected in the other Site wells. The highest dissolved Chromium detection was in well MW-6S at 0.37 ug/L. The highest dissolved Nickel detection was in well MW-6s at 50.3 ug/L. The data collected from the March 2023 sampling round is included in Table 11.

Per and Poly-Fluorinated Alkyl Substances (PFAS):

At the request of the NYSDEC, PFAS analysis was included in the 2018 sampling round (AMEC June 2018, October 2018 and January 2019). At the time those samples were collected and analyzed, there were no applicable New York State standards to compare PFAS levels. In May 2016, the United States Environmental Protection Agency (EPA) established a drinking water health advisory of 0.07 ppb for the combined concentrations of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) and 400 ppb for Perfluorobutane Sulfonate (PFBS). NYS has since established a groundwater standard of 0.010 ppb for both PFOS and PFOA.

The concertation of the combined value of PFOA and PFOS exceeded the EPA drinking water advisory and the NYS standard. The greatest concentrations were detected below the building in samples collected from basement monitoring wells BMW-3 and BMW-4, the wells that had historically displayed the highest VOC detections. None of the groundwater

results exceed the EPA drinking water advisory for PFBS. The laboratory analytical results for the sampling conducted in January 2019 display similar concentrations to those seen in the previous sampling event.

In July 2020, Plumestop® injections were conducted to remediate PFAS concentrations in the groundwater. Groundwater sampling results are not available at this time.

The January 2019 laboratory results for PFAS (AMEC, April 2019 Annual Monitoring Report) are tabulated on Table 4C. A map depicting the concentrations of PFOA, PFOS, and PFBS concentration at each monitoring well location is included as Figure 6C.

Tables 4A-4C and Figures 6A-6C summarize the results of all samples of groundwater that exceed the SCGs after completion of the remedial action.

Sampling of the off-site sidewalk wells for PFAS continued after the March 2020 PlumeStop® injection program in the basement was completed. The off-site wells were last sampled on March 15, 2023. Historically, PFAS levels were highest underneath the basement and decreased in the direction of the downgradient wells. Since the application of PlumeStop® in the basement of the former Hygrade Plating Site, the concentration of PFOA and PFOS has declined in all four wells but are still in exceedance of New York State drinking water standards of 0.010 ug/L. MW-6D had highest detections of PFOA at 0.0608 ug/L and PFOS at 0.387 ug/L. The data collected from the March 2023 sampling round is included on Table 12.

Based on the sampling frequency outlined in the October 2020 SMP and the concentrations displayed in the off-site monitoring well samples, the NYSDEC agreed that additional groundwater monitoring would not be required beyond the March 15, 2023 sampling event.

2.5.4 Surface Water

There are no surface waters impacted by this site.

2.5.5 Soil Vapor

Six initial samples were analyzed using EPA method TO-15 during the Remedial Investigation in 2016 (AMEC, November 2017 Remedial Investigation Report). Results of the VOC analyses from each sample point were tabulated and presented on Table 5A. These results included detections of PCE, TCE, cis-1,2-DCE and vinyl chloride in the 1 to 200 ug/m^3 range. Of these compounds, only TCE was detected above the NYSDOH October 2006 Matrix A, B and C mitigation guidance concentrations.

Several BTEX and BTEX-related compounds were also detected in the 1 to 100 ug/m^3 range. A Sub-Slab Depressurization system was installed in the basement in 2018.

In March of 2018, a pilot test was run to test the Sub-Slab Depressurization (SSD) System. As a part of this test, one sub-slab soil vapor sample was taken. Results of the VOC analyses from the pilot test were tabulated and presented on Table 5B. These results included detections of PCE, TCE, cis-1,2-DCE and vinyl chloride in the 18 to 2500 ug/m^3 range. Tables 5A and Figure 7 summarize the results of all samples of soil vapor that exceed the SCGs after completion of the remedial action.

Most recent indoor air sample results from the winter 2025-2026 sampling event do not exhibit exceedances of NYSDOH indoor air guidelines. The chlorinated solvents carbon tetrachloride (0.55 µg/m^3) and tetrachloroethylene (PCE, 0.35 µg/m^3) were detected at concentrations below their respective NYSDOH guidance values and were not considered a concern. The compound 1,2-dichloroethane (1,2-DCA) was detected at a concentration of 125 µg/m^3, representing a significant increase from the concentration of 2.77 µg/m^3 detected in 2025 and 4.17 detected in 2024. The NYSDOH has not established an indoor air guidance value for 1,2-DCA. Additional details regarding indoor air sampling results can be found in the 2026 PRR.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- 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;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix D for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the RAWP to:

(1) implement, maintain and monitor the Engineering Control systems;

(2) prevent future exposure to remaining contamination; and,

(3) limit the use and development of the site to commercial and industrial uses only.

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 the same as the property boundaries and are shown on Figure 9.

These Institutional Controls are:

- The property may be used for: commercial or industrial use only.
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens 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
- Groundwater and other environmental or public health 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;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall 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.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 8, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the site are prohibited;

3.3 Engineering Controls

3.3.1 Cover (or Cap)

The property is entirely covered by the building slab and paved surfaces. These represent the site cover system for the project.

3.3.2 Sub-slab Depressurization Systems

A sub-slab depressurization (SSD) system was installed to prevent the migration of soil vapor through the concrete slab. Details of the SSD system are included in Appendix F, the layout of the vapor barrier and SSD system is included in Figure 9 of this report.

The SSD system was installed in the basement of the property, a trench that was approximately one foot in depth was dug in the center of the basement and a 4-inch diameter perforated PVC pipe surrounded by filter fabric for a SSD system was then installed. Vacuum monitoring points were installed along the perimeter of the basement shown in Figure 4. The PVC was surrounded with ¾" diameter screened gravel and was covered in a 20-mil vapor barrier manufactured by Stego and all seams and utility penetrations were sealed with tape and mastic provided by the manufacturer. An 8-inch concrete slab was then poured over the vapor barrier

On the roof of the property, a four-inch diameter sheet metal riser was extended from the vent pipe to the roof shown in Figure F-1. The risers were anchored to the ceiling of the basement and the wall of the western staircase using pipe hangers, channel strut and metal clamps. An electrical connection was completed along with a weather tight on/off switch. A vacuum switch and sample port were installed within the duct work as well.

Procedures for operating and maintaining the SSD System are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). Record drawings, signed and sealed by a professional engineer, are included in Appendix F – Operations and Maintenance Manual. Figure 9 shows the location of the ECs for the site.

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH. In the event that monitoring data indicates that the SSD system may no longer be required, a proposal to discontinue the SSD system will be submitted by the remedial party to the NYSDEC and NYSDOH.

3.3.3 Monitoring Wells associated with Monitored Natural Attenuation

A total of five monitoring wells were installed offsite. The locations of these monitoring wells are shown in Figure 2. Wells were installed 20 – 25 ft below grade or 10 ft below the groundwater table. Construction of the well consists of 15 ft of 2-inch diameter 0.020-inch slotted schedule 40 PVC screen and 10 ft of 2-inch diameter schedule 40 riser. The gravel pack of each well consists of No. 2 sand up to 2 ft above the screen, followed by a 2 ft bentonite seal and the remaining annular space will be comprised of backfill. Each well is finished with a watertight J-plug and a bolt down manhole cemented flush to grade. After construction of the well is finished, it will be developed and after a period of two weeks ready for low flow ground water sampling.

Monitoring data from the 2022-2023 monitoring period indicated that monitoring for natural attenuation may no longer be required, and a proposal to discontinue the system was submitted by the remedial party in 2023. Groundwater monitoring activities to assess natural attenuation were discontinued as of July 2023, as determined and granted in writing by the NYSDEC (see Appendix L), with consultation with the NYSDOH, as residual groundwater concentrations are found to be consistently below ambient water quality standards, the site SCGs, or have become asymptotic at an acceptable level over an extended period. Groundwater sampling is no longer required. Monitoring wells have not been decommissioned.

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. 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 G.

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

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; 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;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

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. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect the ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix H – 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;
- 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 PRR. 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; and

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 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 determined by the

NYSDEC. Written confirmation must be provided to the NYSDEC 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.

4.3 Treatment System Monitoring and Sampling

4.3.1 Remedial System Monitoring

Monitoring of the Sub-Slab Depressurization System will be performed continuously by means of an on-site alarm and in-person on an annual basis, as identified in Table 6 Remedial System Monitoring Requirements and Schedule (see below). Modification to the frequency or sampling requirements will require approval from the NYSDEC. A visual inspection of the complete system will be conducted during each monitoring event. Unscheduled inspections and/or sampling may take place when a suspected failure of the Sub-Slab Depressurization System has been reported, or an emergency occurs that is deemed likely to affect the operation of the system. Sub-Slab Depressurization System components to be monitored include, but are not limited to, the components included in Table 6 below.

Table 6 – Remedial System Monitoring Requirements and Schedule

Remedial System Component	Monitoring Parameter	Operating Range	Monitoring Schedule
SSD System Fan	Vacuum in riser pipe	1.0 to 1.1 inches of water	Annually, in person, 24 hrs. a day/7 days a week, remotely
SSD System duct work	Condition during inspection (circle one)	Excellent, Good, Needs Repair	Annually, in person
Vacuum Monitoring Points (VMPs)	Vacuum in Points VMP-1, VMP-2, VMP-3 and VMP-4 (see Figure 10)	Excellent, Good, Needs Repair	Annually, in person
Concrete Slab Cover System	Condition during inspection (circle one)	Excellent, Good, Needs Repair	Annually, in person

There are no components of the SSD system that require regular maintenance service. A DAR analysis was performed in 2018 and confirmed off gas treatment was not required. There are no filters to change or components that require lubrication. Should the fan fail to operate, it will be removed, and a new fan of similar capacity should be installed in its

place by a licensed electrician. In this case, performance of the system start-up procedure will be documented as part of a Corrective Measures Work Plan and reported in the PRR.

A complete list of components to be inspected is provided in the Inspection Checklist, provided on Table 6. If any equipment readings are not within their specified operation range, any equipment is observed to be malfunctioning or the system is not performing within specifications; maintenance and repair, as per the Operation and Maintenance Plan, is required immediately.

4.3.2 Remedial System Sampling

Samples are not required to be collected from the SSD System.

4.4 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the basement indoor air on an annual basis. The sampling locations required analytical parameters and schedule are provided in Table 7 – Remedial System Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table 7 – Post Remediation Sampling Requirements and Schedule

Sampling Location	Analytical Parameters				Schedule
	VOCs (EPA Method 8260)	TAL Metals (EPA Method 6020)	PFAS	VOC (EPA Method TO-15)	
Monitoring Wells: MW-5, WM-6S, MW-6D & MW-E	X	X	X		No longer required
Basement Indoor Air				X	Annually during the winter heating season. Frequency will not change without NYSDEC and NYSDOH approval.

Detailed sample collection and analytical procedures and protocols are provided in Appendix I – Field Activities Plan and Appendix G – Quality Assurance Project Plan.

4.4.1 Groundwater Sampling

Groundwater monitoring was performed semi-annually for 2 years following the PlumeStop® injections, and then annually for 1 year with the results reported to the NYSDEC. Based on those results, the NYSDEC no longer requires groundwater monitoring at the Site and the monitoring wells have been decommissioned.

Table 8 summarizes the Well identification numbers, as well as the purpose, location, depths, diameter and screened intervals of the wells that were sampled. They were decommissioned in 2023, details are included in a Field Activities Summary Report (Eric A. Weinstock, PG, PC September 2023) which is attached as Appendix K.

Table 8 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Coordinates (Northing/ Easting)	Well Dia. (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-E	Upgradient	213681.48 /1000677.58	1	16.21	16.32	6.32	-3.68
MW-5	Downgradient	213856.41 /10005252.37	2	14.50	14.79	6.79	-3.21
MW-6S	Downgradient	213817.08/ 1000524.04	2	14.09	14.49	5.99	-4.01
MW-6D	Downgradient	213815.21 /1000525.05	2	14.18	14.42	-7.58	-17.58

Monitoring well construction logs are included in Appendix C of this document.

4.4.2 Soil Vapor Sampling

Soil vapor sampling will not be performed as part of this SMP.

4.4.3 Indoor Air Sampling

Indoor air sampling will be performed annually during the winter months to assess the performance of the remedy. The sampling will be performed during the annual site visit to check and confirm that the fan and associated duct work are working properly. During the annual visit, one indoor air sample will be collected in the basement using a SUMMA canister with a regulator set to fill over an approximate 8-hour period. The sample will be analyzed using EPA method TO-15. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of on-site indoor air sample locations has been designed based on the following criteria:

The basement is the nearest accessible space to the SSD system.

4.4.4 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix H - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional details regarding monitoring and sampling protocols are provided in the site-specific Field Activities Plan provided as Appendix I of this document.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

This Operation and Maintenance Plan provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the site to operate and maintain the Sub-Slab Depressurization system;
- Will be updated periodically to reflect changes in site conditions or the manner in which the Sub-Slab Depressurization system is operated and maintained.

Further details regarding the Operation and Maintenance of the Sub-Slab Depressurization system are provided in Appendix F - Operation and Maintenance Manual. A copy of this Operation and Maintenance Manual, along with the complete SMP, is to be maintained at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP.

5.2 Remedial System (or other Engineering Control) Performance Criteria

The performance criteria for the SSD system will be to maintain a vacuum of at least 0.004 inches of water vacuum below the basement slab.

5.3 Operation and Maintenance of Sub-slab Depressurization System

The following sections provide a description of the operations and maintenance of the Sub-slab Depressurization System. Cut-sheets and as-built drawings for SSDS are provided in Appendix F - Operations and Maintenance Manual.

There are no components of the SSD system that require regular maintenance service. There are no filters to change or components that require lubrication. Should the fan fail to operate, it should be removed, and a new fan of similar capacity should be installed in its place by a licensed electrician.

Sentry Communications & Security was contracted to connect a low vacuum alarm system to the riser duct. In the event that the fan fails, the central station will be alerted and will contact the owner of the building. A visual light was also installed in the basement staircase to alert current occupants if the system fails and there is no vacuum in the riser pipe. The phone number to call for service is mounted by the light. At the time this SMP was prepared, the central station password for the SSD alarm was Duraspec.

5.3.1 Non-Routine Operation and Maintenance

In the event that the fan fails, the central station will be alerted, and they will contact the owner of the building. A visual light was also installed in the basement staircase to alert current occupants if the system fails and there is no vacuum in the riser pipe. The phone number to call for service is mounted by the light.

5.3.2 System Monitoring Devices and Alarms

To turn off the alarm, enter the following code on the keypad: **1 2 3 4 1**. Repeat this action twice and then press #3 in order to re-arm the system.

In the event of a false alarm or to test the alarm, contact central station at (718-494-6798) and provide them with the following information and request that the alarm be turned off until troubleshooting is completed. The system is set up to not alert the police or the fire department.

Remove the vacuum hose connecting the vacuum switch to the sheet metal duct to test the alarm. Reconnect the vacuum hose after the test

Central Station Account #: 37-3344

Central Station Password: Duraspec

A relay contact is attached from the vacuum switch to the control panel and monitors if no vacuum is present in the riser duct.

Should a decrease in vacuum be noticed in the riser duct, these steps will be taken before resorting to a replacement fan:

- Ensure fan is running
- Check for leaks in joints and duct work

The SSD system has warning devices to indicate that the system is not operating properly. In the event that the warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the PRR to be prepared for that reporting period.

5.3.3 Routine System Operation and Maintenance

The SSD fans have no filters and do not require any lubrication. As such, there is no scheduled maintenance required. In the event the fan fails, an electrician will be hired to replace the unit with one of a similar make and model.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

The only vulnerable aspect of the system with respect to climate change is the fan and duct located on the roof.

This section provides a summary of vulnerability assessments that will be conducted for the site during periodic assessments and briefly summarizes the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding.

High velocity wind could cause damage to the fan and duct work on the roof. Therefore, a visual inspection of the fan and roof top duct work is recommended after a hurricane, tropical storm or other high wind event.

Electrical outages will turn off the fan as well and trip the alarm. The breaker for the rooftop outlet in which the fan is wired into is located on the panel next to the elevator in the basement. The #10 switch operates the rooftop GFI circuit which operates the fan.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management, and as reported in the PRR.

Recycle Concrete Aggregate (RCA) screened to ¾-inch diameter was used for the installation of the SSD system sub-slab piping. The fan selected is less than 1 HP and is very energy efficient. The remedy selected for this site does not lend itself to any additional green remediation alternatives.

6.2.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities.

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the PRR.

6.2.2. Remedial Systems

Remedial systems will be operated properly considering the current site conditions to conserve materials and resources to the greatest extent possible. Consideration will be given to operating rates.

6.2.3 Building Operations

Structures including buildings and sheds will be operated and maintained to provide for the most efficient operation of the remedy, while minimizing energy, waste generation and water consumption.

6.2.4 Frequency of System Checks, Sampling and Other Periodic Activities

Transportation to and from the Site and use of consumables in relation to visiting the Site to conduct system checks and/or collect samples and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact the remedy protectiveness but reduces expenditure of energy or resources.

6.2.5 Metrics and Reporting

The size of the remediation equipment installed at this site does not merit the reporting of green remediation metrics.

6.3 Remedial System Optimization

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed.

An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

7.0 REPORTING REQUIREMENTS

7.1 Site Management Reports

A Site Management Report will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial report, the next Site Management Report shall be submitted annually to the Department or at another frequency as may be required by the Department.

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix H. These forms are subject to NYSDEC revision.

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 9 and summarized in the PRR.

Table 9: Schedule of Interim Reporting Summary/Schedule

Task/Report	Reporting Frequency*
Site Management Report	Annually, or as otherwise determined by the Department
Periodic Review Report	Annually, or as otherwise determined by the Department

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

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, etc.);

- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- 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

A PRR will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial PRR, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department.

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 B - 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 and severe condition inspections, if applicable.

- 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.

- 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 will include a presentation of past data as part of an evaluation of contaminant concentration trends.

- 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^{TM} 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 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; and

  - Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.

  - The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State (depending on the need to evaluate engineering systems) 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 site management plan 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.*

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, Robert Birnbaum, of 100 Field Street, West Babylon, NY, 11704, am certifying as Owner/Remedial Party for the site."

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

The signed certification will be included in the PRR.

The PRR will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The PRR may need to be submitted in hard-copy format, as 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, a Corrective Measures Work Plan will be submitted to the NYSDEC 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.

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed (see Section 6.3, upon completion of an RSO, an RSO report must be submitted to the Department for approval. A general outline for the RSO report is not provided. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

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

AMEC (May 2017) Interim Remedial Measure Plan, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (November 2017) Remedial Investigation Report, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (June 2018) 2018 First Quarterly Groundwater Monitoring Report, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (October 2018) 2018 Second Quarterly Groundwater Monitoring Report, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (January 2019) 2018 Third Quarterly Groundwater Monitoring Report, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (July 2018) Interim Remedial Measures Construction Completion Report, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (April 2019) 2019 Annual Monitoring Report, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (December 2019) Remedial Action Work Plan, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

AMEC (April 2020) Final Engineering Report, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

CA RICH (September 2013) RCRA Closure Plan, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101 (August 2018 addendum)

CA RICH (June 2016) Remedial Investigation Work Plan, Former Hygrade Polishing and Plating Site, 22-07 41st Avenue, Long Island City, NY BCP Site No.: C241148.

Eric A. Weinstock, PG, PC (July 2023) 2023 Periodic Review Report, Former Hygrade Polishing and Plating Site, 22-07 41st Avenue, Long Island City, NY

Eric A. Weinstock, PG, PC (September 2023) Field Activities Summary Report, Former Hygrade Polishing and Plating Site, 22-07 41st Avenue, Long Island City, NY

IRT (May 2013) Final Report for the Limited Remediation of the Former Double E Plating Facility

IRT (August 2014) Supplemental Report for the Former Double E Plating Facility

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation", May 2010

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

Julian Soren (February 1978) Subsurface Geology and Paleogeography of Queens County, Long Island, NY USGS Water-Resources Investigation 77-34, Open-File Report.

Wendi Zheng (July 2023) Site Management Periodic Review Report Response Letter, Former Hygrade Polishing and Plating Co., 22-07 41st Avenue, Long Island City, NY 11101

TABLES

TABLE 2: ELEVATIONS OF MONITORING WELLS AND WATER TABLE
FORMER HYGRADE
LONG ISLAND CITY, NEW YORK

Well ID Number	Elevation of Top of Casing (ft. MSL)	Depth to Water (ft.) in January 2019	Water Table Elevation (ft. MSL)	Depth to Top of Screen Interval (ft.)	Depth to Bottom of Screen Interval (ft.)	Elevation of Top of Screen (ft. MSL)	Elevation of Bottom of Screen Interval (ft. MSL)
MW-E	16.21	8.90	7.31	5	15	11.2	1.2
BMW-1	7.52	1.95	5.57	1	6	6.5	1.5
BMW-2	7.57	1.69	5.88	2.5	7.5	5.1	0.1
BMW-3	7.42	2.10	5.32	3.5	8.5	3.9	-1.1
BMW-4	7.40	1.75	5.65	4.6	9.6	2.8	-2.2
MW-5	14.50	8.09	6.41	8	18	6.5	-3.5
MW-6S	14.09	8.05	6.04	8.5	18.5	5.6	-4.4
MW-6D	14.18	8.00	6.18	26.5	31.5	-12.3	-17.3

TABLE 3A: SOIL BORING VOCs ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE ID:			SB-1 (2')		SB-2 (6')		SB-2 (X)		SB-3 (4')		SB-4 (6')		SB-5 (3')		SB-6 (6')		SB-6 (7')	
SAMPLE DEPTH:			2'		6'		6'		4'		6'		3'		6'		7	
COLLECTION DATE:			10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016	
SAMPLE MATRIX:			SOIL - Fill		SOIL - Native		SOIL - Native		SOIL - Fill		SOIL - Native		SOIL - Fill		SOIL - Native		SOIL - Native	
ANALYTE (ppb)	**NY-RESC**	**NY-UNRES**	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Volatile Organics by GC/MS-8260																		
Methylene chloride	500000	50	ND		ND		ND		1.5	J	ND		ND		ND		ND	
1,1-Dichloroethane	240000	270	ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	350000	370	ND		ND		ND		ND		ND		ND		ND		ND	
Carbon tetrachloride	22000	760	ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloropropane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Dibromochloromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	150000	1300	ND		0.16	J	ND		ND		1.6		ND		ND		ND	
Chlorobenzene	500000	1100	ND		ND		ND		ND		ND		ND		ND		ND	
Trichlorofluoromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethane	30000	20	ND		ND		ND		ND		ND		ND		ND		ND	
1,1,1-Trichloroethane	500000	680	ND		ND		ND		ND		ND		ND		ND		ND	
Bromodichloromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
trans-1,3-Dichloropropene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,3-Dichloropropene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,3-Dichloropropene, Total	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloropropene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Bromoform	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Benzene	44000	60	ND		ND		ND		ND		ND		ND		ND		ND	
Toluene	500000	700	ND		ND		ND		0.26	J	ND		ND		12	J	ND	
Ethylbenzene	390000	1000	ND		ND		ND		ND		ND		ND		ND		ND	
Chloromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Bromomethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Vinyl chloride	13000	20	ND		ND		ND		ND		0.36	J	ND		ND		ND	
Chloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethene	500000	330	ND		ND		ND		ND		ND		ND		ND		ND	
trans-1,2-Dichloroethene	500000	190	ND		ND		ND		ND		ND		ND		ND		ND	
Trichloroethene	200000	470	ND		ND		ND		ND		0.96	J	ND		ND		ND	
1,2-Dichlorobenzene	500000	1100	ND		ND		ND		ND		ND		ND		ND		ND	
1,3-Dichlorobenzene	280000	2400	ND		ND		ND		ND		ND		ND		ND		ND	
1,4-Dichlorobenzene	130000	1800	ND		ND		ND		ND		ND		ND		ND		ND	
Methyl tert butyl ether	500000	930	ND		ND		ND		ND		ND		ND		ND		ND	
p/m-Xylene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
o-Xylene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Xylenes, Total	500000	260	ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,2-Dichloroethene	500000	250	ND		ND		ND		ND		1.4		ND		ND		ND	
1,2-Dichloroethene, Total	NS	NS	ND		ND		ND		ND		1.4		ND		ND		ND	

Notes:

ppb	parts per billions
ND	Not Detected
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-RESC	New York Restricted Commercial Criteria use
NY-UNRES	New York Unrestricted Criteria use

Prepared By: JCL | Checked By: EAW

TABLE 3A: SOIL BORING VOCs ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE ID:			SB-1 (2')		SB-2 (6')		SB-2 (X)		SB-3 (4')		SB-4 (6')		SB-5 (3')		SB-6 (6')		SB-6 (7')	
SAMPLE DEPTH:			2'		6'		6'		4'		6'		3'		6'		7	
COLLECTION DATE:			10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016		10/13/2016	
SAMPLE MATRIX:			SOIL - Fill		SOIL - Native		SOIL - Native		SOIL - Fill		SOIL - Native		SOIL - Fill		SOIL - Native		SOIL - Native	
ANALYTE (ppb)	**NY-RESC**	**NY-UNRES**	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Volatile Organics by GC/MS-8260																		
Dibromomethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Styrene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Dichlorodifluoromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Acetone	500000	50	12		2.1	J	4	J	5.5	J	2.5	J	7	J	ND		12	
Carbon disulfide	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
2-Butanone	500000	120	ND		ND		ND		ND		ND		ND		ND		ND	
Vinyl acetate	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
4-Methyl-2-pentanone	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,2,3-Trichloropropane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
2-Hexanone	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Bromochloromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
2,2-Dichloropropane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dibromoethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,3-Dichloropropane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,1,1,2-Tetrachloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Bromobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
n-Butylbenzene	500000	12000	ND		ND		ND		ND		ND		ND		440		ND	
sec-Butylbenzene	500000	11000	ND		ND		ND		ND		ND		ND		380		0.17	J
tert-Butylbenzene	500000	5900	ND		ND		ND		ND		ND		ND		72	J	ND	
o-Chlorotoluene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
p-Chlorotoluene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dibromo-3-chloropropane	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Hexachlorobutadiene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Isopropylbenzene	NS	NS	ND		ND		ND		ND		ND		ND		53	J	ND	
p-Isopropyltoluene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
Naphthalene	500000	12000	ND		ND		ND		ND		ND		ND		ND		ND	
Acrylonitrile	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
n-Propylbenzene	500000	3900	ND		ND		ND		ND		ND		ND		100		ND	
1,2,3-Trichlorobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,2,4-Trichlorobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,3,5-Trimethylbenzene	190000	8400	ND		ND		ND		ND		ND		ND		ND		ND	
1,2,4-Trimethylbenzene	190000	3600	ND		ND		ND		ND		ND		ND		ND		ND	
1,4-Dioxane	130000	100	ND		ND		ND		ND		ND		ND		ND		ND	
p-Diethylbenzene	NS	NS	ND		ND		ND		ND		ND		ND		270		ND	
p-Ethyltoluene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
1,2,4,5-Tetramethylbenzene	NS	NS	ND		ND		ND		ND		ND		ND		1200		0.13	J
Ethyl ether	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	
trans-1,4-Dichloro-2-butene	NS	NS	ND		ND		ND		ND		ND		ND		ND		ND	

Notes:

ppb	parts per billions
ND	Not Detected
	Sample SB-2 (X) is a duplicate of SB-2 (6')
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-RESC	New York Restricted Commercial Criteria use
NY-UNRES	New York Unrestricted Criteria use

Prepared By: JCL | Checked By: EAW

TABLE 3B: SOIL BORING SVOCs ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE ID:			SB-2 (COMP)		SB-2 (XCOMP)		SB-6 (COMP)	
COLLECTION DATE:			10/13/2016		10/13/2016		10/13/2016	
SAMPLE MATRIX:			SOIL		SOIL		SOIL	
ANALYTE (ppb)	NY-RESC	NY-UNRES	Conc	Qual	Conc	Qual	Conc	Qual
Semivolatile Organics by GC/MS								
Acenaphthene	500000	20000	ND		ND		90	J
1,2,4-Trichlorobenzene	NS	NS	ND		ND		ND	
Hexachlorobenzene	6000	330	ND		ND		ND	
Bis(2-chloroethyl)ether	NS	NS	ND		ND		ND	
2-Chloronaphthalene	NS	NS	ND		ND		ND	
1,2-Dichlorobenzene	500000	1100	ND		ND		ND	
1,3-Dichlorobenzene	280000	2400	ND		ND		ND	
1,4-Dichlorobenzene	130000	1800	ND		ND		ND	
3,3'-Dichlorobenzidine	NS	NS	ND		ND		ND	
2,4-Dinitrotoluene	NS	NS	ND		ND		ND	
2,6-Dinitrotoluene	NS	NS	ND		ND		ND	
Fluoranthene	500000	100000	ND		ND		ND	
4-Chlorophenyl phenyl ether	NS	NS	ND		ND		ND	
4-Bromophenyl phenyl ether	NS	NS	ND		ND		ND	
Bis(2-chloroisopropyl)ether	NS	NS	ND		ND		ND	
Bis(2-chloroethoxy)methane	NS	NS	ND		ND		ND	
Hexachlorobutadiene	NS	NS	ND		ND		ND	
Hexachlorocyclopentadiene	NS	NS	ND		ND		ND	
Hexachloroethane	NS	NS	ND		ND		ND	
Isophorone	NS	NS	ND		ND		ND	
Naphthalene	500000	12000	ND		ND		ND	
Nitrobenzene	69000	NS	ND		ND		ND	
NDPA/DPA	NS	NS	ND		ND		ND	
n-Nitrosodi-n-propylamine	NS	NS	ND		ND		ND	
Bis(2-ethylhexyl)phthalate	NS	NS	ND		ND		64	J
Butyl benzyl phthalate	NS	NS	ND		ND		ND	
Di-n-butylphthalate	NS	NS	ND		ND		ND	
Di-n-octylphthalate	NS	NS	ND		ND		ND	
Diethyl phthalate	NS	NS	ND		ND		ND	
Dimethyl phthalate	NS	NS	ND		ND		ND	
Benzo(a)anthracene	5600	1000	ND		ND		ND	
Benzo(a)pyrene	1000	1000	ND		ND		ND	
Benzo(b)fluoranthene	5600	1000	ND		ND		ND	
Benzo(k)fluoranthene	56000	800	ND		ND		ND	
Chrysene	56000	1000	ND		ND		ND	
Acenaphthylene	500000	100000	ND		ND		59	J
Anthracene	500000	100000	ND		ND		43	J
Benzo(ghi)perylene	500000	100000	ND		ND		ND	
Fluorene	500000	30000	ND		ND		140	J
Phenanthrene	500000	100000	ND		ND		270	
Dibenzo(a,h)anthracene	560	330	ND		ND		ND	
Indeno(1,2,3-cd)pyrene	5600	500	ND		ND		ND	
Pyrene	500000	100000	ND		ND		57	J
Biphenyl	NS	NS	ND		ND		ND	
4-Chloroaniline	NS	NS	ND		ND		ND	
2-Nitroaniline	NS	NS	ND		ND		ND	
3-Nitroaniline	NS	NS	ND		ND		ND	
4-Nitroaniline	NS	NS	ND		ND		ND	
Dibenzofuran	350000	7000	ND		ND		ND	
2-Methylnaphthalene	NS	NS	ND		ND		340	
1,2,4,5-Tetrachlorobenzene	NS	NS	ND		ND		ND	
Acetophenone	NS	NS	ND		ND		ND	
2,4,6-Trichlorophenol	NS	NS	ND		ND		ND	
p-Chloro-m-cresol	NS	NS	ND		ND		ND	
2-Chlorophenol	NS	NS	ND		ND		ND	
2,4-Dichlorophenol	NS	NS	ND		ND		ND	
2,4-Dimethylphenol	NS	NS	ND		ND		ND	
2-Nitrophenol	NS	NS	ND		ND		ND	
4-Nitrophenol	NS	NS	ND		ND		ND	
2,4-Dinitrophenol	NS	NS	ND		ND		ND	
4,6-Dinitro-o-cresol	NS	NS	ND		ND		ND	
Pentachlorophenol	6700	800	ND		ND		ND	
Phenol	500000	330	ND		ND		ND	
2-Methylphenol	500000	330	ND		ND		ND	
3-Methylphenol/4-Methylphenol	500000	330	ND		ND		ND	
2,4,5-Trichlorophenol	NS	NS	ND		ND		ND	
Benzoic Acid	NS	NS	ND		ND		ND	
Benzyl Alcohol	NS	NS	ND		ND		ND	
Carbazole	NS	NS	ND		ND		ND	

Notes:

ppb	parts per billions
ND	Not Detected
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-RESC	New York Restricted Commercial Criteria use
NY-UNRES	New York Unrestricted Criteria use

Sample SB-2 (XCOMP) is a duplicate of SB-2 (COMP)

Prepared By: JCL | Checked By: EAW

TABLE 3C: SOIL BORING TAL METALS ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE ID:			SB-2 (COMP)		SB-2 (XCOMP)		SB-6 (COMP)	
COLLECTION DATE:			10/13/2016		10/13/2016		10/13/2016	
SAMPLE MATRIX:			SOIL		SOIL		SOIL	
ANALYTE (ppb)	**NY-RESC**	**NY-UNRES**	Conc	Qual	Conc	Qual	Conc	Qual
Total Metals								
Aluminum, Total	NS	NS	3200000		2500000		3200000	
Antimony, Total	NS	NS	ND		ND		ND	
Arsenic, Total	16000	13000	520	J	630	J	780	J
Barium, Total	400000	350000	29000		110000		13000	
Beryllium, Total	590000	7200	100	J	70	J	60	J
Cadmium, Total	9300	2500	ND		ND		ND	
Calcium, Total	NS	NS	3000000		2500000		1600000	
Chromium, Total	NS	NS	10000		7900		12000	
Cobalt, Total	NS	NS	3100		2300		1800	
Copper, Total	270000	50000	8000		6000		5800	
Iron, Total	NS	NS	6700000		5400000		4100000	
Lead, Total	1000000	63000	2900	J	2400	J	2800	J
Magnesium, Total	NS	NS	2900000		1800000		1200000	
Manganese, Total	10000000	1600000	200000		110000		49000	
Mercury, Total	2800	180	ND		ND		ND	
Nickel, Total	310000	30000	11000		6600		6000	
Potassium, Total	NS	NS	890000		610000		300000	
Selenium, Total	1500000	3900	ND		ND		ND	
Silver, Total	1500000	2000	ND		ND		ND	
Sodium, Total	NS	NS	200000		180000		64000	J
Thallium, Total	NS	NS	ND		ND		ND	
Vanadium, Total	NS	NS	9900		8400		8600	
Zinc, Total	10000000	109000	16000		12000		13000	

Notes:

ppb	parts per billions
ND	Not Detected
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-RESC	New York Restricted Commercial Criteria use
NY-UNRES	New York Unrestricted Criteria use

Sample SB-2 (XCOMP) is a duplicate of SB-2 (COMP)

Prepared By: JCL

Checked By: EAW

TABLE 3D: SOIL BORING PESTICIDES ANALYTICAL RESLTS
22-07 41st Avenue, Long Island City, NY

SAMPLE ID:			SB-2 (COMP)		SB-2 (XCOMP)		SB-6 (COMP)	
COLLECTION DATE:			10/13/2016		10/13/2016		10/13/2016	
SAMPLE MATRIX:			SOIL		SOIL		SOIL	
ANALYTE (ppb)	**NY-RESC**	**NY-UNRES**	Conc	Qual	Conc	Qual	Conc	Qual
Organochlorine Pesticides by GC								
Delta-BHC	500000	40	ND		ND		ND	
Lindane	9200	100	ND		ND		ND	
Alpha-BHC	3400	20	ND		ND		ND	
Beta-BHC	3000	36	ND		ND		ND	
Heptachlor	15000	42	ND		ND		ND	
Aldrin	680	5	ND		ND		ND	
Heptachlor epoxide	NS	NS	ND		ND		ND	
Endrin	89000	14	ND		ND		ND	
Endrin aldehyde	NS	NS	ND		ND		ND	
Endrin ketone	NS	NS	ND		ND		ND	
Dieldrin	1400	5	ND		ND		ND	
4,4'-DDE	62000	3.3	ND		ND		ND	
4,4'-DDD	92000	3.3	ND		ND		ND	
4,4'-DDT	47000	3.3	ND		ND		ND	
Endosulfan I	200000	2400	ND		ND		ND	
Endosulfan II	200000	2400	ND		ND		ND	
Endosulfan sulfate	200000	2400	ND		ND		ND	
Methoxychlor	NS	NS	ND		ND		ND	
Toxaphene	NS	NS	ND		ND		ND	
cis-Chlordane	24000	94	ND		ND		ND	
trans-Chlordane	NS	NS	ND		ND		ND	
Chlordane	NS	NS	ND		ND		ND	

Notes:

ppb	parts per billions
ND	Not Detected
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-RESC	New York Restricted Commercial Criteria use
NY-UNRES	New York Unrestricted Criteria use

Sample SB-2 (XCOMP) is a duplicate of SB-2 (COMP)

Prepared By: JCL	Checked By: EAW

TABLE 3E: SOIL BORING PCBs ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE ID:			SB-2 (COMP)		SB-2 (XCOMP)		SB-6 (COMP)	
COLLECTION DATE:			10/13/2016		10/13/2016		10/13/2016	
SAMPLE MATRIX:			SOIL		SOIL		SOIL	
ANALYTE (ppb)	**NY-RESC**	**NY-UNRES**	Conc	Qual	Conc	Qual	Conc	Qual
Polychlorinated Biphenyls by GC								
Aroclor 1016	1000	100	ND		ND		ND	
Aroclor 1221	1000	100	ND		ND		ND	
Aroclor 1232	1000	100	ND		ND		ND	
Aroclor 1242	1000	100	ND		ND		ND	
Aroclor 1248	1000	100	ND		ND		ND	
Aroclor 1254	1000	100	ND		ND		ND	
Aroclor 1260	1000	100	ND		ND		ND	
Aroclor 1262	1000	100	ND		ND		ND	
Aroclor 1268	1000	100	ND		ND		ND	
PCBs, Total			ND		ND		ND	

Notes:

ppb	parts per billions
ND	Not Detected
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-RESC	New York Restricted Commercial Criteria use
NY-UNRES	New York Unrestricted Criteria use

Sample SB-2 (XCOMP) is a duplicate of SB-2 (COMP)

Prepared By: JCL	Checked By: EAW

TABLE 4A: GROUNDWATER VOCs ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE LOCATION ID:		BMW-1		BMW-2		BMW-3		BMW-4		MW-5		MW-6S		MW-6D		MW-E		DUPLICATE*	
COLLECTION DATE:		1/15/2019		1/15/2019		1/15/2019		1/15/2019		1/14/2019		1/14/2019		1/14/2019		1/14/2019		1/15/2019	
LOCATION:		BASEMENT		BASEMENT		BASEMENT		BASEMENT		SIDEWALK -		SIDEWALK -		SIDEWALK -		SIDEWALK -		BASEMENT	
DEPTH (ft):		1-6		2.5-7.5		3.5-8.5		3.5-8.5		8-18		8-18		26-31		8-18		3.5-8.5	
SAMPLE MATRIX:		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
ANALYTE (ppb)	**NY-AWQS**	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Volatile Organics by GC/MS-8260																			
Methylene chloride	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,1-Dichloroethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Chloroform	7	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	**0.75**	J	2.5	U	2.5	U
Carbon tetrachloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U	2.5	U	1	U	1	U	1	U
Dibromochloromethane	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	1	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	3.8	U	1.5	U	1.5	U	1.5	U
Tetrachloroethene	5	**0.6**		**1.4**		**0.99**		**5.8**		**0.55**		**32**		**0.48**	J	0.5	U	**5.9**	
Chlorobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Trichlorofluoromethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**0.52**	J	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Bromodichloromethane	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropene, Total	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Bromoform	50	2	U	2	U	2	U	2	U	2	U	5	U	2	U	2	U	2	U
1,1,2,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
Benzene	1	0.5	U	**0.23**	J	**14**		**1.6**		0.5	U	1.2	U	0.5	U	0.5	U	**1.7**	
Toluene	5	2.5	U	2.5	U	**1.2**	J	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Ethylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Chloromethane	NS	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Bromomethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Vinyl chloride	2	**0.28**	J	**0.99**	J	**72**		**3.7**		1	U	**0.19**	J	1	U	1	U	**4**	
Chloroethane	5	2.5	U	2.5	U	**0.99**	J	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,1-Dichloroethene	5	0.17	J	**0.19**	J	**0.55**		0.5	U	0.5	U	1.2	U	0.5	U	0.5	U	0.5	U
trans-1,2-Dichloroethene	5	2.5	U	2.5	U	**3.4**		**2.2**	J	2.5	U	6.2	U	2.5	U	2.5	U	**2.1**	J
Trichloroethene	5	**3**		**3.8**		**5.2**		**3.6**		**4.4**		**14**		**1**		0.5	U	**3.9**	
1,2-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,3-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,4-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Methyl tert butyl ether	10	2.5	U	2.5	U	2.5	U	**8**		2.5	U	**500**		2.5	U	2.5	U	**5.9**	
p/m-Xylene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
o-Xylene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Xylenes, Total	NS	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
cis-1,2-Dichloroethene	5	**9.7**		**7.9**		**180**		**5.9**		2.5	U	**31**		2.5	U	2.5	U	**6**	
1,2-Dichloroethene, Total	NS	**9.7**		**7.9**		**180**		**8.1**	J	2.5	U	**31**		2.5	U	2.5	U	**8.1**	J

Notes:

ppb	parts per billions
Bold	Analyte detected for sample
NS	No Standard
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-AWQS	New York Ambient Water Quality Standards
*	Due to analyte exceedance above laboratory instrument, the tabulated value is from second laboratory run after a 1 to 10 dilution factor
**	Duplicate was collected with the BMW-4 sample

Prepared By: JCL | Checked By: EAW

TABLE 4A: GROUNDWATER VOCs ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE LOCATION ID:		BMW-1		BMW-2		BMW-3		BMW-4		MW-5		MW-6S		MW-6D		MW-E		DUPLICATE*	
COLLECTION DATE:		1/15/2019		1/15/2019		1/15/2019		1/15/2019		1/14/2019		1/14/2019		1/14/2019		1/14/2019		1/15/2019	
LOCATION:		BASEMENT		BASEMENT		BASEMENT		BASEMENT		SIDEWALK -		SIDEWALK -		SIDEWALK -		SIDEWALK -		BASEMENT	
DEPTH (ft):		1-6		2.5-7.5		3.5-8.5		3.5-8.5		8-18		8-18		26-31		8-18		3.5-8.5	
SAMPLE MATRIX:		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
ANALYTE (ppb)	**NY-AWQS**	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Volatile Organics by GC/MS-8260																			
Dibromomethane	5	5	U	5	U	5	U	5	U	5	U	12	U	5	U	5	U	5	U
1,2,3-Trichloropropane	0.04	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Acrylonitrile	5	5	U	5	U	5	U	5	U	5	U	**59**		5	U	5	U	5	U
Styrene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Dichlorodifluoromethane	5	5	U	5	U	5	U	5	U	5	U	12	U	5	U	5	U	5	U
Acetone	50	5	U	5	U	**180**	**	5	U	5	U	12	U	5	U	5	U	5	U
Carbon disulfide	60	5	U	5	U	5	U	5	U	5	U	12	U	5	U	5	U	5	U
2-Butanone	50	5	U	5	U	**89**		5	U	5	U	12	U	5	U	5	U	5	U
Vinyl acetate	NS	5	U	5	U	5	U	5	U	5	U	12	U	5	U	5	U	5	U
4-Methyl-2-pentanone	NS	5	U	5	U	5	U	5	U	5	U	12	U	5	U	5	U	5	U
2-Hexanone	50	5	U	5	U	**2.4**	J	5	U	5	U	12	U	5	U	5	U	5	U
Bromochloromethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
2,2-Dichloropropane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	UJ	2.5	UJ	2.5	UJ	2.5	UJ
1,2-Dibromoethane	0.0006	2	U	2	U	2	U	2	U	2	U	5	U	2	U	2	U	2	U
1,3-Dichloropropane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,1,1,2-Tetrachloroethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Bromobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
n-Butylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
sec-Butylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
tert-Butylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
o-Chlorotoluene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
p-Chlorotoluene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,2-Dibromo-3-chloropropane	0.04	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Hexachlorobutadiene	0.5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Isopropylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
p-Isopropyltoluene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
Naphthalene	10	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
n-Propylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,2,3-Trichlorobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,2,4-Trichlorobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,3,5-Trimethylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,2,4-Trimethylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
1,4-Dioxane	0.035	250	U	250	U	250	U	250	U	250	U	620	U	250	U	250	U	250	U
p-Diethylbenzene	NS	2	U	2	U	2	U	2	U	2	U	5	U	2	U	2	U	2	U
p-Ethyltoluene	NS	2	U	2	U	2	U	2	U	2	U	5	U	2	U	2	U	2	U
1,2,4,5-Tetramethylbenzene	5	2	U	2	U	2	U	2	U	2	U	5	U	2	U	2	U	2	U
Ethyl ether	NS	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U
trans-1,4-Dichloro-2-butene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	6.2	U	2.5	U	2.5	U	2.5	U

Notes:

ppb	parts per billions
Bold	Analyte detected for sample
NS	No Standard
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NY-AWQS	New York Ambient Water Quality Standards
*	Due to analyte exceedance above laboratory instrument, the tabulated value is from second laboratory run after a 1 to 10 dilution factor
**	Duplicate was collected with the BMW-4 sample

Prepared By: JCL | Checked By: EAW

TABLE 4B: GROUNDWATER METALS ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE LOCATION ID:		BMW-1		BMW-2		BMW-3		BMW-4		MW-5		MW-6S		MW-6D		MW-E		DUPLICATE*	
COLLECTION DATE:		1/15/2019		1/15/2019		1/15/2019		1/15/2019		1/14/2019		1/14/2019		1/14/2019		1/14/2019		1/15/2019	
LOCATION:		BASEMENT		BASEMENT		BASEMENT		BASEMENT		SIDEWALK -		SIDEWALK -		SIDEWALK -		SIDEWALK -		BASEMENT	
DEPTH (ft):		1-6		2.5-7.5		3.5-8.5		3.5-8.5		8-18		8-18		26-31		8-18		3.5-8.5	
SAMPLE MATRIX:		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
ANALYTE (ppb)	**NY-AWQS**	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Dissolved Metals																			
Aluminum, Dissolved	NS	10	U	10	U	10	U	10	U	**14.5**	J+	10	U	**11.8**	J+	**73.8**	J+	10	U
Antimony, Dissolved	3	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
Arsenic, Dissolved	25	**0.89**		**0.81**		**5.4**		**7.81**		**0.31**	J	**1**		**0.32**	J	**0.69**		**7.79**	
Barium, Dissolved	1000	**98.47**		**125.2**		**139.5**		**64.93**		**86.08**		**69.75**		**106.9**		**53.53**		**88.33**	
Beryllium, Dissolved	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium, Dissolved	5	**4.09**		**9.23**		0.2	U	0.2	U	0.2	U	0.2	U	**0.08**	J	0.2	U	0.2	U
Calcium, Dissolved	NS	**254000**		**305000**		**206000**		**205000**		**230000**		**320000**		**249000**		**66000**		**214000**	
Chromium, Dissolved	50	**1.33**		**2.04**		**1.63**		**0.47**	J	**2.76**		**0.25**	J	**0.55**	J	**0.65**	J	**0.48**	J
Cobalt, Dissolved	NS	**9.4**	J	**19.07**		**7.37**		**7.94**		**0.58**		**3.23**		**0.44**	J	0.5	U	**7.62**	J
Copper, Dissolved	200	**2.9**	J+	**2.8**	J+	1	U	1	U	**1.73**	J+	1	U	**2.17**	J+	**1.33**	J+	1	U
Iron, Dissolved	300	**112**	J+	**252**	J+	**692**		**4640**	J	**70.7**	J+	**102**	J+	60	U	**212**	J+	**656**	J
Lead, Dissolved	25	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Magnesium, Dissolved	35000	**65300**		**60300**		**45700**		**33900**		**13700**		**107000**		**19200**		**10300**		**31800**	
Manganese, Dissolved	300	**8103**		**14750**		**1521**		**2415**		**49.1**	J	**3300**		**68.16**		**16.24**		**2464**	
Mercury, Dissolved	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel, Dissolved	100	**90.13**		**148.6**		**256.7**		**49.59**		**1.92**	J	**33.85**		**3.01**	J	**0.58**	J	**67.32**	J
Potassium, Dissolved	NS	**27500**		**32300**		**35100**		**26600**		**23900**		**17400**		**26000**		**19300**		**27400**	
Selenium, Dissolved	10	5	U	5	U	5	U	5	U	**7.15**		5	U	**5.18**	J	5	U	5	U
Silver, Dissolved	50	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
Sodium, Dissolved	20000	**210000**		**221000**		**213000**		**140000**		**103000**		**154000**		**78100**		**96800**		**138000**	
Thallium, Dissolved	0.5	**0.75**	J	**0.56**		0.5	U	0.5	U	**0.21**	J	0.5	U	0.5	U	**0.19**	J	0.5	U
Vanadium, Dissolved	NS	5	U	5	U	5	U	5	U	5	U	5	U	**3.03**	J	5	U	5	U
Zinc, Dissolved	2000	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Notes:

ppb	parts per billions
Bold	Analyte detected for sample
NS	No Standard
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
J+	indicates estimated value and potentially biased high; concentration is below the reporting limit but above the minimum detection limit
NY-AWQS	New York Ambient Water Quality Standards
*	Duplicate was collected with the BMW-4 sample

Prepared By: JCL | Checked By: EAW

TABLE 4B: GROUNDWATER METALS ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE LOCATION ID:		BMW-1		BMW-2		BMW-3		BMW-4		MW-5		MW-6S		MW-6D		MW-E		DUPLICATE	
COLLECTION DATE:		1/15/2019		1/15/2019		1/15/2019		1/15/2019		1/14/2019		1/14/2019		1/14/2019		1/14/2019		1/15/2019	
LOCATION:		BASEMENT		BASEMENT		BASEMENT		BASEMENT		SIDEWALK -		SIDEWALK -		SIDEWALK -		SIDEWALK -		BASEMENT	
DEPTH (ft):		1-6		2.5-7.5		3.5-8.5		3.5-8.5		8-18		8-18		26-31		8-18		3.5-8.5	
SAMPLE MATRIX:		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
ANALYTE (ppb)	**NY-AWQS**	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Total Metals																			
Aluminum, Total	NS	10	U	**36**	J+	**41.8**		10	U	**111**		10	U	**44.6**		**20900**		10	U
Antimony, Total	3	**0.67**	J	4	U	4	U	4	U	**4.25**		4	U	**0.81**	J	**1.18**	J	**0.85**	J
Arsenic, Total	25	**1.12**		**1.1**		**15.89**		**28.23**		**0.3**	J	**1.23**		**0.3**	J	**12.8**		**25.89**	
Barium, Total	1000	**100.4**		**124.3**		**204.6**		**85.91**		**79.32**		**70.57**		**102.1**		**278.3**		**80.55**	
Beryllium, Total	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**1.28**		0.5	U
Cadmium, Total	5	**3.89**		**8.8**		0.2	U	0.2	U	0.2	U	0.2	U	**0.07**	J	**0.18**	J	0.2	U
Calcium, Total	NS	**247000**		**299000**		**192000**		**207000**		**220000**		**310000**		**243000**		**72400**		**206000**	
Chromium, Total	50	**1.7**	J+	**3.37**		**2.78**		**0.8**	J	**4.12**		1	U	1	U	**59.05**		1	U
Cobalt, Total	NS	**7.53**	J	**16.12**		**7.14**		**7.14**		**0.71**		**3.47**		**0.49**	J	**19.56**		**6.03**	J
Copper, Total	200	**3.05**	J+	**3.38**	J+	1	U	1	U	**1.63**	J+	1	U	**2.05**	J+	**56.88**		1	U
Iron, Total	300	**810**		**2970**		**17000**		**19400**		**192**	J+	**615**		**110**	J+	**44900**		**18700**	
Lead, Total	25	1	U	**0.61**	J	1	U	1	U	**1.39**		1	U	1	U	**20.51**		1	U
Magnesium, Total	35000	**62100**		**57400**		**46200**		**31600**		**13200**		**101000**		**18400**		**23300**		**34000**	
Manganese, Total	300	**7771**		**13820**		**1412**		**2389**		**46.56**		**3136**		66.34		**2270**		**2358**	
Mercury, Total	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel, Total	100	**86.03**		**148.4**		**271.1**		**48.86**		**1.91**	J	**32.92**		**2.45**	J	**49.52**		**47.44**	J
Potassium, Total	NS	**27000**		**31200**		**31900**		**26200**		**22700**		**16400**		**24800**		**24200**		**26000**	
Selenium, Total	10	5	U	5	U	5	U	5	U	**7.42**		5	U	**4.24**	J	**5.08**		5	U
Silver, Total	50	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
Sodium, Total	20000	**200000**		**213000**		**203000**		**136000**		**98600**		**148000**		**76600**		**90700**		**140000**	
Thallium, Total	0.5	**0.57**	J	**0.48**	J	0.5	U	0.5	U	**0.24**	J	0.5	U	0.5	U	**0.44**	J	0.5	U
Vanadium, Total	NS	5	U	5	U	5	U	5	U	5	U	5	U	**3.15**	J	**66.97**		5	U
Zinc, Total	2000	**4.38**	J	**3.87**	J	**5.23**	J	**57.1**	J	**3.81**	J	10	U	10	U	**120.2**		10	UJ

Notes:

ppb	parts per billions
Bold	Analyte detected for sample
NS	No Standard
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
J+	indicates estimated value and potentially biased high; concentration is below the reporting limit but above the minimum detection limit
NY-AWQS	New York Ambient Water Quality Standards
*	Duplicate was collected with the BMW-4-0418 sample

Prepared By: JCL | Checked By: EAW

TABLE 4C: GROUNDWATER PFOAS ANALYTICAL RESULTS
22-07 41st Avenue, Long Island City, NY

SAMPLE LOCATION ID:		BMW-1		BMW-2		BMW-3		BMW-4		MW-5		MW-6S		MW-6D		MW-E		DUPLICATE***	
COLLECTION DATE:		1/15/2019		1/15/2019		1/15/2019		1/15/2019		1/14/2019		1/14/2019		1/14/2019		1/14/2019		1/15/2019	
LOCATION:		BASEMENT		BASEMENT		BASEMENT		BASEMENT		SIDEWALK -		SIDEWALK -		SIDEWALK -		SIDEWALK -		BASEMENT	
DEPTH (ft):		1-6		2.5-7.5		3.5-8.5		3.5-8.5		8-18		8-18		26-31		8-18		3.5-8.5	
SAMPLE MATRIX:		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
ANALYTE (ug/L)	**EPA**	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Perfluorinated Alkyl Acids by Isotope Dilution																			
Perfluorobutanoic Acid (PFBA)	NSG	**0.0219**		**0.0242**		**0.0256**		**0.0166**		**0.0118**		**0.0126**		**0.01**		**0.0197**		**0.0167**	
Perfluoropentanoic Acid (PFPeA)	NSG	**0.0203**		**0.0282**		**0.0798**		**0.0266**		**0.0133**		**0.00966**		**0.00868**		**0.0348**		**0.0269**	
Perfluorobutanesulfonic Acid (PFBS)	400	**1.59**	**	**1.85**	**	**0.12**		**0.0972**		**0.0178**		**0.022**		**0.0149**		**0.00645**		**0.108**	
Perfluorohexanoic Acid (PFHxA)	NSG	**0.0202**		**0.0314**		**0.176**		**0.0503**		**0.0106**		**0.00945**		**0.00882**		**0.0408**		**0.05**	
Perfluoroheptanoic Acid (PFHpA)	NSG	**0.0149**		**0.0172**		**0.0397**		**0.0155**		**0.0077**		**0.00619**		**0.00603**		**0.00941**		**0.0158**	
Perfluorohexanesulfonic Acid (PFHxS)	NSG	**0.362**		**0.434**	J	**0.13**	J	**0.0604**		**0.00349**		**0.0258**		**0.00292**		**0.00104**	J	**0.0724**	
Perfluorooctanoic Acid (PFOA)*	0.070	**0.089**		**0.0886**		**0.0889**		**0.0603**		**0.0254**		**0.0573**		**0.0209**		**0.0386**		**0.0685**	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	NSG	0.00183	U	**0.00227**		**0.00245**	J	0.00196	U	0.00189	UJ	0.00177	UJ	0.00185	U	**0.00224**		0.00192	U
Perfluoroheptanesulfonic Acid (PFHpS)	NSG	**0.136**		**0.158**		**0.113**		**0.0316**		0.00189	U	**0.0101**		**0.000841**	J	0.00222	U	**0.0346**	
Perfluorononanoic Acid (PFNA)	NSG	**0.00238**		**0.00143**	J	**0.00378**		**0.00248**		0.00189	U	**0.00216**		**0.00221**		**0.000844**	J	**0.00264**	
Perfluorooctanesulfonic Acid (PFOS)*	0.070	**3.94**	**	**4.94**	**	**5.04**	**	**2.15**	**	**0.0714**		**0.618**		**0.0956**		**0.00809**		**2.08**	**
Perfluorodecanoic Acid (PFDA)	NSG	**0.00374**		**0.00286**		0.00207	U	0.000627	J	0.00189	U	0.00177	U	**0.000967**	J	0.00222	U	**0.000648**	J
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	NSG	0.00183	UJ	0.00183	UJ	0.00207	UJ	0.00196	UJ	0.00189	UJ	0.00177	UJ	**0.00143**	J	0.00222	U	0.00192	UJ
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NSG	**0.00041**	J	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.000411	J	**0.000537**	J	0.00222	U	**0.000441**	J
Perfluoroundecanoic Acid (PFUnA)	NSG	0.00183	U	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.00177	U	**0.00391**		**0.00564**		0.00192	U
Perfluorodecanesulfonic Acid (PFDS)	NSG	0.00183	U	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.00177	U	0.00185	U	0.00222	U	0.00192	U
Perfluorooctanesulfonamide (FOSA)	NSG	0.00183	U	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.00177	U	0.00185	U	0.00222	U	0.00192	U
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NSG	0.000568	J	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.00177	U	**0.000478**	J	0.00222	U	**0.00046**	J
Perfluorododecanoic Acid (PFDoA)	NSG	0.00183	U	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.00177	U	0.00185	U	0.00222	U	0.00192	U
Perfluorotridecanoic Acid (PFTrDA)	NSG	0.00183	U	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.00177	U	0.00185	U	0.00222	U	0.00192	U
Perfluorotetradecanoic Acid (PFTA)	NSG	0.00183	U	0.00183	U	0.00207	U	0.00196	U	0.00189	U	0.00177	U	0.00185	U	0.00222	U	0.00192	U
PFOA + PFOS (combined value)	0.070	**4.029**		**5.0286**		**5.1289**		**2.2103**		**0.0968**		**0.6753**		**0.1165**		**0.04669**		**2.1485**	

