GENERAL INSTRUMENT CORPORATION

CHENANGO COUNTY

SHERBURNE, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 709010

Prepared for:

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315-802-0260

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

JUNE 2026

CERTIFICATION STATEMENT

I JEFFREY P. LAMBERT certify that I am currently a New York State registered Professional Engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and Green Remediation (DER-31).

_____ PE

June 9, 2026
_____ DATE



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SITE MANAGEMENT PLAN

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LIST OF ACRONYMS

1,1,1-TCA	1,1,1-trichloroethane
1,2-DCE	1,2-Dichloroethene
AST	Aboveground Storage Tank
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
ASP	Analytical Services Protocol
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulation
cis-1,2-DCE	cis-1,2-Dichloroethene
COC	Certificate of Completion
CVOC	Chlorinated Volatile Organic Compound
CP	Commissioner Policy
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
EE	Environmental Easement
ELAP	Environmental Laboratory Approval Program
EPA	Environmental Protection Agency
ES	Executive Summary
EWP	Excavation Work Plan
FS	Feasibility Study
GHD	GHD Consulting Services Inc.
GHG	Greenhouse Gas
GIC	General Instrument Corporation
HASP	Health and Safety Plan
HDPE	High-Density Polyethylene
IA	Indoor Air
IC	Institutional Control
LNAPL	Light Non-Aqueous Phase Liquid
MW	Monitoring Well
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OA	Outdoor Air
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
P.E. or PE	Professional Engineer

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PFAS	Per- and Polyfluoroalkyl Substances
PID	Photoionization Detector
PRB	Permeable Reactive Barrier
PRR	Periodic Review Report
PVC	Polyvinyl Chloride
PZ	Piezometer
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
RAO	Remedial Action Objective
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SG	Soil Gas
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SS	Sub-slab
SSDS	Sub-slab Depressurization System
STARS	Spill Technology and Remediation Series
SVI	Soil Vapor Intrusion
SVOC	Semi-volatile Organic Compound
TACO	Technical Appliance Corporation of America
TAGM	Technical and Guidance Memorandum
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
trans-1,2-DCE	Trans-1,2-dichloroethene
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VC	Vinyl Chloride
VGSI	Vishay GSI, Inc.
VM	Vacuum Monitoring
VOC	Volatile Organic Compound

ES EXECUTIVE SUMMARY

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

Site Identification: No. 709010

General Instrument Corporation, 1 BrightPet Drive (formerly Kenyon Press Drive), Sherburne, New York

Institutional Controls:	1. The property may be used for commercial or industrial use; 2. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Chenango County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department; 3. Groundwater and other environmental or public health monitoring must be performed as defined in this SMP; 4. Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP; 5. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP; 6. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP; 7. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP; 8. Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the

Site Identification: No. 709010

General Instrument Corporation, 1 BrightPet Drive (formerly Kenyon Press Drive), Sherburne, New York

	restrictions identified by the Environmental Easement; 9. The potential for vapor intrusion must be evaluated for any buildings developed on the Site, and any potential impacts that are identified must be monitored or mitigated; 10. Vegetable gardens and farming on the Site are prohibited; and 11. An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.	
Engineering Controls:	None	
Inspections:		Frequency
N/A		N/A
Monitoring:		
1. Groundwater Monitoring Wells MW-17, MW-22, MW-31, MW-32, MW-34, and P-8		Once every 16 months, starting in July 2025
2. Indoor Air and Sub-Slab Vapor Monitoring at co-located locations IA-7/SS-7, IA-8/SS-8, IA-9/SS-9, IA-10/SS-10, IA-11/SS-11, IA-12/SS-12, IA - 13/SSV-13, IA-14/SSV-14, IA-15/SSV-15, and IA-16/SSV-16		Annually during the heating season (between November 1st and March 31st)
3. Soil Vapor Intrusion Evaluation for New Buildings		As needed
Maintenance:		
1. Monitoring Networks		As needed

Site Identification: No. 709010

General Instrument Corporation, 1 BrightPet Drive (formerly Kenyon Press Drive), Sherburne, New York

Reporting:	
1. Periodic Monitoring (Groundwater or Indoor Air/Sub-Slab Vapor)	Following each event
2. Periodic Review Report	Every three years

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

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the General Instrument Corporation Site located at 1 BrightPet Drive (formerly known as Kenyon Press Drive) in Sherburne, Chenango County, New York (hereinafter referred to as the "Site"). See Figures 1 and 2. The Site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program, Site No. 709010, which is administered by New York State Department of Environmental Conservation (NYSDEC or Department).

General Instrument Corporation (GIC; a corporate predecessor of Vishay GSI, Inc. [VGSI]) entered into an Order on Consent on September 5, 1989 with the NYSDEC to remediate the Site. VGSI assumed responsibility for environmental issues at the Site through their historical acquisition of GIC. A figure showing the Site location and boundaries of this Site is provided as Figure 2. The boundaries of the Site will be more fully described in the metes and bounds Site description that will be part of the future Environmental Easement (EE), which will be prepared and filed with the Chenango County Clerk's Office. The NYSDEC's example EE is provided in Appendix A for reference.

After completion of the remedial work, some contamination was left at this Site, which is hereafter referred to as "remaining contamination". Institutional Controls (ICs) have been incorporated into the Site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An EE granted to the NYSDEC is to be finalized and recorded with the Chenango County Clerk, and will require compliance with this SMP and all ICs placed on the Site.

This SMP was prepared to manage remaining contamination at the site and off-Site, until the future EE is extinguished in accordance with ECL Article 71, Title 36. This SMP has been approved by the NYSDEC, and compliance with this SMP is required by the

grantor of the future EE, the grantor's successors and assigns, and the current or future Site owners and/or operators. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the Site-specific implementation procedures that will be required by the EE, once finalized and filed with the Chenango County Clerk's Office. Failure to properly implement the SMP is a violation of the future EE, which is grounds for revocation of the future Site closure document; and
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the Order on Consent (Index # A701578810; Site #709010) for the Site, and thereby subject to applicable penalties.

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

This SMP was prepared by GHD Consulting Services Inc. (GHD), on behalf of Vishay GSI, Inc. (VGSI), in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs that will be required by the future EE for the Site.

1.2 Revisions and Alterations

Revisions and alterations to this SMP will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the SMP or request revisions from the Remedial Party (VGSI). Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the Site conditions. All approved alterations must conform with Article 145 Section 7209 of the Education Law regarding the application of professional

seals and alterations. For example, any changes to as-built drawings must be stamped by a New York State Professional Engineer (PE). In accordance with the future EE for the Site, the NYSDEC project manager will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

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

1. 60-day advance notice of any proposed changes in Site use that are required under the terms of the Order on Consent, 6 NYCRR Part 375, and/or Environmental Conservation Law.
2. 7-day advance notice of any field activity associated with the remedial program.
3. 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan (Appendix C). If the ground-intrusive activity qualifies as a change of use as defined in 6 NYCRR Part 375, the above mentioned 60-day advance notice is also required.
4. Notice within 48 hours of any non-routine maintenance activities.

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

5. At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Order on Consent, and all approved work plans and reports, including this SMP.
6. Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Exhibit 1-1 on the following page includes contact information for the above notifications. The information on this table will be updated as necessary to provide accurate

contact information. A full listing of Site-related contact information is provided in Appendix B.

Exhibit 1-1: Notifications*

Name	**Contact Information**	**Required Notification****
Jasmine Stefansky – NYSDEC Project Manager	(518) 402-9575 jasmine.stefansky@dec.ny.gov	All Notifications
Jeffrey Dyber – NYSDEC Project Manager's Supervisor	(518) 402-9698 jeffrey.dyber@dec.ny.gov	All Notifications
NYSDEC Site Control	DERSiteControl@dec.ny.gov	Notifications 1 and 5
Mark Sergott – NYSDOH Project Manager	(518) 402-7897 mark.sergott@health.ny.gov	Notification 3

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

** Note: Numbers in this column reference the numbered bullets in the notification list in this section.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The Site is located in Sherburne, Chenango County, New York and is identified as Section 44.16, Block 1, and Lots 4 and 20 on the Chenango County Tax Map (see Figure 2). In total, the site is an approximately 6.5-acre area and is bounded by a petroleum bulk storage facility and a commercial gas station to the north, light commercial and residential properties to the south and east, and a railroad and agricultural fields to the west (see Figure 2). The boundaries of the Site will be more fully described in an EE that will be prepared, finalized, filed with the Chenango County Clerk's Office, and included in Appendix A. The owner and operator of the Site parcels at the time of issuance of this SMP is:

Sherburne Agricultural Services, LLC

The responsibilities of the Site owner/operator and Remedial Party, VGSI, are presented in Appendix D.

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: a 75,000-square-foot main building formerly used for manufacturing, warehousing, and administration, and currently vacant; a 4,900-square-foot building formerly used for plating, etching, vapor degreasing, and storage (connected to main building via a passageway), and currently vacant; a 1,600-square-foot garage near the southeast corner of the main building that was formerly used as a maintenance shop and storage; and a 2,800-square-foot wooden shed near the northern property line that was and currently is used for storage. The Site is zoned industrial and is currently utilized for commercial uses. Site occupants include Sherburne Agricultural

Services, LLC, who will utilize the Site as a warehouse and distribution center for various packaged pet supplies and agricultural rental equipment once they complete modifications and move in around August 2026.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial and residential properties. The properties immediately south and east of the Site include light commercial and residential properties; the properties immediately north of the Site include commercial properties; and the properties to the west of the Site include a railroad and agricultural properties.

2.2.2 Geology

General geology in the area consists of glacially derived sediment deposits overlaying sedimentary bedrock, which is comprised of shales and siltstones, at considerable depth below ground surface (bgs). The glacially derived deposits on the Site are generally divided into three shallow units: (1) historical fill from approximately 1 to 5 feet bgs, where present; (2) sandy silt from approximately 1 to 9 feet bgs; and (3) coarse gravel from approximately 10 to 23 feet bgs. The gravel unit overlies a clay-silt unit, which is estimated to be approximately 150 feet thick and acts as a confining layer above a deeper groundwater aquifer. The stratigraphy of these units is fairly uniform across the Site.

Geologic cross sections and available Site-specific boring logs from previous reports are provided in Appendix E.

2.2.3 Hydrogeology

The Site is underlain by a shallow sand and gravel aquifer with an average thickness of approximately 10 feet and an average depth below the ground surface of 3 to 4 feet. Permeability in the shallow soils is high and the hydraulic gradient within the unit is low, as expected with the low topographic relief nature of the valley in which the Site is located.

Underneath the shallow aquifer is a silt and clay layer, estimated to be approximately 150 to 200-feet thick, that acts as a confining layer to the deeper aquifer. Groundwater flow across the Site has been identified as generally from east to west toward the Chenango River, which is located approximately 1,500 feet west of the Site's western boundary and flows southward. There is some localized variability in groundwater flow identified during hydraulic monitoring events, particularly adjacent to the permeable reactive barrier located west of the Site.

Groundwater contour maps from the 1989 and 1990 Remedial Investigation (RI), which include groundwater contour interpretations across the entirety of the Site, are shown as Figures 18, 19, and 20 in Appendix F. Groundwater contour maps generated from groundwater elevations calculated at a limited number of Site wells from 2004 to 2017, and in 2024 and 2025 are also provided in Appendix F for reference. It is noted that recent groundwater contour interpretations are limited as the currently monitored wells, and the only groundwater monitoring wells remaining at the Site, are located generally in a line and adjacent to the permeable reactive barrier, which complicates groundwater contour development. However, overall groundwater flow interpretations are consistent with those made previously.

Available historical groundwater elevation data is provided in Table 1. Groundwater monitoring well construction logs that are available from historical reports are provided in Appendix E. A summary of groundwater analytical results is included in Table 2 and recent COC exceedances are depicted on Figure 4.

2.3 Investigation and Remedial History

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

The Site was originally developed in 1947 by the Technical Appliance Corporation

of America (TACO) for the manufacture of kitchen equipment and then transitioned to the manufacture of antennas. The Site was purchased by Jerrold Electronic Corporation in 1962 and by GIC in 1968. GIC used the facility to produce aluminum television antennas, antenna controllers, and other small electronics starting in 1969. In 1983, GIC initiated the process of closing and decommissioning their manufacturing and plating operations at the Site. As part of this process, a closure plan (Plan) was prepared and submitted to the NYSDEC in 1984. The Plan outlined the decommissioning of affected surfaces, the removal of industrial equipment, the decontamination of remaining surfaces, and testing for environmental releases in areas suspected of contamination. The investigation into the presence of hazardous materials identified eight areas of concern (AOCs) containing potential sources of organic and inorganic compounds. As part of initial remedial measures, contamination identified from underground storage tanks, contaminated soils on the western and southern portions of the property, and contaminated soil in a section of Potash Creek were remediated. Remediation of these AOCs included the filling or removal of underground storage tanks and the excavation and disposal of contaminated soils.

