

CORRECTIVE MEASURES WORK PLAN
DOLLINGER CORPORATION SITE
SITE ID NO. 828078
1 TOWNLINE CIRCLE
ROCHESTER, NEW YORK, 14623

by
H & A of New York Engineering and Geology
Rochester, New York

for
New York State Department of Environmental Conservation
Avon, New York

File No. 0129388-006
June 2025





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24 June 2025
File No. 0129388-006

New York State Department of Environmental Conservation
6274 East-Avon-Lima Road
Avon, New York 14414

Attention: Mike Ormanoski
Project Manager

Subject: Corrective Measures Work Plan
Former Dollinger Corporation Site
Site ID No. 828078
1 Townline Circle
Rochester, New York, 14623

Dear Mr. Ormanoski:

On behalf of Bunzl Distribution USA, LLC (Bunzl), H & A of New York Engineering and Geology (Haley & Aldrich of New York) has prepared this Corrective Measures Work Plan (CMWP) for the installation of permanent groundwater monitoring wells at the former Dollinger Corporation Site (Dollinger) in Brighton, New York (SSF Site # C828078) as requested by the New York State Department of Conservation (NYSDEC) in our teleconference on 19 December 2024. Haley & Aldrich of New York visited the site in January 2025 and confirmed that there are no wells remaining from historical site investigations and remediation activities. We understand from our teleconference that the NYSDEC will use the results of groundwater sampling in the newly installed wells downgradient of the area of residual volatile organic compound soil impacts to confirm the potential for off-site migration and determine the appropriate sampling frequency moving forward. The sampling frequency will be described in a Site Management Plan to be prepared after reporting on the groundwater quality in the new wells.

Site Description

The former Dollinger Corporation site is located in a commercial/industrial area in the Town of Brighton on a cul-de-sac just north of Brighton-Henrietta Townline Road (see Figure 1). The 18.5-acre property consists of a 140,000-square-foot, single story building that was used for manufacturing and office space. A parking area is located on the western portion of the site and loading docks are on the eastern portion of the site. The northern portion of the site is vacant land with grass and wooded areas. The current building is occupied by a granite and quartz countertop manufacturing company.

Site geology consists of sand and gravel fill within the upper three feet of soils. Native soils are lacustrine deposits consisting of silts and clays between approximately 3 and 45 feet below ground surface (bgs). Fine sands and silts were encountered below 45 feet bgs until bedrock which was encountered at approximately 80 feet bgs. Bedrock is interpreted to be Vernon Shale. Groundwater was encountered at depths ranging from 10 to 15 feet bgs. Groundwater generally flows to the northwest.

Proposed Scope of Work

MONITORING WELL INSTALLATION AND DEVELOPMENT

Three permanent monitoring wells will be installed in the grassy area north of the building (see Figure 2). Prior to drilling activities, Dig Safely New York will be contacted to mark underground utilities in areas where intrusive activities will occur. A call to Dig Safely New York will be placed two weeks prior to the start date. Prior to drilling, a subcontractor will perform utility clearance using ground penetrating radar (GPR).

Monitoring wells will be installed using hollow-stem augers. Soils will be screened in the field for volatile organic compounds (VOCs) using a photoionization detector (PID). One soil sample will be collected at each well location. Soil samples will be collected directly above the water table or in areas where evidence of impact is observed (i.e. staining, elevated PID readings). Soil samples will be analyzed for VOCs by U.S. Environmental Protection Agency (EPA) Method 8260D. A Site-Specific Quality Assurance Project Plan (QAPP) has been prepared and included as Appendix B of this Work Plan.

Community air monitoring will be performed according to the New York State Department of Health (NYSDOH) generic Community Air Monitoring Plan (CAMP). A copy of the NYSDOH generic CAMP is included as Appendix A. This plan requires real-time monitoring of VOCs and particulates at the upwind and downwind perimeter of designated work areas when certain activities are in progress. The CAMP contains conservative monitoring threshold values established by the NYSDOH, and provisions requiring that response actions are promptly implemented, if necessary, to reduce emissions at the work site perimeter to levels deemed acceptable by NYSDOH and NYSDEC, including but not limited to ceasing work if necessary.

A site-specific Health & Safety Plan (HASP) has been prepared in accordance with 29 CFR 1910.120 for the proposed CMWP activities. A copy of the HASP is included as Appendix C of this Work Plan.

Monitoring wells will be installed to a depth of 24 feet bgs. The wells will be screened within the bottom 10 feet (14 to 24 feet) of each borehole to correlate with the screened zone of previously decommissioned shallow monitoring wells. Monitoring wells will be constructed using 2-inch-diameter Schedule-40 polyvinyl chloride (PVC) pipe riser, and 10 feet of Schedule-40 PVC 0.010-inch slotted screen. The wells will be completed as stick-ups with protective steel casing.

Following installation, all wells will be sufficiently developed to remove any sediments. Wells will be purged using a whale pump or bailer and purged until 10 well volumes have been removed, or turbidity values are below 50 nephelometric turbidity units (NTUs).

GROUNDWATER SAMPLING

At least two weeks after development, groundwater samples will be collected from each monitoring well using low-flow sampling techniques. Prior to sampling, a synoptic gauging event of all wells will be completed. Groundwater samples will be collected and analyzed for VOCs EPA Method 8260D, 1,4-dioxane via EPA Method 8270, and Per- and Poly-Fluoroalkyl Substances (PFAS) via EPA Method 1633A.

DECONTAMINATION AND INVESTIGATION-DERIVED WASTE

Non-dedicated sampling equipment (i.e., water level indicators, whale pumps, etc.) will be decontaminated using Alconox® prior to sampling at each location to reduce the potential for cross-contamination. Soil cuttings and purge water generated during drilling activities will be containerized in 55-gallon drums, characterized, and disposed of off-site in accordance with applicable regulations. The drums will be staged against the back of the building until disposal.

Project Schedule

Haley & Aldrich of New York will coordinate access to the site with the property owner and tenant. Well drilling activities are tentatively scheduled to begin July 2025 and are estimated to require approximately one to two days to complete.

Reporting

Haley & Aldrich of New York will prepare a brief report for submittal to the NYSDEC, which includes boring logs, well completion reports, Category B laboratory analytical reports, findings, and conclusions based upon the groundwater analytical results and recommendations for next steps. All laboratory data generated during corrective measures activities will be compiled into an electronic Data deliverable (EDD) file and submitted to the NYSDEC EQulS database.

Following corrective measures reporting, Institutional Controls will be needed at the Site including an Environmental Easement, and a Site Management Plan (SMP) that will be developed concurrent with the corrective measures work.

Sincerely yours,

H & A OF NEW YORK ENGINEERING AND GEOLOGY, LLP



Santa E. McKenna, P.G.
Assistant Project Manager



Glenn M. White, CHMM
Senior Associate

Enclosures:

Figure 1 – Site Locus

Figure 2 – Proposed Monitoring Wells

Appendix A – Community Air Monitoring Plan

Appendix B – Quality Assurance Project Plan

Appendix C – Health and Safety Plan

c: NYSDEC; Attn. D. Pratt and D. Loe
Bunzl; Attn: D. Lett
Husch Blackwell; Attn: D. Fanning

\\haleyaldrich.com\share\roc_common\Projects\70007-Dollinger\2025 Activities\Corrective Measures Work Plan\Final\Revised Corrective Measures Work Plan\2025_0624_Frm Dollinger Revised Corrective Measures Work Plan_Final.docx

Certification

I, Glenn M. White, certify that I am currently a Qualified Environmental Professional and that this Corrective Measures Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with DER Technical Guidance for Site Investigation and Remediation (DER-10).



Name: Glenn M. White, CHMM

24 June 2025

Date

References

1. Haley & Aldrich of New York, 1991. Remedial Investigation Report, Dollinger Facility, Rochester, New York. November.

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FIGURES



GIS: \\haleyaldrich.com\share\roc_common\Projects\70007-Dollinger\Global\GIS\0129388_BUNZL_DOLLINGER\0129388_BUNZL_DOLLINGER.aprx - dvenier - 2/7/2025 11:58 AM



MAP SOURCE: ESRI
SITE COORDINATES: 43°05'50"N, 77°37'37"W

**HALEY
ALDRICH**

1 TOWNLINE CIRCLE
ROCHESTER, NEW YORK

PROJECT LOCUS





APPROXIMATE SCALE: 1 IN = 2000 FT
FEBRUARY 2025

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\c\common\Projects\7007-Dollinger\Global\GIS\013348_BUNCL_DOLLINGER.aprx USER: dvrner - LAST SAVED: 27/03/25 12:40 PM



LEGEND

-  PROPOSED MONITORING WELL
-  PROPERTY BOUNDARY
-  APPROXIMATE HISTORICAL REMEDIATION AREA
-  GROUNDWATER FLOW DIRECTION

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: NEARMAP, 5 SEPTEMBER 2024



0 120 240
SCALE IN FEET

**HALEY
ALDRICH**

1 TOWNLINE CIRCLE
ROCHESTER, NEW YORK

PROPOSED MONITORING WELLS

MAY 2025

FIGURE 2

APPENDIX A

Community Air Monitoring Plan

Appendix 1A

New York State Department of Health Generic Community Air Monitoring Plan

Overview

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

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

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

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

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

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.
4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

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

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \text{ mcg}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \text{ mcg}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

APPENDIX B

Quality Assurance Project Plan

REPORT ON
QUALITY ASSURANCE PROJECT PLAN
1 TOWN LINE CIRCLE
ROCHESTER, NEW YORK

by
H & A of New York Engineering and Geology
Rochester, New York

for
Bunzl Distribution USA, LLC
Rochester, New York

File No. 129388-006
May 2025



Executive Summary

This Quality Assurance Project Plan (QAPP) outlines the scope of the quality assurance and quality control (QA/QC) activities associated with the site monitoring activities associated with the Corrective Measures Work Plan (CMWP) for 1 Townline Circle in Rochester, New York.

Protocols for sample collection, sample handling and storage, chain-of-custody procedures, and laboratory and field analyses are described herein or specifically referenced to related project documents.

Table of Contents

	Page
Executive Summary	i
List of Tables	v
1. Project Description	1
1.1 PROJECT OBJECTIVES	1
1.2 SITE DESCRIPTION AND HISTORY	1
1.3 LABORATORY PARAMETERS	1
1.4 SAMPLING LOCATIONS	1
2. Project Organization and Responsibilities	2
2.1 MANAGEMENT RESPONSIBILITIES	2
2.2 QUALITY ASSURANCE RESPONSIBILITIES	2
2.2.1 Quality Assurance (QA) Officer	2
2.2.2 Data Validation Staff	2
2.3 LABORATORY RESPONSIBILITIES	3
2.3.1 Laboratory Project Manager	3
2.3.2 Laboratory Operations Manager	3
2.3.3 Laboratory QA Officer	3
2.3.4 Laboratory Sample Custodian	3
2.3.5 Laboratory Technical Personnel	3
2.4 FIELD RESPONSIBILITIES	4
2.4.1 Field Coordinator	4
2.4.2 Field Team Personnel	4
3. Sampling Procedures	5
3.1 SAMPLE CONTAINERS	5
3.2 SAMPLE LABELING	5
3.3 FIELD QC SAMPLE COLLECTION	5
3.3.1 Equipment Rinse Blank Sample Collection	5
3.3.2 Field Duplicate Sample Collection	5
4. Custody Procedures	7
4.1 FIELD CUSTODY PROCEDURES	7
4.1.1 Field Procedures	8
4.1.2 Transfer of Custody and Shipment Procedures	8
4.2 LABORATORY CHAIN-OF-CUSTODY PROCEDURES	9
4.3 STORAGE OF SAMPLES	9
4.4 FINAL PROJECT FILES CUSTODY PROCEDURES	9
5. Calibration Procedures and Frequency	11

Table of Contents

	Page
5.1 FIELD INSTRUMENT CALIBRATION PROCEDURES	11
5.2 LABORATORY INSTRUMENT CALIBRATION PROCEDURES	11
6. Analytical Procedures	12
6.1 FIELD ANALYTICAL PROCEDURES	12
6.2 LABORATORY ANALYTICAL PROCEDURES	12
6.2.1 List of Project Target Compounds and Laboratory Detection Limits	12
6.2.2 List of Method Specific Quality Control (QC) Criteria	12
7. Internal Quality Control Checks	13
7.1 FIELD QUALITY CONTROL	13
7.1.1 Equipment Rinse Blanks	13
7.1.2 Trip Blanks	13
7.2 LABORATORY PROCEDURES	13
7.2.1 Field Duplicate Samples	13
7.2.2 Matrix Spike Samples	14
7.2.3 Laboratory Control Sample (LCS) Analyses	14
7.2.4 Surrogate Compound/Internal Standard Recoveries	14
7.2.5 Calibration Verification Standards	15
7.2.6 Laboratory Method Blank Analyses	15
8. Data Quality Objectives	16
8.1 PRECISION	16
8.1.1 Definition	16
8.1.2 Field Precision Sample Objectives	16
8.1.3 Laboratory Precision Sample Objectives	16
8.2 ACCURACY	17
8.2.1 Definition	17
8.2.2 Field Accuracy Objectives	17
8.3 LABORATORY ACCURACY OBJECTIVES	17
8.4 REPRESENTATIVENESS	18
8.4.1 Definition	18
8.4.2 Measures to Ensure Representativeness of Field Data	18
8.5 COMPLETENESS	18
8.5.1 Definition	18
8.5.2 Field Completeness Objectives	18
8.5.3 Laboratory Completeness Objectives	18
8.6 COMPARABILITY	18
8.6.1 Definition	18
8.6.2 Measures to Ensure Comparability of Laboratory Data	19
8.7 LEVEL OF QUALITY CONTROL EFFORT	19

Table of Contents

	Page
9. Data Reduction, Validation and Reporting	20
9.1 DATA REDUCTION	20
9.1.1 Field Data Reduction Procedures	20
9.1.2 Laboratory Data Reduction Procedures	20
9.1.3 Quality Control Data	20
9.2 DATA VALIDATION	20
9.3 DATA REPORTING	21
10. Performance and System Audits	22
10.1 FIELD PERFORMANCE AND SYSTEM AUDITS	22
10.1.1 Internal Field Audit Responsibilities	22
10.1.2 External Field Audit Responsibilities	22
10.2 LABORATORY PERFORMANCE AND SYSTEM AUDITS	22
10.2.1 Internal Laboratory Audit Responsibilities	22
10.2.2 External Laboratory Audit Responsibilities	23
11. Preventive Maintenance	24
11.1 FIELD INSTRUMENT PREVENTIVE MAINTENANCE	24
11.2 LABORATORY INSTRUMENT PREVENTIVE MAINTENANCE	24
12. Specific Routine Procedures Used to Assess Data Precision, Accuracy, and Completeness	25
12.1 FIELD MEASUREMENTS	25
12.2 LABORATORY DATA	25
13. Quality Assurance (QA) Reports	27
References	28
Tables	

List of Tables

Table No.	Title
I	Analyte Detection Limits in Groundwater and Soil
II	Summary of Analysis Method, Preservation Method, Holding Time, Sample Size Requirements and Sample Containers

1. Project Description

This Quality Assurance Project Plan (QAPP) has been prepared as a component of the CMWP for 1 Townline Circle (Site) in Rochester, New York.

1.1 PROJECT OBJECTIVES

The primary objective for data collection activities is to confirm the potential for off-site migration and determine the appropriate sampling frequency.

1.2 SITE DESCRIPTION AND HISTORY

The general Site description and Site history is provided in the Remedial Investigation Report dated 27 November 1991.

1.3 LABORATORY PARAMETERS

Laboratory parameters are listed in Table I.

The laboratory parameters for soil and groundwater include:

- Dollinger Target Compound List volatile organic compounds (VOCs) using EPA method 8260D

Select monitoring well analyses include:

- Per- and polyfluoroalkyl substances (PFAS) using method 1633A
- 1,4-Dioxane using EPA method 8270E

During the collection of groundwater samples, pH, specific conductivity, temperature, dissolved oxygen (DO), and oxidation/reduction potential (ORP) will be measured.

Laboratory parameters for disposal samples will be determined by the disposal facility after an approved facility has been determined.

1.4 SAMPLING LOCATIONS

The CMWP provides the locations of soil samples and groundwater monitoring wells that will be sampled.

2. Project Organization and Responsibilities

This section defines the roles and responsibilities of the individuals who will perform the CMWP monitoring activities. A NYSDOH certified analytical laboratory will perform the analyses of environmental samples collected at the Site.

2.1 MANAGEMENT RESPONSIBILITIES

The Project Manager is responsible for managing the implementation of the CMWP monitoring and coordinating the collection of data. The Project Manager is responsible for technical quality control and project oversight. The Project Manager responsibilities include the following:

- Acquire and apply technical and corporate resources as needed to ensure performance within budget and schedule restraints;
- Review work performed to ensure quality, responsiveness, and timeliness;
- Communicate with the client point of contact concerning the progress of the monitoring activities;
- Assure corrective actions are taken for deficiencies cited during audits of CMWP monitoring activities; and,
- Overall Site health and safety plan compliance.

2.2 QUALITY ASSURANCE RESPONSIBILITIES

The Quality Assurance team will consist of a Quality Assurance Officer and the Data Validation staff. Quality Assurance responsibilities are described as follows:

2.2.1 Quality Assurance (QA) Officer

The QA Officer reports directly to the Project Manager and will be responsible for overseeing the review of field and laboratory data. Additional responsibilities include the following:

- Assure the application and effectiveness of the QAPP by the analytical laboratory and the project staff;
- Provide input to the Project Manager as to corrective actions that may be required as a result of the above-mentioned evaluations;
- Prepare and/or review data validation and audit reports.