Notes:

Bold	Analyte detected for sample
E	Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
NSG	No Standard Given
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
EPA	EPA drinking water guideline, May 2016
*	Guideline value for combined concentrations of PFOS and PFOA
**	Due to analyte exceedance above laboratory instrument, the tabulated value is from second laboratory run after a 1 to 10 dilution factor
***	Duplicate was collected with the BMW-4 sample

Prepared By: JCL | Checked By: EAW

TABLE 5A: SOIL VAPOR ANALYSIS,
22-07 41ST AVENUE, LONG ISLAND CITY, NY

SAMPLE ID:			SV-1		SV-2		SV-3		SV-4		SV-5		SV-6		SV-DUP	
COLLECTION DATE:			11/10/2016		5/5/2017		11/10/2016		11/10/2016		11/10/2016		11/10/2016		11/10/2016	
SAMPLE MATRIX:			AIR		AIR		AIR		AIR		AIR		AIR		AIR	
ANALYTE (ug/m3)	NFA	MON./MIT.	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Volatile Organics in Air																
Dichlorodifluoromethane	NS	NS	1.71		1.91		2.05		1.75		2.11		3.01		1.81	
Chloromethane	NS	NS	ND		ND		ND		0.423		ND		ND		0.448	
Freon-114	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Vinyl chloride	< 6	> 6	ND		ND		ND		ND		0.798		ND		ND	
1,3-Butadiene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Bromomethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Chloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Ethanol	NS	NS	40.7		15.6		36.9		49.6		42.8		33.2		48.2	
Vinyl bromide	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Acetone	NS	NS	35.2		9.17		36.8		54.9		34.2		45.4		46.6	
Trichlorofluoromethane	NS	NS	7.76		4.33		17.4		12.2		6.18		9.5		10.8	
Isopropanol	NS	NS	64.2		29		58		76.7		58.7		51.6		63.9	
1,1-Dichloroethene	< 6	> 6	ND		ND		ND		ND		ND		ND		ND	
Tertiary butyl Alcohol	NS	NS	2.31		ND		1.95		2.37		2.05		1.79		1.96	
Methylene chloride	< 100	> 100	1.91		ND		ND		ND		3.72		ND		2.14	
3-Chloropropene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Carbon disulfide	NS	NS	ND		ND		ND		ND		0.679		ND		ND	
Freon-113	NS	NS	ND		ND		ND		ND		ND		ND		ND	
trans-1,2-Dichloroethene	NS	NS	1.21		0.952		1.77		0.963		5.39		ND		1.01	
1,1-Dichloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Methyl tert butyl ether	NS	NS	ND		ND		ND		ND		ND		ND		ND	
2-Butanone	NS	NS	7.76		ND		9.82		6.4		7.11		7.28		5.49	
cis-1,2-Dichloroethene	< 6	> 6	3.31		7.22		8.29		7.06		61.1		0.793		7.37	
Ethyl Acetate	NS	NS	2.88		ND		2.88		5.26		4.04		4.5		5.84	
Chloroform	NS	NS	9.47		5.96		9.08		1.96		17.2		14		1.91	
Tetrahydrofuran	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
n-Hexane	NS	NS	ND		ND		ND		0.747		1.06		ND		ND	
1,1,1-Trichloroethane	< 100	> 100	ND		1.28		ND		ND		ND		ND		ND	
Benzene	NS	NS	0.834		ND		0.843		1.04		1.55		0.709		0.869	
Carbon tetrachloride	< 6	> 6	ND		ND		ND		ND		ND		ND		ND	
Cyclohexane	NS	NS	ND		ND		ND		ND		ND		ND		ND	

Notes:

ug/m3	micrograms/cubic meter
NS	No Standard
ND	Not Detected
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NFA	New York State Department of Health Soil Vapor Intrusion Guidance No Further Action criteria
Mon./Mit	New York State Department of Health Soil Vapor Intrusion Guidance - monitor sub slub vapor and indoor air mitigation may be required as noted in Matrix tables
	SV-Dup is a duplicate of SV-4

Prepared By: JCL | Checked By: EAW

TABLE 5A: SOIL VAPOR ANALYSIS,
22-07 41ST AVENUE, LONG ISLAND CITY, NY

SAMPLE ID:			SV-1		SV-2		SV-3		SV-4		SV-5		SV-6		SV-DUP	
COLLECTION DATE:			11/10/2016		5/4/2017		11/10/2016		11/10/2016		11/10/2016		11/10/2016		11/10/2016	
SAMPLE MATRIX:			AIR		AIR		AIR		AIR		AIR		AIR		AIR	
ANALYTE (ug/m3)	NFA	MON./MIT.	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual	Conc	Qual
Volatile Organics in Air																
1,2-Dichloropropane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Bromodichloromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,4-Dioxane	NS	NS	ND		ND		ND		0.872		ND		0.85		ND	
Trichloroethene	< 6	> 6	25.5		39.9		19.1		8.01		192		2.63		7.79	
2,2,4-Trimethylpentane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Heptane	NS	NS	7.29		2.25		7.62		9.51		5.37		6.8		8.28	
cis-1,3-Dichloropropene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
4-Methyl-2-pentanone	NS	NS	ND		ND		3.78		ND		ND		2.07		ND	
trans-1,3-Dichloropropene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Toluene	NS	NS	373		15.3		304		330		335		320		311	
2-Hexanone	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Dibromochloromethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,2-Dibromoethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	< 100	> 100	21.2		43.5		13.8		7.32		36.5		6.92		6.15	
Chlorobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Ethylbenzene	NS	NS	57.8		20.8		47.8		46.9		59.1		46		42	
p/m-Xylene	NS	NS	212		126		177		177		229		174		154	
Bromoform	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Styrene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	NS	NS	ND		ND		ND		ND		ND		ND		ND	
o-Xylene	NS	NS	80.8		65.6		65.2		59.9		86.9		59.1		50.8	
4-Ethyltoluene	NS	NS	ND		ND		ND		ND		2.45		ND		ND	
1,3,5-Trimethylbenzene	NS	NS	ND		ND		ND		ND		3.09		ND		ND	
1,2,4-Trimethylbenzene	NS	NS	1.44		ND		1.28		1.52		11.4		1.14		1.03	
Benzyl chloride	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,3-Dichlorobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,4-Dichlorobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,2-Dichlorobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
1,2,4-Trichlorobenzene	NS	NS	ND		ND		ND		ND		ND		ND		ND	
Hexachlorobutadiene	NS	NS	ND		ND		ND		ND		ND		ND		ND	

Notes:

ug/m3	micrograms/cubic meter
NS	No Standard
ND	Not Detected
J	indicates estimated value; concentration is below the reporting limit but above the minimum detection limit
NFA	New York State Department of Health Soil Vapor Intrusion Guidance No Further Action criteria
Mon./Mit	New York State Department of Health Soil Vapor Intrusion Guidance - monitor sub slub vapor and indoor air mitigation may be required as noted in Matrix tables
	SV-Dup is a duplicate of SV-4

Prepared By: JCL | Checked By: EAW

Table 5B
Hygrade Pilot Test Results

LOCATION					**HYGRADE PILOT TEST**	
SAMPLING DATE					**3/7/2018**	
LAB SAMPLE ID					**L1808099-01**	
SAMPLE TYPE					**SOIL_VAPOR**	
		CasNum	**NY-IAC-A**	**Units**	**Results**	**Qual**
Volatile Organics in Air						
	1,1,1-Trichloroethane	71-55-6	100	ug/m3	10.9	U
	1,1,2,2-Tetrachloroethane	79-34-5		ug/m3	13.7	U
	1,1,2-Trichloroethane	79-00-5		ug/m3	10.9	U
	1,1-Dichloroethane	75-34-3		ug/m3	8.09	U
	1,1-Dichloroethene	75-35-4	60	ug/m3	7.93	U
	1,2,4-Trichlorobenzene	120-82-1		ug/m3	14.8	U
	1,2,4-Trimethylbenzene	95-63-6		ug/m3	11.4	
	1,2-Dibromoethane	106-93-4		ug/m3	15.4	U
	1,2-Dichlorobenzene	95-50-1		ug/m3	12	U
	1,2-Dichloroethane	107-06-2		ug/m3	8.09	U
	1,2-Dichloropropane	78-87-5		ug/m3	9.24	U
	1,3,5-Trimethylbenzene	108-67-8		ug/m3	9.83	U
	1,3-Butadiene	106-99-0		ug/m3	4.42	U
	1,3-Dichlorobenzene	541-73-1		ug/m3	12	U
	1,4-Dichlorobenzene	106-46-7		ug/m3	12	U
	1,4-Dioxane	123-91-1		ug/m3	7.21	U
	2,2,4-Trimethylpentane	540-84-1		ug/m3	9.34	U
	2-Butanone	78-93-3		ug/m3	2510	
	2-Hexanone	591-78-6		ug/m3	8.2	U
	3-Chloropropene	107-05-1		ug/m3	6.26	U
	4-Ethyltoluene	622-96-8		ug/m3	9.83	U
	4-Methyl-2-pentanone	108-10-1		ug/m3	20.5	U
	Acetone	67-64-1		ug/m3	506	
	Benzene	71-43-2		ug/m3	6.39	U
	Benzyl chloride	100-44-7		ug/m3	10.4	U
	Bromodichloromethane	75-27-4		ug/m3	13.4	U
	Bromoform	75-25-2		ug/m3	20.7	U
	Bromomethane	74-83-9		ug/m3	7.77	U
	Carbon disulfide	75-15-0		ug/m3	6.23	U
	Carbon tetrachloride	56-23-5	60	ug/m3	12.6	U
	Chlorobenzene	108-90-7		ug/m3	9.21	U
	Chloroethane	75-00-3		ug/m3	5.28	U
	Chloroform	67-66-3		ug/m3	9.77	U
	Chloromethane	74-87-3		ug/m3	4.13	U
	cis-1,2-Dichloroethene	156-59-2	60	ug/m3	184	
	cis-1,3-Dichloropropene	10061-01-5		ug/m3	9.08	U
	Cyclohexane	110-82-7		ug/m3	6.88	U
	Dibromochloromethane	124-48-1		ug/m3	17	U
	Dichlorodifluoromethane	75-71-8		ug/m3	9.89	U
	Ethanol	64-17-5		ug/m3	94.2	U
	Ethyl Acetate	141-78-6		ug/m3	18	U
	Ethylbenzene	100-41-4		ug/m3	8.69	U

	Freon-113	76-13-1		ug/m3	15.3	U
	Freon-114	76-14-2		ug/m3	14	U
	Heptane	142-82-5		ug/m3	8.2	U
	Hexachlorobutadiene	87-68-3		ug/m3	21.3	U
	Isopropanol	67-63-0		ug/m3	12.3	U
	Methyl tert butyl ether	1634-04-4		ug/m3	7.21	U
	Methylene chloride	75-09-2	100	ug/m3	17.4	U
	n-Hexane	110-54-3		ug/m3	7.05	U
	o-Xylene	95-47-6		ug/m3	8.69	U
	p/m-Xylene	179601-23-1		ug/m3	17.4	U
	Styrene	100-42-5		ug/m3	8.52	U
	Tertiary butyl Alcohol	75-65-0		ug/m3	15.2	U
	Tetrachloroethene	127-18-4	100	ug/m3	2500	
	Tetrahydrofuran	109-99-9		ug/m3	1080	
	Toluene	108-88-3		ug/m3	9.08	
	trans-1,2-Dichloroethene	156-60-5		ug/m3	7.93	U
	trans-1,3-Dichloropropene	10061-02-6		ug/m3	9.08	U
	Trichloroethene	79-01-6	60	ug/m3	1290	
	Trichlorofluoromethane	75-69-4		ug/m3	11.2	U
	Vinyl bromide	593-60-2		ug/m3	8.74	U
	Vinyl chloride	75-01-4	60	ug/m3	18	

*NY-IAC-A: New York DOH Matrix A, B & C Indoor Air Concentrations
Criteria per Guidance for Evaluating Soil Vapor Intrusion, October 2006, and updated May 2017.

- Exceeds standard

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TABLE 10: REMAINING GROUNDWATER SAMPLE EXCEEDANCES IN OFF-SITE WELLS - VOCS
22-07 41ST AVENUE, LONG ISLAND CITY, NY

	SAMPLE ID:			MW-E		MW-5		MW-6D		MW-X		MW-6S	
	SAMPLING DATE:			3/1/2023		3/1/2023		3/1/2023		3/1/2023		3/1/2023	
	SAMPLE LOCATION:			UPGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT	
	SAMPLE TYPE			WATER		WATER		WATER		WATER		WATER	
	SAMPLE DEPTH (ft.)			10-20		8-18		22-32		22-32		8-18	
		NY-AWQS	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
Volatile Organics by GC/MS													
	Methylene chloride	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,1-Dichloroethane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Chloroform	7	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Carbon tetrachloride	5	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	1,2-Dichloropropane	1	ug/l	1	U	1	U	10	U	10	U	1	U
	Dibromochloromethane	50	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	1,1,2-Trichloroethane	1	ug/l	1.5	U	1.5	U	15	U	15	U	1.5	U
	Tetrachloroethene	5	ug/l	0.5	U	0.37	J	39		45		0.78	
	Chlorobenzene	5	ug/l	1.1	J	2.5	U	25	U	25	U	2.5	U
	Trichlorofluoromethane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,2-Dichloroethane	0.6	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	1,1,1-Trichloroethane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Bromodichloromethane	50	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	trans-1,3-Dichloropropene	0.4	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	cis-1,3-Dichloropropene	0.4	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	1,3-Dichloropropene, Total		ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	1,1-Dichloropropene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Bromoform	50	ug/l	2	U	2	U	20	U	20	U	2	U
	1,1,2,2-Tetrachloroethane	5	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	Benzene	1	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	Toluene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Ethylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Chloromethane		ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Bromomethane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Vinyl chloride	2	ug/l	1	U	1	U	10	U	10	U	1	U
	Chloroethane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,1-Dichloroethene	5	ug/l	0.5	U	0.5	U	5	U	5	U	0.5	U
	trans-1,2-Dichloroethene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Trichloroethene	5	ug/l	0.5	U	3.2		15		17		1.2	
	1,2-Dichlorobenzene	3	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,3-Dichlorobenzene	3	ug/l	0.8	J	2.5	U	25	U	25	U	2.5	U
	1,4-Dichlorobenzene	3	ug/l	1	J	2.5	U	25	U	25	U	2.5	U
	Methyl tert butyl ether	10	ug/l	2.5	U	2.5	U	230		210		2.5	U
	p/m-Xylene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	o-Xylene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Xylenes, Total		ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	cis-1,2-Dichloroethene	5	ug/l	2.5	U	2.5	U	27		26		2.5	U
	1,2-Dichloroethene, Total		ug/l	2.5	U	2.5	U	27		26		2.5	U
	Dibromomethane	5	ug/l	5	U	5	U	50	U	50	U	5	U
	1,2,3-Trichloropropane	0.04	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Acrylonitrile	5	ug/l	5	U	5	U	50	U	50	U	5	U
	Styrene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Dichlorodifluoromethane	5	ug/l	5	U	5	U	50	U	50	U	5	U
	Acetone	50	ug/l	5	U	5	U	50	U	50	U	5	U
	Carbon disulfide	60	ug/l	5	U	5	U	50	U	50	U	5	U
	2-Butanone	50	ug/l	5	U	5	U	50	U	50	U	5	U
	Vinyl acetate		ug/l	5	U	5	U	50	U	50	U	5	U
	4-Methyl-2-pentanone		ug/l	5	U	5	U	50	U	50	U	5	U
	2-Hexanone	50	ug/l	5	U	5	U	50	U	50	U	5	U
	Bromochloromethane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	2,2-Dichloropropane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,2-Dibromoethane	0.0006	ug/l	2	U	2	U	20	U	20	U	2	U
	1,3-Dichloropropane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,1,1,2-Tetrachloroethane	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Bromobenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	n-Butylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	sec-Butylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	tert-Butylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	o-Chlorotoluene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	p-Chlorotoluene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,2-Dibromo-3-chloropropane	0.04	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Hexachlorobutadiene	0.5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Isopropylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	p-Isopropyltoluene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	Naphthalene	10	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	n-Propylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,2,3-Trichlorobenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,2,4-Trichlorobenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,3,5-Trimethylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,2,4-Trimethylbenzene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	1,4-Dioxane		ug/l	250	U	250	U	2500	U	2500	U	250	U
	p-Diethylbenzene		ug/l	2	U	2	U	20	U	20	U	2	U
	p-Ethyltoluene		ug/l	2	U	2	U	20	U	20	U	2	U
	1,2,4,5-Tetramethylbenzene	5	ug/l	2	U	2	U	20	U	20	U	2	U
	Ethyl ether		ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U
	trans-1,4-Dichloro-2-butene	5	ug/l	2.5	U	2.5	U	25	U	25	U	2.5	U

U Compound not detected above the indicated method reporting limit

J Indicates estimated value; value is below the reporting limit but above the minimum detection limit

Sample MW-X is a duplicate of sample MW-6D

NY-AWQS: New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

TABLE 11: REMAINING GROUNDWATER SAMPLE EXCEEDANCES IN OFF-SITE WELLS - METALS
22-07 41ST AVENUE, LONG ISLAND CITY, NY

	SAMPLE ID:			MW-E		MW-5		MW-6D		MW-X		MW-6S	
	SAMPLING DATE:			3/1/2023		3/1/2023		3/1/2023		3/1/2023		3/1/2023	
	SAMPLE LOCATION:			UPGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT	
	SAMPLE TYPE			WATER		WATER		WATER		WATER		WATER	
	SAMPLE DEPTH (ft.)			10-20		8-18		22-32		22-32		8-18	
		NY-AWQS	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
Dissolved Metals													
	Aluminum, Dissolved		ug/l	3.7	J	11		6.15	J	10	U	3.29	J
	Antimony, Dissolved	3	ug/l	4	U	0.51	J	4	U	4	U	0.7	J
	Arsenic, Dissolved	25	ug/l	2.89		0.5	U	1.67		1.58		0.5	U
	Barium, Dissolved	1000	ug/l	52.87		74.63		243.5		226.6		176.3	
	Beryllium, Dissolved	3	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
	Cadmium, Dissolved	5	ug/l	0.2	U	0.07	J	0.2	U	0.2	U	0.24	
	Calcium, Dissolved		ug/l	63800		103000		232000		174000		208000	
	Chromium, Dissolved	50	ug/l	1	U	0.76	J	1	U	1	U	0.37	J
	Cobalt, Dissolved		ug/l	0.33	J	0.68		0.91		0.62		0.85	
	Copper, Dissolved	200	ug/l	1.25	J	0.85	J	0.71	J	0.96	J	1.14	J
	Iron, Dissolved	300	ug/l	50	U	20.8	J	50	U	50	U	50	U
	Lead, Dissolved	25	ug/l	0.34	J	1.45		1	U	1	U	1	U
	Magnesium, Dissolved	35000	ug/l	13000		9560		95100		96000		19600	
	Manganese, Dissolved	300	ug/l	608.8		101.1		1107		38.28		156.8	
	Mercury, Dissolved	0.7	ug/l	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
	Nickel, Dissolved	100	ug/l	1.05	J	2.96		12.6		14.01		50.3	
	Potassium, Dissolved		ug/l	13200		28000		15500		14600		27100	
	Selenium, Dissolved	10	ug/l	5	U	9.39		5	U	5	U	3.69	J
	Silver, Dissolved	50	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
	Sodium, Dissolved	20000	ug/l	95600		303000		204000		201000		332000	
	Thallium, Dissolved	0.5	ug/l	0.19	J	0.18	J	0.16	J	0.23	J	0.38	J
	Vanadium, Dissolved		ug/l	5	U	5	U	5	U	5	U	5	U
	Zinc, Dissolved	2000	ug/l	10	U	10	U	10	U	10	U	10	U

U Compound not detected above the indicated method reporting limit
J Indicates estimated value; value is below the reporting limit but above the minimum detection limit
Sample MW-X is a duplicate of sample MW-6D
NY-AWQS: New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

TABLE 11: REMAINING GROUNDWATER SAMPLE EXCEEDANCES IN OFF-SITE WELLS - METALS
22-07 41ST AVENUE, LONG ISLAND CITY, NY

	SAMPLE ID:			MW-E		MW-5		MW-6D		MW-X		MW-6S	
	SAMPLING DATE:			3/1/2023		3/1/2023		3/1/2023		3/1/2023		3/1/2023	
	SAMPLE LOCATION:			UPGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT	
	SAMPLE TYPE			WATER		WATER		WATER		WATER		WATER	
	SAMPLE DEPTH (ft.)			10-20		8-18		22-32		22-32		8-18	
		NY-AWQS	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
Total Metals													
	Aluminum, Total		ug/l	1990		62		15.3		7.88	J	35.6	
	Antimony, Total	3	ug/l	4	U	4	U	4	U	4	U	1.92	J
	Arsenic, Total	25	ug/l	4.1		0.28	J	1.89		1.95		0.41	J
	Barium, Total	1000	ug/l	74.56		79.32		260.2		272.9		191.4	
	Beryllium, Total	3	ug/l	0.11	J	0.5	U	0.5	U	0.5	U	0.5	U
	Cadmium, Total	5	ug/l	0.2	U	0.07	J	0.2	U	0.2	U	0.31	
	Calcium, Total		ug/l	57300		96000		219000		224000		194000	
	Chromium, Total	50	ug/l	5.31		1.36		0.27	J	1	U	8.34	
	Cobalt, Total		ug/l	2.19		1		1.07		1.21		1	
	Copper, Total	200	ug/l	7.83		1.23		1.58		1.17		3.36	
	Iron, Total	300	ug/l	4170		98.1		398		368		298	
	Lead, Total	25	ug/l	2.39		0.61	J	1	U	1	U	1	U
	Magnesium, Total	35000	ug/l	14100		10100		111000		112000		23000	
	Manganese, Total	300	ug/l	728.9		105.2		1048		1157		148	
	Mercury, Total	0.7	ug/l	0.11	J	0.09	J	0.13	J	0.17	J	0.09	J
	Nickel, Total	100	ug/l	6.29		2.49		15.19		16.24		58.43	
	Potassium, Total		ug/l	11500		19400		15000		15100		26600	
	Selenium, Total	10	ug/l	1.75	J	8.62		5	U	5	U	3.71	J
	Silver, Total	50	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
	Sodium, Total	20000	ug/l	90600		298000		208000		201000		352000	
	Thallium, Total	0.5	ug/l	1	U	1	U	1	U	1	U	0.29	J
	Vanadium, Total		ug/l	6.29		5	U	5	U	5	U	1.82	J
	Zinc, Total	2000	ug/l	18.55		10	U	10	U	10	U	10	U

U Compound not detected above the indicated method reporting limit
J Indicates estimated value; value is below the reporting limit but above the minimum detection limit
Sample MW-X is a duplicate of sample MW-6D
NY-AWQS: New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

TABLE 12: REMAINING GROUNDWATER SAMPLE EXCEEDANCES IN OFF-SITE WELLS - PFAS
22-07 41ST AVENUE, LONG ISLAND CITY, NY

SAMPLE ID:			MW-E		MW-5		MW-6D		MW-X		MW-6S	
SAMPLING DATE:			3/1/2023		3/1/2023		3/1/2023		3/1/2023		3/1/2023	
SAMPLE LOCATION:			UPGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT		DOWNGRADIENT	
SAMPLE TYPE			WATER		WATER		WATER		WATER		WATER	
SAMPLE DEPTH (ft.)			10-20		8-18		22-32		22-32		8-18	
	NY-AWQS	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
Perfluorinated Alkyl Acids by Isotope Dilution												
Perfluorobutanoic Acid (PFBA)	NS	ug/l	0.0217		0.0137		0.0101		0.00982		0.0143	
Perfluoropentanoic Acid (PFPeA)	NS	ug/l	0.0438		0.0141		0.0109		0.0104		0.015	
Perfluorobutanesulfonic Acid (PFBS)	NS	ug/l	0.00803		0.0205		0.00816		0.00883		0.0189	
Perfluorohexanoic Acid (PFHxA)	NS	ug/l	0.0487		0.0126		0.0217		0.0186		0.0204	
Perfluoroheptanoic Acid (PFHpA)	NS	ug/l	0.00766		0.00623		0.00799		0.00814		0.00721	
Perfluorohexanesulfonic Acid (PFHxS)	NS	ug/l	0.00154	J	0.00342		0.0245		0.026		0.00482	
Perfluorooctanoic Acid (PFOA)	0.01	ug/l	0.00984		0.0257		0.0608		0.0595		0.0233	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	NS	ug/l	0.00183	JB	0.00218		0.0972		0.0897		0.00156	JB
Perfluoroheptanesulfonic Acid (PFHpS)	NS	ug/l	0.00207	U	0.00188	U	0.0031		0.00296		0.00104	J
Perfluorononanoic Acid (PFNA)	NS	ug/l	0.00136	J	0.000731	J	0.0031		0.00319		0.00233	
Perfluorooctanesulfonic Acid (PFOS)	0.01	ug/l	0.00513		0.135		0.337		0.387		0.1	
Perfluorodecanoic Acid (PFDA)	NS	ug/l	0.000493	J	0.00188	U	0.00186	U	0.00187	U	0.000399	J
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
Perfluoroundecanoic Acid (PFUnA)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
Perfluorodecanesulfonic Acid (PFDS)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
Perfluorooctanesulfonamide (FOSA)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
Perfluorododecanoic Acid (PFDoA)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
Perfluorotridecanoic Acid (PFTrDA)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
Perfluorotetradecanoic Acid (PFTA)	NS	ug/l	0.00207	U	0.00188	U	0.00186	U	0.00187	U	0.00178	U
PFOA/PFOS, Total	NS	ug/l	0.015		0.161		0.398		0.447		0.123	

NS No Standard
U Compound not detected above the indicated method reporting limit
J Indicates estimated value; value is below the reporting limit but above the minimum detection limit
Sample MW-X is a duplicate of sample MW-6D
NY-AWQS: New York TOGS 111 Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

FIGURES

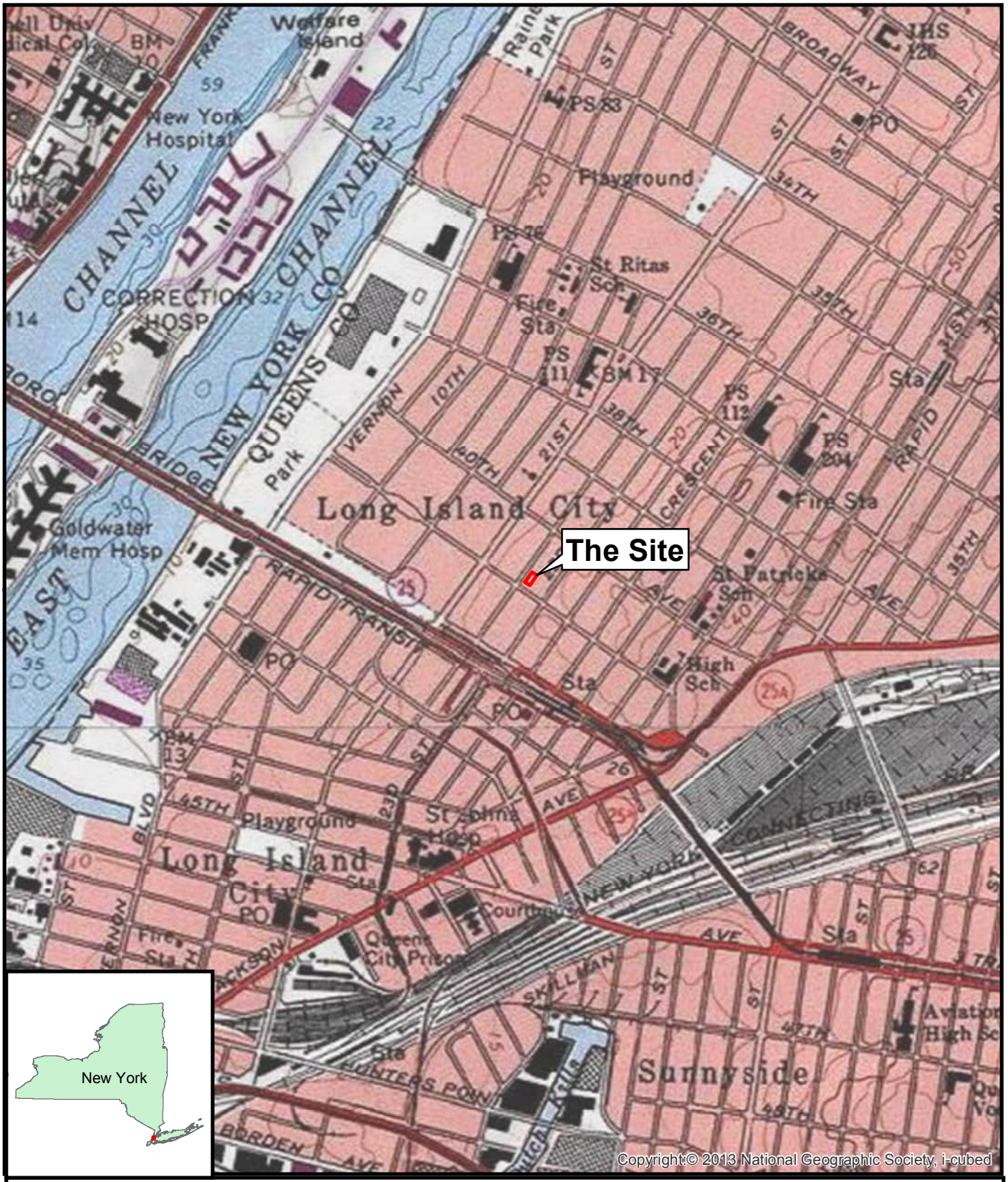


Figure 1
Site Location Map

22-07 41st Avenue
Long Island City, New York

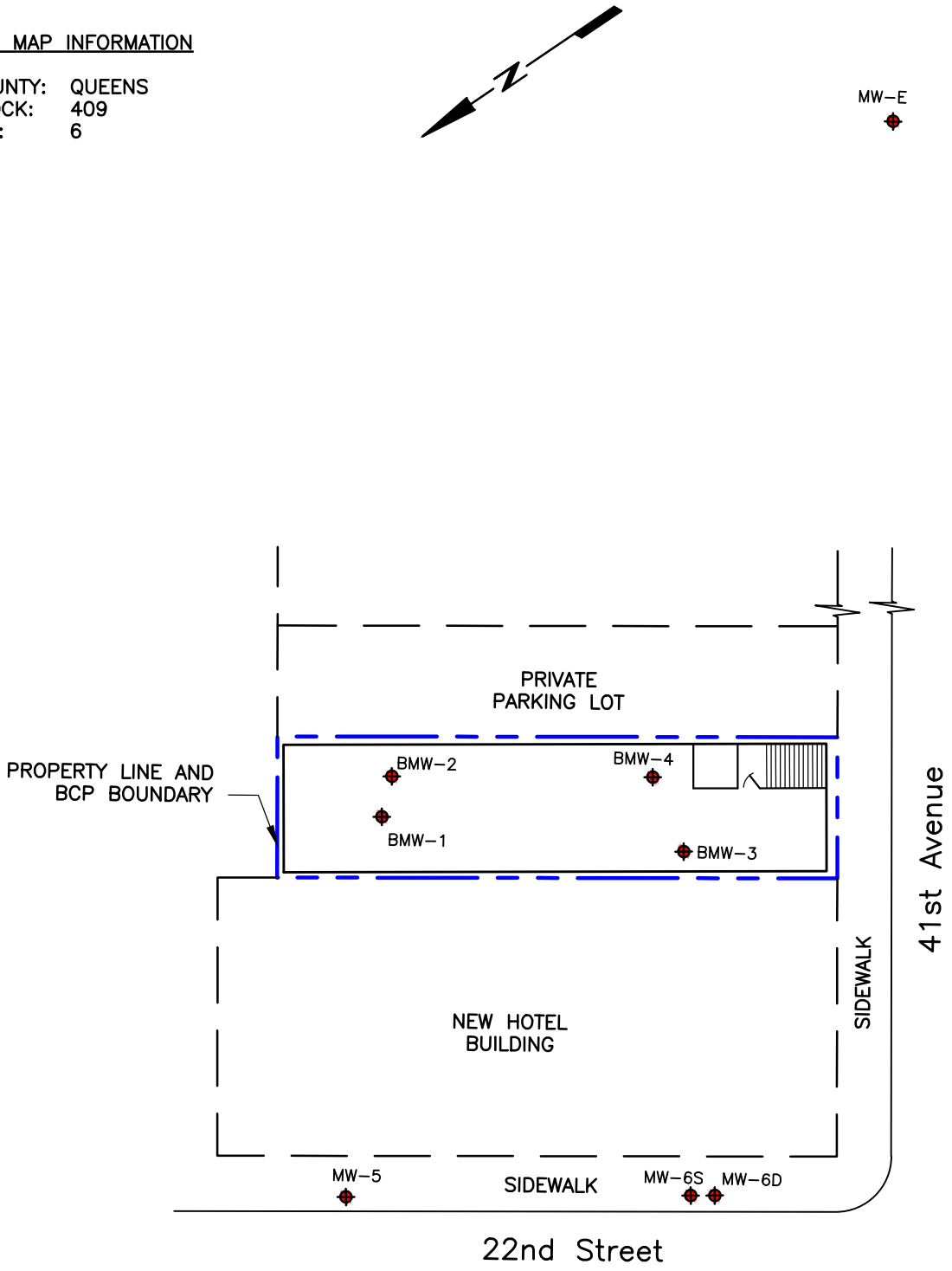
N

0 500 1,000
Feet

Prepared/Date: JCL 12/05/16	Checked/Date: □□□ 12/05/16

TAX MAP INFORMATION

COUNTY: QUEENS
BLOCK: 409
LOT: 6



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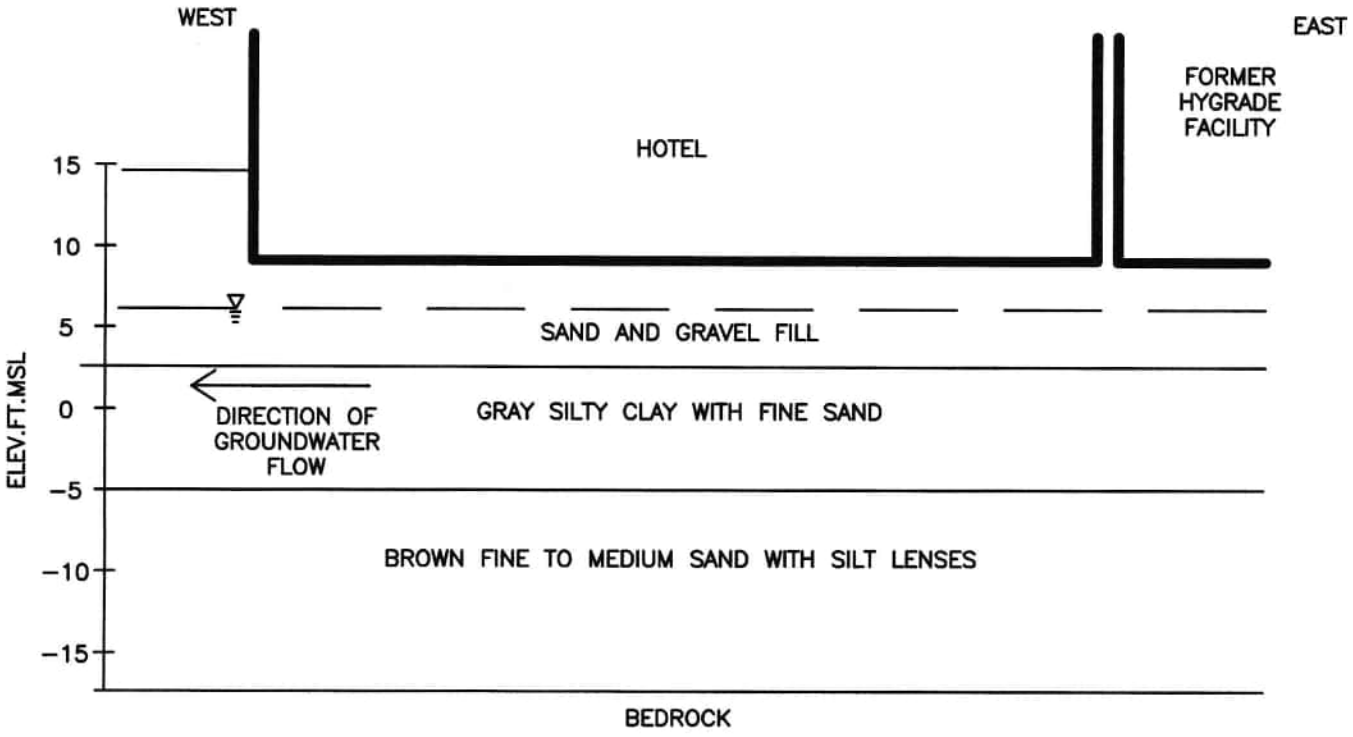
LEGEND

MW-5 MONITORING WELL
WELL ID

Prepared/Date: BRT 09/30/20
Checked/Date: EMP 09/30/20

Former Hygrade Plating 20-07 41st Ave Long Island City, NY	Amec E & E, PC 214-25 42nd Avenue, Suite 3R Bayside, NY 11361 (347) 836-4445	Site Layout Map Project 3612-16-2331 Figure 2

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Prepared/Date: BJH 07/23/2018
Checked/Date: EAW 07/23/2018

SCALE: NTS

Former Hygrade Plating 22-07 41st Ave Long Island City, NY	Amec E & E, PC 1979 Marcus Ave., Suite 210 Lake Success, New York 11042 (516) 622-2254	GEOLOGIC CROSS-SECTION FIGURE 3

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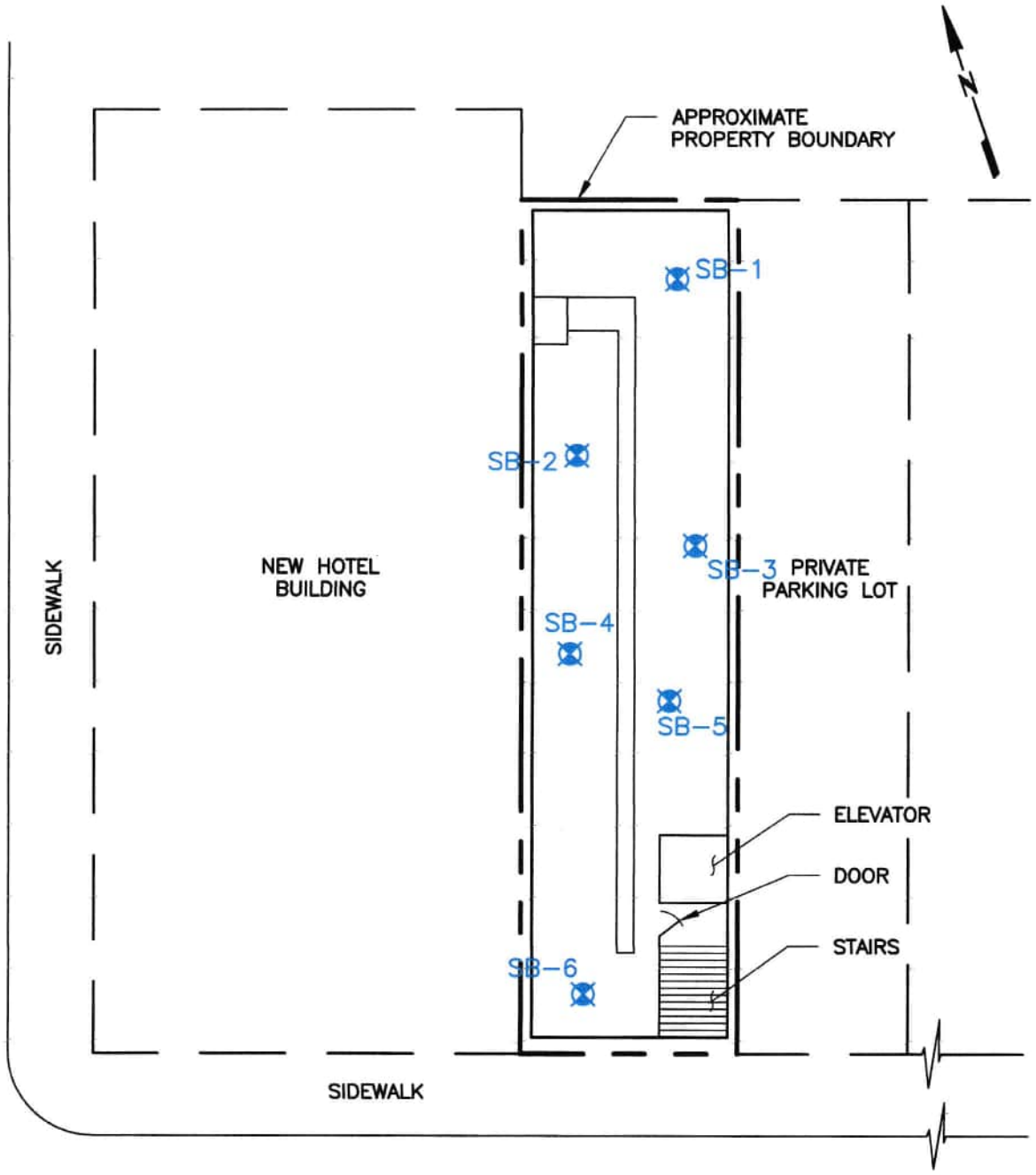
Figure 4
Site-Specific Water Table Map

22-07 41st Avenue
Long Island City, New York

Prepared By: JCL 03/01/19 | Checked By: EAW 03/01/19

N

0 15 30 Feet



LEGEND

SB–1 SOIL BORING

41st Avenue

*THERE WERE NO EXCEEDANCES OF PART 375 CONTAMINANTS

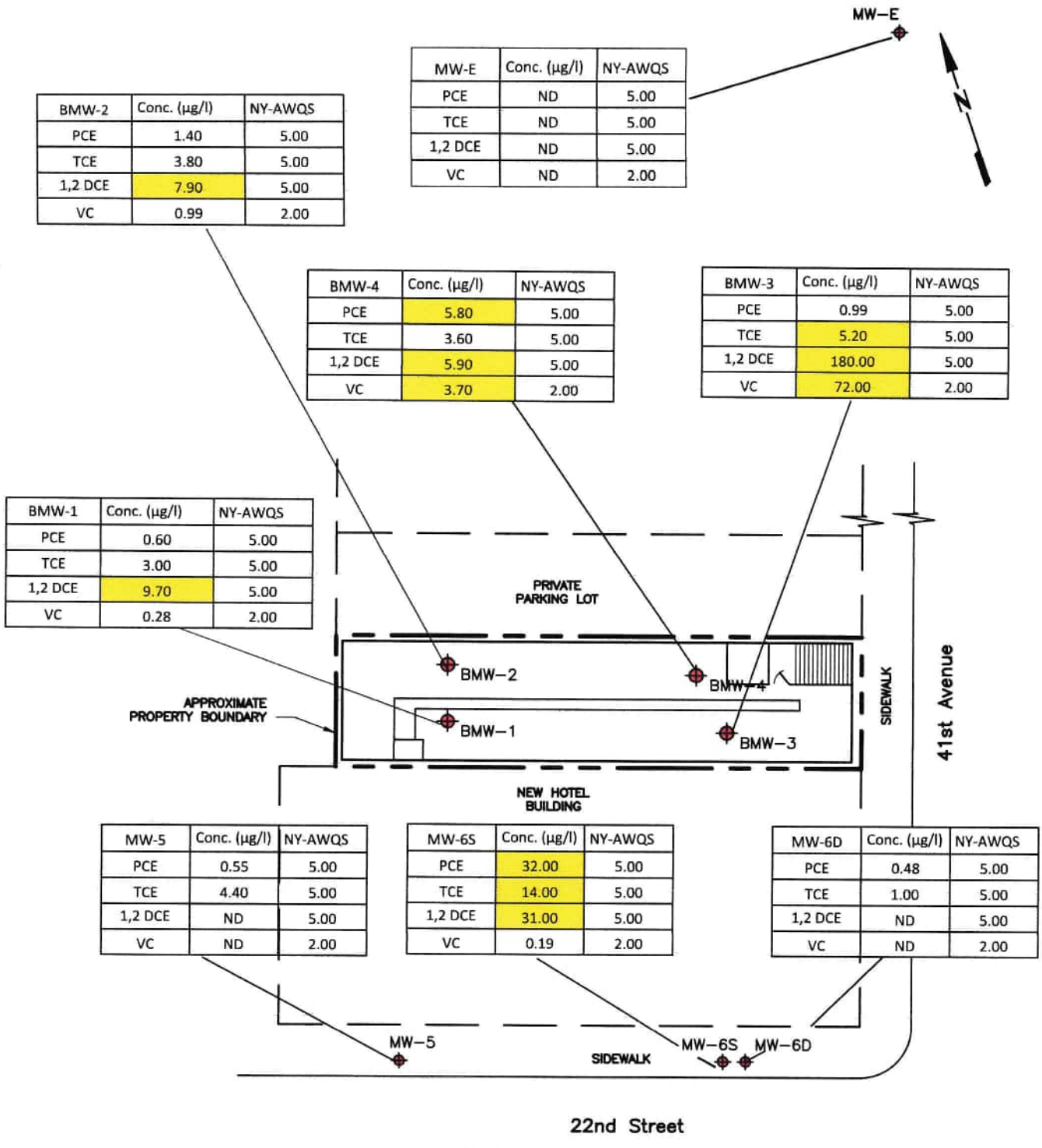
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Prepared/Date: BJH 07/23/2018
Checked/Date: EAW 07/23/2018

Former Hygrade Plating 22-07 41st Ave Long Island City, NY	Amec E & E, PC 214–25 42nd Avenue, Suite 3R Bayside, New York 11361 (347) 836–4343	BASEMENT SOIL BORING SAMPLE LOCATIONS Project 3612-162-331 Figure 5

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January 15, 2019

0 10 20 40

SCALE IN FEET

LEGEND

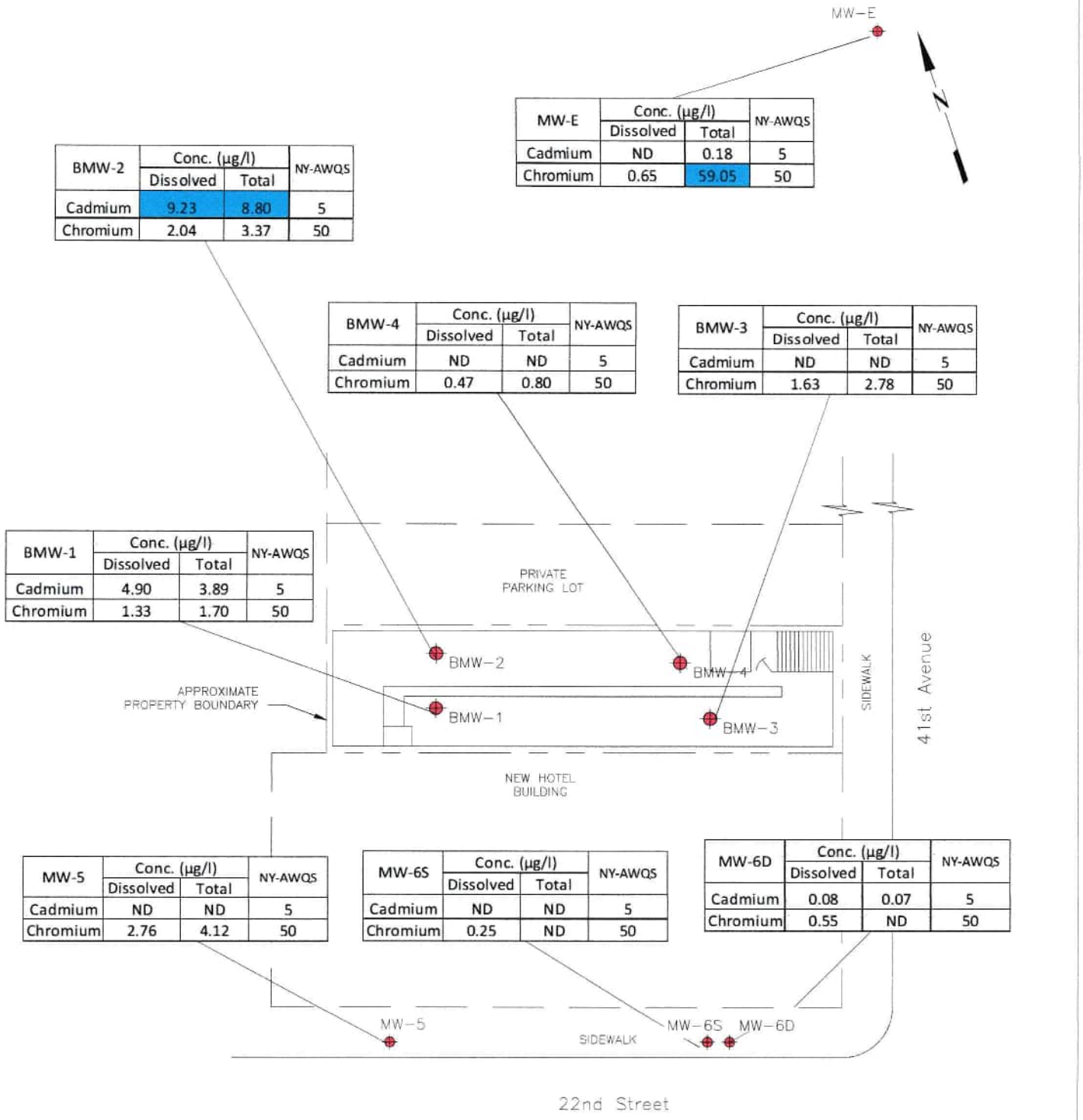
CONCENTRATION EXCEEDS NYSDEC STANDARDS

MW-5 MONITORING WELL WELL ID

Prepared/Date: BRT 05/06/2020
Checked/Date: EAW 05/06/2020

Former Hygrade Plating 20-07 41st Ave Long Island City, NY	Amec E & E, PC 214–25 42nd Avenue, Suite 3R Bayside, NY 11361 (347) 836–4445	Groundwater Monitoring Well VOC Concentrations Map Project 3612-16-2331 Figure 6A

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MW-E	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	ND	0.18	5
Chromium	0.65	59.05	50

BMW-2	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	9.23	8.80	5
Chromium	2.04	3.37	50

BMW-4	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	ND	ND	5
Chromium	0.47	0.80	50

BMW-3	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	ND	ND	5
Chromium	1.63	2.78	50

BMW-1	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	4.90	3.89	5
Chromium	1.33	1.70	50

MW-5	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	ND	ND	5
Chromium	2.76	4.12	50

MW-6S	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	ND	ND	5
Chromium	0.25	ND	50

MW-6D	Conc. (µg/l)		NY-AWQS
	Dissolved	Total	
Cadmium	0.08	0.07	5
Chromium	0.55	ND	50

January 15, 2019

0 10 20 40

SCALE IN FEET

LEGEND

CONCENTRATION EXCEEDS NYSDEC STANDARDS

MW-5 MONITORING WELL WELL ID

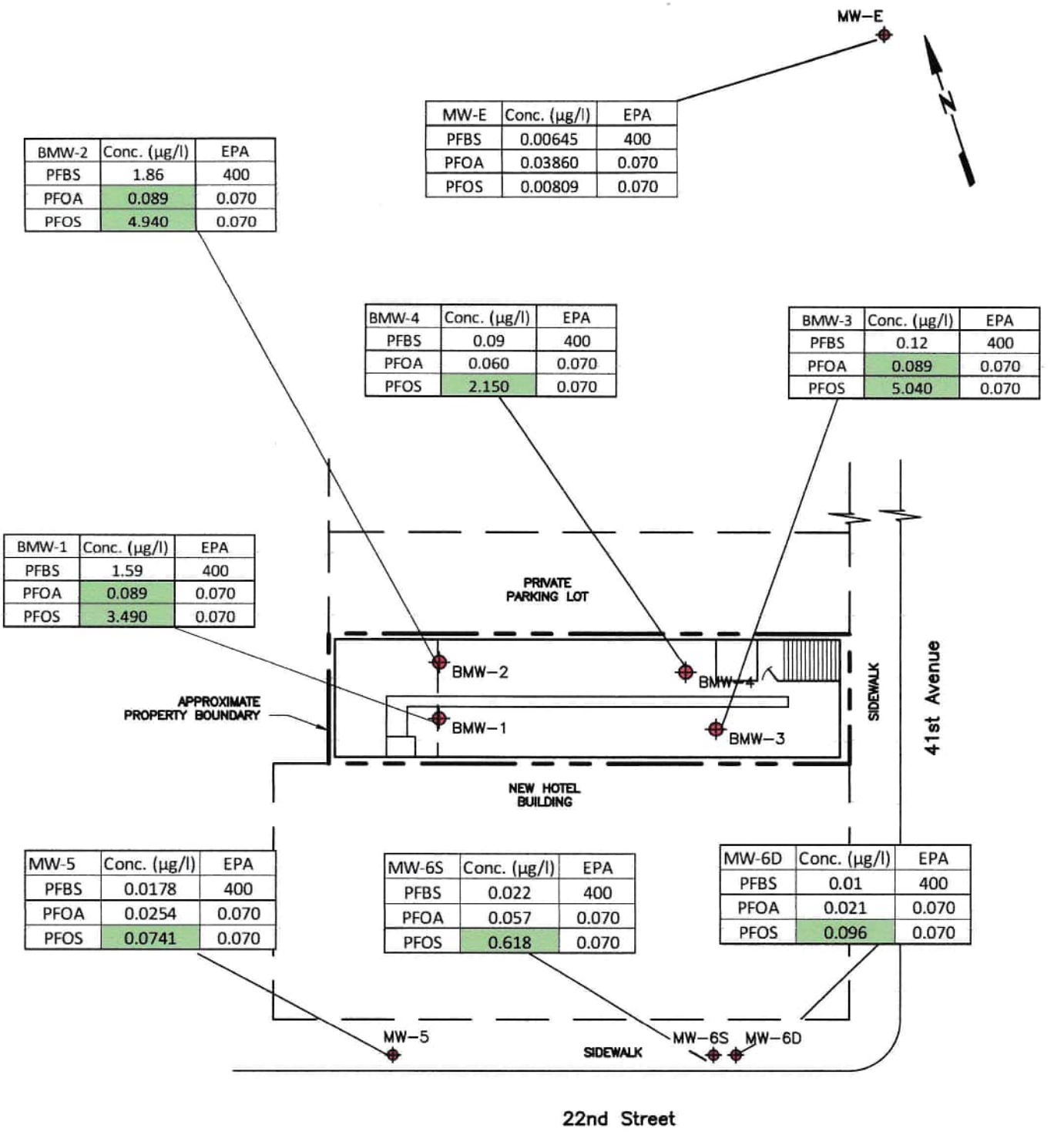
Prepared/Date: BRT 05/06/2020
Checked/Date: EAW 05/06/2020

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Former Hygrade Plating
20-07 41st Ave
Long Island City, NY