Following these remedial actions, a groundwater investigation was initiated in 1985 with the installation of 9 monitoring wells (MW-1 through MW-9 on Figure 4) and 6 piezometers (exact locations uncertain based on available documentation). Monthly groundwater sampling at these wells and piezometers between January 1985 and September 1986 detected concentrations of halogenated hydrocarbons and metals. As a result, the Site was classified by the NYSDEC as a Class 2 inactive hazardous waste disposal site (Site #709010) and Consent Order Index #A701578810 was executed on September 5, 1989. As a requirement of the Consent Order, a Remedial Investigation/Feasibility Study (RI/FS) was carried out to evaluate the extent, sources, and fate and transport of the remaining contamination in the soil and groundwater at the Site, and to identify potential exposure risks.

2.3.1 Interim Remedial Measures (1992)

During previous sampling activities, free-phase petroleum product was identified

on the surface of the groundwater in the vicinity of MW-8 (Figure 4). GIC implemented a three month program in mid-1992 to remove the petroleum from groundwater monitoring well MW-8. Due to the observed lack of recoverable quantities of free-phase product, the program was suspended until the implementation of the remedial action, when recovery could be integrated with a groundwater treatment program.

In addition, contaminated sediments identified in Potash Creek were removed and disposed of as part of interim remedial measures in 1992. The creek was enclosed in a culvert that is routed nearby the previous Chenango Canal on the eastern side of the Site and discharges back to a surface channel south-southwest of the Site. Additional information related to these activities could not be determined during review of historical Site documentation.

2.3.2 Remedial Investigation (1993)

A total of 20 groundwater monitoring wells, including those installed in 1985, located on-Site and on the adjoining properties to the north and west were sampled as part of the RI (MW-10 through MW-17 and WES-1 through WES-3 on Figure 4 and information in Appendix F). In addition, soil samples were taken from test pits and the stream bottom of Potash Creek (Table 3 and Appendix G) at intervals of 0 to 2-feet bgs, 2 to 4-feet bgs, and greater than 4-feet bgs. Laboratory analytical results from the RI detected the following volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in both soil and groundwater samples: 1,2-dichloroethene (1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE), tetrachloroethene (PCE), chloroform, toluene, and xylene. At MW-8, up to 9-inches of light non-aqueous phase liquid (LNAPL) was identified. Vinyl chloride (VC) and 1,3-dichloropropene were only identified in groundwater samples while 2-butanone (methyl ethyl ketone [MEK]), benzene, 2-hexanone, and ethylbenzene were only identified in soil samples. The greatest concentrations were observed in the vicinity of the former plating room, located in the northern portion of the Site, which suggested that the former plating room was the primary source of contamination identified at the Site.

2.3.3 Record of Decision (1994)

Following the completion of the RI/FS, a Record of Decision (ROD) was prepared and specified the remedies to be implemented on the Site to address concerns related to hazardous materials exposure and human health risks. These included the following:

- In-situ treatment of contaminated soils in proximity of the former plating building by Soil Vapor Extraction (SVE).
- Low permeability cover over the treatment area to enhance SVE and prevent short-circuiting.
- Short-term pumping wells to remove LNAPL, with on-Site treatment of groundwater.
- Remediation of fuel contaminated soils in the West Field, which is defined as off-Site areas on the adjacent agricultural fields, and mitigation of possible impacts of fuel product in West Field subsurface soils on the reactive iron medium.
- Pilot test of “Funnel and Gate” hydraulic controls to direct contaminated groundwater through an in-situ groundwater treatment zone.
- Pilot test of an in-situ groundwater treatment zone (permeable reactive barrier [PRB])using reactive iron filings .
- Full scale implementation of a funnel and gate hydraulic system and PRB, if supported by results of the pilot test.
- A long-term monitoring program to evaluate the rate and effectiveness of natural attenuation of the plume area that is not subject to active remediation.
- ICs for on- and off-Site to prevent potential risks to human health until groundwater standards are met.

2.3.4 Interim Remedial Action (1995)

In 1995, additional test pits were excavated along the west side of the Site, between the main building and the railroad tracks, and in the West Field. During this excavation, LNAPL was encountered in four of the test pits. LNAPL was manually recovered from the test pits using skimmer pumps and sorbent pads. 12-inch diameter culvert wells were installed in test pits near the northwest corner of the building to facilitate the on-going removal of the LNAPL. No further information was identified in previous reports regarding the remedy.

2.3.5 Remedial Action

Construction of four remedial systems specified in the ROD, which were designed and overseen by Stearns & Wheler (S&W), took place between 1995 and 1998 and included the following:

- An on-Site SVE system for unsaturated soils located adjacent to the former plating building was installed beginning in October 1995. The SVE system consisted of horizontal piping and vacuum monitoring points at locations to demonstrate conditions and operated until the summer of 2000 when it was shut down because the NYSDEC determined that it had achieved its cleanup target.
- A groundwater pump and treat system was installed west of the former plating building and utilized one 6-inch diameter recovery well. Extracted water was treated by a temporary system setup in the former plating building consisting of an air stripper, bag filters, liquid phase carbon absorbers, and vapor phase carbon absorbers.
- Installation and operation of a LNAPL (fuel oil) recovery system west of the former plating building starting in August 1995. The recovery system consisted of two 18-inch diameter, 40-foot long, culvert pipes installed one

above the other to straddle the fluctuating water table. Sorbent booms were placed in the pipes to collect LNAPL and changed as needed.

- Pilot testing and installation of an off-site in-situ PRB consisting of granular iron for treatment of the dissolved phase chlorinated solvent plume migrating west with groundwater. The pilot test was implemented from June to December of 1995, consisted of a 12-foot long by 3-feet wide PRB that extended through the sand and gravel aquifer unit, and demonstrated greater than 95% removal efficiency for CVOCs. The full-scale PRB was installed in late 1997 and consisted of two parallel sections, one 120 feet in length and the other 370 feet in length, each extending to approximately 18-feet bgs (Figure 2 and Figure 4). Additional information is provided in Appendix E.
- An approximately 340-foot long and 40-foot wide landfarm was constructed in the West Field (Figure 7) to receive petroleum impacted soils excavated from the Site during installation of the SVE system along with other excavated petroleum impacted soils from off-Site areas during PRB installation activities. The landfarm cell was capped with 6 mil polyethylene sheeting and approved cover soils, which were seeded.

2.3.6 2006 and 2007 Soil Vapor Intrusion Investigation

In 2006, the NYSDEC requested a soil vapor intrusion (SVI) investigation due to the potential existence of residual VOCs in groundwater that could generate soil vapors and ultimately lead to elevated sub-slab or indoor air concentrations above the NYSDOH guidance. The limited investigation was carried out in August 2006 by ESC Engineering and included three sub-slab vapor samples (SS-1 through SS-3 on Figure 5), and Site-related COCs were identified in samples from the three sampling points.

Monitoring was performed again in February and April 2007 and included the installation of three more sub-slab vapor sampling points (SS-4 through SS-6 on Figure 5). The results of sampling identified VOCs in the sub-slab soil vapor and indoor air samples.

Several non-chlorinated VOCs, including 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-ethyltoluene, and acetone, were found at relatively high concentrations in the indoor air, outdoor air, and the sub-slab soil vapor samples. Some of these compounds were listed on Kenyon Press' Air State Facility Permit (Permit #7-0856-00034/00007) and the higher concentrations detected were attributed to Kenyon Press' printing processes occurring at the time of sample collection. The analytical results for the sub-slab soil vapor samples collected in February indicated that Site-related chlorinated VOCs were present in the soil vapor beneath the main building. The compounds, primarily TCE (7.1 to 740 micrograms per cubic meter [$\mu g/m^3$]) and PCE (2.28 $\mu g/m^3$), were detected below the concrete slab in the northern portion of the building (i.e., at locations SS-1 through SS-3) near the former source area, which was consistent with the previous investigation. No chlorinated VOCs were detected at concentrations above reporting limits in sub-slab soil vapor samples collected from locations SS-4 through SS-6 installed in the middle and southern portions of the building.

The overall observations of the investigation were as follows:

- Concentrations of PCE and 1,1,1-TCA were present in select sub-slab soil vapor and indoor air samples from the northern portion of the main building; however, the concentrations were low and corresponded to the decision matrix recommendation of *no further action required* at the time.
- Concentrations of TCE were present in the sub-slab soil vapor and indoor air samples collected from the northern portion of the main building. The concentrations were sufficiently elevated to warrant, based on the NYSDOH decision matrix at the time, the recommendations of *additional monitoring* (SS-1 and SS-2) or *mitigation* (SS-3; February only).
- No significant concentrations of chlorinated compounds were detected in the sub-slab soil vapor or indoor air samples from the central and southern portions of the building. SVI did not appear to be an issue in these portions of the building.

The conclusions of the investigations were that there did not appear to be a consistent source of VOCs present below the slab of the building and that the concentrations of VOCs identified in indoor air samples did not warrant further action, given that the Site was being used for industrial printing processes.

2.3.7 Groundwater Supplemental Remedial Actions

Following completion of initial remedial actions, supplemental Site remedies were performed in 2009 by WSP to address concerns with the PRB's influence on groundwater flow believed to be caused by the PRB's hydraulic conductivity being lower than that of the surrounding geologic units. This lower hydraulic conductivity appeared to result in groundwater mounding on the upgradient side of the PRB and some groundwater appeared to subsequently flow north or south and around the ends of the PRB. The supplemental remedy proposed by WSP and approved by the NYSDEC involved bioremediation using the amendment 3-D MicroEmulsion (3DME) to provide a reducing environment and carbon source for bacteria to further degrade dissolved contaminants. The remedy was implemented in proximity to the northern and southern ends of the PRB and included 108 and 30 injection points, respectively, in a grid pattern. Follow up groundwater monitoring determined that CVOCs in both treatment zones, except for the area around P-8, showed improvement and were trending towards meeting treatment goals.

In 2014, further actions were taken to address recalcitrant CVOC concentrations upgradient of the PRB, near piezometer P-8, where the concentration of total CVOCs in groundwater samples had increased to 1,855 µg/L and consisted predominantly of cis-1,2-DCE. The amendment SRS-Z®, a commercial formulation variant of the National Aeronautical and Space Administration's patented EZVI® amendment was injected at 25 injection points around piezometer P-8 to facilitate conditions that would enhance bioremediation conditions. CVOC concentrations in samples from piezometer P-8 and nearby wells continued to show improvement and demonstrated that the supplemental remedy was effective at further reducing concentrations towards treatment goals.

Following remedial measures taken across the Site and the confirmation of improvement in the concentrations of total CVOCs, the Site was reclassified in 2022 as a Class 4 hazardous waste site.

2.3.8 Additional Soil Vapor Intrusion Investigations

During discussions regarding advancing administrative closure of the Site between WSP, the NYSDEC, and the NYSDOH, the NYSDEC and NYSDOH determined that the Site investigation was incomplete. The NYSDEC and NYSDOH required further SVI sampling due to the previous investigations only taking place within the footprint of the facility buildings and the findings being inconclusive due to the previous activities of Kenyon Press occurring within the buildings at the time.

2.3.8.1 2022 Soil Vapor Intrusion Investigation

The 2022 SVI investigation conducted by WSP consisted of six co-located indoor air and sub-slab soil vapor samples (IA-7 through IA-12 and SS-7 through SS-12) that were consistent with the 2007 investigation locations, three outdoor soil gas samples (SG-1 through SG-3), and an outdoor air sample located upwind of the facility (OA-1).

The results of the investigation identified Site-specific CVOCs in sub-slab soil vapor and indoor air samples. TCE was detected in each of the sub-slab soil vapor samples. The highest concentrations of CVOCs detected were observed in the samples from the northwest corner of the building and decreased with distance away from this location. The concentrations of CVOCs in the co-located indoor air samples were markedly lower than their respective sub-slab soil vapor sample concentrations. No Site-specific CVOCs were detected in the ambient (outdoor) air sample. WSP concluded that the CVOCs in soil vapor samples collected beneath the floor of the main building warranted additional investigation since four of the six sample locations, all of which were located in the northern portion of the main building, fell into the mitigate category based on the NYSDOH's matrices.

Elevated concentrations were detected in one of the soil gas samples, which was anomalous with historical results and warranted additional investigation.

2.3.8.2 2023 Soil Vapor Intrusion Investigation

Based on the findings and recommendations of the 2022 investigation, SVI sampling was repeated in March of 2023 by GHD at the request of the NYSDEC and the NYSDOH. This included six co-located indoor air and sub-slab vapor sampling points consistent with the previous locations (IA-7 through IA-12 and SS-7 through SS-12), seven exterior soil gas samples (SG-4 through SG-10), and an outdoor air sample located upwind of the facility (OA-1). The laboratory analytical results of the March 2023 sampling event indicated that the sub-slab soil vapor and indoor air in the northern portion of the building had higher concentrations of Site-specific COCs compared to the southern portion and the detected TCE concentrations warranted additional investigation. Soil gas sample results confirmed previous findings and indicated additional investigation was warranted in specific areas.