The QA Officer will be assisted by the data validation staff in the evaluation and validation of field and laboratory generated data.

2.2.2 Data Validation Staff

The data validation staff will be independent of the laboratory and familiar with the analytical procedures performed. The validation will include a review of each validation criterion as prescribed by the guidelines presented in Section 9.2 of this document and be presented in a Data Usability Summary Report (DUSR) for submittal to the QA Officer.

2.3 LABORATORY RESPONSIBILITIES

Laboratory services in support of the CMWP monitoring include the following personnel:

2.3.1 Laboratory Project Manager

The Laboratory Project Manager will report directly to the QA Officer and Project Manager and will be responsible for ensuring all resources of the laboratory are available on an as-required basis. The Laboratory Project Manager will also be responsible for the approval of the final analytical reports.

2.3.2 Laboratory Operations Manager

The Laboratory Operations Manager will report to the Laboratory Project Manager and will be responsible for coordinating laboratory analysis, supervising in-house chain-of-custody reports, scheduling sample analyses, overseeing data review and overseeing preparation of analytical reports.

2.3.3 Laboratory QA Officer

The Laboratory QA Officer will have sole responsibility for review and validation of the analytical laboratory data. The Laboratory QA Officer will provide Case Narrative descriptions of any data quality issues encountered during the analyses conducted by the laboratory. The QA Officer will also define appropriate QA procedures, overseeing QA/QC documentation.

2.3.4 Laboratory Sample Custodian

The Laboratory Sample Custodian will report to the Laboratory Operations Manager and will be responsible for the following:

- Receive and inspect the incoming sample containers;
- Record the condition of the incoming sample containers;
- Sign appropriate documents;
- Verify chain-of-custody and its correctness;
- Notify the Project Manager and Operations Manager of sample receipt and inspection;
- Assign a unique identification number and enter each into the sample receiving log;
- Initiate transfer of samples to laboratory analytical sections; and
- Control and monitor access/storage of samples and extracts.

2.3.5 Laboratory Technical Personnel

The laboratory technical staff will have the primary responsibility in the performance of sample analysis and the execution of the QA procedures developed to determine the data quality. These activities will include the proper preparation and analysis of the project samples in accordance with the laboratory's Quality Assurance Manual (QAM) and associated Standard Operating Procedures (SOP).

2.4 FIELD RESPONSIBILITIES

2.4.1 Field Coordinator

The Field Coordinator is responsible for the overall operation of the field team and reports directly to the Project Manager. The Field Coordinator works with the project Health & Safety Officer (HSO) to conduct operations in compliance with the project Health & Safety Plan (HASP). The Field Coordinator will facilitate communication and coordinate efforts between the Project Manager and the field team members.

Other responsibilities include the following:

- Develop and implement field-related work plans, ensuring schedule compliance, and adhering to management-developed project requirements;
- Coordinate and manage field staff;
- Perform field system audits;
- Oversee quality control for technical data provided by the field staff;
- Prepare and approve text and graphics required for field team efforts;
- Coordinate and oversee technical efforts of subcontractors assisting the field team;
- Identify problems in the field; resolve difficulties in consultation with the Project QAO, and Project Manager; implement and document corrective action procedures; and,
- Participate in preparation of the final reports.

2.4.2 Field Team Personnel

Field Team Personnel will be responsible for the following:

- Perform field activities as detailed in the CMWP, and in compliance with the QAPP.
- Immediately report any accidents and/or unsafe conditions to the Site Health & Safety Officer and take reasonable precautions to prevent injury.

3. Sampling Procedures

3.1 SAMPLE CONTAINERS

Sample containers for each sampling task will be provided by the laboratory performing the analysis. The containers will be cleaned by the manufacturer to meet or exceed the analyte specifications established in the U.S. EPA, "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers", April 1992, OSWER Directive #9240.0-0.5A. Certificates of analysis for each lot of sample containers used will be maintained by the laboratory.

The appropriate sample containers, preservation method, maximum holding times, and handling requirements for each sampling task are provided in Table II.

3.2 SAMPLE LABELING

Each sample will be labeled with a unique sample number that will facilitate tracking and cross-referencing of sample information:

- Employee ID-Day/Month/Year-Sample Time

Equipment rinse blank and field duplicate samples also will be numbered with a unique sample number to prevent analytical bias of field QC samples.

3.3 FIELD QC SAMPLE COLLECTION

3.3.1 Equipment Rinse Blank Sample Collection

Equipment rinse blank samples will be collected when non-dedicated sampling equipment is used to collect samples. Equipment rinse blanks consist of distilled water that has been routed through decontaminated sampling equipment and collected into the appropriate containers. The containers will be filled in order of decreasing analyte volatility (i.e., VOC first, SVOC second and followed by the containers for the remaining analyses).

A separate equipment rinse blank sample will be collected for PFAS using the sample collection procedure described in the NYSDEC Guidelines for Sampling and Analysis of PFAS.

3.3.2 Field Duplicate Sample Collection

3.3.2.1 *Water Samples*

Field duplicate samples will be collected by filling the first sample container to the proper level and sealing and then repeated for the second set of sample container.

1. The samples are properly labeled as specified in Section 3.2.
2. Steps 1 through 4 are repeated for the bottles for each analysis. The samples are collected in order of decreasing analyte volatility as detailed in Section 3.3.1.
3. Chain-of-custody documents are executed.

4. The samples will be handled as specified in Table II.

3.3.2.2 *Soil Samples*

Soil field duplicates will be collected as specified in the following procedure:

1. The split-spoon sampler or trowel will be retrieved from the sampling point.
2. Soil for VOC analysis will be removed from the sampling device using a trowel.
3. Soil for non-VOC analysis will be removed from the sampling device and placed in a stainless-steel mixing bowl. The soil will be thoroughly homogenized using stainless steel utensils and the sample containers will be filled in order of decreasing analyte volatility.

4. Custody Procedures

Sample custody is addressed in three parts: field sample collection, laboratory analysis and final project files. Custody of a sample begins when it is collected by or transferred to an individual and ends when that individual relinquishes or disposes of the sample.

A sample is under custody if:

1. The item is in actual possession of a person;
2. The item is in the view of the person after being in actual possession of the person;
3. The item was in actual possession and subsequently stored to prevent tampering; or
4. The item is in a designated and identified secure area.

4.1 FIELD CUSTODY PROCEDURES

Field personnel will keep written records of field activities on applicable preprinted field forms or in a bound field notebook to record data collecting activities. These records will be written legibly in ink and will contain pertinent field data and observations. Entry errors or changes will be crossed out with a single line, dated and initialed by the person making the correction. Field forms and notebooks will be periodically reviewed by the Field Coordinator.

The beginning of each entry in the logbook or preprinted field form will contain the following information:

- Date
- Start time
- Weather
- Names of field personnel (including subcontractors)
- Level of personal protection used at the Site
- Names of all visitors and the purpose of their visit.

For each measurement and sample collected, the following information will be recorded:

- Detailed description of sample location,
- Equipment used to collect sample or make measurement and the date equipment was calibrated,
- Time sample was collected,
- Description of the sample conditions,
- Depth sample was collected (if applicable),
- Volume and number of containers filled with the sample; and,
- Sampler's identification.

4.1.1 Field Procedures

The following procedure describes the process to maintain the integrity of the samples:

Upon collection samples are placed in the proper containers. In general, samples collected for organic analysis will be placed in pre-cleaned glass containers and samples collected for inorganic analysis will be placed in pre-cleaned plastic (polyethylene) bottles.

Samples will be assigned a unique sample number and will be affixed to a sample label.

- Samples will be properly and appropriately preserved by field personnel in order to minimize loss of the constituent(s) of interest due to physical, chemical or biological mechanisms.
- Appropriate volumes will be collected to ensure that the appropriate reporting limits can be successfully achieved and that the required QC sample analyses can be performed.

4.1.2 Transfer of Custody and Shipment Procedures

- A chain-of-custody (COC) record will be completed at the time of sample collection and will accompany each shipment of project samples to the laboratory. The field personnel collecting the samples will be responsible for the custody of the samples until the samples are relinquished to the laboratory. Sample transfer will require the individuals relinquishing and receiving the samples to sign, date and note the time of sample transfer on the COC record.
- Samples will be shipped or delivered in a timely fashion to the laboratory so that holding times and/or analysis times as prescribed by the methodology can be met.
- Samples will be transported in containers (coolers) which will maintain the refrigeration temperature for those parameters for which refrigeration is required in the prescribed preservation protocols.
- Samples will be placed in an upright position and limited to one layer of samples per cooler. Additional bubble wrap or packaging material will be added to fill the cooler. Shipping containers will be secured with strapping tape and custody tape for shipment to the laboratory.
- When samples are split with the NYSDEC representatives, a separate chain-of-custody will be prepared and marked to indicate with whom the samples are shared. The person relinquishing the samples will require the representative's signature acknowledging sample receipt.
- If samples are sent by a commercial carrier, a bill of lading will be used. A copy of the bill of lading will be retained as part of the permanent record. Commercial carriers will not sign the custody record as long as the custody record is sealed inside the sample cooler and the custody tape remains intact.
- Samples will be picked up by a laboratory courier or transported to the laboratory the same day they are collected unless collected on a weekend or holiday. In these cases, the samples will be stored in a secure location until delivery to the laboratory. Additional ice will be added to the cooler as needed to maintain proper preservation temperatures.

4.2 LABORATORY CHAIN-OF-CUSTODY PROCEDURES

A sample custodian will be designated by the laboratory and will have the responsibility to receive all incoming samples. Once received, the custodian will document if the sample is received in good condition (i.e., unbroken, cooled, etc.) and that the associated paperwork, such as chain-of-custody forms have been completed. The custodian will sign the chain-of-custody forms.

The custodian will also document if sufficient sample volume has been received to complete the analytical program. The sample custodian will then place the samples into secure, limited access storage (refrigerated storage, if required). The sample custodian will assign a unique number to each incoming sample for use in the laboratory. The unique number will then be entered into the sample-receiving log with the verified time and date of receipt also noted.

Consistent with the analyses requested on the chain-of-custody form, analyses by the laboratory's analysts will begin in accordance with the appropriate methodologies. Samples will be removed from secure storage with internal chain-of-custody sign-out procedures followed.

4.3 STORAGE OF SAMPLES

Empty sample bottles will be returned to secure and limited access storage after the available volume has been consumed by the analysis. Upon completion of the entire analytical work effort, samples will be disposed of by the sample custodian. The length of time that samples are held will be at least thirty (30) days after reports have been submitted. Disposal of remaining samples will be completed in compliance with all Federal, State and local requirements.

4.4 FINAL PROJECT FILES CUSTODY PROCEDURES

The final project files will be the central repository for all documents with information relevant to sampling and analysis activities as described in this QAPP. The H&A of New York Engineering and Geology (Haley & Aldrich of New York) Project Manager will be the custodian of the project file. The project files including all relevant records, reports, logs, field notebooks, pictures, subcontractor reports and data reviews will be maintained in a secured, limited access area and under custody of the Project Director or his designee.

The final project file will include the following:

- Project plans and drawings
- Field data records
- Sample identification documents and soil boring/monitoring well logs
- All chain-of-custody documentation
- Correspondence
- References, literature
- Laboratory data deliverables
- Data validation and assessment reports
- Progress reports, QA reports
- Final report

The laboratory will be responsible for maintaining analytical logbooks, laboratory data and sample chain of custody documents. Raw laboratory data files and copies of hard copy reports will be inventoried and maintained by the laboratory for a period of six (6) years at which time the laboratory will contact the Haley & Aldrich of New York Project Manager regarding the disposition of the project related files.

5. Calibration Procedures and Frequency

5.1 FIELD INSTRUMENT CALIBRATION PROCEDURES

Several field instruments will be used for both on-site screening of samples and for health and safety monitoring, as described in the Health and Safety Plan (HASP). On-site air monitoring for health and safety purposes may be accomplished using a vapor detection device, such as a Photo-ionization Detector (PID).

Field instruments will be calibrated at the beginning of each day and checked during field activities to verify performance. Instrument specific calibration procedures will be performed in accordance with the instrument manufacturer's requirements.

5.2 LABORATORY INSTRUMENT CALIBRATION PROCEDURES

Reference materials of known purity and quality will be utilized for the analysis of environmental samples. The laboratory will carefully monitor the preparation and use of reference materials including solutions, standards and reagents through well-documented procedures.

All solid chemicals and acids/bases used by the laboratory will be rated as "reagent grade" or better. All gases will be "high" purity or better. All Standard Reference Materials (SRMs) or Performance Evaluation (PE) materials will be obtained from approved vendors of the National Institute of Standards and Technology (formerly National Bureau of Standards), the U.S. EPA Environmental Monitoring Support Laboratories (EMSL), or reliable Cooperative Research and Development Agreement (CRADA) certified commercial sources.

6. Analytical Procedures

Analytical procedures to be utilized for analysis of environmental samples will be based on referenced USEPA analytical protocols and/or project specific SOP.

6.1 FIELD ANALYTICAL PROCEDURES

Field analytical procedures include the measurement of pH, temperature, ORP, DO and specific conductivity during sampling of groundwater, and the qualitative measurement of Volatile Organic Compounds (VOC) during the collection of soil samples.

6.2 LABORATORY ANALYTICAL PROCEDURES

Laboratory analyses will be based on the U.S. EPA methodology requirements promulgated in:

- "Test Methods for Evaluating Solid Waste," SW-846 EPA, Office of Solid Waste, and promulgated updates, 1986.

6.2.1 List of Project Target Compounds and Laboratory Detection Limits

The laboratory reporting limits (RLs) and associated method detection limits (MDLs) for the target analytes and compounds for the environmental media to be analyzed are presented in Table II. MDLs have been experimentally determined by the project laboratory using the method provided in 40 CFR, Part 136 Appendix B.

Laboratory parameters for soil and groundwater samples are listed in Table II. Laboratory parameters for disposal samples will be determined by the disposal facility after an approved facility has been determined.

6.2.2 List of Method Specific Quality Control (QC) Criteria

The laboratory SOPs include a section that presents the minimum QC requirements for the project analyses. Section 7.0 references the frequency of the associated QC samples for each sampling effort and matrix.

7. Internal Quality Control Checks

This section presents the internal quality control checks that will be employed for field and laboratory measurements.

7.1 FIELD QUALITY CONTROL

7.1.1 Equipment Rinse Blanks

Internal quality control checks will include analysis of equipment blanks to validate successful equipment cleaning activities. Whenever possible, dedicated equipment will be employed to reduce the possibility of cross-contamination of samples.

The frequency of equipment rinse sample preparation will be for each type of sampling equipment on which decontamination procedures have been performed as part of each sampling event.

A separate equipment rinse blank sample will be collected for PFAS using the sample collection procedure described in the NYSDEC Guidelines for Sampling and Analysis of PFAS.

7.1.2 Trip Blanks

Trip blanks samples will be prepared by the project laboratory using ASTM Type II or equivalent water placed within pre-cleaned 40 milliliter (ml) VOC vials equipped with Teflon septa. Trip blanks will accompany each sample delivery group (SDG) of environmental samples collected for analysis of VOCs.

Trip blank samples will be placed in each cooler that stores and transports project samples that are to be analyzed for VOCs.

7.2 LABORATORY PROCEDURES

Procedures which contribute to maintenance of overall laboratory quality assurance and control include appropriately cleaned sample containers, proper sample identification and logging, applicable sample preservation, storage and analysis within prescribed holding times, and use of controlled materials.

7.2.1 Field Duplicate Samples

The precision or reproducibility of the data generated will be monitored through the use of field duplicate samples. Field duplicate analysis will be performed at a frequency of 1 in 20 project samples.

Precision will be measured in terms of the absolute value of the relative percent difference (RPD) as expressed by the following equation:

$$RPD = [|R1-R2|/[(R1+R2)/2]] \times 100\%$$

Acceptance criteria for duplicate analyses performed on solid matrices will be 100% and aqueous matrices will be 35%. RPD values outside these limits will require an evaluation of the sampling and/or

analysis procedures by the project QA Officer and/or laboratory QA Director. Corrective actions may include re-analysis of additional sample aliquots and/or qualification of the data for use.

7.2.2 Matrix Spike Samples

Ten percent of each project sample matrix for each analytical method performed will be spiked with known concentrations of the specific target compounds/analytes.

The amount of the compound recovered from the sample compared to the amount added will be expressed as a percent recovery. The percent recovery of an analyte is an indication of the accuracy of an analysis within the site-specific sample matrix. Percent recovery will be calculated for MS/MSD using the following equation.

$$\% \text{ Recovery} = \frac{\text{Spiked Sample} - \text{Background}}{\text{Known Value of Spike}} \times 100\%$$

If the quality control value falls outside the control limits (UCL or LCL) due to sample matrix effects, the results will be reported with appropriate data qualifiers. To determine the effect a non-compliant MS recovery has on the reported results, the recovery data will be evaluated as part of the validation process.

7.2.3 Laboratory Control Sample (LCS) Analyses

The laboratory will perform LCS analyses prepared from Standard Reference Materials (SRMs). The SRMs will be supplied from an independent manufacturer and traceable to NIST materials with known concentrations of each target analyte to be determined by the analytical methods performed. In cases where an independently supplied SRM is not available, the LCS may be prepared by the laboratory from a reagent lot other than that used for instrument calibration.

The laboratory will evaluate LCS analyses in terms of percent recovery using the most recent laboratory generated control limits.