Amec E & E, PC
214-25 42nd Avenue, Suite 3R
Bayside, NY 11361
(347) 836-4445

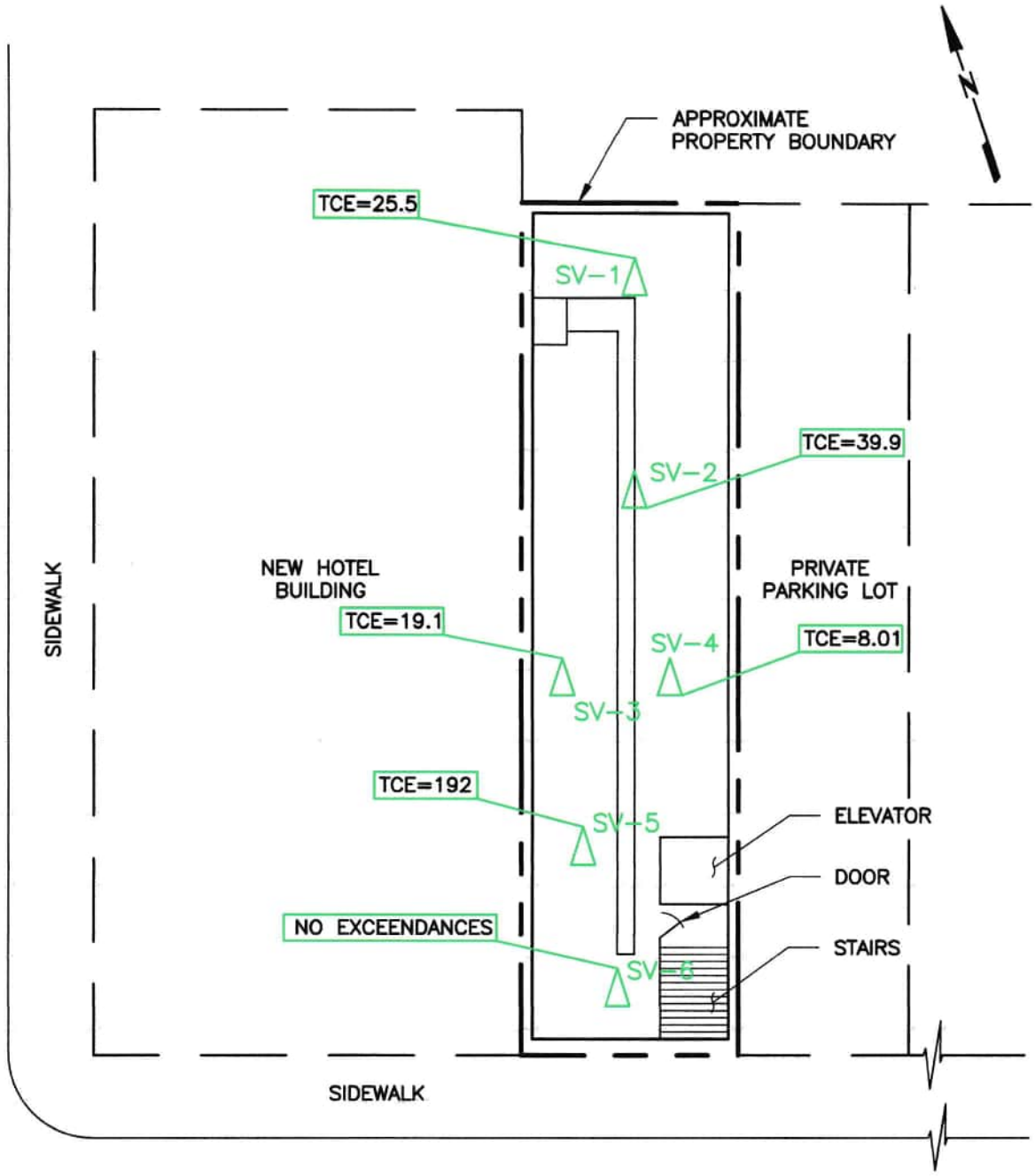
Groundwater Monitoring Well
Metals Concentration Map
Project 3612-16-2331
Figure 6B



Prepared/Date: BRT 05/06/2020
Checked/Date: EAW 05/06/2020

Former Hygrade Plating 20-07 41st Ave Long Island City, NY	Amec E & E, PC 214-25 42nd Avenue, Suite 3R Bayside, NY 11361 (347) 836-4445	Groundwater Monitoring Well PFAS Concentration Map Project 3612-16-2331 Figure 6C

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LEGEND

SV-1 SOIL VAPOR BORING

TCE=192 CONCENTRATION IN $\mu g/m^3$

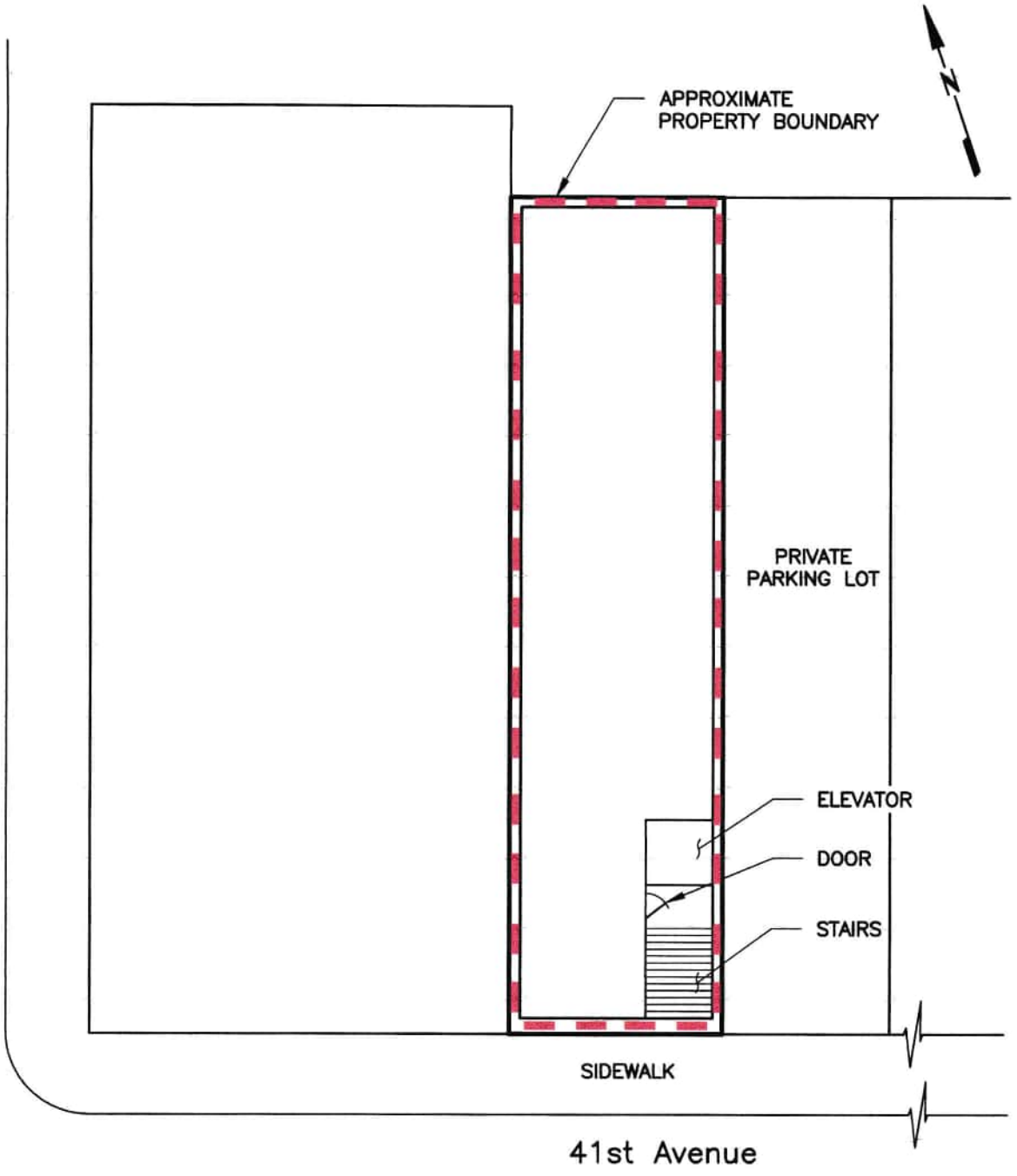
0 10 20 40

SCALE IN FEET

Prepared/Date: BJH 07/23/2018
Checked/Date: EAW 07/23/2018

Former Hygrade Plating 22-07 41st Ave Long Island City, NY	Amec E & E, PC 214-25 42nd Avenue, Suite 3R Bayside, New York 11361 (347) 836-4343	SOIL VAPOR DATA EXCEEDANCES OF DOH GUIDELINES Project 3612-162-331 Figure 7

C:\Users\benjamin.hess\Dropbox\PROJECTS\Misc_BH\Stalingrad\Fig-10 RAWP.dwg Mon, 23 Jul 2018 - 10:02am benjamin.hess



LEGEND

AREA OF SOIL VAPOR
INTRUSION CONCERN

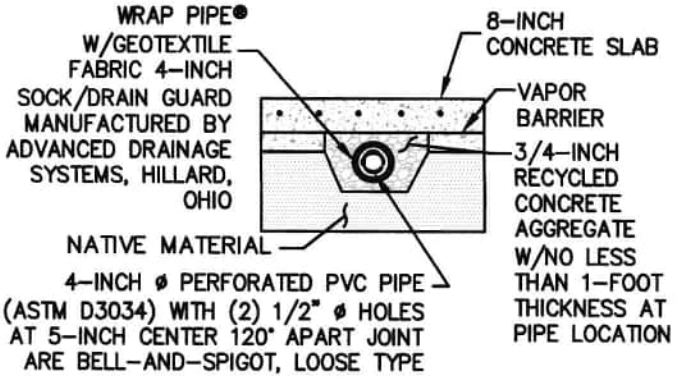
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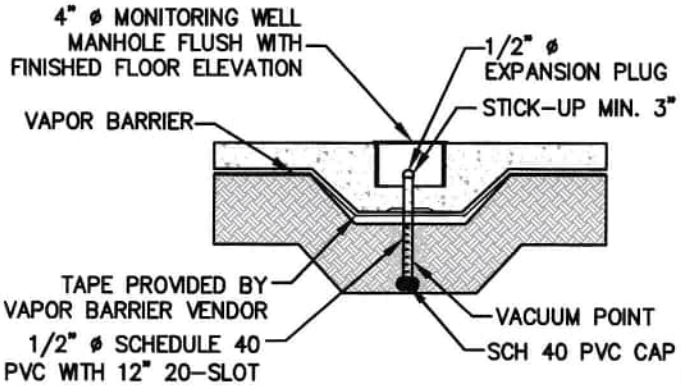
Prepared/Date: BJH 07/23/2018
Checked/Date: EAW 07/23/2018

Former Hygrade Plating 22-07 41st Ave Long Island City, NY	Amec E & E, PC 214–25 42nd Avenue, Suite 3R Bayside, New York 11361 (347) 836–4343	AREA OF SOIL VAPOR INTRUSION CONCERN Project 3612-162-331 Figure 8

C:\Users\benjamin.hess\Dropbox\PROJECTS\Misc_BH\Stalingrad\AREA OF CONCERN FIG 8 SMP.dwg Fri, 17 Aug 2018 - 2:56pm benjamin.hess

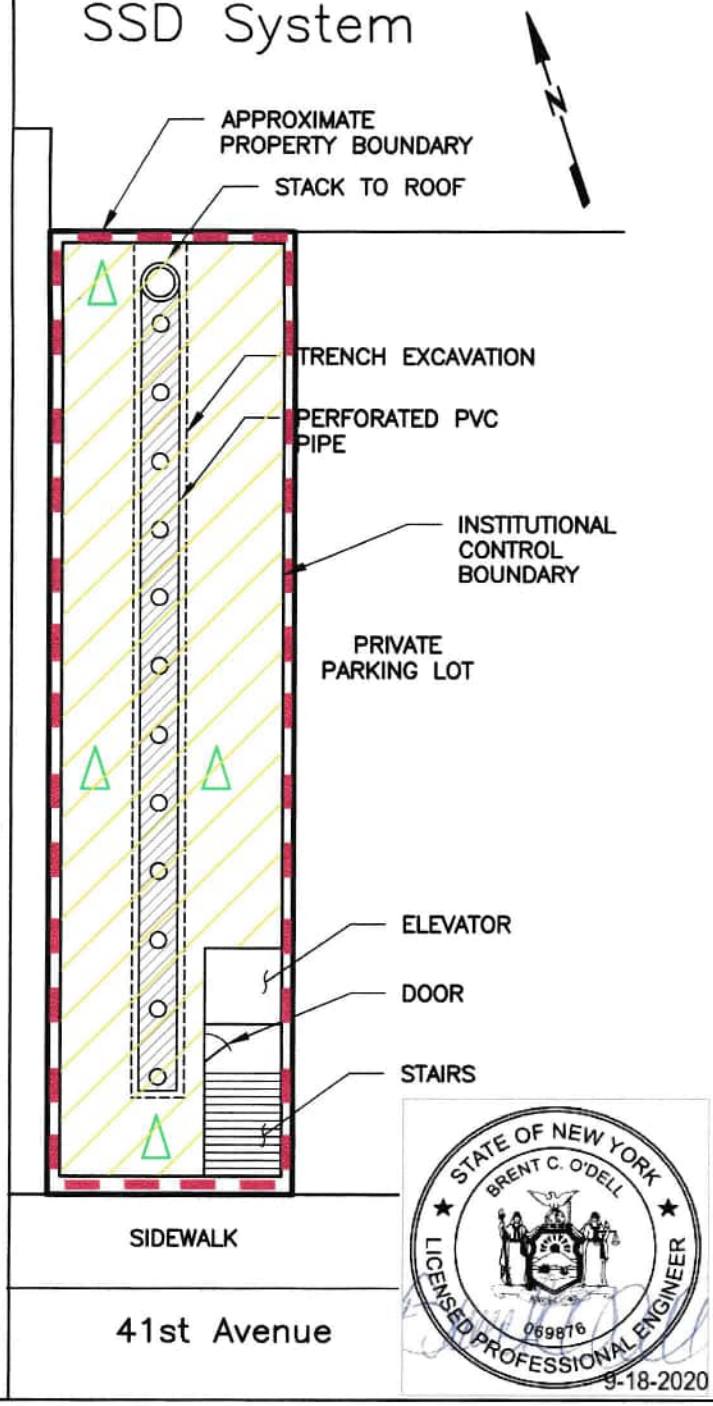


TYPICAL VENT PIPE CROSS-SECTION (NTS)



TYPICAL VACUUM MONITORING POINT (NTS)

SSD System



STATE OF NEW YORK
BRENT C. O'DELL
069876
LICENSED PROFESSIONAL ENGINEER
9-18-2020

LEGEND

VACUUM MONITORING POINT

4"ø PERFORATED PVC PIPE

AREA OF SOIL VAPOR INTRUSION CONCERN

AREAS OF INSTALLED 20 MIL VAPOR BARRIER COVERED BY 8 INCHES OF CONCRETE

0 10 20 40

SCALE IN FEET

Prepared/Date: BJH 07/23/2018
Checked/Date: EAW 07/23/2018

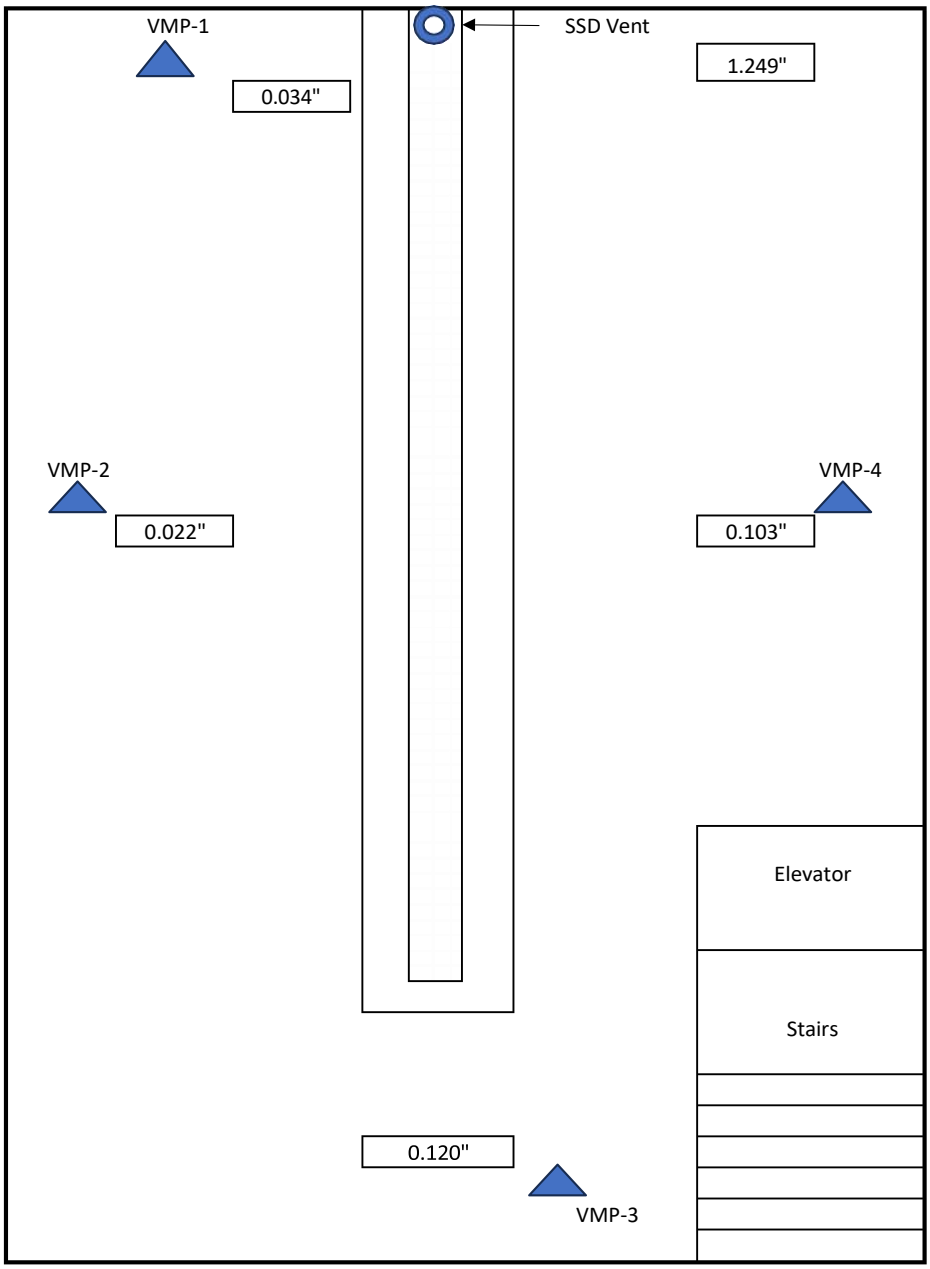
Former Hygrade Plating
22-07 41st Ave
Long Island City, NY

Amec E & E, PC
214-25 42nd Avenue, Suite 3R
Bayside, New York 11361
(347) 836-4343

Institutional Control Boundaries and Engineering Controls Location
Project 3612-162-331
Figure 9

C:\Users\benjamin.hess\Dropbox\PROJECTS\Misc_BH\Stalingrad\SSD LAYOUT FIG 16 RAWP.dwg Fri, 17 Aug 2018 - 2:59pm benjamin.hess

3/21/2025



Not to scale

Former Hygrade Plating 22-07 41st Ave Long Island City, NY	Touchstone Environmental Geology, PC 1919 Middle Country Road, Suite 205 Centereach, NY 11720	Sub-Slab Depressurization Vent And Vacuum Monitoring Point Readings In Inches Of Water Figure 10

APPENDICES

APPENDIX A

LIST OF SITE CONTACTS

APPENDIX A – LIST OF SITE CONTACTS

Name	**Phone/Email Address**
Site Owner and Remedial Party: Stalingrad Ventures, LLC	631-293-1998 uselectroplate@optonline.net
Qualified Environmental Professional: Rachael Ataman	691-672-3530 rachelataman@touchstoneenvironmental,com
NYSDEC DER Project Manager: Wendi Zheng	718-482-7541 wendi.zheng@dec,ny.gov
NYSDEC Regional HW Engineer: Jane O'Connell	(718) 482-4599 jane.oconnell@dec.ny.gov
NYSDEC Site Control: Kelly A. Lewandowski	(518) 402-8013 kelly.lewandowski@dec.ny.gov
Remedial Party Attorney: Ira Levine, Esq.	516-541-1072 ilevinelaw@optimum.net

APPENDIX B

ENVIRONMENTAL EASEMENT/NOTICE/DEED RESTRICTION

NYC

Department of Finance

May 22, 2019

SAHN WARD COSCHIGNANO PLLC
333 EARLE OVINGTON BOULEVARD SUITE 601
ATTN: MIRIAM VILLANI
UNIONDALE, NY 11553

RE: Submitted Transaction Successfully Recorded

Dear SAHN WARD COSCHIGNANO PLLC:

Document Identification Number 2019050600319001 which was submitted and intaken for Recording on 5/21/2019 3:33:10 PM, was successfully recorded on 5/22/2019 at 12:15 PM.

Below summarizes the status of the document(s).

Recording & Endorsement Cover Page(s) attached

2019050600319001

If you have questions or require further information, please send an email to acrishelp@finance.nyc.gov and someone will get back to you.

Thank you.

City Register

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

This page is part of the instrument. The City Register will rely on the information provided by you on this page for purposes of indexing this instrument. The information on this page will control for indexing purposes in the event of any conflict with the rest of the document.

2019050600319001004EED33

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 11**

Document ID: 2019050600319001 Document Date: 03-25-2019 Preparation Date: 05-21-2019
Document Type: EASEMENT
Document Page Count: 9

PRESENTER:
FIRST AMERICAN TITLE
666 THIRD AVENUE
955799 ACCOM
NEW YORK, NY 10017
212-551-9421
MLETTIERI@FIRSTAM.COM

RETURN TO:
SAHN WARD COSCHIGNANO PLLC
333 EARLE OVINGTON BOULEVARD SUITE 601
ATTN: MIRIAM VILLANI
UNIONDALE, NY 11553

PROPERTY DATA

Borough	Block	Lot	Unit	Address
QUEENS	409	6	Entire Lot	22-07 41ST AVENUE

Property Type: OFFICE BUILDING

CROSS REFERENCE DATA

CRFN_____ *or* DocumentID_____ *or* _____ Year____ Reel____ Page_____ *or* File Number_____

PARTIES

GRANTOR/SELLER:
STALINGRAD VENTURES LLC
100 FIELD STREET
WEST BABYLON, NY 11704

☒ Additional Parties Listed on Continuation Page

GRANTEE/BUYER:
THE PEOPLE OF THE STATE OF NEW YORK
ACTING THROUGH THEIR COMMISSIONER OF THE,
625 BROADWAY
ALBANY, NY 12233

FEES AND TAXES

Mortgage :

Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	82.00
Affidavit Fee:	$	0.00

Filing Fee: $ 100.00
NYC Real Property Transfer Tax: $ 0.00
NYS Real Estate Transfer Tax: $ 0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 05-22-2019 12:15
City Register File No.(CRFN): **2019000161926**

City Register Official Signature

3020-422 MM

County: Queens Site No: C241148 Brownfield Cleanup Agreement Index : C241148-03-15

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

THIS INDENTURE made this 25th day of March, 2019, between Owner(s) Stalingrad Ventures LLC, having an office at 100 Field Street, West Babylon, New York 11704, County of Suffolk, State of New York (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,

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 at the address of 22-07 41st Avenue in the City of New York, County of Queens and State of New York, known and designated on the tax map of the New York City Department of Finance as tax map parcel number: Block 409 Lot 6, being the same as that property conveyed to Grantor by deed dated March 8, 2013 and recorded in the City Register of the City of New York as CRFN # 2013000115169. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.0574 +/- acres, and is hereinafter more fully described in the Land Title Survey dated August 24, 2018 and last revised October 3, 2018 prepared by Stephen E. Ravn, L.L.S. of American Engineering & Land Surveying P.C., 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

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C241148-03-15, 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:

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 New York City Department of Health and Mental Hygiene 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 or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), 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: C241148
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 has caused this instrument to be signed in its name.

Stalingrad Ventures LLC:

By: _____

Print Name: IRA LEVINE

Title: Authorized Signatory Date: 2/14/19

Grantor's Acknowledgment

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

On the 14th day of February in the year 20 19, before me, the undersigned, personally appeared Ira Levine, 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.

Ellen M. Ryan
Notary Public - State of New York

ELLEN M. RYAN
Notary Public, State of New York
Qualified in Nassau County
No. 01RY6045855
Term Expires July 31, 2022

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: _____
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 25th day of March, in the year 2019, before me, the undersigned, personally appeared Michael J. Ryan, 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

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2022

SCHEDULE "A" PROPERTY DESCRIPTION

ALL that certain plot, piece or parcel of land situate, lying and being in the First Ward, Borough and County of Queens, City and State of New York in the former 3rd Ward of Long Island City, Queens County, known as Lot# 49 on a certain map entitled, "Map of Property adjoining Ravenswood in the Town of Newtown, Queens Long Island belonging to Abraham B. Payntar surveyed May_, 1868 by P.G. Van Alst, C.S." and filed in the Office of the Clerk, now Register of Queens County, which according to Long Island City standard of measurements is bounded and described as follows:

BEGINNJNG at a point on the northeasterly line of 41st Avenue (formerly Wilbur Avenue), 50 feet 3/4 inches southeasterly from the comer formed by the northeasterly line of 41st Avenue and southeasterly line of 22nd Street (formerly Sunswich Street);

RUNNING THENCE northeasterly parallel with 22nd Street 100.01 feet;

THENCE southeasterly parallel with 41st Avenue 25 feet 1/4 inch;

THENCE southwesterly again parallel with 22nd Street 100.01 feet to the northeasterly line of 41st Avenue; and

THENCE northwesterly along same 25 feet 1/4 inches to the point or place of BEGINNING.

Parcel having an area of 2,502 square feet or 0.0574 acres more or less.

For Information Only: Premises also known as 22-07 41stAvenue, Long Island City, New York. Block 409 Lot 6

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of the General Counsel
625 Broadway, 14th Floor, Albany, New York 12233-1500
P: (518) 402-9185 | F: (518) 402-9018
www.dec.ny.gov

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

THIS INDENTURE made this 25th day of March, 2019 between Owner(s) Stalingrad Ventures LLC, having an office at 100 Field Street, West Babylon, New York 11704, County of Suffolk, State of New York (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,

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 at the address of 22-07 41st Avenue in the City of New York, County of Queens and State of New York, known and designated on the tax map of the New York City Department of Finance as tax map parcel number: Block 409 Lot 6, being the same as that property conveyed to Grantor by deed dated March 8, 2013 and recorded in the City Register of the City of New York as CRFN # 2013000115169. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.0574 +/- acres, and is hereinafter more fully described in the Land Title Survey dated August 24, 2018 and last revised October 3, 2018 prepared by Stephen E. Ravn, L.L.S. of American Engineering & Land Surveying P.C., 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

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C241148-03-15, 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:

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 New York City Department of Health and Mental Hygiene 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 or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), 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: C241148
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.

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

Stalingrad Ventures LLC:

By: _____

Print Name: IRA LEVINE

Title: Authorized Signatory Date: 2/14/19

Grantor's Acknowledgment

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

On the 14th day of February in the year 20 __, before me, the undersigned, personally appeared Ira Levine, 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.

Ellen M. Ryan
Notary Public - State of New York

ELLEN M. RYAN
Notary Public, State of New York
Qualified in Nassau County
No. 01RY6045855
Term Expires July 31, 2022

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: _____
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 25th day of March, in the year 2019, before me, the undersigned, personally appeared Michael J. Ryan, 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

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2022

SCHEDULE "A" PROPERTY DESCRIPTION

ALL that certain plot, piece or parcel of land situate, lying and being in the First Ward, Borough and County of Queens, City and State of New York in the former 3rd Ward of Long Island City, Queens County, known as Lot# 49 on a certain map entitled, "Map of Property adjoining Ravenswood in the Town of Newtown, Queens Long Island belonging to Abraham B. Payntar surveyed May_, 1868 by P.G. Van A1st, C.S." and filed in the Office of the Clerk, now Register of Queens County, which according to Long Island City standard of measurements is bounded and described as follows:

BEGINNJNG at a point on the northeasterly line of 41st Avenue (formerly Wilbur Avenue), 50 feet 3/4 inches southeasterly from the comer formed by the northeasterly line of 41st Avenue and southeasterly line of 22nd Street (formerly Sunswich Street);

RUNNING THENCE northeasterly parallel with 22nd Street 100.01 feet;

THENCE southeasterly parallel with 41st Avenue 25 feet 1/4 inch;

THENCE southwesterly again parallel with 22nd Street 100.01 feet to the northeasterly line of 41st Avenue; and

THENCE northwesterly along same 25 feet 1/4 inches to the point or place of BEGINNING.

Parcel having an area of 2,502 square feet or 0.0574 acres more or less.

For Information Only: Premises also known as 22-07 41stAvenue, Long Island City, New York. Block 409 Lot 6

APPENDIX C

MONITORING WELL BORING AND CONSTRUCTION LOGS

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC		**Boring No. SB-1**

Contractor:	AARCO	**Drilling Method:**	Post-Hole and Jack Hammer
Logged By:	Jazmin Logan	**Operator:**	D. Pacheo (AARCO)
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	
Date Start/Finish:	10/13/2016	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
1				0.0'-2.0' Post-hole digger used.			
2	SB-1 (2')		0.8-0.9 ppm	Tan, medium to coarse Sand, with angular inclusions (fill material)	▽	YES	
3			0.8-0.9 ppm	2.0'-5.0' Changed to jackhammer with macrocore.			
4		0.5'/5.0'		Dark gray Sand, angular inclusions (fill material)			
5							
6				Refusal encountered at 5' feet			
7							
8							

Notes
Sample depth is measured from basement floor grade. Groundwater table encountered at 2'.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC		**Boring No. SB-2**

Contractor:	AARCO	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	D. Pacheo (AARCO)
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Post-Hole and Jack Hammer
Date Start/Finish:	10/13/2016	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
1			0.2-0.3 ppm	0.0'-2.0' Post-hole digger used. Tan, medium to coarse Sand, with angular inclusions (fill material)			
2					▽		
3		4.0'/5.0'		2.0'-6.0' Changed to jackhammer with macrocore Tan, medium to coarse Sand, with angular inclusions (fill material)			
4			0.2-0.3 ppm				
5				6.0'-7.0' Gray silty Clay, with fine sand			
6	SB-2 (6')					YES	
7							
8				End of boring @ 7'			

Notes

Sample depth is measured from basement floor grade. Groundwater table encountered at 2'.

Composite sample, SB-2 (comp) also collected.

Duplicate samples taken at this boring location

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC		**Boring No. SB-3**

Contractor:	AARCO	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	D. Pacheo (AARCO)
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Post-Hole and Jack Hammer
Date Start/Finish:	10/13/2016	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
1			0.2-0.3 ppm	0.0'-2.0' Post-hole digger used. Tan, medium to coarse Sand, with angular inclusions (fill material)			
2					▽		
3		4.3'/5.0'		2.0'-6.0' Changed to jackhammer with macrocore			
4	SB-3 (4')		0.2-0.3 ppm	Tan, medium to coarse Sand, with angular inclusions (fill material)		YES	
5				6.0'-7.0' Gray silty Clay, with fine sand			
6							
7							
8				End of boring @ 7'			

Notes
Sample depth is measured from basement floor grade. Groundwater table encountered at 2'.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC		**Boring No. SB-4**

Contractor:	AARCO	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	D. Pacheo (AARCO)
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Post-Hole and Jack Hammer
Date Start/Finish:	10/13/2016	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
1	SB-4 (6')		0.2-0.3 ppm	0.0'-2.0' Post-hole digger used. Tan, medium to coarse Sand, with angular inclusions (fill material)			
2					▽		
3		4.0'/5.0'		2.0'-6.0' Changed to jackhammer with macrocore Tan, medium to coarse Sand, with angular inclusions (fill material)			
4			0.2-0.3 ppm				
5				6.0'-7.0' Gray silty Clay, with fine sand			
6						YES	
7							
8				End of boring @ 7'			
9							
10							
11							
12							

Notes
Sample depth is measured from basement floor grade. Groundwater table encountered at 2'.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC		**Boring No. SB-5**

Contractor:	AARCO	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	D. Pacheo (AARCO)
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Post-Hole and Jack Hammer
Date Start/Finish:	10/13/2016	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
1			0.2-0.3 ppm	0.0'-2.0' Post-hole digger used. Tan, medium to coarse Sand, with angular inclusions (fill material)			
2					▽		
3				2.0'-5.0' Changed to jackhammer with macrocore			
4		4.5'/5.0'	0.2-0.3 ppm	Tan, medium to coarse Sand, with angular inclusions (fill material)			
5	SB-5 (3')			5.0'-7.0' Gray silty Clay, with fine sand		YES	
6							
7				Headspace reading was 12.1 ppm			
8				End of boring @ 7'			
9							
10							
11							
12							

Notes

Sample depth is measured from basement floor grade. Groundwater table encountered at 2'.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC		**Boring No. SB-6**

Contractor:	AARCO	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	D. Pacheo (AARCO)
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Post-Hole and Jack Hammer
Date Start/Finish:	10/13/2016	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
1			0.2-	0.0'-2.0' Post-hole digger used. Tan, medium to coarse Sand, with			
2			0.3 ppm	angular inclusions (fill material)	▽		
3			0.2-	2.0'-5.0' Changed to jackhammer with macrocore			
4		4.5'/5.0'	0.3 ppm	Tan, medium to coarse Sand, with angular inclusions (fill material)			
5				Hit refusal at 5' and move over 5.0'-6.5' Black silty Clay, with fine sand			
6	SB-6 (6')		50-100 ppm	6.5'-7.0' Dark brown, fine to medium Sand, PID readings lower		YES	
7	SB-6 (7')		15ppm			YES	
8				End of boring @ 7'			
9							
10							
11							
12							

Notes

Sample depth is measured from basement floor grade. Groundwater table encountered at 2'.

Composite sample, SB-6 (comp) also collected.

MS and MSDS samples taken at this boring location

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC	**Boring No. MW-6D**

Contractor:	Cascade	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	Luke
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Geoprobe
Date Start/Finish:	4/11/2017	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
				Drill straight through 0-20' bgs without characterization			
20							
22				20'-24': Fine to medium, brown Sand with mica			
24		4.5'/5.0'	0.0 ppm	24'-24.5': Grayish Silt			
26				25'-30': Grayish clayey Sand			
28		5.0'/5.0'	0.0 ppm				
30							
32		0.3'/5'	0.0	30'-30.3': Grayish, dense, clayey Sand with pebble inclusions			
34				Refusal @ 32' End of Boring			
36							
38							

Notes

Sample depth is measured from sidewalk grade.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC	**Boring No. MW-6S**

Contractor:	Cascade	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	Luke
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Geoprobe
Date Start/Finish:	4/11/2017	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
2				0'-0.1': Crushed conrete 0.1'-1': Fine to medium, brown Sand			
4		2.5' / 5'	0.0 ppm	1'-2.5': Crushed Asphalt			
6				5'-6.3': Crushed Asphalt			
8		2.5' / 5'	0.0 ppm	6.3'-7.3': Light brown, clayey Sand 7.3'-7.5': Greenish gray Silt w/ some clay	▽		
10							
12				10'-12': Greenish gray Silt w/ some clay 12'-14': Brown, medium Sand			
14		4.0'/5.0'	0.0 ppm	with angular pebble inclusions			
16				15'-20': Brown, fine to medium Sand			
18		5.0'/5.0'	0.0 ppm	with traceof angular inclusions			
20							
				End of boring @ 20'			

Notes

Sample depth is measured from sidewalk grade.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

amec foster wheeler	**Project:** 3612162331.01 **Location:** 22-07 41st Street, LIC **Client:** Stalingrad Ventures, LLC	**Boring No. MW-5**

Contractor:	Cascade	**Drilling Method:**	Geoprobe
Logged By:	Jazmin Logan	**Operator:**	Luke
Checked By:	Eric Weisntock	**Hammer Wt./ Fall:**	Geoprobe
Date Start/Finish:	4/12/2017	**Sampler:**	Jazmin Logan

Definitions:
S = Split Spoon Sample
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
q_p = Unconfined Compressive Strength (psf)
woh = weight of 140 lb. hammer
wor = weight of rods
wc = Water Content, percent
oc = Organic Content, percent

Depth	Sample Information: Sample No.	Advance/ Recovery	PID Reading	Geologic Description	Water level	Analytical Collected (Y/N)	
2		2'/5'	0.7 ppm	0'-1': Crushed conrete 1'-2': Crushed Asphalt			
4							
6		2'/5'	0.6 ppm	5'-6': Crushed Asphalt 6'-7': Fine to medium, orangey brown Sand	▽		
8							
10		4.0'/5.0'	0.6 ppm	10'-10.5': Fine to medium, orangey brown Sand 10.5'-12.5': Greenish gray Silt w/ some clay 12.5'-14':Fine to medium orangey brown Sand Sand			
12							
14							
16		5.0'/5.0'	0.6 ppm	15'-18': Fine to medium orangey brown Sand 18'-18.75': Brown Silt w/ some sand 18.75'-19': Pocket of fine to medium brown Sand Sand 19'-20': Grayish brown Silt w/ clay & mica			
18							
20							
				End of boring @ 20'			

Notes

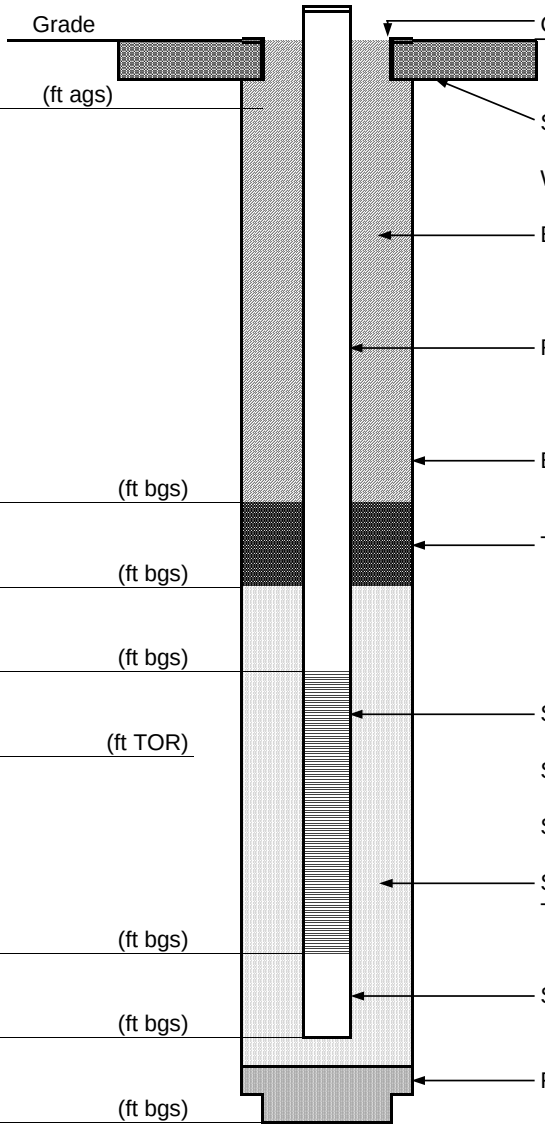
Sample depth is measured from sidewalk grade.
Background PID reading is 0.7 ppm

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

STANDPIPE WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: BMW-1	Start Date & Time: 1-25-18 at 1230
Project Location (City & State): Long Island City, New York	Logged By: Ben Hess	Checked By: Eric Weinstock	Finish Date & Time: 1-25-18 at 1330
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Quincy Brandt	
Developed By: Cascade	Development Date & Time:	Development Method:	

CONSTRUCTION DETAILS



Top of Riser Pipe	(ft ags)	
Top of Seal	0.5	(ft bgs)
Top of Sand Pack	0.75	(ft bgs)
Top of Screen	1	(ft bgs)
Static DTW	3	(ft TOR)
Base of Screen	6	(ft bgs)
Bottom of Well	6.4	(ft bgs)
Total Drilled Depth	6.5	(ft bgs)

Casing Material	NA	(in.)
Surface Seal Type	NA	
Well Diameter	2	(in.)
Backfill/Grout Type	Cuttings	
Riser Pipe Material	PVC	
Borehole Diameter	3	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.010	(in.)
Screen Length	5	(ft.)
Sand Pack Type	U.S. Silica #1 Sand	
Sump Length	4	(in.)
Fallback/Backfill	NA	(ft)

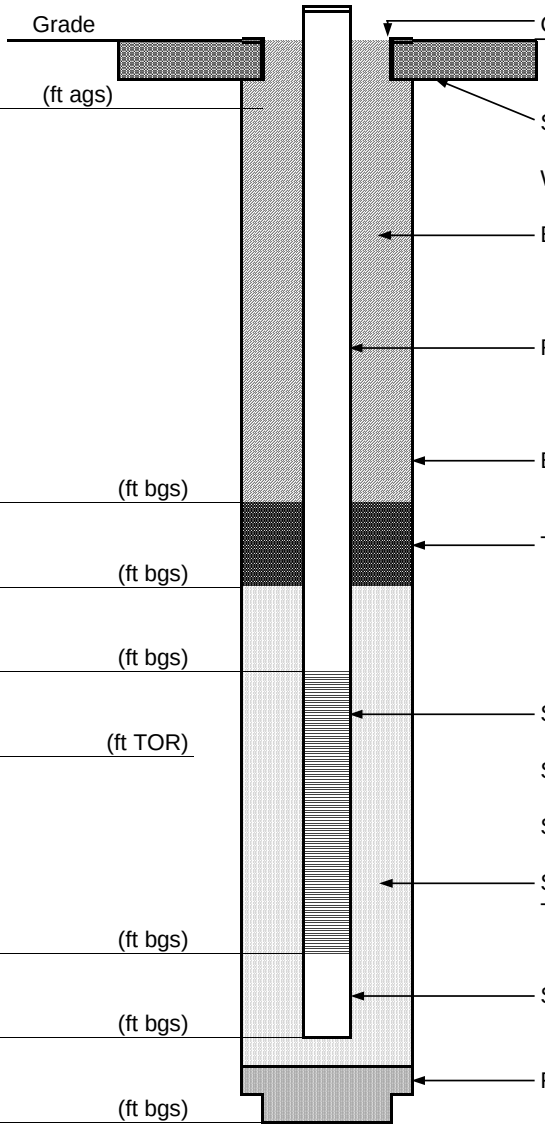
NOTES:

Amec Foster Wheeler
1979 Marcus Avenue
Suite 210
Lake Success, NY 11042
(516) 622-2254

STANDPIPE WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: BMW-2	Start Date & Time: 1-25-18 at 1030
Project Location (City & State): Long Island City, New York	Logged By: Ben Hess	Checked By: Eric Weinstock	Finish Date & Time: 1-25-18 at 1130
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Quincy Brandt	
Developed By: Cascade	Development Date & Time:	Development Method:	

CONSTRUCTION DETAILS



Top of Riser Pipe	(ft ags)	
Top of Seal	1.5	(ft bgs)
Top of Sand Pack	2.5	(ft bgs)
Top of Screen	2.5	(ft bgs)
Static DTW	2.5	(ft TOR)
Base of Screen	7.5	(ft bgs)
Bottom of Well	7.9	(ft bgs)
Total Drilled Depth	8	(ft bgs)

Casing Material	NA	(in.)
Surface Seal Type	NA	
Well Diameter	2	(in.)
Backfill/Grout Type	Cuttings	
Riser Pipe Material	PVC	
Borehole Diameter	3	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.010	(in.)
Screen Length	5	(ft.)
Sand Pack Type	U.S. Silica #1 Sand	
Sump Length	4	(in.)
Fallback/Backfill	NA	(ft)

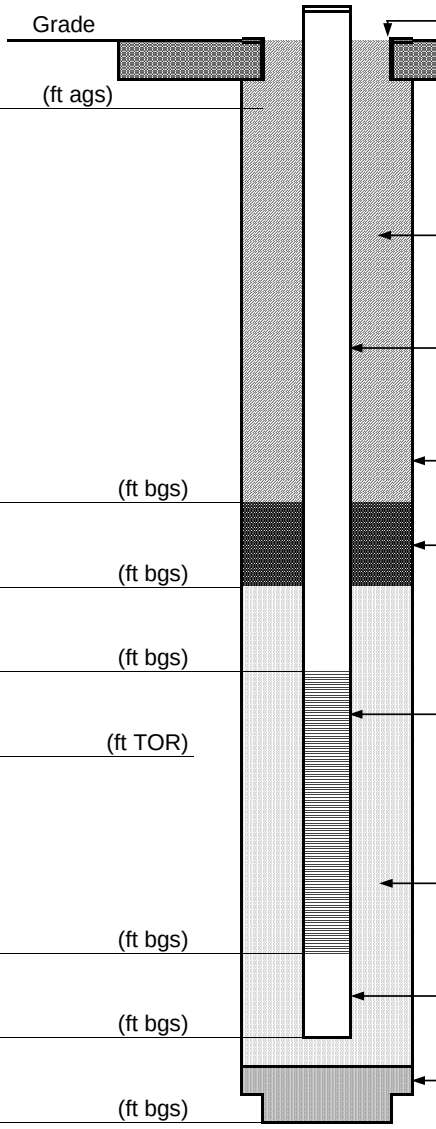
NOTES:

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Lake Success, NY 11042
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STANDPIPE WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: BMW-3	Start Date & Time: 1-24-18 at
Project Location (City & State): Long Island City, New York	Logged By: Jazmin Logan	Checked By: Eric Weinstock	Finish Date & Time: 1-24-18 at
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Quincy Brandt	
Developed By: Cascade	Development Date & Time:	Development Method:	

CONSTRUCTION DETAILS



Top of Riser Pipe	(ft ags)	
Top of Seal	2.5	(ft bgs)
Top of Sand Pack	3	(ft bgs)
Top of Screen	3.5	(ft bgs)
Static DTW	3	(ft TOR)
Base of Screen	8.5	(ft bgs)
Bottom of Well	8.9	(ft bgs)
Total Drilled Depth	9	(ft bgs)

Casing Material	NA	(in.)
Surface Seal Type	NA	
Well Diameter	2	(in.)
Backfill/Grout Type	Type 1 Portlad Cement	
Riser Pipe Material	PVC	
Borehole Diameter	3	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.010	(in.)
Screen Length	5	(ft.)
Sand Pack Type	U.S. Silica #1 Sand	
Sump Length	4	(in.)
Fallback/Backfill	NA	(ft)

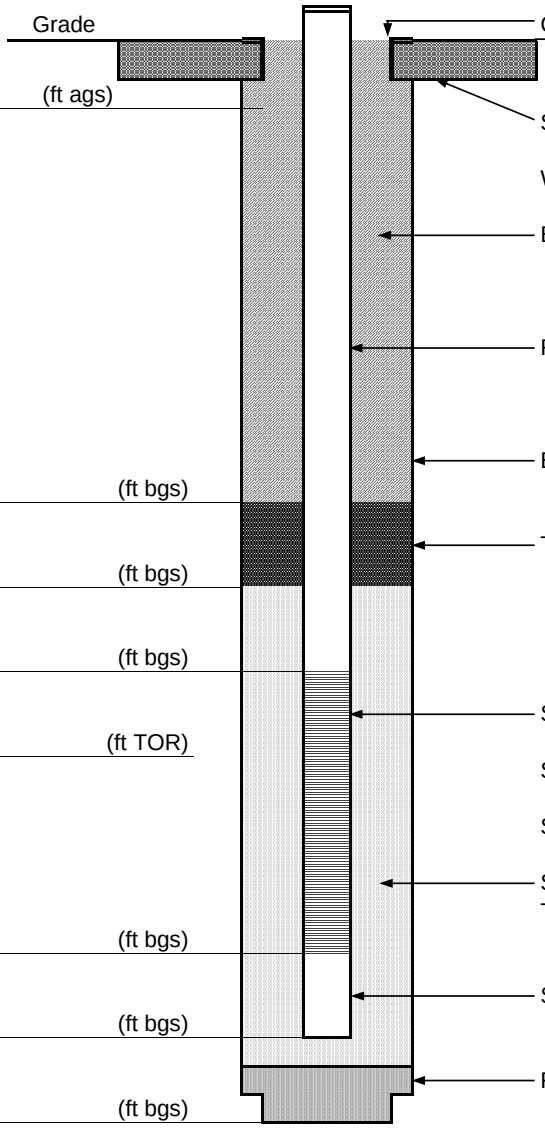
NOTES:

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Lake Success, NY 11042
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STANDPIPE WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: BMW-4	Start Date & Time: 1-24-18 at 1300
Project Location (City & State): Long Island City, New York	Logged By: Jazmin Logan	Checked By: Eric Weinstock	Finish Date & Time: 1-24-18 at
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Quincy Brandt	
Developed By: Cascade	Development Date & Time:	Development Method:	

CONSTRUCTION DETAILS



Top of Riser Pipe	(ft ags)	
Top of Seal	2.5	(ft bgs)
Top of Sand Pack	3	(ft bgs)
Top of Screen	3.5	(ft bgs)
Static DTW	3	(ft TOR)
Base of Screen	8.5	(ft bgs)
Bottom of Well	8.9	(ft bgs)
Total Drilled Depth	9	(ft bgs)

Casing Material	NA	(in.)
Surface Seal Type	NA	
Well Diameter	2	(in.)
Backfill/Grout Type	Type 1 Portlad Cement	
Riser Pipe Material	PVC	
Borehole Diameter	3	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.010	(in.)
Screen Length	5	(ft.)
Sand Pack Type	U.S. Silica #1 Sand	
Sump Length	4	(in.)
Fallback/Backfill	NA	(ft)

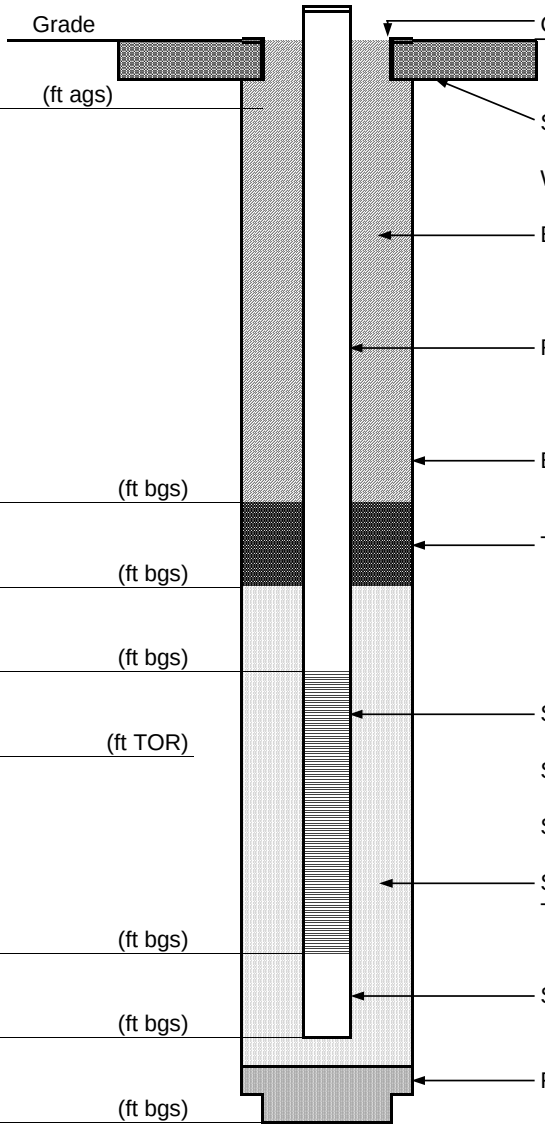
NOTES:

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Suite 210
Lake Success, NY 11042
(516) 622-2254

STANDPIPE WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: IP-1	Start Date & Time: 1-25-18 at 0915
Project Location (City & State): Long Island City, New York	Logged By: Ben Hess	Checked By: Eric Weinstock	Finish Date & Time: 1-25-18 at 1000
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Quincy Brandt	
Developed By: Cascade	Development Date & Time:	Development Method:	

CONSTRUCTION DETAILS



Top of Riser Pipe	(ft ags)	
Top of Seal	1.5	(ft bgs)
Top of Sand Pack	2	(ft bgs)
Top of Screen	4.6	(ft bgs)
Static DTW	2	(ft TOR)
Base of Screen	9.6	(ft bgs)
Bottom of Well	10	(ft bgs)
Total Drilled Depth	10	(ft bgs)

Casing Material	NA	(in.)
Surface Seal Type	NA	
Well Diameter	2	(in.)
Backfill/Grout Type	Cuttings	
Riser Pipe Material	PVC	
Borehole Diameter	3	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.030	(in.)
Screen Length	5	(ft.)
Sand Pack Type	U.S. Silica #3 Sand	
Sump Length	4	(in.)
Fallback/Backfill	NA	(ft)

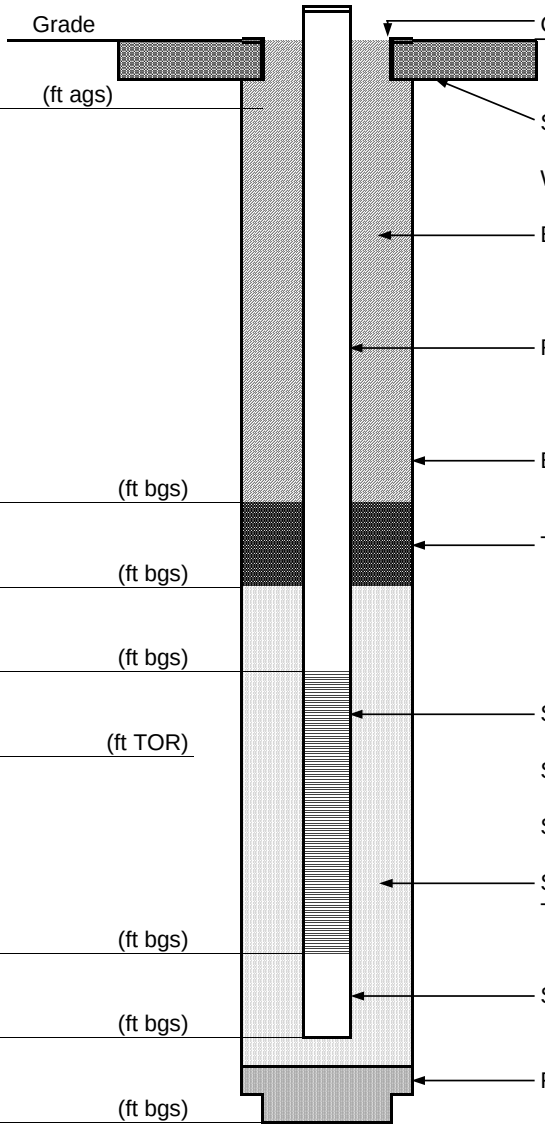
NOTES:

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Suite 210
Lake Success, NY 11042
(516) 622-2254

STANDPIPE WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: IP-2	Start Date & Time: 1-25-18 at 1415
Project Location (City & State): Long Island City, New York	Logged By: Ben Hess	Checked By: Eric Weinstock	Finish Date & Time: 1-25-18 at 1510
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Quincy Brandt	
Developed By: Cascade	Development Date & Time:	Development Method:	

CONSTRUCTION DETAILS



Top of Riser Pipe	(ft ags)	
Top of Seal	0.5	(ft bgs)
Top of Sand Pack	1	(ft bgs)
Top of Screen	1.6	(ft bgs)
Static DTW	2.5	(ft TOR)
Base of Screen	6.6	(ft bgs)
Bottom of Well	7	(ft bgs)
Total Drilled Depth	7.2	(ft bgs)

Casing Material	NA	(in.)
Surface Seal Type	NA	
Well Diameter	2	(in.)
Backfill/Grout Type	Cuttings	
Riser Pipe Material	PVC	
Borehole Diameter	3	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.030	(in.)
Screen Length	5	(ft.)
Sand Pack Type	U.S. Silica #3 Sand	
Sump Length	4	(in.)
Fallback/Backfill	NA	(ft)

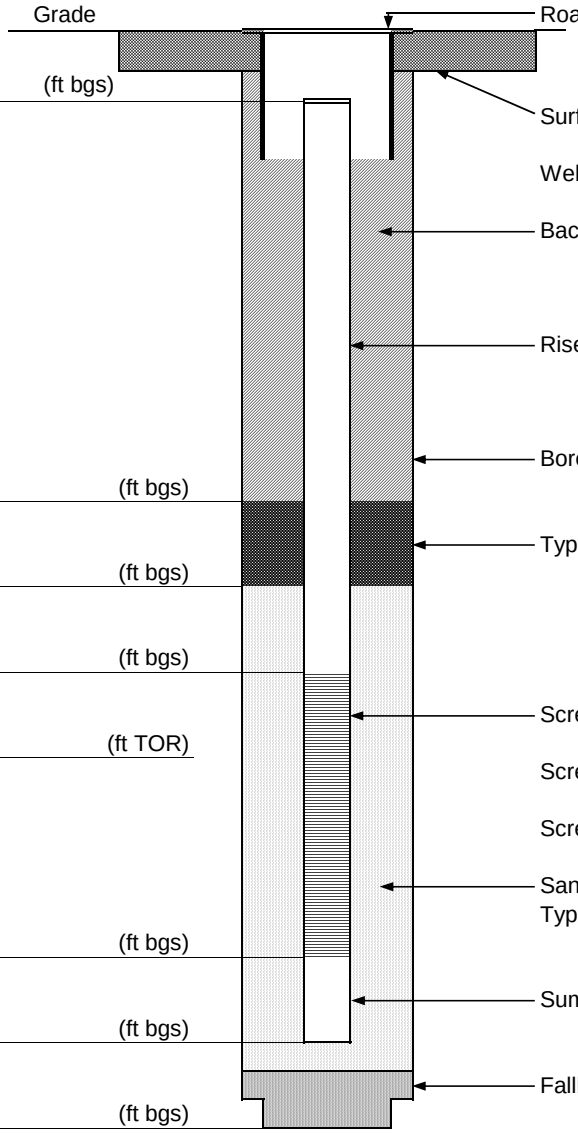
NOTES:

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Suite 210
Lake Success, NY 11042
(516) 622-2254

FLUSHMOUNT WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: MW-6S	Start Date & Time: 4-11-17 at 0835
Project Location (City & State): Long Island City, New York	Logged By: Jazmin Logan	Checked By: Eric Weinstock	Finish Date & Time: 4-12-17 at 1000
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Luke	
Developed By: Cascade	Development Date & Time: 4-12-17 at 1420	Development Method: Whale Pump	

CONSTRUCTION DETAILS



Top of Riser Pipe	0.5	(ft bgs)
Top of Seal	4.5	(ft bgs)
Top of Sand Pack	6	(ft bgs)
Top of Screen	8.5	(ft bgs)
Static DTW	8	(ft TOR)
Base of Screen	18.5	(ft bgs)
Bottom of Well	19	(ft bgs)
Total Drilled Depth	20	(ft bgs)

Roadbox Diameter	8	(in.)
Surface Seal Type	Cement	
Well Diameter	2	(in.)
Backfill/Grout Type	Grout	
Riser Pipe Material	PVC	
Borehole Diameter	3.5	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.010	(in.)
Screen Length	10	(in.)
Sand Pack Type	U.S. Silica #1 Sand	
Sump Length	5	(ft)
Fallback/Backfill	1	(ft)

NOTES:

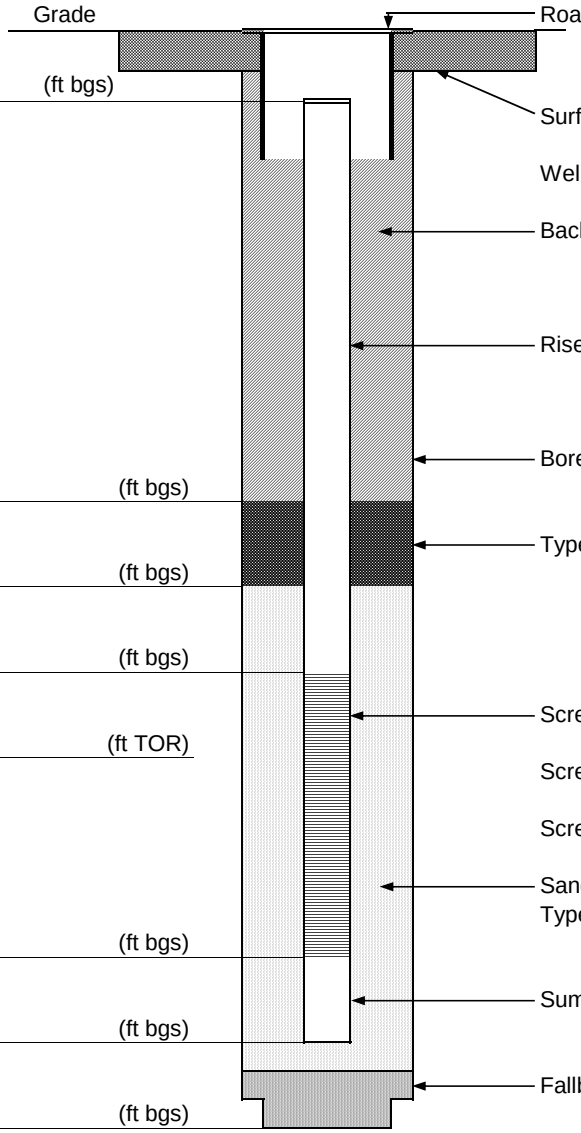
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(516) 622-2254

amec foster wheeler

FLUSHMOUNT WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: MW-6D	Start Date & Time: 4-11-17 at 1030
Project Location (City & State): Long Island City, New York	Logged By: Jazmin Logan	Checked By: Eric Weinstock	Finish Date & Time: 4-12-17 at 1030
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Luke	
Developed By: Cascade	Development Date & Time: 4-12-17 @1300	Development Method: Whale Pump	

CONSTRUCTION DETAILS



Top of Riser Pipe	0.25	(ft bgs)
Top of Seal	4.5	(ft bgs)
Top of Sand Pack	6	(ft bgs)
Top of Screen	26.5	(ft bgs)
Static DTW	8.05	(ft TOR)
Base of Screen	31.5	(ft bgs)
Bottom of Well	32	(ft bgs)
Total Drilled Depth	32	(ft bgs)

Roadbox Diameter	8	(in.)
Surface Seal Type	Cement	
Well Diameter	2	(in.)
Backfill/Grout Type	Grout	
Riser Pipe Material	PVC	
Borehole Diameter	3.5	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.010	(in.)
Screen Length	10	(in.)
Sand Pack Type	U.S. Silica #1 Sand	
Sump Length	5	(ft)
Fallback/Backfill	0	(ft)

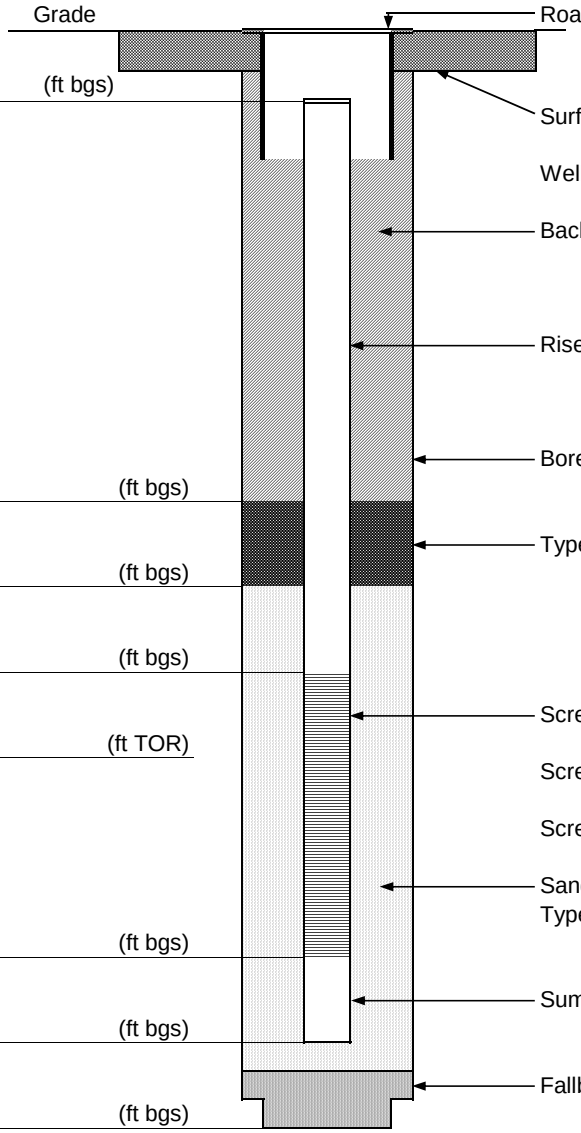
NOTES:

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Suite 210
Lake Success, NY 11042
(516) 622-2254

FLUSHMOUNT WELL CONSTRUCTION LOG

Project Name: Stalingrad Ventures	Project Number: 3612162331	Well ID: MW-5	Start Date & Time: 4-12-17 at 0900
Project Location (City & State): Long Island City, New York	Logged By: Jazmin Logan	Checked By: Eric Weinstock	Finish Date & Time: 4-12-17 at 1500
Drilling Contractor: Cascade	Drilling Method: Geoprobe	Lead Driller: Luke	
Developed By: Cascade	Development Date & Time: 4-12-17 @1400	Development Method: Whale Pump	

CONSTRUCTION DETAILS



Top of Riser Pipe	0.3	(ft bgs)
Top of Seal	4.5	(ft bgs)
Top of Sand Pack	6	(ft bgs)
Top of Screen	8	(ft bgs)
Static DTW	8	(ft TOR)
Base of Screen	18	(ft bgs)
Bottom of Well	18.5	(ft bgs)
Total Drilled Depth	20	(ft bgs)

Roadbox Diameter	8	(in.)
Surface Seal Type	Cement	
Well Diameter	2	(in.)
Backfill/Grout Type	Grout	
Riser Pipe Material	PVC	
Borehole Diameter	3.5	(in.)
Type of Seal	PDS Bentonite Chips	
Screen Material	PVC	
Screen Slot Size	0.010	(in.)
Screen Length	10	(in.)
Sand Pack Type	U.S. Silica #1 Sand	
Sump Length	5	(ft)
Fallback/Backfill	1.5	(ft)

NOTES:

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APPENDIX D

EXCAVATION WORK PLAN

APPENDIX D – EXCAVATION WORK PLAN (EWP)

D-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. Table D-1 includes contact information for the above notification. 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 A

Table D-1: Notifications*

Regional Office NYSDEC Representative NYSDEC DER Project Manager: Wendi Zheng	(718) 482-7541 wendi.zheng@dec.ny.gov
NYSDEC HW Regional Engineer: Jane O'Connell	(718) 482-4599 jane.oconnell@dec.ny.gov
NYSDEC Site Control: Kelly A. Lewandowski	(518) 402-8013 kelly.lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;

- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix E of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

D-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section D-7 of this Appendix.