2.3.8.3 2024 Soil Vapor Intrusion Investigation

SVI sampling was repeated in 2024 to provide further confirmation of results. This included six co-located indoor air and sub-slab vapor sampling points consistent with the previous locations (IA-7 through IA-12 and SS-7 through SS-12), four additional co-located indoor air and sub-slab vapor sampling points (IA-13 through IA-16 and SS-13 through SS-16), four exterior soil gas samples (SG-11 through SG-14), and an outdoor air sample located upwind of the facility (OA-1).

Based on the laboratory analytical results from the multiple rounds of investigation, soil gas samples from locations along the eastern property boundary did not appear to indicate the presence of a significant source of VOCs with the potential to migrate off-Site. The results of the soil gas sample collected from location SG-14, outside the northern wall

of the main building, indicated the presence of elevated CVOC concentrations from an unknown source, which is likely related to the concentrations detected in the sub-slab vapor samples collected immediately to the south, beneath the northwestern corner of the main building. The laboratory analytical results from the March 2024 sampling event indicated that the sub-slab soil vapor and indoor air samples from the northern portion of the building have higher concentrations of Site-related CVOCs compared to samples from the southern portion. Detected concentrations generally fell into the mitigate category on the NYSDOH matrices due to TCE and cis-1,2-DCE concentrations between the co-located indoor air and sub-slab vapor samples. Seven of the ten sample locations recommended mitigation for TCE (IA-7/SS-7, IA-8/SS-8, IA-9/SS-9, IA-10/SS-10, IA-13/SSV-13, IA-14/SSV-14, and IA-16/SSV-16) and one location had a recommendation of mitigation due to cis-1,2-DCE (IA-8/SS-8).

Elevated concentrations of petroleum-range compounds were also detected unexpectedly in indoor air and sub-slab vapor samples during the March 2024 sampling event, some of which fell into the mitigate category per the NYSDOH matrices. These compounds were noted as abundantly present and utilized at the Site while Kenyon Press owned and operated the facility and the initial SVI investigations were performed.

Based on the concentrations of TCE and cis-1,2-DCE detected in samples from the main building, the NYSDOH matrices resulted in the conclusion that mitigation was warranted in the northern half of the building, north of sample locations SS-10, SSV-15, and SSV-16. The analytes that fell into the mitigate category in the southern portion of the main building are petroleum range compounds that are not known to be attributed to GIC's historical operations at the Site and mitigation in that portion of the building was not proposed. The petroleum range detections in the sub-slab vapor samples were also anomalously elevated compared to the previous round of analytical results and would warrant further evaluation before determinations of appropriate next steps were made.

2.3.8.4 2025 Soil Vapor Intrusion Sampling

SVI sampling took place in February 2025 at the same indoor air and sub-slab vapor sample locations as the 2024 SVI investigation: six co-located indoor air and sub-slab vapor sampling points (IA-7 through IA-12 and SS-7 through SS-12), four additional co-located indoor air and sub-slab vapor sampling points (IA-13 through IA-16 and SS-13 through SS-16), and an outdoor air sample located upwind of the facility (OA-1).

The laboratory analytical results of the February 2025 sampling event are generally consistent with previous sampling events and indicate that the sub-slab soil vapor and indoor air in the northern portion of the building generally has higher concentrations of Site-related chlorinated VOCs compared to the southern portion, although detected concentrations generally fell into the No Further Action category on the NYSDOH matrices during the 2025 sampling event except for TCE concentrations at six sample locations. TCE is in the Monitor category for sample locations IA-7/SS-7, IA-9/SS-9, and IA-10/SS-10; and in the Mitigate category for sample locations IA-8/SS-8, IA-13/SSV-13, and IA-14/SSV-14. The results demonstrate a slight improvement compared to March 2024 sample results.

Based on the concentrations of TCE detected in samples from beneath the main building, soil vapor intrusion is a concern in the northernmost portion, in the vicinity of sample locations IA-8/SS-8, IA-13/SSV-13, and IA-14/SSV-14. The analytes that previously fell into the mitigate category in other portions of the main building in the 2024 SVI investigation were not repeated during the February 2025 monitoring event and were generally petroleum range compounds that are not known to be attributed to GIC's historical operations while Kenyon Press owned and operated the facility.

It was concluded that remedial action should be performed and as a next step, the Remedial Party, VGSI, is proposing evaluating options to complete an isolated remedial

action beneath and adjacent to the northern portion of the main building to eliminate remaining Site-related chlorinated VOC concentrations and prevent the need for installing and operating a sub-slab depressurization system in the main building.

2.3.9 Post-Remediation Groundwater Monitoring

Routine groundwater monitoring has been conducted at the Site since 2004 to monitor changes in groundwater quality and the effectiveness of supplemental remedial actions. Discussions began in 2020 regarding the cessation of groundwater monitoring and closure of the groundwater remedy portion of the Site. As part of proceedings, and due to the timing of the requested reductions, the NYSDEC required three additional groundwater monitoring events in advance of re-evaluating the P-8 supplemental remedial action status and continuing discussions related to closure of the groundwater remedy portion of the Site. The March 2024 groundwater sampling event was the third of the three additional events requested by NYSDEC. Based on the results of laboratory analysis performed in 2024, most VOCs were not detected above the method detection limits. Site-specific COCs (TCE, cis-1,2-DCE, trans-1,2-DCE, and/or VC) were detected in the groundwater samples from MW-17, MW-22, MW-31, MW-32, MW-34 and P-8.

Site-specific COCs (cis-1,2-DCE and/or VC) were detected in groundwater samples from MW-22, MW-31 and MW-32 at concentrations that exceeded their respective Class GA groundwater standards. Each of these wells are located near the southern end of the PRB.

The March 2024 groundwater monitoring event demonstrated a continued trend of low and/or decreasing concentrations of CVOCs in samples from the downgradient groundwater wells, as these concentrations represented substantial decreases from initial concentrations identified in samples from wells across the Site. This supports the conclusion that the remedies to address CVOCs in groundwater have been effective.

The August 2025 groundwater monitoring event results were consistent with those of previous monitoring events and continued to demonstrate decreased or non-detect concentrations for Site COCs in most of the samples, with many not detected above laboratory method detection limits or at concentrations below the Class GA groundwater standard for at least the four most recent monitoring events. Concentrations of cis-1,2-DCE in samples from MW-22, MW-31, and MW-32 and VC in samples from MW-22 and MW-32 were detected above their respective Class GA groundwater standards (5 µg/L for cis-1,2-DCE and 2 µg/L for VC).

NYSDEC currently requires on-going periodic groundwater monitoring at these six downgradient monitoring wells until a trend of concentrations below groundwater standards is evident.

Figures and Tables in Appendix F, Figure 4, and Table 2 summarize the available results of historical groundwater monitoring.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site were originally identified in the ROD dated December 1994, and are correlated to current terminology as follows:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

- Remove the source of groundwater contamination.

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

2.5 Remaining Contamination

2.5.1 Soil

A number of remedial measures have been completed across the Site to address soil contamination. Laboratory analytical testing in areas across the Site indicated that the upper foot of soil generally meets the Industrial Use SCOs. The exception is the detection of benzo(a)pyrene at discrete sample locations throughout the Site (Figure 9), which is not uncommon given the low level of the SCO and is potentially attributable to historical coal burning in the surrounding area and/or the adjoining rail line.

The predominant on-Site soil contamination consisted of the following VOCs: TCA, DCE, TCE, and xylene, with lesser concentrations of SVOCs. PCBs were identified on the Site in the vicinity of monitoring well MW-5 near the south end of the main building in fill that was previously brought onto the Site. The concentrations identified during the

1993 RI are below the previous and current Industrial Use SCOs, but above the current Unrestricted Use SCO. The soil samples used in this evaluation were obtained as part of the 1993 RI and the 1994 FS and may not represent current conditions at the Site.

Figures and Tables in Appendix G summarize the results of available historical soil sampling performed at the Site compared against standards available at the time. Figures 8 and 9 and Tables 3 through 5 summarize the results of soil samples collected that exceed the current Unrestricted Use SCOs and the Industrial Use SCOs at the Site.

2.5.2 Groundwater

A number of remedial measures have been completed at the Site to address Site contamination, and routine monitoring has occurred afterwards as discussed in Section 2.3. As of the date of this SMP, groundwater quality downgradient and off-Site is monitored every 16-months at six monitoring wells, as approved by the NYSDEC.

Concentrations of Site COC breakdown products were detected in groundwater samples during the August 2025 sampling event from the following wells, each of which are located near the southern end of the PRB, at concentrations that exceeded their respective Class GA groundwater standards (5 µg/L for cis-1,2-DCE and 2 µg/L for VC):

- MW-22: cis-1,2-DCE (22 µg/L and 24 µg/L [Duplicate]) and VC (2.8 µg/L and 3.1 µg/L [Duplicate])
- MW-31: cis-1,2-DCE (estimated at 50 µg/L)
- MW-32: cis-1,2-DCE (estimated at 51 µg/L) and VC (5.6 µg/L)

Table 2 summarizes the results of historical groundwater sampling. Figure 4 summarizes the exceedances of VOCs in groundwater samples taken during the most recent monitoring events (2021, 2022, 2024, and 2025).

2.5.3 Soil Vapor

SVI investigations have identified that CVOCs are present in indoor air, sub-slab soil vapor, and soil gas samples primarily in the vicinity of the northwest corner of the main Site building. Cis-1,2-DCE was detected in the sub-slab vapor samples from SS-7 and SS-8 (3.39 µg/m^3 and 30.3 µg/m^3, respectively) and concentrations of TCE where detected in sub-slab samples ranging from a minimum of 2.72 µg/m^3 (sample SS-11) to a maximum of 2,650 µg/m^3 (sample SS-8). The highest concentrations detected continue to be in the northwest corner of the main building where previous elevated concentrations have been identified. Indoor air concentrations were significantly lower than sub-slab vapor concentrations, with TCE detected in the February 2025 indoor air samples at concentrations that ranged from 0.398 µg/m^3 (sample IA-12) to 1.06 µg/m^3 (sample IA-7).

Detections of CVOCs in soil gas samples during the March 2024 sampling event, the most recent soil gas sampling event, were limited to those from locations SG-11 (TCE and PCE) and SG-14 (TCE, cis-1,2-DCE, trans-1,2-DCE, and VC). The detections of PCE and TCE in samples from location SG-11 were at concentrations of 3.25 and 1.81 µg/m^3, respectively. TCE was detected in the sample from SG-14 at 111 µg/m^3. Cis-1,2-DCE (258 µg/m^3) and VC (200 µg/m^3) were also detected in the sample from SG-14.

Table 6 and Figures 5 and 6 summarize the detected VOCs from historical sampling events.

3.0 INSTITUTIONAL CONTROL PLAN

3.1 General

Since remaining contamination exists at the Site, ICs and ECs are required to protect human health and the environment. This IC Plan describes the procedures for the implementation and management of all IC at the Site. The IC Plan is one component of the SMP and is subject to revision by the NYSDEC project manager.

This plan provides:

- A description of all ICs on the Site;
- The basic implementation and intended role of each IC;
- A description of the key components of the ICs to be set forth in the future EE;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix C) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the ICs required by the Site remedy, as determined by the NYSDEC project manager.

3.2 Institutional Controls

A series of ICs are required by the ROD to: (1) prevent future exposure to remaining contamination; and, (2) limit the use and development of the site to commercial or industrial uses only. Adherence to these ICs on the Site is required by the future EE and will be implemented under this SMP. ICs identified in the future EE may not be discontinued without an amendment to or extinguishment of the EE. These ICs, which apply to the entirety of the Site, are:

- The property may be used for commercial or industrial use;
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Chenango County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the EE;
- The potential for vapor intrusion must be evaluated on the Site, and any potential impacts that are identified must be monitored or mitigated;
- Vegetable gardens and farming on the Site are prohibited; and
- An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.

3.3 Engineering Controls

There are no ECs required for the Site. Due to soil vapor concerns at the Site, it is required that soil vapor intrusion be evaluated at any new structure and mitigated if necessary. If mitigation is required, this section of the SMP will be updated to include information related to the maintenance and monitoring of installed systems.

3.3.1 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the RAOs identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10. Unless waived by the NYSDEC, confirmation samples of applicable environmental media are required before terminating any remedial actions at the Site. Confirmation samples require Category B deliverables and a Data Usability Summary Report (DUSR).

As discussed below, the NYSDEC may approve termination of a groundwater monitoring program. When a remedial party receives this approval, the remedial party will decommission all Site-related monitoring, injection and recovery wells as per the NYSDEC CP-43 policy.

The remedial party will also conduct any needed Site restoration activities, such as asphalt patching and decommissioning treatment system equipment. In addition, the remedial party will conduct any necessary restoration of vegetation coverage, trees and wetlands, and will comply with NYSDEC and United States Army Corps of Engineers regulations and guidance. Also, the remedial party will ensure that no ongoing erosion is occurring on the Site.