LCS recoveries that do not meet acceptance criteria will be deemed invalid. Analysis of project samples will cease until an acceptable LCS analysis has been performed. If sample analysis is performed in association with an out-of-control LCS sample analysis, the data will be deemed invalid.

Corrective actions will be initiated by the Haley & Aldrich of New York QA Officer and/or Laboratory QA Officer to investigate the problem. After the problem has been identified and corrected, the solution will be noted in the instrument run logbook and re-analysis of project samples will be performed, if possible.

The analytical anomaly will be noted in the sample delivery group (SDG) Case Narrative and reviewed by the data validator. The data validator will confirm that appropriate corrective actions were implemented and recommend the applicable use of the affected data.

7.2.4 Surrogate Compound/Internal Standard Recoveries

For VOCs, surrogates will be added to each sample prior to analysis to establish purge and trap efficiency. Quantitation will be accomplished via internal standardization techniques.

The recovery of surrogate compounds and internal standards will be monitored by laboratory personnel to assess possible site-specific matrix effects on instrument performance.

For semi-volatile organics analyses, surrogates will be added to the raw sample to assess extraction efficiency. Internal standards will be added to all sample extracts and instrument calibration standard immediately before analysis for quantitation via internal standardization techniques.

Method specific quality control (QC) limits are provided in the attached laboratory method SOPs. Surrogate compound/internal standard recoveries that do not fall within accepted QC limits for the analytical methodology performed will have the analytical results flagged with data qualifiers as appropriate by the laboratory and will not be noted in the laboratory report Case Narrative.

To ascertain the effect non-compliant surrogate compound/internal standard recoveries may have on the reported results, the recovery data will be evaluated as part of the validation process. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

7.2.5 Calibration Verification Standards

Calibration verification (CV) standards will be utilized to confirm instrument calibrations and performance throughout the analytical process. CV standards will be prepared as prescribed by the respective analytical protocols. Continuing calibration will be verified by compliance with method-specific criteria prior to additional analysis of project samples.

Non-compliant analysis of CV standards will require immediate corrective action by the project laboratory QA officer and/or designated personnel. Corrective action may include re-analysis of each affected project sample, a detailed description of the problem, the corrective action undertaken, the person who performed the action, and the resolution of the problem.

7.2.6 Laboratory Method Blank Analyses

Method blank sample analysis will be performed as part of each analytical batch for each methodology performed. If target compounds are detected in the method blank samples, the reported results will be flagged by the laboratory in accordance with standard operating procedures. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

8. Data Quality Objectives

Sampling that will be performed as described in the CMWP is designed to produce data of the quality necessary to achieve the minimum standard requirements of the field and laboratory analytical objectives described below. These data are being obtained with the primary objective to assess levels of contaminants of concern associated with the Site.

The overall project data quality objective (DQO) is to implement procedures for field data collection, sample collection, handling, and laboratory analysis and reporting that achieve the project objectives. The following section is a general discussion of the criteria that will be used to measure achievement of the project DQO.

8.1 PRECISION

8.1.1 Definition

Precision is defined as a quantitative measure of the degree to which two or more measurements are in agreement. Precision will be determined by collecting and analyzing field duplicate samples and by creating and analyzing laboratory duplicates from one or more of the field samples. The overall precision of measurement data is a mixture of sampling and analytical factors. The analytical results from the field duplicate samples will provide data on sampling precision. The results from duplicate samples created by the laboratory will provide data on analytical precision. The measurement of precision will be stated in terms of relative percent difference (RPD).

8.1.2 Field Precision Sample Objectives

Field precision will be assessed through collection and measurement of field duplicate samples at a rate of 1 duplicate per 20 investigative samples. The RPD criteria for the project field duplicate samples will be +/- 100% for soil, +/- 35 % for groundwater for parameters of analysis detected at concentrations greater than 5 times (5X) the laboratory reporting limit (RL).

8.1.3 Laboratory Precision Sample Objectives

Laboratory precision will be assessed through the analysis of laboratory control and laboratory control duplicate samples (LCS/LCSD) and matrix spike and matrix spike duplicate (MS/MSD) samples for groundwater and soil samples and the analysis of laboratory duplicate samples for air and soil vapor samples. Air and soil vapor laboratory duplicate sample analyses will be performed by analyzing the same SUMMA canister twice. The RPD criteria for the air/soil vapor laboratory duplicate samples will be +/- 35 % for parameters of analysis detected at concentrations greater than 5 times (5X) the laboratory reporting limit (RL).

8.2 ACCURACY

8.2.1 Definition

Accuracy relates to the bias in a measurement system. Bias is the difference between the observed and the "true" value. Sources of error are the sampling process, field contamination, preservation techniques, sample handling, sample matrix, sample preparation and analytical procedure limitations.

8.2.2 Field Accuracy Objectives

Sampling bias will be assessed by evaluating the results of field equipment rinse and trip blanks. Equipment rinse and trip blanks will be collected as appropriate based on sampling and analytical methods for each sampling effort.

If non-dedicated sampling equipment is used, equipment rinse blanks will be collected by passing ASTM Type II water over and/or through the respective sampling equipment utilized during each sampling effort. One equipment rinse blank will be collected for each type of non-dedicated sampling equipment used for the sampling effort. Equipment rinse blanks will be analyzed for each target parameter for the respective sampling effort for which environmental media have been collected. (Note: If dedicated or disposable sampling equipment is used, equipment rinse samples will not be collected as part of that field effort.)

Trip blank samples will be prepared by the laboratory and provided with each shipping container that includes containers for the collection of groundwater samples for the analysis of VOC. Trip blank samples will be analyzed for each VOC for which groundwater samples have been collected for analysis.

8.3 LABORATORY ACCURACY OBJECTIVES

Analytical bias will be assessed through the use of laboratory control samples (LCS) and Site-specific matrix spike (MS) sample analyses. LCS analyses will be performed with each analytical batch of project samples to determine the accuracy of the analytical system.

One (1) set of MS/MSD analyses will be performed with each batch of twenty (20) project samples collected for analysis to assess the accuracy of the identification and quantification of analytes within the Site-specific sample matrices. Additional sample volume will be collected at sample locations selected for the preparation of MS/MSD samples so that the standard laboratory reporting limits (RLs) are achieved.

The accuracy of analyses that include a sample extraction procedure will be evaluated through the use of system monitoring or surrogate compounds. Surrogate compounds will be added to each sample, standard, blank, and QC sample prior to sample preparation and analysis. Surrogate compound percent recoveries will provide information on the effect of the sample matrix on the accuracy of the analyses.

8.4 REPRESENTATIVENESS

8.4.1 Definition

Representativeness expresses the degree to which sample data represent a characteristic of a population, a parameter variation at a sampling point or an environmental condition. Representativeness is a qualitative parameter that is dependent upon the design of the sampling program. The representativeness criterion is satisfied through the proper selection of sampling locations, the quantity of samples and the use of appropriate procedures to collect and analyze the samples.

8.4.2 Measures to Ensure Representativeness of Field Data

Representativeness will be addressed by prescribing sampling techniques and the rationale used to select sampling locations. Sampling locations may be biased (based on existing data, instrument surveys, observations, etc.) or unbiased (completely random or stratified-random approaches).

8.5 COMPLETENESS

8.5.1 Definition

Completeness is a measure of the amount of valid (usable) data obtained from a measuring system compared to the total amount of the anticipated to be obtained. The completeness goal for all data uses is that a sufficient amount of valid data be generated so that determinations can be made related to the intended data use with a sufficient degree of confidence.

8.5.2 Field Completeness Objectives

Completeness is a measure of the amount of valid measurements obtained from measurements taken in this project versus the number planned. Field completeness objective for this project will be greater than (>) 90%.

8.5.3 Laboratory Completeness Objectives

Laboratory data completeness objective is a measure of the amount of valid data obtained from laboratory measurements. The evaluation of the data completeness will be performed at the conclusion of each sampling and analysis effort.

The completeness of the data generated will be determined by comparing the amount of valid data, based on independent validation, with the total laboratory data set. The completeness goal will be >90%.

8.6 COMPARABILITY

8.6.1 Definition

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another.

8.6.2 Measures to Ensure Comparability of Laboratory Data

Comparability of laboratory data will be measured from the analysis of Standard Reference Materials (SRM) obtained from either EPA Cooperative Research and Development Agreement (CRADA) suppliers or the National Institute of Standards and Technology (NIST). The reported analytical data will also be presented in standard units of mass of contaminant within a known volume of environmental media. The standard units for various sample matrices are as follows:

- Solid Matrices – mg/kg of media (Dry Weight).
- Aqueous Matrices – ng/L for PFAS analyses, ug/L of media for organic analyses, and mg/L for inorganic analyses.

8.7 LEVEL OF QUALITY CONTROL EFFORT

Equipment rinse blanks for non-dedicated sampling equipment will be prepared by field personnel and submitted for analysis of target parameters. Equipment rinse blank samples will be analyzed to check for potential cross-contamination between sampling locations that may be introduced during the investigation. One (1) equipment rinse blank will be collected per sampling event to the extent that non-dedicated sampling equipment is used.

A separate equipment rinse blank sample will be collected for PFAS using the sample collection procedure described in the NYSDEC Guidelines for Sampling and Analysis of PFAS.

Trip blanks will be used to assess the potential for contamination during sample storage and shipment. Trip blanks will be provided with the sample containers to be used for the collection of groundwater samples for the analysis of VOC. Trip blanks will be preserved and handled in the same manner as the project samples. One (1) trip blank will be included along with each shipping container containing project samples to be analyzed for VOC.

Method blank samples will be prepared by the laboratory and analyzed concurrently with all project samples to assess potential contamination introduced during the analytical process.

Field duplicate samples will be collected and analyzed to determine sampling and analytical reproducibility. One (1) field duplicate will be collected for every 20 or fewer investigative samples collected for off-Site laboratory analysis.

Matrix spikes will provide information to assess the precision and accuracy of the analysis of the target parameters within the environmental media collected. One (1) matrix spike/matrix spike duplicate (MS/MSD) will be collected for every 20 or fewer investigative samples per sample matrix.

(Note: Soil MS/MSD samples require triple sample volume for VOC only. Aqueous MS/MSD samples require triple the normal sample volume for VOC analysis and double the volume for the remaining parameters.)

9. Data Reduction, Validation and Reporting

Data generated by the laboratory operation will be reduced and validated prior to reporting in accordance with the following procedures:

9.1 DATA REDUCTION

9.1.1 Field Data Reduction Procedures

Field data reduction procedures will be minimal in scope compared to those implemented in the laboratory setting. The pH, conductivity, temperature, turbidity, DO, ORP and breathing zone VOC readings collected in the field will be generated from direct read instruments. The data will be written into field logbooks immediately after measurements are taken. If errors are made, data will be legibly crossed out, initialed and dated by the field member, and corrected in a space adjacent to the original entry.

9.1.2 Laboratory Data Reduction Procedures

Laboratory data reduction procedures are provided by the appropriate chapter of USEPA, "Test Methods for Evaluating Solid Waste", SW-846, Third Edition. Errors will be noted; corrections made with the original notations crossed out legibly. Analytical results for soil samples will be calculated and reported on a dry weight basis.

9.1.3 Quality Control Data

Quality control data (e.g., laboratory duplicates, surrogates, matrix spikes, and matrix spike duplicates) will be compared to the method acceptance criteria. Data determined to be acceptable will be entered into the laboratory information management system.

Unacceptable data will be appropriately qualified in the project report. Case narratives will be prepared which will include information concerning data that fell outside acceptance limits and any other anomalous conditions encountered during sample analysis.

9.2 DATA VALIDATION

Data validation procedures of the analytical data will be performed by the Haley & Aldrich of New York QA Officer or designee using the following documents as guidance for the review process:

- "U.S. EPA National Functional Guidelines for Organic Data Review", and the "U.S. EPA National Functional Guidelines for Inorganic Data Review".
- The specific data qualifiers used will be applied to the reported results as presented and defined in the EPA National Functional Guidelines. Validation will be performed by qualified personnel at the direction of the Haley & Aldrich of New York QAO.
- The completeness of each data package will be evaluated by the Data Validator. Completeness checks will be administered on all data to determine that the deliverables are consistent with

the NYSDEC Analytical Services Protocol (ASP) Category A and Category B data package requirements. The validator will determine whether the required items are present and request copies of missing deliverables (if necessary) from the laboratory.

9.3 DATA REPORTING

Data reporting procedures will be carried out for field and laboratory operations as indicated below:

- **Field Data Reporting:** Field data reporting will be conducted principally through the transmission of report sheets containing tabulated results of measurements made in the field and documentation of field calibration activities.
- **Laboratory Data Reporting:** The laboratory data reporting package will enable data validation based on the protocols described above. The final laboratory data report format will include the QA/QC sample analysis deliverables to enable the development of a data usability summary report (DUSR) based on Department DER-10 Appendix 2B.

10. Performance and System Audits

A performance audit is an independent quantitative comparison with data routinely obtained in the field or the laboratory. Performance audits include two separate, independent parts: internal and external audits.

10.1 FIELD PERFORMANCE AND SYSTEM AUDITS

10.1.1 Internal Field Audit Responsibilities

Internal audits of field activities will be initiated at the discretion of the Project Manager and will include the review of sampling and field measurements. The audits will verify that all procedures are being followed. Internal field audits will be conducted periodically during the project. The audits will include examination of the following:

- Field sampling records, screening results, instrument operating records
- Sample collection
- Handling and packaging in compliance with procedures
- Maintenance of QA procedures
- Chain-of-custody reports

10.1.2 External Field Audit Responsibilities

External audits may be conducted by the Project Coordinator at any time during the field operations. These audits may or may not be announced and are at the discretion of the NYSDEC. The external field audits can include (but are not limited to) the following:

- Sampling equipment decontamination procedures
- Sample bottle preparation procedures
- Sampling procedures
- Examination of health and safety plans
- Procedures for verification of field duplicates
- Field screening practices

10.2 LABORATORY PERFORMANCE AND SYSTEM AUDITS

10.2.1 Internal Laboratory Audit Responsibilities

The laboratory system audits are typically conducted by the laboratory QA Officer or designee on an annual basis. The system audit will include an examination of laboratory documentation including: sample receiving logs, sample storage, chain-of-custody procedures, sample preparation and analysis and instrument operating records.

At the conclusion of internal system audits, reports will be provided to the laboratory's operating divisions for appropriate comment and remedial/corrective action where necessary. Records of audits and corrective actions will be maintained by the Laboratory QA Officer.

10.2.2 External Laboratory Audit Responsibilities

External audits will be conducted as required, by the NYSDOH or designee. External audits may include any of the following:

- Review of laboratory analytical procedures
- Laboratory on-site visits
- Submission of performance evaluation samples for analysis

Failure of any of the above audit procedures can lead to laboratory de-certification. An audit may consist of but not limited to:

- Sample receipt procedures
- Custody, sample security and log-in procedures
- Review of instrument calibration logs
- Review of QA procedures
- Review of logbooks
- Review of analytical SOPs
- Personnel interviews

A review of a data package from samples recently analyzed by the laboratory can include (but not be limited to) the following:

- Comparison of resulting data to the SOP or method
- Verification of initial and continuing calibrations within control limits
- Verification of surrogate recoveries and instrument timing results
- Review of extended quantitation reports for comparisons of library spectra to instrument spectra, where applicable
- Assurance that samples are run within holding times

11. Preventive Maintenance

11.1 FIELD INSTRUMENT PREVENTIVE MAINTENANCE

The field equipment preventive maintenance program is designed to ensure the effective completion of the sampling effort and to minimize equipment down time. Program implementation is concentrated in three areas:

- Maintenance responsibilities
- Maintenance schedules
- Inventory of critical spare parts and equipment

The maintenance responsibilities for field equipment will be assigned to the task leaders in charge of specific field operations. Field personnel will be responsible for daily field checks and calibrations and for reporting any problems with the equipment. The maintenance schedule will follow the manufacturer's recommendations. In addition, the field personnel will be responsible for determining that an inventory of spare parts will be maintained with the field equipment. The inventory will primarily contain parts that are subject to frequent failure, have limited useful lifetimes and/or cannot be obtained in a timely manner.

11.2 LABORATORY INSTRUMENT PREVENTIVE MAINTENANCE

Analytical instruments at the laboratory will undergo routine and/or preventive maintenance. The extent of the preventive maintenance will be a function of the complexity of the equipment.

Generally, annual preventive maintenance service will involve cleaning, adjusting, inspecting and testing procedures designed to deduce instrument failure and/or extend useful instrument life. Between visits, routine operator maintenance and cleaning will be performed according to manufacturer's specifications by laboratory personnel.

Maintenance records will be placed on file at the laboratory and can be made available upon request.