D-3 SOIL STAGING METHODS

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

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

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

D-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

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

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete Truck wash waters will be collected and disposed of off-site in an appropriate manner.

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

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

D-5 MATERIALS TRANSPORT OFF-SITE

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

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

Truck transport routes are as follows: Drive down 41st Avenue to Van Dam Street then enter I495 (LIE). All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport;

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

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

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

D-6 MATERIALS DISPOSAL OFF-SITE

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

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

D-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

D-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

D-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the RAWP, The existing cover system is comprised of a minimum of eight inches of concrete. The demarcation layer, consisting of a 20-mil vapor barrier will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

D-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

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

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards will be approved by the NYSDEC in the unlikely event imported soil needs to be brought to the site. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

D-11 STORMWATER POLLUTION PREVENTION

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

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

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

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

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

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

D-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

D-13 COMMUNITY AIR MONITORING PLAN

A figure showing the location of air sampling stations based on generally prevailing wind conditions will be provided to the NYSDEC in the event a soil removal activity is required. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

D-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site, if there are residents or tenants on the property. Specific odor control methods to be used on a routine basis will include misting with potable water. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the

halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

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

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

D-15 DUST CONTROL PLAN

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

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

D-16 OTHER NUISANCES

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

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

APPENDIX E

HEALTH AND SAFETY PLAN

Amec Foster Wheeler Environment & Infrastructure
Short Form HASP

Site: Stalingrad Ventures, LLC Job #/Task # 3612162331
Street Address: 22-07 41st Avenue, Long Island City, NY
Proposed Date(s) of Investigation: Winter 2017
Prepared by: Jazmin Logan Date: December 2017
*Approved by: Eric Weinstock Date: December 2017
Site Description: **(attach map)** One (1) urban, commercial property located in Long Island City, New York.
Comments: Amec FW activities will be limited to the oversight of a remediation injection program and installation of a sub-slab depressurization system; documentation and sample submission groundwater monitoring wells, and soil vapor points for post-remediation monitoring.

*Approval also serves as certification of a Hazard Assessment as required by 29 CFR 1910.132

Tasks:

AMEC	Other contractor	Task Description
☒	☐	Groundwater low-flow sample collection, with parameter stabilization.
☒	☐	Soil vapor point sample collection
☐	☒	Installation of injection points via direct-push methodology
☐	☒	Installation of sub-slab depressurization system

Dates of Required Training and Medical Surveillance (add additional training topics, as required**):**

Name					
Job duties:	**Site Manager**	**SHSO**	**Field Tech**		
Names:	**Eric Weinstock**	**Jazmin Logan**	**Benjamin Hess**		
	Dates	**Dates**	**Dates**	**Dates**	**Dates**
Medical Surveillance	May 2016	1/20/2017	9/10/2017		
-Exam Type (A[4], B, C)					
40-Hour Initial	11/2/1984	5/24/2016	8/28/2017		
8-Hour Supervisor [3]					
8-Hour Refresher	2/4/2017	2/4/2017			
First Aid					
CPR					
Hazard Communication	2/4/2017	2/4/2017	8/28/2017		

[2] At least one worker must be trained in First Aid/CPR and should received Bloodborne Pathogen Training
[3] Required for Site Manager and Site Health and Safety Officer
[4] **Medical Surveillance Exam A has no respiratory clearance so can only be used for Level D PPE.** . Exam A (basic HAZWOPER), Exam B (respirator & HAZWOPER under 40 years old), Exam C (respirator & HAZWOPER over 40 years old), Exam E (DOT), Exam F (asbestos monitoring), Exam G (lead monitoring) etc. **Contact HSE Coordinator or Cindy Sundquist to determine type of exam employee received.**

Known or Suspected Contaminants (include PELs/TLVs):

Contaminants of Concern (COC) (Attach Fact Sheets*)	Maximum Concentrations		PEL/TLV
	Soil (mg/kg)	Water/Groundwater (µg/l)	
Chromium	NA	9.23	NA
Cadmium	NA	2.04	NA
Perchloroethene	NA	5.8	NA
Trichloroethene	NA	5.2	NA
1,2-dicholorthene	NA	180	NA
Vinyl Chloride	NA	72	NA
PFAS	NA	5.1	NA

*Workers must be made aware of the signs, symptoms, and first aid for each COC. Information is located on the COC fact sheets.

Amec Foster Wheeler Environment & Infrastructure

Short Form HASP

Air Monitoring Action Levels:

PID/FID Reading[1]	Detector Tube[1]	Dust Meter[1]	LEL[2]/O_2[1]	Action
<150ppm				Continue to monitor with PID and LEL. Work at Level D
>150 ppm				Stop work. Evacuate the area, move upwind. Reevaluate.
			>10% LEL	Stop work. Evacuate area. Consider return with ventilation system and spark proof/intrinsically safe equipment.
			<19.5% O_2	Stop work and evacuate area.

[1] Sustained readings measured in the breathing zone
[2] Readings at measured at the source (borehole, well, etc.)

AHAs: Check and attach all that apply (add applicable AHAs not already listed):

Activity Specific AHAs:

☒	Mobilization/Demobilization and Site Preparation
☒	Field Work - General
☒	Field Work - Oversight
☒	Decontamination
☒	Groundwater Sampling
☐	Soil Sampling
☒	Soil Vapor Sampling
☒	Working with Preservatives (Acids)
☐	Utility Clearance Activities
☐	Drilling Operation (MACTEC Driller)
☐	Geoprobe (MACTEC Geoprobe Operator)

Hazard Specific AHAs:

☐	Insect Stings and Bites
☐	Gasoline
☐	Excavations and Backfilling
☐	Stream/Wetlands Work
☐	
☐	
☐	
☐	
☐	
☐	
☐	

HAZARD IDENTIFICATION SUMMARY

Complete the checklist for summarizing the hazards identified in the JHAs

Standard Hazards						
☒ Falling Objects	☒ Slips and trips	☒ Pinch points	☐ Rotating equipment			
☒ Falls	☒ Power equipment/tools	☐ Elevated work surfaces	☐ _____			
Eye Hazards						
☒ Particulates	☒ Liquid splashes	☐ Welding Arc	☐ _____			
Hearing Hazards						
☐ None	☒ Impact noise	☒ High frequency noise	☒ High ambient noise			
Respiratory Hazards						
☐ None	☒ Dust/aerosols/particulates	☒ Organic Vapors	☒ Acid Gases	☐ O_2 deficient	☐ Metals	☐ Asbestos
Chemical Hazards						
☐ None	☐ Organic solvents	☐ Reactive metals	☐ PCBs			
☐ Acids / bases	☐ Oxidizers	☒ Volatiles/Semi-volatiles	☐ _____			
Environmental Hazards						
☐ None	☒ Cold Stress	☐ Heat Stress	☐ Wet location	☐ Bio hazards (snakes, insects, spiders, poisonous plants, etc.)		

Amec Foster Wheeler Environment & Infrastructure

Short Form HASP

☐ Explosive vapors	☐ Confined space	☐ Engulfment Hazard	☐ _____

Electrical Hazards

☐ None	☒ Energized equipment or circuits	☐ Overhead utilities	☒ Underground utilities	☐ Wet location

Fire Hazards

☒ None	☐ Cutting, welding, or grinding generated sparks or heat sources	☐ Flammable materials present	☐ Oxygen enriched location

Ergonomic Hazards

☒ Lifting	☒ Bending	☐ Twisting	☒ Pulling/tugging	☒ Repetitive motion	☒ Carrying
Computer Use in the: ☐ Office ☐ Field			☐ _____	☐ _____	

Radiological Hazards

☒ None	☐ Alpha	☐ Beta	☐ Gamma/X-rays	☐ Neutron	☐ Radon	☐ Non-Ionizing

Other Hazards

☐

PPE and Monitoring Instruments

Initial Level of PPE *

☒ Level D	☐ Modified Level D	☐ Level C	* Cannot use Short Form HASP for Level B or A work

Standard PPE

☒ Hard Hat	☒ Safety boots	☒ Safety glasses	☐ Chem. Resistant Boots	☒ High visibility vest	☐ Other:_____

Eye and Face Protection

☐ Face shield	☐ Vented goggles	☐ Unvented goggles	☐ Indirect vented goggles

Hearing Protection

☒ Ear plugs	☐ Ear Muffs	☐ Ear plugs and muffs	☐ Other _____

Respiratory Protection

☒ None	☐ Dust mask	☐ Full Face APR	☐ Half Face APR	Cartridge Type: _____	Change Cartridges: _____

Protective Clothing

☐ Work uniform	☐ White uncoated Tyvek®	☐ Poly-coated Tyvek®	☐ Saranex®
☐ Boot covers	☒ Reflective vest	☐ Chaps or Snake Legs	☐ Other ___

Hand Protection

☐ None	☒ Cotton gloves	☐ Leather gloves	☐ Glove liners	☐ Cut-resistant gloves	☒ Other nitrile
☐ Outer Gloves: List Type_____			☐ Inner Gloves: List Type_____		

Monitoring Instruments Required*			
Periodic monitoring shall be conducted when the possibility of an IDLH condition or flammable atmosphere has developed or when there is indication that exposures may have risen over permissible exposure limits or published exposure levels since prior monitoring. Situations where it shall be considered whether the possibility that exposures have risen are as follows: ▪ When work begins on a different portion of the site. ▪ When contaminants other than those previously identified are being handled. ▪ When a different type of operation is initiated (e.g., drum opening as opposed to exploratory well drilling.) ▪ When employees are handling leaking drums or containers or working in areas with obvious liquid contamination (e.g., a spill or lagoon.)			
☐ LEL/O2 Meter	☒ PID: ☒ 10.0-10.6 eV Lamp ☐ 11.7 eV Lamp	☐ FID	☐ Hydrogen Sulfide/Carbon Monoxide
☐ Dräger Pump (or equivalent) List Tubes_____	☐ Dust Meter: ☐ Respirable dust ☐ Total dust	☐ Other _____	

*Monitoring instruments will be calibrated daily in accordance with manufacturer's instructions. Results will be recorded in the field logbook.

Chemicals Brought to the Site:
List all chemicals brought to the site (e.g., preservatives, decon solutions, calibration gases, gasoline, etc.).

Chemicals (Note: Name listed must match name on label and MSDS)	**SDS Attached?**
ISOBUTYLENE CALIBRATON GAS	☒
HYDROCHLORIC ACID	☒
NITRIC ACID	☒
SODIUM HYDROXIDE	☒

Chemicals will be kept in their original containers. If transferred to another container, aside from days use by one individual, the new container will be clearly labeled with the name of the chemical (product identifier), signal word, hazard statement, pictogram(s), precautionary statement, and name, address and telephone number of the chemical manufacturer, importer or other responsible party.

Work Zones:
The work zones will be defined relative to the location of the work activity. The Exclusion Zone is considered the area within a 10-foot diameter of the sampling location. The Contamination Reduction Zone is considered to be the area with in a 20-foot diameter of the sampling location. The Decontamination Zone is to be located upwind of the work area. Work zones will be maintained through the use of:

☒ Warning Tape
☒ Cones and Barriers
☒ Visual Observations

Decontamination Procedures and Equipment:
Note: See Decontamination JHA for further information

Level D Decontamination Procedures

Decontamination Solution:	Detergent and Water
Station 1: Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, etc. on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool-down station may be set up within this area.
Station 2: Outer Boots, and Gloves Wash and Rinse (if worn)	Scrub outer boots, and outer gloves decon solution or detergent water. Rinse off using copious amounts of water.

Station 3:	Outer Boot and Glove Removal (if worn)	Remove outer boots and gloves. Deposit in plastic bag.
Station 4:	Inner glove removal	Remove inner gloves and place in plastic bag.
Station 5:	Field Wash	Hands and face are thoroughly washed. Shower as soon as possible.

Modified Level D and Level C PPE Decontamination Procedures

Decontamination Solution:		Detergent and Water
Station 1:	Equipment Drop	Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, etc. on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool-down station may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	Scrub outer boots, outer gloves, and splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Canister or Mask (Level C only) Change	If worker leaves exclusion zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers are donned, joints are taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	Boots, chemical resistant splash suit, and inner gloves are removed and deposited in separate containers lined with plastic.
Station 6:	Face Piece Removal (Level C only)	Facepiece is removed. Avoid touching face with fingers. Facepiece is deposited on plastic sheet.
Station 7:	Field Wash	Hands and face are thoroughly washed. Shower as soon as possible.

Site Communication:

- ☒ Verbal
- ☐ Two-way radio
- ☒ Cellular telephone
- ☒ Hand signals
  - Hand gripping throat ..... Out of air, can't breathe
  - Grip partner's wrist or both hands around waist ..... Leave area immediately
  - Hands on top of head ..... Need assistance
  - Thumbs up ..... OK, I am all right, I understand
  - Thumbs down ..... No, negative
- ☐ Horn
- ☐ Siren
- ☐ Other:

EMERGENCY CONTACTS

NAME	TELEPHONE NUMBERS		DATE OF PRE-EMERGENCY NOTIFICATION (if applicable)
Fire Department:	911		
Hospital:	(212) 746-5454		
WorkCare (Early case management)	1-888-449-7787		
Police Department:	911		
	Office	**Cell**	
Site Health And Safety Officer: Eric Weinstock	516-622-2254	516-413-6643	
Client Contact: Robert Birnbaum	516-829-7911		
Project Manager: Eric Weinstock	347-836-4343	516-413-6643	
*Eastern Group HSE Manager: Cindy Sundquist	207-828-3309	207-650-7593 (Cell) 207-892-4402 (Home)	
Corporate VP of HSE – Vlad Ivensky	610-877-6144	484-919-5175 (Cell) 215-947-0393 (Home)	
EPA/DEP (if applicable):			
OTHER: Ambulance	911		

*See Incident Flow Chart for additional Group HSE Manager's Contact Information

Emergency Equipment:
The following emergency response equipment is required for this project and shall be readily available:

- ☒ Field First Aid Kit (including bloodborne pathogen kit/supplies)
- ☐ Fire Extinguisher (ABC type)
- ☐ Eyewash (Note: 15 minutes of free-flowing fresh water)
- ☐ Other: _____

EMERGENCY PROCEDURES

- The SHSO (or alternate) should be immediately notified via the on-site communication system. The HSO assumes control of the emergency response.
- The SHSO notifies the Project Manager and client contact of the emergency.
- If the emergency involves an injury to an AMEC employee, the HSE Coordinator or Site Manager are to implement the AMEC Early Injury Case Management program. See procedures and Flow Diagram below:
- If applicable, the SHSO shall notify off-site emergency responders (e.g. fire department, hospital, police department, etc.) and shall inform the response team as to the nature and location of the emergency on-site.
- If applicable, the SHSO evacuates the site. Site workers should move to the predetermined evacuation point

(See Site Map)

- For small fires, flames should be extinguished using the fire extinguisher. Large fires should be handled by the local fire department.
- In an unknown situation or if responding to toxic gas emergencies, appropriate PPE, including SCBAs (if available), should be donned. If appropriate PPE is unavailable, site workers should evacuate and call in emergency personnel.
- For chemical spills, follow the job specific JHA for spill containment
- If chemicals are accidentally spilled or splashed into eyes or on skin, use eyewash and wash affected area. Site worker should shower as soon as possible after incident.
- If the emergency involves toxic gases, workers will back off and reassess. Prior to re-entering the work zone, the area must be determined to be safe. Entry will be using Level B PPE and utilize appropriate monitoring equipment to verify that the site is safe.
- An injured worker shall be decontaminated appropriately.
- Within 24 hours after any emergency response, the Incident Analysis Report (and Vehicle Incident Report if vehicle incident) shall be completed and returned to the Group HSE Manager. Injuries requiring medical treatment beyond first aid (as well as work-related vehicle incidents) will require the employee to submit a post incident drug test.

AMEC Early Injury Case Management Program

NON-EMERGENCY INCIDENT	EMERGENCY INCIDENT
Steps 1 & 2 must be completed before seeking medical attention other than local first aid. 1. Provide first-aid as necessary. Report the situation to your immediate supervisor AND HSE coordinator (all incidents with the apparent starting event should be reported within 1 hour of occurrence). 2. Injured employee:	1. Provide emergency first aid. Supervisor on duty must immediately call 911 or local emergency number; no employee may respond to outside queries without prior authorization. Any outside media calls concerning this incident must be referred immediately to Lauren Gallagher at 602-757-3211. 2. Once medical attention is sought and provided, the supervisor must:
Call WorkCare 24/7 Hotline* (888) II-XPRTS or (888) 449-7787	
WorkCare will assess the situation and determine whether the incident requires further medical attention. During this process, WorkCare will perform the following: • Explain the process to the caller. • Determine the nature of the concern. • Provide appropriate medical advice to the caller. • Determine appropriate path forward with the caller. • Maintain appropriate medical confidentiality. • Help caller to execute path forward, including referral to the appropriate local	WorkCare will be responsible for performing the following: • Contact the treating physician. • Request copies of all medical records from clinic. • Send an email update to the Corporate HSE Department.

medical facility. • Send an email notification to the Corporate HSE Department.	

3. IMMEDIATELY after contacting WorkCare send a brief email notification AND inform verbally (direct contact is required) ONE of HSE corporate representatives See Figure 11.3.
4. Make all other local notifications and client notifications.
5. Local Supervisor, HSE Coordinator, SSHO and any applicable safety committees to complete preliminary investigation, along with the initial Incident Report within 24 hours.
6. Corporate Loss Prevention Manager to complete Worker's Compensation Insurance notifications as needed.
7. Corporate HSE to conduct further incident notifications, investigation, include in statistics, classify, and develop lessons learned materials.

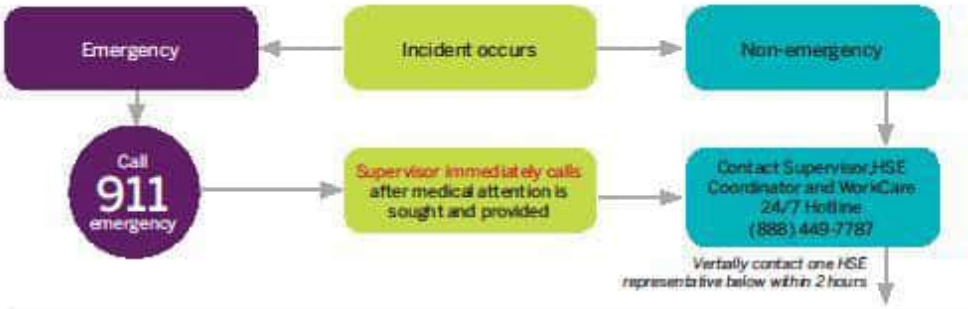
* - **NOTE: Step 2 is only applicable to the North-American operations and to incidents involving AMEC personnel. High potential near misses, subcontractors' incidents, regulatory inspections, spills and property damages above $1,000 should be reported immediately, following directions from Step 3.**

Site Specific Procedures are as follows:

INCIDENT FLOW CHART

Incident flow chart

Call immediately



E&I Corporate HSE department contact list

Name/email	Office location	Contact information
Bruce Voss bruce.voss@amecfw.com	Cathedral City, CA	760.202.3737 (office) 951.897.6381 (cell)
Chad Barnes chad.barnes@amecfw.com	Phoenix, AZ	602.733.6000 (office) 480.495.9846 (cell)
Cindy Sundquist cynthia.sundquist@amecfw.com	Portland, ME	207.828.3309 (office) 207.650.7593 (cell) 207.892.4402 (home)
Gabe Sandholm gabe.sandholm@amec.com	Minneapolis, MN	612.252.3785 (office) 206.683.9190 (cell)
John Mazur john.mazur@amec.com	Wilmington, NC	910.444.2978 (office) 910.431.2330 (cell) 910.681.0538 (home)
Lori Dowling lori.dowling@amec.com	Prince George, BC	250.564.3243 (office)
Philip Neville philip.neville@amec.com	Thorold, ON	905.687.6616 (office) 905.380.4465 (cell)
Tim Kihn tim.kihn@amec.com	Edmonton, AB	780.944.6363 (office) 780.717.5058 (cell)
Vladimir Ivensky (can call 24/7) vladimir.ivensky@amec.com	Plymouth Meeting, PA	610.877.6144 (office) 484.919.5175 (cell) 215.947.0393 (home)
Kirby Lastinger kirby.lastinger@amec.com	Lakeland, FL	836-667-2345 x207 (office) 863-272-4775 (cell)

*High potential near misses, subcontractor incidents, regulatory inspections, spills, and property damage should be reported within 60 minutes to one of the above HSE Representatives.
WITHIN 24 HOURS - Local Supervisor, HSE Coordinator, Project HSE Officer, and any applicable safety committees must complete preliminary investigation, along with the initial Incident Analysis Report Form and forward it to the Corporate HSE Department



Rev. Feb15-Hb

Amec Foster Wheeler Environment & Infrastructure

Short Form HASP

FIELD TEAM REVIEW: I acknowledge that I understand the requirements of this HASP, and agree to abide by the procedures and limitations specified herein. I also acknowledge that I have been given an opportunity to have my questions regarding the HASP and its requirements answered prior to performing field activities. Health and safety training and medical surveillance requirements applicable to my field activities at this site are current and will not expire during on-site activities.

Name:	_____	Date:	_____
Name:	_____	Date:	_____
Name:	_____	Date:	_____
Name:	_____	Date:	_____
Name:	_____	Date:	_____
Name:	_____	Date:	_____
Name:	_____	Date:	_____
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Name:	_____	Date:	_____
Name:	_____	Date:	_____
Name:	_____	Date:	_____

Amec Foster Wheeler Environment & Infrastructure

Short Form HASP

Routes to Emergency Medical Facilities

HOSPITAL(for immediate emergency treatment):

Facility Name: Mount Sinai Queens

Address: 2510 30th Avenue, Astoria, NY 11102

Telephone Number: 718-932-1000

DIRECTIONS TO PRIMARY HOSPITAL (attach map):

CLINIC (for non-emergency medical treatment)

Facility Name: Urgent Medical Care Astoria

Address: 32-74 Steinway Street, Astoria, NY 11103

Telephone Number: 718-721-0101

DIRECTIONS TO CLINIC (attach map):

Tailgate Safety Meeting Report

Check One:

☐ Initial Kickoff Safety Meeting ☐ Regular/Daily Tailgate Safety Meeting ☐ Unscheduled Tailgate Safety Meeting

Date: _____ Site: _____

Site Manager: _____ Site Health and Safety Officer: _____
Print *Print*

Order of Business

Topics Discussed (Check all that apply)

☐ Scope of Work
☐ Site History/Site Layout
☐ Personnel Responsibilities
☐ Training Requirements
☐ Hazard Analysis of Work Tasks (chemical, physical, biological and energy health hazard effects)
☐ Applicable SOPs (e.g., Hearing Conservation Program, Safe Driving, etc.)
☐ Safe Work Practices
☐ Engineering Controls
☐ Chemical Hazards and Controls
☐ Signs and symptoms of over exposure to site chemicals
☐ Medical Surveillance Requirements
☐ Action Levels
☐ Monitoring Instruments and Personal Monitoring
☐ Perimeter Monitoring, Type and Frequency
☐ PPE Required/PPE Used
☐ Define PPE Levels, Donning, Doffing Procedures
☐ Decontamination Procedures for Personnel and Equipment
☐ Physical Hazards and Controls (e.g., overhead utility lines)
☐ Anticipated Weather (snow, high winds, rain)
☐ Temperature Extremes (heat or cold stress symptoms and controls)
☐ Biological Hazards and Controls (e.g., poison ivy, spiders)
☐ Site Control (visitor access, buddy system, work zones, security, communications)
☐ Sanitation and Illumination
☐ Logs, Reports, Recordkeeping
☐ Incident Reporting Procedures
☐ Near Misses/Hazard ID including worker suggestions to correct and work practices to avoid similar occurrences
☐ General Emergency Procedures (e.g., locations of air horns and what 1 or 2 blasts indicate)
☐ General Emergency Response Procedures (e.g., earthquake response, typhoon response, etc.)
☐ Medical Emergency Procedures (e.g., exposure control precautions, location of first aid kits, etc.)
☐ Route to Hospital and Medical Care Provider Visit Guidelines
☐ Site/Regional Emergency Response Procedures (e.g., exposure control precautions, location of first aid kits, etc.)
☐ Hazardous Materials Spill Procedures

Safety Suggestions by Site Workers: _____

Action Taken on Previous Suggestions: _____

Injuries/Incidents/Personnel Changes since last meeting: _____

Tailgate Safety Meeting Report

Observations of unsafe work practices/conditions that have developed since previous meeting: _____

Location of (or changes in the locations of) evacuation routes/safe refuge areas: _____

Additional Comments: _____

Attendee signatures below indicate acknowledgment of the information and willingness to abide by the procedures discussed during this safety meeting

Name (Print)	Company	Signature

Meeting Conducted by: _____ Title: _____
Print

Signature: _____ Time: _____
Print

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PPE Selection Guidelines

When selecting the appropriate PPE for the job, consider the following:

- **Safety glasses** – general eye protection – source of hazard, typically coming from straight on, required at most sites
- **Tinted Safety Glasses** – same as above, but when working in direct sunlight. May need two both tinted and untinted if working in both sunlight and shade/overcast skys.
- **Safety goggles** – needed for splash hazard, more severe eye exposures coming from all directions. Non-vented or indirect venting for chemical splash, non-vented for hazardous gases or very fine dust, vented for larger particulates coming from all directions.
- **Face shield** – needed to protect face from cuts, burns, chemicals (corrosives or chemicals with skin notation), etc.
- **Safety boots** – needed if danger of items being dropped on foot that could injure foot
- **Hard hat** – danger from items falling on head – any overhead work, tools, equipment, etc that is above the head and could fall on head of item fails, or falls off work platform. Typically required at most sites as a general PPE
- **Thin, chemical protective inner gloves** (e.g., thin Nitrile, PVC – do not use latex – many people are allergic to latex) –needed to protect hands from incidental contact with low risk contamination at very low concentrations (ppb or low ppm concentrations in groundwater or soil) or used in combination with outer gloves as a last defense against contamination. Need to specify type
- **Outer gloves** – thicker gloves (e.g., Nitrile, Butyl, Viton, etc.) – used when potential for high concentrations of contaminants (e.g., floating product, percent ranges of contaminant, opening drums, handling pure undiluted chemicals, etc.). Need to specify type.
- **Leather gloves, leather palm, cotton** – good in protecting hands against cuts – no protection from chemicals. May be used in combination with chemical protective gloves.
- **Boot Covers –** when there is contamination in surface soils or waking surface in general. When safety boots need protection from contact with contaminants.
- **White (uncoated) Tyveks** – protect clothing from getting dirty, good for protection against solid, non-volatile chemicals (e.g., asbestos, metals) – no chemical protection.
- **Polycoated Tyveks** – least protective of chemical protective clothing. Used when some risk of contamination getting on skin or clothing. Usually, lower ppm ranges of contaminants.
- **Saranex** – Greater protection against contamination than Polycoated Tyveks. Used to protect against PCBs or higher concentrations of contaminants in the soil or groundwater.
- **Other Chemical protective clothing** – if significant risk of dermal exposure, contact H&S to determine best kind.
- **Long sleeved shirts, long pants** – if working in areas with poison ivy/oak/sumac, poisonous insects, etc. and no chemicals exposure. May want to use uncoated Tyveks for work in areas where poisonous plants are know to be to protect clothing.
- **Cartridge Respirator (Level C PPE)** – Need to calculate change schedule (contact Division EH&S Manager for this) to determine length of use. To be able to use cartridge respirators, need to know contaminants, estimate levels to be encountered in the breathing zone, need to ensure that cartridge will be effective against COCs, and need to be able to monitor for COCs using PID, FID, Dräger tubes, etc.. If can't do any of these, then Level B PPE is probably going to be needed.
- **High Visibility Vest** – needed for any road work (with in 15 feet of a road) or when working on a site with vehicular traffic or working around heavy equipment. Needed if work tasks would take employee concentration away from movement of vehicles and workers would have to rely on the other driver's ability to see the employee in order not to hit them. This includes heavy equipment as well as cars and trucks, on public roads or the jobsite. Not needed if wearing Polycoated Tyveks – as they are already high visibility.
- **Reflective Vest** – see above, but for use at night.
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- **Protective Chaps –** required when using a machete or chain saw or any other cut hazard to legs.

Incident Report Forms

1. Incident Analysis Report (IAR)
2. Vehicle Incident Report (VIR)
3. Ground Disturbance Incident Report(GDR)

Activity Hazard Analysis (AHAs)

Mobilization-Demobilization
Field General
Field Work Oversight
Decontamination
Groundwater Sampling
Soil Sampling
Soil Vapor Sampling

Chemical of Concerns

Chromium
Nickel
Perchloroethene
Trichloroethene
1,2-dichlorthene
Vinyl Chloride
PFAS

Mount Sinai Queens

2510 30th Ave, Astoria, NY 11102
(718) 932-1000

View Business Details

MAP & DIRECTIONS

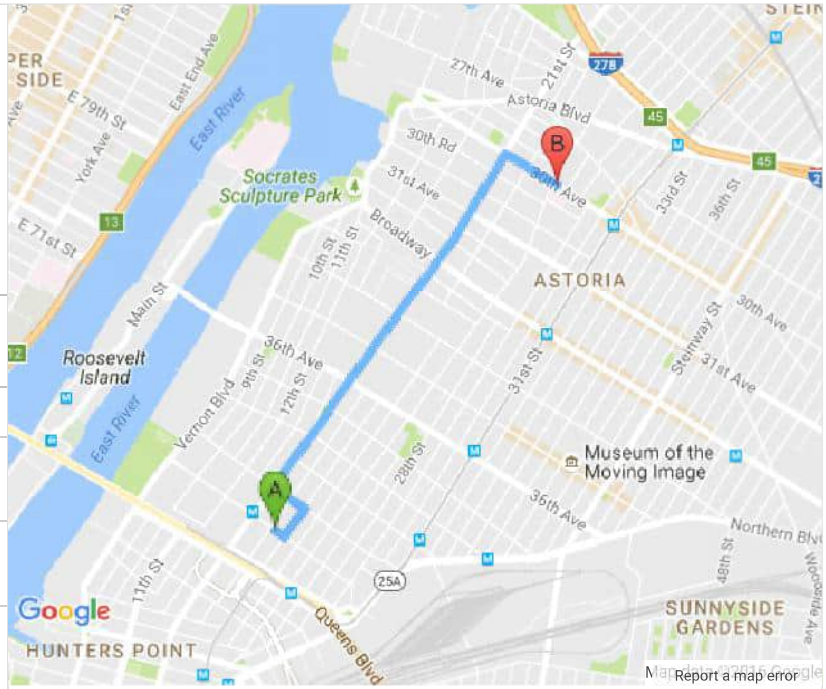
PRINT

A 22-07 41st Avenue, Long Island City, NY

B Mount Sinai Queens, 2510 30th Ave, Ast...

Round-trip | Reverse

Clear All | Get Directions



22-07 41st Ave, Long Island City, NY 11101, USA

1.7 mi. About 8 mins

1. Head **southeast** on **41st Ave** toward **23rd St** — 174 ft
2. Turn **left** at the 1st cross street onto **23rd St** — 0.1 mi
3. Turn **left** at the 1st cross street onto **40th Ave** — 0.1 mi
4. Turn **right** at the 2nd cross street onto **21st St** — 1.2 mi
5. Turn **right** onto **30th Ave** — 0.2 mi
   Destination will be on the right

25-10 30th Ave, Astoria, NY 11102, USA

Map data ©2016 Google

Small Business Advertising
Advertising Choices
About Call Recording

Boston
Charlotte
Chicago
Dallas
Denver

Kansas City
Las Vegas
Los Angeles
Louisville
Memphis

Oklahoma City
Orlando
Philadelphia
Phoenix
Saint Louis

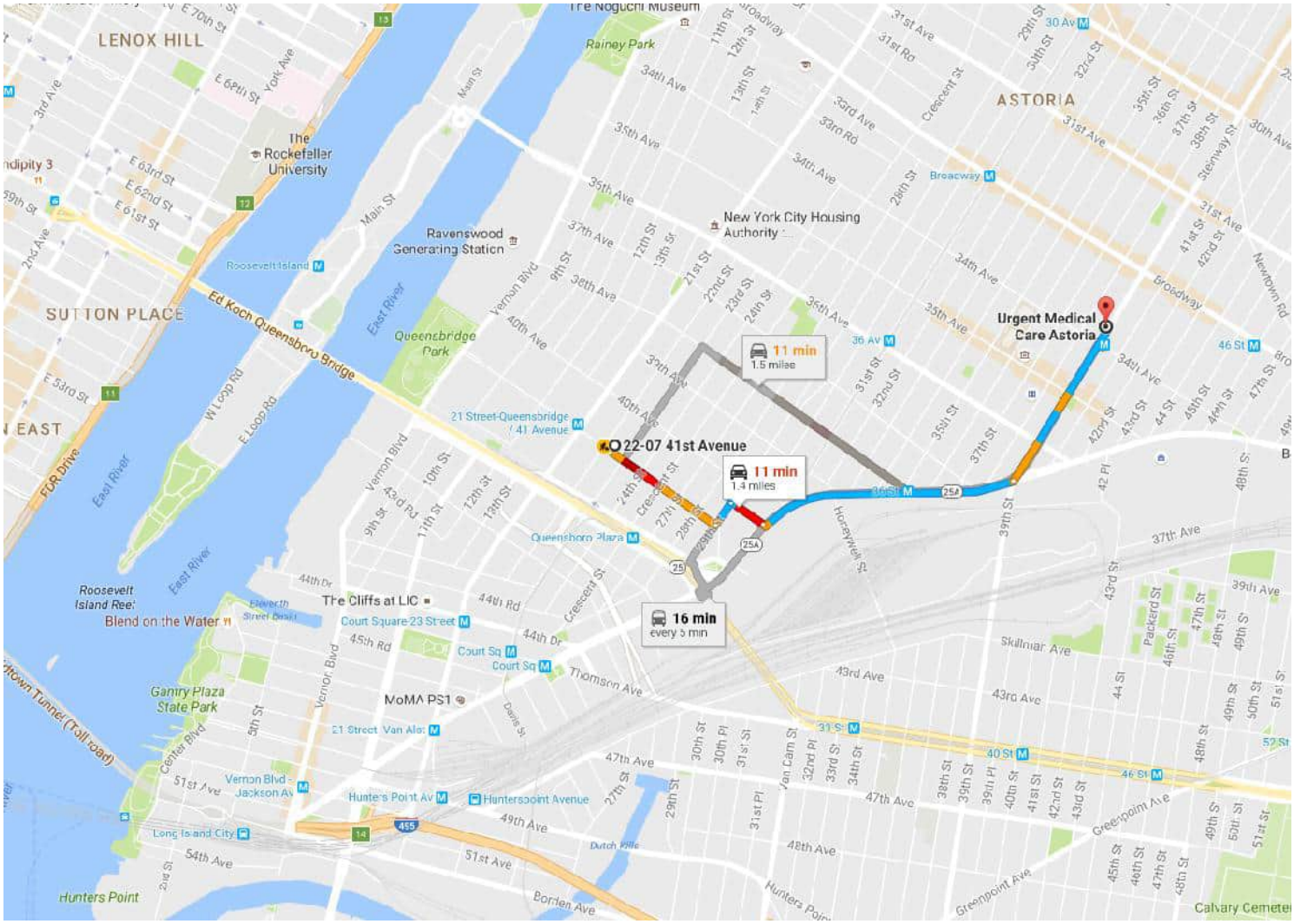
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AT&T, the AT&T Logo and all AT&T related marks are trademarks of AT&T Inc. or AT&T affiliated companies. All other marks contained herein are the property of their respective owners.



Google Maps

22-07 41st Avenue, Long Island City, NY to Urgent Medical Care Astoria

Drive 1.4 miles, 11 min



22-07 41st enue

Long sland Cit NN 11101

1. Head southeast on 41st e toward 23rd St

0.3 mi

2. Turn left onto 29th St

322 ft

3. Turn right onto 40th Rd

443 ft

4. Turn left at the 1st cross street onto Northern Blvd

0.6 mi

5. Use the left 2 lanes to turn left onto Steinway St

Destination will be on the left

0.4 mi

Urgent Medical Care Astoria

32-74 Ste nwa Street, Astoria, NN 11103

These d rect ons are for plann ng purposes only You may find that construct on projects, traffic, weather, or other events may cause cond t ons to d f fr from the map results, and you shoulc plan your route accord ngly You must obey all s gns or not ces regarc ng your route

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3. Ground Disturbance Incident Report(GDR)

GROUND DISTURBANCE INCIDENT REPORT (GDR)

Amec Foster Wheeler E&I

Section 1 – General Information

Employee Name: _____ Time of incident: _____ ☐ am | ☐ pm Time Reported:_____ ☐ am | ☐ pm Report Date: _____

Project Name: _____ Project Number: _____ Client: _____

List of All Parties Present

Name	Company	Telephone No.	Role

Describe the chronological description of the incident and response:_____

Section 2 – Date and Location of Event

A. *Date of Event: (MM/DD/YYYY)

B. ***Country** ***State** ***County** **City**

C. **Street address** **Nearest Intersection**

D. *Right of Way where event occurred

E. Public: ☐ City Street ☐ State Highway ☐ County Road ☐ Interstate Highway ☐ Public-Other

F. Private: ☐ Private Business ☐ Private Land Owner ☐ Private Easement

G. ☐ Pipeline ☐ Power /Transmission Line ☐ Dedicated Public Utility Easement

☐ Federal Land ☐ Railroad ☐ Data not collected ☐ Unknown/Other

List attached documentation (Public Utility Locates, Private Utility Locates, Copy of notifications submitted to Owner or other utility Owners, photographs): _____

Section 3 – Affected Facility Information

***What type of facility operation was affected?**

☐ Cable Television ☐ Electric ☐ Natural Gas ☐ Liquid Pipeline ☐ Sewer (Sanitary Sewer)

☐ Steam ☐ Telecommunications ☐ Water ☐ Unknown/Other

***What type of facility was affected?**

☐ Distribution ☐ Gathering ☐ Service/Drop ☐ Transmission ☐ Unknown/Other

Was the facility part of a joint trench?

☐ Unknown ☐ Yes ☐ No

Was the facility owner a member of One-Call Center?

☐ Unknown ☐ Yes ☐ No

Section 4 – Excavation Information

***Type of Excavator**

☐ Contractor ☐ County ☐ Developer ☐ Farmer ☐ Municipality ☐ Occupant
☐ Railroad ☐ State ☐ Utility ☐ Data not collected ☐ Unknown/Other

***Type of Excavation Equipment**

☐ Auger ☐ Backhoe/Trackhoe ☐ Boring ☐ Drilling ☐ Directional Drilling
☐ Explosives ☐ Farm Equipment ☐ Grader/Scraper ☐ Hand Tools ☐ Milling Equipment
☐ Probing Device ☐ Trencher ☐ Vacuum Equipment ☐ Data Not Collected ☐ Unknown/Other

***Type of Work Performed**

☐ Agriculture ☐ Cable Television ☐ Curb/Sidewalk ☐ Bldg. Construction ☐ Bldg. Demolition
☐ Drainage ☐ Driveway ☐ Electric ☐ Engineering/Survey ☐ Fencing
☐ Grading ☐ Irrigation ☐ Landscaping ☐ Liquid Pipeline ☐ Milling
☐ Natural Gas ☐ Pole ☐ Public Transit Auth. ☐ Railroad Maint. ☐ Road Work
☐ Sewer (San/Storm) ☐ Site Development ☐ Steam ☐ Storm Drain/Culvert ☐ Street Light
☐ Telecommunication ☐ Traffic Signal ☐ Traffic Sign ☐ Water ☐ Waterway Improvement
☐ Data Not Collected ☐ Unknown/Other

Section 5 – Pre-Excavation Notification

***Was the One-Call Center notified?**

☐ Yes ☐ No If Yes, which One-Call Center? Ticket number:

Was Private Contract Locator used?

☐ Yes ☐ No

Section 6 – Locating and Marking

***Type of Locator**

☐ Utility Owner ☐ Contract Locator ☐ Data Not Collected

***Were facility marks visible in the area of excavation?**

☐ Yes ☐ No ☐ Data Not Collected

***Were facilities marked correctly?**

☐ Yes ☐ No ☐ Data Not Collected

What technology was used to locate utilities?

☐ Maps ☐ Active(transmitter+receiver) ☐ Passive (receiver only) ☐ GPR
☐ Acoustic ☐ Magnetic ☐ Infrared ☐ Unknown/Other

What Factors affected the ability to locate services?

☐ Soil Type:_____ ☐ Non-Grounded ☐ Common Bonded ☐ Depth
☐ Electromagnetic interference ☐ Parallel facilities ☐ Congested facilities ☐ Unknown/Other

Section 7 – Excavator Downtime

Did Excavator incur down time?

☐ Yes ☐ No

If yes, how much time?

☐ Unknown ☐ Less than 1 hour ☐ 1 hour ☐ 2 hours ☐ 3 or more hours Exact Value _____If

Estimated cost of down time?

☐ Unknown ☐ $0 ☐ $1 to 500 ☐ $501 to 1,000 ☐ $1,001 to 2,500 ☐ $2,501 to 5,000
☐ $5,001 to 25,000 ☐ $25,001 to 50,000 ☐ $50,001 and over Exact Value _____

Section 8 – Description of Damage

***Was there damage to a facility?**
☐ Yes ☐ No (i.e. near miss)
***Did the damage cause an interruption in service?**
☐ Yes ☐ No ☐ Data Not Collected ☐ Unknown/Other
If yes, duration of interruption
☐ Unknown ☐ Less than 1 hour ☐ 1 to 2 hrs ☐ 2 to 4 hrs ☐ 4 to 8 hrs ☐ 8 to 12 hrs ☐ 12 to 24 hrs
☐ 1 to 2 days ☐ 2 to 3 days ☐ 3 or more days ☐ Data Not Collected Exact Value _____
Approximately how many customers were affected?
☐ Unknown ☐ 0 ☐ 1 ☐ 2 to 10 ☐ 11 to 50 ☐ 51 or more Exact Value _____
Estimated cost of damage / repair/restoration
☐ Unknown ☐ $0 ☐ $1 to 500 ☐ $501 to 1,000 ☐ $1,001 to 2,500 ☐ $2,501 to 5,000
☐ $5,001 to 25,000 ☐ $25,001 to 50,000 ☐ $50,001 and over Exact Value _____
Number of people injured
☐ Unknown ☐ 0 ☐ 1 ☐ 2 to 9 ☐ 10 to 19 ☐ 20 to 49 ☐ 50 to 99
☐ 100 or more Exact Value _____
Number of fatalities
☐ Unknown ☐ 0 ☐ 1 ☐ 2 to 9 ☐ 10 to 19 ☐ 20 to 49 ☐ 50 to 99
☐ 100 or more Exact Value _____

Was there a Product Release?
Product Release: ☐ No ☐ Yes ☐ N/A Type: ____ **If Yes, Incident Type is Environmental Report.**
Volume: ____ Spill Controls: ____
Repair Process: ____

Section 9 – Description of the Root Cause Link to GDR Root Cause Tip Card

Please choose one

One-Call Notification Practices Not Sufficient
☐ No notification made to the One-Call Center
☐ Notification to one-call center made, but not sufficient
☐ Wrong information provided to One Call Center

Locating Practices Not Sufficient
☐ Facility could not be found or located
☐ Facility marking or location not sufficient
☐ Facility was not located or marked
☐ Incorrect facility records/maps

Excavation Practices Not Sufficient
☐ Failure to maintain marks
☐ Failure to support exposed facilities
☐ Failure to use hand tools where required
☐ Failure to test-hole (pot-hole)
☐ Improper backfilling practices
☐ Failure to maintain clearance
☐ Other insufficient excavation practices

Miscellaneous Root Causes
☐ One-Call Center error
☐ Abandoned facility
☐ Deteriorated facility
☐ Previous damage
☐ Data Not Collected
☐ Other

Provide explanation of selected root cause/s:____

Section 10 - Notifications, Certification & Approvals

Check the appropriate boxes indicating the applicable reports have been made to the following applicable organizations:

One Call was called ☐ **Spills Reporting Agency Notified** ☐

Emergency Responders (Fire) was called ☐ **Post-incident Drug/Alcohol Testing Performed**

List of All Agencies Contacted

Name/Agency	Phone #	Date	Time

Incident Report prepared by: ____

Employee (s): ____	Date: ____	Employee's Supervisor: ____	Date: ____
HSE Coordinator/Project/Unit Manager: ____	Date: ____	Group HSE Manager:____	Date: ____

Check one
Initial Report: ☐
Update: ☐
Final Report: ☐ ____

INCIDENT ANALYSIS REPORT (IAR)

Amec Foster Wheeler E&I
Confidential - Privileged

Incident Potential Severity
Letter: Select One
Number: Select One
Investigation Level: Select One
Severity Matrix (LINK)

Group: Select One Group HSE Manager: ____ Incident Review Panel Team (if applicable): ____

Incident Date: _____ Report Date: _____

Section 1 – General Information

Employee Name: ____ Sex: ☐ M ☐ F Date of Birth: ____ Age Range: Select One

Job Position: Select One Hire Date: ____ Time employee began work: _____ Time of incident: ____ ☐ am | ☐ pm

Business Line: Select One Department Number: ____ Project Manager: ____

Project Name: ____ Project Number: ____ Client: ____

Employee home office: ____ State/Province: ____ Immediate Supervisor: ____ Hours employee worked during last 7 days: ____ hrs

Location: Select One Is this a Company controlled work site: ☐ Yes ☐ No Incident Assigned to: Select One

Location description: ____

Section 2 – Incident Type - Process (**mark at least ONE BOLD TYPE** and all that apply)

☐ **Fatality** ☐ **Environmental** ☐ **Injury/Illness Incident** If Injury/illness: Select One

☐ **Security** ☐ **Near Miss/Hazard ID** ☐ **Property Damage** If Damage: Select One ☐ 3rd Party?

☐ Hospitalization ☐ **Regulatory Inspection** ☐ **Notice of Violation or Citation** ☐ Agency Reportable

☐ Motor Vehicle Incident Involving Injury ☐ Other (describe): ____

Outcome/Result: Select One If "other", specify: ____ Source of Hazard: Select One If "other", specify: ____

Immediate Cause: Select One

A. If **injury/illness**: Indicate the part of the body: Select One If "other", specify: ____

Indicate body part location: Select One If "other", specify: ____

Injury Type: Select One If "other" specify: ____ Illness Type: Select One If "other", specify: ____

☐ Bleeding? Select One If yes, "First Aider" name: ____ ☐ Contact with blood/infectious material? Select One

Exposure Control Precautions taken by First Aider (check all that apply):

- ☐ None (If none, contact WorkCare)
- ☐ Immediate Personal Hygiene
- ☐ Eye protection
- ☐ Gloves
- ☐ One-way CPR valve
- ☐ Face mask
- ☐ Previous HBV Immunization
- ☐ Recommended for HBV Immunization
- ☐ Other (describe): ____

☐ Blood contaminated work area / surface? If contaminated, describe cleanup/disposal: ____

☐ Medical treatment provided (i.e. prescriptions, referrals, etc.). If medical treatment, describe: ____

☐ Physical limitations received from physician? If limitations, describe: ____ ☐ Modified Work Offer provided.

☐ Second medical opinion? If second opinion, describe: ____

☐ Workers Compensation claim filed? If filed, claim number: ____

B. If **property damage**: describe what happened and estimate ($) of damage to all objects involved? ____

C. If **environmental**: Environmental incident category: ☐ Pollution Event ☐ Non-conformance

Was Regulatory Action Taken: Select One If "Yes" describe: ____

Type of pollution event: Select One Type of substance: Select One Name, CAS#, physical state: ____

Quantity: ____ Substance Unit: Select One Source of release: Select One If "other", specify: ____

Duration of Breach: Select One Receiving Environment: Select One If "other", specify: ____

Level of Non-conformance: Select One Describe Non-conformance: ____

D. If **security**: Security Incident Type: Select One If Physical: Select One If Criminal: Select One If Intellectual: Select One

E. If an **inspection by a regulatory agency**, what agency, who were the inspectors, inspector contact information? ___

Section 3 – Incident Description

Attach and number additional pages, as needed, to ensure all details related to the incident are captured.

A. List the names of all persons involved in the incident, and employer information: ___

B. List the names of any witnesses, their employer, and a local/company telephone number or address: ___

C. Name of Employee's supervisor: ___ Contact phone number for supervisor: ___

D. What specific job/task or action was the employee(s) doing just prior to the incident: ___

E. Was a tool or equipment involved? ☐ Yes ☐ No What was it: ___ Last Inspection Date: ___Defects: ___

F. Explain in **detail** what happened: ___

G. Explain in **detail** what object or substance directly harmed the employee: ___

H. What were the weather conditions at time of incident?: ___

I. What was the lighting like at time of incident? Bright ☐ Shadows ☐ Dark ☐ Other: ___

J. List any damaged equipment or property (other than motor vehicles). Provide model and serial number **and** estimated costs to repair/replace damaged equipment or property, if applicable: ___

Section 4 - Incident Analysis

A. Was a Health and Safety Plan (HASP) or Activity Hazard Analysis (AHA) completed for the work being performed? ☐ Yes ☐ No
If "yes", Who prepared the document?: ___

B. Who and when was the last manager (Project, Unit, etc.) at the site of the incident?: ___

C. When and what safety training **directly related** to the incident has the person(s) involved had?: ___

D. List attached documentation (HASP acknowledgement forms, kickoff/daily/weekly meetings, inspections, photographs): ___

Section 5 - Incident Investigation Results and Corrective Actions

This section to be completed by the Group HSE Manager/IRP with support from location where incident occurred, in accordance with A-Z List of Accident Causes and Glossary of A-Z Causes (click links).