3.3.2 - Monitoring Wells Associated with Permeable Reactive Barrier

Groundwater monitoring activities to assess the effectiveness of the PRB and supplemental remedial actions in its vicinity will continue at the current 16-month frequency, as determined by the NYSDEC project manager in consultation with NYSDOH project manager, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the Site standards, criteria, and guidance (SCGs), or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that groundwater monitoring may no longer be required, a

proposal to discontinue the monitoring will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC project manager. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

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

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

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC SCGs, particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.

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

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and

- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – Wide Inspection

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

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

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

- If controls continue to be protective of human health and the environment;

- Compliance with requirements of this SMP and the EE;
- Achievement of remedial performance criteria; and
- If Site records are complete and up to date.

Reporting requirements are outlined in Section 7.0 of this SMP.

Inspections will also be performed in the event of an emergency. In addition, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the ICs implemented at the Site by a qualified environmental professional, as defined in 6 NYCCR Part 375. Written confirmation must be provided to the NYSDEC project manager within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public. The remedial party will submit follow-up status reports to the NYSDEC within 45 days of the event on actions taken to respond to any emergency event requiring ongoing responsive action, describing and documenting actions taken to restore the effectiveness of the controls.

4.3 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the PRB effectiveness monitoring wells and co-located sub-slab vapor and indoor air monitoring locations on a routine basis. Sampling locations, required analytical parameters, and schedule are provided in Exhibit 4-1 – Post Remediation Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

Exhibit 4-1 – Post Remediation Sampling Requirements and Schedule

Sampling Location	Analytical Parameters		Schedule
	VOCs (EPA Method 8260)	VOCs (EPA Method TO-15)	
PRB Effectiveness Monitoring			
MW-17, MW-34, and P-8 (northern end)	X		Every 16-months (starting August 2025)
MW-22, MW-31, and MW-32 (southern end)	X		Every 16-months (starting August 2025)
Soil Vapor Intrusion Monitoring			
IA-7 through IA-16 SS-7 through SS-12 SSV-13 through SSV-16		X	Annually during the heating season (November through March), until such time as a remedy is in place and monitoring can be suspended (with NYSDEC and NYSDOH approval)

Detailed sample collection and analytical procedures and protocols are provided in the sections below and Appendix J – QAPP.

4.3.1 Soil Sampling

Soil sampling will be performed as needed during future excavation or soil importing activities that may occur at the Site to assess the quality of the soil remaining following completion of excavations or being imported to the Site. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

Soil sampling will be required anywhere on-Site where excavations occur or prior to importing soil for use anywhere on-Site. Remaining on-Site soil conditions will be documented by sampling the sidewalls and floor of excavations for laboratory analysis. Imported soil will be sampled and analyzed prior to importing, in accordance with the frequencies and analytical lists specified in DER-10, to determine its suitability for use.

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

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

4.3.2 Groundwater Sampling

Groundwater monitoring will be performed once every 16-months (starting in August 2025) to assess the performance of the remedy. Sampling will utilize passive diffusion bags (PDBs) to collect representative groundwater samples without generating excess water requiring management. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

The network of monitoring wells has been installed to monitor downgradient groundwater conditions at the Site.

Exhibit 4-2 summarizes the well identification numbers, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, 6 downgradient wells are sampled to evaluate the effectiveness of the remedial actions. The remedial party will measure depth to the water table for each monitoring well in the network before sampling.

Exhibit 4-2 – Monitoring Well Construction Details

Monitoring Well ID	Downgradient Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-17	Northern end of PRB	-75.503045 42.683485	2	1050.74	1047.85	1042.34	1032.34
MW-22	Southern end of PRB	-75.502709 42.682581	2	1051.24	1048.09	1043.73	1033.73
MW-31	Southern end of PRB	-75.502643 42.682462	2	1050.54	1048.4	1040.90	1030.90
MW-32	Southern end of PRB	-75.502763 42.682333	2	1048.92	1047.42	1044.17	1034.17
MW-34	Northern end of PRB	-75.503232 42.683596	2	1048.38	1046.39	1043.70	1033.70
P-8	Northern end of PRB	-75.503045 42.683431	2	1051.32	1048.81	1045.39	1035.39

A summary of groundwater elevations and laboratory analytical results from the August 2025 groundwater monitoring event are provided in Tables 1 and 2. Groundwater samples are to be analyzed for target compound list VOCs using the most appropriate current USEPA Method. Figure 2 depicts groundwater monitoring well locations. Available monitoring well construction logs are included in Appendix E of this document.

If biofouling or silt accumulation occurs in the off-Site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC project manager will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent PRR.

Well decommissioning without replacement will be done only with the prior approval of the NYSDEC project manager. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC project manager.

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

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.3.3 Soil Vapor Intrusion Sampling

Soil vapor intrusion sampling will be performed annually, during the heating season between November 1st and March 31st, to assess Site conditions. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

The network of on-site soil vapor intrusion sample locations has been designed to provide representative coverage of the Site building's sub-slab and indoor air environments, with increased density of sample locations in proximity of historical known or suspected source areas.

A summary of SVI investigation laboratory analytical results from the February 7, 2025 monitoring event is provided in Table 6. SVI samples are to be analyzed for target compound list VOCs using the most appropriate current USEPA Method for air samples. Figure 5 depicts SVI investigation sample locations.

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

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

4.3.4 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix L – Site Management Forms. Other observations (e.g., groundwater monitoring well integrity and building conditions) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the Site-specific QAPP provided as Appendix J of this document.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

The Site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP. Should such systems be necessary in the future, this section will be updated to include applicable information.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

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

This section provides a current vulnerability assessment that evaluates the vulnerability of the Site to severe storms/weather events and associated flooding. This section also identifies vulnerability assessment updates that will be conducted for the Site in PRRs.

The Site is considered to have moderate vulnerability to impacts from varying climatic conditions due to its location in a valley nearby the Chenango River. The Site remedy does not include remedial systems that consume fuel or rely on an electrical supply or that could be negatively impacted by flooding. The Site is generally flat with less than 1 percent slopes across the majority. Given the topographic consistency across much of the Site, the potential vulnerability of the Site to erosion resulting from intense and/or severe storm events is minimal.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including Site management, with the goal of improving the sustainability of the cleanup and summarizing

the net environmental benefit of any implemented green technology. This section provides an environmental footprint analysis of the remedy, as implemented at the time of this SMP. This section of the SMP also provides a summary of green remediation evaluations to be completed for the Site during Site management and reported in PRRs.

The selected remedy for the Site does not include on-going operation or maintenance of mechanical remedial systems. Required on-going groundwater monitoring will occur at 6 groundwater monitoring wells using passive diffusion bags for groundwater sampling on a 16-month frequency. Indoor air and sub-slab vapor sampling will occur annually. As a result, future waste generation, energy usage, water usage, and emissions associated with the operation and maintenance of the remedial components of the Site and on-going monitoring have been reduced to the most practicable extent. An effort will be made to consolidate Site visits to allow for completion of more than one required task at a time, when possible, to further limit emissions related to traveling to and from the Site.

6.2.1 Timing of Green Remediation Evaluations

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

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

6.2.2 Frequency of System Checks, Sampling and Other Periodic Activities

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

Utilizing PDB sampling techniques during monitoring events will create no excess water to be containerized, managed, and disposed, compared to a volumetric purging approach and will have the added benefit of yielding quality, and representative, groundwater samples.

6.3 Remedial System Optimization

A Remedial System Optimization (RSO) study will be conducted any time that the NYSDEC project manager or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;

- There is an anticipated transfer of the Site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

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

The RSO study will focus on overall Site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to Site operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO.

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All Site management inspection, maintenance and monitoring events will be recorded on the appropriate Site management forms provided in Appendix L. These forms are subject to NYSDEC revision. All Site management inspection, maintenance, and monitoring events will be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Exhibit 7-1 and summarized in the PRR.

Exhibit 7-1 - Schedule of Interim Monitoring/Inspection Reports

Task/Report	**Reporting Frequency***
Inspection Report	Annually
Periodic Review Report	Every three years

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

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

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;

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

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

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

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

- Date of event;

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

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

7.2 Periodic Review Report

A PRR will be submitted to the NYSDEC project manager beginning 16 months after the COC or equivalent document is issued. After submittal of the initial PRR, the next PRR shall be submitted every third year to the NYSDEC project manager or at another frequency as may be required by the NYSDEC project manager. In the event that the Site is subdivided into separate parcels with different ownership, a single PRR will be prepared that addresses the Site described in the future EE to be included in Appendix A when available. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the PRR. The report will include:

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

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

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

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

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

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

  - Trend monitoring graphs depicting system influent analytical data on a per event and cumulative basis, if any;

  - O&M data summary tables, if any;

  - A current plume map for sites with remaining groundwater contamination; and

  - A groundwater elevation contour map for each gauging event.

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

- A Site evaluation, which includes the following:

  - The compliance of the remedy with the requirements of the Site-specific ROD;

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

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

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

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

- An evaluation of trends in contaminant levels in the affected media to determine if the remedy continues to be effective in achieving remedial goals as specified by the ROD; and
- The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional Controls

Following the last inspection of the reporting period, a qualified environmental professional as defined in 6 NYCRR Part 375 or PE licensed to practice and registered in New York State will prepare, and include in the PRR, the following certification as per the requirements of NYSDEC DER-10:

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

- *The institutional control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any Site management plan for this control;*
- *Access to the Site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *Use of the Site is compliant with the environmental easement.*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] [and I have been authorized and designated by all Site owners to sign this certification] for the Site."

- *No new information has come to my attention, including groundwater monitoring data from wells located at the Site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and*

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

The signed certification will be included in the PRR.

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

7.3 Corrective Measures Work Plan

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

7.4 Remedial System Optimization Report

If an RSO is to be performed (see Section 6.3), upon completion of an RSO, an RSO report must be submitted to the NYSDEC project manager for approval. A general outline for the RSO report is provided in Appendix N. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual Site model, and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs, etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager.

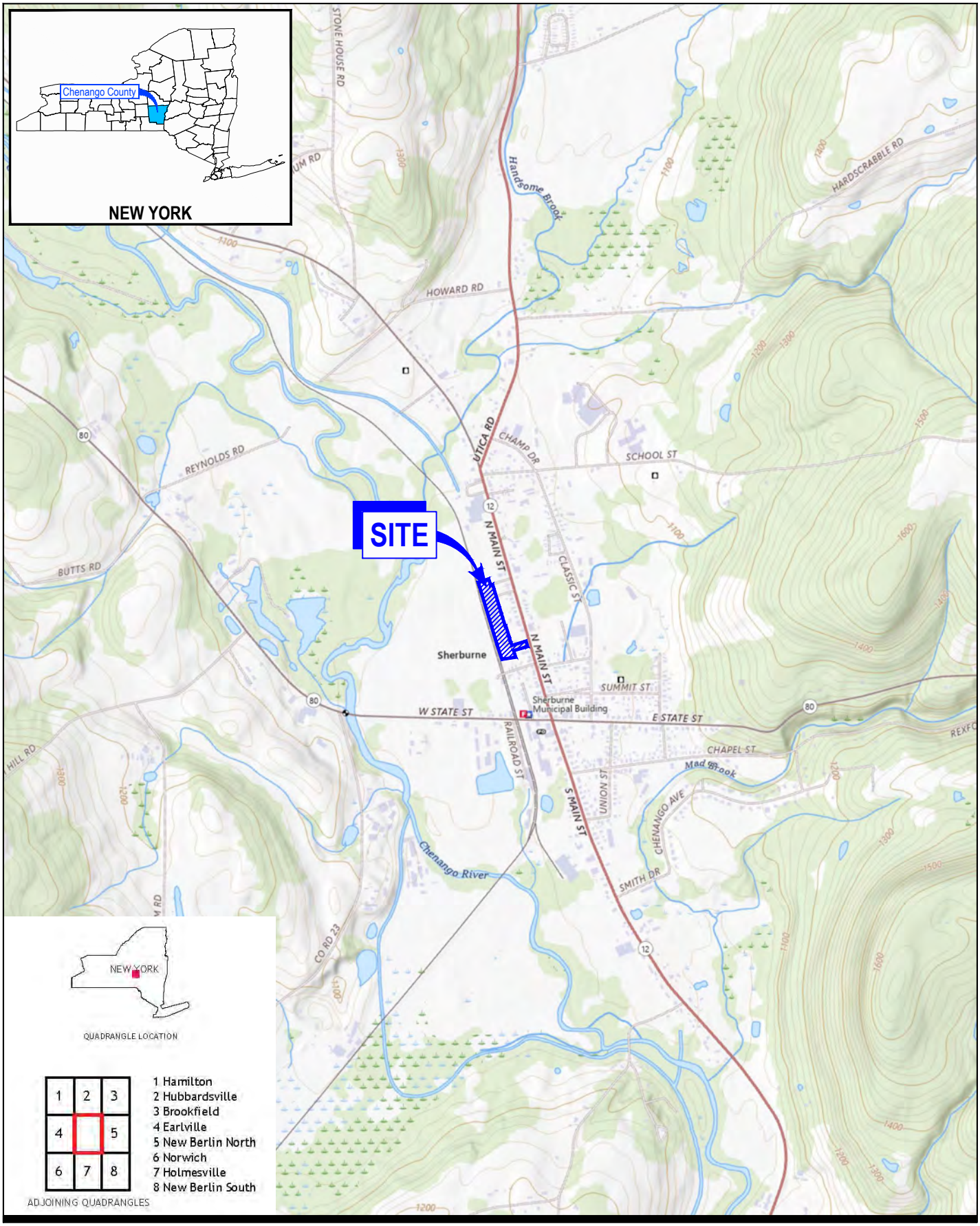
8.0 REFERENCES

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

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

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

FIGURES



ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

Project No. **12595756**
Date **December 2025**

SITE LOCATION MAP

FIGURE 1

Filename: \\ghdnet\ghd\US\Cazenovia\Projects\564\12595756\Digital_Design\ACAD\Figures\RPT2025\SMP\12595756-GHD-00-00-RPT-EN-D101_DL-2025.dwg
Plot Date: 12 December 2025 1:10 PM

Data Source: USGS 7.5 Minute Quad "Earlville and Sherburne, New York"
Lat/Long: 42.683317° North, 75.501983° West



LEGEND

- GROUNDWATER MONITORING WELL
- PIEZOMETER
- FORMER MONITORING WELL OR PIEZOMETER (DECOMMISSIONED)
- PROPERTY LINE
- RAILROAD
- PERMEABLE REACTIVE BARRIER

NOTES:

1. SITE FEATURES TAKEN FROM PREVIOUS REPORTS PREPARED BY OTHERS.
2. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.