12. Specific Routine Procedures Used to Assess Data Precision, Accuracy, and Completeness

12.1 FIELD MEASUREMENTS

Field generated information will be reviewed by the Field Coordinator and typically include evaluation of bound logbooks/forms, data entry and calculation checks. Field data will be assessed by the Project Coordinator who will review the field results for compliance with the established QC criteria that are specified in Section 7.0 of this QAPP. The accuracy of pH and specific conductance will be assessed using daily instrument calibration, calibration check, and blank data. Accuracy will be measured by determining the percent recovery (% R) of calibration check standards. Precision of the pH and specific conductance measurements will be assessed on the basis of the reproducibility of duplicate readings of a field sample and will be measured by determining the relative percent difference (RPD). Accuracy and precision of the soil VOC screening will be determined using duplicate readings of calibration checks. Field data completeness will be calculated using the following equation:

$$\text{Completeness} = \frac{\text{Valid (usable) Data Obtained}}{\text{Total Data Planned}} \times 100$$

12.2 LABORATORY DATA

Surrogate, internal standard and matrix spike recoveries will be used to evaluate data quality. The laboratory quality assurance/quality control program will include the following elements:

- Precision, in terms of relative percent difference (RPD), will be determined by relative sample analysis at a frequency of one duplicate analysis for each batch of ten project samples or a frequency of 10 percent (10%). RPD is defined as the absolute difference of duplicate measurements divided by the mean of these analyses normalized to percentage.
- Accuracy, in terms of percent recovery (recovery of known constituent additions or surrogate recoveries), will be determined by the analysis of spiked and unspiked samples. MS/MSD will be used to determine analytical accuracy. The frequency of MS/MSD analyses will be one project sample MS/MSD per set of 20 project samples.
- One method blank will be prepared and analyzed with each batch of project samples. The total number of method blank sample analyses will be determined by the laboratory analytical batch size.
- Standard Reference Materials (SRMs) will be used for each analysis. Sources of SRM's include the U.S. EPA, commercially available material from CRADA certified vendors and/or laboratory produced solutions. SRMs, when available and appropriate, will be processed and analyzed on a frequency of one per set of samples.
- Completeness is the evaluation of the amount of valid data generated versus the total set of data produced from a particular sampling and analysis event. Valid data is determined by independent confirmation of compliance with method-specific and project-specific data quality

objectives. The calculation of data set completeness will be performed by the following equation.

$$\frac{\text{Number of Valid Sample Results}}{\text{Total Number of Samples Planned}} \times 100 = \% \text{ Complete}$$

13. Quality Assurance (QA) Reports

Critically important to the successful implementation of the QA Plan is a reporting system that provides the means by which the program can be reviewed, problems identified, and programmatic changes made to improve the plan.

QA reports to management include:

- Audit reports, internal and external audits with responses
- Performance evaluation sample results; internal and external sources
- Daily QA/QC exception reports/corrective actions

QA/QC corrective action reports will be prepared by the Haley & Aldrich of New York QA Officer when appropriate and presented to the project and/or laboratory management personnel so that performance criteria can be monitored for all analyses from each analytical department. The updated trend/QA charts prepared by the laboratory QA personnel will be distributed and reviewed by various levels of the laboratory management.

References

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TABLES

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
 1 TOWN LINE CIRCLE
 ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
GROUNDWATER				
Volatile Organic Compounds (8260D)				
Vinyl chloride	74-83-9	ug/l	0.0714	1
1,1-Dichloroethene	75-00-3	ug/l	0.169	0.5
Trichloroethene	156-60-5	ug/l	0.175	0.5
Tetrachloroethene	127-18-4	ug/l	0.181	0.5
cis-1,2-Dichloroethene	156-59-2	ug/l	0.7	2.5
1,2-Dichloroethene (total)	540-59-0	ug/l	0.7	2.5
Semi Volatile Organic Compounds (8270E)				
1,4-Dioxane	123-91-1	ng/l	33.900	150
PFAS (1633A)				
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/l	0.528	6.4
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/l	0.36	3.2
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	0.4	1.6
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/l	0.912	6.4
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	0.248	1.6
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/l	0.208	1.6
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	0.24	1.6
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	0.136	1.6
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	0.264	1.6
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/l	4.816	6.4
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/l	0.2	1.6
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	0.264	1.6
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	0.264	1.6
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	0.208	1.6
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/l	1.224	6.4
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/l	0.2	1.6
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	0.48	1.6
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	0.176	1.6
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/l	0.136	1.6
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/l	0.096	1.6
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	0.48	1.6
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	0.216	1.6
Perfluorotridecanoic Acid (PFTTrDA)	72629-94-8	ng/l	0.184	1.6
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	0.16	1.6
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	13252-13-6	ng/l	1.6	6.4
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	919005-14-4	ng/l	0.376	6.4
Perfluorododecane Sulfonic Acid (PFDoDS)	79780-39-5	ng/l	0.24	1.6
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9CI-PF3ONS)	756426-58-1	ng/l	0.44	6.4
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11CI-PF3OUDs)	763051-92-9	ng/l	0.448	6.4
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	31506-32-8	ng/l	0.224	1.6
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	4151-50-2	ng/l	0.352	1.6
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	24448-09-7	ng/l	1.304	16
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	1691-99-2	ng/l	1.104	16
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	377-73-1	ng/l	0.248	3.2
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	863090-89-5	ng/l	0.36	3.2
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEEESA)	113507-82-7	ng/l	0.328	3.2
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	151772-58-6	ng/l	0.544	3.2
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	356-02-5	ng/l	0.536	8
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	914637-49-3	ng/l	4.256	40
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	812-70-4	ng/l	3.184	40

TABLE I
ANALYTE DETECTION LIMITS IN GROUNDWATER AND SOIL
 1 TOWN LINE CIRCLE
 ROCHESTER, NEW YORK

Analyte	CAS Number	Units	Method Detection Limit (MDL)	Reporting Limit (RL)
SOIL				
Volatile Organic Compounds (8260D)				
Vinyl chloride	74-87-3	ug/kg	0.335	1
1,1-Dichloroethene	75-01-4	ug/kg	0.238	1
Trichloroethene	75-35-4	ug/kg	0.137	0.5
Tetrachloroethene	127-18-4	ug/kg	0.196	0.5
cis-1,2-Dichloroethene	156-59-2	ug/kg	0.175	1
1,2-Dichloroethene (total)	540-59-0	ug/kg	0.137	1

Notes:

1. The information provided in this table is subject to change at anytime at the discretion of Pace Analytical.
2. Laboratory parameters for disposal samples will be determined by the disposal facility after an approved facility has been determined.

TABLE II
SUMMARY OF ANALYSIS METHOD, PRESERVATION METHOD, HOLDING TIME, SAMPLE SIZE REQUIREMENTS AND SAMPLE CONTAINERS
1 TOWN LINE CIRCLE
ROCHESTER, NEW YORK

Analysis/Method	Sample Type	Preservation	Holding Time	Volume/Weight	Container
Volatile Organic Compounds/8260D	Soil	1 - 1 Vial MeOH/2 Vial Water	14 days	120 mL	3 - 40ml glass vials
Volatile Organic Compounds/8260D	Groundwater	HCl, Cool, 4 ± 2 °C	14 days	120 mL	3 - 40ml glass vials
1,4-Dioxane/8270E	Groundwater	Cool, 4 ± 2 °C	7 days	120 mL	3 - 40ml glass vials
PFAS 1633A	Groundwater	Cool, 4 ± 2 °C	14 days	500 mL	2 - tflon free 250 mL HDPE containers

Notes:
1. Refer to text for additional information.

APPENDIX C

Health and Safety Plan



**HALEY & ALDRICH, INC.
SITE-SPECIFIC SAFETY PLAN**

FOR

DOLLINGER CORPORATION (SITE ID NO. 828078)

1 Townline Circle,

Rochester, New York, 14623

Project/File No. 0129388-006

Click to Select

Prepared By: Emma Loubsky-Lonergan

Date: 5/16/2025

Approvals: The following signatures constitute approval of this Health & Safety Plan.

Field Safety Manager: Sage Bedard

Date: 5/16/2025

Project Manager: Santa McKenna

Date: 5/16/2025

HASP Valid Through: 01/01/2026

Table of Contents

	Page
STOP WORK AUTHORITY	I
ISSUANCE AND COMPLIANCE	II
EMERGENCY EVENT PROCEDURES	III
PROJECT INFORMATION AND CONTACTS	IV
DIRECTIONS TO THE NEAREST HOSPITAL	V
1. WORK SCOPE	7
Project Task Breakdown	8
Subcontractor(s) Tasks	8
2. SITE OVERVIEW / DESCRIPTION	9
Site Classification	9
Site Description	9
Background and Historic Site Usage	9
Site Status	9
Site Plan	9
Work Areas	9
3. HAZARD ASSESSMENT	12
Site Chemical Hazards	12
Site Hazards Checklist	13
Weather	13
High Winds	13
Biological	13
Location/Terrain	16
Miscellaneous	17
Task Hazard Summary	18
Task Physical Hazards Checklist	21
Summary of Physical Hazards & Controls	22
4. PROTECTIVE MEASURES	28
Required Safety & Personal Protective Equipment	28
5. TRAINING REQUIREMENTS	29
Site Specific Training Requirements	29
Task Specific Training Requirements	29
6. AIR MONITORING PLAN AND EQUIPMENT	30
Air Monitoring/Screening Equipment Requirements	30
Monitoring Plans	30
7. DECONTAMINATION & DISPOSAL METHODS	32
Personal Hygiene Safeguards	32
Decontamination Supplies	32

	Location of Decontamination Station	32
	Standard Personal Decontamination Procedures	33
	Disposal Methods	34
	Disposal of Single Use Personal Protective Equipment	34
8.	SITE CONTROL	35
	Communication	35
	Visitors	35
	Zoning	35
9.	SITE SPECIFIC EMERGENCY RESPONSE PLAN	36
	Pre-Emergency Planning	36
	Onsite Emergency Response Equipment	36
	EVACUATION ALARM	37
	EVACUATION ROUTES	37
	EVACUATION MUSTER POINT(S)/ SHELTER AREA(S)	37
	EVACUTION RESPONSE DRILLS	37
	Emergency Type	38
	Notification	38
	Response Action	38
	Evacuation Plan/Route	38
10.	HASP ACKNOWLEDGEMENT FORM	39

Attachments

Attachment A	HASP Amendment Form
Attachment B	Training Requirements
Attachment C	Roles and Responsibilities
Attachment D	Job Safety Analyses
Attachment E	Project Site Forms
Attachment F	Site-Specific Operating Procedures

STOP WORK AUTHORITY

In accordance with Haley & Aldrich (Haley & Aldrich) Stop Work Authority Operating Procedure (OP1035), any individual has the right to refuse to perform work that he or she believes to be unsafe without fear of retaliation. He or she also has the authority, obligation, and responsibility to stop others from working in an unsafe manner.

STOP Work Authority is the stop work policy for all personnel and subcontractors on the Site. When work has been stopped due to an unsafe condition, Haley & Aldrich site management (e.g., Project Manager [PM], Site Health & Safety Officer [SHSO], etc.) and the Haley & Aldrich Senior Project Manager (SPM) will be notified immediately.

Reasons for issuing a stop work order include, but are not limited to:

- The belief/perception that injury to personnel or accident causing significant damage to property or equipment is imminent.
- An Haley & Aldrich subcontractor is in breach of site safety requirements and/or their own site HASP.
- Identifying a substandard condition (e.g., severe weather) or activity that creates an unacceptable safety risk as determined by a qualified person.

Work will not resume until the unsafe act has been stopped OR sufficient safety precautions have been taken to remove or mitigate the risk to an acceptable degree. Stop work orders will be documented as part of an on-site stop work log, on daily field reports to include the activity/activities stopped, the duration, person stopping work, person in-charge of stopped activity/activities, and the corrective action agreed to and/or taken. Once work has been stopped, only the Haley & Aldrich SPM or SHSO can give the order to resume work. Haley & Aldrich senior management is committed to support anyone who exercises his or her “Stop Work” authority.

ISSUANCE AND COMPLIANCE

This HASP has been prepared in accordance with Occupational Safety and Health Administration (OSHA) regulations (CFR 29, Parts 1904, 1910, and 1926) if such are applicable.

The specific requirements of this HASP include precautions for hazards that exist during this project and may be revised as new information is received or as site conditions change.

- This HASP must be signed by all Haley & Aldrich personnel involved in implementation of the SOW (Section 2 of this HASP).
- This HASP, or a current signed copy, must be retained at all times when Haley & Aldrich staff are present.
- Revisions to this HASP must be outlined within the contents of the HASP. If immediate or minor changes are necessary, the Field Safety Manager (FSM), Haley & Aldrich, SSO and/or Project Manager (PM) may use Attachment 1 (HASP Amendment Form), presented at the end of this HASP. Any revision to the HASP requires employees and subcontractors to be informed of the changes so that they understand the requirements of the change.
- Deviations from this HASP are permitted with approval from the Haley & Aldrich FSM, PM, or Senior Health & Safety Manager (SHSM). Unauthorized deviations may constitute a violation of Haley & Aldrich company procedures/policies and may result in disciplinary action.
- This HASP will be relied upon by Haley & Aldrich's subcontractors and visitors to the site. Haley & Aldrich's subcontractors must have their own HASP which will address hazards specific to their trade that is not included in this HASP. This HASP will be made available for review to Haley & Aldrich's subcontractors and other interested parties (e.g. Facility personnel and regulatory agencies) to ensure that Haley & Aldrich has properly informed our subcontractors and others of the potential hazards associated with the implementation of the SOW to the extent that Haley & Aldrich is aware.

This site-specific HASP provides only site-specific descriptions and work procedures. General safety and health compliance programs in support of this HASP (e.g., injury reporting, medical surveillance, personal protective equipment (PPE) selection, etc.) are described in detail in the Haley & Aldrich Corporate Health and Safety Program Manual and within Haley & Aldrich's Standard Operating Procedures. Both the manual and SOPs can be located on the Haley & Aldrich's Company Intranet. When appropriate, users of this HASP should always refer to these resources and incorporate to the extent possible. The manual and SOPs are available to clients and regulators upon request.

EMERGENCY EVENT PROCEDURES	
1 - ASSESS THE SCENE	
<ul style="list-style-type: none"> • <u>STOP WORK</u> • Review the situation and ascertain if it's safe to enter the area. • Evacuate the site if the conditions are unsafe. 	
2 - EVALUATE THE EMERGENCY	
<ul style="list-style-type: none"> • Call 911, or designated emergency number, if required. • Provide first aid for the victim if qualified and safe to do so. <ul style="list-style-type: none"> ○ First aid will be addressed using the onsite first aid kit. * <ul style="list-style-type: none"> ▪ If providing first aid, remember to use proper first aid universal precautions if blood or bodily fluids are present. • If exposure to hazardous substance is suspected, immediately vacate the contaminated area. <ul style="list-style-type: none"> ○ Remove any contaminated clothing and/or equipment. ○ Wash any affected dermal/ocular area(s) with water for at least 15 minutes. ○ Seek immediate medical assistance if any exposure symptoms are present. <p><i>* Note: Haley & Aldrich employees are not required or expected to administer first aid / CPR to any Haley & Aldrich staff member, Contractor, or Civilian personnel at any time; it is Haley & Aldrich's position that those who do are doing so on their own behalf and not as a function of their job.</i></p>	
3 - SECURE THE AREA	
<ul style="list-style-type: none"> • Cordon off the incident area, if possible. <ul style="list-style-type: none"> ○ Notify any security personnel, if required. ○ Escort all non-essential personnel out of the area, if able. 	
4 - REPORT ON-SITE ACCIDENTS / INCIDENTS TO PM / SSO	
<ul style="list-style-type: none"> • Notify the PM and SSO as soon as it is safe to do so. <ul style="list-style-type: none"> ○ Assist PM and SSO in completing any additional tasks, as required. 	
5 - INVESTIGATE / REPORT THE INCIDENT	
<ul style="list-style-type: none"> • Record details of the incident for input to the Gensuite. <ul style="list-style-type: none"> ○ Complete any additional forms as requested by the PM and SSO. 	
6 - TAKE CORRECTIVE ACTION	
<ul style="list-style-type: none"> • Implement corrective actions per the PM following root cause analysis. <ul style="list-style-type: none"> ○ Complete Lessons Learned form. 	