Causal Factors (Acts or Omissions / Conditions)

(Attach and number any additional pages as needed to completely address this section)

	IMMEDIATE CAUSE	IMMEDIATE CAUSE SUB-TYPE	DESCRIPTION
1	Select One	____	____
2	Select One	____	____
3	Select One	____	____
4	Select One	____	____

Root Cause(s) Analysis - The below items represents major root cause categories which have been determined to be Less Than Adequate (LTA). A more detailed determination of the root cause will be facilitated, if needed, by the applicable Group HSE Manager / IRP.

	ROOT CAUSE TYPE	ROOT CAUSE SUB-TYPE	DESCRIPTION
1	Select One	____	____

2	Select One	____	____
3	Select One	____	____
4	Select One	____	____

Amec Foster Wheeler Safety Rules and Safety Essentials

Safety Rules **Select all applicable breaches of rules or** ☐ None		**Safety Essentials** **Select all applicable breaches of behavioral expectations or** ☐ None	
☐ Confined Space ☐ Working at Height ☐ Suspended Loads ☐ Driving ☐ Permit to Work	☐ Isolation (energy) ☐ Dropped Objects (height) ☐ Excavations ☐ Overhead electricity ☐ Personal Security	☐ Always Take Care ☐ Follow the Rules ☐ Do a Risk Assessment	☐ You Must Intervene ☐ Manage Any Change ☐ Wear the Correct PPE

Corrective Actions

Root Cause #	**Corrective Actions Taken** (Attach additional pages as needed to completely address this section)	**Responsible Person**	**Proposed Completion Date**	**Closed on Date**	**Verified by and Date Verified**
____	___	___	___	___	___
____	___	___	___	___	___
____	___	___	___	___	___
____	___	___	___	___	___
____	___	___	___	___	___

Section 6 - Notifications, Certification & Approvals

Check the appropriate boxes indicating the applicable reports have been made to the following applicable organizations:

Auto Insurance Carrier was called ☐ **Group HSE Manager Notified** ☐

WorkCare was called ☐ **Post-incident Drug/Alcohol Testing Performed** ☐

Incident Report prepared by: ___

Employee (s): ___	Date: ___	Employee's Supervisor: ___	Date: ___
HSE Coordinator/Project/Unit Manager: ___	Date: ___	Group HSE Manager: ___	Date: ___

VEHICLE INCIDENT REPORT (VIR)

Amec Foster Wheeler E&I

Confidential - Privileged

Section 1 - General Information

Date of Incident: ____

Time incident occurred: ____ ☐ am | ☐ pm | Illumination: ☐ Dark ☐ Dusk ☐ Light | Road Condition: ☐ Dry ☐ Wet ☐ Icy/snow

Were police summoned to scene? ☐ Yes ☐ No Police Department and Location: ____

Report #; ____ Officer's Name: ____ Officer's Badge Number: ____

Section 2 - Company Driver and Vehicle

Driver's name: ____ D/L #: ____ State: ____

Driver's home office address: ____ Driver's Phone #: ____

Company Vehicle #: ____ Year: ____ Model: ____ License #: ____ State: ____

Company car?: ☐ Yes ☐ No Personal Vehicle?: ☐ Yes ☐ No Rental Vehicle?: ☐ Yes ☐ No

If rental, rented from: ____

Passenger/Witness Name(s): ____ Address: ____ Telephone: ____

Passenger/Witness Name(s): ____ Address: ____ Telephone: ____

Damage to vehicle: ____

Was an employee injured?: ☐ Yes ☐ No If yes, please describe: ____

Injuries to others?: ☐ Yes ☐ No If yes, please describe: ____

Vehicle was being used for: Company business ☐ Yes ☐ No Personal business ☐ Yes ☐ No

Towed?: ☐ Yes ☐ No If yes, by whom?: ____ To Where?: ____

Section 3 - Other Driver and Vehicle Information

Driver's Name: ____ D/L # : ____ State: ____

Current address: ____ City: ____ State: ____

Telephone: ____ Work: ____ Cell: ____

Registered Owner's Name: ____ Address: ____ City: ____ State: ____

(verify registration document)

The Other Vehicle: Make: ____ Model: ____ Year: ____ License #: ____ State: ____

Insurance company name: ____ Address: ____ Phone #: ____

Policy No.: ____ Contact Person: ____ Phone #: ____

Passenger/Witness Name(s): ____ Address: ____ Telephone: ____

Passenger/Witness Name(s): ____ Address: ____ Telephone: ____

Damage: (*Make note of pre-existing damage and take pictures if possible – you may attach additional pages if necessary):* ____

Injuries to other driver/passengers: ____

Section 4 – Approvals (signatures required)

Form completed by (please print): ____ Date: ____

Signature: _____

Office/Project Manager (please print): ____ Date: ____

Signature: _____

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Things to Do First In The Event Of a Motor Vehicle Incident

GENERAL INFORMATION

1. Do not decide on your own whether a particular incident is "covered" by insurance. Should there be any doubt, it is always preferable to report an occurrence, as this allows underwriters, the Risk Management Department and insurance adjusters to determine if a covered loss has taken place.

2. Policy Conditions do require that all losses and occurrences, which may result in a claim be promptly reported.

3. Do not admit liability or offer your opinion of liability to anyone.

4. Complete this IAR/VIR form promptly and forward with all applicable supporting documentation. It is essential both division and location information be provided.

5. For automobile collisions within the **United States**, please indicate on the IAR form that you have contacted Zurich at:

Zurich Insurance Company
1-800-987-3373 or
1-877-928-4531
24 hours a day, 7 days a week

6. For automobile collisions within **Canada**, please indicate on the IAR form that you have contacted Zurich at:

Crawford Adjusters Canada
Claims Alert
1-888-218-2346
24 hours a day, 7 days a week

7. Information on the use of rental and personal vehicles at work and insurance are at the links for **Canada** and **US**.

The more details you have the better but, don't delay reporting if you don't have all of the information - that may be obtained later. A Zurich trained operator will answer your call and ask for all relevant information regarding the incident. The initial information required includes:

- Your division,
- Office location and division contact name – advise that you are an AMEC Company
- Name, drivers license and phone number of the driver involved in the loss
- Description of the vehicle which he/she was driving (i.e., year, make, model, license plate number, serial number)
- Date, time and location of incident
- Passenger information (if applicable)
- Third party information (i.e., name, phone number, address, vehicle information, insurance information)
- If any injuries occurred (if applicable)
- Police information
- Witness information (if applicable)

Call 911 if there are serious injuries!

If you are injured or think you were injured, **contact your supervisor and call WorkCare at 888-449-7787**. Your supervisor will notify your HSE Coordinator and your Group HSE Manager. For additional instructions on what to do, go to Amec Foster Wheeler's HSE website at:

http://ee.amecnet.com/she/sheweb/incident_reporting.htm

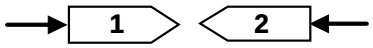
1. Call for an officer if the incident occurred on public property (streets, highways or roads). Disputes often arise between the parties involved as to who was at fault; therefore, a police report is important. If an officer is unable to attend the scene of the collision, a counter police report may be filed at most stations. Insurance companies rely on police reports to determine liability.
2. Complete the Incident Investigation Report and the Vehicle Incident Report forms. It is important that both these forms are completed in detail. Include a diagram of the incident on the provided sheet. Incomplete information may lead to delays in processing associated claims and in helping to prevent this type of incident from occurring again.
3. Give only information that is required by the authorities or as directed by Amec Foster Wheeler contractual requirements.
4. Sign only those statements required by the authorities or as directed by Amec Foster Wheeler contractual requirements. Do not sign away your or the company's rights.

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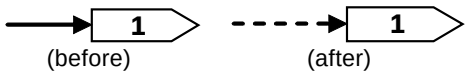
Vehicle Incident Diagram

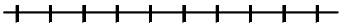
This or a similar diagram must be completed with all VIRs

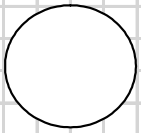
Instructions:

1. Number each vehicle and show directions 

2. Use a solid line to show path before incident and use a dotted line to show path after incient



3. Show pedestrian/non-motorist by: 
4. Show railroad by: 
5. Indicate north by arrow as: 
6. Show street or highway names or numbers
7. Show signs, signals, warning and traffic controls.



Indicate North
by Arrow

Prepared by: _____ Date: _____

Activity Hazard Analysis (AHAs)

Mobilization-Demobilization
Field General
Field Work Oversight
Decontamination
Groundwater Sampling
Soil Sampling
Soil Vapor Sampling

AHA - - Mobilization/Demobilization and Site Preparation Activity Description

Activity/Work Task:	Mobilization/Demobilization and Site Preparation		
Project Location:	**Stalingrad Ventures, LLC**		
Contract Number:	**3216162331**		
Date Prepared:	7/03/2012	**Date Accepted:**	
Prepared by (Name/Title):	Ryan Mankowski/Staff Environmental Scientist		
Reviewed by (Name/Title):			

Notes: (Field Notes, Review Comments, etc.)

This AHA involves the following:

- Establishing site specific measures

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements. Contractor to follow general site safety controls for Slips Trips and Falls, Biological hazards, cuts lacerations and pinch points, and emergency procedures.

Overall Risk Assessment Code (RAC) (Use highest code) **M**

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart
E = Extremely High Risk
H = High Risk
M = Moderate Risk
L = Low Risk

Job Steps	Hazards	Controls	RAC
1. Prepare for Site Visit	1A) N/A	Prior to leaving for site: ▪ Obtain and review HASP prior to site visit, if possible ▪ Determine PPE needs – bring required PPE to the site, if not otherwise being provided at the site (e.g., steel toed boots) ▪ Determine training and medical monitoring needs and ensure all required Health and Safety training and medical monitoring has been received and is current ▪ Ensure all workers are fit for duty (alert, well rested, and mentally and physically fit to perform work assignment) ▪ If respiratory protection is required/potentially required, ensure that training and fit-testing has occurred within the past year. ▪ Familiarize yourself with route to the site	**M**

AHA - - Mobilization/Demobilization and Site Preparation
Activity Description

Job Steps	Hazards	Controls	RAC
	1b) Vehicle defects	Inspect company owned/leased vehicle for defects such as: ▪ Flat tires ▪ Windshield wipers worn or torn ▪ Oil puddles under vehicle ▪ Headlights, brake lights, turn signals not working	**L**
	1c) Insufficient emergency equipment, unsecured loads	Insufficient emergency equipment, unsecured loads: ▪ Ensure vehicle has first aid kit and that all medications are current (if first aid kits are not provided at the site) ▪ Ensure vehicle is equpped with warning flashers and/or flares and that the warning flashers work ▪ Cell phones are recommended to call for help in the event of an emergency ▪ Vehicles carrying tools must have a safety cage in place. All tools must be properly secured ▪ Vehicles must be equipped with chocks if the vehicle is to be left running, unattended. ▪ Ensure sufficient gasoline is in the tank	**L**
2. Operating vehicles	2a) Collisions, unsafe driving conditions	Drive Defensively!: ▪ Seat belts must be used at all times when operating any vehicle on company business. ▪ Drive at safe speed for road conditions ▪ Maintain adequate following distance ▪ Pull over and stop if you have to look at a map ▪ Try to park so that you don't have to back up to leave. ▪ If backing in required, walk around vehicle to identify any hazards (especially low level hazards that may be difficult to see when in the vehicle) that might be present. Use a spotter if necessary	**M**
3. Driving to the jobsite (mobilization)	3a) Dusty, winding, narrow roads	Dusty, winding, narrow roads ▪ Drive confidently and defensively at all times. ▪ Go slow around corners, occasionally clearing the windshield.	**M**

AHA - - Mobilization/Demobilization and Site Preparation
Activity Description

Job Steps	Hazards	Controls	RAC
	3b) Rocky or one-lane roads	Rocky or one-lane roads: ▪ Stay clear of gullies and trenches, drive slowly over rocks. ▪ Yield right-of-way to oncoming vehicles---find a safe place to pull over.	**M**
	3c) Stormy weather, near confused tourists	Stormy weather, near confused tourists: ▪ Inquire about conditions before leaving the office. ▪ Be aware of oncoming storms. ▪ Drive to avoid accident situations created by the mistakes of others.	**L**
	3d) When angry or irritated	When angry or irritated: ▪ Attitude adjustment; change the subject or work out the problem before driving the vehicle. Let someone else drive.	**M**
	3e) Turning around on narrow roads	Turning around on narrow roads: ▪ Safely turn out with as much room as possible. ▪ Know what is ahead and behind the vehicle. ▪ Use a backer if available.	**M**
	3f) Sick or medicated	Sick or medicated: ▪ Let others on the crew know you do not feel well. ▪ Let someone else drive.	**M**
	3g) On wet or slimy roads	On wet or slimy roads ▪ Drive slow and safe, wear seatbelts.	**M**
	3h) Animals on road	Animals on road ▪ Drive slowly, watch for other animals nearby. ▪ Be alert for animals darting out of wooded areas	**M**
4. Gain permission to enter site	4a) Hostile landowner, livestock, pets	Hostile landowner, livestock, pets ▪ Talk to land owner, be courteous and diplomatic ▪ Ensure all animals have been secured away from work area	**L**
5. Mobilization/ Demobilization of	5a) Struck by Heavy Equipment/Vehicles	Struck by heavy equipment: ▪ Be aware of heavy equipment operations.	**M**

AHA - - Mobilization/Demobilization and Site Preparation
Activity Description

Job Steps	Hazards	Controls	RAC
Equipment and Supplies		▪ Keep out of the swing radius of heavy equipment. ▪ Ground personnel in the vicinity of heavy equipment operations will be within the view of the operator at all times ▪ Employees shall wear a high visibility vest or T-shirt (reflective vest required if working at night). ▪ Ground personnel will be aware of the counterweight swing and maintain an adequate buffer zone. ▪ Ground personnel will not stand directly behind heavy equipment when it is in operation.	
	5b) Struck by Equipment/Supplies	Struck by Equipment/Supplies: ▪ Workers will maintain proper space around their work area, if someone enters it, stop work. ▪ When entering another worker's work space, give a verbal warning so they know you are there.	**L**
	5c) Overexertion Unloading/Loading Supplies	Overexertion Unloading/Loading Supplies: ▪ Train workers on proper body mechanics, do not bend or twist at the waist while exerting force or lifting. ▪ Tightly secure all loads to the truck bed to avoid load shifting while in transit.	**M**
	5d) Overexertion Unloading/Loading Supplies	Caught in/on/between: ▪ Do not place yourself between two vehicles or between a vehicle and a fixed object.	**M**
	5e) Slip/Trip/Fall	Slip/Trip/Fall: ▪ Mark all holes and low spots in area with banner tape. Instruct personnel to avoid these areas. ▪ Drivers will maintain 3 point contact when mounting/dismounting vehicles/equipment. ▪ Drivers will check surface before stepping, not jumping down.	**L**
	5f) Vehicle accident	Vehicle accident: ▪ Employees should follow AMEC vehicle operation policy and be aware of all stationary and mobile vehicles.	**L**

AHA - - Mobilization/Demobilization and Site Preparation
Activity Description

Job Steps	Hazards	Controls	RAC
6. Site Preparation	6a) Slip/Trip/Fall	Slip/Trip/Fall: ▪ Mark all holes and low spots in area with banner tape. Instruct personnel to avoid these areas	**L**
7. Installation of soil erosion and sediment controls	7a) Overexertion	Overexertion: ▪ Workers will be trained in the proper method of placing erosion controls. ▪ Do not bend and twist at the waist while lifting or exerting force.	**M**
	7b) Struck by Equipment/Supplies	Struck by Equipment/Supplies: ▪ Workers will maintain proper space around their work area, if someone enters it, stop work. ▪ When entering another worker's work space, give a verbal warning so they know you are there.	**M**
8. Driving back from the jobsite	7c) See hazards listed under item #3	See safe work practices under item #3	**M**

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (1/2 face respirator with P-100 cartridge, Hard Hat, safety glasses, gloves, steel toe work boots, high visibility safety vest, hearing protection) Note: When initially entering the site the following PPE must be donned: ⁾ Work Uniform or Work Clothes ⁾ Hard Hat ⁾ Safety Glasses ⁾ Steel Toe Boots ⁾ Reflective Vests	**Competent / Qualified Personnel:** Name – Position/Employer **Training requirements:** List specific certification (as applicable) Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's instructions. Tag tools that are defective and remove from service. Inspect power cord sets prior to use. Inspect all PPE prior to use

AHA - Field Work General

Activity/Work Task:	Field Work General		
Project Location:	**Stalingrad Ventures, LLC**		
Contract Number:	**3216162331**		
Date Prepared:	**8-15-12**	**Date Accepted:**	**8-15-12**
Prepared by (Name/Title):	Kendra Bavor		
Reviewed by (Name/Title):	Kendra Bavor, CSP		

Overall Risk Assessment Code (RAC) (Use highest code)	**L**

Risk Assessment Code (RAC) Matrix

Severity	**Probability**				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	**E**	**E**	**H**	**H**	**M**
Critical	**E**	**H**	**H**	**M**	**L**
Marginal	**H**	**M**	**M**	**L**	**L**
Negligible	**M**	**L**	**L**	**L**	**L**

Notes: (Field Notes, Review Comments, etc.)

This AHA involves the following:

- Establishing site specific measures

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements. Contractor to follow general site safety controls for Slips Trips and Falls, Biological hazards, cuts lacerations and pinch points, and emergency procedures.

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- **E = Extremely High Risk**
- **H = High Risk**
- **M = Moderate Risk**
- **L = Low Risk**

Job Steps	Hazards	Controls	RAC
1. Mobilization/ See Mobilization/Demobilization and Site Preparation JHA Demobilization and Site Preparation	1A) See Mobilization/Demobilization and Site Preparation JHA	1A) See Mobilization/Demobilization and Site Preparation JHA	**L**
2. Communication	2A) Safety, crew unity	2A) Talk to each other. ▪ Let other crewmembers know when you see a hazard. ▪ Avoid working near known hazard trees (trees that are rotten, dead, damaged, etc.). ▪ Always know the wherabouts of fellow crewmembers. ▪ Carry a radio and spare batteries or cell phone. ▪ Review Emergency Evacuation Procedures (see below).	**L**
3. Walking and working in the field	3A) Falling down, twisted ankles and knees, poor footing	3A) Always watch your footing. ▪ Slow down and use extra caution around logs, rocks, and animal holes. ▪ Extremely steep slopes (>50%) can be hazardous under wet or dry conditions; consider an alternate route. ▪ Wear laced boots with a minimum 8" high upper and non-skid Vibram-type soles for ankle support and traction.	**L**

AHA - Field Work General

	3B) Falling objects	3B) Protect head agains falling objects. ▪ Wear your hardhat for protection from falling limbs and pinecones, and from tools and equipment carried by other crewmembers. ▪ Stay out of the woods during extremely high winds.	**L**
	3C) Damage to eyes	3C) Protect eyes: ▪ Watch where you walk, ecpecially around trees and brush with limbs sticking out. ▪ Exercise caution when clearing limbs from tree trunks. Advise wearing eye protection. ▪ Ultraviolet light from the sun can be damaging to the eyes; look for sunglasses that specify significant protection from UV-A and UV-B radiation. If safety glasses require, use one's with tinted lenses	**L**
	3D) Bee and wasp stings	3D) See JHA for Insect Stings and Bites	**L**
	3E) Ticks and infected mosquitos	3E) See JHA for Insect Stings and Bites	**L**
	3F) Lifting Injuries (e.g., Back Injuries)	3F) Lifting Injuries (e.g., Back Injuries)) Site personnel will be instructed on proper lifting techniques.) Perform warm-up excercises before starting work.) **DO NOT EXCEED THE MACTEC LIFTING LIMIT OF 50 POUNDS.**) Use two people to lift, lower, or carry equipment or materials heavier than 50 pounds.) Mechanical devices should be used to reduce manual handling of materials.) Drive the field vehicle as close to the point that the heavy equipment/material will be used as long as the area is safe to drive into and you do not create hazards to you, your co-worker, or the vehicle.	**L**
	3G) Slips/Trips/Falls	3G) Slips/Trips/Falls) Maintain work areas safe and orderly; unloading areas should be on even terrain; mark or repair possible tripping hazards.) Site SHSO inspect the entire work area to identify and mark hazards.) Be aware of work area conditions that can cause slip hazards such as ponding of water on concrete surfaces. Ponding of water on smooth surfaces, such as concrete, coupled with the warm or freezing weather conditions has the potential to cause slippery condiitons such as growth of scum or ice, as applicable. Adding a layer of clean fill to the surface may prevent the growth of scum, and/or create a non-slippery walking surface.	**L**
	3H) Vehicular Traffic	3H) Vehicular Traffic ▪ Spotters will be used when backing up trucks and heavy equipment and when moving equipment. ▪ High visibility vests will be worn when workers are exposed to vehicular traffic at the site or on public roads.	**L**
	3I) Overhead Hazards	3I) Overhead Hazards ▪ Personnel will be required to wear hard hats that meet ANSI Standard Z89.1. ▪ All ground personnel will stay clear of suspended loads. ▪ All equipment will be provided with guards, canopies or grills to protect the operator from falling or flying objects. ▪ All overhead hazards will be identified prior to commencing work operations.	**L**

	3J) Dropped Objects	3J) Dropped Objects ▪ Steel toe boots meeting ANSI Standard Z41 will be worn.	**L**
	3K) Noise	3K) Noise ▪ Hearing protection will be worn with a noise reduction rating capable of maintaining personal exposure below 85 dBA (ear muffs or plugs); all equipment will be equipped with manufacturer's required mufflers. Hearing protection shall be worn by all personnel working in or near heavy equipment.	**L**
	3L) Eye Injuries	3L) Eye Injuries ▪ Safety glasses meeting ANSI Standard Z87 will be worn.	**L**
	3M) Heavy Equipment (overhead hazards, spills, struck by or against)	3M) Heavy Equipment ▪ Equipment will have seat belts. ▪ Operators will wear seat belts when operating equipment. ▪ Do not operate equipment on grades that exceed manufacturer's recommendations. ▪ Equipment will have guards, canopies or grills to protect from flying objects. ▪ Ground personnel will stay clear of all suspended loads. ▪ Ground personnel will wear high visibility vests ▪ Spill and absorbent materials will be readily available. ▪ Drip pans, polyethylene sheeting or other means will be used for secondary containment. ▪ Ground personnel will stay out of the swing radius of excavators. ▪ Eye contact with operators will be made before approaching equipment. ▪ Operator will acknowledge eye contact by removing his hands from the controls. ▪ Equipment will not be approached on blind sides. ▪ All equipment will be equipped with backup alarms and use spotters when significant physical movement of equipment occurs on-site, (i.e., other than in place excavation or truck loading).	**L**
	3N) Struck by vehicle/equipment	3N) Struck by vehicle/equipment ▪ Be aware of heavy equipment operations. ▪ Keep out of the swing radius of heavy equipment. ▪ Ground personnel in the vicinity of heavy equipment operations will be within the view of the operator at all times and will wear high visibility vests. ▪ Ground personnel will be aware of the counterweight swing and maintain an adequate buffer zone. ▪ Ground personnel will not stand directly behind heavy equipment when it is in operation. ▪ Drivers will keep workers on foot in their vision at all times, if you lose sight of someone, Stop!	**L**
	3O) Struck/cut by tools	3O) Struck/cut by tools ▪ Cut resistant work gloves will be worn when dealing with sharp objects. ▪ All hand and power tools will be maintained in safe condition. ▪ Guards will be kept in place while using hand and power tools.	**L**

	3P) Caught in/on/between	3P) Caught in/on/between ▪ Workers will not position themselves between equipment and a stationary object. ▪ Workers will not wear long hair down (place in pony-tail and tuck into shirt) or jewelry if working with tools/machinery.	**L**
	3Q) Contact with Electricity/Lightning	3Q) Contact with Electricity/Lighting ▪ All electrical tools and equipment will be equipped with GFCI. ▪ Electrical extension cords will be of the "Hard" or "Extra Hard" service type. ▪ All extension cords shall have a three-blade grounding plug. ▪ Personnel shall not use extension cords with damaged outer covers, exposed inner wires, or splices. ▪ Electrical cords shall not be laid across roads where vehicular traffic may damage the cord without appropriate guarding. ▪ All electrical work will be conducted by a licensed electrician. ▪ All utilities will be marked prior to excavation activities. ▪ All equipment will stay a minimum of 10 feet from overhead energized electrical lines (50 kV). This distance will increase by 4 inches for each 10 kV above 50 kV. Rule of Thumb: Stay 10 feet away from all overhead powerlines known to be 50 kV or less and 35 feet from all others.) ▪ The SHSO shall halt outdoor site operations whenever lightning is visible, outdoor work will not resume until 30 minutes after the last sighting of lightning.	**L**
	3R) Equipment failure	3R) Equipment failure ▪ All equipment will be inspected before use. If any safety problems are noted, the equipment should be tagged and removed from service until repaired or replaced.	**L**
	3S) Hand & power tool usage, cuts, burns, etc.	3S) Hand & power tool usage ▪ Inspect the tool daily. ▪ Remove broken or damaged tools from service. ▪ Use the tool for its intended purpose. ▪ Use in accordance with manufacturers instructions.	**L**

	3T) Burns and Exposure to Exhaust from Portable Propane Torch Use	3T) Portable propane torch usage - Read the manual to become familiar with the propane torch and follow all safety precautions. Don PPE (safety glasses, heavy leather gloves) before using the torch. - Inspect the propane cylinder and the torch tip to ensure there are no defects, damage, etc. - Assemble the torch kit per instruction manual. The torch is designed to be used with the small propane cylinder, do not attempt to attach the torch to any other gas cylinder. - Do not use the torch in areas where gasoline or other liquids having flammable vapors are stored or used. - Do not smoke while igniting or operating the propane torch. - Have an ABC type fire extinguisher readily accessible to the work area. - Be sure the torch tip has a tight seal to the cylinder. If you smell gas, do not try to light the torch. Check the seal between the cylinder and torch. Do not attempt to light the torch until the seal is secure and no gas is leaking. - To ignite the torch flame, first position the point of the torch tip away from you. - If the unit requires a striker to ignite the torch, only use the striker provided with the unit. Never use a match or lighter to ignite torch. - Do not place hand or any part of your body in the path of the flame while lighting or operating the propane torch. - Never leave an ignited torch unattended while in operation. When not in use, the torch tip must be removed from the propane cylinder. - Be aware of the weather conditions. On bright sunny days, the torch flame may be barely visible. On windy days, the wind may carry the torch's heat back towards you. - The torch can produce combustion products such as carbon monoxide. Do not breathe in the exhaust. Propane vapors are heavier than air and can accumulate in low or confined areas. Use the torch only in a well ventilated area. - Heating a surface may cause heat to be conducted to adjoining surfaces that may be combustible or become pressurized when heated. Always check to make sure no unintended parts or materials are being heated. - Torch will be extremely hot, allow the torch to cool before touching it to remove it from the cylinder. - Never store a torch that is still hot. - When cooled, disconnect the torch from the cylinder for storage, and store them in a safe manner to prevent damage.	**L**

AHA - Field Work General

4. Environmental health considerations	4A) HEAT Stress	4A) Take precautions to prevent heat stress ▪ Remain constantly aware of the four basic factors that determine the degree of heat stress (air temperature, humidity, air movement, and heat radiation) relative to the surrounding work environmental heat load. ▪ Know the signs and symptoms of heat exhaustion, heat cramps, and heat stroke. Heat stroke is a true medical emergency requiring immediate emergency response action. NOTE: The severity of the effects of a given environmental heat stress is decreased by reducing the work load, increasing the frequency and/or duration of rest periods, and by introducing measures which will protect employees from hot environments. ▪ Maintain adequate water intake by drinking water periodically in small amounts throughout the day (flavoring water with citrus flavors or extracts enhances palatability). ▪ Allow approximately 2 weeks with progressive degrees of heat exposure and physical exertion for substantial acclimatization. ▪ Acclimatization is necessary regardless of an employee's physical condition (the better one's physical condition, the quicker the acclimatization). Tailor the work schedule to fit the climate, the physical condition of employees, and mission requirements. ▪ A reduction of work load markedly decreases total heat stress. ▪ Lessen work load and/or duration of physical exertion the first days of heat exposure to allow gradual acclimatization. ▪ Alternate work and rest periods. More severe conditions may require longer rest periods and electrolyte fluid replacement.	**L**
	4B) Wet Bulb Globe Temperature (WBGT) Index	4B) WBGT ▪ Curtail or suspend physical work when conditions are extremely severe (see attached Heat Stress Index). ▪ Compute a Wet Bulb Globe Temperature Index to determine the level of physical activity (take WBGT index measurements in a location that is similar or closely approximates the environment to which employees will be exposed).	**L**
		WBGT THRESHOLD VALUES FOR INSTITUTING PREVENTIVE MEASURES 80-90 degrees F — Fatigue possible with prolonged exposure and physical activity. 90-105 degrees F — Heat exhaustion and heat stroke possible with prolonged exposure and physical 105-130 degrees F — Heat exhaustion and heat stroke are likely with prolonged heat exposure and phy	

	4C) Cold Extremes	4C) Take precautions to prevent cold stress injuries ▪ Cover all exposed skin and be aware of frostbite. While cold air will not freeze the tissues of the lungs, slow down and use a mask or scarf to minimize the effect of cold air on air passages. ▪ Dress in layers with wicking garments (those that carry moisture away from the body – e.g., cotton) and a weatherproof slicker. A wool outer garment is recommended. ▪ Take layers off as you heat up; put them on as you cool down. ▪ Wear head protection that provides adequate insulation and protects the ears. ▪ Maintain your energy level. Avoid exhaustion and over-exertion which causes sweating, dampens clothing, and accelerates loss of body heat and increases the potential for hypothermia. ▪ Acclimate to the cold climate to minimize discomfort. ▪ Maintain adequate water/fluid intake to avoid dehydration.	**L**
	4D) Wind	4D) Effects of the wind ▪ Wind chill greatly affects heat loss (see attached Wind Chill Index). ▪ Avoid marking in old, defective timber, especially hardwoods, during periods of high winds due to snag hazards.	**L**
	4E) Thunderstorms	4E) Thunderstorms ▪ Monitor weather channels to determine if electrical storms are forcased. ▪ Plan ahead and identify safe locations to be in the event of a storm. (e.g., sturdy building, vehicle, etc.) ▪ Suspend all field work at the first sound of thurnder. You should be in a safe place when the time between the lightning and thunder is less than 30 seconds. ▪ Only return to work 30 minutes after the after the last strike or sound of thunder	**L**
5. Check and calibrate industrial hygiene and other field instruments and equipment as required and as recommended by the manufacturer	5A) Exposure to Calibration Gases/Chemicals due to:) Use of damaged instruments.	5A) Verify proper operation of the instrument prior to calibration. Calibrate instruments in an area with adequate ventilation and follow the manufacturer's recommendations. ▪ Wear appropriate PPE to conduct calibrations as specified in the instrument manual.	**L**

	5B) Exposure to Site contaminants due to: • Improper instrument calibration; • Misinterpretation of calibration results; • Improper instrument repair; • Improper use of instrument due to lack of training.	5B) Calibrate the instrument in accordance with the manufacturer's recommendations (see instrument manual) using the applicable calibration standard and calibration procedure. • Perform calibrations at a frequency recommended by the manufacturer. Be aware of the instrument's limitations (e.g., detection limit, maximum sensitivity) and the conditions (e.g., humidity) that may affect correct operation or accuracy of that equipment. Possible sources of error that may affect the correct calibration of the instrument. • Use only calibration materials recommended by the manufacturer for calibration. Do not use substitutions. • Confirm that the connections between the instrument and the calibration gas/material is leak-free. • Record all instrument calibrations in the field logbook. Include the instrument ID (type/manufacture/serial number/lamp eV, etc.), calibration gas used (chemical and concentration), and instrument result. • Do not attempt to repair instrument. Return to the vendor for replacement. Report any damaged or malfunctioning instrument to the vendor. • All personnel must be familiar with operation of the instrument and understand: - Theroy of its operation including any alarms and their setpoints - Materials the instrument can and cannot detect, - Instrument's limitations - The expected responses to calibration gases/materials - Interfering gases/chemicals and their affects on the instrument readings - When re-zeroing is appropriate	**L**

AHA - Field Work General

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (1/2 face respirator with P-100 cartridge (upgrade), Hard Hat, safety glasses, gloves (per HASP), steel toe work boots, high visibility safety vest, hearing protection)	**Competent / Qualified Personnel:** Names provided in HASP (Position/Employer) **Training requirements:** Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's instructions. Tag tools that are defective and remove from service. Inspect power cord sets prior to use. Inspect all PPE prior to use

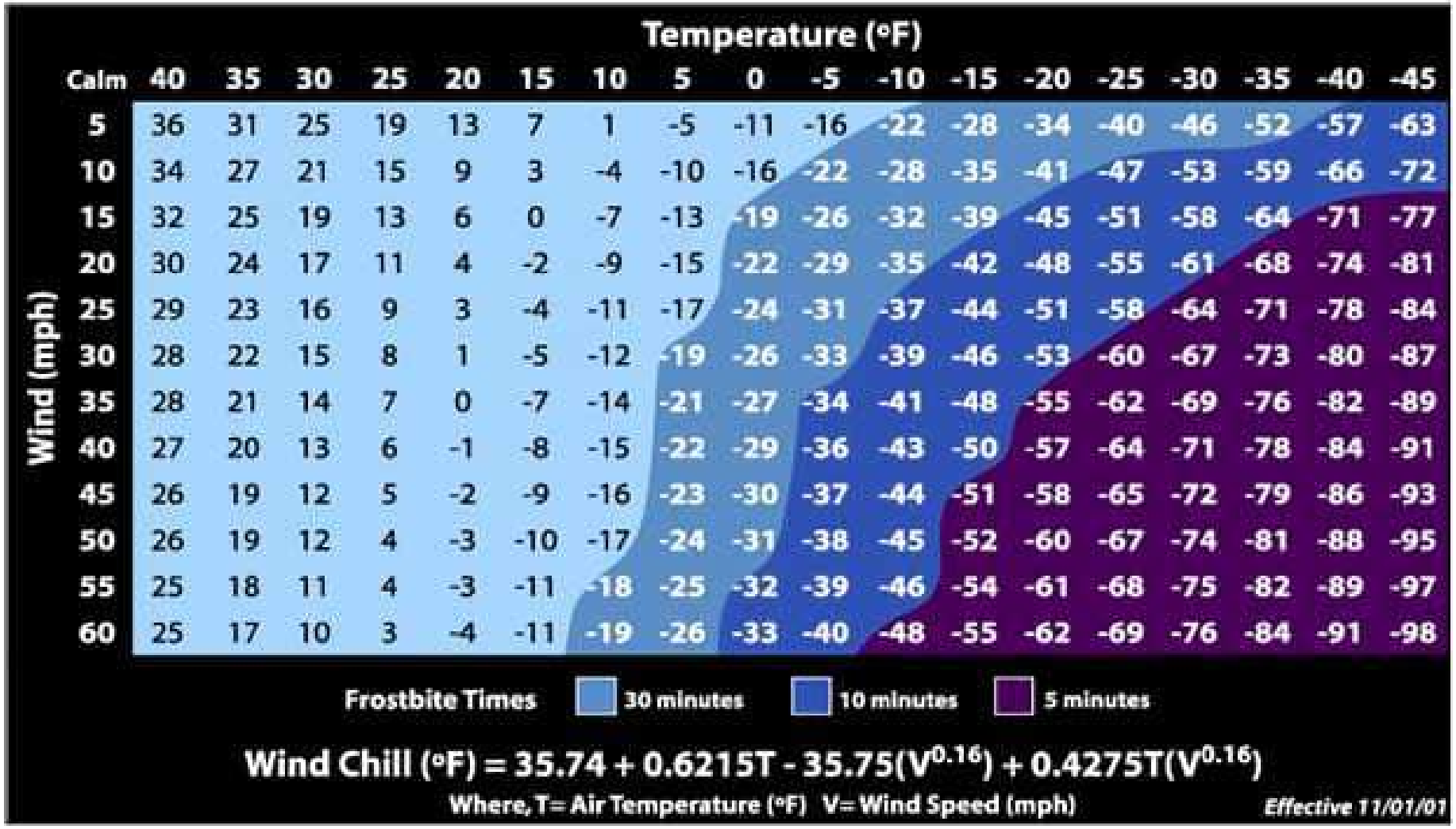
AHA - Field Work General

Heat Index Chart

Temperature	% Relative Humidity																
		15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
	110	108	112	117	123	130											
	105	102	105	108	113	117	122	130									
	100	97	98	102	104	107	110	115	120	126	132						
	95	91	93	95	96	98	100	104	106	109	113	119	124	130			
	90	86	87	88	90	91	92	95	97	98	100	103	106	110	114	117	121
	85	81	82	83	84	85	86	87	88	89	90	92	94	96	97	100	102
	80	76	77	78	78	79	79	80	81	82	83	84	85	86	87	88	89

Legend	
80-89 degrees	Fatigue is possible with prolonged exposure and/or physical activity.
90-104 degrees	Sunstroke, heat cramps and heat exhaustion are possible with prolonged exposure and/or physical activity.
105-129 degrees	Sunstroke, heat cramps and heat exhaustion are likely. Heat stroke is possible with prolonged exposure and/or physical activity.
130+ degrees	Heatstroke/sunstroke is highly likely with continued exposure.

Wind Chill Chart



AHA - Field Work General

AHA - - Field Work Oversight
Activity Description

Activity/Work Task:	Field Work Oversight		
Project Location:	**Stalingrad Ventures, LLC**		
Contract Number:	**3216162331**		
Date Prepared:	**7/03/2012**	**Date Accepted:**	**8-16-2012**
Prepared by (Name/Title):	Ryan Mankowski/Staff Environmental Scientist		
Reviewed by (Name/Title):	Kendra Bavor, CSP		

Overall Risk Assessment Code (RAC) (Use highest code) **L**

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Notes: (Field Notes, Review Comments, etc.)

This AHA involves the following:

- Establishing site specific measures

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements. Contractor to follow general site safety controls for Slips Trips and Falls, Biological hazards, cuts lacerations and pinch points, and emergency procedures.

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- **E = Extremely High Risk**
- **H = High Risk**
- **M = Moderate Risk**
- **L = Low Risk**

Job Steps	Hazards	Controls	RAC
1. Prepare for site visit	1a) N/A	▪ Obtain and review HASP prior to site visit, if possible ▪ Determine PPE needs – bring required PPE to the site, if not otherwise being provided at the site (e.g., steel toed boots) ▪ Determine training and medical monitoring needs and ensure all required Health and Safety training and medical monitoring has been received and is current ▪ Complete site specific/ client required training ▪ Ensure all workers are fit for duty (alert, well rested, and mentally and physically fit to perform work assignment) ▪ First aid kits shall be available at the work site and on each transport vehicle. ▪ Familiarize yourself with route to the site ▪ Check weather forecast. Pack appropriate clothing and other items (e.g., sunscreen) for anticipated weather conditions ▪ Verify that subsurface utilities have been identified.	**L**

AHA - - Field Work Oversight
Activity Description

2. Traveling to the site by vehicle	2a) See JHA for Mobilization, Demobilization and Site Preparation	▪ See JHA for Mobilization, Demobilization and Site Preparation	**L**
3. Initial arrival—assess site conditions	3a) Communication with subcontractor and other site personnel	▪ Develop communication methods (agree on hand signals, warning alarms) ▪ Log all workers and visitor on and off the site. ▪ Let other crewmembers know when you see a hazard. ▪ Avoid working near known hazards. ▪ Always know the whereabouts of fellow crewmembers. ▪ Carry a radio and spare batteries or cell phone ▪ Hold and document Safety tailgate meetings ▪ Establish work zones, evacuation routes and rally locations.	**L**
	3b) Insect Bites and Stings	▪ Discuss the types of insects expected at the Site and be able to identify them. ▪ Look for signs of insects. ▪ Inform crew members if allergic to insects and what to do if you need assistance. ▪ Avoid wearing heavy fragrances. ▪ Carry first-aid and sting relief kits. ▪ Carry identification of known allergies and necessary emergency medication. ▪ Spray clothing with insect repellant as a barrier. ▪ Wear light colored clothing that fits tightly at the wrists, ankles, and waist. ▪ Cover trouser legs with high socks or boots. ▪ Tuck in shirt tails.	**L**
	3c) Poisonous plants	▪ Wear long sleeves, long pants and boots ▪ Ensure all field workers can identify the plants. Mark identified poisonous plants with high visibility spray paint if working at a fixed location. ▪ Look for signs of poisonous plants and demark area to aid in avoiding plant. ▪ Do not touch any plant part to any part of your body/clothing. ▪ Use commercially available products such as Ivy Block or Ivy Wash as appropriate.	**L**

	3d) Vermin, leaches, animal borne disease	▪ Survey the area for dens, nests, etc. ▪ Identify areas where biological hazards may be present. ▪ Wear long sleeve shirt and full length pants ▪ Be aware of your surroundings. ▪ Wear appropriate footwear (snake boots, etc.) ▪ Avoid high grass areas if possible ▪ Do not put hand/arm into/under an area that you cannot see into/under clearly ▪ Perform routine inspections for ticks, leaches, etc. of yourself and co-workers.	**L**
	3e) Chemical Hazards	▪ Wear chemical resistant PPE as identified in the HASP ▪ Use monitoring equipment, as outlined in HASP, to monitor breathing zone ▪ Read MSDSs for all chemicals brought to the site ▪ Be familiar with hazards associated with site contaminants. ▪ Ensure that all containers are properly labeled	**L**
	3f) Overhead Power Lines	▪ Identify the location of all overhead power lines at the site. ▪ Maintain clearances depending on voltage - All equipment will stay a minimum of 10 feet from overhead energized electrical lines (50 kV or less). This distance will increase by 4 inches for each 10 kV above 50 kV. Rule of Thumb: Stay 10 feet away from all overhead power lines known to be 50 kV or less and 35 feet from all others.) ▪ Re-locate work so it is not close to power lines ▪ Avoid storing materials under overhead power lines	**L**
	3g) Underground Utilities	▪ All utilities will be marked prior to excavation activities ▪ For areas where utility locations cannot be verified, workers must hand dig for the first 3 feet ▪ Use lineman's gloves when locating underground power lines ▪ Work at adequate offsets from utility locations ▪ Immediately cease work if unknown utility markings are discovered.	**L**

	3h) Cold Stress	▪ Dress in layers with wicking garments (those that carry moisture away from the body – e.g., cotton) and a weatherproof slicker. A wool outer garment is recommended. ▪ Take layers off as you heat up; put them on as you cool down. ▪ Wear head protection that provides adequate insulation and protects the ears. ▪ Maintain your energy level. Avoid exhaustion and over-exertion which causes sweating, dampens clothing, and accelerates loss of body heat and increases the potential for hypothermia. ▪ Acclimate to the cold climate to minimize discomfort. ▪ Maintain adequate water/fluid intake to avoid dehydration. ▪ Be aware of signs of hypothermia, its prevention, detection and treatment. ▪ Have extra protection available, in case of an emergency such as blankets and heating devices. ▪ Don't work under extremely adverse weather conditions ▪ Stay in tune to current weather and extended forecasts.	**L**
	3i) Heat Stress	▪ Remain constantly aware of the four basic factors that determine the degree of heat stress (air temperature, humidity, air movement, and heat radiation) relative to the surrounding work environmental heat load. ▪ Know the signs and symptoms of heat exhaustion, heat cramps, and heat stroke. Heat stroke is a true medical emergency requiring immediate emergency response action. ▪ Maintain adequate water intake by drinking water periodically in small amounts throughout the day (flavoring water with citrus flavors or extracts enhances palatability). ▪ Lessen work load and/or duration of physical exertion the first days of heat exposure to allow gradual acclimatization. ▪ Alternate work and rest periods. More severe conditions may require longer rest periods and electrolyte fluid replacement.	**L**
	3j) Lightning and Thunder	▪ Monitor weather channels to determine if electrical storms are forecasted. ▪ Plan ahead and identify safe locations to be in the event of a storm. (e.g., sturdy building, vehicle, etc.) ▪ Suspend all field work at the first sound of thunder. You should be in a safe place when the time between the lightning and thunder is less than 30 seconds.	**L**

	3k) Severe Weather	▪ Watch for clouds and incoming weather. ▪ Monitor weather forecasts. ▪ Train workers about weather and appropriate precautions. ▪ Identify a shelter and a safe place in event of tornado etc	**L**
	3l) Sun	▪ Keep body protected ▪ Wear sunscreen, wide brimmed hat or hardhat. ▪ Schedule work for cool part of day. ▪ Take breaks in the shade.	**L**
	3m) High Crime Areas	▪ Do not enter areas where threats are present. ▪ Contract security where applicable. Use the buddy system. ▪ Maintain contact with support such as radio or cell phone ▪ Do not work after dark.	**L**
	3n) Operations conducted at an active facility	▪ Stay well clear of operations being conducted at the facility ▪ Keep alert for moving materials, equipment or vehicles ▪ Determine client specific PPE needs prior to arriving at the site ▪ Determine client specific emergency response procedures and follow as appropriate ▪ Participate in client required safety training ▪ Get copies of Clients MSDSs for any client chemicals that workers may be exposed to. ▪ Provide MSDSs to client for all chemicals brought to the site.	**L**
	3o) Remote Locations	▪ Carry a two-way radio and know how to use it. ▪ Work in teams. Account for all at the end of the work day. ▪ Make sure someone on crew is certified in first aid. ▪ Carry a first aid kit.	**L**

	3p) Set up Decon Station	▪ Refer to MSDS for specific hazards associated with decon solutions ▪ Monitor breathing zone for decon solutions (e.g., methanol, hexane, etc.), if appropriate (see HASP) ▪ Removal of PPE will be performed by the following tasks in the listed order: o Gross boot wash and rinse and removal o Outer glove removal o Suit removal o Respirator removal (if worn). o Inner glove removal ▪ Contaminated PPE is to be placed in the appropriate, provided receptacles. ▪ Employees will wash hands, face, and any other exposed areas with soap and water. ▪ Portable eyewash stations and showers will be available should employees come into direct contact with contaminated materials. ▪ Decon solutions will be disposed of according to the work plan.	**L**
4. Walk around the Site	4a) Poisonous plants	▪ See section 3C above	**L**
	4b) Vermin, leaches, animal borne disease	▪ See Section 3 D above	**L**
	4c) Chemical Hazards	▪ See Section 3 E above	**L**
	4d) Slips/Trips/Falls	▪ Wear slip resistant footwear preferably laced boots with a minimum 8" high upper and non-skid soles for ankle support and traction. ▪ Pay attention to where you place your feet ▪ Slow down and use extra caution around logs, rocks, and animal holes. ▪ Extremely steep slopes (>50%) can be hazardous under wet or dry conditions; consider an alternate route. ▪ Site SHSO will inspect the entire work area to identify and mark hazards. ▪ Clear area of trip hazards; mark or barricade those that cannot be moved; ▪ Use caution when walking around excavated areas ▪ Stay back at least 5 feet from excavated areas ▪ Use caution when walking on or around loose soil. ▪ Be aware of surroundings. Avoid muddy areas if possible.	**L**

AHA - - Field Work Oversight
Activity Description

5. Oversight during drilling, or construction operations	5a) Heavy Equipment/ Vehicles	▪ Spotters will be used when backing up trucks and heavy equipment and when moving equipment. ▪ Ground personnel in the vicinity of vehicles or heavy equipment operations will be within the view of the operator at all times. ▪ Ground personnel will be aware of the swing radius and maintain an adequate buffer zone. ▪ Ground personnel will not stand directly behind heavy equipment when it is in operation. ▪ Personnel are prohibited from riding on the buckets, or elsewhere on the equipment except for designated seats with proper seat belts or lifts specifically designed to carry workers. Ground personnel will stay clear of all suspended loads. ▪ Ground personnel will wear high visibility vests ▪ Eye contact with operators will be made before approaching equipment.	**L**
	5b) Eye Injury	▪ Wear appropriate safety glasses (tinted for sun). ▪ Watch where you walk, especially around trees and brush with protruding limbs.	**L**
	5c) Foot Injury	▪ Wear steel toed boots ▪ Wear insulated steel toed boots during winter ▪ Ensure shoes/boots have good traction ▪ Pay attention to where you place your feet, especially when walking on uneven terrain	**L**
	5d) Head Injury	▪ Wear hardhat ▪ Do not walk or work under scaffolding or other elevated work unless there are guardrails and toeboards in place ▪ Flag or mark protruding objects at head level	**L**
	5e) Chemical Hazards	▪ See Section 3E above ▪ Wash hands and face prior to consumption of food, beverage or tobacco.	**L**
	5f) Dust - particulates (respiratory)	▪ Use dust suppression methods ▪ Stand upwind of point of dust generation	**L**
	5g) Overhead Power Lines	▪ See Section 3F above.	**L**
	5h) Underground Utilities	▪ See Section 3G above	**L**
	5i) Standing/Static Posture	▪ Change posture on a frequent basis ▪ Stretch prior to any physical activity	**L**
	5j) Slips/`Trips/Falls	▪ See Section 4D above	**L**

	5k) Noise	▪ Hearing protection will be worn with a noise reduction rating capable of maintaining personal exposure below 85 dBA (ear muffs or plugs). ▪ All equipment will be equipped with manufacturer's required mufflers. ▪ Hearing protection shall be worn by all personnel working in or near heavy equipment. ▪ Hearing protection will be worn when workers need to shout when standing two feet away from each other. ▪ Segregate noisy equipment from the operators ▪ Use sound dampening around noisy equipment	**L**
	5L) Moving Equipment	▪ Clear area of obstructions and communicate with all workers involved that drilling is beginning ▪ Do not exceed manufacturer's recommended speed, force, torque, or other specifications. and penetrate the ground slowly with hands on the controls for at least the first foot of soil to minimize chance of auger kick-out ▪ Stay clear of rotating auger ▪ Use long-handled shovel to clear away cuttings when auger has stopped ▪ Do not wear loose clothing ▪ Wear appropriate PPE including leather gloves and steel-toed boots (See HASP)	**L**
6. Sampling Oversight	6a) Chemical Hazards	▪ See Section 3E above ▪ Wash hands and face prior to consumption of food, beverage or tobacco. ▪ Calibrate meters in a clean, well ventilated area ▪ Store calibration gases in well vented area. Ensure chemical labels and warnings are legible.	**L**

	6b) Personnel Decontamination	▪ Refer to MSDS for specific hazards associated with decon solutions ▪ Monitor breathing zone for decon solutions (e.g., methanol, hexane, etc.), if appropriate (see HASP) ▪ Removal of PPE will be performed by the following tasks in the listed order: o Gross boot wash and rinse and removal o Outer glove removal o Suit removal o Respirator removal (if worn). o Inner glove removal ▪ Contaminated PPE is to be placed in the appropriate, provided receptacles. ▪ Employees will wash hands, face, and any other exposed areas with soap and water. ▪ Portable eyewash stations and showers will be available should employees come into direct contact with contaminated materials. ▪ Decon solutions will be disposed of according to the work plan.	**L**
	6c) Lifting	▪ Good lifting techniques (lift with legs not back) ▪ Mechanical devices (e.g., hand truck, cart, forklift, etc.) should be used to reduce manual handling of materials and drums. ▪ Team lifting should be utilized if mechanical devices are not available. (mandatory for items over 50 lbs) ▪ Split heavy loads in to smaller loads ▪ Make sure that path is clear prior to lift. ▪ Redesign work area to avoid low lifts ▪ Stretch prior to lifting ▪ Maintain a healthy life style and level of physical fitness.	**L**
	6d) Hand Tools	▪ Cut resistant work gloves will be worn when dealing with sharp objects. ▪ All hand and power tools will be maintained in safe condition. ▪ Do not drop or throw tools. Tools shall be placed on the ground or work surface or handed to another employee in a safe manner. ▪ Guards will be kept in place while using hand and power tools. ▪ Daily inspections will be performed. ▪ Remove broken or damaged tools from service and tag out as defective ▪ No tampering with electrical equipment is allowed (e.g., splicing cords, cutting the grounding prong off plug, etc.) ▪ Do not use excessive force or impact ▪ Do not use tool improperly. Ensure all workers are trained	**L**

	6e) Slips/Trips/Falls	▪ See Section 4D above.	**L**
	6f) Struck by Vehicle	▪ Ground personnel in the vicinity of vehicles operations will be within the view of the operator at all times. ▪ Ground personnel will not stand directly behind vehicles when it is in operation ▪ Drivers will keep workers on foot in their vision at all times, if you lose sight of someone, Stop! ▪ High visibility vests will be worn when workers are exposed to vehicular traffic at the site or on public roads. ▪ Try to park so that you don't have to back up to leave. ▪ If backing in required, walk around vehicle to identify any hazards (especially low level hazards that may be difficult to see when in the vehicle) that might be present. Use a spotter if necessary ▪ Place cones in the font and rear of the vehicle ▪ Prior to driving off, walk around vehicle to collect cones and identify any hazards - especially low level hazards that may be difficult to see when in the vehicle. ▪ Set up "Workers in the Road" or similar warning signs and cones to alert traffic. ▪ Use emergency flashers and roof top flashing light (recommended) to alert oncoming vehicular traffic. ▪ Remain alert at all times as to the traffic outside the vehicle. Step to the side of the road when distracted by by-standers. Keep unofficial personnel out of the work area. ▪ Exit vehicle with caution. ▪ Wear High Visibility Vest when outside the vehicle. Utilize vehicle as a shield from oncoming traffic, as practical	**L**
7. IDW pickup oversight	7a) Foot Injury	▪ See Section 5C above.	**L**
	7b) Chemical Hazards	▪ See Section 3E above.	**L**
	7c) Lifting	▪ See Section 6C above.	**L**
	7d) Slips/Trips/Falls	▪ See Section 4D above	**L**
8. Return to office/home	8a)See Mobilization/ Demobilization and Site Preparation JHA	**See Mobilization/ Demobilization and Site Preparation JHA**	**L**

AHA - - Field Work Oversight
Activity Description

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (1/2 face respirator with P-100 cartridge, Hard Hat, safety glasses, gloves, steel toe work boots, high visibility safety vest, hearing protection)	**Competent / Qualified Personnel:** Name – Position/Employer **Training requirements:** List specific certification (as applicable) Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's instructions. Tag tools that are defective and remove from service. Inspect power cord sets prior to use. Inspect all PPE prior to use

AHA - Decontamination
Activity Description

Activity/Work Task:	Decontamination		
Project Location:	**Stalingrad Ventures, LLC**		
Contract Number:	**3216162331**		
Date Prepared:	**8-15-12**	**Date Accepted:**	**8-15-12**
Prepared by (Name/Title):	Kendra Bavor		
Reviewed by (Name/Title):	Kendra Bavor, CSP		

Notes: (Field Notes, Review Comments, etc.)

This AHA involves the following:

- Establishing site specific measures

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements. Contractor to follow general site safety controls for Slips Trips and Falls, Biological hazards, cuts lacerations and pinch points, and emergency procedures.