0 75 150 ft

1" = 150 ft
Coordinate System:
NAD 1983 State Plane-
New York Central (US Feet)

N

GHD

ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

SITE LAYOUT MAP

Project No. **12595756**
Date **December 2025**

FIGURE 2

Filename: \\ghdnet\ghd\US\Cazenovia\Projects\564\12595756\Digital_Design\ACAD\Figures\RPT2025\SMP\12595756-GHD-00-00-RPT-EN-D102_DL-2025.dwg
Plot Date: 12 December 2025 1:10 PM

Data Source: NYS GIS Clearinghouse Website - Imagery Date: 2022
Lat/Long: 42.682845° North, 75.502328° West



LEGEND

- GROUNDWATER MONITORING WELL
- PIEZOMETER
- FORMER MONITORING WELL OR PIEZOMETER (DECOMMISSIONED)
- FORMER SOIL GAS MONITORING POINT (DECOMMISSIONED)
- FOOTPRINT OF EXISTING BUILDING
- APPROXIMATE LOCATION AND EXTENT OF HISTORICAL FEATURE
- PROPERTY LINE
- RAILROAD
- ABANDONED AND FILLED IN CHENANGO CANALWAY (APPROXIMATE)

NOTES:

1. AST - ABOVEGROUND STORAGE TANK
2. UST - UNDERGROUND STORAGE TANK
3. THE UST NEXT TO THE FORMER PLATING BUILDING WAS REMOVED AND REPLACED BY AN AST OVER THE AREA WHERE THE UST WAS PREVIOUSLY LOCATED BEFORE THE AST WAS ALSO REMOVED.
4. ALL LOCATIONS OF SITE FEATURES ARE APPROXIMATE.
5. SITE FEATURES TAKEN FROM PREVIOUS REPORTS PREPARED BY OTHERS.
6. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.

0 75 150 ft

1" = 150 ft
Coordinate System:
NAD 1983 State Plane-
New York Central (US Feet)

N

GHD

ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

HISTORICAL SITE FEATURES

Project No. **12595756**
Date **December 2025**

FIGURE 3

Filename: \\ghdnet\ghd\US\Cazenovia\Projects\564\12595756\Digital_Design\ACAD\Figures\RPT2025\SMP\12595756-GHD-00-00-RPT-EN-D103_DL-2025.dwg
Plot Date: 15 December 2025 12:38 PM

Data Source: NYS GIS Clearinghouse Website - Imagery Date: 2022
Lat/Long: 42.682845° North, 75.502328° West

MW-34	7/20/2021	10/18/2022	3/28/2024	8/27/2025
TCE	ND	ND/ND	ND	0.19 J
cis-DCE	ND	0.67 J/ND	ND	ND
trans-DCE	ND	ND/ND	ND	ND
VC	ND	0.63 J/0.72 J	0.53 J	0.36 J

MW-17	7/20/2021	10/19/2022	3/28/2024	8/27/2025
TCE	ND/ND	ND	ND/ND	ND
cis-DCE	0.89 J/0.77 J	ND	ND/ND	ND
trans-DCE	ND/ND	ND	ND/ND	ND
VC	ND/ND	ND	0.16 J/0.12 J	0.31 J

P-08	7/20/2021	10/19/2022	3/28/2024	8/27/2025
TCE	ND	ND	ND	ND
cis-DCE	2.2	ND	ND	ND
trans-DCE	ND	ND	ND	ND
VC	**6.0**	ND	0.48 J	0.37 J

MW-22	7/20/2021	10/19/2022	3/28/2024	8/27/2025
TCE	ND	ND	0.36 J	0.19 J/0.22 J
cis-DCE	**37.2**	**29.3**	**18**	**22/24**
trans-DCE	1.1	1.1	0.94 J	1.0 J/0.89 J
VC	**5.6**	**5.8**	**11 J**	**2.8/3.1**

MW-31	7/20/2021	10/18/2022	3/28/2024	8/27/2025
TCE	1.5	3.2	1.6	0.55 J
cis-DCE	**60.6**	**35.4**	**12**	**50 J**
trans-DCE	1.6	0.73 J	ND	1.0 J
VC	ND	ND	ND	0.36 J

MW-32	7/20/2021	10/19/2022	3/28/2024	8/27/2025
TCE	ND	ND	ND	ND
cis-DCE	**66.8**	**43.7**	**8.9**	**51 J**
trans-DCE	1.1	0.88 J	ND	0.88 J
VC	**7**	**6.4**	**5.3 J**	**5.6**

LEGEND

- GROUNDWATER MONITORING WELL
- PIEZOMETER
- FORMER MONITORING WELL OR PIEZOMETER (DECOMMISSIONED)
- PROPERTY LINE
- RAILROAD
- PERMEABLE REACTIVE BARRIER
- APPROXIMATE GROUNDWATER FLOW DIRECTION

ANALYTE	Unit	CLASS GA TOGS 1.1.1
TCE	µg/L	5
cis-DCE	µg/L	5
trans-DCE	µg/L	5
VC	µg/L	2

NOTES:

1. ALL CONCENTRATIONS ARE IN MICROGRAMS PER LITER (µg/L).
2. RED AND BOLD INDICATES CONCENTRATION EXCEEDED THE CLASS GA GROUNDWATER STANDARD FOR THE RESPECTIVE ANALYTE (NYSDEC TOGS 1.1.1, JUNE 1998 AND SUBSEQUENT ADDENDA).
3. ND INDICATES CONCENTRATION WAS BELOW THE METHOD DETECTION LIMIT.
4. ## / ## PARENT/DUPLICATE SAMPLE RESULT.
5. J INDICATES THAT THE REPORTED CONCENTRATION IS AN ESTIMATED VALUE.
6. SITE FEATURES TAKEN FROM PREVIOUS REPORTS PREPARED BY OTHERS.
7. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.

0 75 150 ft

1" = 150 ft
Coordinate System:
NAD 1983 State Plane-
New York Central (US Feet)

N

GHD

ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

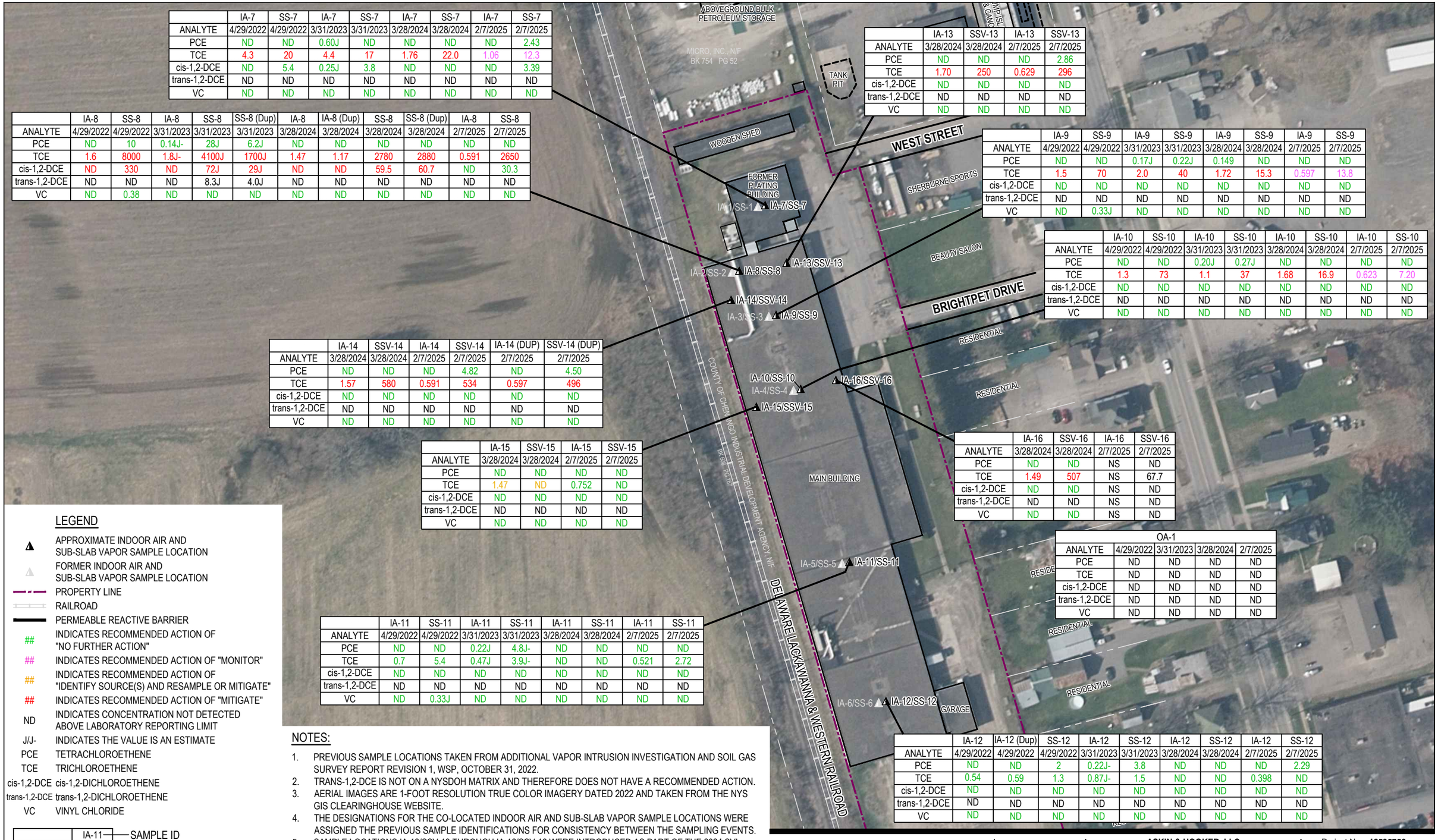
GROUNDWATER MONITORING RESULTS

Project No. **12595756**
Date **December 2025**

FIGURE 4

Filename: \\ghdnet\ghd\US\Cazenovia\Projects\564\12595756\Digital_Design\ACAD\Figures\RPT2025\SMP\12595756-GHD-00-00-RPT-EN-D104_DL-2025.dwg
Plot Date: 12 December 2025 1:09 PM

Data Source: NYS GIS Clearinghouse Website - Imagery Date: 2022
Lat/Long: 42.682845° North, 75.502328° West



	IA-7	SS-7	IA-7	SS-7	IA-7	SS-7	IA-7	SS-7
ANALYTE	4/29/2022	4/29/2022	3/31/2023	3/31/2023	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	0.60J	ND	ND	ND	ND	2.43
TCE	4.3	20	4.4	17	1.76	22.0	1.06	12.3
cis-1,2-DCE	ND	5.4	0.25J	3.8	ND	ND	ND	3.39
trans-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND	ND	ND

	IA-8	SS-8	IA-8	SS-8	SS-8 (Dup)	IA-8	IA-8 (Dup)	SS-8	SS-8 (Dup)	IA-8	SS-8
ANALYTE	4/29/2022	4/29/2022	3/31/2023	3/31/2023	3/31/2023	3/28/2024	3/28/2024	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	10	0.14J-	28J	6.2J	ND	ND	ND	ND	ND	ND
TCE	1.6	8000	1.8J-	4100J	1700J	1.47	1.17	2780	2880	0.591	2650
cis-1,2-DCE	ND	330	ND	72J	29J	ND	ND	59.5	60.7	ND	30.3
trans-1,2-DCE	ND	ND	ND	8.3J	4.0J	ND	ND	ND	ND	ND	ND
VC	ND	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND