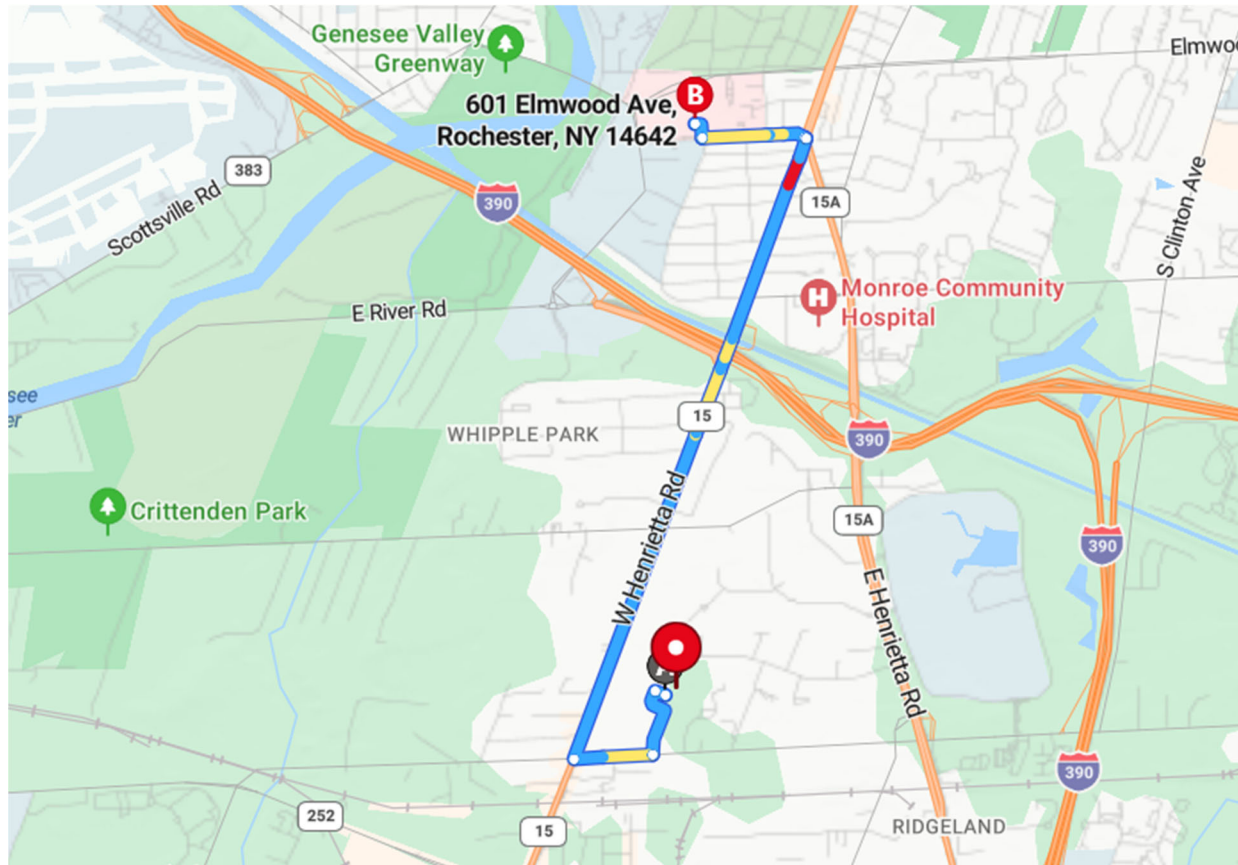
PROJECT INFORMATION AND CONTACTS	
Project Name: DOLLINGER CORPORATION (SITE ID NO. 828078)	Haley & Aldrich File No.: 0129388-006
Location: 1 Townline Circle, Rochester, NY 14623	
Client Contact: Phone Number:	Daniel Fanning 314-480-1610
Site Contact: Phone Number:	Rick Shaheen 585-266-1400
Haley & Aldrich Field Representative: Phone Number: Emergency Phone Number:	Kim Bartlett 585.321.4234 909.472.2116
Haley & Aldrich Project Manager: Phone Number: Emergency Phone Number:	Santa McKenna 585.321.4242 585.490.0760
Field Safety Manager: Phone Number: Emergency Phone Number:	Sage Bedard 781.685.2167 914.960.2762
Subcontractor Project Manager: Phone Number:	Steven Marchetti 585-770-4332
Nearest Hospital: Address: (see map on next page) Phone Number:	Strong Memorial Hospital 601 Elmwood Ave. Rochester, NY 14642 585-275-4551
Nearest Occ. Health Clinic: Work Care Phone Number:	Contact work care for directions to nearest occupational health clinic 888.449.7787
Liberty Mutual Claim Policy	WC6Z11254100033
Emergency Response Number:	911
Other Local Emergency Response Number:	N/A

DIRECTIONS TO THE NEAREST HOSPITAL

[Liberty Mutual Medical Location Directory](#)

Directions to the Nearest Hospital:

↑	1. Depart and head (west)	180 ft
↩	2. Turn left , then immediately turn right onto Townline Circle	0.2 mi
↗	3. Turn right onto Brighton Henrietta Town Line Rd / County Hwy-85	0.2 mi
↗	4. Turn right onto NY-15 / W Henrietta Rd	2.0 mi
↩	5. Turn left onto Crittenden Blvd McDonald's on the corner	30 ft
↑	6. Road name changes to Crittenden Blvd	0.3 mi
↗	7. Turn right	322 ft
	8. Arrive at destination The last intersection before your destination is Crittenden Blvd	



1. WORK SCOPE

This Site-Specific Health and Safety Plan addresses the health and safety practices and procedures that will be exercised by all Haley & Aldrich employees participating in all work on the Project Site. This plan is based on an assessment of the site-specific health and safety risks available to Haley & Aldrich and Haley & Aldrich's experience with other similar project sites. The scope of work includes the following:

Three permanent monitoring wells will be installed in the grassy area north of the building. Prior to drilling activities, Dig Safely New York will be contacted to mark underground utilities in areas where intrusive activities will occur. A call to Dig Safely New York will be placed two weeks prior to the start date. Prior to drilling, a subcontractor will perform utility clearance using a hand auger to five feet bgs.

Monitoring wells will be installed using hollow-stem augers. Soils will be screened in the field for volatile organic compounds (VOCs) using a photoionization detector (PID). One soil sample will be collected at each well location. Soil samples will be collected directly above the water table or in areas where evidence of impact is observed (i.e. staining, elevated PID readings). Soil samples will be analyzed for VOCs by U.S. Environmental Protection Agency (EPA) Method 8260D.

Community air monitoring will be performed according to the New York State Department of Health (NYSDOH) generic Community Air Monitoring Plan (CAMP). A copy of the NYSDOH generic CAMP is included as Appendix A. This plan requires real-time monitoring of VOCs and particulates at the upwind and downwind perimeter of designated work areas when certain activities are in progress. The CAMP contains conservative monitoring threshold values established by the NYSDOH, and provisions requiring that response actions are promptly implemented, if necessary, to reduce emissions at the work site perimeter to levels deemed acceptable by NYSDOH and NYSDEC, including but not limited to ceasing work if necessary.

Monitoring wells will be installed to a depth of 24 feet bgs. The wells will be screened within the bottom 10 feet (14 to 24 feet) of each borehole to correlate with the screened zone of previously decommissioned shallow monitoring wells. Monitoring wells will be constructed using 2-inch-diameter Schedule-40 polyvinyl chloride (PVC) pipe riser, and 10 feet of Schedule-40 PVC 0.010-inch slotted screen. The wells will be completed as stick-ups with protective steel casing.

Following installation, all wells will be sufficiently developed to remove any sediments. Wells will be purged using a whale pump or bailer and purged until 10 well volumes have been removed or turbidity values are below 50 nephelometric turbidity units (NTUs).

At least two weeks after development, groundwater samples will be collected from each monitoring well using low-flow sampling techniques. Prior to sampling, a synoptic gauging event of all wells will be completed. Groundwater samples will be collected and analyzed for VOCs by U.S. Environmental Protection Agency EPA Method 8260D, 1,4-dioxane via EPA Method 8270, and Per- and Poly-Fluoroalkyl Substances (PFAS) via EPA Method 1633A.

Non-dedicated sampling equipment (i.e., water level indicators, whale pumps, etc.) will be decontaminated using Alconox® prior to sampling at each location to reduce the potential for cross-contamination. Soil cuttings and purge water generated during drilling activities will be containerized

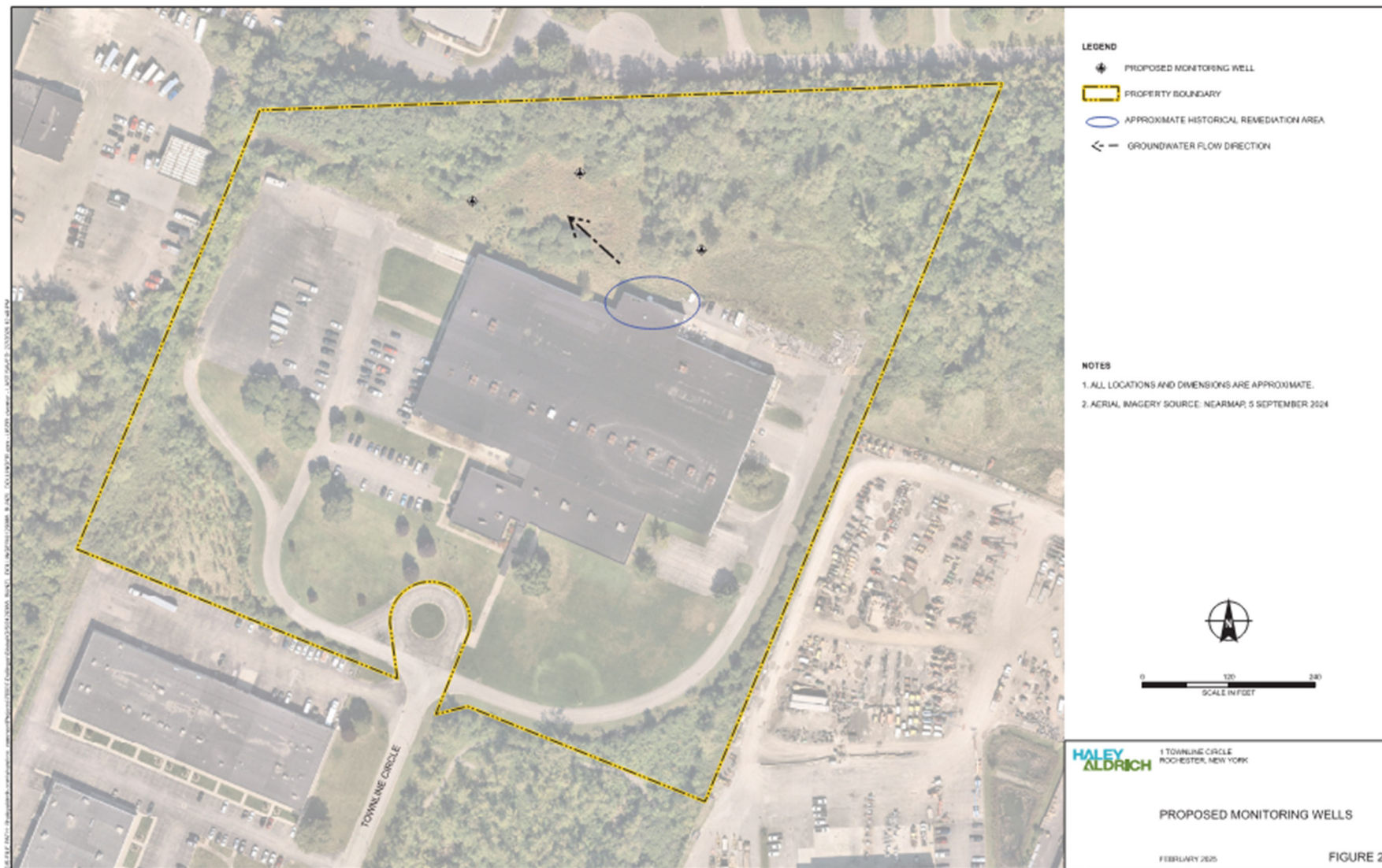
in 55-gallon drums, characterized, and disposed of off-site in accordance with applicable regulations. The drums will be staged against the back of the building until disposal.

Project Task Breakdown			
Task No.	Task Description	Employee(s) Assigned	Work Date(s) or Duration
1	CAMP Monitoring	K. Bartlett	1 day
2	Drilling oversight	K. Bartlett	1 day
3	Soils logging, screening, and sampling	K. Bartlett	1 day
4	Monitoring well installation and development oversight	K. Bartlett	1 day
5	Low-flow groundwater sampling	D. Loewenguth	1 day
6	Decontamination/ Waste Management	D. Loewenguth	¼ day
Subcontractor(s) Tasks			
Firm Name		Work Activity	Work Date(s) or Duration
Matrix Environmental Technologies		Utility clearance	¼ day
Matrix Environmental Technologies		Monitoring well installation	1 day
Matrix Environmental Technologies		Monitoring well development	½ day
Matrix Environmental Technologies		Decontamination/ waste drum management	¼ day
Projected Start Date: July 2025			
Projected Completion Date: July 2025			

2. SITE OVERVIEW / DESCRIPTION
Site Classification
Manufacturing
Site Description
<p>The former Dollinger Corporation site is located in a commercial/industrial area in the Town of Brighton on a cul-de-sac just north of Brighton-Henrietta Townline Road (see Figure 1). The 18.5-acre property consists of a 140,000-square-foot, single story building that was used for manufacturing and office space. A parking area is located on the western portion of the site and loading docks are on the eastern portion of the site. The northern portion of the site is vacant land with grass and wooded areas. The current building is occupied by a granite and quartz countertop manufacturing company.</p> <p>Site geology consists of sand and gravel fill within the upper three feet of soils. Native soils are lacustrine deposits consisting of silts and clays between approximately 3 and 45 feet below ground surface (bgs). Fine sands and silts were encountered below 45 feet bgs until bedrock which was encountered at approximately 80 feet bgs. Bedrock is interpreted to be Vernon Shale. Groundwater was encountered at depths ranging from 10 to 15 feet bgs. Groundwater generally flows to the northwest.</p>
Background and Historic Site Usage
<p>The Site was the location of the manufacture and assembly of industrial filters between 1970 and 1987. Operations at the facility ceased in approximately 1987 and the building was vacated of personnel, equipment, and operations prior to its sale in 1989. The former degreasing operation was located in the Annex portion of the building, which is currently vacant. Between 1991 and 2001 a predecessor company to Bunzl, American Filtrona, entered into an Order on Consent with the Department to complete investigation and remediation of the Site, with focus on groundwater, soil and sediment found to have been impacted by the former degreaser operations. That work was completed in conformance with the Order on Consent. The site equipment and wells were decommissioned with approval from NYSDEC in 2001.</p>
Site Status
<p>Indicate current activity status and describe operations at the site:</p> <p>Partially Active</p> <p>The northern portion of the site is vacant land with grass and wooded areas. The current building is occupied by a granite and quartz countertop manufacturing company.</p>
Site Plan
Is a site plan or sketch available? Yes
Work Areas
List and identify each specific work areas(s) on the job site and indicate its location(s) on the site plan:

1. Field north of property building

Site Plan



3. HAZARD ASSESSMENT			
Site Chemical Hazards			
Is this Site impacted with chemical contamination? Yes			
Source of information about contaminants: Previous Investigation			
Contaminant of Concern	Location/Media	Concentration	Units
Trichloroethylene	Vapor	0.061	ug/M3
Tetrachloroethylene	Vapor	0.15	ug/M3
Vinyl Chloride	Vapor	ND	ug/M3
Cis- 1,2-Dichloroethylene	Vapor	ND	ug/M3
<p>Tetrachloroethylene: is a colorless liquid with a sharp sweet odor. Tetrachloroethylene vapor is heavier than air and will be found in low lying areas.</p> <p>Trichloroethylene: is a nonflammable colorless liquid with a sweet odor. Trichloroethylene vapor is heavier than air and is found in low lying areas.</p> <p>Vinyl Chloride: is a colorless, flammable gas that evaporates very quickly. Vinyl chloride can be formed in the environment when soil organisms break down "chlorinated" solvents. In the environment, the highest levels of vinyl chloride are found in air around factories producing vinyl products. Vinyl chloride that is released by industries or formed by the breakdown of other chlorinated chemicals can enter the air and drinking water supplies. It is a common contaminant found near landfills.</p> <p>Most exposure occurs when people breathe contaminated air. If a water supply is contaminated, vinyl chloride can enter household air when the water is used. It can be absorbed through the skin if handling vinyl products, contaminated soil, or bathing in contaminated water. Skin absorption is probably a minor route of exposure.</p> <p>Vinyl chloride is very toxic and contact with this chemical should be avoided. Health effects can occur after several years of exposure such as damage to the nervous system, changes in the immune system and decrease in bone strength in fingers, arms, and joints. It can also increase a person's risk of developing cancer.</p> <p>Cis- 1,2-Dichloroethylene: is a clear, colorless liquid and has an ether like odor. It is utilized to produce many types of pharmaceuticals, solvents, resins and has been used to help extract oils and fats from fish and other meat. Cis-1,2-Dichloroethylene has also been utilized as a refrigerant.</p>			

Site Hazards Checklist			
Weather			
Hot Temperatures	High Winds	Lightning Storms	
<p>Hot Temperatures</p> <p>Heat stress may occur at any time work is being performed at elevated ambient temperatures. Because heat stress is one of the most common and potentially serious illnesses associated with outdoor work during hot seasons, regular monitoring and other preventative measures are vital. Site workers must learn to recognize and treat the various forms of heat stress. The best approach is preventative heat stress management.</p> <p>H&A employees and their subcontractors should be aware of potential health effects and/or physical hazards of working when there are hot temperatures or a high heat index. Refer OP1015-Heat Stress for a discussion on hot weather hazards.</p> <p>High Winds</p> <p>While high winds are commonly associated with severe thunderstorms and hurricanes they may also occur as a result of differences in air pressures, such as when a cold front passes across the area. They can cause downed trees and power lines, and flying debris (such as dust or larger debris), which adds additional risks and could lead to power outages, transportation disruptions, damage to buildings and vehicles, and serious injury.</p> <p>Wind Advisory are issued for sustained winds 25 to 39 mph and/or gusts to 57 mph. High Wind warnings are issued by the National Weather Service when high wind speeds may pose a hazard or is life threatening. The criteria for this warning will varies by state. The Beaufort Wind Scale is a helpful tool to when dealing with high winds.</p> <p>Lightning Storms</p> <p>Where the threat of electrical storms and the hazard of lightning exist staff shall ensure site procedures exist to: (1) detect when lightning is in the near vicinity and when there is a potential for lightning and (2) to notify appropriate site personnel of these conditions and (3) implement protocols to stop work and seek shelter.</p> <p>The 30-30 Rule states that if time between seeing the lightning and hearing the thunder is less than 30 seconds, you are in danger and must seek shelter. You must also stay indoors for more than 30 minutes after hearing the last clap of thunder.</p>			
Biological			
Small Mammals	Mosquitos	Stinging Insects	Ticks

Small Mammals

Rodents, are the most abundant order of mammals. There are hundreds of species of rats; the most common are the black and brown rat. Other rodents you may encounter are mice, beavers, squirrels, guinea pigs, capybaras and coypu.

The Brown Rat has small ears, blunt nose, and short hair. It is approximately 14-18" long (with tail). They frequently infest garbage/rubbish, slaughterhouses, domestic dwellings, warehouses, and supermarkets. They also frequent any space with an easy meal and potential nesting sites. The Black Rat is identified by its tail, that is always longer than the length from the head to the body. It is also slimmer and more agile than the Brown rat. Its size varies according to its environment and food supply.