Overall Risk Assessment Code (RAC) (Use highest code) **M**

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- **E = Extremely High Risk**
- **H = High Risk**
- **M = Moderate Risk**
- **L = Low Risk**

Job Steps	Hazards	Controls	RAC
1. Establish Decontamination Station	1A) Materials Handling	1A) Materials Handling ▪ Use proper lifting techniques ▪ Use mechanical aids, if available, to move heavy items.	**L**
2. Decontamination / Steam cleaning.	2A) Struck by steam/hot water/pressure washing	2A) Struck by steam/hot water ▪ Workers not directly engaged in steam cleaning operations must stay clear. ▪ Workers using steam cleaning equipment must be trained on operation and safety devices/procedures using the owners/operators manual. ▪ Use face shield **and** safety glasses or goggles, if steam cleaning. ▪ Stay out of the splash/steam radius. ▪ Pressure washer must have dead man switch. ▪ Do not direct steam at anyone. ▪ Do not hold objects with your feet or hands. ▪ Ensure that direction of spray minimizes spread of contaminants of concern. ▪ Use shielding as necessary.	**M**

AHA - Decontamination
Activity Description

Job Steps	Hazards	Controls	RAC
	2B) Exposure to contaminants	2B) Exposure to contaminants ▪ Conduct air monitoring (see HASP). ▪ Wear proper PPE (see HASP). ▪ See MSDSs for hazards associated with the decon solutions used (if other than water alone us used).	**L**
	2C) Slips/Trips/Falls	2C) Slips/Trips/Falls ▪ Be cautious as ground/plastic can become slippery ▪ Use boots or boot covers with good traction	**L**
3. Vehicle Decontamination	3A) Vehicle traffic in and out of the CRZ	3A) Large Vehicle Traffic ▪ Always wear a hard hat, steel toe boots, and a high visibility vest (unless Tyveks are used and are high visibility). ▪ Vehicle drivers are not to exit the vehicle in the CRZ. ▪ Identify an individual to communicate with vehicle drivers and maintain order ▪ Trucks will be lined with plastic and kept out of direct contact with any contaminated materials during loading. Wear PPE when removing plastic lining from truck beds. ▪ If not in the vehicle, obtain eye contact with the driver, so he is aware of your presence and location in the CRZ. ▪ If you are driving the vehicle, be aware of personnel in the CRZ and maintain communication with the identified personnel.	**L**
	3B) Exposure to contaminants	3B) Exposure to contaminants ▪ Use safety glasses or goggles, Polycoated Tyvek (if level of contamination poses dermal hazard or to keep work clothes dry), high visibility vest (if high visibility Tyveks are not used) hard hats, steel toe boots, and gloves while cleaning contaminated materials. ▪ Do not doff PPE until decontamination of the vehicle is complete and a decontamination certificate has been issued by the HSO. ▪ Conduct air monitoring (see HASP). ▪ See MSDSs for hazards associated with the decon solutions (if other than water alone is used).	**L**
	3C) Slips/Trips/Falls	3C) Slips/Trips/Falls ▪ Be cautious as ground/plastic can become slippery ▪ Use boots or boot covers with good traction	**L**
4. Equipment and Sample Decontamination	4A) Chemical exposure when handling contaminated sample jars and equipment	4A) Chemical exposure ▪ Wear PPE as outlined in the HASP. ▪ Refer to MSDS for specific hazards associated with decon solutions ▪ Monitor breathing zone for contaminants ▪ Monitor breathing zone for decon solutions (e.g., methanol, hexane, etc.) if appropriate (see HASP)	**M**
	4B) Materials Handling related injuries	4B) Materials Handling related injuries ▪ Use proper lifting techniques when lifting heavy equipment ▪ Use two person lift for heavy coolers	**L**

AHA - Decontamination
Activity Description

Job Steps	Hazards	Controls	RAC

5. Personal Decontamination	4C) Exposure to contaminants	4C) Exposure to contaminants
		▪ Avoid bringing contaminated materials via shoes and clothing into the CRZ by examining such prior to exiting the EZ.
		▪ Removal of PPE will be performed by the following tasks in the listed order:
		  ▪ Gross boot wash and rinse and removal
		  ▪ Outer glove removal
		  ▪ Suit removal
		  ▪ Respirator removal (if worn).
		  ▪ Inner glove removal
		▪ Contaminated PPE is to be placed in the appropriate, provided receptacles.
		▪ Respirators will be removed and decontaminated at a specified location within the CRZ by a designated technician, then placed in storage bag.
		▪ Employees will wash hands, face, and any other exposed areas with soap and water.
		▪ Portable eyewash stations and showers will be available should employees come into direct contact with contaminated materials.
		▪ See MSDSs for hazards associated with the decontamination solutions used.
		▪ Decon solutions will be disposed of according to the work plan.
			M

AHA - Decontamination
Activity Description

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (Safety glasses, gloves (HASP), steel toe work boots, high visibility safety vest, hearing protection.)	**Competent / Qualified Personnel:** See HASP - Name – Position/Employer **Training requirements:** Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's instructions. Tag tools that are defective and remove from service. Inspect power cord sets prior to use. Inspect all PPE prior to use

AHA - Groundwater Sampling
Activity Description

Activity/Work Task:	Groundwater Sampling		
Project Location:	**Stalingrad Ventures, LLC**		
Contract Number:	**3216162331**		
Date Prepared:	**8/15/2112**	**Date Accepted:**	**8-16-2012**
Prepared by (Name/Title):	Ryan Mankowski/Staff Environmental Scientist		
Reviewed by (Name/Title):	Kendra Bavor, CSP		

Overall Risk Assessment Code (RAC) (Use highest code) **M**

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Notes: (Field Notes, Review Comments, etc.)

This AHA involves the following:

- Establishing site specific measures

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements. Contractor to follow general site safety controls for Slips Trips and Falls, Biological hazards, cuts lacerations and pinch points, and emergency procedures.

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- **E = Extremely High Risk**
- **H = High Risk**
- **M = Moderate Risk**
- **L = Low Risk**

Job Steps	Hazards	Controls	RAC
1. Mobilization	3A) See JHA Mobilization/Demobilization/Site Preparation	1A) See JHA Mobilization/Demobilization/Site Preparation	**M**
2. General Site Hazards	2A) See JHA Field Work - General	2A) See JHA Field Work - General	
	2B) Chemical exposure	2B) Chemical Exposure ▪ Read HASP TO determine air monitoring and PPE needs.	**M**
3. Calibrate monitoring equipment	4A) Exposure to calibration gases	4A) Exposure to calibration gases ▪ Review equipment manuals ▪ Calibrate in a clean, well ventilated area	**L**

AHA - Groundwater Sampling
Activity Description

Job Steps	Hazards	Controls	RAC
4. Opening the well cap, taking water level readings	5A) Contact with poisonous plants or the oil from poisonous plants	5A) Contact with poisonous plants or the oil from those plants: ▪ Look for signs of poisonous plants and avoid. ▪ Ensure all field workers can identify the plants. Mark identified poisonous plants with spray paint if working at a fixed location. ▪ Wear PPE as described in the HASP. ▪ Do not touch any part of your body/clothing. ▪ Always wash gloves before removing them. ▪ Discard PPE in accordance with the HASP. ▪ Use commercially available products such as Ivy Block or Ivy Wash as appropriate.	**M**
	5B) Contact with biting insects (i.e., spiders, bees, etc.) which may have constructed a nest in the well cap/well.	5B) Contact with stinging/biting insects ▪ Discuss the types of insects expected at the Site and be able to identify them. ▪ Look for signs of insects in and around the well. ▪ Wear Level of PPE as described in the HASP. At a minimum, follow guidelines in the JHA "Insects Stings and Bites." ▪ If necessary, wear protective netting over your head/face. ▪ Avoid contact with the insects if possible. ▪ Inform your supervisor and the Site Health and Safety Supervisor if you have any allergies to insects and insect bites. Make sure you have identification of your allergies with you at all times and appropriate response kits if applicable. ▪ Get medical help immediately if you are bitten by a black widow or brown recluse, or if you have a severe reaction to any spider bite or bee sting.	**M**
	5C) Exposure to hazardous Inhalation and contact with hazardous substances (VOC contaminated groundwater/ soil); liquid splash; flammable atmospheres.	5C) Exposure to hazardous substances ▪ Wear PPE as identified in HASP. ▪ Review hazardous properties of site contaminants with workers before sampling operations begin ▪ Immediately monitor breathing zone after opening well to determine exposure and verify that level of PPE is adequate – see Action Levels in HASP ▪ Monitor headspace in well. After the initial headspace reading (if required by the Work Plan), allow the well to vent for several minutes before obtaining water level and before sampling. ▪ When decontaminating equipment wear additional eye/face protection over the safety glasses such as a face shield.	**M**
	5D) Back strain due to lifting bailers or pumps and from moving equipment to well locations	5D) Back strain ▪ Use mechanical aids when possible, if mechanical aids are not available, use two person lifts for heavy items. ▪ Use proper lifting techniques	**L**
	5E) Foot injuries from dropped equipment	5E) Foot Injuries ▪ Be aware when moving objects, ensure you have a good grip when lifting and carrying objects. ▪ Do not carry more than you can handle safely ▪ Wear Steel toed boots	**L**

AHA - Groundwater Sampling
Activity Description

Job Steps	Hazards	Controls	RAC
5. Collecting water samples	6A) Fire/Explosion/Contamination hazard from refueling generators	6A) Fire/Explosion/Contamination hazard from refueling generators ▪ Turn the generator off and let it cool down before refueling ▪ Segregate fuel and other hydrocarbons from samples to minimize contamination potential ▪ Transport fuels in approved safety containers. The use of containers other than those specifically designed to carry fuel is prohibited ▪ See AHA for Gasoline use	**L**
	6B) Electrocution	6B) Electrocution ▪ A ground fault circuit interrupter (GFCI) device must protect all AC electrical circuits. ▪ Use only correctly grounded equipment. Never use three-pronged cords which have had the third prong broken off. ▪ Make sure that the electrical cords from generators and power tools are not allowed to be in contact with water ▪ Do not stand in wet areas while operating power equipment ▪ Always make sure all electrically-powered sampling equipment is in good repair. Report any problems so the equipment can be repaired or replaced. ▪ When unplugging a cord, pull on the plug rather than the cord. ▪ Never do repairs on electrical equipment unless you are both authorized and qualified to do so.	**L**
	6C) Exposure to contaminants	6C) Exposure to Contaminants ▪ Stand up wind when sampling ▪ Monitor breathing zone with appropriate monitoring equipment (see HASP) ▪ Wear chemical resistant PPE as identified in HASP ▪ See section 4C) under Safe Practices above	**M**
	6D) Infectious water born diseases	6D) Infectious water born diseases ▪ Wear chemical resistant gloves and other PPE – as identified in HASP ▪ Prevent water from contacting skin ▪ Wash exposed skin with soap and water ASAP after sampling event ▪ Ensure that all equipment is adequately decontaminated using a 10% bleach solution	**L**
	6E) Exposure to water preservatives	6E) Exposure to water preservatives ▪ Work in a well ventilated area, upwind of samples ▪ Wear chemical resistant PPE as identified in HASP ▪ When preserving samples always add acid to water, avoid the opposite. ▪ See Working With Preservatives JHA	**M**
	6F) Slips/trips/falls	6F) Slips/trips/falls ▪ Ground can become wet/muddy, created by spilled water ▪ Place all purged water in drums for removal ▪ Wear good slip resistant footwear	**M**

AHA - Groundwater Sampling
Activity Description

Job Steps	Hazards	Controls	RAC
	6G) Repetitive Motion and other Ergonomic Issues	6G) Ergonomic Issues ▪ Use mechanical means where possible to raise and lower equipment into well. ▪ Alternate raising and lowering equipment between field sampling team members, and alternate bailing the well. ▪ Use safe lifting techniques.	**L**
6. Sample Processing	7A) Contaminated water	7A) Contaminated water ▪ Wear appropriate PPE as identified in HASP ▪ Decontaminate outside of bottles ▪ Prevent water from contacting skin ▪ Work in well ventilated area – upwind of samples ▪ Waste will be returned to the operation office for storage and disposal	**M**
7. Shipping Samples	8A) Freeze burns, back strain, hazardous chemical exposure, sample leakage	8A) Freeze burns, back strain, hazardous chemical exposure, sample leakage ▪ Wear appropriate chemical resistant gloves as identified in HASP. ▪ Wear leather or insulated gloves when handling dry ice. ▪ Follow safe lifting techniques – get help lifting heavy coolers. ▪ Samples that contain hazardous materials under the DOT definition, must be packaged, manifested and shipped by personnel that have the appropriate DOT HAZMAT training.	**M**

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (Hard Hat, safety glasses, gloves, steel toe work boots, high visibility safety vest, hearing protection (See project specific HASP)	**Competent / Qualified Personnel:** See HASP (Name – Position/Employer) **Training requirements:** HAZCOM Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's instructions. Tag tools that are defective and remove from service. Inspect power cord sets prior to use. Inspect all PPE prior to use

AHA - Soil Sampling
Activity Description

Activity/Work Task:	Soil Sampling		
Project Location:	**Stalingrad Ventures, LLC**		
Contract Number:	**3216162331**		
Date Prepared:	**9/25/2012**	**Date Accepted:**	
Prepared by (Name/Title):			
Reviewed by (Name/Title):			

Overall Risk Assessment Code (RAC) (Use highest code) **M**

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Notes: (Field Notes, Review Comments, etc.)

This AHA involves the following:

- Establishing site specific measures

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements. Contractor to follow general site safety controls for Slips Trips and Falls, Biological hazards, cuts lacerations and pinch points, and emergency procedures.

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- **E = Extremely High Risk**
- **H = High Risk**
- **M = Moderate Risk**
- **L = Low Risk**

Job Steps	Hazards	Controls	RAC
1. Prepare for sampling event	1A) Chemical exposure	1A) Chemical Exposure ▪ Read HASP and determine air monitoring and PPE needs.	M
2. Carrying equipment to site location	2A) Back or muscle strain	2A) Back or muscle strain ▪ Use proper lifting techniques when lifting pumps or generators ▪ Use mechanical aids if available ▪ Use 2 person lift for heavy items	M
3. Calibrate monitoring equipment	1A) Exposure to calibration gases	3A) Exposure to calibration gases ▪ Review equipment manuals ▪ Calibrate in a clean, well ventilated area	L
4. Preparing sampling location	4A) Contact with poisonous plants or the oil from poisonous plants	4A) Contact with poisonous plants or the oil from those plants: ▪ Look for signs of poisonous plants and avoid. ▪ Wear PPE as described in the HASP. ▪ Do not touch anything part of your body/clothing. ▪ Always wash gloves before removing them. ▪ Discard PPE in accordance with the HASP.	L

AHA - Soil Sampling
Activity Description

Job Steps	Hazards	Controls	RAC
	4B) Contact with biting insects (i.e., spiders, bees, etc.)	4B) Contact with stinging/biting insects ▪ Discuss the types of insects expected at the Site and be able to identify them. ▪ Look for signs of insects in and around the well. ▪ Wear Level of PPE as described in the HASP. At a minimum, follow guidelines in the JHA "Insects Stings and Bites." ▪ If necessary, wear protective netting over your head/face. ▪ Avoid contact with the insects if possible. ▪ Inform your supervisor and the Site Health and Safety Supervisor if you have any allergies to insects and insect bites. Make sure you have identification of your allergies with you at all times and appropriate response kits if applicable. ▪ Get medical help immediately if you are bitten by a black widow or brown recluse, or if you have a severe reaction to any spider bite or bee sting.	**L**
	4C) Exposure to hazardous Inhalation and contact with hazardous substances (VOC contaminated soil); flammable atmospheres.	4C) Exposure to hazardous substances ▪ Wear PPE as identified in HASP. ▪ Review hazardous properties of site contaminants with workers before sampling operations begin ▪ Monitor breathing zone air in accordance with HASP to determine levels of contaminants present. ▪ When decontaminating equipment wear additional eye/face protection over the safety glasses such as a face shield.	**L**
	4D) Back strain due to lifting or moving equipment to sampling locations	4D) Back strain ▪ Use mechanical aids when possible, if mechanical aids are not available, use two person lifts for heavy items. ▪ Use proper lifting techniques	**M**
	4E) Foot injuries from dropped equipment	4E) Foot Injuries ▪ Be aware when moving objects, ensure you have a good grip when lifting and carrying objects. ▪ Do not carry more than you can handle safely ▪ Wear steel toed boots	**M**
5. Collecting soil samples	5A) Working around drill rigs	5A) See JHA - Drilling	**M**
	5B) Encountering underground or overhead utilities	5B) Have all utilities located.	**H**
	5C) Fire/Explosion/Contamination hazard from refueling generators	5C) Fire/Explosion/Contamination hazard from refueling generators ▪ Turn the generator off and let it cool down before refueling ▪ Segregate fuel and other hydrocarbons from samples to minimize contamination potential ▪ Transport fuels in approved safety containers. The use of containers other than those specifically designed to carry fuel is prohibited ▪ See JHA for Gasoline use	**M**

AHA - Soil Sampling
Activity Description

Job Steps	Hazards	Controls	RAC
	5D) Electrocution	5D) Electrocution ▪ A ground fault circuit interrupter (GFCI) device must protect all AC electrical circuits. ▪ Use only correctly grounded equipment. Never use three-pronged cords which have had the third prong broken off. ▪ Make sure that the electrical cords from generators and power tools are not allowed to be in contact with water ▪ Do not stand in wet areas while operating power equipment ▪ Always make sure all electrically-powered sampling equipment is in good repair. Report any problems so the equipment can be repaired or replaced. ▪ When unplugging a cord, pull on the plug rather than the cord. ▪ Never do repairs on electrical equipment unless you are both authorized and qualified to do so.	**M**
	5E) Exposure to contaminants	5E) Exposure to Contaminants ▪ Stand up wind when sampling ▪ Monitor breathing zone with appropriate monitoring equipment (see HASP) ▪ Wear chemical resistant PPE as identified in HASP ▪ See section 4C) under Safe Practices above	**L**
	5F) Exposure to preservatives	5F) Exposure to preservatives ▪ Work in a well ventilated area, upwind of samples ▪ Wear chemical resistant PPE as identified in HASP ▪ Review MSDSs	**M**
	5G) Slips/trips/falls	5G) Slips/trips/falls ▪ Ground can become wet/muddy ▪ Wear good slip resistant footwear	**L**
	5H) Lifting Injury	5H) Lifting injury ▪ Use proper lifting techniques when carrying quantities of samples ▪ Use proper ergonomics when hand digging for samples	**M**
	5I) Eye injury	5I) Eye Injury ▪ Wear eye protection when using picks or similar devices to loosen soil	**M**
	5J) Fire	5J) Fire ▪ When using gas powered auger, maintain fire watch whenever fueling or otherwise handling gasoline ▪ See JHA - Gasoline	**L**
6. Soil sampling using floor corer	6A) Back injury	6A) Back Injury ▪ Use proper lifting techniques when moving floor corer and generator ▪ Use mechanincal aids if available ▪ Use two person lift for heavy items.	**M**

AHA - Soil Sampling
Activity Description

Job Steps	Hazards	Controls	RAC
	6B) Electric Shock	6B) Electric Shock ▪ Use electric cords free from defects ▪ Keep cords out of water ▪ Ensure all electrical equipment is properly grounded ▪ Use GFCI	**M**
	6C) Hearing	6C) Hearing ▪ Wear hearing protection	**L**
	6D) Fire	6D) Fire ▪ When using generator, maintain fire watch whenever refueling or otherwise handling gasoline ▪ See JHA - Gasoline	**M**
	6E) Contamination	6E) Contamination ▪ Use appropriate PPE for the contaminants of concern (see HASP). ▪ Minimize sample contact ▪ Label sample in accordance with procedures ▪ Monitor breathing zone levels.	**L**

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (1/2 face respirator with P-100 cartridge, Hard Hat, safety glasses, gloves, steel toe work boots, high visibility safety vest, hearing protection)	**Competent / Qualified Personnel:** Name – Position/Employer **Training requirements:** List specific certification (as applicable) Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's instructions. Tag tools that are defective and remove from service. Inspect power cord sets prior to use. Inspect all PPE prior to use

AHA - Soil Vapor Sampling
Activity Description

Activity/Work Task:	Soil Vapor Sampling	Overall Risk Assessment Code (RAC) (Use highest code)	**M**
Project Location:	**Stalingrad Ventures, LLC**		
Contract Number:	**3216162331**		
Date Prepared:	**9/25/2012** **Date Accepted:**		
Prepared by (Name/Title):			
Reviewed by (Name/Title):			

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Notes: (Field Notes, Review Comments, etc.)

This AHA involves the following:

- Establishing site specific measures

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements. Contractor to follow general site safety controls for Slips Trips and Falls, Biological hazards, cuts lacerations and pinch points, and emergency procedures.

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- **E = Extremely High Risk**
- **H = High Risk**
- **M = Moderate Risk**
- **L = Low Risk**

Job Steps	Hazards	Controls	RAC
1. Mobilization	1A) See JHA Mobilization/Demobilization/Site Preparation	1A) See JHA Mobilization/Demobilization/Site Preparation	M
2. General Site Hazards	2A) See JHA Field Work - General	2A) See JHA Field Work - General	M
	2B) Chemical exposure	2B) Chemical Exposure ▪ Read HASP and determine air monitoring and PPE needs.	L
3. Calibrate monitoring equipment	3A) Exposure to calibration gases	3A) Exposure to calibration gases ▪ Review equipment manuals ▪ Calibrate in a clean, well ventilated area	L
4. Access Residence or outdoor location	4A) Tripping hazards	4A) Observe floors/stairs for potential tripping hazards	L
	4B) Back strain	4B) Watch back when carrying equipment into residence	M
	4C) Chemical Hazard	4C) Be careful when identifying residential chemicals ▪ Wear PPE as described in the HASP.	L

AHA - Soil Vapor Sampling
Activity Description

Job Steps	Hazards	Controls	RAC
5. Drill Hole in basement floor or exterior location	5A) Electrocution	5A) Electrocution ▪ A ground fault circuit interrupter (GFCI) device must protect all AC electrical circuits. ▪ Use only correctly grounded equipment. Never use three-pronged cords which have had the third prong broken off. ▪ Make sure that the electrical cords from generators and power tools are not allowed to be in contact with water ▪ Do not stand in wet areas while operating power equipment ▪ Always make sure all electrically-powered sampling equipment is in good repair. Report any problems so the equipment can be repaired or replaced. ▪ When unplugging a cord, pull on the plug rather than the cord. ▪ Never do repairs on electrical equipment unless you are both authorized and qualified to do so.	**M**
	5B) Exposure to hazardous Inhalation and contact with hazardous substances (VOC contaminated Soil Vapor).	5B) Exposure to hazardous substances ▪ Wear PPE as identified in HASP (steel-toed boots, safety glasses, nitrile gloves and a flashlight or lamp). ▪ Review hazardous properties of site contaminants with workers before sampling operations begin ▪ Immediately monitor breathing zone using a PID after drilling hole to determine exposure and verify that level of PPE is adequate – see Action Levels in HASP	**L**
	5C) Back strain due to lifting and from moving equipment	5C) Back strain ▪ Use mechanical aids when possible, if mechanical aids are not available, use two person lifts for heavy items. ▪ Use proper lifting techniques	**M**
	5D) Foot injuries from dropped equipment/drill bit	5D) Foot Injuries ▪ Be aware when moving objects, ensure you have a good grip when lifting and carrying objects. ▪ Do not carry more than you can handle safely ▪ Watch feet when drilling and hold drill firmly ▪ Wear Steel toed boots	**M**
6. Collecting sample	6A) Burn Hazard/fire Hazard	6A) Burn Hazard/ Fire Hazard from Melting Wax ▪ Place hot plate in safe location away from flammable material ▪ Be careful with exposed skin when working around hot plate and hot wax. ▪ Poor wax with spoon and avoid splatter.	**M**
	6B) Cutting Hazard	6B) Be careful with sharp knives when cutting tubing	**M**
	6C) Exposure to contaminants	6C) Exposure to Contaminants ▪ Monitor breathing zone with appropriate monitoring equipment (see HASP) ▪ Wear chemical resistant PPE as identified in HASP ▪ See section 5B) under Safe Practices above	**L**
7. Collecting sample	7A) Pinching Hazard	7A) Pinching Hazard from attaching regulators/tubing ▪ Be careful when using wrenches to attach regulator and or tubing to cans to not pinch fingers	**L**

AHA - Soil Vapor Sampling
Activity Description

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (1/2 face respirator with P-100 cartridge, Hard Hat, safety glasses, gloves, steel toe work boots, high visibility safety vest, hearing protection)	**Competent / Qualified Personnel:** Name – Position/Employer **Training requirements:** List specific certification (as applicable) Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's instructions. Tag tools that are defective and remove from service. Inspect power cord sets prior to use. Inspect all PPE prior to use

AHA - Working with Preservatives
Activity Description

Activity/Work Task:	Working with Preservatives (Acids)	Overall Risk Assessment Code (RAC) (Use highest code)	**L**
Project Location:	**Stalingrad Ventures, LLC**		
Project Number:	**3216162331**		
Date Prepared:	**6/25/2013** **Date Accepted:**		
Prepared by (Name/Title):	Kenneth McRowe/Project Geologist		
Reviewed by (Name/Title):			

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

This AHA involves the following:

- Establishing site specific measures for working with sample preservatives
- Majority of site sampling is for PCBs

This AHA is not an exhaustive summary of all hazards associated with the Site. Refer to the site HASP for additional requirements.

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- **E = Extremely High Risk**
- **H = High Risk**
- **M = Moderate Risk**
- **L = Low Risk**

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
PPE (safety glasses, gloves), ventilate if necessary First aid kit with eye wash or water for eye wash available if needed	**Competent / Qualified Personnel:** All AMEC employees **Training requirements:** HAZCOM PPE Site Specific HASP Orientation Toolbox safety meeting Task kick-off meeting	Daily inspection of equipment per manufacturer's/suppliers instructions. Inspect all PPE prior to use Check preservative expiration dates prior to use

Job Steps	Hazards	Controls	RAC
1. Opening the box of ampoules	1A) Cuts or punctures with a knife	1A) Cuts or punctures with a knife ▪ Use appropriate techniques when handling a knife. Always cut away from you.	**L**

AHA - Working with Preservatives
Activity Description

Job Steps	Hazards	Controls	RAC
	1B) Broken ampoules in the box. Cuts from the broken glass.	1B) Broken ampoules in the box. Cuts from the broken glass. ▪ Wear safety glasses and protective gloves. ▪ Dispose of the preservative and broken glass by approved methods.	L
	1C) Broken ampoules in the box. Breathing fumes.	1C) Broken ampoules in the box. Breathing fumes. ▪ Wear safety glasses and protective gloves. ▪ Always work in a well-ventilated area.	L
2. Breaking top of glass ampoule	2A) Cuts from the broken glass.	2A) Cuts from the broken glass ▪ Wear safety glasses and protective gloves. ▪ Use a paper towel to wrap ampoule in to snap the top or use an ampoule breaker. Always point the ampoule away from you when you snap off the top.	L
	2B) Skin contact chemical burns.	2B) Skin contact chemical burns. ▪ Wear safety glasses and protective gloves. ▪ Fumes may come into contact with the perspiration on your skin and rehydrate to form an acid. ▪ If your skin itches, flush affected area for 15 minutes with water.	L
	2C) Eye contact	2C) Eye contact ▪ Wear safety glasses. ▪ If acid splashes in the eyes, flush eyes for 15 minutes with water. Seek medical advice.	L
	2D) Breathing fumes	2D) Breathing fumes ▪ HNO_3 and HCL have high vapor pressure. Always work in a well-ventilated area.	L
3. Adding acid to sample	3A) Chemical reaction	3A) Chemical reaction ▪ Wear safety glasses and protective gloves. Acid may react with high alkaline sample and fizz (releases CO_2).	L
	3B) Eye contact	3B) Eye contact ▪ Wear safety glasses. ▪ If acid splashes in the eyes, flush eyes for 15 minutes with water. Seek medical advice.	L
	3C) Skin contact chemical burns.	3C) Skin contact chemical burns. ▪ Wear safety glasses and protective gloves.	L
4. Ampoule disposal	4A) Cuts from the broken glass.	4A) Cuts from the broken glass. ▪ Wear safety glasses and protective gloves. ▪ Place used ampoules in an empty, non-reactive container in the field and bring it back to the office. Dispose of the preservative and broken glass by approved methods.	L

APPENDIX F

O&M MANUAL

APPENDIX F - O&M MANUAL

There are no components of the SSD system that require regular maintenance service. There are no filters to change or components that require lubrication. Should the fan fail to operate, it should be removed and a new fan of similar capacity should be installed in its place by a licensed electrician.

Copies of the SSD System installation drawings and a manufacturer's literature for the vapor barrier, the SSD fan and differential pressure switch connected to the building alarm are included.

MEMORANDUM

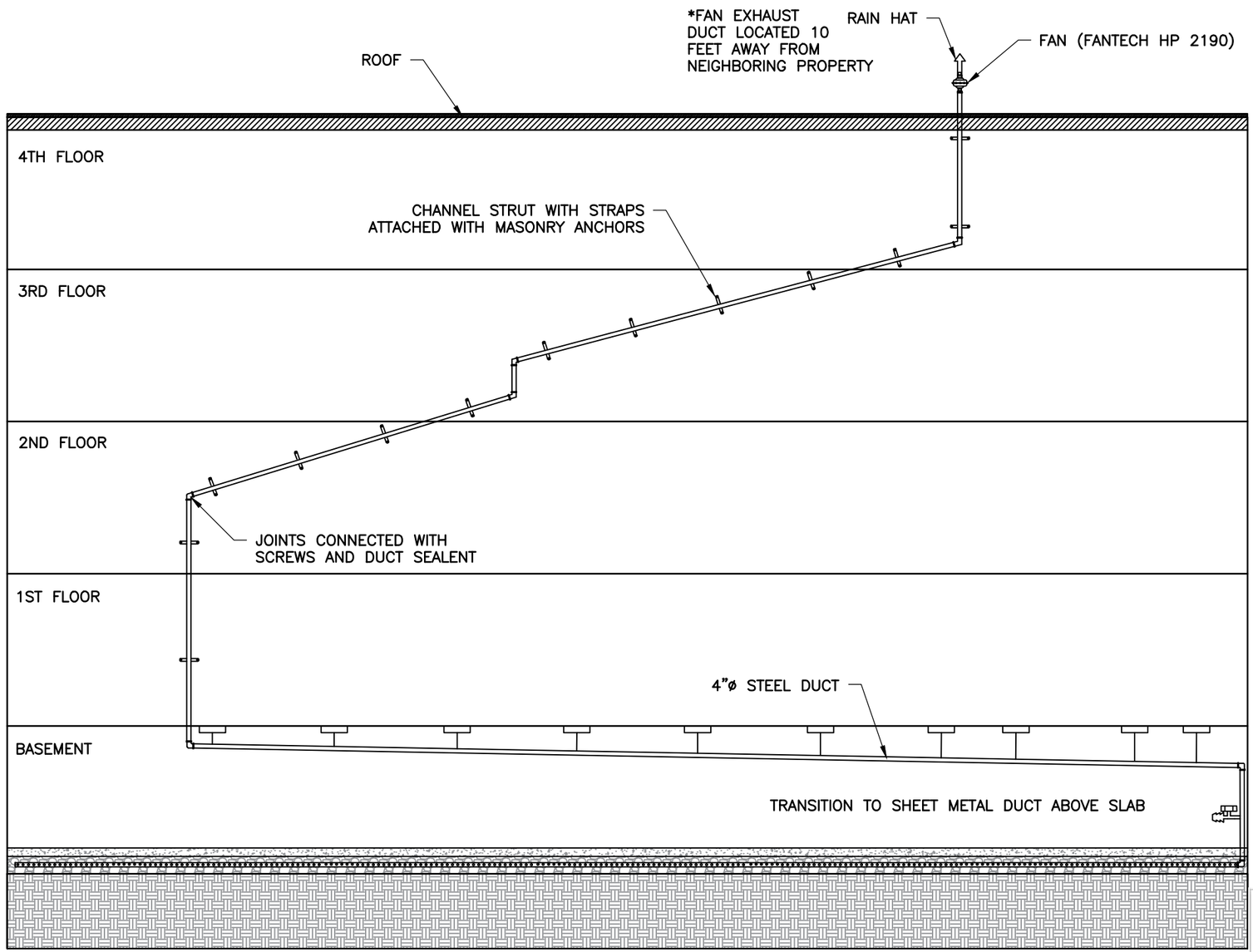
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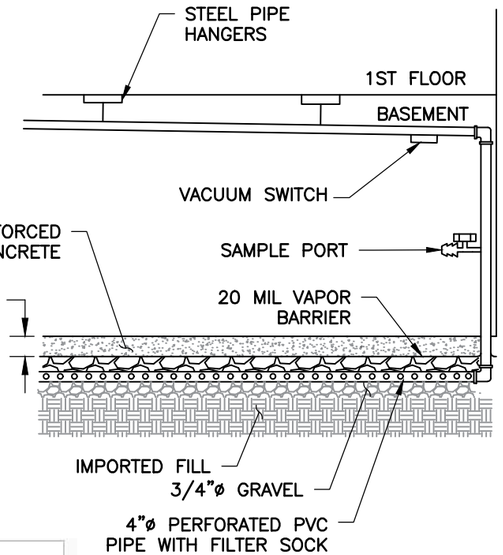
From: Eric Weinstock

Date: July 5, 2024

Subject: SSDS alarm at Hygrade Plating Site

On June 26, 2024, a field technician from Sentry Communications & Security visited the Site and checked the alarm at the request of Peter, the maintenance supervisor from the property owner's office. The battery-powered remote connection was replaced with a hard-wired connection. Sentry reported back to Peter that the system was tested and is working properly.





EXHAUST PLAN DETAIL
NTS

STATE OF NEW YORK
BRENT C. O'DELL
069876
LICENSED PROFESSIONAL ENGINEER
9-18-2020

Prepared/Date: BRT 10/02/20
Checked/Date: EWA10/02/20

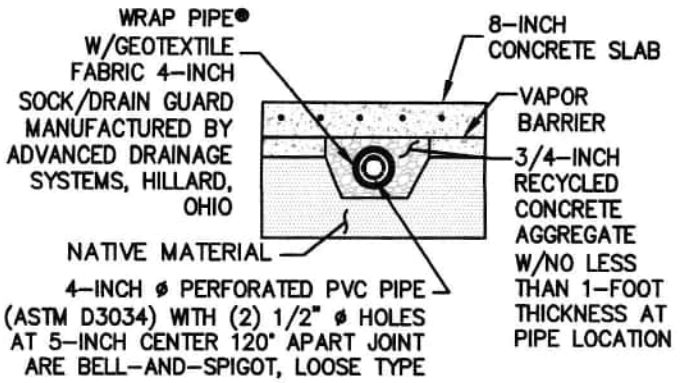
0 5 10 20
SCALE IN FEET

Former Hygrade Plating
20-07 41st Ave
Long Island City, NY

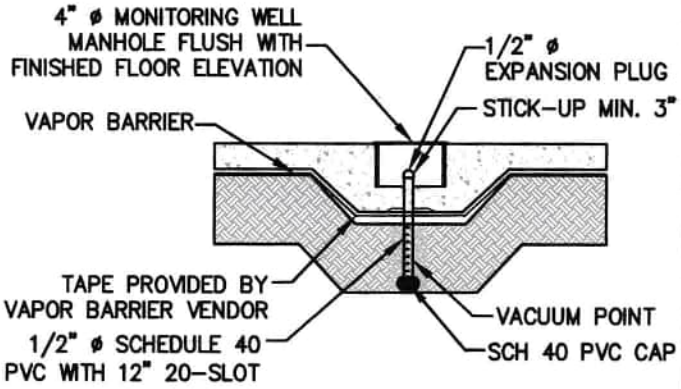
Amec E & E, PC
214-25 42nd Avenue, Suite 3R
Bayside, NY 11361
(347) 836-4445

EXHAUST PLAN DETAILS
Project 3612-16-2331
Figure F-1

C:\Users\branko.tomic\OneDrive - Wood PLC\Projects\Former Hygrade Planting\Figures\Exhaust Plan.dwg Fri, 02 Oct 2020 - 8:06am branko.tomic

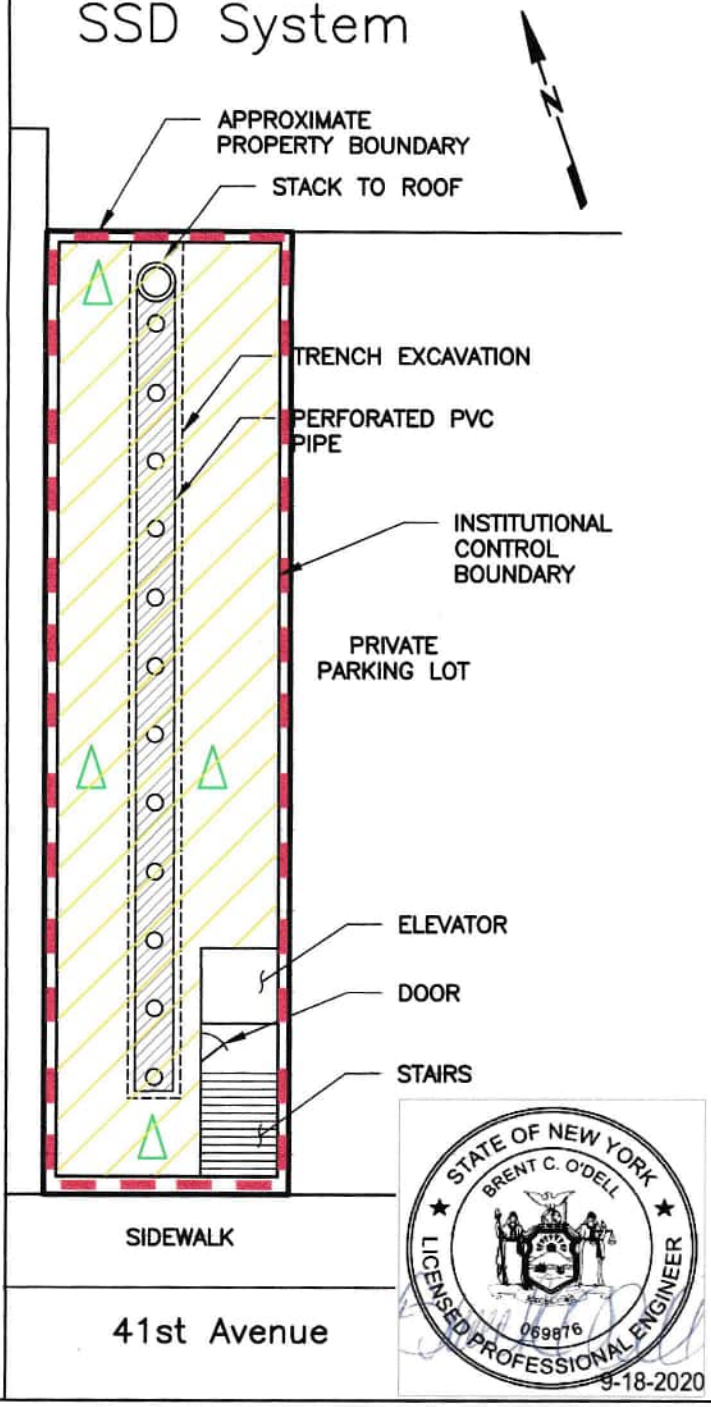


TYPICAL VENT PIPE CROSS-SECTION (NTS)



TYPICAL VACUUM MONITORING POINT (NTS)

SSD System



STATE OF NEW YORK
BRENT C. O'DELL
LICENSED PROFESSIONAL ENGINEER
059876
9-18-2020

LEGEND

VACUUM MONITORING POINT

4"ø PERFORATED PVC PIPE

AREA OF SOIL VAPOR INTRUSION CONCERN

AREAS OF INSTALLED 20 MIL VAPOR BARRIER COVERED BY 8 INCHES OF CONCRETE

0 10 20 40

SCALE IN FEET

Prepared/Date: BJH 07/23/2018
Checked/Date: EAW 07/23/2018

Former Hygrade Plating
22-07 41st Ave
Long Island City, NY

Amec E & E, PC
214-25 42nd Avenue, Suite 3R
Bayside, New York 11361
(347) 836-4343

Institutional Control Boundaries and Engineering Controls Location
Project 3612-162-331
Figure F-2

C:\Users\benjamin.hess\Dropbox\PROJECTS\Misc_BH\Stalingrad\SSD LAYOUT FIG 16 RAWP.dwg Fri, 17 Aug 2018 - 2:59pm benjamin.hess

Fantech

HP SERIES

FANS FOR RADON APPLICATIONS
WITH IMPROVED UV RESISTANCE!

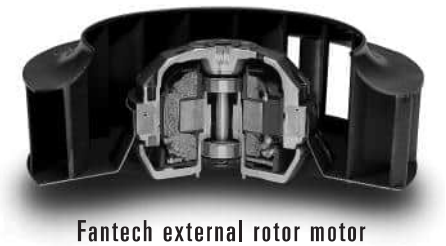






TRUST THE INDUSTRY STANDARD.
HERE'S WHY:

Don't put your reputation at stake by installing a fan you know won't perform like a Fantech! For nearly twenty years, Fantech has manufactured quality ventilation equipment for Radon applications. Fantech is the fan Radon contractors have turned to in over 1,000,000 successful Radon installations worldwide.



Fantech external rotor motor

FANTECH HP SERIES FANS MEET THE CHALLENGES OF RADON APPLICATIONS:

HOUSING
- UV resistant, UL Listed durable plastic
- UL Listed for use in commercial applications
- Factory sealed to prevent leakage
- Watertight electrical terminal box
- Approved for mounting in wet locations - i.e. Outdoors

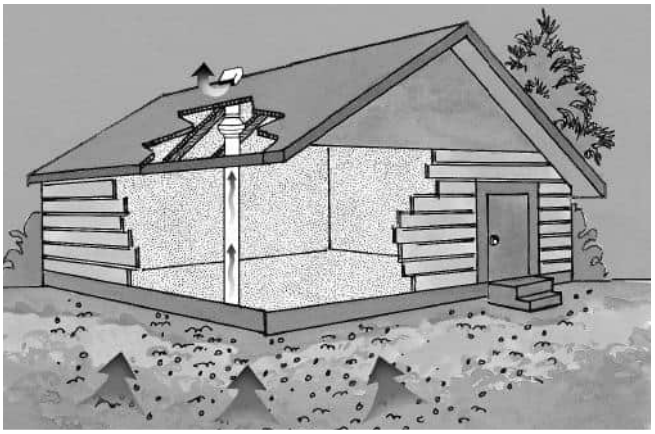
MOTOR
- Totally enclosed for protection
- High efficiency EBM motorized impeller
- Automatic reset thermal overload protection
- Average life expectancy of 7-10 years under continuous load conditions

RELIABILITY
- Five Year Full Factory Warranty
- Over 1,000,000 successful radon installations worldwide

Fantech

HP Series Fans are Specially Designed with Higher Pressure Capabilities for Radon Mitigation Applications

MOST RADON MITIGATORS WHO PREVIOUSLY USED THE FANTECH FR SERIES FANS HAVE SWITCHED TO THE NEW HP SERIES.



PERFORMANCE DATA

Fan Model	Volts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.								Max. Ps
				0"	0.5"	0.75"	1.0"	1.25"	1.5"	1.75"	2.0"	
HP2133	115	14 - 20	0.17	134	68	19	-	-	-	-	-	0.84
HP2190	115	60 - 85	0.78	163	126	104	81	58	35	15	-	1.93
HP175	115	44 - 65	0.57	151	112	91	70	40	12	-	-	1.66
HP190	115	60 - 85	0.78	157	123	106	89	67	45	18	1	2.01
HP220	115	85 - 152	1.30	344	260	226	193	166	137	102	58	2.46

HVI MEMBER™

PERFORMANCE CURVES

Fantech provides you with independently tested performance specifications.

The performance curves shown in this brochure are representative of the actual test results recorded at Texas Engineering Experiment Station/Energy Systems Lab, a recognized testing authority for HVI. Testing was done in accordance with AMCA Standard 210-85 and HVI 916 Test Procedures. Performance graphs show air flow vs. static pressure.

Use of HP Series fans in low resistance applications such as bathroom venting will result in elevated sound levels. We suggest FR Series or other Fantech fans for such applications.

HP FEATURES INCLUDE



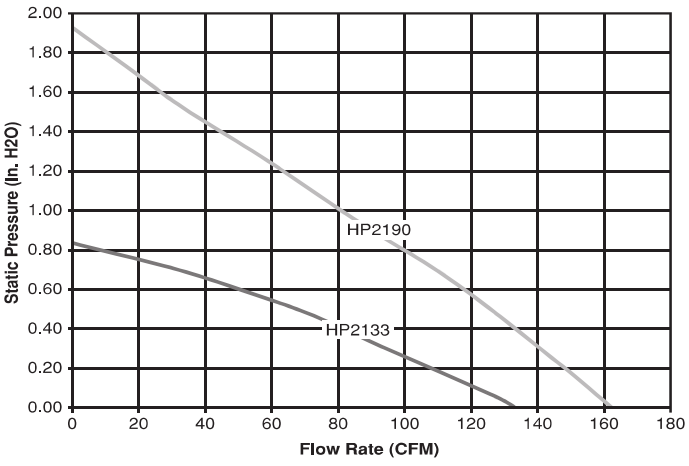
- Improved UV resistant housings approved for commercial applications.
- UL Approved for Wet Locations (Outdoors)
- Sealed housings and wiring boxes to prevent Radon leakage or water penetration
- Energy efficient permanent split capacitor motors
- External wiring box
- Full Five Year Factory Warranty

c UL us

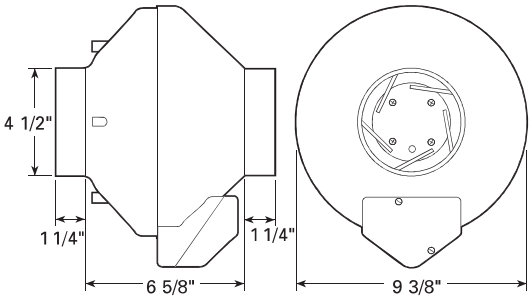
NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

HP2133 & HP2190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.



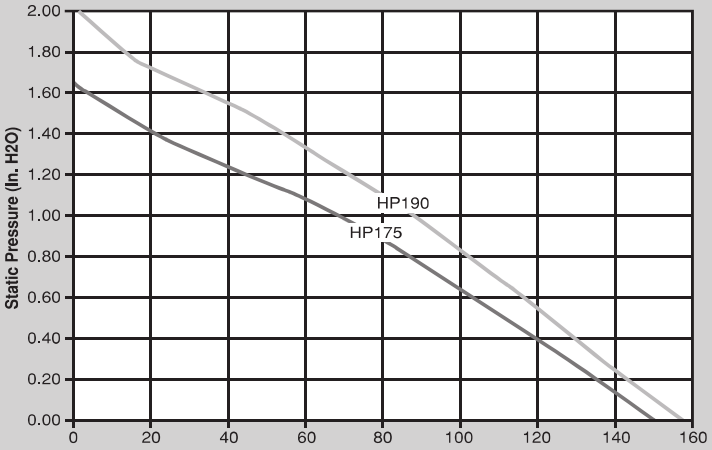
HP2133 – For applications where lower pressure and flow are needed. Record low power consumption of 14-20 watts! Often used where there is good sub slab communication and lower Radon levels.

HP2190 – Performance like the HP190 but in a smaller housing. Performance suitable for the majority of installations.

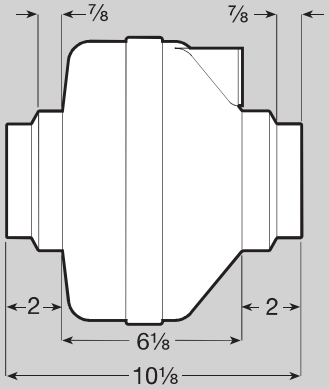
Fans are attached to PVC pipe using flexible couplings.

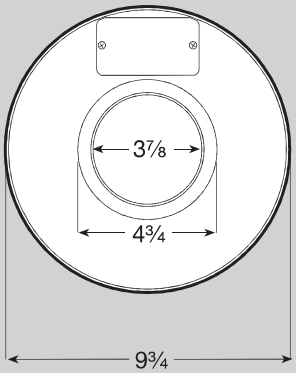
For 4" PVC pipe use Indiana Seals #156-44, Pipeconx PCX 56-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP175 & HP190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.





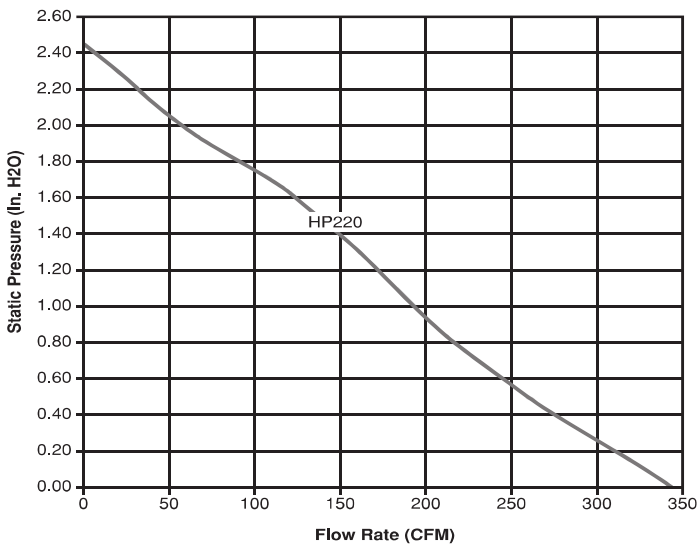


HP175 – The economical choice where slightly less air flow is needed. Often used where there is good sub slab communication and lower Radon levels.

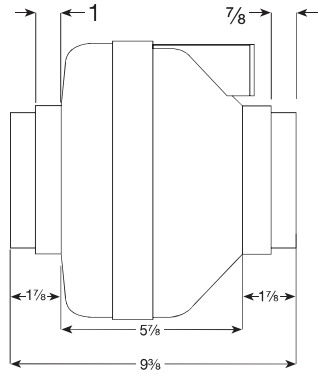
HP190 – The standard for Radon Mitigation. Ideally tailored performance curve for a vast majority of your mitigations.

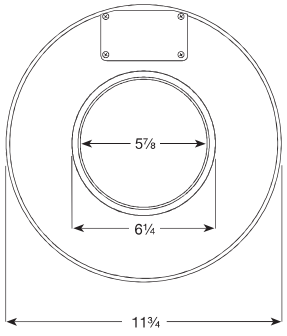
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #151-44, Pipeconx PCX 51-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP220 RADON MITIGATION FAN



Tested with 6" ID duct and standard couplings.





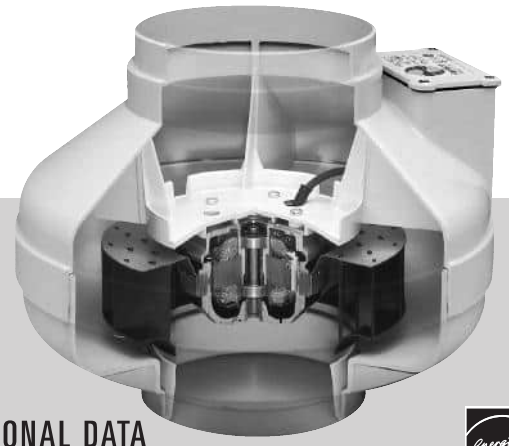
HP 220 – Excellent choice for systems with elevated radon levels, poor communication, multiple suction points and large subslab footprint. Replaces FR 175.

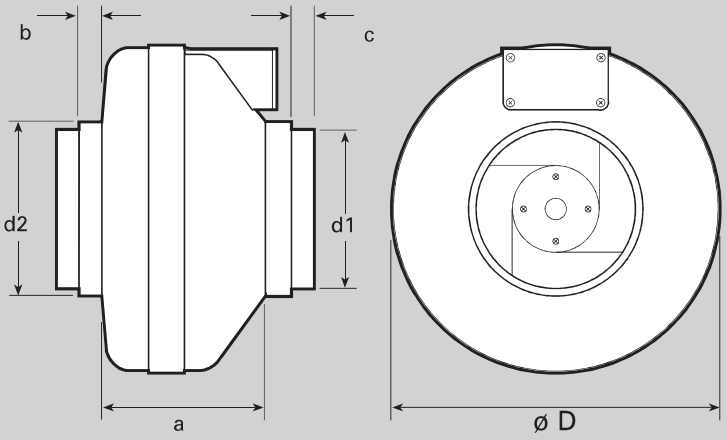
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-64, Pipeconx PCX 56-64 or equivalent.
For 3" PVC pipe use Indiana Seals #156-63, Pipeconx PCX 56-63 or equivalent.

Fantech

FR SERIES

THE ORIGINAL MITIGATOR





DIMENSIONAL DATA

model	øD	d1	d2	a	b	c
FR100	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR110	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR125	9 1/2	–	4 7/8	6 1/8	7/8	–
FR140	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR150	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR160	11 3/4	5 7/8	6 1/4	6 3/8	1	7/8
FR200	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR225	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR250	13 1/4	–	9 7/8	6 1/4	–	1 1/2

All dimensions in inches

PERFORMANCE DATA

Fan Model	Energy Star	RPM	Volts	Rated Watts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.							Max. Ps	Duct Dia.
							0"	.2"	.4"	.6"	.8"	1.0"	1.5"		
FR100	✓	2950	120	21.2	13 - 22	0.18	137	110	83	60	21	-	-	0.90"	4"
FR125	✓	2950	115	18	15 - 18	0.18	148	120	88	47	-	-	-	0.79"	5"
FR150	✓	2750	120	71	54 - 72	0.67	263	230	198	167	136	106	17	1.58"	6"
FR160	-	2750	115	129	103 - 130	1.14	289	260	233	206	179	154	89	2.32"	6"
FR200	✓	2750	115	122	106 - 128	1.11	408	360	308	259	213	173	72	2.14"	8"
FR225	✓	3100	115	137	111 - 152	1.35	429	400	366	332	297	260	168	2.48"	8"
FR250*	-	2850	115	241	146 - 248	2.40	649	600	553	506	454	403	294	2.58"	10"

FR Series performance is shown with ducted outlet. Per HVI's Certified Ratings Program, charted air flow performance has been derated by a factor based on actual test results and the certified rate at .2 inches WG.
** Also available with 8" duct connection. Model FR 250-8. Special Order.*

NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

FIVE YEAR WARRANTY

DURING ENTIRE WARRANTY PERIOD:

FANTECH will replace any fan which has a factory defect in workmanship or material. Product may need to be returned to the Fantech factory, together with a copy of the bill of sale and identified with RMA number.

FOR FACTORY RETURN YOU MUST:

- Have a Return Materials Authorization (RMA) number. This may be obtained by calling FANTECH either in the USA at 1.800.747.1762 or in CANADA at 1.800.565.3548. Please have bill of sale available.
- The RMA number must be clearly written on the outside of the carton, or the carton will be refused.
- All parts and/or product will be repaired/replaced and shipped back to buyer; no credit will be issued.

OR

The Distributor may place an order for the warranty fan and is invoiced.
The Distributor will receive a credit equal to the invoice only after product is returned prepaid and verified to be defective.

FANTECH WARRANTY TERMS DO NOT PROVIDE FOR REPLACEMENT WITHOUT CHARGE PRIOR TO INSPECTION FOR A DEFECT. REPLACEMENTS ISSUED IN ADVANCE OF DEFECT INSPECTION ARE INVOICED, AND CREDIT IS PENDING INSPECTION OF RETURNED MATERIAL. DEFECTIVE MATERIAL RETURNED BY END USERS SHOULD NOT BE REPLACED BY THE DISTRIBUTOR WITHOUT CHARGE TO THE END USER, AS CREDIT TO DISTRIBUTOR'S ACCOUNT WILL BE PENDING INSPECTION AND VERIFICATION OF ACTUAL DEFECT BY FANTECH.

THE FOLLOWING WARRANTIES DO NOT APPLY:

- Damages from shipping, either concealed or visible. Claim must be filed with freight company.
- Damages resulting from improper wiring or installation.
- Damages or failure caused by acts of God, or resulting from improper consumer procedures, such as:

1. Improper maintenance
2. Misuse, abuse, abnormal use, or accident, and
3. Incorrect electrical voltage or current.

- Removal or any alteration made on the FANTECH label control number or date of manufacture.
- Any other warranty, expressed, implied or written, and to any consequential or incidental damages, loss or property, revenues, or profit, or costs of removal, installation or reinstallation, for any breach of warranty.

WARRANTY VALIDATION

- The user must keep a copy of the bill of sale to verify purchase date.
- These warranties give you specific legal rights, and are subject to an applicable consumer protection legislation. You may have additional rights which vary from state to state.

DISTRIBUTED BY:

Fantech

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Canada 50 Kanalflakt Way • Bouctouche, NB E4S 3M5 • 1.800.565.3548 • www.fantech.net

Item #: 411741
Rev Date: 021010

Fantech, reserves the right to modify, at any time and without notice, any or all of its products' features, designs, components and specifications to maintain their technological leadership position.

Stego® Tape

STEGO INDUSTRIES, LLC



Vapor Retarders
07 26 00, 03 30 00

1. Product Name

Stego Tape

2. Manufacturer

Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

3. Product Description

USES: Stego Tape is a low permeance tape designed for protective sealing, hanging, seaming, splicing, and patching applications where a highly conformable material is required. It has been engineered to bond specifically to Stego Wrap, making it ideal for sealing Stego Wrap seams and penetrations.

COMPOSITION: Stego Tape is composed of polyethylene film and an acrylic, pressure-sensitive adhesive.

SIZE: Stego Tape is 3.75" wide and 180' long. Stego Tape ships 12 rolls in a case.

4. Technical Data

APPLICABLE STANDARDS:

Pressure Sensitive Tape Council (PSTC)

- PSTC 101 – International Standard for Peel Adhesion of Pressure Sensitive Tape

American Society for Testing & Materials (ASTM)

- ASTM E 1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs

5. Installation

SEAMS:

Overlap Stego Wrap six inches and seal with Stego Tape. Make sure the area of adhesion is free from dust, dirt, moisture and frost to allow maximum adhesion of the pressure sensitive tape.

PIPE PENETRATION SEALING

1) Install Stego Wrap around pipe by slitting/cutting material
2) If void space around pipe is minimal, seal around base of pipe with Stego Tape (Stego Mastic can be used for additional coverage)

DETAIL PATCH FOR PIPE PENETRATION SEALING

1) Cut a piece of Stego Wrap that creates a six inch overlap around all edges of the void space
2) Cut an "X" in the center of the detail patch
3) Slide detail patch over pipe, secure tightly
4) Tape down all sides of detail patch with Stego Tape
5) Seal around base of pipe with Stego Tape (Stego Mastic can be used for additional coverage)

Stego Tape should be installed above 40°F. In temperatures below 40°F, take extra care to remove moisture or frost from the area of adhesion.

For additional information, please refer to Stego's complete installation instructions.



6. Availability & Cost

Stego Tape is available nationally via building supply distributors. For current cost information, contact your local Stego distributor or Stego Industries' sales department.

7. Warranty

Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. No warranty, express or implied, is given as to the merchantability, fitness for a particular purpose, or otherwise with respect to the products referred to.

8. Maintenance

None required.

9. Technical Services

Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or by visiting the website.

10. Filing Systems

- Stego Industries' website
- Buildsite

TABLE 1: PHYSICAL PROPERTIES OF STEGO TAPE

PROPERTY	RESULTS
Total Thickness	6 mils
Permeance	0.03 perms
Tensile Strength	17 lbs./in. width
Elongation (at break) MD	1060%
Adhesion (20 min dwell ss, PSTC 101)	95-oz./in. width
Ultraviolet Resistance	Excellent

Stego, the stegosaurus logo, Crete Claw, and StegoTack are all deemed to be registered and protectable trademarks of Stego Industries, LLC.