	IA-13	SSV-13	IA-13	SSV-13
ANALYTE	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	ND	2.86
TCE	1.70	250	0.629	296
cis-1,2-DCE	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND
VC	ND	ND	ND	ND

	IA-9	SS-9	IA-9	SS-9	IA-9	SS-9	IA-9	SS-9
ANALYTE	4/29/2022	4/29/2022	3/31/2023	3/31/2023	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	0.17J	0.22J	0.149	ND	ND	ND
TCE	1.5	70	2.0	40	1.72	15.3	0.597	13.8
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	0.33J	ND	ND	ND	ND	ND	ND

	IA-10	SS-10	IA-10	SS-10	IA-10	SS-10	IA-10	SS-10
ANALYTE	4/29/2022	4/29/2022	3/31/2023	3/31/2023	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	0.20J	0.27J	ND	ND	ND	ND
TCE	1.3	73	1.1	37	1.68	16.9	0.623	7.20
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND	ND	ND

	IA-14	SSV-14	IA-14	SSV-14	IA-14 (DUP)	SSV-14 (DUP)
ANALYTE	3/28/2024	3/28/2024	2/7/2025	2/7/2025	2/7/2025	2/7/2025
PCE	ND	ND	ND	4.82	ND	4.50
TCE	1.57	580	0.591	534	0.597	496
cis-1,2-DCE	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND

	IA-15	SSV-15	IA-15	SSV-15
ANALYTE	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	ND	ND
TCE	1.47	ND	0.752	ND
cis-1,2-DCE	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND
VC	ND	ND	ND	ND

	IA-16	SSV-16	IA-16	SSV-16
ANALYTE	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	NS	ND
TCE	1.49	507	NS	67.7
cis-1,2-DCE	ND	ND	NS	ND
trans-1,2-DCE	ND	ND	NS	ND
VC	ND	ND	NS	ND

	OA-1			
ANALYTE	4/29/2022	3/31/2023	3/28/2024	2/7/2025
PCE	ND	ND	ND	ND
TCE	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND
VC	ND	ND	ND	ND

	IA-11	SS-11	IA-11	SS-11	IA-11	SS-11	IA-11	SS-11
ANALYTE	4/29/2022	4/29/2022	3/31/2023	3/31/2023	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	0.22J	4.8J-	ND	ND	ND	ND
TCE	0.7	5.4	0.47J	3.9J-	ND	ND	0.521	2.72
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	0.33J	ND	ND	ND	ND	ND	ND

	IA-12	IA-12 (Dup)	SS-12	IA-12	SS-12	IA-12	SS-12	IA-12	SS-12
ANALYTE	4/29/2022	4/29/2022	4/29/2022	3/31/2023	3/31/2023	3/28/2024	3/28/2024	2/7/2025	2/7/2025
PCE	ND	ND	2	0.22J-	3.8	ND	ND	ND	2.29
TCE	0.54	0.59	1.3	0.87J-	1.5	ND	ND	0.398	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND

LEGEND

- ▲ APPROXIMATE INDOOR AIR AND SUB-SLAB VAPOR SAMPLE LOCATION
- △ FORMER INDOOR AIR AND SUB-SLAB VAPOR SAMPLE LOCATION
- PROPERTY LINE
- RAILROAD
- PERMEABLE REACTIVE BARRIER
- ## INDICATES RECOMMENDED ACTION OF "NO FURTHER ACTION"
- ## INDICATES RECOMMENDED ACTION OF "MONITOR"
- ## INDICATES RECOMMENDED ACTION OF "IDENTIFY SOURCE(S) AND RESAMPLE OR MITIGATE"
- ## INDICATES RECOMMENDED ACTION OF "MITIGATE"
- ND INDICATES CONCENTRATION NOT DETECTED ABOVE LABORATORY REPORTING LIMIT
- J/J- INDICATES THE VALUE IS AN ESTIMATE
- PCE TETRACHLOROETHENE
- TCE TRICHLOROETHENE
- cis-1,2-DCE cis-1,2-DICHLOROETHENE
- trans-1,2-DCE trans-1,2-DICHLOROETHENE
- VC VINYL CHLORIDE

	IA-11
ANALYTE	4/29/2022
PCE	ND
TCE	0.7
cis-1,2-DCE	ND
trans-1,2-DCE	ND
VC	ND

IA-11 — SAMPLE ID
4/29/2022 — SAMPLING DATE
CONCENTRATION IN MICROGRAMS PER CUBIC METER (µg/m^3)

NOTES:

1. PREVIOUS SAMPLE LOCATIONS TAKEN FROM ADDITIONAL VAPOR INTRUSION INVESTIGATION AND SOIL GAS SURVEY REPORT REVISION 1, WSP, OCTOBER 31, 2022.
2. TRANS-1,2-DCE IS NOT ON A NYSDOH MATRIX AND THEREFORE DOES NOT HAVE A RECOMMENDED ACTION.
3. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.
4. THE DESIGNATIONS FOR THE CO-LOCATED INDOOR AIR AND SUB-SLAB VAPOR SAMPLE LOCATIONS WERE ASSIGNED THE PREVIOUS SAMPLE IDENTIFICATIONS FOR CONSISTENCY BETWEEN THE SAMPLING EVENTS.
5. SAMPLE LOCATIONS IA-13/SSV-13 THROUGH IA-16/SSV-16 WERE INTRODUCED AS PART OF THE 2024 SVI INVESTIGATION ACTIVITIES.
6. OA SAMPLE LOCATION OUTSIDE AND UPWIND OF SITE BUILDING BASED ON OBSERVED WIND DIRECTION AT TIME OF SAMPLING. AS A RESULT, THE EXACT SAMPLE LOCATION CHANGES BETWEEN SAMPLING EVENTS AND IS NOT SHOWN ON THIS FIGURE.
7. IA-16 WAS NOT SAMPLED IN 2025 DUE TO EQUIPMENT MALFUNCTION. RECOMMENDED ACTION BASED ON CO-LOCATED SAMPLING CANNOT BE DETERMINED.

0 75 150 ft
1" = 150 ft
Coordinate System:
NAD 1983 State Plane-
New York Central (US Feet)

N

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ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

SVI INVESTIGATION RESULTS

Project No. **12595756**
Date **December 2025**

FIGURE 5

Filename: \\ghdnet\ghd\US\Cazenovia\Projects\564\12595756\Digital_Design\ACAD\Figures\RPT2025\SMP\12595756-GHD-00-00-RPT-EN-D105_DL-2025.dwg
Plot Date: 12 December 2025 8:21 PM

Data Source: NYS GIS Clearinghouse Website - Imagery Date: 2022
Lat/Long: 42.682845° North, 75.502328° West

LEGEND

SG-11 — APPROXIMATE SOIL GAS SAMPLE LOCATION (2024) - DECOMMISSIONED

SG-3 — APPROXIMATE SOIL GAS SAMPLE LOCATION (2022 OR 2023) - DECOMMISSIONED

SAMPLE ID	SG-11	← SAMPLE ID
ANALYTE	3/26/2024	← SAMPLING DATE
PCE	3.25	← CONCENTRATION IN MICROGRAMS PER CUBIC METER (µg/m^3)
TCE	1.81	
cis-1,2-DCE	ND	
trans-1,2-DCE	ND	← "ND" INDICATES CONCENTRATION NOT DETECTED ABOVE LABORATORY REPORTING LIMIT.
VC	ND	

"J" OR "J-" INDICATES VALUE IS AN ESTIMATE

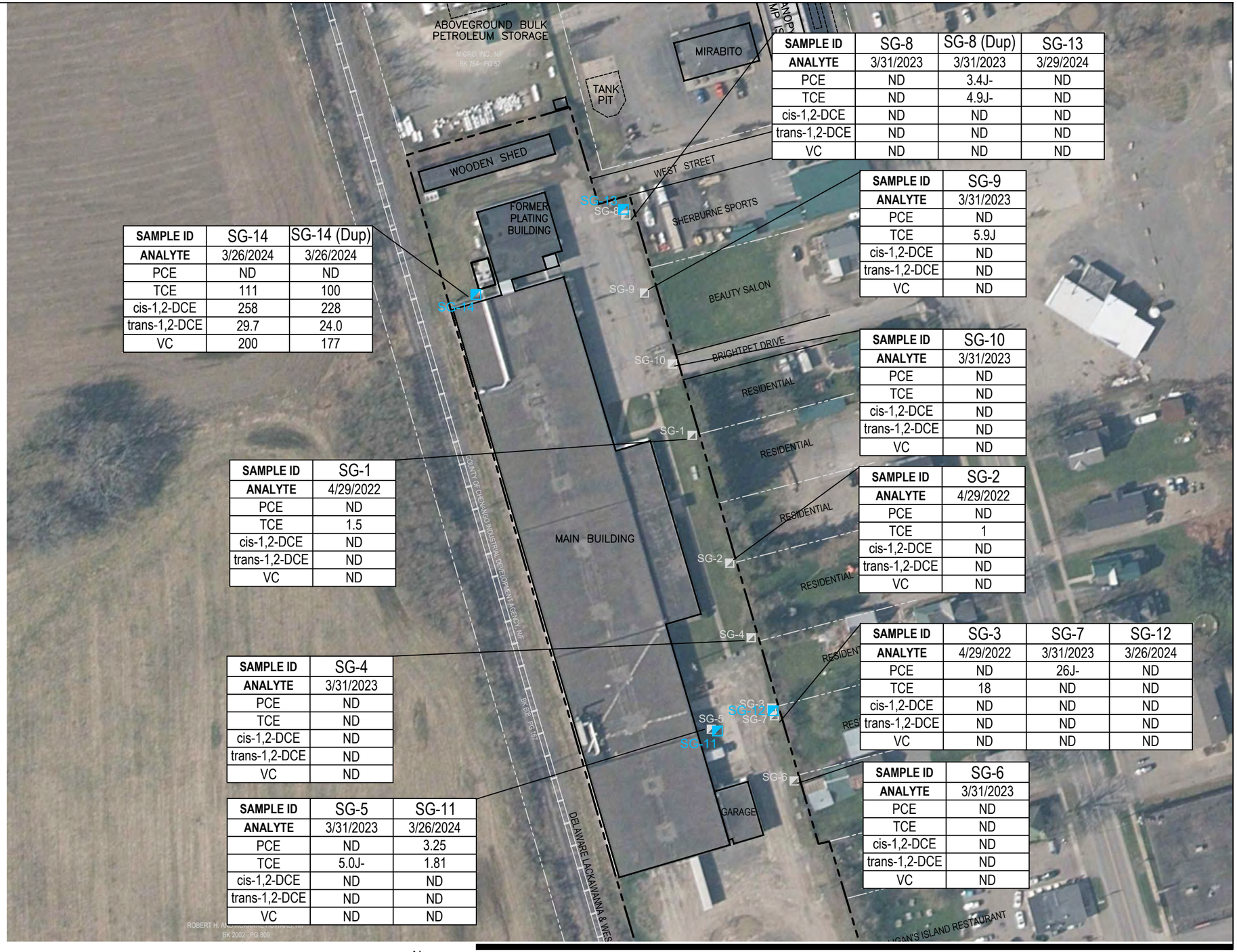
PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE
cis-1,2-DCE	cis-1,2-DICHLOROETHENE
trans-1,2- DCE	trans-1,2-DICHLOROETHENE
VC	VINYL CHLORIDE

SITE BOUNDARY

RAILROAD

NOTES:

1. PREVIOUS SAMPLE LOCATIONS TAKEN FROM ADDITIONAL VAPOR INTRUSION INVESTIGATION AND SOIL GAS SURVEY REPORT REVISION 1, WSP, OCTOBER 31, 2022.
2. WHERE APPLICABLE, SAMPLE RESULTS WITH DIFFERENT LOCATION IDENTIFICATIONS ARE GROUPED TOGETHER FOR COMPARISON PURPOSES AS THEY REPRESENT RESULTS FROM REPEATING SAMPLING AT SOIL GAS POINTS INSTALLED IN THE SAME GENERAL VICINITY AS ONE ANOTHER SINCE THE SAMPLE POINTS WERE DECOMMISSIONED IMMEDIATELY FOLLOWING SAMPLE COLLECTION.
3. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.
4. ALL SOIL GAS SAMPLE LOCATIONS WERE DECOMMISSIONED FOLLOWING SAMPLE COLLECTION.