The House Mouse has the amazing ability to adapt and can frequently be found in human dwellings. In buildings, mice will live anywhere and difficult to keep out. Mice are omnivorous, they will eat anything. Rats and mice often become a serious problem in cold winter months when they seek food and warmth inside buildings. They may suddenly appear in large numbers when excavation work disturbs their in-ground nesting locations or their food source is changed.

Some major problems caused by rats and mice are contaminating the food they eat with urine and excrement. Gnawing into materials such as paper, wood, or upholstery, to use as nest material. Also gnawing plastic, cement, soft metals such as lead and aluminum, and wiring, which may cause a fire hazard. Occasionally biting people and may kill small animals. They, or the parasites they carry, like fleas, mites and worms, spread many diseases such as salmonella, trichinosis, rat bite fever, hantavirus, Weil's disease, and bubonic plague. They damage ornamental plants by burrowing among the roots or feeding on new growth. They also eat garden vegetables, such as corn and squash. These rodents have been a problem for centuries, because of their incredible ability to survive and are so difficult to eliminate. In addition, they are extremely compatible with human behavior and needs.

Avoid contact with rodents, if possible. Avoid contact with rodent excrement. Do not eat food or water that may have encountered rodent excrement. If exposed, wash hands and avoid touching your face with your hands.

Mosquitos

Work outdoors with temperatures above freezing will likely bring staff into contact with mosquitos. There are a variety of mosquito species that can transmit a range of diseases. Birds act as reservoirs for the viruses that can be collected by the mosquito and transmitted to a person. Majority of mosquitos are mainly a nuisance but staff need to take appropriate precautions to minimize the potential transmission of a virus that can result in one of the following diseases: West Nile, Eastern Equine Encephalitides and Western Encephalitides. Knowing some key steps that can minimize the risk of mosquito bites is, therefore, important in reducing the risks. Workers working outdoors should be aware that the use of PPE techniques is essential to preventing mosquito bites especially when working at sites where mosquitoes may be active and biting.

Use repellents containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus and para-menthane-diol products provide longer-lasting protection. To optimize safety and effectiveness,

repellents should be used according to the label instructions. Cover as much of your skin as possible by wearing shirts with long-sleeves, long pants, and socks whenever possible. Avoid use of perfumes and colognes when working outdoors during peak times when mosquitoes may be active; mosquitoes may be more attracted to individuals wearing perfumes and colognes.

Stinging Insects

Stinging Insects fall into two major groups: Apidae (honeybees and bumblebees) and vespids (wasps, yellow jackets, and hornets). Apidae are docile and usually do not sting unless provoked. The stinger of the honeybee has multiple barbs, which usually detach after a sting. Vespids have few barbs and can inflict multiple stings.

There are several kinds of stinging insects that might be encountered on the project site. Most stings will only result in a temporary injury. However, sometimes the effects can be more severe, even life-threatening depending on where you are stung and what allergies you have. Being stung in the throat area of the neck may cause edema (swelling caused by fluid build-up in the tissues) around the throat and may make breathing difficult.

In rare cases, a severe allergic reaction can occur. This can cause "anaphylaxis" or anaphylactic shock with symptoms appearing immediately or up to 30 minutes later. Symptoms include; Hives, itching and swelling in areas other than the sting site, swollen eyes/eyelids, wheezing, chest tightness, difficulty breathing, hoarse voice, swelling of the tongue, dizziness or sharp drop in blood pressure, shock, unconsciousness or cardiac arrest. Reactions can occur the first time you are stung or with subsequent stings. If you see any signs of reaction, or are unsure, call or have a co-worker call emergency medical services (e.g., 911) right away. Get medical help for stings near the eyes, nose or throat. Stay with the person who has been stung to monitor their reaction.

Staff who are allergic to bee stings are encouraged to inform their staff/project manager. If staff member carries an Epi-pen (i.e., epinephrine autoinjector) they are encouraged to inform their colleagues in case they are stung and are incapable of administering the injection. Examine site for any signs of activity or a hive/nest. If you see several insects flying around, see if they are entering/exiting from the same place. Most will not sting unless startled or attacked. Do not swat, let insects fly away on their own. If you must, walk away slowly or gently "blow" them away. If a nest is disturbed and you hear "wild" buzzing, protect your face with your hands and run from the area immediately. Wear long sleeves, long pants, and closed-toed boots. Wear light colored clothes such as khakis. Avoid brightly colored, patterned, or black clothing. Tie back long hair to avoid bees or wasps from entanglement. Do not wear perfumes, colognes or scented soaps as they contain fragrances that are attractive. If bee or wasp is found in your car, stop and leave windows open.

Ticks

Ticks are generally found in wooded, brushy, or grassy areas. They favor moist, shaded areas with fallen leaves and low vegetation, often sitting on the tips of tall grass or on shrubs waiting for a host to pass. Adult ticks are approximately the size of sesame seeds and are most active from March to mid-May and mid-August to November. Both nymphs and adults can transmit Lyme disease. Ticks can be active any time the temperature is above freezing. Ticks burrow into the host's skin to position themselves to withdraw blood. Infected ticks pass pathogens to the host through the bloodstream. Once imbedded, they may remain on the host for days. On humans, they frequently crawl to fleshy parts of the body

and into difficult to reach spots such as the groin, armpit, or scalp.

A fine-tipped tweezer is recommended for tick removal tool and should be in the first-aid kit. Follow these steps: Pull upward with steady, even pressure. Do not twist or jerk the tick; this can cause mouth parts to break off and remain in the skin. If this happens, remove the parts with tweezers. If unable to remove easily with tweezers, leave them alone and let the skin heal.

After removing the tick, thoroughly clean the bite area and hands with rubbing alcohol, iodine scrub, or soap & water. Dispose of live ticks by submersion in alcohol, placing it in a sealed bag/container, wrap it tightly in tape or flush it down the toilet. Never crush ticks with your fingers. Do not attempt to use nail polish remover, petroleum jelly, lotion or heat to try to get the tick to exit skin. Swift removal is key.

Wear light-colored clothing so ticks stand out and long-sleeved shirts and long pants to reduce skin exposure. Tuck your shirt into your pants and tuck your pants into your socks to close gaps. Use repellent containing 20-30% DEET (N, N-diethyl-m-toluamide) on exposed skin and clothing. Avoid hands, eyes and mouth and wash off repellent when back indoors. Treat clothing with or purchase clothing with products containing 0.5% permethrin. It remains protective through several washings. Conduct frequent tick checks on clothing and skin. Have others check your back, scalp, and behind your ears and check gear for "hitchhikers". As soon as returning indoors, take a bath or shower and do a full-body inspection using a mirror. Wash field clothes and tumble dry on high to kill any ticks that may be hidden. If working in an area of significant tick habitat PPE may need to be upgraded to a Tyvek suit. Implementation of controls is crucial to minimize or eliminate the possibility of a tick bite. Should a staff member find an embedded tick they need to report it immediately to Corporate H&S. If a staff member has been bitten contact Corporate H&S and Work Care at 888-449-7787 to initiate the Tick Management Protocol. Once bitten, it takes approximately 48 hours to transmit Lyme Disease.

Location/Terrain			
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Slip/Trip/Falls	Choose an item.		
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Slips, Trips & Falls

Slip and trip injuries are the most frequent injuries to workers. Statistics show most falls happen on the same level resulting from slips and trips. Both slips and trips result from unintended or unexpected change in the contact between the feet and the ground or walking surface. Good housekeeping, quality of walking surfaces (flooring), awareness of surroundings, selection of proper footwear, and appropriate pace of walking are critical for preventing fall accidents.

Site workers will be walking on a variety of irregular surfaces, that may affect their balance. Extra care must be taken to walk cautiously near rivers because the bottom of the riverbed maybe slick and may not be visible. Rocks, gradient changes, sandy bottoms, and debris may be present but not observable.

Take your time and pay attention to where you are going. Adjust your stride to a pace that is suitable for the walking surface and the tasks you are doing. Check the work area to identify hazards - beware of trip hazards such as wet floors, slippery floors, and uneven surfaces or terrain. Establish and utilize a pathway free of slip and trip hazards. Choose a safer walking route. Carry loads you can see over. Keep work areas clean and free of clutter. Communicate hazards to on-site personnel and remove hazards as appropriate.

Miscellaneous			
Choose an item.	Choose an item.	Choose an item.	Choose an item.
Click + to Add Additional Hazard Language			

Task Hazard Summary**Tasks 1-6 - Site Walk**

General hazards associated with site walk-throughs and site surveys include the following: • Exposure to irritant and toxic plants such as poison ivy and sticker bushes may cause allergic reactions to personnel. • Surfaces covered with heavy vegetation and undergrowth create a tripping hazard. • Back strain due to carrying equipment, tools, and instruments. • Native wildlife such as rodents, ticks, and snakes present the possibility of insect bites and associated diseases such as Lyme disease. Driving vehicles on uneven or unsafe surfaces can result in accidents such as overturned vehicles or flat tires. • Heat stress/cold stress exposure.

HAZARD PREVENTION • Wear long-sleeved clothing and slacks to minimize contact with irritant and toxic plants and to protect against insect bites. Appropriate first aid for individuals' known allergic reactions. • Be alert and observe terrain while walking to minimize slips and falls. • Use proper lifting techniques to prevent back strain. • Avoid wildlife when possible. In case of an animal bite, perform first aid and capture the animal, if possible, for rabies testing. Perform a tick check after leaving a wooded or vegetated area. • Ensure all maintenance is performed on vehicles before going to the field. A site surveillance on foot might be required to choose clear driving paths. • Implement heat stress management techniques such as shifting work hours, fluid intake, and monitoring employees, especially high risk workers.

Task 2 - Underground Utility Clearance

Ground disturbance activities such as excavating or drilling have the potential to contact underground utilities and may be considered a hazardous activity and a permit to work may be required. Once the H&A Project Manager has identified the work zone and the areas designated for ground disturbance the PM or designee is required to delineate the area with either white paint or flags so that the appropriate agencies know which area to check for their respective utilities. Haley & Aldrich staff members must ensure that permission has been gained from the property owner to access the property prior to site entry and before marking any proposed exploration or drilling locations.

The Project Manager shall verify that the proposed dig or drill zones are adequately marked or staked prior to the locators site visit, and that the appropriate Line Location Organization/ Contractor has been notified (a minimum of 72 business hours in advance) of all planned ground disturbance activities and a request for line location has been registered with the applicable One Call or dial Before You Dig organization when applicable. Personnel that are required to mark the area need to identify and understand the hazards associated with the project area which can range from a public roadway to a greenspace in a remote location.

See OP1020 Work Near Utilities.

Task 2 – Hand Augering

A hand auger is used to collect surficial soil samples up to eight (8) feet in depth. There are a variety of hand augers such as bucket and bit augers, continuous flight (screw) and post-hole augers. This equipment can be used in a wide variety of soil conditions. The presence of rock layers and collapsing of the borehole usually prohibit sampling at depths greater than 3 to 6 feet.

When using a hand auger the area in which the bore holes are located needs to be cleared of any underground utilities prior to initiating work. Check boring locations for potential hazards such as poison ivy, evidence of underground piping, rubble, rebar or old foundations. Stretch prior to initiating work. Stand upwind to avoid exposure whenever possible. Use proper tools for hand augering (augers with non-conductive handles) and use proper lifting techniques. Proceed slowly and use caution. The diameter of the boring should be equal to or greater than the diameter of drill augers or geoprobe rods. ONLY remove the auger flights one at a time, as they were put on; do NOT pull the entire auger out of the hole at once.

Avoid twisting and straining with the hand auger. Use a posthole digger to pull and remove debris that cannot be removed with the hand auger. Proceed slowly and use caution. An offset handle (outward closing) style posthole digger should be used. If post hole digger does not work, use a steel spud bar to pry and dislodge debris. Do not attempt to remove objects or debris that are too large to recover with a post hole digger. If you suspect you have encountered a buried metallic object, stop work and immediately and notify the site manager.

Task 3 – Soil Sampling

Soil sampling by H&A staff on active construction sites can be conducted in conjunction with a wide range activities such as building construction, earthwork and soil management related activities. These activities can include, but are not limited to: drill spoil characterization and management during building foundation element installation, characterization of excavated soils for management/disposal/reuse during earthwork activities, and as part of environmental remedial activities such as delineation and confirmation sampling. Familiarity with basic heavy construction safety, site conditions (geotechnical and environmental), and potential soil contaminants are essential components of soil sampling performed on active sites. Potential hazards related to soil sampling at construction sites include, but are not limited to: encountering site vehicle traffic and heavy equipment operations, manual lifting, generated waste, contact or exposure to impacted soil, and encountering unknown toxic or hazardous substances. Although soil sampling is commonly performed within active excavations, from stockpiles, or within trench excavations, sampling locations and situations will vary depending on site conditions. Care should be taken while entering and exiting excavations or trenches, and when accessing (climbing up or down) soil stockpiles, ensuring that the sampling area is not being actively accessed by construction equipment. Care should also be taken with handling of potentially environmentally impacted soil during sampling, with appropriate PPE identified and used. At no time during classification activities are personnel to reach for debris near machinery that is in operation, place any samples in their mouth, or come in contact with the soils without the use of gloves. Staff will have to carry and use a variety of sampling tools, equipment, containers, and potentially heavy sample bags. It is imperative that staff are aware of emergency / communication protocols with the Contractor prior to the start of work.

Task 2 – Drilling

Drilling is conducted for a range of services that can include but are not limited to: soil characterization, environmental investigation, well installation, and ore exploration. Familiarity with basic drilling safety is an essential component of all drilling projects. Potential hazards related to drilling operations include, but are not limited to encountering underground or overhead utilities, traffic and heavy equipment, hoisting heavy tools, steel impacts, open rotation entanglement, and the planned or unexpected encountering of toxic or hazardous substances. While staff members do not operate drilling equipment, they may work in close proximity to operating drilling equipment and may be exposed to many of the same hazards as the drilling subcontractor. It is imperative that staff are aware of emergency stops and establish communication protocols with the drillers prior to the start of work.

See OP 1002 Drilling Safety for more information.

Task 5 – Water Sampling

Environmental water sampling could include activities such as groundwater sampling from permanent or temporary wells, or surface water sampling from streams, rivers, lakes, ponds, lagoons, and surface impoundments.

Sampling tasks could involve uncapping, purging (pumping water out of the well), and sampling, and/or monitoring, new or existing monitoring wells. A mechanical pump may be used to purge the wells and can be hand-, gas-, or electric-operated. Water samples taken from the wells are then placed in containers and shipped to an analytical laboratory for analysis. The physical hazards of these operations are primarily associated with the collection methods and procedures used.

When sampling bodies of water containing known or suspected hazardous substances, adequate precautions must be taken to ensure the safety of sampling personnel. The sampling team member collecting the sample should not get too close to the edge, where ground failure or slips, trips or falls may cause him/her to lose his/her balance. The person performing the sampling should have fall restraint or protection for the task. When conducting sampling from a boat in an impoundment or flowing waters, appropriate vessel safety procedures should be followed. Avoid lifting heavy coolers with back muscles; instead, use ergonomic lifting techniques, team lift or mechanical lifts. Wear proper gloves, such as when handling sample containers to avoid contacting any materials that may have spilled out of the sample containers.

Inhalation and absorption of COCs are the primary routes of entry associated with water sampling, due to the manipulation of sample media and equipment, manual transfer of media into sample containers, and proximity of operations to the breathing zone. During this project, several different groundwater sampling methodologies may be used based on equipment accessibility and the types of materials to be sampled. These sampling methods may include hand or mechanical bailing. The primary hazards associated with these specific sampling procedures are not potentially serious; however, other operations in the area or the conditions under which samples must be collected may present chemical and physical hazards. The hazards directly associated with groundwater sampling procedures are generally limited to strains or sprains from hand bailing, and potential eye hazards. Exposure to water containing COCs is also possible. All tools and equipment that will be used at the site must be intrinsically safe (electronics and electrical equipment) and non-sparking or explosion-proof (hand

tools).

Task Physical Hazards Checklist						
Potential Task Hazards	Task 1 CAMP Monitoring	Task 2 Drilling Oversight	Task 3 Soils logging, screening, & sampling	Task 4 Monitoring well install & development oversight	Task 5 Low flow GW sampling	Task 6 Decon. & Waste Management
Ergonomics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Energized Equipment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Generated Wastes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ground Disturbance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heavy Equipment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Line of Fire	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual Lifting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Noise	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Repetitive Motion	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Rotating Equipment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slippery Surfaces	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sharp Objects	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Underground Utilities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summary of Physical Hazards & Controls

Energized Equipment

Energy sources including electrical, mechanical, hydraulic, pneumatic, or other sources in machines and equipment can be hazardous to workers. During servicing and maintenance of machines and equipment, the unexpected startup or release of stored energy can result in serious injury or death to workers.

Staff members that are required to work on energized equipment must first ensure that the source of energy is isolated and/or de-energized. In addition, any stored energy must also be released. Staff must ensure that the process to de-energize and isolate energy sources is documented and communicated to those who are working on the equipment. Staff must be trained on and understand the procedure.

See OP 1032 Control of Hazardous Energy for more information.

Controls

- Document process to de-energize or isolate energy sources.
- Ensure staff are appropriately trained to conduct work requiring LOTO.
- Affix log or tag to equipment to ensure improper start-up or release of energy.
- Execute an Energy Isolation Permit.

Ergonomics

Most Work-related Musculoskeletal Disorders (WMSDs) are caused by Ergonomic Stressors. Ergonomic Stressors are caused by poor workplace practices and/or insufficient design, which may present ergonomic risk factors. These stressors include, but not limited to, repetition, force, extreme postures, static postures, quick motions, contact pressure, vibration, and cold temperatures.