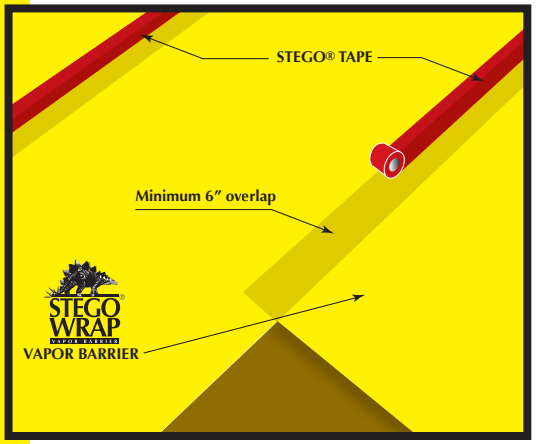
PART 1

STEGO WRAP VAPOR BARRIER/RETARDER
INSTALLATION INSTRUCTIONS

STEGO® INDUSTRIES, LLC

IMPORTANT: Please read these installation instructions completely, prior to beginning any Stego Wrap installation. The following installation instructions are based on ASTM E 1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs. If project specifications call for compliance with ASTM E 1643, then be sure to review the specific installation sections outlined in the standard along with the techniques referenced in these instructions.

FIGURE 1: UNDER-SLAB INSTALLATION



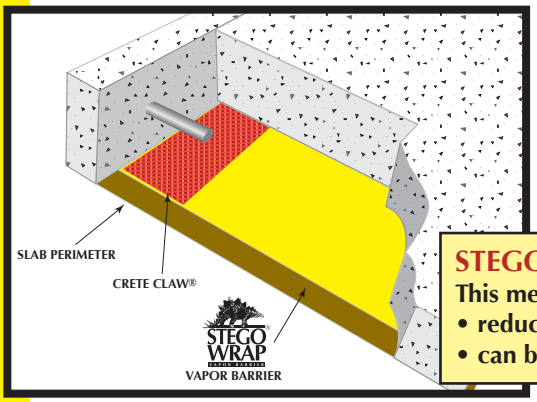
UNDER-SLAB INSTRUCTIONS:

1. Stego Wrap can be installed over an aggregate, sand, or tamped earth base. It is not necessary to have a cushion layer or sand base, as Stego Wrap is tough enough to withstand rugged construction environments.
2. Unroll Stego Wrap over the area where the slab is to be placed. Stego Wrap should completely cover the concrete placement area. All joints/seams both lateral and butt should be overlapped a minimum of six inches and taped using Stego Tape.

NOTE: The area of adhesion should be free from dust, dirt, moisture, and frost to allow maximum adhesion of the pressure-sensitive tape.

3. ASTM E 1643 requires sealing the perimeter of the slab. *Extend vapor retarder over footings and seal to foundation wall, grade beam, or slab at an elevation consistent with the top of the slab or terminate at impediments such as waterstops or dowels.* Consult the structural engineer of record before proceeding.

FIGURE 2a: SEAL TO SLAB AT PERIMETER



SEAL TO SLAB AT PERIMETER:*

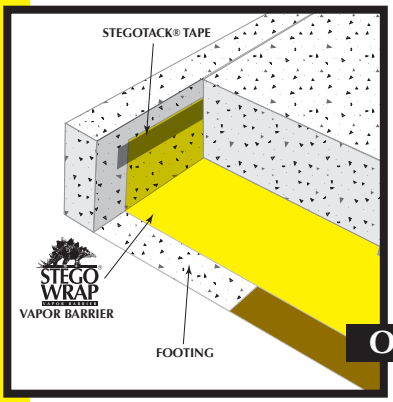
NOTE: Clean the surface of Stego Wrap to ensure that the area of adhesion is free from dust, dirt, moisture, and frost to allow maximum adhesion of the pressure-sensitive adhesive.

a. Install Crete Claw® on the entire perimeter edge of Stego Wrap.

b. Prior to the placement of concrete, ensure that the top of Crete Claw is free of dirt, debris, or mud to maximize the bond to the concrete.

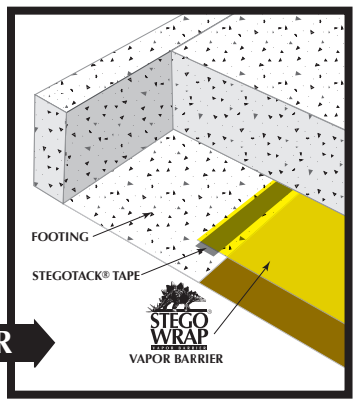
STEGO LABOR SAVER!
This method not only complies with ASTM E 1643, but it also:
- **reduces labor compared to other perimeter sealing techniques.**
- **can be used even without an existing wall or footing, unlike alternatives.**

FIGURE 2b: SEAL TO PERIMETER WALL



OR

FIGURE 2c: SEAL TO FOOTING



OR SEAL TO PERIMETER WALL OR FOOTING WITH STEGOTACK® TAPE:*

a. Make sure area of adhesion is free of dust, dirt, debris, moisture, and frost to allow maximum adhesion.

b. Remove release liner on one side and stick to desired surface.

c. When ready to apply Stego Wrap, remove the exposed release liner and press Stego Wrap firmly against StegoTack Tape to secure.

* If ASTM E 1643 is specified, consult with project architect and structural engineer to determine which perimeter seal technique should be employed for the project.

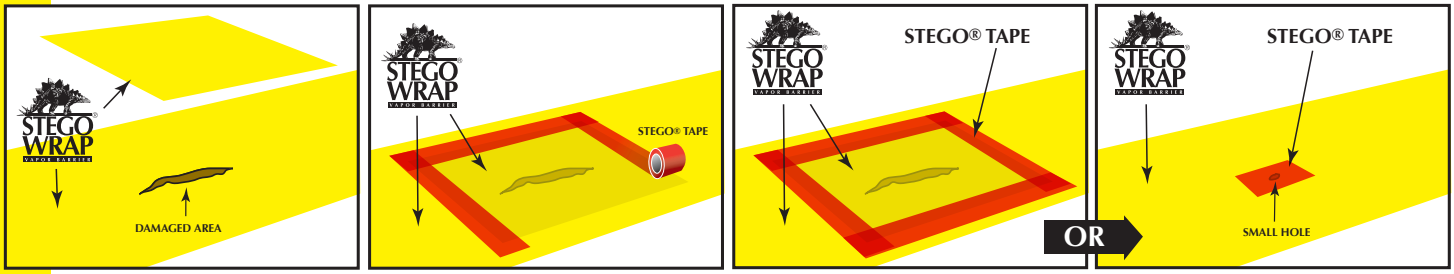
NOTE: Stego Industries, LLC's ("Stego") installation instructions are based on ASTM E 1643 - *Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.* These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions or Stego products, please call us at 877-464-7834 for technical assistance. While Stego employees and representatives may provide technical assistance regarding the utility of a specific installation practice or Stego product, they are not authorized to make final design decisions.

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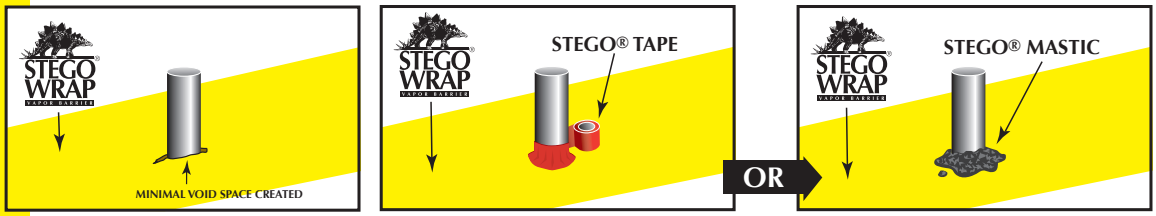
4. In the event that Stego Wrap is damaged during or after installation, repairs must be made. Stego Tape can be used to repair small holes in the material. For larger holes, cut a piece of Stego Wrap to a size and shape that covers any damage by a minimum overlap of six inches in all directions. Clean all adhesion areas of dust, dirt, moisture, and frost. Tape down all edges using Stego Tape (see figure 3, Sealing Damaged Areas).

FIGURE 3: SEALING DAMAGED AREAS



5. **IMPORTANT: ALL PENETRATIONS MUST BE SEALED.** All pipe, ducting, rebar, wire penetrations and block outs should be sealed using Stego Wrap, Stego Tape and/or Stego Mastic (see figure 4a, Pipe Penetration Sealing).

FIGURE 4a: PIPE PENETRATION SEALING



STEGO WRAP PIPE PENETRATION REPAIR DETAIL:

1: Install Stego Wrap around pipe penetrations by slitting/cutting material as needed. Try to minimize the void space created.

2: If Stego Wrap is close to pipe and void space is minimized then seal around pipe penetration with Stego Tape and/or Stego Mastic.

(See Figure 4a)

3: If detail patch is needed to minimize void space around penetration, then cut a detail patch to a size and shape that creates a six inch overlap on all edges around the void space at the base of the pipe. Stego Pre-Cut Pipe Boots are also available to speed up the installation.

4: Cut an "X" the size of the pipe diameter in the center of the pipe boot and slide tightly over pipe.

5: Tape down all sides of the pipe boot with Stego Tape.

6: Seal around the base of the pipe using Stego Tape and/or Stego Mastic.

(See Figure 4b)

FIGURE 4b: DETAIL PATCH FOR PIPE PENETRATION SEALING

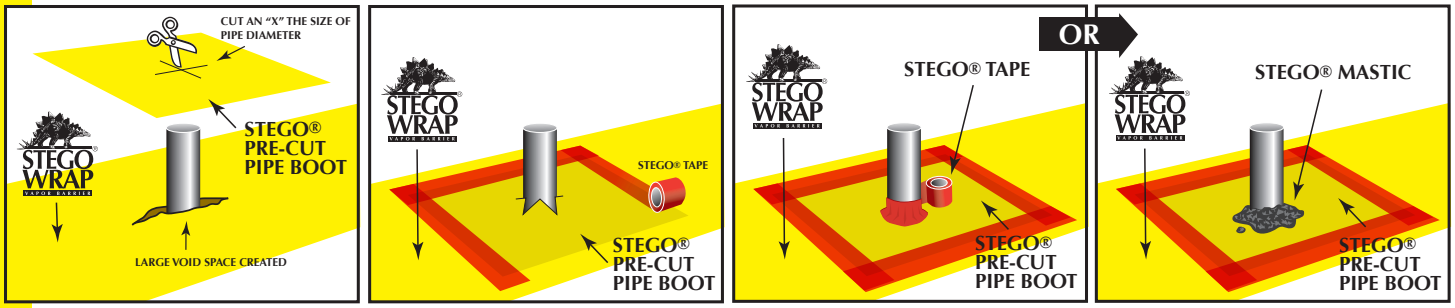
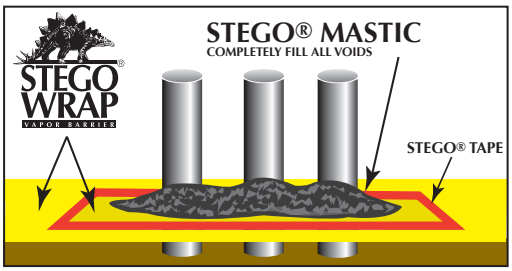


FIGURE 5: MULTIPLE PIPE PENETRATION SEALING



MULTIPLE PIPE PENETRATION SEALING:

Multiple pipe penetrations in close proximity and very small pipes may be sealed using Stego Wrap and Stego Mastic for ease of installation (see figure 5, Multiple Pipe Penetration Sealing).

NOTE: Stego Industries, LLC's ("Stego") installation instructions are based on ASTM E 1643 - *Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.* These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions or Stego products, please call us at 877-464-7834 for technical assistance. While Stego employees and representatives may provide technical assistance regarding the utility of a specific installation practice or Stego product, they are not authorized to make final design decisions.

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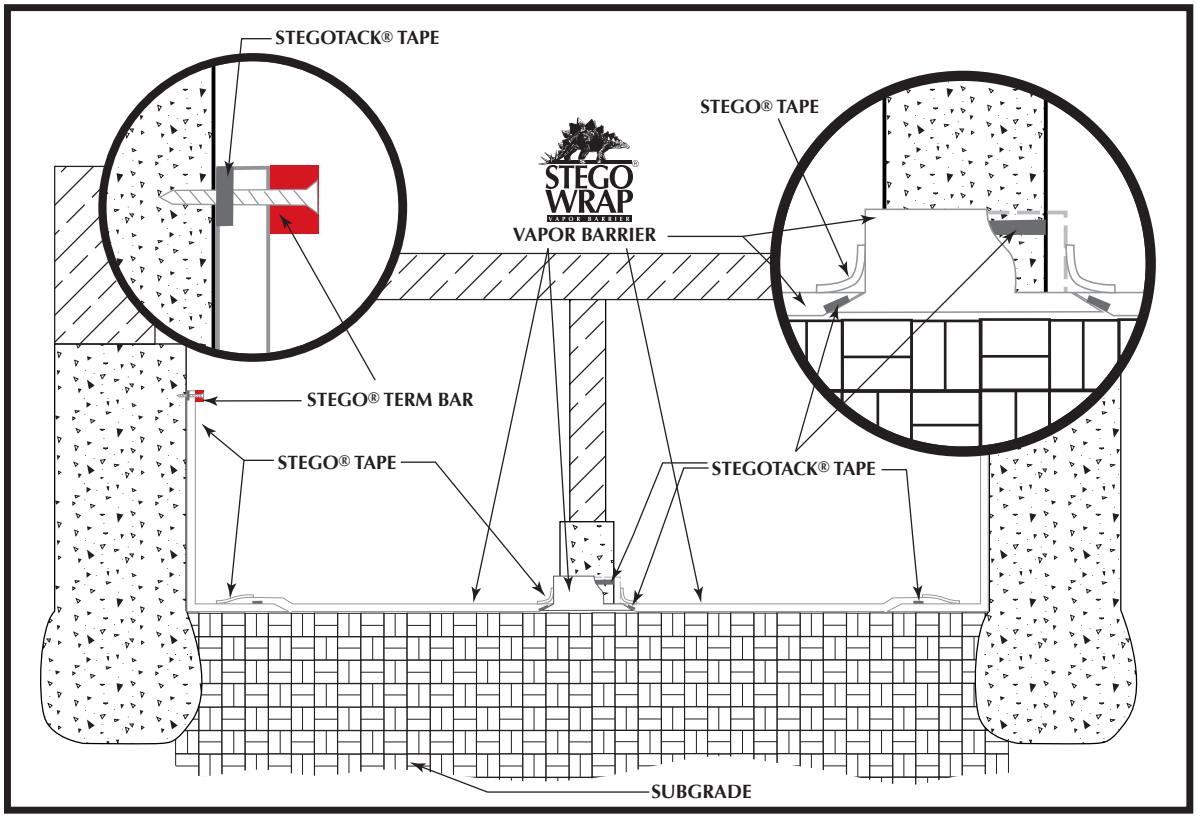
PART 2

STEGO WRAP VAPOR BARRIER/RETARDER INSTALLATION INSTRUCTIONS

CRAWL SPACE INSTALLATION INSTRUCTIONS:

1. Turn Stego Wrap up the foundation wall to a minimum height of six inches above the outside/exterior grade or in compliance with local building codes and terminate with Stego Term Bar. To form a complete seal, apply StegoTack Tape or a layer of Stego Mastic to the foundation wall prior to installing Stego Term Bar. Allow one hour for Stego Mastic to cure prior to installing Stego Term Bar.
2. Seal Stego Wrap around all penetrations and columns using Stego Tape, StegoTack Tape, and/or Stego Mastic.
3. Place Stego Wrap directly over the crawl space floor. If rigid insulation is to be used, install Stego Wrap prior to insulation (under insulation and between the foundation wall and insulation).
4. Overlap seams a minimum of six inches and seal with Stego Tape. Some codes require a minimum of a twelve inch overlap. Check appropriate codes prior to installation.

FIGURE 6: CRAWL SPACE INSTALLATION



NOTE: Stego Wrap Vapor Barrier and Stego Tape are both available in white (as shown in illustration above).

INSTALLATION TIP:

1. For a cleaner look and to prevent against tenting of Stego Wrap at the foundation wall/foundation floor intersection, consider mechanically fastening Stego Wrap to base of foundation wall in addition to the above mentioned wall termination.

NOTE: Stego Industries, LLC's ("Stego") installation instructions are based on ASTM E 1643 - *Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.* These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions or Stego products, please call us at 877-464-7834 for technical assistance. While Stego employees and representatives may provide technical assistance regarding the utility of a specific installation practice or Stego product, they are not authorized to make final design decisions.

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Stego® Wrap 20-Mil Vapor Barrier

STEGO INDUSTRIES, LLC



Vapor Retarders
07 26 00, 03 30 00

1. Product Name

Stego Wrap 20-Mil Vapor Barrier

2. Manufacturer

Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

3. Product Description

USES: Stego Wrap 20-Mil Vapor Barrier is used as a below-slab vapor barrier, and as a protection course for below grade waterproofing applications.
COMPOSITION: Stego Wrap 20-Mil Vapor Barrier is a multi-layer plastic extrusion manufactured with only the highest grade of prime, virgin, polyolefin resins.
ENVIRONMENTAL FACTORS:
Stego Wrap 20-Mil Vapor Barrier can be used in systems for the control of soil gases (radon, methane), soil poisons (oil by-products) and sulfates.

5. Installation

UNDER SLAB: Unroll Stego Wrap 20-Mil Vapor Barrier over an aggregate, sand or tamped earth base. Overlap all seams a minimum of six inches and tape using Stego Tape or Crete Claw® Tape. All penetrations must be sealed using a combination of Stego Wrap and Stego accessories.

For additional information, please refer to Stego's complete installation instructions.

6. Availability & Cost

Stego Wrap 20-Mil Vapor Barrier is available nationally via building supply distributors. For current cost information, contact your local Stego Wrap distributor or Stego Industries' sales department.

7. Warranty

Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. NO WARRANTY, EXPRESS, IMPLIED OR STATUTORY, IS GIVEN AS TO THE MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE WITH RESPECT TO THE PRODUCTS REFERRED TO. Please see www.stegoindustries.com/legal.

8. Maintenance

None required.

9. Technical Services

Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or via the website.

10. Filing Systems

• www.stegoindustries.com

4. Technical Data

TABLE 1: PHYSICAL PROPERTIES OF STEGO WRAP 20-MIL VAPOR BARRIER

PROPERTY	TEST	RESULTS
Under Slab Vapor Retarders	ASTM E1745 Class A, B & C – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs	Exceeds Class A, B & C
Water Vapor Permeance	ASTM F1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor	0.0071 perms
Puncture Resistance	ASTM D1709 – Test Methods for Impact Resistance of Plastic Film by Free-Falling Dart Method	3500+ grams*
Tensile Strength	ASTM D882 – Test Method for Tensile Properties of Thin Plastic Sheeting	97.7 lbf/in.
Permeance After Conditioning (ASTM E1745 Sections 7.1.2 - 7.1.5)	ASTM E154 Section 8, F 1249 – Permeance after wetting, drying, and soaking ASTM E154 Section 11, F 1249 – Permeance after heat conditioning ASTM E154 Section 12, F 1249 – Permeance after low temperature conditioning ASTM E154 Section 13, F 1249 – Permeance after soil organism exposure	0.0088 perms 0.0081 perms 0.0084 perms 0.0077 perms
Radon Diffusion Coefficient	K124/02/95	9.9 x 10^{-12} m^2/second
Thickness		20 mils
Roll Dimensions		14 ft. wide x 105 ft. long or 1,470 ft^2
Roll Weight		140 lbs.

Note: perm unit = grains/(ft^2 *hr* in.Hg)
* The material maxed out the testing equipment and did not fail at 3746 grams.

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Stego® Mastic

STEGO INDUSTRIES, LLC



Vapor Retarders
07 26 00, 03 30 00

1. Product Name
Stego Mastic

2. Manufacturer
Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

3. Product Description
USES: Stego Mastic is designed to be used as a waterproofing and vapor retardant membrane for use in conjunction with Stego Wrap 10-mil and 15-mil Vapor Retarder/Barrier. Stego Mastic can be used as an alternate to boots for pipe penetrations in Stego Wrap Vapor Barrier.
COMPOSITION: Stego Mastic is a medium-viscosity, water-based, polymer-modified anionic bituminous/asphalt emulsion.
SIZE: Stego Mastic comes in two-gallon and five-gallon buckets.

4. Technical Data
APPLICABLE STANDARDS:
American Society for Testing and Materials (ASTM)
- ASTM D412 Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers - Tension
- ASTM E154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover
- ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials
- ASTM D751 Standard Test Methods for Coated Fabrics
- ASTM D1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
- ASTM C836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Water-proofing Membrane for Use with Separate Wearing Course.
- ASTM E1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.

5. Installation
PREPARATION:
- A test application simulating the project environment should always be done prior to final usage of Stego Mastic.
- All Surfaces should be dry and free of loose materials, oils and other contaminants. The surfaces should be cleaned in the same fashion as the test surface in order to ensure proper results.
- Store above 40°F, and apply above 40°F and below 100°F.

PENETRATIONS:
To repair penetrations in Stego Wrap, cut Stego Wrap just big enough to fit over and around the penetration so as to minimize void space. Liberally apply Stego Mastic around the penetration to keep the integrity of the membrane intact. Stego Mastic can be applied by brush, roller, or trowel.
NOTES: 1) For larger penetrations or wide cut-outs of Stego Wrap, use Stego Wrap and Stego Tape to repair and seal. 2) Solvent-based products should not be applied over this product. 3) Clean all tools with kerosene and/or oil-based cleaners.

For additional information, please refer to Stego's complete installation instructions.

6. Availability & Cost
Stego Mastic is available nationally via building supply distributors. For current cost information, contact your local Stego distributor or Stego Industries' sales department.

7. Warranty
Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. NO WARRANTY, EXPRESS, IMPLIED OR STATUTORY, IS GIVEN AS TO THE MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE WITH RESPECT TO THE PRODUCTS REFERRED TO. Please see www.stegoindustries.com/legal.

8. Maintenance
None required.

9. Technical Services
Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or by visiting the website.

10. Filing Systems
- Stego Industries' website
- Buildsite

TABLE 1: PHYSICAL PROPERTIES OF STEGO MASTIC

Property and Test	Stego Mastic
Tensile/Elongation, ASTM D412	32 psi / 3860%
Resistance to Decay, ASTM E154	10% perm loss
Permeance, ASTM E96	0.17 Perms
Hydrostatic Water Pressure, ASTM D751	28 psi
Adhesion to Concrete & Masonry, ASTM C836	7 lbf./in.
Hardness, ASTM C836	75
Crack Bridging, ASTM C836	No Cracking
Low Temp Flexibility, ASTM C836	No Cracking

Note: perm unit = grains/(ft² *hr* in.Hg)

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Series 1800 Low Differential Pressure Switch for General Industrial Service

Set Points from 0.07" to 85" w.c. Repetitive Accuracy within 2%

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Essential for industrial environments, the **Series 1800 Low Differential Pressure Switch for General Industrial Service** combines small size and low price with 2% repeatability for all but the most demanding applications. Set point adjustment inside the mounting stud permits mounting the switch on one side of a wall or panel with adjustment easily accessible on the opposite side. UL and CSA listed, and FM approved.

CAUTION: FOR USE ONLY WITH AIR OR COMPATIBLE GASES.

Please see Series AT21823 for ATEX approved.



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Specifications

Service:	Air and non-combustible, compatible gases.
Wetted Materials:	Consult Factory.
Temperature Limits:	-30 to 180°F (-34 to 82.2°C). 1823-00, -20 to 180°F (-28.9 to 82.2°C).
Pressure Limits:	10 psig (68.95 kPa) continuous, 25 psig (172.4 kPa) surge.
Switch Type:	Single-pole double-throw (SPDT).
Repeatability:	±2%.
Electrical Rating:	15 A @ 120-480 VAC, 60 Hz. Resistive 1/8 HP @ 125 VAC, 1/4 HP @ 250 VAC, 60 Hz. De-rate to 10 A for operation at high cycle rates.
Electrical Connections:	3 screw type, common, normally open and normally closed.
Process Connections:	1/8" female NPT.
Mounting Orientation:	Diaphragm in vertical position. Consult factory for other position orientations.
Set Point Adjustment:	Screw type inside mounting spud.
Weight:	1 lb, 5 oz (595 g).
Agency Approvals:	CE, CSA, FM, UL. NOTE: Optional (-EXPL) Explosion-proof Enclosure does not possess any agency approvals.

APPENDIX G

QUALITY ASSURANCE PROJECT PLAN

Quality Assurance Project Plan
Hygrade Polishing and Plating Site
Long Island City, New York

1.1 Introduction - The following Quality Assurance Project Plan ("QAPP") has been prepared by Amec E&E, PC specifically for the Site Management Plan (SMP) in connection with the Hygrade Polishing and Plating Site located in Queens, New York. This Plan was prepared and approved as stated below.

Eric Weinstock

Prepared by: _____ Date: 4/22/2020
Eric A. Weinstock, Principal Scientist

1.2 QAPP - Table of Contents

The following elements are included in this QAPP:

Title Page and Introduction
Table of Contents
Project Description
Project Organization
Quality Assurance Objectives for Data Measurements
Sampling Procedure
Sample and Document Custody Procedures
Calibration Procedures and Frequency
Analytical Procedures
Data Reduction, Validation and Reporting
Internal Quality Control Checks
Performance and System Audits
Preventive Maintenance
Data Measurement Assessment Procedures
Corrective Action
Quality Assurance Reports and Management

1.3 Project Description - The SMP subject to this QAPP has been prepared to address the following issues:

- Post remediation groundwater monitoring; and
- Indoor air monitoring.

The methods that will be used include: groundwater sampling, air sampling, trip blanks, and field blanks. These are described in detail in the SMP.

1.4 Project Organization – Eric Weinstock will serve as the Project Manager (PM) and will be responsible for the overall scheduling and performance of all investigative activities.

Chris Ricardi will serve as the Quality Assurance Officer (QAO) for this project and his resume is attached to the QAPP. His duties will include:

- Review of laboratory data packages
- Interface with laboratory
- Performance of Field Audits

Experienced Amec staff will perform and/or oversee completion of all the field activities described in this plan.

1.5 Quality Assurance Objectives and Data Measurement

Chemical Analysis – All environmental samples will delivered to an ELAP-Certified laboratory contracted to Amec E&E, PC for chemical analysis. This data is intended monitor the quality of the groundwater below the site and the quality of the air in the basement of the building. The laboratory will follow the NYSDEC – Analytical Services Protocol dated 2005 for soil samples and the analytical reports will be prepared in NYSDEC ASP Category B deliverables. All water samples will be placed in iced-filled coolers and delivered to the laboratory within 48 hours of collection. The water samples will be maintained at a temperature of 4+/-2^{o} C. Soil vapor and indoor air samples do not require ice. The laboratory will be instructed to report the 10 highest VOC.

Quality assurance objectives are generally defined in terms of five parameters:

- **Representativeness -** Representativeness is the degree to which sampling data accurately and precisely represents site conditions, and is dependent on sampling and analytical variability. The SMP has been designed to assess the presence of the constituents in the target media at the time of sampling. The SMP presents the rationale for sample quantities and location. The Field Sampling Plan (FSP) included as Appendix I also presents field sampling methodologies and laboratory analytical methodologies.

  The use of the prescribed field and laboratory analytical methods with associated holding times and preservation requirements are intended to provide representative data. Further discussion of QC checks is presented in Section 1.11.

- **Comparability** - Comparability is the degree of confidence with which one data set can be compared to another data set. Comparability between this investigation and to the extent possible, with existing data will be maintained through consistent sampling and analytical methodology set forth in the QAPP; the SMP; the FSP; and the NYSDEC ASP analytical

methods (2005) with NYSDEC ASP QA/QC requirements; and through use of QA/QC procedures and appropriately trained personnel.

- **Completeness -** Completeness is defined as a measure of the amount of valid data obtained from a sampling event compared to the amount that was expected to be obtained under normal conditions. This will be determined upon assessment of the analytical results.

- **Precision -** Precision is the measure of reproducibility of sample results. The goal is to maintain a level of analytical precision consistent with the objectives of the SMP. To maximize precision, sampling and analytical procedures will be followed. All work for the investigation phase of this project will adhere to established protocols presented in the QAPP, the SMP and FSP. Checks for analytical precision will include the analysis of matrix spike duplicated, laboratory duplicates, and field duplicates. Checks for field measurement precision will include obtaining duplicate field measurements. Further discussion of precision QC checks is provided in Section 1.11.

- **Accuracy** - Accuracy is the deviation of a measurement from the true value of a known standard. Both field and analytical accuracy will be monitored through initial and continuing calibration of instruments. In addition, internal standards, matrix spikes, blank spikes, and surrogates (e.g. system monitoring compounds) will be used to assess the accuracy of the laboratory analytical data.

1.6 Sampling Procedures - The sampling procedures that will be employed are discussed in detail in the FSP.

1.7 Sample and Document Custody Procedures

- **General** - The Chain-of-Custody program allows for the tracing of possession and handling of the sample from its time of collection through its chemical analysis in the laboratory. The chain-of-custody program at this site will include:

    - Sample labels
    - Chain-of-Custody records
    - Field records

- **Decontamination Procedure for Sampling Devices**

Some of the sampling devices are dedicated and will only be used once. The sampling devices that will be re-used will consist of pumps and tubing. These will be washed in a mixture of Alconox and tap water followed by tap water and distilled water rinses.

- **Sample Container Details**

Details of the type of containers, the method of sample preservation and the number of QA/QC samples are included on Table 1 of the QAPP.

- **Sample Labels** - To prevent misidentification of samples, a label will be affixed to the sample container and will contain the following information:

    - Site Name
    - Sample identification number
    - Date and time of collection
    - Initials of Sampler

- Preservation (if any)
- Type of analysis to be conducted.

- **Chain-of-Custody Records** - To establish the documentation necessary to trace sample possession from the time of collection, a chain-of-custody record will be filled out and will accompany samples at all times. The record will contain the following information:

  - Project name:
  - Printed name and signature of samplers
  - Sample Identification
  - Date and time of collection
  - Sampling location
  - Number of containers for each sample
  - Signature of individuals involved in sample transfer (when relinquishing and accepting samples)
  - Inclusive dates and times of possession.

- **Field Records** - Field records will be maintained during each sampling effort in a logbook. All aspects of sample collection, handling and visual observations will be recorded. All sample collection equipment, field analytical equipment and equipment utilized to make physical measurements will be identified in the field logbook.

  All calculations, results and calibration data for field sampling, field analytical and field physical measurement equipment will also be recorded in the field logbook. Entries will be dated and initialed. Entries will be made in ink, and will be legible.

1.8 Calibration Procedures and Frequency - The contracted laboratory will follow calibration procedures as outlined in the EPA methods.

1.9 Analytical Procedures - All laboratory analysis will follow NYSDEC ASP (2005) protocols with Category B deliverables. The following samples will be collected for QA/QC purposes: 1 duplicate sample, 1 matrix spike, and 1 matrix spike duplicate per every twenty field samples per sample matrix; 1 trip blank per sampling event; and 1 field blank per sampling event for each type of sampling tool used to collect samples. A qualified data validator will review the laboratory data and a Data Usability Summary Report (DUSR) will be prepared.

All methods, matrix, parameters, number of samples, containers, preservatives, number of QA/QC samples, and holding times are displayed in Table 1.

The groundwater samples will then be analyzed for VOCs, TAL metals and PFASs. The remedial action objectives are to achieve either the TOGS (NYSDEC, June 1988) drinking water standards or a continual decreasing trend in contaminant concentrations over time. (There is currently no NYS standard for PFAS. The laboratory Reporting Limits provided by Alpha, the subcontracted laboratory, for PFAS are included as an attachment to Table 1.

One Summa canister indoor air sample will be collected from the basement during the winter heating season an annual basis.

1.10 Data Reduction, Validation and Reporting

- **Field Data** - All field data recorded in logbooks or on log sheets will be evaluated in the Office and transferred to word processor text by field personnel or clerical staff. PID readings will be included on the logs. The QAO and/or PM will review this data for accuracy and completeness.

- **Laboratory Data** - The laboratory will transfer the instrument readings to laboratory report forms. A qualified validator (not the QAO) will perform independent data validation of all analytical data using NYSDEC DUSR protocols.

  The Data Validator will provide Amec with a Data Validation Summary Report, the resume of the Data Validator is attached. The QAO will review the summary report as well as other field data and prepare a Data Usability Report. Amec will prepare summary tables of the validated analytical data using an imported spreadsheet received directly from the laboratory.

1.11 Internal Quality Control Checks

Both field and laboratory quality control checks are proposed for this project. In the event that there are any deviations from these checks, the Project Manager and Quality Assurance Officer will be notified. The proposed field and laboratory control checks are discussed below.

Field Quality Control Checks

- **Field Measurements -** To verify the quality of data collected using field instrumentation, at least one duplicate measurement will be obtained per day and reported for all field analytical measurements.

- **Sample Containers -** Certified-clean sample containers will be supplied by the contracted laboratory.

- **Field Duplicates** – Field duplicates will be collected to check reproducibility of the sampling methods. Field duplicates will be prepared as discussed in the SMP. Field duplicates will be analyzed one every 20 field samples.

- **Field Rinse Blanks** – Field rinse blanks are used to monitor the cleanliness of the sampling equipment and the effectiveness of the cleaning procedures. Field rinse blanks will be prepared by filling sample containers with analyte-free water (supplied by the laboratory), which has been routed through a cleaned sampling device.

- **Trip Blanks** – Trip blanks will be used to assess whether site samples have been exposed to non-site-related volatile constituents during storage and transport. Trip blanks will be analyzed at a frequency of once per sampling event, and will be analyzed for volatile organic constituents. A trip blank will consist of a container filled with analyte-free water (supplied by the laboratory), which remains unopened with field samples throughout the sampling event. Trip blanks will only be analyzed for volatile organic constituents.

1.12 Performance and Systems Audits

Performance and systems audits will be completed in the field and the laboratory during the investigation phase of this project as described below.

- **Field Audits –** Amec Foster Wheeler's Project Manager and Quality Assurance Officer will monitor field performance and field meter calibrations to verify that measurements are taken according to established protocols. The Project Manager will review all field logs. In addition, the Project Manager and the Quality Assurance Officer will review the field rinse and trip blank data to identify potential deficiencies in field sampling and cleaning procedures.

- **Laboratory Audits** – The contracted laboratory will perform internal audits consistent with NYSDEC ASP (2005).

1.13 Preventive Maintenance

Preventive maintenance schedules have been developed for both field and laboratory instruments. A summary of the maintenance activities to be performed is presented below.

- **Field Instruments and Equipment -** Prior to any field sampling, each piece of field equipment will be inspected to assure it is operational. If the equipment is not operational, it must be serviced prior to use. All meters which require charging or batteries will be fully charged or have fresh batteries. If instrument servicing is required, it is the responsibility of the field personnel to follow the maintenance schedule and arrange for prompt service.

- **Laboratory Instruments and Equipment -** The laboratory will document Laboratory instrument and equipment procedures. Documentation includes details of any observed problems, corrective measure(s), routine maintenance, and instrument repair (which will include information regarding the repair and the individual who performed the repair).

  Preventive maintenance of laboratory equipment generally will follow the guidelines recommended by the manufacturer. A malfunctioning instrument will be repaired immediately by in-house staff or through a service call from the manufacturer.

1.14 Data Assessment Procedures

The analytical data generated during implementation of the SMP will be evaluated with respect to precision, accuracy, and completeness. The procedures utilized when assessing data precision, accuracy, and completeness are presented below.

- **Data Precision Assessment Procedures -** Field precision is difficult to measure because of temporal variations in field parameters. However, precision will be controlled through the use of experienced field personnel, properly calibrated meters, and duplicate field measurements. Field duplicates will be used to assess precision for the entire measurement system including sampling, handling, shipping, storage, preparation and analysis.

  Laboratory data precision for organic analyses will be monitored through the use of matrix spike duplicate sample analyses. For other parameters, laboratory data precision will be monitored through the use of field duplicates and/or laboratory duplicates.

  The precision of data will be measured by calculation of the standard deviation (SD) and the coefficient of variation (CV) of duplicate sample sets. The SD and CV are calculated for duplicate sample sets by:

SD = (A-B)/1.414
CV = ((A-B)/1.414/((A+B)/2))

Where:

A = Analytical result from one of two duplicate measurements
B = Analytical result from the second measurement.

Where appropriate, A and B may be either the raw measurement or an appropriate mathematical transformation of the raw measurement (e.g., the logarithm of the concentration of a substance).

Alternately, the relative percent difference (RPD) can be calculated by the following equation:

$$RPD = \frac{(A-B)}{(A+B)/2} \times 100$$

RPD = 1.414 (CV)(100)

- **Data Accuracy Assessment Procedures -** The accuracy of field measurements will be controlled by experienced field personnel, properly calibrated field meters, and adherence to established protocols. The accuracy of field meters will be assessed by review of calibration and maintenance logs.

  Laboratory accuracy will be assessed via the use of matrix spikes, surrogate spikes, and internal standards. Where available and appropriate, QA performance standards will be analyzed periodically to assess laboratory accuracy. Accuracy will be calculated as a percent recovery as follows:

$$Accuracy = \frac{A-X}{B} \times 100$$

  Where:

  A = Value measured in spiked sample or standard
  X = Value measured in original sample
  B = True value of amount added to sample or true value of standard

  This formula is derived under the assumption of constant accuracy over the original and spiked measurements. If any accuracy calculated by this formula is outside of the acceptable levels, data will be evaluated to determine whether the deviation represents unacceptable accuracy, or variable, but acceptable accuracy. Accuracy objectives for matrix spike recoveries and surrogate recovery objectives are identified in the NYSDEC, ASP (2005).

- **Data Completeness Assessment Procedures -** Completeness of a field or laboratory data set will be calculated by comparing the number of samples collected or analyzed to the proposed number.

$$Completeness = \frac{\text{No. Valid Samples Collected or Analyzed}}{\text{No. Proposed Samples Collected or Analyzed}} \times 100$$

As general guidelines, overall project completeness is expected to be at least 90 percent. The assessment of completeness will require professional judgment to determine data usability for intended purposes.

1.15 Corrective Action

Corrective actions are required when field or analytical data are not within the objectives specified in this QAPP, or the Site Management Plan (SMP). Corrective actions include procedures to promptly investigate, document, evaluate, and correct data collection and/or analytical procedures. Field and laboratory corrective action procedures for this project are described below.

- **Field Procedures** - When conducting the investigative fieldwork, if a condition is noted that would have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action implemented will be documented as a memo to the project file and reported to the Project Manager.

  Examples of situations, which would require corrective actions, are provided below:

  - Protocols as defined by the QAPP and the SMP have not been followed;
  - Equipment is not in proper working order or properly calibrated;
  - QC requirements have not been met; and
  - Issues resulting from performance or systems audits.

  Project field personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

- **Laboratory Procedures -** In the laboratory, when a condition is noted to have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action to be taken will be documented, and reported to the Quality Assurance Officer.

  Corrective action may be initiated, at a minimum, under the following conditions:

  - Specific laboratory analytical protocols have not been followed;
  - Predetermined data acceptance standards are not obtained;
  - Equipment is not in proper working order or calibrated;
  - Sample and test results are not completely traceable;
  - QC requirements have not been met; and
  - Issues resulting from performance or systems audits.

  Laboratory personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

1.16 Quality Assurance Reports and Management

- **Internal Reporting -** The analytical laboratory will submit analytical reports using NYSDEC ASP (2005), Category B requirements. The analytical reports will be submitted to the Data Validator (not the Quality Assurance Officer) for review. Supporting data (i.e., historic data, related field or laboratory data) will also be reviewed to evaluate data quality, as appropriate. The Quality Assurance Officer (not the Data Validator) will incorporate results of data validation reports (if any) and assessments of data usability into a summary report. This report will be filed in the project file and will include the following:

- Assessment of data accuracy, precision, and completeness for field & laboratory data;
- Results of the performance and systems audits;
- Significant QA/AC problems, solutions, corrections, and potential consequences;
- Analytical data validation report; and
- Data Usability Summary Report.

- **Reporting** - The quarterly and annual monitoring reports will contain a separate QA/QC section including the DUSR and a summary of data collected and/or used as appropriate to the project DQOs. The Quality Assurance Officer will prepare the QA/QC summary tables and reports and memoranda documenting the data assessment and validation.

References

1. New York State Department of Environmental Conservation, Technical & Operational Guidance Series (TOGS), Standard 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998.

Table 1
Sample Container Details for Groundwater, Soil Vapor and Indoor Air Samples
Hygrade Polishing and Plating Site
Long Island City, New York

Matrix and Parameters	Number Samples	Container / Preservative	Number of QA/QA Samples					Holding Time
			MS	Ms Duplicate	Duplicate	Trip Blank	Field Blank	
Groundwater								
VOCs (USEPA Method 8260C) + 10 TICs	4	Two 40 ml vials / HCL / Ice	1 per 20	1 per 20	1 per 20	1 per event	1 per event	14 days
TAL Metals (Filtered and Unfiltered)(USEPA Method 6010C/7471A)	4	One 500 ml plastic bottle / Acid & Ice	1 per 20	1 per 20	1 per 20	NA	1 per event	6 months (28 days for Hg)
PFAS (USEPA Method 537) see attached table for Reporting Limits	4	250 ml plastic bottle / Ice	1 per 20	1 per 20	1 per 20	NA	1 per event	14 days
Indoor Soil Vapor and Air								
VOCs (USEPA Method TO-15)	1	SUMMA Canister	NA	NA	NA	NA	NA	30 days

Eric Weinstock, PG, LEED AP

Principal Scientist, Branch Manager NYC/LI

Professional Summary

Mr. Weinstock is the branch manager of Wood's NYC/Long Island office and oversees Environmental Site Assessments (ESAs), Brownfield and Superfund investigations, and cleanups in the metro New York City and Long Island areas. He has over 35 years' experience managing and implementing environmental investigations, most of which were located in the metro New York City and Long Island areas. He has performed or overseen dozens of Phase I ESAs and Phase II investigations and cleanups for property transfers in the five Boroughs of New York City. He regularly advises property owners and real estate professionals about potential purchases of property in NYC on the ASTM Phase I and II processes. He also has developed and managed investigations at numerous New York State Superfund sites including property formerly operated by dry cleaners, metal platers, printers, pharmaceutical companies, gasoline stations, and chemical blending facilities.

Mr. Weinstock has supervised site investigations and cleanups under the review of the United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), New York City Department of Environmental Protection (NYCDEP), and NYC Office of Environmental Remediation (NYCOER). As a component of his Federal & State Superfund and Brownfield assignments, he has a great deal of experience in the performance of soil vapor intrusion investigations in accordance with ASTMs Phase I protocols and in the design and implementation of Sub-Slab Depressurization (SSD) systems. He has evaluated, assisted in designing, and supervised the installation of numerous SSD systems in the five boroughs of NYC and on Long Island. These have included both retrofitting SSD systems into existing buildings and incorporating SSD systems into new buildings. The end uses of these buildings have included apartment houses, schools, hotels, shopping centers, factories, and warehouses. Mr. Weinstock also provides RCRA compliance services to numerous clients.

Qualifications

Education

- BS, Geology, State University of New York at Oneonta, 1978
- MS, Engineering Geology, Georgia Tech, 1980

Registrations / Certifications / Licenses

- Professional Geologist, NY, #229
- Certified Professional Geologist, US and Guam, #7391
- Certified Ground Water Professional, US and Guam, #112761
- LEED Green Associate, US, 10916255 GA

Years of Experience

39 (4 with Wood)

Office of Employment

East US - NYC/Long Island

Languages

- English - Fluent
-

Professional Associations

- Member, American Institute of Professional Geologists
- Member, National Ground Water Association
- US Green Building Council

Areas of Expertise

- Construction Inspector - Civil - Advanced
- Geologist - Expert
- Hydrologist/Hydrogeologist – Expert
- Brownfields - Expert

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Training

- Confined Space - Permit Required, 2011
- HAZWOPER 40 Hour, 1984
- HAZWOPER 8 Hour Refresher, 2016
- HAZWOPER 8 Hour Supervisor, 1996
- Lockout/Tagout, 2007
- OSHA 10 Hour Construction Safety and Health, 2011
- NYC Office of Environmental Remediation (NYCOER) Gold Level Professional 6/2014

Wood Experience

111 Bruckner - Phase I/II Environmental Site Assessments and Oil Spill Clean-up, 111 Bruckner Blvd, LLC, Bronx, NY, United States. 3612152303, $118,800, 2016. Project Manager. 9/2015 – 2/2016. Served as the overall project manager for this project. Supervised Amec Foster Wheeler's sampling crews throughout the project. Also served as the agency contact and prepared all of the reports needed for closure of the spill with the NYSDEC. Wood performed a Phase I Environmental Site Assessment and a Phase II subsurface investigation, prepared and submitted a Remedial Action Plan (RAP) to the New York State Department of Environmental Conservation (NYSDEC) for clean-up of a release of No. 6 heating oil, and upon approval of the RAP, remediated the site. Following site clean-up, Wood submitted the Remedial Action Report to NYSDEC who approved the report and closed the Spill Case Number. This spill clean-up was necessary so this Brownfield site could be sold to a developer. The developer will gut the building and renovate it for use as a residential apartment building.

Drinking Water Sampling for Per- and Polyfluoroalkyl Substances (PFAS) and Contingent Drinking Water Supply at 7 Air National Guard (ANG) Sites, National Guard Bureau (ANG), Various Cities throughout the, Various, United States. 291330010, $1,463,105, 2020. Project Role Title, 09/2017 – Present. Supported work at the Francis S. Gabreski ANG Base in Westhampton Beach, NY. Wood performed drinking water sampling for the presence of per- and polyfluoroalkyl substances (PFASs), also referred to as perfluorinated chemicals (PFCs), at seven Air National Guard bases throughout the United States. Mr. Weinstock communicated with local public health officals and arranged for bottled water supplies to local residents.

Barker Brothers, Inc. RCRA Closure, Tank Compliance, and Petroleum Spill Cleanup, Anmar Realty, LLC, Ridgewood, NY, United States. 3612152295, $388,905, 2016. Project Manager. 6/2015-2/2016. Provided overall coordination of all project related activities. Communicated regularly with the NYSDEC. Ensured that sample collection was performed in compliance with approved plans. Prepared and submitted the RCRA Closure Report and NYSDEC Tank Closure Report. Wood prepared and implemented a RCRA closure plan for a former manufacturing facility. Performed a geophysical survey of the property. Identified ASTs and USTs, updated their regulatory status with NYSDEC, and removed or abandoned them in place. Investigated and implemented cleanup of a NYSDEC petroleum spill in soil with a soil vapor extraction (SVE) system.

CONFIDENTIAL CLIENT Record of Decision (ROD) Implementation Work Plans, New Hyde Park, NY, United States. 3617157344, $473,464, 2016. Technical Reviewer. 5/2015-8/2015. Reviewed and edited work plans and drilling specifications. Performed site visits to identify locations for off-site groundwater monitoring wells. Eric supervised the drilling of a 350 foot deep vertical profile boring. Gorundwater samples were collected at 10 foot intervals. Monitoring wells were designed and installed to track a deep VOC plume migrating off-site from a large former industrial facility.

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Hampton Inn Sub-Slab Depressurization System and Soil Stabilization, Brooklyn LW Hotel Associates, L.P., Brooklyn, NY, United States. 3612152293, $111,735, 2016. Project Manager. 6/2015-4/2016. Provided overall coordination of all project related activities. Communicated regularly with the General Contractor (GC). Performed inspections during construction of sub-surface piping to ensure compliance with approved plans. Participated in the SSD system pilot test. Wood designed and provided installation oversight of a sub-slab venting system below this new 24-story hotel in downtown Brooklyn. Also designed and provided construction oversight of a soil stabilization program to address elevated levels of arsenic where metals-impacted soil were removed from 3 foot wide trenches, mixed with a concrete-bentonite slurry, and placed back in the ground. This in situ approach saved the client thousands of dollars and months of planning and implementation. Prepared final reports for submission to the New York City Office of Environmental Remediation (NYCOER).

New Summerfield - Environmental Services for Brownfield Redevelopment, New Summerfield, LLC, Ridgewood, NY, United States. 3612162314, $108,810, 2017. Project Manager. 5/2015 – 11/2016. Served as the project manager for all of the environmental work completed on this project. Served as the direct contact with the client and the regulatory agency. Scheduled and supervised all sampling activities at the site and prepared the project reports. Communicated regularly with the General Contractor (GC). Performed inspections during construction of sub-surface piping to ensure compliance with approved plans. Participated in the SSD system pilot test. Wood performed subsurface investigation, underground storage tank removals, designed and installed a soil vapor extraction system, gasoline spill closure activities under New York State Department of Environmental Conservation (NYSDEC) Spills Group, and designed and oversaw the installation of a vapor barrier and sub-slab depressurization system (SSDS) for two five-story residential apartment buildings.

Rodless Properties - Phase I, Rodless Properties, LP, Jamaica, NY, United States. 3612152311, $84,600 Project Manager. Mr. Weinstock was the project manager for this Phase I and II due diligence investigation. Four previous unknown underground storage tanks were identified and removed. A number of contaminated storm drains were clean. A report was prepared prior to the transfer of the property.

Stalingrad Ventures-Hygrade, Polishing and Plating, Long Island City, NY, United States. 3612162331, $200,0001, 2017. Project Manager. Mr. Weinstock is the project manager for this NYSDEC Brownfield Cleanup. After completing a Remedial Investigation, a chemical oxidant injection program and sub-slab depressurization system were installed at the property. Quarterly monitoring continues at the property. Hastings Capital/Duraspec Plating, Jamaica, NY $100,000. Mr. Weinstock is the project manager for this NYSDEC Superfund Cleanup. After completing a Remedial Investigation, a soil removal program and sub-slab depressurization system were performed at the property. Off-site vapor intrusion and quarterly monitoring continues at the property.

70-65 Queens Blvd. Environmental Site Assessment, Sunny K Realty, LLC, Woodside, New York, United States. $30,000. 11/2015 – 1/2016. Performed a Phase I and II Environmental Site Assessment (ESA) for this active car wash. Since the property is "E-designated" by the NYCOER, the Phase II included the scope of testing required for the "E" program. Estimated the cost of the required cleanup of the property for the prospective buyer. Our investigation will enable the buyer to promptly complete the initial phase of the NYCOER Voluntary Cleanup Program (VCP).

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Other than Wood projects

CA Rich Consultants, Inc.: Vice President, Project Manager, Not-For-Profit Developer, Brooklyn, NY, Atlantic Terrace Apartments Brownfield Redevelopment Site, 11/2008 - 10/2010. This Brownfield project involved the redevelopment of a former gas station located in the Fort Green area of Brooklyn, NY. Numerous underground tanks were removed along with 20,000 tons of petroleum contaminated soil. A 10-story multi-use commercial and residential building with underground parking was constructed at the site. The building included a vapor barrier and sub-slab depressurization system. Project work was reviewed and approved by the NYSDEC and the NYCDEP. Upon completion, the project achieved LEED gold accreditation and was awarded a Big Apple Brownfield Award. Project Fees: $1,200,000.

CA Rich Consultants, Inc.: Vice President, Project Manager, Ralph Associates, Brooklyn, NY, Former Bon Ton Cleaners State Superfund Site, 10/2002 - 1/2012. Releases from a former dry cleaner resulted in soil, soil vapor and groundwater contamination from perchloroethene (PCE). An extensive on-site and off-site soil and groundwater investigation was performed. The installation and operation of a Soil Vapor Extraction/Air Sparge system was performed to address this site. A network of both groundwater wells were installed to monitor the underlying groundwater. Operation of the system has been terminated and a release letter was issued by the NYSDEC. Fees: $500,000.

CA Rich Consultants, Inc.: Vice President, Project Manager, F.C. Properties, Hicksville, NY, Coral Graphics State Voluntary Cleanup Program Site, 5/2002 – 3/2013. Releases from a former waste storage area resulted in soil, soil vapor and groundwater contamination from perchloroethene (PCE). An extensive on-site and off-site soil and groundwater investigation was performed. Contaminated soil was removed from the source area followed by the installation and operation of a Soil Vapor Extraction/Air Sparge system. A network of both on-site and off-site groundwater wells were installed to monitor the underlying groundwater. Operation of the system has been terminated and a release letter was issued by the NYSDEC. Fees: $1,800,000.

CA Rich Consultants, Inc.: Vice President, Project Manager, Private Property Owner, Merrick, NY, Jim Jam Cleaners State Superfund Site, 5/2000 – 7/2008. Releases from a former dry cleaner resulted in soil, soil vapor and groundwater contamination from perchloroethene (PCE). An extensive on-site and off-site soil and groundwater investigation was performed. The installation and operation of a Soil Vapor Extraction/Air Sparge system was performed to address this site. A network of both on-site and off-site groundwater wells were installed to monitor the underlying groundwater. Operation of the system has been terminated and this site was delisted for the NYSDEC registry of hazardous waste sites. Fees: $500,000.

CA Rich Consultants, Inc.: Vice President, Project Manager, U.S Electro Plating, Inc., West Babylon, NY, US Electro Plating State Superfund Site, 6/1996 - 9/2014. Soil borings were installed to characterize and delineate the extent of subsurface metals contamination from a former metal plating shop connected to an on-site septic system at a State Superfund site. Contaminated soils were removed from the septic pools followed by the collection of end-point soil samples. A network of on-site and off-site monitoring wells were installed and monitored. Upon successful completion of the filed program, this site was delisted for the NYSDEC registry of hazardous waste sites. Fees: $500,000.
CA Rich Consultants, Inc.: Associate, Project Manager, Tishcon Corporation, Westbury, NY Tishcon Corporation State Superfund Site, 11/1995 – 11/2009. 1,1,1-trichlorothane was released to groundwater from discharges to a floor drain connected to a septic system. This project involved the removal of contaminated soil followed by the design, installation and operation of an extensive on-site

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and off-site Soil Vapor Extraction/Air Sparge system. An extensive system of on-site and off-site monitoring wells were installed and monitored. After 5 years of operation, the system termination criteria was achieved and the operation of the remediation system was shut down. Fees: $1,000,000. CA Rich Consultants, Inc.: Project Manager, Brooklyn Homes, Brooklyn, NY, Spring Creek Gardens State Superfund Site, 1/1989 – 5/1990. During the excavation of the foundation for a housing development in Brooklyn, NY a grouping of buried drums filled with chemical wastes was discovered. The drums were excavated, removed and properly disposed. A program of groundwater monitoring followed the excavation program. The site was delisted from the NYSDEC registry of hazardous waste sites and a housing project was constructed at the property. Fees: $250,000.

CA Rich Consultants, Inc.: Project Manager, Project Manager, Commerce Holding Company, Farmingdale, NY, Former Tronic Plating Federal Superfund Site, 4/1988 – 7/1993. Soil borings were installed to characterize and delineate the extent of subsurface metals contamination from a former metal plating shop connected to an on-site septic system at this Federal Superfund site. Contaminated soils were removed from the septic pools followed by the collection of end-point soil samples. A network of on-site and off-site monitoring wells were installed and monitored. Upon successful completion of the filed program, this site was delisted for the Federal NPL registry of hazardous sites. Fees: $1,100,000.

CA Rich Consultants, Inc.: Associate, Project Manager, Ranco Wiping Cloth, Inc., Roosevelt, NY, Ranco Wiping Cloth State Superfund Site, 4/1983 – 3/1991. Releases from a former wiping cloth and rag laundering facility to on-site storm drains resulted in soil and groundwater contamination from xylene. An on-site and off-site soil and groundwater investigation was performed. The soil from the bottom of the storm drain was removed and end-point soil samples were collected. A network of both on-site and off-site groundwater wells were installed to monitor the underlying groundwater. After a program of groundwater monitoring was completed, this site was delisted for the NYSDEC registry of hazardous waste sites. Fees: $150,000.

Camp, Dresser & Mckee (CDM): Project Geologist, U.S. Environmental Protection Agency , New York, NY, Port Washington Landfill Superfund Site, Nassau County, NY, 3/1987-3/1988. While at CDM, Mr. Weinstock was the Project Geologist Remedial Investigation and Feasibility Study (RI/FS) for the Port Washington Landfill, a USEPA Superfund site. He was in charge of a drilling program that included 400 foot-deep monitoring wells and landfill gas wells. He assisted in the use of CDM's Dynflow/Dyntrack computer model to assess remedial alternatives. Fees: 1,000,000.

Camp, Dresser & Mckee (CDM): Project Geologist, Nassau County Department of Public Works, Nassau County Groundwater Model, Nassau County, NY, 6/1986-2/1987. Mr. Weinstock developed a simulation of the regional stratigraphy of Nassau County for the Nassau County Department of Public Works (NCDPW) regional groundwater model. This information, along with hydrologic data, is being used by Nassau County to model the effects of pumping in Dynflow/Dyntrack. Fees: $250,000.

Dames & Moore (currently AECOM): Staff Geologist, Chevron USA, Richmond, CA, RCRA Groundwater investigation, Richmond Refinery, Richmond, CA, 6/1980 – 6 /1981. While with Dames & Moore, Mr. Weinstock supervised the installation, sampling and testing of a RCRA monitoring well network at a Chevron refinery and chemical plant in Richmond, California. Duties included drilling supervision, geophysical logging, mapping, pump testing, and sampling. Fees: $250,000.