SAMPLE ID	SG-8	SG-8 (Dup)	SG-13
ANALYTE	3/31/2023	3/31/2023	3/29/2024
PCE	ND	3.4J-	ND
TCE	ND	4.9J-	ND
cis-1,2-DCE	ND	ND	ND
trans-1,2-DCE	ND	ND	ND
VC	ND	ND	ND

SAMPLE ID	SG-9
ANALYTE	3/31/2023
PCE	ND
TCE	5.9J
cis-1,2-DCE	ND
trans-1,2-DCE	ND
VC	ND

SAMPLE ID	SG-14	SG-14 (Dup)
ANALYTE	3/26/2024	3/26/2024
PCE	ND	ND
TCE	111	100
cis-1,2-DCE	258	228
trans-1,2-DCE	29.7	24.0
VC	200	177

SAMPLE ID	SG-10
ANALYTE	3/31/2023
PCE	ND
TCE	ND
cis-1,2-DCE	ND
trans-1,2-DCE	ND
VC	ND

SAMPLE ID	SG-1
ANALYTE	4/29/2022
PCE	ND
TCE	1.5
cis-1,2-DCE	ND
trans-1,2-DCE	ND
VC	ND

SAMPLE ID	SG-2
ANALYTE	4/29/2022
PCE	ND
TCE	1
cis-1,2-DCE	ND
trans-1,2-DCE	ND
VC	ND

SAMPLE ID	SG-4
ANALYTE	3/31/2023
PCE	ND
TCE	ND
cis-1,2-DCE	ND
trans-1,2-DCE	ND
VC	ND

SAMPLE ID	SG-3	SG-7	SG-12
ANALYTE	4/29/2022	3/31/2023	3/26/2024
PCE	ND	26J-	ND
TCE	18	ND	ND
cis-1,2-DCE	ND	ND	ND
trans-1,2-DCE	ND	ND	ND
VC	ND	ND	ND

SAMPLE ID	SG-5	SG-11
ANALYTE	3/31/2023	3/26/2024
PCE	ND	3.25
TCE	5.0J-	1.81
cis-1,2-DCE	ND	ND
trans-1,2-DCE	ND	ND
VC	ND	ND

SAMPLE ID	SG-6
ANALYTE	3/31/2023
PCE	ND
TCE	ND
cis-1,2-DCE	ND
trans-1,2-DCE	ND
VC	ND

N

0 50 100 150 200'

SCALE 1"=100' AT ORIGINAL SIZE

GHD

ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

SOIL GAS INVESTIGATION RESULTS

Project No. 12595756
Date 10.2024

FIGURE 6

Filename: G:\564\12595756\Digital_Design\ACAD\Figures\SMP\12595756-SMP-FIG06-SVI Results-Soil.gas.dwg
Plot Date: 26 September 2024 12:47 PM

LEGEND

- LANDFARM EXTENTS (APPROX.)
- SITE BOUNDARY
- RAILROAD
- PERMEABLE REACTIVE BARRIER
- FORMER SVE INSTALLATION AREA (APPROX.)

NOTES:

1. SITE FEATURES TAKEN FROM PREVIOUS REPORTS PREPARED BY OTHERS.
2. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.



Graphics Scale: North Arrow, Detail Page, etc.

N

0 50 100 150 200'

SCALE 1"=100' AT ORIGINAL SIZE

GHD

ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

LOCATION OF REMEDIES

Project No. **12595756**
Date **10.2024**

FIGURE 7

Filename: \\ghdnet\ghd\US\Cazenovia\Projects\564\12595756\Digital_Design\ACAD\Figures\SMP\12595756-SMP-Figure-7-Engineering.Controls.dwg
Plot Date: 19 September 2024 2:09 PM

LEGEND

- SS-## Sample Interval 0'-2'
- SB-## Sample Interval 2'-4'
- SS-## Sample Interval >4'
- B## Sample from the 1994 Feasibility Study
- SS-## Off-Site Sample

Sample Location ID / Approximate Sampling Depth

SS-17 (0'-2')	
Cadmium	15.9
Silver	19.8

E indicates values are an estimate

Analyte — Concentration in mg/kg (ppm)

SITE BOUNDARY

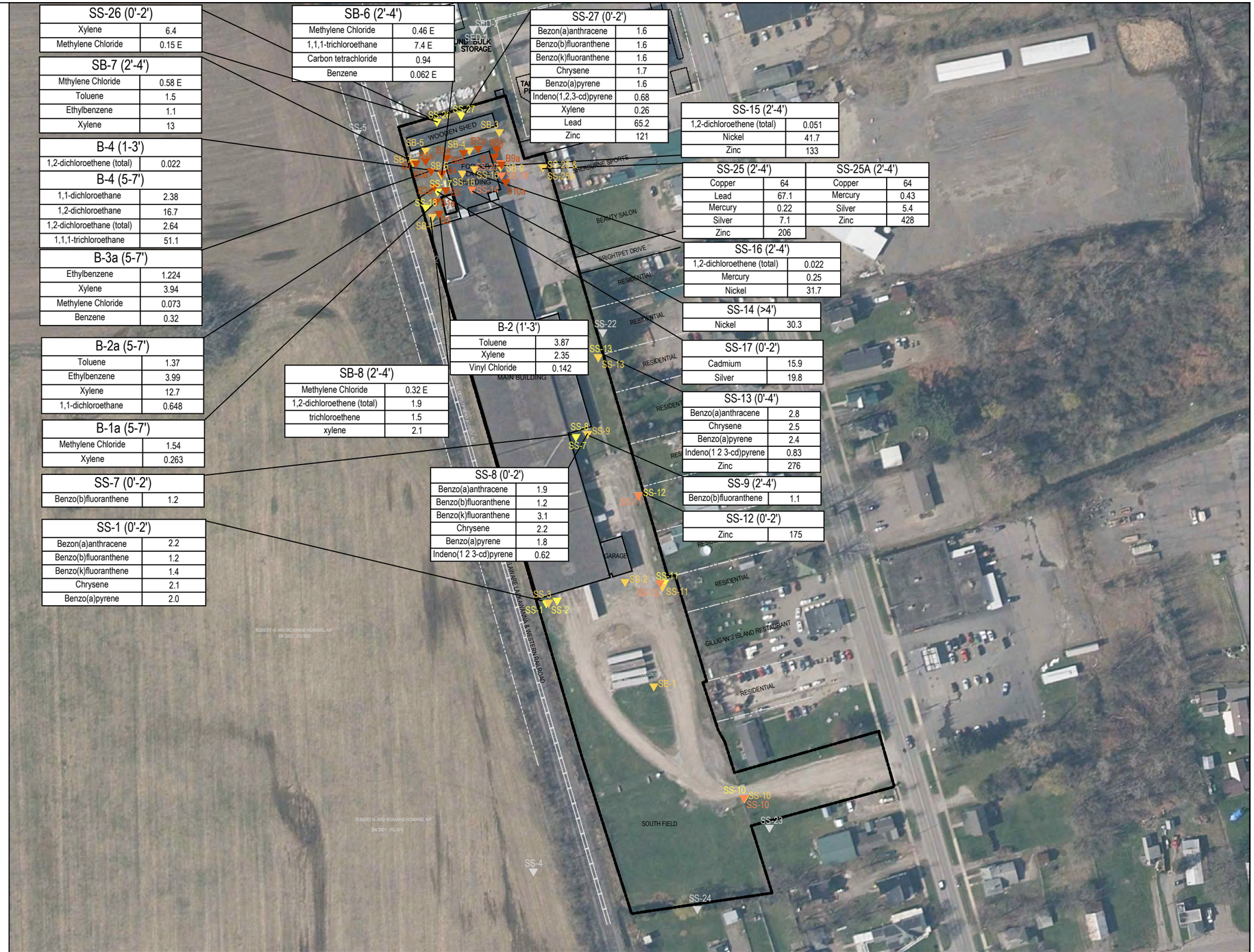
RAILROAD

NOTES:

1. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm) OR MILLIGRAMS PER KILOGRAM (mg/kg)
2. ALL LOCATIONS AND CONCENTRATIONS SHOWN ARE TAKEN FROM THE 1993 REMEDIAL INVESTIGATION REPORT AND THE 1994 FEASIBILITY STUDY REPORT FOR THE SITE AND MAY NOT REPRESENT CURRENT SITE CONDITIONS.
3. OFF-SITE DATA IS NOT SHOWN ON FIGURE; REFER TO TABLES IN THE SITE MANAGEMENT PLAN FOR A SUMMARY
4. ALL CONCENTRATIONS SHOWN ARE IN EXCEEDANCE OF CURRENT UNRESTRICTED USE SOIL CLEANUP OBJECTIVES.
7. SITE FEATURES TAKEN FROM PREVIOUS REPORTS PREPARED BY OTHERS.
8. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.

ANALYTE	UNRESTRICTED USE SCO
Benzene	0.06
Toluene	0.700
Ethylbenzene	1
Xylene	0.26
Methylene Chloride	0.05
1,1-dichloroethane	0.330
1,2-dichloroethane	0.270
1,2-dichloroethene (total)	0.020
Benzo(a)anthracene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.800
Benzo(a)pyrene	1
Chrysene	1
1,1,1-trichloroethane	0.680
Indeno(1,2,3-cd)pyrene	0.500
Vinyl Chloride	0.020

ANALYTE	UNRESTRICTED USE SCO
Cadmium	2.5
Copper	50
Lead	63
Mercury	0.18
Nickel	30
Silver	2
Zinc	109



N

0 75 150 225 300'

SCALE 1"=150' AT ORIGINAL SIZE

ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

UNRESTRICTED USE SCO SOIL EXCEEDANCES

Project No. 12595756
Date 10.2024

FIGURE 8

Filename: G:\564\12595756\Digital_Design\ACAD\Figures\SMP\12595756-SMP-Figures-8-Remaining Soil Contamination-Unrestricted.Use.dwg
Plot Date: 26 September 2024 12:51 PM

LEGEND

- SS-## Sample Interval 0'-2'
- SB-## Sample Interval 2'-4'
- SS-## Sample Interval >4'
- B## Sample from the 1994 Feasibility Study
- SS-## Off-Site Sample

Sample Location ID | Approximate Sampling Depth

SS-1 (0'-2')	
Benzo(a)pyrene	2.0

Analyte | Concentration in mg/kg (ppm)

SITE BOUNDARY

RAILROAD

NOTES:

1. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm) OR MILLIGRAMS PER KILOGRAM (mg/kg)
2. ALL LOCATIONS AND CONCENTRATIONS SHOWN ARE TAKEN FROM THE 1993 REMEDIAL INVESTIGATION REPORT AND THE 1994 FEASIBILITY STUDY REPORT FOR THE SITE AND MAY NOT REPRESENT CURRENT SITE CONDITIONS.
3. OFF-SITE DATA IS NOT SHOWN ON FIGURE; REFER TO TABLES IN THE SITE MANAGEMENT PLAN FOR A SUMMARY
4. ALL CONCENTRATIONS SHOWN ARE IN EXCEEDANCE OF CURRENT INDUSTRIAL USE SOIL CLEANUP OBJECTIVES.
7. SITE FEATURES TAKEN FROM PREVIOUS REPORTS PREPARED BY OTHERS.
8. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.

ANALYTE	INDUSTRIAL USE SCO
Benzo(a)pyrene	1.1



N

0 75 150 225 300'

SCALE 1"=150' AT ORIGINAL SIZE

GHD

ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
SITE MANAGEMENT PLAN

INDUSTRIAL USE SCO
SOIL EXCEEDANCES

Project No. 12595756
Date 10.2024

FIGURE 9

Filename: G:\564\12595756\Digital_Design\ACAD\Figures\SMP\12595756-SMP-Figures-9-Remaining Soil Contamination-Industrial.Use.dwg
Plot Date: 26 September 2024 12:53 PM