WMSDs are injuries to the musculoskeletal system, which involves bones, muscles, tendons, ligaments, and other tissues in the system. Symptoms may include numbness, tightness, tingling, swelling, pain, stiffness, fatigue, and/or redness. WMSD are usually caused by one or more Ergonomic Stressors. There may be individual differences in susceptibility and symptoms among employees performing similar tasks. Any symptoms are to be taken seriously and reported immediately.

See OP1053 Ergonomics for more information.

Controls

- Ensure workstations are ergonomically correct so bad posture is not required to complete tasks.
- Take periodic breaks over the course of the day.
- Stretch during break times.
- Break up tasks that require repetitive motion.
- Contact Corporate H&S with any ergonomic concerns

Generated Waste

Activities on environmental sites may generate waste that requires regulated handling and disposal. Excess sample solids, decontamination materials, poly sheeting, used PPE, etc. that are determined to be free of contamination through field or laboratory screening can usually be disposed into client-approved, on-site trash receptacles. Uncontaminated wash water may be discarded onto the ground

surface away from surface water bodies in areas where infiltration can occur. Contaminated materials must be segregated into liquids or solids and drummed separately for off-site disposal.

Controls

- Manage waste properly through good work practices.
- Collect, store, containerize waste, and dispose of it properly.
- All wastes generated shall be containerized in an appropriate container (i.e. open or closed top 55-gallon drum, roll-off container, poly tote, cardboard box, etc.) as directed by the PM.
- Containers should be inspected for damages or defects
- Waste containers should be appropriately labeled indicating the contents, date the container was filled, owner of the material (including address) and any unique identification number, if necessary.
- Upon completion of filling the waste container, the container should be inspected for leaks and an appropriate seal.

Ground Disturbance

Ground disturbance is defined as any activity disturbing the ground. Ground disturbance activities include, but are not limited to, excavating, trenching, drilling (either mechanically or by hand), digging, plowing, grading, tunneling and pounding posts or stakes.

Because of the potential hazards associated with striking an underground utility or structure, the operating procedure for underground utility clearance shall be followed prior to performing any ground disturbance activities.

See OP1020 Working Near Utilities

Controls

Prior to performing ground disturbance activities, the following requirements should be applied:

- Confirm all approvals and agreements (as applicable) either verbal or written have been obtained.
- Request for line location has been registered with the applicable One-Call or Dial Before You Dig organization, when applicable.
 - Whenever possible, ground disturbance areas should be adequately marked or staked prior to the utility locators site visit.
- Notification to underground facility operator/owner(s) that may not be associated with any known public notification systems such as the One-Call Program regarding the intent to cause ground disturbance within the search zone.
- Notifications to landowners and/or tenant, where deemed reasonable and practicable.
- Proximity and Common Right of Way Agreements shall be checked if the line locator information is inconclusive.

Heavy Equipment

Staff must be careful and alert when working around heavy equipment, failure or breakage and limited visibility can lead to accidents and worker injury. Heavy equipment such as cranes, drills, haul trucks, or other can fail during operation increasing chances of worker injury. Equipment of this nature shall be visually inspected and checked for proper working order prior to commencement of field work. Those operating heavy equipment must meet all requirements to operate the equipment. Haley & Aldrich, Inc.

staff that supervise projects or are associated with high risk projects that involve digging or drilling should use due diligence when working with a construction firm.

See OP1052 Heavy Equipment for additional information.

Controls

- Only approach equipment once you have confirmed contact with the operator (e.g., operator places the bucket on the ground).
- Always maintain visual contact with operators and keep out of the strike zone whenever possible.
- Always be alert to the position of the equipment around you.
- Always approach heavy equipment with an awareness of the swing radius and traffic routes of all equipment and never go beneath a hoisted load.
- Avoid fumes created by heavy equipment exhaust.

Line of Fire

Line of fire refers to the path an object will travel. Examples of line of fire situations typically observed on project sites include lifting/hoisting, lines under tension, objects that can fall or roll, pressurized objects or lines, springs or stored energy, work overhead, vehicles and heavy equipment.

Controls

- Never walk under a suspended load.
- Be aware and stay clear of tensioned lines such as cable, chain and rope.
- Be cautious of torque stresses that drilling equipment and truck augers can generate. Equipment can rotate unexpectedly long after applied torque force has been stopped.
- Springs and other items can release tremendous energy if compressed and suddenly released
- Items under tension and pressure can release tremendous energy if it is suddenly released.
- Not all objects may be overhead; be especially mindful of top-heavy items and items being transported by forklift or flatbed.
- Secure objects that can roll such as tools, cylinders, and pipes.
- Stay clear of soil cuttings or soil stockpiles generated during drilling operations and excavations, be aware that chunks of soil, rocks, and debris can fall or roll.

Manual Lifting/Moving

Most materials associated with investigation, remedial, or construction-related activities are moved by hand. The human body is subject to damage in the forms of back injury, muscle strains, and hernia if caution is not observed in the handling process.

Controls

- Under no circumstances should any one person lift more than 49 pounds unassisted.
- Always push, not pull, the object when possible.
- Size up the load before lifting. If it is heavy or clumsy, get a mechanical aid or help from a worker.
- Bend the knees; it is the single most important aspect of lifting.
- When performing the lift:
 - Place your feet close to the object and center yourself over the load.
 - Get a good handhold.
 - Lift straight up, smoothly and let your legs do the work, not your back!

- Avoid overreaching or stretching to pick up or set down a load.
- Do not twist or turn your body once you have made the lift.
- Make sure beforehand that you have a clear path to carry the load.
- Set the load down properly.

Noise

Working around heavy equipment (drill rigs, excavators, etc.) often creates excessive noise. The effects of noise include physical damage to the ear, pain, and temporary and/or permanent hearing loss. Workers can also be startled, annoyed, or distracted by noise during critical activities. Noise monitoring data that indicates that working within 25 feet of operating heavy equipment result in exposure to hazardous levels of noise (levels greater than 85 dBA).

See OP 1031 Hearing Conservation for additional information.

Controls

- Personnel are required to use hearing protection (earplugs or earmuffs) within 25 feet of any operating piece of heavy equipment.
- Limit the amount of time spent at a noise source.
- Move to a quiet area to gain relief from hazardous noise sources.
- Increase the distance from the noise source to reduce exposure.

Repetitive Motion

Repetitive Motion or Strain Injuries are injuries effecting muscles, nerves, and tendons by repetitive movement and overuse. Almost any kind of awkward or repetitive motion you make could lead to an injury over time. Actions like bending or twisting of the wrists, reaching for materials, working with your hands above shoulder level, or grasping objects can increase wear and tear on the body. The condition mostly effects the upper body.

Controls

- Arrange your work zone, supplies and tools as much as possible to avoid reaching, leaning, bending and twisting your waist or wrists.
- During rest breaks, use stretches to loosen up your body.
- Vary tasks if you can so that you are not making the same movement repeatedly over for a long period.

Rotating Equipment

Exposure to rotating parts can occur when working near a drilling rig, or other similar equipment. All rotating parts should be covered with guards to prevent access by workers. When performing maintenance activities that require the rotating parts to be exposed, workers should not allow loose clothing, hands, or tools to approach the rotating parts. Energy isolation procedures must be followed, and guards must be replaced as soon as possible after completing the maintenance task.

Operation of drilling equipment also creates hazards associated with pinch points and rotating equipment. These are hazards where the body and extremities, especially the hands, can be caught in moving equipment and crushed.

Controls

- Evaluate work procedures to avoid placing the body and extremities in the path of rotating equipment and tools to avoid being struck by moving equipment, tools and machinery.
- Evaluate equipment and tool use to identify pinch points and develop procedures to avoid placing body parts in a position where they can be caught in moving equipment, tools and machinery.
- Follow energy isolation procedures if required
- Do not work near rotating equipment with long loose hair, loose clothing or jewelry.

Sharp Objects

Workers who handle sharp edged objects like sheets of steel or glass are at risk of cuts. Workers who handle sharp edged objects are also at risk of cuts. Injuries may occur to hands, fingers, or legs when they are in the way of the blade, when the blade slips, or if an open blade is handled unexpectedly. Other hazards at job sites include stepping on sharp objects (e.g. wooden boards with protruding nails, sharp work-tools, chisels, etc.) and colliding with sharp and/or protruding objects.

Controls

Always be alert when handling sharps. Never look away or become distracted while handling sharp objects. Use caution when working with tools; use right tool for the job. Keep tools sharp, dull blades are a safety hazard, requiring more force to make cuts which can lead to tool slippage. Wear appropriate PPE and do not handle sharp objects (i.e., broken glass) with bare hands. Use mechanical devices, when possible. Stay away from building debris; avoid handling site debris or placing your hand where you cannot see. Watch out for barbed wire and electrical fences; cover with a car mat or equivalent to cross or walk around; use the buddy system to avoid entanglement; wear gloves. Do not leave unprotected sharps unattended. Use protective shields, cases, styrofoam blocks, etc. Pass a sharp by handing it over carefully by the handle with the blade down or retracted. Fixed open blades are prohibited. Always cut away from the body, making several passes when cutting thicker materials. Make sure blades are fitted properly into the knife. Never cut items with a blade or other sharp object on your lap. Never try to catch a blade or cutting tool that is falling.

Slippery Surfaces

Both slips and trips result from unintended or unexpected change in the contact between the feet and ground or walking surface. Good housekeeping, quality of walking surfaces, selection of proper footwear, and appropriate pace of walking are critical for preventing fall accidents. Slips happen where there is too little friction or traction between the footwear and walking surface.

Common causes of slips are wet or oily surfaces, spills, weather hazards, loose unanchored rugs or mats and flooring or other walking surfaces that do not have same degree of traction in all areas.

Weather-related slips and falls become a serious hazard as winter conditions often make for wet or icy surfaces outdoors. Even wet organic material or mud can create hazardous walking conditions. Spills and leaks can also lead to slips and falls.

Controls

- Evaluate the work area to identify any conditions that may pose a slip hazard.
- Address any spills, drips or leaks immediately.
- Mark areas where slippery conditions exist.
- Select proper footwear or enhance traction with additional PPE.

- Where conditions are uncertain or environmental conditions result in slippery surfaces walk slowly, take small steps, and slide feet on wet or slippery surfaces.

Underground Utilities

Various forms of underground/overhead utility lines or conveyance pipes may be encountered during site activities. Prior to the start of intrusive operations, utility clearance is mandated, as well as obtaining authorization from all concerned public utility department offices. Should intrusive operations cause equipment to come into contact with utility lines, the SHSO, Project Manager, and Regional H&S Manager shall be notified immediately. Work will be suspended until the client and applicable utility agency is contacted and the appropriate actions for the situation can be addressed.

See OP1020 Work Near Utilities for complete information.

Controls

- Obtain as-built drawings for the areas being investigated from the property owner;
- Visually review each proposed soil boring locations with the property owner or knowledgeable site representative;
- Perform a geophysical survey to locate utilities;
- Hire a private line locating firm to determine location of utility lines that are present at the property;
- Identifying a no-drill or dig zone;
- Hand dig or use vacuum excavation in the proposed ground disturbance locations if insufficient data is unavailable to accurately determine the location of the utility lines.

4. PROTECTIVE MEASURES				
The personal protective equipment and safety equipment (if listed) is specific to the associated task. The required PPE and equipment listed must be onsite during the task being performed. Work shall not commence unless the required PPE or Safety Equipment is present.				
Required Safety & Personal Protective Equipment				
Required Personal Protective Equipment (PPE)	Task 1	Tasks 2 & 4	Tasks 3 & 5	Task 6
	CAMP Monitoring	Oversight Activities	Sampling/ Screening Activities	Decon. & Waste Management
Hard hat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety Glasses	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Safety Toed Shoes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Class 2 Safety Vest	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hearing Protection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrile Gloves	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ANSI A2 Cut-Resistant Gloves	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Level of protection required	D	D	D	D
Required Safety Equipment				
Fire Extinguisher	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
First Aid Kit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Eyewash Bottles	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

5. TRAINING REQUIREMENTS				
The table below lists the training requirements staff must have respective to their assigned tasks and that are required to access the Site.				
Site Specific Training Requirements				
HAZWOPER - 40 Hour (Initial) HAZWOPER – 8 Hour (Annual Refresher) First Aid/ CPR Site Specific Orientation				
Task Specific Training Requirements				
Required Training Type	Task 1	Task 2	Task 3	Task 4
				Decon. & Waste Management
DOT HAZMAT Transporter Training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

6. AIR MONITORING PLAN AND EQUIPMENT
<p>Exposures to airborne substances shall be fully characterized throughout project operations to ensure that exposure controls are effectively selected and modified as needed.</p> <p>Is air/exposure monitoring required at this work site for personal protection? Yes</p> <p>Is perimeter monitoring required for community protection? Yes</p> <p>Air monitoring plan not applicable? No</p>
Air Monitoring/Screening Equipment Requirements
<p>Photo-Ionization Detector (PID) 10.6eV</p> <p>The required equipment listed above must be on site. Work shall not commence unless the equipment is present and in working order.</p>
Monitoring Plans

Parameter/ Contaminant	Equipment	Action Level	Response Activity
VOCs	PID 10.6 eV	< 10 ppm	Continue work and monitoring.
		>10 ppm for 5 minutes >10 ppm for >5 minutes	Clear Instrument and Re-Monitor the Area. Implement PPE upgrades Evacuate the area and call the RHSM and/or PM for further guidance. Implement engineering controls.

Zone Location and Monitoring Interval
 Breathing zone and edge of Exclusion Zone.

Parameter/ Contaminant	Equipment	Preventative Measure	Response Activity
Dust and Silica Dust	Visual Assessment/ CAMP Monitoring Equipment	During drilling activities, personnel will position themselves upwind of the drilling activities and maintain a safe distance. Personnel will monitor CAMP	Response activity is outlined in the CAMP.

data closely and
frequently visually
inspect the area.

Zone Location and Monitoring Interval

Breathing zone.

7. DECONTAMINATION & DISPOSAL METHODS		
<p>All possible and necessary steps shall be taken to reduce or minimize contact with chemicals and contaminated/impacted materials while performing field activities (e.g., avoid sitting or leaning on, walking through, dragging equipment through or over, tracking, or splashing potential or known contaminated/impacted materials.)</p>		
Personal Hygiene Safeguards		
<p>The following minimum personal hygiene safeguards shall be adhered to:</p> <ol style="list-style-type: none"> 1. No smoking or tobacco products in any project work areas. 2. No eating or drinking in the exclusion zone. 3. It is required that personnel present on site wash hands before eating, smoking, taking medication, chewing gum/tobacco, using the restroom, or applying cosmetics and before leaving the site for the day. <p>It is recommended that personnel present on site shower or bathe at home at the end of each day of working on the site.</p>		
Decontamination Supplies		
<p>All decontamination should be conducted at the project site in designated zones or as dictated by Client requirements. Decontamination should not be performed on Haley & Aldrich owned or leased premises.</p>		
<input type="checkbox"/> Acetone	<input checked="" type="checkbox"/> Distilled Water	<input checked="" type="checkbox"/> Polyethylene Sheeting
<input checked="" type="checkbox"/> Alconox Soap	<input checked="" type="checkbox"/> Drums	<input checked="" type="checkbox"/> Pressure/Steam Cleaner
<input checked="" type="checkbox"/> Brushes	<input type="checkbox"/> Hexane	<input checked="" type="checkbox"/> Tap Water
<input checked="" type="checkbox"/> Disposal Bags	<input type="checkbox"/> Methanol	<input type="checkbox"/> Wash tubs
<input checked="" type="checkbox"/> 5 Gallon Buckets	<input checked="" type="checkbox"/> Paper Towels	<input type="checkbox"/> Other:
Location of Decontamination Station		
<p>Decontamination station location will be determined at the kick-off meeting.</p>		

Standard Personal Decontamination Procedures
<p>Outer gloves and boots should be decontaminated periodically as necessary and at the end of the day. Brush off solids with a hard brush and clean with soap and water or other appropriate cleaner whenever possible. Remove inner gloves carefully by turning them inside out during removal. Wash hands and forearms frequently. It is good practice to wear work-designated clothing while on-site which can be removed as soon as possible. Non-disposable overalls and outer work clothing should be bagged onsite prior to laundering. If gross contamination is encountered on-site contact the Project Manager and Field Safety Manager to discuss proper decontamination procedures.</p> <p>The steps required for decontamination will depend upon the degree and type of contamination but will generally follow the sequence below.</p> <ol style="list-style-type: none"> 1. Remove and wipe clean hard hat 2. Rinse boots and gloves of gross contamination 3. Scrub boots and gloves clean 4. Rinse boots and gloves 5. Remove outer boots (if applicable) 6. Remove outer gloves (if applicable) 7. Remove Tyvek coverall (if applicable) 8. Remove respirator, wipe clean and store (if applicable) 9. Remove inner gloves (if outer gloves were used) <p>PPE that is not grossly contaminated can be bagged and disposed in regular trash receptacles.</p>
Small Equipment Decontamination
<p>Pretreatment of heavily contaminated equipment may be conducted as necessary:</p> <ol style="list-style-type: none"> 1. Remove gross contamination using a brush or wiping with a paper towel 2. Soak in a solution of Alconox and water (if possible) 3. Wipe off excess contamination with a paper towel <p>Standard decontamination procedure:</p> <ol style="list-style-type: none"> 4. Wash using a solution of Alconox and water 5. Rinse with potable water 6. Rinse with methanol (or equivalent) 7. Rinse with distilled/deionized water <p>Inspect the equipment for any remaining contamination and repeat as necessary.</p>

Disposal Methods
Procedures for disposal of contaminated materials, decontamination waste, and single use personal protective equipment shall meet applicable client, locate, State, and Federal requirements.
Disposal of Single Use Personal Protective Equipment
PPE that is not grossly contaminated can be bagged and disposed in regular trash receptacles. PPE that is grossly contaminated must be bagged (sealed and field personnel should communicate with the Project Manager to determine proper disposal.
<div> Standard Disposal Methods for Contaminated Materials <ul style="list-style-type: none"> Excess sample solids, decontamination materials, rags, brushes, poly-sheeting, etc. that are determined to be free of contamination through field screening can usually be disposed into client-approved, on-site trash receptacles. Uncontaminated wash water may be discarded onto the ground surface away from surface water bodies in areas where infiltration can occur. Contaminated materials must be segregated into liquids or solids and containerized separately for offsite disposal. <p>Any additional requirements that are designated by the workplan or by client specifications should be entered here.</p> </div>

8. SITE CONTROL

The overall purpose of site control is to minimize potential contamination of workers, protect the public from the site's hazards, and prevent vandalism. Site control is especially important in emergency situations. The degree of site control necessary depends on site characteristics, site size, and the surrounding community. The following information identifies the elements used to control the activities and movements of people and equipment at the project site.