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Professional History

- Wood/Amec Foster Wheeler, Principal Scientist/Project Manager, Lake Success, NY, 5/2015 to present
- CA Rich Consultants, Inc., Vice President/Senior Hydrogeologist/Associate/Senior Project Manager, Plainview, NY, 4/1988 to 4/2015
- Camp Dresser & McKee (CDM), Senior Hydrogeologist, New York, NY, 3/1984 to 4/1988
- Leeds Hill & Jewett, Hydrogeologist, San Francisco, CA, 4/1982 to 10/1983
- Dames & Moore (currently AECOM), Hydrogeologist, San Francisco, CA, 6/1980 to 3/1982

Additional Qualifications

Publications / Presentations

- Rao, S.G. and Weinstock, E.A., "Numerical Modeling of Solute Transport in Groundwater; An Application to a Landfill Site in Florida." Paper presented at the 17th Am. Water Resources Assoc., National Conference, October 4-8, 1981, Atlanta, Georgia.
- Weinstock, Eric A., "A Sensible Alternative for the Installation of Monitoring Wells," Water Well Journal, December 1988.
- Weinstock, Eric A., "Phase II Environmental Assessments, Water Well Journal," April 1991.
- Weinstock, Eric A., "Cost-Effective Options for the Collection of Subsurface Soil, Soil Gas and Groundwater Samples," The National Environmental Journal, Nov/Dec 1992.
- Weinstock, Eric A., "Methods for the Collection of Subsurface Samples during Environmental Site Assessments", in Sampling Environmental Media, ASTM STP 1282, 1996.
- Weinstock, Eric A., "Dry Cleaners, Perchloroethene and Glacial Aquifers – Lessons Learned on Long Island, New York", The Professional Geologist, October, 2001.
- Weinstock, Eric A. and Sobstyl, Steven, "Comparison of Site Remediation Costs for Cleanups Performed Under Federal, State and County Oversight", NGWA Conference on Remediation: Site Closure and the Total Cost of Cleanup, November 13-14, 2003, New Orleans, LA, 2003.
- Weinstock, Eric A., "Dual-Treatment Approach to Perc Cleanup", Drycleaner News, 2004.
- Weinstock, Eric A. and Shapiro, Deborah, 2006, Redeveloping "E-Sites" in New York City, in The Real Estate Journal, January 3-9, 2006.
- Weinstock, Eric A., Osmundsen, Steven, and Shapiro, Deborah, 2008, "Subsurface Evaluation Through Sub-Slab Depressurization, The Investigation and Remediation of a Dry Cleaning Facility in Brooklyn, NY", NGWA Conference on Eastern Regional Ground Water Issues, June 23-24, 2008, Ronkonkoma, NY.
- Weinstock, Eric A. "Sub-Slab Depressurization – A Necessary Part of the Final Remedy", The Professional Geologist, January/February 2009.
- Sanghvi,S, M. Magnusson, E. Weinstock and H. Gershen, "From Brown to Green to Gold, An Innovative Mixed-Income, Mixed-Use, Residential Development grows in Brooklyn", AIANYS, October 14, 2010.
- Weinstock, Eric A., Shefali Sanghvi, and Heather Gershen, "Brooklyn's Finest: From Brown to Green to Gold", in Brownfield Renewal, October-November 2010.
- Guest Hydrogeology lecturer, Manhattan College 1988, Cooper Union 1988, Adelphi University 1991, CW Post University, 2011.
- Guest lecturer, NYC Mayor's Office of Environmental Remediation, Big Apple Brownfields Work Shop, 2008.

Awards

- Recipient of the "Big Apple Brownfield Award" by the New York City Brownfield Partnership, 5/2010, 5/2011, and 5/2015

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Julie Ricardi

Senior Environmental Scientist

Professional Summary

Ms. Ricardi has over 35 years of environmental chemistry experience with a focus on chemistry support for hazardous waste remedial investigations and remedial designs. As program chemist for the New York State Department of Environmental Conservation (NYSDEC) Superfund contract, she is responsible for coordination and oversight of analytical chemistry support tasks for the NYSDEC Superfund contract, including scheduling and budgeting laboratory analytical work, estimating and scheduling chemistry data validation to meet project due dates and budgets, evaluating analytical chemistry data quality and writing data quality assessment reports, writing and reviewing project quality assurance plans, performing senior peer reviews of data quality assessment reports, and training and mentoring data validation staff.

Ms. Ricardi has experience evaluating data quality associated with analyses for dioxins and furans, as well as per- and polyfluorinated alkyl substances (PFAS). Ms. Ricardi has previously served as the Quality Assurance Officer of an analytical chemistry laboratory, as a consultant for a national environmental laboratory developing a hands-on training program for gas chromatography/mass spectrometry (GC/MS), and as a laboratory analyst in the preparation and analysis of soil, water, and hazardous waste samples for organic parameters.

Qualifications

Education

- Bachelor of Science, Chemical Engineering, Louisiana State University, 1983

Wood Experience

Senior Scientist

Confidential Client, Environmental Assessment and Remediation, Wallingford, CT (01/2017 – 04/2018)

Responsible for providing data validation for completed analytical sample delivery groups in accordance with Region I EPA-New England validation guidelines and Connecticut Department of Environmental Protection Recommended Reasonable Confidence Protocols (RCP). Wood performed environmental services including site-wide investigation, soil remediation and operations and maintenance (O&M) of a groundwater recovery system at this site. This is a 240 acre active chemical manufacturing facility. Work also involved soil and groundwater sampling, groundwater modeling, strategic planning, and regulatory support. Services provided by Wood at this site for this and prior owners since 1988. Performed PCB investigations and remediation. Provided support to a CAFO (Consent Agreement) for landfill gas emissions.

Years of Experience

36 (20 with Wood)

Office of Employment

East US - Portland, ME

Languages

- English - Fluent

Areas of Expertise

- Environmental Scientist - Advanced
- Chemist - Advanced
- Quality Assurance Specialist - Advanced
- Technical Writer - Expert
- Chemical Engineer - Intermediate

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Environmental Scientist
Confidential Client, RCRA Facility Investigation and Corrective Measures, Power Technology Client, Windsor, CT (2007 – 2010)
Responsible for providing ongoing data validation services for completed analytical sample delivery groups in accordance with USEPA Region I data validation guidelines and Connecticut Department of Environmental Protection Recommended Reasonable Confidence Protocols (RCP). Wood provided environmental services assisting client in performing RCRA Voluntary Corrective Action (VCA) Program activities including decontamination and dismantlement (D&D), soil and groundwater remediation, waste management, and regulatory services for radiological and hazardous soil and groundwater remediation to support site closure at a former 600-acre research and nuclear facility site. Project tasks included historical review, community relations planning, field investigations, interim corrective measures, RCRA facility investigation, development of a comprehensive data management and GIS system, remediation design and reporting, human health and ecological risk evaluations, groundwater monitoring and modeling, and implementation of final remedies to attain RCRA stabilization. Under the U.S. Army Corps of Engineers' Formerly Utilized Sites Remedial Action Program (FUSRAP), completed D&D of radiologically-contaminated buildings and process waste lines and remediated soils where nuclear fuel production occurred. Streamlined management of VCA and FUSRAP remediation for soil and groundwater allowed for incremental release of portions of the property from the RCRA permit and NRC licenses and redevelopment.

Environmental Scientist
Confidential Client, Groundwater Monitoring, Postville, IA (10/2013 – 12/2015)
Responsible for providing ongoing data validation and chemistry support for a broad range of analytical parameters and sample matrices.

Environmental Scientist
Confidential Client, OM&M 2015, Detroit, MI (01/19/2015 - 01/19/2016)
Responsible for providing ongoing data validation and chemistry support for a broad range of analytical parameters and sample matrices. Proprietary analytical methods were used for some parameters, and chemistry support involved significant interaction with scientists in other offices to evaluate sample preparation and analysis protocols as well as sample matrices and environmental conditions, and their potential impacts on resulting analytical data.

Environmental Scientist
Confidential Client, General Consulting 2013, Claymont, DE (08/28/2013 - 10/14/2015)
Responsible for providing ongoing data validation and chemistry support for a broad range of analytical parameters and sample matrices. Wood provided general consulting services in support of RCRA Corrective Actions activities at this former inorganic chemical and pesticide manufacturing facility. Metals, volatile organic compounds (VOCs), and pesticides were the main contaminants of concern that were found in soils, sediments, and groundwater at the site.

Environmental Scientist
Confidential Client, Groundwater Remediation, Eatontown, NJ (10/23/2013 - 12/31/2015)
Responsible for providing ongoing data validation and chemistry support for a broad range of analytical parameters in groundwater.

Senior Scientist
Confidential Client, RI/FS OM&M, Eatontown, NJ (12/14/2015 - 12/13/2016)
Responsible for providing ongoing data validation and chemistry support for a broad range of analytical parameters and sample matrices.

Other Experience

- **Woodard and Curran, Inc.: Scientist, Various environmental projects, Portland, ME, United States. 11/1997 – 08/1998.** Responsibilities included analytical chemistry support for hazardous waste site assessment and remediation programs. Responsible for data validation and evaluation of chemistry data collected on soil and water samples. Data reviews included verification of completeness of laboratory reports, review of laboratory raw data to determine accuracy of reporting and compliance with analytical method

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requirements, and adherence to program defined quality control objectives. Data validation was performed in accordance with the USEPA Functional Guidelines for Organic and Inorganic Data Review.

- **Katahdin Analytical Services, Inc.: Quality Assurance Officer, Analytical Laboratory Services, Westbrook, ME, United States. 02/1989 – 03/1997.** Responsible for organization and direction of the laboratory Quality Assurance Program. The laboratory offered analytical services using U.S. Environmental Protection Agency procedures for samples collected under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA/Superfund), the Resource Conservation and Recovery Act (RCRA), the National Pollutant Discharge Elimination System (NPDES), and state hazardous waste remediation programs. Clients included the USEPA and contractors for the U.S. Navy, Air Force, and Army, as well as private industry. Primary responsibilities included development and ongoing evaluation of the laboratory quality assurance/quality control (QA/QC) procedures, review and reporting of quality control data, trouble shooting and resolving laboratory process problems, performing internal audits to assess conformance to the published laboratory QA Program, and implementation of corrective actions. Additional responsibilities included development of analytical methods, writing, review, and implementation of standard operating procedures (SOPs), overseeing federal and state performance evaluation programs, and reviewing and revising as necessary the laboratory Quality Assurance Manual.

  A major responsibility included maintenance of certification and accreditation for numerous federal and state laboratory approval programs. Responsible for maintaining federal approval to perform analytical services in support of government installation site assessment and cleanup activities for the U.S. Air Force Center for Engineering and the Environment (AFCEE), U.S. Army Corps of Engineers (USACE), U.S. Department of Energy Hazardous Waste Remedial Actions Program, and Naval Facilities Engineering Service Center.

  This position required interaction with clients and state and federal regulatory agencies, including the preparation of technical reports, correspondence letters, review of project specific QA Plans, and attending meetings related to project planning and execution.

- **Enseco, Inc.: Training Consultant, Arvada, CO, United States. 08/1988 – 11/1988.** Contracted for two months to develop and write a training manual for gas chromatography/mass spectrometry (GC/MS) analyses and to write standard operating procedures for the analysis of volatile and semi-volatile organic compounds. A hands on training program was developed which utilized computer interaction to simulate actual sample analysis, data reduction, interpretation, and quality control evaluations for a variety of GC/MS instrumentation and procedures.

- **Enseco, Inc.: Environmental Chemist, Arvada, CO, United States. 02/1985 – 08/1988.** Responsibilities included preparation and analysis of environmental samples utilizing a variety of USEPA methodologies to recover and report hazardous chemicals. Duties included performing daily operation and maintenance of Finnigan GC/MS instrumentation and data management systems to perform chemical analysis for volatile and semi-volatile organic compounds using USEPA methodologies. As a lead chemist responsibilities included training support for less experienced analysts, senior review of analytical data, and scheduling of analytical work.

- **E.I. DuPont de Nemours: Technical Representative, Denver, CO, United States. 09/1983 – 11/1984.** Technical Representative responsible for customer relations, technical support, and sales and marketing of medical x-ray film, chemicals, and equipment. Daily duties included process and equipment trouble shooting, establishing and monitoring quality control programs, and project and budget management.

Professional History

- Wood, Senior Environmental Scientist, Portland, ME, 08/1999 to Present
- Woodard and Curran, Inc., Scientist, Portland, ME, 11/1997 to 08/1998
- Katahdin Analytical Services, Inc., Quality Assurance Officer, Westbrook, ME, 02/1989 to 03/1997
- Enseco, Inc., Training Consultant, Arvada, CO, 08/1988 to 11/1988
- Enseco, Inc., Environmental Chemist, Arvada, CO, 02/1985 to 08/1988

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- E.I. DuPont de Nemours, Technical Representative, Denver, CO, 09/1983 to 11/1984

Additional Qualifications

Publications / Presentations

- With C. S. Ricardi, "Training Manual for Gas Chromatography/Mass Spectrometry (GC/MS) Analyses of Environmental Samples", Enseco, Inc., November 1988.

Software

- Proficient in Microsoft Office Suite
- Nitro® Pro PDF Software

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APPENDIX H

SITE MANAGEMENT FORMS

Remedial System Monitoring Form

Remedial System Component Check List	Monitoring Parameter	Operating Range	Monitoring Schedule
SSD System Fan	Vacuum in riser pipe at Startup Vacuum during annual inspection	1.0 to 1.1 inches of water _____ in. of water	Annually, in person, 24 hrs. a day/7 days a week, remotely
Vacuum Monitoring Points	VMP-1 VMP-2 VMP-3 VMP-4	_____ in. of water _____ in. of water _____ in. of water _____ in. of water	Annually, in person
Duct Work	Condition at Start up Condition during inspection (circle one)	Excellent Excellent, Good, Needs Repair	Annually, in person
Concrete Slab Cover System	Condition at Start up Condition during inspection (circle one)	Excellent Excellent, Good, Needs Repair	Annually, in person

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, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	**Total to Date (miles)**
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service		
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		
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:
Other:

CERTIFICATION BY CONTRACTOR

I, _____ (**Name**) do hereby certify that I am

_____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including that last day of the period covered by this application.

_____

Date **Contractor**

APPENDIX I

FIELD SAMPLING PLAN

FIELD SAMPLING PROTOCOLS TO AVOID CROSS-CONTAMINATION OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

1.0 PURPOSE

The purpose of this SOP is to describe the procedures/considerations when collecting soil, sediment, surface water, and groundwater samples at potential per- and polyfluoroalkyl substances (PFAS) release areas. This SOP also describes a tiered approach that should be used to assist with field decisions. Sampling specific SOPs should also be reviewed prior to conducting field sampling activities at PFAS areas.

2.0 SCOPE

This procedure applies to all AMEC Environment & Engineering, P.C. (AMEC) personnel and subcontractors who collect or otherwise handle samples of soil, sediment, surface water, and groundwater for analysis of PFAS. This SOP should be reviewed by all on-site personnel prior to implementation of field activities.

3.0 GENERAL

Given the low detection limits associated with laboratory PFAS analysis, and the many potential sources of trace levels of PFAS, field personnel are advised to act on the side of caution by strictly following the subject protocols, frequently replacing nitrile gloves, and rinsing field equipment to help mitigate the potential for false detections of PFAS. Specific items related to field sampling are discussed below.

4.0 PROCEDURES

This section contains both the responsibilities and procedures involved with field sampling for analysis of PFAS. Proper procedures are necessary to insure the quality and integrity of the samples. The details within this SOP should be used in conjunction with site-specific work plans. The site-specific work plans will generally provide the following information:

- Sample collection objectives;
- Locations to be sampled;
- Number and volume of samples to be collected at each location;
- Types of chemical analyses to be conducted for the samples;
- Specific quality control (QC) procedures, including type (MS/MSD, field duplicates, and blanks) and sampling required;

- Any additional sampling requirements or procedures beyond those covered in this SOP, as necessary; and,
- At a minimum, the procedures outlined in this SOP for field sampling will be followed.

5.1 RESPONSIBILITIES

Project Manager

The Project Manager shall provide the Quality Assurance Program Plan (QAPP)(MACTEC, 2011), and site-specific work plan to the Field Lead and Field Personnel, which shall include the sampling requirements for each investigation area. The Project Manager will detail deviations to the procedure provided in this SOP in the site-specific report.

Field Lead

The Field Lead shall ensure that samples are collected using procedures that are in accordance with the QAPP (MACTEC, 2011), site-specific work plans, and applicable SOPs. The Field Lead shall also be required to make rational and justifiable decisions when deviations from these procedures are necessary because of field conditions or unforeseen issues and report the deviations to the Project Manager.

Field Personnel

Field personnel assigned to sampling activities are responsible for completing their tasks according to specifications outlined in the QAPP (MACTEC, 2011), site-specific work plans, applicable SOPs, and other appropriate procedures. Field personnel are responsible for reporting deviations from procedures to the Project Manager.

4.2 FIELD PROCEDURES/CONSIDERATIONS

The following are procedures/considerations to be made during field activities at potential PFAS release or sampling areas. A summary of the prohibited and acceptable items for PFAS investigation areas is included in Table 1. A checklist, provided as Attachment 1, shall be used by the Field Personnel daily prior to the commencement of fieldwork to ensure the field team is in compliance with this protocol.

Field Equipment

- **Do not use Teflon®-containing materials** (e.g., Teflon® tubing, bailers, tape, plumbing paste, or other Teflon® materials) since Teflon® contains fluorinated compounds.
- Sample containers and collected samples will be stored and shipped using dedicated coolers provided by the laboratory.

- Stainless steel, high-density polyethylene (HDPE), polypropylene, and silicone materials are acceptable for sampling. Samples should not be collected with tubing or stored in containers made of low-density polyethylene (LDPE) materials (fluorinated compounds are known to adsorb to LDPE). All sampling equipment components and sample containers should not come in contact with aluminum foil, LDPE, glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.
- AMEC will use peristaltic pumps for groundwater sample collection at depths shallower than 25 feet. AMEC will use ProActive SS Pumps with polyvinyl chloride (PVC) leads or Geotech SS Geosub pumps for groundwater sample collection at depths greater than 25 feet. These pumps are constructed with stainless steel and will minimize introductions of PFAS. However, for groundwater sample depths greater than 150 feet, a Grundfos RediFlo pump (or similar) may be used due to the pumping limitations of stainless steel pumps. PFAS-free bladder pumps may also be used for sampling. Whale® pumps can be used for well development, if needed, but should not be used for sampling, or left in the wells.
- When using liners to collect soil samples during direct-push technology or during conventional drilling and sampling methodologies, acetate liners are to be used.
- **Rite in the Rain products are the only waterproof field books that may be used**. To avoid plastic coating or glue materials, do not use other brands of waterproof field books. If Rite in the Rain products are not available, field reports will be documented on loose paper secured on masonite or aluminum clipboards (i.e. plastic clipboards, binders, or spiral hard cover notebooks are not acceptable) using a pen or pencil.
- **Post-It Notes are not allowed** on project sites.
- Use ballpoint pens. Pens will be used when documenting field activities in the field log and on field forms as well as labeling sample containers and preparing the Chain of Custody.
- **Do not use chemical (blue) ice packs** during the sampling program. This includes the use of ice packs for the storage of food and/or samples.

Field Clothing and Personal Protective Equipment

- **Do not wear water resistant, waterproof, or stain-treated clothing** during the field program. Field clothing made of synthetic and natural fibers (preferably cotton) are acceptable. Field clothing should be laundered without the use of fabric softener. Preferably, field gear should be cotton construction and well laundered (i.e., washed a minimum of three times prior to use after purchase). New clothing may contain PFAS related treatments. **Do not use new clothing** while sampling or sample handling.

- **Do not wear clothing or boots containing Gore-Tex™** during the sampling program as it contains a PFAS membrane.
- Safety footwear will consist of steel-toed boots made with polyurethane and PVC, untreated leather boots, or well-worn leather boots. Newer leather boots may be worn if they are covered with polypropylene, polyethane, or PVC boot covers.
- Disposable nitrile gloves must be worn at all times. Further, a new pair of nitrile gloves shall be donned prior to the following activities at each sample location:
  - Decontamination of re-usable sampling equipment;
  - Prior to contact with sample bottles or water containers;
  - Insertion of anything into the well (e.g., HDPE tubing, HydraSleeve bailer, etc.);
  - Insertion of silicone tubing into the peristaltic pump;
  - Completion of monitor well purging, prior to sample collection;
  - Handling of any quality assurance/quality control samples including field blanks and equipment blanks; and,
  - After the handling of any non-dedicated sampling equipment, contact with non-decontaminated surfaces, or when judged necessary by field personnel.

Sample Containers

- Different laboratories may supply sample collection containers of varying sizes dependent on the type of media to be sampled (e.g., soil, groundwater, etc.). All samples should be collected in polypropylene or HDPE bottles. The screw cap will be made of polypropylene or HDPE and may be lined or unlined. However, if lined, the liner may not be made of Teflon® or contain PFAS.
- Container labels will be completed using pen after the caps have been placed back on each bottle.
- Glass sample containers are not to be used due to potential loss of analyte through adsorption.

Wet Weather

- Field sampling occurring during wet weather (e.g., rainfall and snowfall) should be conducted while wearing appropriate clothing that will not pose a risk for cross-contamination. Teams will avoid synthetic gear that has been treated with water-repellant finishes containing PFAS. Use rain gear made from polyurethane, vinyl, and wax or rubber-coated materials.
- Teams should consider the use of a gazebo tent, which can be erected overtop of the sample location and provide shelter from the rain. It should be noted that the canopy

material is likely a treated surface and should be handled as such; therefore, gloves should be worn when setting up and moving the tent, changed immediately afterwards and further contact with the tent should be avoided until all sampling activities have been finished and the team is ready to move on to the next sample location.

Equipment Decontamination

- Field sampling equipment, including oil/water interface meters and water level indicators, and other downhole equipment used at each sample location, will require cleaning between uses. Alconox® and Liquinox® soap is acceptable for use since the Safety Data Sheets do not list fluoro-surfactants as an ingredient (do not use Liquinox® soap if also sampling for 1,4-dioxane). However, Decon 90 will not be used during decontamination activities. Water used for the final rinse during decontamination of sampling equipment will be laboratory certified "PFAS-free" water.
- For larger equipment (e.g., drill rig and large downhole drilling and sampling equipment), decontamination will be conducted with potable water using a high-pressure washer and then rinsed using potable water.

Groundwater Sampling

- At sites with dedicated sampling equipment installed in the wells that contains Teflon (e.g., tubing, pumps), this equipment should be removed from the wells and replaced with HDPE tubing and non-Teflon containing equipment, if possible. These wells will be re-developed by removing three well volumes of water, if possible, and letting the wells recover for at least 48 hours prior to sampling.
- At sites with dedicated sampling equipment installed in the wells that contain LDPE tubing, this tubing should be removed from the wells and replaced with HDPE tubing. These wells can be sampled immediately following replacement of tubing; however, attempts should be made to remove one well volume prior to sampling. For larger wells, with higher volumes of water, it may be preferable to redevelop the wells and remove one well volume with a higher volume pump. In such cases the wells should be allowed to recover for at least 48 hours prior to sampling.

Personnel Hygiene

- Field personnel will not use cosmetics, moisturizers, hand cream, or other related products as part of their personal cleaning/showering routine on the morning of a sampling event, unless the products are applied to a part of the body that will be coved

by clothing. These products may contain surfactants and represent a potential source of PFAS.

- All clothing worn by sampling personnel must have been laundered multiple times.
- Many manufactured sunblock and insect repellants contain PFAS and should not be brought or used on-site. Sunblock and insect repellants that are used on-site should consist of 100% natural ingredients, unless previously vetted by the project chemist. A list of acceptable sunscreens and insect repellents is provided in Table 1.
- For washroom breaks, field personnel will leave the exclusion zone and then remove gloves and overalls. Field personnel should wash as normal with extra time for rinsing with water after soap use. When finished washing, the use of a mechanical dryer is preferred and the use of paper towel for drying is to be avoided (if possible).

Food Considerations

- No food or drink shall be brought on-site, with the exception of bottled water and hydration drinks (e.g., Gatorade® and Powerade®), which will only be allowed to be brought and consumed within the staging area.

Visitors

- Visitors to the investigation area are asked to remain outside of the exclusion zone during sampling activities.

5.0 TIERED APPROACH TO ASSIST WITH FIELD DECISIONS

In evaluating whether products contain PFAS and are suitable for use in the field, the tiered approach presented in Table 2 will be used to assist with field decisions. Any member of the field team should contact the Project Manager with questions.

Table 1. Summary of Prohibited and Acceptable Items for PFAS Sampling

Prohibited Items	Acceptable Items
Field Equipment	
Teflon® containing materials	High-density polyethylene (HDPE) materials
Storage of samples in containers made of LDPE materials	Acetate liners, HDPE bottles
Teflon® tubing	HDPE or silicone tubing
Waterproof field books not manufactured by Rite in the Rain	Rite in the Rain products or Loose paper (non-waterproof)
Plastic clipboards, binders, or spiral hard cover notebooks	Aluminum field clipboards or with Masonite
Sharpies®, if possible	Ballpoint pens
Post-It Notes	
Chemical (blue) ice packs	Regular ice

Excel Purity Paste TFW Multipurpose Thread Sealant Vibra-Tite Thread Sealant	Gasoils NT Non-PTFE Thread Sealant Bentonite
Equipment with Viton Components (need to be evaluated on a case by case basis, Viton contains PTFE, but may be acceptable if used in gaskets or O-rings that are sealed away and will not come into contact with sample or sampling equipment.)	
Field Clothing and PPE	
New clothing or water resistant, waterproof, or stain-treated clothing, clothing containing Gore-Tex™	Well-laundered clothing, defined as clothing that has been washed 6 or more times after purchase, made of synthetic or natural fibers (preferable cotton)
Clothing laundered using fabric softener	No fabric softener
Boots containing Gore-Tex™	Boots made with polyurethane and PVC, well-worn or untreated leather boots, leather boots with boot covers
	Reflective safety vests, Tyvek®, Cotton Clothing, synthetic under clothing, body braces
No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling, unless the products are applied to body parts that will be covered by clothing.	**Sunscreens** - Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss my face, Baby sunscreens that are “free” or “natural” **Insect Repellents** - Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellant, Herbal Armor, California Baby Natural Bug Spray, BabyGanics, Deep Woods Off **Sunscreen and insect repellant -** Avon Skin So Soft Bug Guard Plus – SPF 30 Lotion
Sample Containers	
LDPE or glass containers	HDPE or polypropylene
Teflon®-lined caps	Lined or unlined HDPE or polypropylene caps
Rain Events	
Waterproof or resistant rain gear	Polyurethane, vinyl, wax or rubber-coated rain gear. Gazebo tent that is only touched or moved prior to and following sampling activities
Equipment Decontamination	
Decon 90	Alconox® and/or Liquinox® (Do not use Liquinox® if also sampling for 1,4-dioxane).
Water from an on-site well	Potable water from municipal drinking water supply
Food Considerations	
All food and drink, with exceptions noted on the right	Bottled water and hydration drinks (i.e. Gatorade® and Powerade®) to be brought and consumed only in the staging area

Table 2. Tiered Approach

Tier and Description	Action
Tier 1: Products that *will come into direct contact*	These products will undergo the greatest scrutiny

with field samples include, but are not limited to, drilling grease, sampling equipment, sample containers, and well construction materials	and requires chemist's input to help evaluate the materials as a possible source of contamination[A] and as possible sampling or storage materials or both
Tier 2: Products that *will not come into direct contact* with samples, but could be *reasonably expected to contain PFAS*, such as waterproof or nonstick products	Project team/affected person can review the Safety Data Sheet (SDS)[B] and if it shows PFAS, product should not be used. If product SDS does not indicate PFAS, confirm with chemist before use
Tier 3: Products that *will not come into direct contact* with samples and are *not expected to contain PFAS*, such as ballpoint pens, zipper bags, and body braces	Project team/affected person can review SDS and if no PFAS, then appropriate to use

[A] Tier 1 products will undergo the closest scrutiny. It may be necessary to have Tier 1 products analyzed for PFAS to confirm that a specific batch or lot number does not contain PFAS. Alternate products will need to be evaluated/used if PFAS are identified in the product.

[B] SDS Check: To evaluate product SDS and/or manufacturing specs, check if the product contains anything with "fluoro" in the name or the acronyms TPE, FEP, ETFE, and/or PFA. If fluorinated compounds are not listed in the manufacturing specs and/or on the SDSs, product can be used.

APPENDIX J

RESPONSIBILITIES OF OWNER AND REMEDIAL PARTY

APPENDIX J
RESPONSIBILITIES of
OWNER and REMEDIAL PARTY

Responsibilities:

The responsibilities for implementing the Site Management Plan ("SMP") for the Former Hygrade Polishing and Plating Co. site (the "site"), number C241148, are divided between the site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:

Stalingrad Ventures, LLC
100 Field Street
West Babylon, NY 11704

(the "owner").

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf. The RP is:

Stalingrad Ventures, LLC
100 Field Street
West Babylon, NY 11704

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the site.

Site Owner's Responsibilities:

1. The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.

2. In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in a(n) Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's PRR certification to the NYSDEC.

3. In the event the site is delisted, the owner remains bound by the -Environmental Easement] and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement, is still in place and has been complied with.

4. The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5. The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3 - Notifications.

6. In the event some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3 - Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.

7. The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site property. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 2.4 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8. The owner will maintain electric power on behalf of the RP. The RP remains ultimately responsible for maintaining the engineering controls.

9. Until such time as the NYSDEC deems the vapor mitigation system unnecessary, the owner shall operate the system, pay for the utilities for the system's operation, and report any maintenance issues to the RP and the NYSDEC.

10. Until such time as the NYSDEC deems the drinking water treatment system unnecessary, the owner shall operate the drinking water treatment system, pay for the utilities and report any maintenance issues to the RP and the NYSDEC.

11. In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1. The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.

2. The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3. Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.

4. If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5. The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html .

6. The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3 - Notifications of the SMP.

7. The RP is responsible for the proper maintenance of any installed vapor intrusion mitigation systems associated with the site, as required in Section 5.0 or Appendix F (Operation, Monitoring and Maintenance Manual) of the SMP.

8. The RP is responsible for the proper monitoring and maintenance of any installed drinking water treatment system associated with the site, as required in Section 5.0 or Appendix F (Operation, Monitoring and Maintenance Manual).

9. Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

10. Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

APPENDIX K

FIELD ACTIVITIES SUMMARY REPORT

Field Activities Summary Report
Former Hygrade Polishing and Plating Site
Long Island City, NY

Prepared For:

New York State Department of Environmental
Conservation, Region 2
47-40 21st Street
Long Island City, NY 11101

Prepared By:

Eric A. Weinstock, PG, PC
314 Hudson View Terrace
Hyde Park, NY 12538
(516) 413-6643

September 2023

Field Activities Summary Report
Former Hygrade Polishing and Plating Site
Long Island City, NY
Site Number C241148

The following Field Activities Summary Report (the Report) was prepared to document field activities performed at Former Hygrade Polishing and Plating Site (the Site) in response to comments provided by the New York State Department of Environmental Conservation (NYSDEC) in their July 26, 2023 response to our Periodic Review Report (PRR) for the period: April 22, 2022 to April 23, 2023.

In response to those comments, the following activities were performed, and a summary is included in this Report:

1) The Vacuum Monitoring Points (VMPs) in the basement that were used during the pilot test and start-up test were located, opened and inspected.

2) The covers of the VMPs were labeled with paint so they can be identified during future monitoring events.

3) A set of vacuum readings were collected from the four existing VMPs and from the riser vent of the Sub-Slab Depressurization System (SSDS).

4) The four groundwater monitoring wells and two injection wells located in the basement were decommissioned.

5) The four groundwater monitoring wells located on the sidewalks were also decommissioned.

Vacuum Monitoring Points

The basement is currently used by a tenant, Alexandra International, for the storage, distribution and sale of religious items. On August 28, 2023, Eric Weinstock and Firat Ataman arrived at the Site and located the four VMPs used during the pilot test and start-up test.

Each VMP was inspected. A clean nylon bristle brush was lowered up and down each point to confirm it was clear and to loosen material that may have formed within the slotted section of the point since it was last measured. A VMP identification label was then painted onto the cover.

Vacuum readings were then measured from the four VMPs using a Dwyer Series 475 Mark III Digital Manometer. The readings ranged from 0.015 to 0.084 inches of water.

The vacuum in the SSDS riser vent located in the basement was also measured using a Dwyer analog magnehelic differential pressure gauge. A measurement of 1.3 inches of water was recorded.

Figure 1 includes the locations and vacuum readings of the four VMPs and the riser vent located in the basement. A photo log of the readings is also included.

Basement Well Decommissioning

On September 6, 2023, the four shallow monitoring wells (MW-1, 2, 3, and 4) two shallow injection points (IP-1 and 2) located in the basement were decommissioned. The screens and casing were first filled with Cetco™ bentonite pellets and then filled with tap water to allow the bentonite to swell and seal the well. Concrete was then placed over the top of the well heads to complete the decommissioning process. Figure 2 includes the locations of the former monitoring wells and injection points.

Sidewalk Well Decommissioning

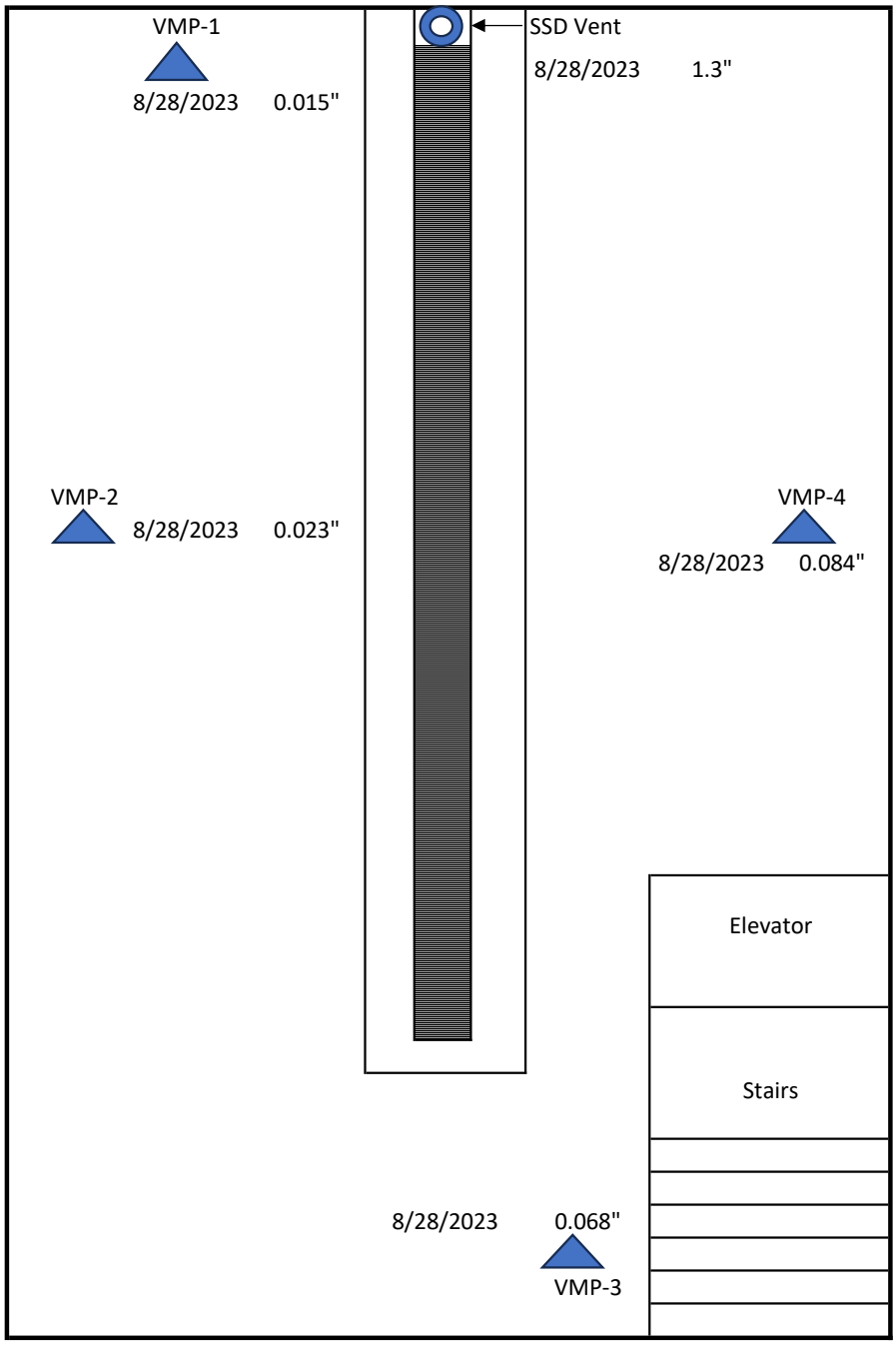
On September 26, 2023, the four monitoring wells located in the sidewalk (MW-E, 5, 6S, 6D) were decommissioned using a mixture of type I Portland cement, bentonite and water placed in the wells using a tremie pipe. Concrete was then placed over the top of the well heads to complete the decommissioning process.

Conclusions and Recommendations

The Site work requested in NYSDEC's July 26, 2023 letter has been completed. The VMPs in the basement that were used during the pilot test and start-up test were located, inspected, measured and labeled. The basement and sidewalk groundwater monitoring wells were decommissioned.

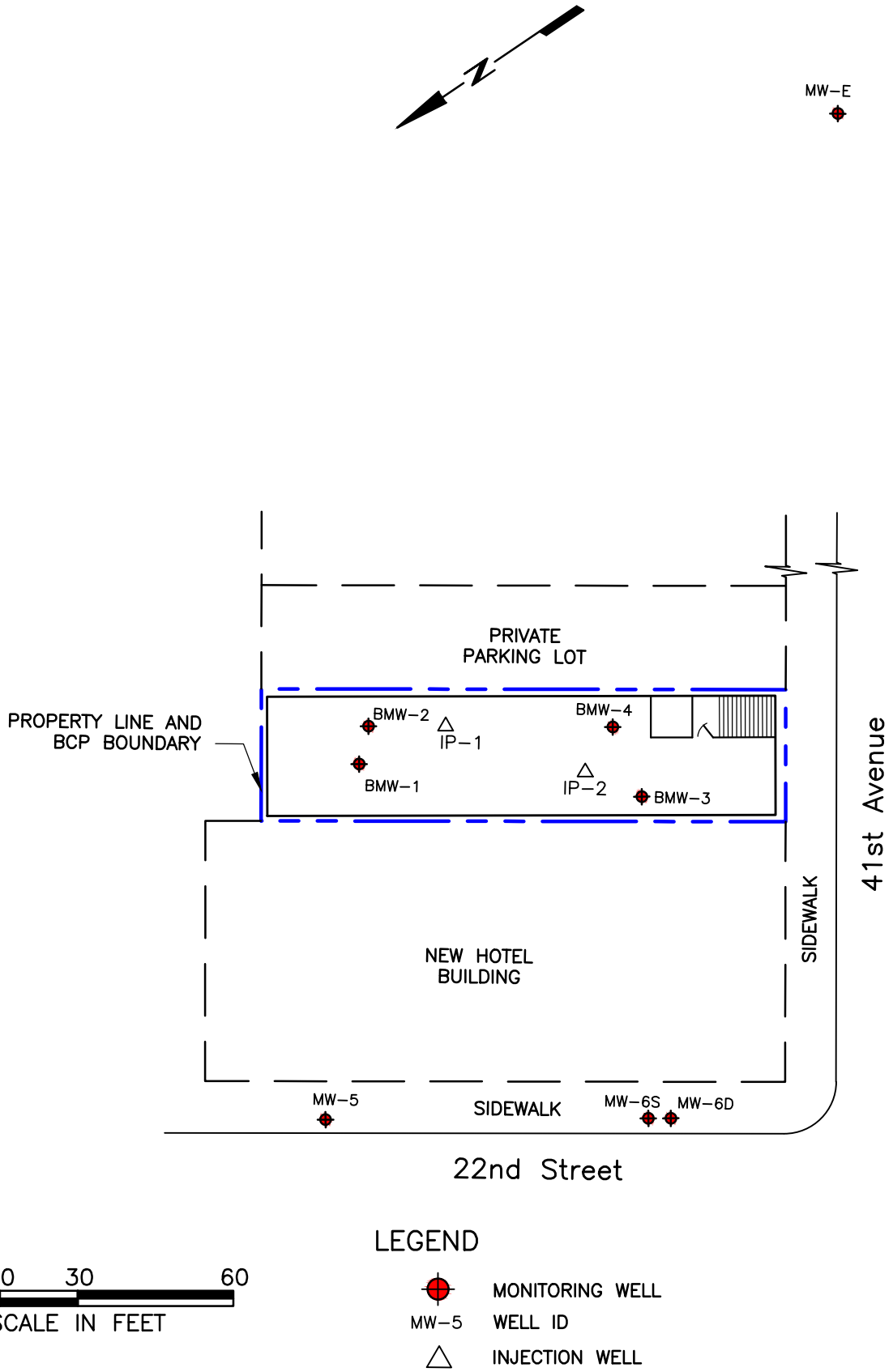
Future monitoring events should include: vacuum measurements in the SSDS riser pipe as well as at the four VMPs; an inspection of the SSDS duct work; and an inspection of the basement floors. The attached form in Attachment A should be completed and the information included in future Periodic Review Reports.

FIGURES



Not to scale

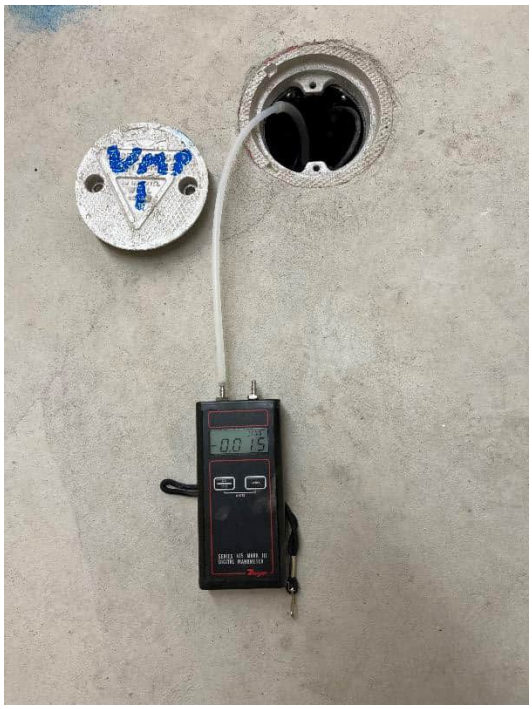
Former Hygrade Plating 22-07 41st Avenue Long Island City, NY	Eric A. Weinstock, PG, PC 314 Hudson View Terrace Hyde Park, NY 12538	Sub-Slab Depressurization Vent And Vacuum Monitoring Point Readings In Inches Of Water Figure 1



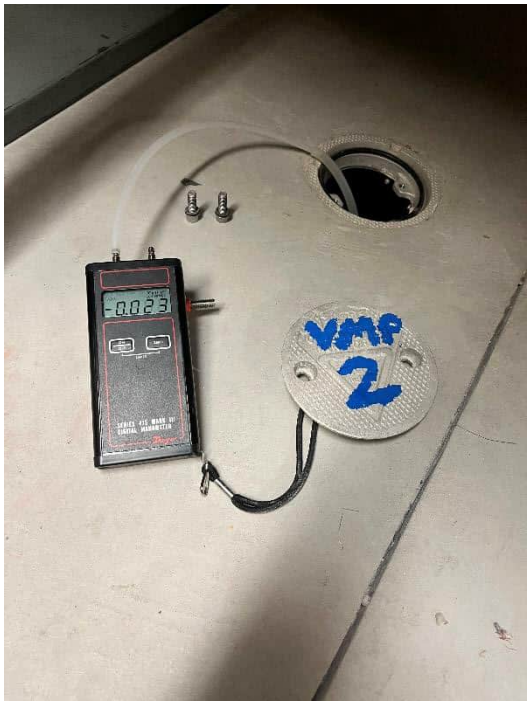
Former Hygrade Plating 20-07 41st Ave Long Island City, NY	Eric A. Weinstock, PG, PC 314 Hudson View Terrace Hyde Park, NY 12538	Former Groundwater Monitoring Well and Injection Point Location Map Figure 2

Z:\Projects\Clifton Park Misc Proj\Former Hygrade Planting\Figures\Figure-8 GW MW and Injection Pts Locations Map.dwg Mon, 26 Oct 2020 - 1:57pm branko.tomic

PHOTO LOG



Vacuum Monitoring Point 1



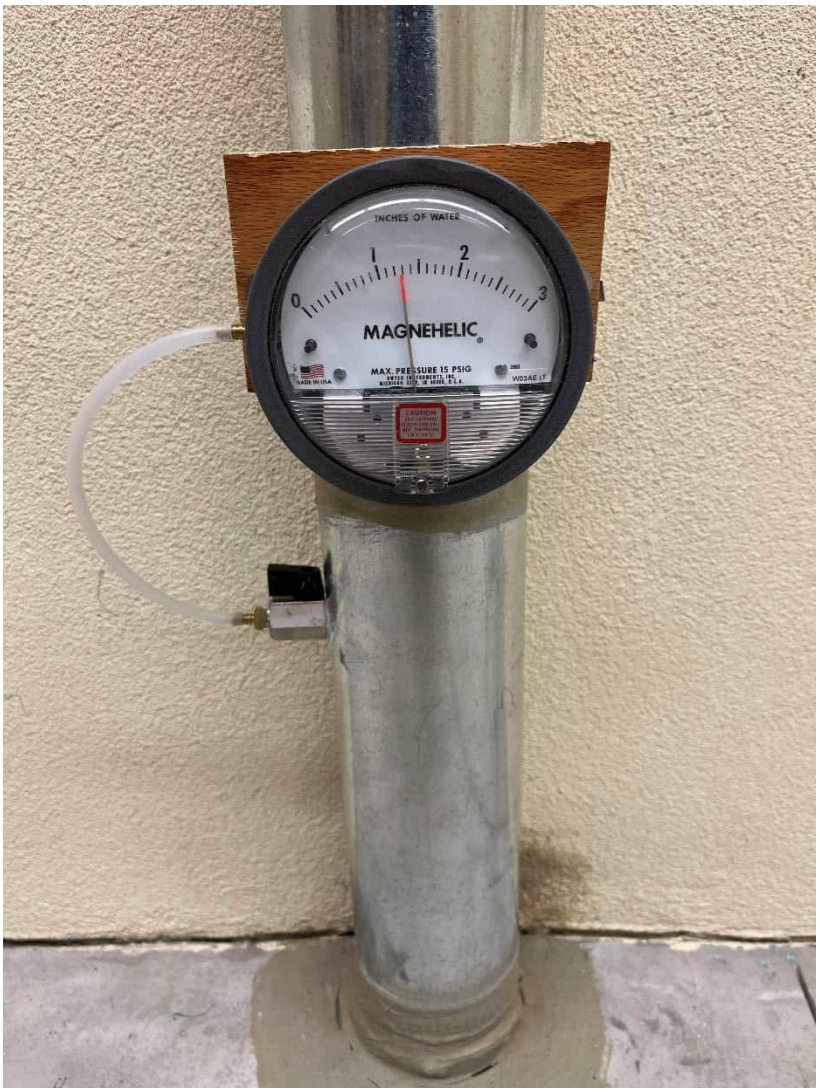
Vacuum Monitoring Point 2



Vacuum Monitoring Point 3



Vacuum Monitoring Point 4



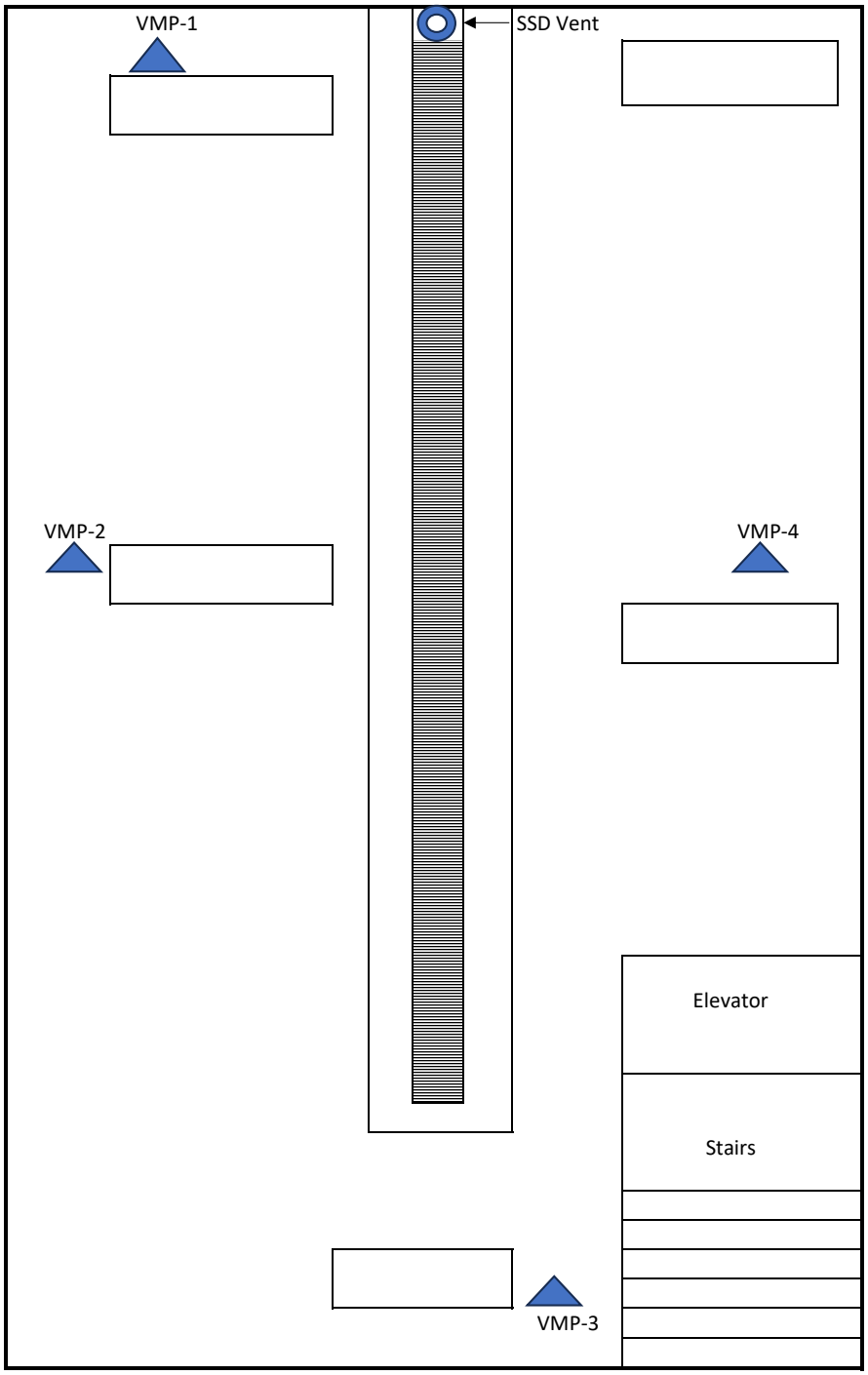
Sub-Slab Depressurization Riser Vent In Basement

ATTACHMENT A – FIELD FORMS

Field Measurements Or Observations To Be Collected During Indoor Air Sampling Events

Remedial System Component	Monitoring Parameter	Measured Or Observed Value	Monitoring Schedule
SSD System Fan	Vacuum during annual inspection	_____ In. of water	Annuallly
Vacuum Monitoring Points	VMP-1 VMP-2 VMP-3 VMP-4	_____ In. of water _____ In. of water _____ In. of water _____ In. of water	Annuallly
Duct Work	Condition during visit (circle one)	Excellent, Good, Needs Repair	Annuallly
Basement Floors	Condition during visit (circle one)	Excellent, Good, Needs Repair	Annuallly

Inventory Of Products Stored In Basement



Former Hygrade Plating 22-07 41st Avenue Long Island City, NY	Date: Readings in Inches of Water	Sub-Slab Depressurization Vent And Vacuum Monitoring Point Readings Field Form

APPENDIX L

SITE MANAGEMENT PRR RESPONSE LETTER

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101
P: (718) 482-4995
www.dec.ny.gov

July 26, 2023

Robert Birnbaum
Stalingrad Ventures LLC
320 Northern Blvd
Great Neck, NY 11021

Re: Site Management (SM) Periodic Review Report (PRR) Response Letter
22-07 41st Avenue, Long Island City
Queens County, Site No.: C241148

Dear Robert Birnbaum:

The New York State Department of Environmental Conservation (NYSDEC) has reviewed your Periodic Review Report (PRR) and IC/EC Certification for the following period: April 22, 2022 to April 22, 2023. The PRR also requests to discontinue future groundwater monitoring at the site.

The NYSDEC hereby accepts the PRR, associated Certification and based on the NYSDEC's review of the PRR, as well as the data obtained during previous groundwater monitoring events, the Department approves the request to discontinue groundwater monitoring.

In accordance with the approved Site Management Plan (SMP) dated October 2020, existing on-site groundwater monitoring wells must be properly decommissioned prior to remedial construction in accordance with NYSDEC Commissioner's Policy 43.

In addition, please include labels for all vacuum monitoring points and collect vacuum monitoring readings for the next PRR.

Please update the SMP to reflect these changes within 30 days of this letter.

The frequency of Periodic Reviews for this site is 1 year, your next PRR is due on May 22, 2024. You will receive a reminder letter and updated certification form 45-days prior to the due date. Regardless of receipt or not, of the reminder notice, the next PRR including the signed certification form, is still due on the date specified above.

If you have any questions, or need additional forms, please contact me at 718-482-7541 or e-mail: wendi.zheng@dec.ny.gov.

Sincerely,

NEW YORK STATE | Department of Environmental Conservation

Wendi Zheng

Wendi Zheng
Project Manager

ec: Jane O'Connell, Andre Obligado – NYSDEC
Scarlett McLaughlin, James Sullivan – NYSDOH
Eric Weinstock – Eric A. Weinstock, PG, PC

APPENDIX M

NYSDOH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY FORM

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.

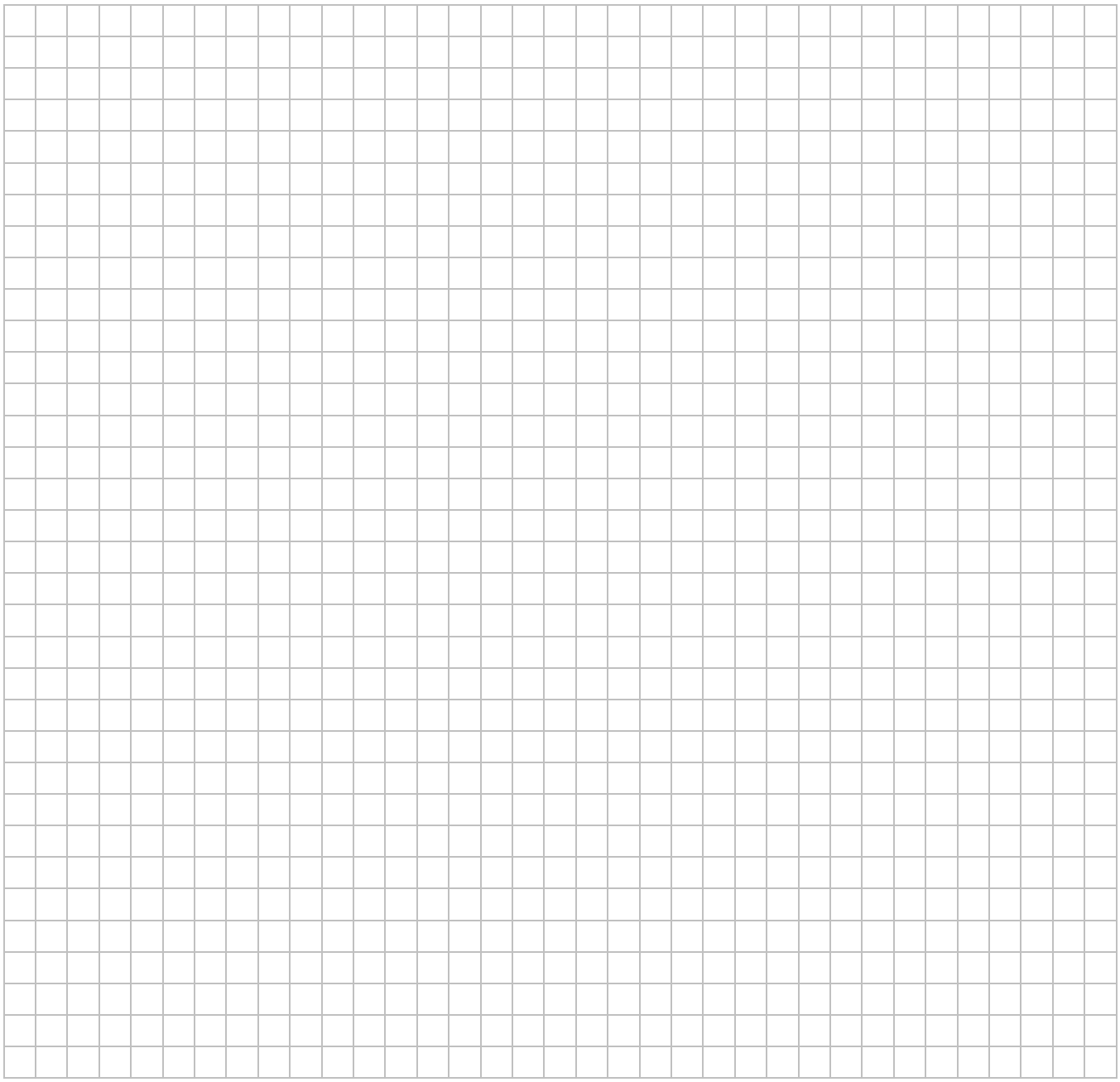
Basement:

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.