Communication
<p>Internal Haley & Aldrich site personnel will communicate with other Haley & Aldrich staff member and/or subcontractors or contractors with:</p> <p>Face to Face Communication Cellular Phones</p>
<p>External H&S site personnel will use the following means to communicate with off-site personnel or emergency services.</p> <p>Cellular Phones</p>
Visitors
<p>Project Site Visitors will have to check in with front desk staff prior to the start of daily activities.</p>
<p>Visitor Access Authorized visitors that require access to the project site need to be provided with known information with respect to the site operations and hazards as applicable to the purpose of their site visit. Authorized visitors must have the required PPE and appropriate training to access the project site.</p> <p>Site Safety Officer is responsible for facilitating authorized visitor access.</p>
Zoning
<p style="text-align: center;">Work Zone</p> <p>The work zone will be clearly delineated to ensure that the general public or unauthorized worker access is prevented. The following will be used:</p> <p>Cones</p>

9. SITE SPECIFIC EMERGENCY RESPONSE PLAN

The Emergency Response Plan addresses potential emergencies at this site, procedures for responding to these emergencies, roles, responsibilities during emergency response, and training. This section also describes the provisions this project has made to coordinate its emergency response with other contractors onsite and with offsite emergency response organizations (as applicable).

During the development of this emergency response plan, local, state, and federal agency disaster, fire, and emergency response organizations were consulted (if required) to ensure that this plan is compatible and integrated with plans of those organizations. Documentation of the dates of these consultations are the names of individuals contacted is kept on file and available upon request.

The site has been evaluated for potential emergency occurrences, based on site hazards, and the major categories of emergencies that could occur during project work are:

- Fire(s)/Combustion
- Hazardous Material Event
- Medical Emergency
- Natural Disaster

A detailed list of emergency types and response actions are summarized in Table X below. Prior to the start of work, the SSO will update the table with any additional site-specific information regarding evacuations, muster points, or additional emergency procedures. The SSO will establish evacuation routes and assembly areas for the Site. All personnel entering the Site will be informed of these routes and assembly areas.

Pre-Emergency Planning

Before the start of field activities, the Project Manager will ensure preparation has been made in anticipation of emergencies. Preparatory actions include the following:

Meeting with the subcontractor/and or client concerning the emergency procedures in the event a person is injured. Appropriate actions for specific scenarios will be reviewed. These scenarios will be discussed, and responses determined before the sampling event commences. A form of emergency communication (i.e.; Cell phone, Air horn, etc.) between the Project Manager and subcontractor and/or client will be agreed on before the work commences.

A training session (i.e., “safety meeting”) given by the Project Manager or their designee informing all field personnel of emergency procedures, locations of emergency equipment and their use, and proper evacuation procedures.

Ensuring field personnel are aware of the existence of the emergency response HASP and ensuring a copy of the HASP accompanies the field team(s).

Onsite Emergency Response Equipment

Emergency procedures may require specialized equipment to facilitate work rescue, contamination control and reduction or post-emergency cleanup. Emergency response equipment stocked

Table 9.1 Emergency Equipment and Emergency PPE			
Emergency Equipment	Specific Type	Quantity Stocked	Location Stored
First Aid Kit	ANSI – Compliant	1 Minimum in trailer 1 personal kit per working group	Trailer, Field Vehicles
Fire Extinguisher	ABC Type	1 per Piece of heavy Equipment	In Heavy Equipment, 1 in Trailer
Emergency Eyewash Bottle	Single Use	1 Minimum in trailer 1 personal kit per working group	Trailer, Field Vehicles

EVACUATION ALARM
Will be communicated during the Onsite Kickoff Meeting
EVACUATION ROUTES
Will be given a map after site specific training
EVACUATION MUSTER POINT(S)/ SHELTER AREA(S)
Will be given a map after site specific training
EVACUTION RESPONSE DRILLS
The Site relies on outside emergency responders and a drill is not required.

Table 9-2 – Emergency Planning

Emergency Type	Notification	Response Action	Evacuation Plan/Route
Chemical Exposure	Report event to SSO immediately	Refer to Safety Data Sheet for required actions	Remove personnel from work zone
Fire - Small	Notify SSO and contact 911	Use fire extinguisher if safe and qualified to do so	Mobilize to <i>Muster Point</i>
Fire – Large/Explosion	Notify SSO and contact 911	Evacuate immediately	Mobilize to <i>Muster Point</i>
Hazardous Material – Spill/Release	Notify SSO; SSO will contact PM to determine if additional agency notification is	If practicable don PPE and use spill kit and applicable procedures to contain the release	See Evacuation Map for route, move at least 100 ft upwind of spill location
Medical – Bloodborne Pathogen	Notify SSO	If qualified dispose in container or call client or city to notify for further instruction.	None Anticipated
Medical – First Aid	Notify SSO	If qualified perform first aid duties	None Anticipated
Medical – Trauma	If life threatening or transport is required call 911, immediately	Wait at site entrance for ambulance	Noe Anticipated
Security Threat	Notify SSO who will call 911 as warranted	Keep all valuables out of site and work zones delineated.	None Anticipated
Weather – Earthquake/Tsunami’s	STOP WORK and evacuate Site upon any earthquake	Turn off equipment and evacuate as soon as is safe to do so	Mobilize to <i>Shelter Location</i>
Weather – Lightning Storm	STOP WORK	Work may resume 30 minutes after the last observed lightning.	None Anticipated
Weather – Tornadoes/Hurricanes	Monitor weather conditions STOP WORK and evacuate the site	Evacuate to shelter location or shelter in place immediately	Mobilize to <i>Shelter Location</i>
<u>MUSTER POINT</u>		<u>SHELTER LOCATION</u>	
In case of site emergencies, site personnel shall be evacuated per this table and will not participate in emergency response activities. Site emergencies shall be reported to local, state, and federal governmental agencies as required.			

10. HASP ACKNOWLEDGEMENT FORM		
<p style="color: red; text-align: center;"><u>All Haley & Aldrich employees onsite must sign this form prior to entering the site.</u></p> <p>I hereby acknowledge receipt of, and briefing on, this HASP prior to the start of on-site work. I declare that I understand and agree to follow the provisions, processes, and procedures set forth herein at all times while working on this site.</p>		
Printed Name	Signature	Date

**ATTACHMENT A
HASP AMENDMENT FORM**

HASP AMENDMENT FORM	
<p>This form is to be used whenever there is an immediate change in the project scope that will require an amendment to the HASP. For project scope changes associated with “add-on” tasks, the changes must be made in the body of the HASP. Before changes can be made, a review of the potential hazards must be initiated by the Haley & Aldrich Project Manager.</p> <p>This original form must remain on site with the original HASP. If additional copies of this HASP have been distributed, it is the Project Manager’s responsibility to forward a signed copy of this amendment to those who have copies.</p>	
Amendment No.	
Site Name	
Work Assignment No.	
Date	
Type of Amendment	
Reason for Amendment	
Alternate Safeguard Procedures	
Required Changes in PPE	

Project Manager Name (Print)	Project Manager Signature	Date
Health & Safety Approver Name (Print)	Health & Safety Approver Signature	Date

**ATTACHMENT B
TRAINING REQUIREMENTS**

TRAINING REQUIREMENTS	
Health and Safety Training Requirements	
<p>Personnel will not be permitted to supervise or participate in field activities until they have been trained to a level required by their job function and responsibility. Haley & Aldrich staff members, contractors, subcontractors, and consultants who have the potential to be exposed to contaminated materials or physical hazards must complete the training described in the following sections.</p> <p>The Haley & Aldrich Project Manager/FSM will be responsible for maintaining and providing to the client/site manager documentation of Haley & Aldrich staff members' compliance with required training as requested. Records shall be maintained per OSHA requirements.</p>	
40-Hour Health and Safety Training	
<p>The 40-Hour Health and Safety Training course provides instruction on the nature of hazardous waste work, protective measures, proper use of personal protective equipment, recognition of signs and symptoms which might indicate exposure to hazardous substances, and decontamination procedures. It is required for all personnel working on-site, such as equipment operators, general laborers, and supervisors, who may be potentially exposed to hazardous substances, health hazards, or safety hazards consistent with 29 CFR 1910.120.</p>	
8-hour Annual Refresher Training	
<p>Personnel who complete the 40-hour health and safety training are subsequently required to attend an annual 8-hour refresher course to remain current in their training. When required, site personnel must be able to show proof of completion (i.e., certification) at an 8-hour refresher training course within the past 12 months.</p>	
8-Hour Supervisor Training	
<p>On-site managers and supervisors directly responsible for, or who supervise staff members engaged in hazardous waste operations, should have eight additional hours of Supervisor training in accordance with 29 CFR 1910.120. Supervisor Training includes, but is not limited to, accident reporting/investigation, regulatory compliance, work practice observations, auditing, and emergency response procedures.</p>	
Additional Training for Specific Projects	
<p>Haley & Aldrich personnel will ensure their personnel have received additional training on specific instrumentation, equipment, confined space entry, construction hazards, etc., as necessary to perform their duties. This specialized training will be provided to personnel before engaging in the specific work activities including:</p> <ul style="list-style-type: none"> • Client specific training or orientation • Competent person excavations • Confined space entry (entrant, supervisor, and attendant) • Heavy equipment including aerial lifts and forklifts • First aid/ CPR • Use of fall protection • Use of nuclear density gauges • Asbestos awareness 	

ATTACHMENT C
ROLES AND RESPONSIBILITIES

SITE ROLES AND RESPONSIBILITIES	
Haley & Aldrich Personnel	
Field Safety Manager (FSM)	<p>The Haley & Aldrich FSM is a full-time Haley & Aldrich staff member, trained as a safety and health professional, who is responsible for the interpretation and approval of this Safety Plan. Modifications to this Safety Plan cannot be undertaken by the PM or the SSO without the approval of the FSM.</p> <p>Specific duties of the FSM include:</p> <ul style="list-style-type: none"> • Approving and amending the Safety Plan for this project • Advising the PM and SHSOs on matter relating to health and safety • Recommending appropriate personal protective equipment (PPE) and air monitoring instrumentation • Maintaining regular contact with the PM and SSO to evaluate the conditions at the property and new information which might require modifications to the HASP and • Reviewing and approving JSAs developed for the site-specific hazards.
Project Manager (PM)	<p>The Haley & Aldrich PM is responsible for ensuring that the requirements of this HASP are implemented at that project location. Some of the PM's specific responsibilities include:</p> <ul style="list-style-type: none"> • Assuring that all personnel to whom this HASP applies have received a copy of it; • Providing the FSM with updated information regarding environmental conditions at the site and the scope of site work; • Providing adequate authority and resources to the on-site SHSO to allow for the successful implementation of all necessary safety procedures; • Supporting the decisions made by the SHSO; • Maintaining regular communications with the SHSO and, if necessary, the FSM; • Coordinating the activities of all subcontractors and ensuring that they are aware of the pertinent health and safety requirements for this project; • Providing project scheduling and planning activities; and • Providing guidance to field personnel in the development of appropriate Job Safety Analysis (JSA) relative to the site conditions and hazard assessment.
Site Health & Safety Officer (SHSO)	<p>The SHSO is responsible for field implementation of this HASP and enforcement of safety rules and regulations. SHSO functions may include some or all of the following:</p> <ul style="list-style-type: none"> • Act as Haley & Aldrich's liaison for health and safety issues with client, staff, subcontractors, and agencies. • Verify that utility clearance has been performed by Haley & Aldrich subcontractors. • Oversee day-to-day implementation of the Safety Plan by Haley & Aldrich personnel on site.

- Interact with subcontractor project personnel on health and safety matters.
- Verify use of required PPE as outlined in the safety plan.
- Inspect and maintain Haley & Aldrich safety equipment, including calibration of air monitoring instrumentation used by Haley & Aldrich.
- Perform changes to HASP and document in Appendix A of the HASP as needed and notify appropriate persons of changes.
- Investigate and report on-site accidents and incidents involving Haley & Aldrich and its subcontractors.
- Verify that site personnel are familiar with site safety requirements (e.g., the hospital route and emergency contact numbers).
- Report accidents, injuries, and near misses to the Haley & Aldrich PM and FSM as needed.

The SHSO will conduct initial site safety orientations with site personnel (including subcontractors) and conduct toolbox and safety meetings thereafter with Haley & Aldrich employees and Haley & Aldrich subcontractors at regular intervals and in accordance with Haley & Aldrich policy and contractual obligations. The SHSO will track the attendance of site personnel at Haley & Aldrich orientations, toolbox talks, and safety meetings.

Field Personnel

Haley & Aldrich personnel are responsible for following the health and safety procedures specified in this HASP and for performing their work in a safe and responsible manner. Some of the specific responsibilities of the field personnel are as follows:

- Reading the HASP in its entirety prior to the start of on-site work;
- Submitting a completed Safety Plan Acceptance Form and documentation of medical surveillance and training to the SHSO prior to the start of work;
- Attending the pre-entry briefing prior to beginning on-site work;
- Bringing forth any questions or concerns regarding the content of the Safety Plan to the PM or the SHSO prior to the start of work;
- Stopping work when it is not believed it can be performed safely;
- Reporting all accidents, injuries and illnesses, regardless of their severity, to the SHSO;
- Complying with the requirements of this safety plan and the requests of the SHSO; and
- Reviewing the established JSAs for the site-specific hazards on a daily basis and prior to each shift change, if applicable.

Visitors

Authorized visitors (e.g., Client Representatives, Regulators, Haley & Aldrich management staff, etc.) requiring entry to any work location on the site will be briefed by the Site Supervisor on the hazards present at that location. Visitors will be escorted at all times at the work location and will be responsible for compliance with their employer's health and safety policies. In addition, this safety plan specifies the minimum acceptable qualifications, training and personal protective equipment which are required for entry to any controlled work area; visitors must comply with these

requirements at all times. Unauthorized visitors, and visitors not meeting the specified qualifications, will not be permitted within established controlled work areas.

SUBCONTRACTOR PERSONNEL

Subcontractor Site Representative

Each contractor and subcontractor shall designate a Contractor Site Representative. The Contractor Site Representative will interface directly with Insert Staff Name Here, the Subcontractor Site Safety Manager, with regards to all areas that relate to this safety plan and safety performance of work conducted by the contractor and/or subcontractor workforce. Contractor Site Representatives for this site are listed in the Contact Summary Table at the beginning of the Safety Plan.

Subcontractor Site Safety Manager

Each contractor / subcontractor will provide a qualified representative who will act as their Site Safety Manager (Sub-SSM). This person will be responsible for the planning, coordination, and safe execution of subcontractor tasks, including preparation of job hazard analyses (JHA), performing daily safety planning, and coordinating directly with the Haley & Aldrich SHSO for other site safety activities. This person will play a lead role in safety planning for Subcontractor tasks, and in ensuring that all their employees and lower tier subcontractors are in adherence with applicable local, state, and/or federal regulations, and/or industry and project specific safety standards or best management practices.

General contractors / subcontractors are responsible for preparing a site-specific HASP and/or other task specific safety documents (e.g., JHAs), which are, at a minimum, in compliance with local, state, and/or federal other regulations, and/or industry and project specific safety standards or best management practices. The contractor(s)/subcontractor(s) safety documentation will be at least as stringent as the health and safety requirements of the Haley & Aldrich Project specific HASP.

Safety requirements include, but are not limited to: legal requirements, contractual obligations and industry best practices. Contractors/subcontractors will identify a site safety representative during times when contractor/subcontractor personnel are on the Site. All contractor/subcontractor personnel will undergo a field safety orientation conducted by the Haley & Aldrich SHSO and/or PM prior to commencing site work activities. All contractors / subcontractors will participate in Haley & Aldrich site safety meetings and their personnel will be subject to training and monitoring requirements identified in this Safety Plan. If the contractors / subcontractors means and methods deviate from the scope of work described in Section 1 of this Safety Plan, the alternate means and methods must be submitted, reviewed and approved by the Haley & Aldrich SHSO and/or PM prior to the commencement of the work task. Once approved by the Haley & Aldrich SHSO and/or PM, the alternate means and methods submittal will be attached to this Safety Plan as an Addendum.

**ATTACHMENT D
JOB SAFETY ANALYSES**



Safety
in everything we do

DOLLINGER CORPORATION (SITE ID NO. 828078)

KEY TASK :

Subtask Category	Potential Hazards	Controls
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