TABLES

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-2	6/1/2000	1050.56	6.47	1044.09
MW-2	11/1/2000	1050.56	6.38	1044.18
MW-2	5/31/2001	1050.56	7.26	1043.3
MW-2	11/30/2001	1050.56	6.17	1044.39
MW-2	6/17/2002	1050.56	--	--
MW-2	7/19/2002	1050.56	5.67	1044.89
MW-2	11/9/2002	1050.56	5.46	1045.1
MW-2	12/21/2002	1050.56	6.36	1044.2
MW-2	6/28/2003	1050.56	7.54	1043.02
MW-2	12/19/2003	1050.56	5.73	1044.83
MW-2	6/2/2004	1050.07	5.98	1044.09
MW-2	6/11/2004	1050.07	6.86	1043.21
MW-2	11/2/2004	1050.07	5.89	1044.18
MW-2	12/28/2004	1050.07	3.08	1046.99
MW-2	6/1/2005	1050.07	6.77	1043.3
MW-2	6/15/2005	1050.07	6.53	1043.54
MW-2	12/1/2005	1050.07	5.68	1044.39
MW-2	2/5/2006	1050.07	5.69	1044.38
MW-2	3/29/2006	1050.07	4.24	1045.83
MW-2	6/29/2006	1050.07	6.7	1043.37
MW-2	7/20/2006	1050.07	5.18	1044.89
MW-2	9/19/2006	1050.07	7.38	1042.69
MW-2	12/15/2006	1050.07	4.77	1045.3
MW-2	12/22/2006	1050.07	5.87	1044.2
MW-2	3/28/2007	1050.07	4.38	1045.69
MW-2	6/19/2007	1050.07	6.36	1043.71
MW-2	6/29/2007	1050.07	7.05	1043.02
MW-2	10/3/2007	1050.07	4.24	1045.83
MW-2	12/14/2007	1050.07	5.38	1044.69
MW-2	12/20/2007	1050.07	5.24	1044.83
MW-2	6/12/2008	1050.07	6.86	1043.21
MW-2	7/5/2008	1050.07	6.95	1043.12
MW-2	11/28/2008	1050.07	6.7	1043.37
MW-2	12/29/2008	1050.07	3.08	1046.99
MW-2	6/2/2009	1050.07	4.88	1045.19
MW-2	6/16/2009	1050.07	6.53	1043.54
MW-2	2/6/2010	1050.07	5.69	1044.38
MW-2	3/30/2010	1050.07	4.24	1045.83
MW-2	6/30/2010	1050.07	6.7	1043.37
MW-2	9/20/2010	1050.07	7.38	1042.69
MW-2	12/16/2010	1050.07	4.77	1045.3
MW-2	3/29/2011	1050.07	4.38	1045.69
MW-2	6/20/2011	1050.07	6.36	1043.71
MW-2	10/4/2011	1050.07	4.24	1045.83
MW-2	12/15/2011	1050.07	5.38	1044.69
MW-2	7/6/2012	1050.07	6.95	1043.12
MW-2	11/29/2012	1050.07	6.7	1043.37
MW-2	6/3/2013	1050.07	4.88	1045.19
MW-2	12/23/2013	1050.07	3.34	1046.73
MW-2	5/31/2014	1050.07	5.75	1044.32
MW-2	12/23/2014	1050.07	5.16	1044.91
MW-2	6/26/2015	1050.07	5.71	1044.36
MW-2	12/10/2015	1050.07	5.1	1044.97
MW-2	4/27/2016	1050.07	5.88	1044.19
MW-2	8/30/2016	1050.07	6.73	1043.34
MW-2	12/20/2016	1050.07	4.1	1045.97
MW-2	4/19/2017	1050.07	4.93	1045.14
MW-2	5/11/2017	1050.07	4.24	1045.83
MW-2	8/23/2017	1050.07	6.41	1043.66

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-8	6/1/2000	1050.93	6.67	1044.26
MW-8	11/1/2000	1050.93	6.6	1044.33
MW-8	5/31/2001	1050.93	7.55	1043.38
MW-8	11/30/2001	1050.93	6.5	1044.43
MW-8	6/17/2002	1050.93	4.86	1046.07
MW-8	7/19/2002	1050.93	5.98	1044.95
MW-8	11/9/2002	1050.93	5.34	1045.59
MW-8	12/21/2002	1050.93	6.66	1044.27
MW-8	6/28/2003	1050.93	7.83	1043.1
MW-8	12/19/2003	1050.93	6.03	1044.9
MW-8	6/2/2004	1050.5	6.24	1044.26
MW-8	6/11/2004	1050.5	7.22	1043.28
MW-8	11/2/2004	1050.5	6.17	1044.33
MW-8	12/28/2004	1050.5	3.49	1047.01
MW-8	6/1/2005	1050.5	7.12	1043.38
MW-8	6/15/2005	1048.13	4.49	1043.64
MW-8	12/1/2005	1048.13	3.7	1044.43
MW-8	2/5/2006	1048.13	3.68	1044.45
MW-8	3/29/2006	1048.13	2.27	1045.86
MW-8	6/29/2006	1048.13	4.68	1043.45
MW-8	7/20/2006	1048.13	3.18	1044.95
MW-8	9/19/2006	1048.13	5.38	1042.75
MW-8	12/15/2006	1048.13	2.71	1045.42
MW-8	12/22/2006	1048.13	3.86	1044.27
MW-8	3/28/2007	1048.13	2.41	1045.72
MW-8	6/19/2007	1048.13	4.32	1043.81
MW-8	6/29/2007	1048.13	5.03	1043.1
MW-8	10/3/2007	1048.13	2.23	1045.9
MW-8	12/14/2007	1048.13	3.31	1044.82
MW-8	12/20/2007	1048.13	3.23	1044.9
MW-8	6/12/2008	1048.13	4.85	1043.28
MW-8	7/5/2008	1048.13	4.98	1043.15
MW-8	11/28/2008	1048.13	4.69	1043.44
MW-8	12/29/2008	1048.13	1.12	1047.01
MW-8	6/2/2009	1048.13	2.84	1045.29
MW-8	6/16/2009	1048.13	4.49	1043.64
MW-8	2/6/2010	1048.13	3.68	1044.45
MW-8	3/30/2010	1048.13	2.27	1045.86
MW-8	6/30/2010	1048.13	4.68	1043.45
MW-8	9/20/2010	1048.13	5.38	1042.75
MW-8	12/16/2010	1048.13	2.71	1045.42
MW-8	3/29/2011	1048.13	2.41	1045.72
MW-8	6/20/2011	1048.13	4.32	1043.81
MW-8	10/4/2011	1048.13	2.23	1045.9
MW-8	12/15/2011	1048.13	3.31	1044.82
MW-8	7/6/2012	1048.13	4.98	1043.15
MW-8	11/29/2012	1048.13	4.69	1043.44
MW-8	6/3/2013	1048.13	2.84	1045.29
MW-8	12/23/2013	1048.13	1.36	1046.77
MW-8	5/31/2014	1048.13	3.72	1044.41
MW-8	12/23/2014	1048.13	3.06	1045.07
MW-8	6/26/2015	1048.13	3.67	1044.46
MW-8	12/10/2015	1048.13	3.48	1044.65
MW-8	4/27/2016	1048.13	3.82	1044.31
MW-8	8/30/2016	1048.13	4.6	1043.53
MW-8	12/20/2016	1048.13	1.98	1046.15
MW-8	4/19/2017	1048.13	2.92	1045.21
MW-8	5/11/2017	1048.13	2.23	1045.9
MW-8	8/23/2017	1048.13	4.37	1043.76

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-14	11/1/2000	1049.67	4.97	1044.7
MW-14	5/31/2001	1049.67	5.76	1043.91
MW-14	11/30/2001	1049.67	4.77	1044.9
MW-14	7/19/2002	1049.67	4.3	1045.37
MW-14	12/21/2002	1049.67	4.9	1044.77
MW-14	6/28/2003	1049.67	6.13	1043.54
MW-14	12/19/2003	1049.67	4.43	1045.24
MW-14	6/2/2004	1049.67	--	--
MW-14	6/11/2004	1049.67	5.97	1043.7
MW-14	11/2/2004	1049.67	4.99	1044.68
MW-14	12/28/2004	1049.67	2.82	1046.85
MW-14	6/1/2005	1049.67	5.78	1043.89
MW-14	6/15/2005	1049.67	5.4	1044.27
MW-14	12/1/2005	1049.67	4.79	1044.88
MW-14	2/5/2006	1049.67	4.63	1045.04
MW-14	3/29/2006	1049.67	3.35	1046.32
MW-14	6/29/2006	1049.67	5.58	1044.09
MW-14	7/20/2006	1049.67	4.3	1045.37
MW-14	9/19/2006	1049.67	6.33	1043.34
MW-14	12/15/2006	1049.67	3.81	1045.86
MW-14	12/22/2006	1049.67	4.9	1044.77
MW-14	3/28/2007	1049.67	3.6	1046.07
MW-14	6/19/2007	1049.67	5.28	1044.39
MW-14	6/29/2007	1049.67	6.13	1043.54
MW-14	10/3/2007	1049.67	--	--
MW-14	12/14/2007	1049.67	4.38	1045.29
MW-14	12/20/2007	1049.67	4.43	1045.24
MW-14	6/12/2008	1049.67	5.97	1043.7
MW-14	7/5/2008	1049.67	--	--
MW-14	11/28/2008	1049.69	5.74	1043.95
MW-14	12/29/2008	1049.67	2.82	1046.85
MW-14	6/2/2009	1049.67	4.14	1045.53
MW-14	6/16/2009	1049.67	5.4	1044.27
MW-14	2/6/2010	1049.67	4.63	1045.04
MW-14	3/30/2010	1049.67	3.35	1046.32
MW-14	6/30/2010	1049.67	5.58	1044.09
MW-14	9/20/2010	1049.67	6.33	1043.34
MW-14	12/16/2010	1049.67	3.81	1045.86
MW-14	3/29/2011	1049.67	3.6	1046.07
MW-14	6/20/2011	1049.67	5.28	1044.39
MW-14	10/4/2011	1049.67	--	--
MW-14	12/15/2011	1049.67	4.38	1045.29
MW-14	7/6/2012	1049.67	--	--
MW-14	11/29/2012	1049.67	5.72	1043.95
MW-14	6/3/2013	1049.67	4.14	1045.53
MW-14	12/23/2013	1049.67	2.89	1046.78
MW-14	5/31/2014	1049.67	--	--
MW-14	12/23/2014	1049.67	4.23	1045.44
MW-14	6/26/2015	1049.67	4.83	1044.84
MW-14	12/10/2015	1049.67	4.22	1045.45
MW-14	4/27/2016	1049.67	4.54	1045.13
MW-14	8/30/2016	1049.67	5.34	1044.33
MW-14	12/20/2016	1049.67	3.13	1046.54
MW-14	4/19/2017	1049.67	3.82	1045.85

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-17	6/1/2000	1051.2	7.13	1044.07
MW-17	11/1/2000	1051.2	7.06	1044.14
MW-17	5/31/2001	1051.2	7.92	1043.28
MW-17	11/30/2001	1051.2	6.84	1044.36
MW-17	6/17/2002	1051.2	5.62	1045.58
MW-17	7/19/2002	1051.2	6.35	1044.85
MW-17	11/9/2002	1051.2	6.17	1045.03
MW-17	12/21/2002	1051.2	7.04	1044.16
MW-17	6/28/2003	1051.2	8.18	1043.02
MW-17	12/19/2003	1051.2	6.39	1044.81
MW-17	6/2/2004	1050.74	6.67	1044.07
MW-17	6/11/2004	1050.74	7.56	1043.18
MW-17	11/2/2004	1050.74	6.6	1044.14
MW-17	12/28/2004	1050.74	3.79	1046.95
MW-17	6/1/2005	1050.74	7.46	1043.28
MW-17	6/15/2005	1050.74	7.21	1043.53
MW-17	12/1/2005	1050.74	6.38	1044.36
MW-17	2/5/2006	1050.74	6.37	1044.37
MW-17	3/29/2006	1050.74	4.8	1045.94
MW-17	6/29/2006	1050.74	7.39	1043.35
MW-17	7/20/2006	1050.74	5.89	1044.85
MW-17	9/19/2006	1050.74	8.05	1042.69
MW-17	12/15/2006	1050.74	5.41	1045.33
MW-17	12/22/2006	1050.74	6.58	1044.16
MW-17	3/28/2007	1050.74	4.98	1045.76
MW-17	6/19/2007	1050.74	7.05	1043.69
MW-17	6/29/2007	1050.74	7.72	1043.02
MW-17	10/3/2007	1050.74	4.9	1045.84
MW-17	12/14/2007	1050.74	6.06	1044.68
MW-17	12/20/2007	1050.74	5.93	1044.81
MW-17	6/12/2008	1050.74	7.56	1043.18
MW-17	7/5/2008	1050.74	7.66	1043.08
MW-17	11/28/2008	1050.74	7.39	1043.35
MW-17	12/29/2008	1050.74	3.79	1046.95
MW-17	6/2/2009	1050.74	6.53	1044.21
MW-17	6/16/2009	1050.74	7.21	1043.53
MW-17	2/6/2010	1050.74	6.37	1044.37
MW-17	3/30/2010	1050.74	4.8	1045.94
MW-17	6/30/2010	1050.74	7.39	1043.35
MW-17	9/20/2010	1050.74	8.05	1042.69
MW-17	12/16/2010	1050.74	5.41	1045.33
MW-17	3/29/2011	1050.74	4.98	1045.76
MW-17	6/20/2011	1050.74	7.05	1043.69
MW-17	10/4/2011	1050.74	4.9	1045.84
MW-17	12/15/2011	1050.74	6.06	1044.68
MW-17	7/6/2012	1050.74	7.66	1043.08
MW-17	11/29/2012	1050.74	7.39	1043.35
MW-17	6/3/2013	1050.74	6.53	1044.21
MW-17	12/23/2013	1050.74	4.08	1046.66
MW-17	5/31/2014	1050.74	6.21	1044.53
MW-17	12/23/2014	1050.74	5.89	1044.85
MW-17	3/19/2015	1050.74	6.23	1044.51
MW-17	6/26/2015	1050.74	6.44	1044.3
MW-17	12/10/2015	1050.74	5.75	1044.99
MW-17	4/27/2016	1050.74	6.62	1044.12
MW-17	8/30/2016	1050.74	7.46	1043.28
MW-17	12/20/2016	1050.74	4.75	1045.99
MW-17	4/19/2017	1050.74	5.56	1045.18
MW-17	5/11/2017	1050.74	4.84	1045.9
MW-17	8/23/2017	1050.74	7.14	1043.6
MW-17	4/17/2018	1050.74	4.85	1045.89
MW-17	4/17/2019	1050.74	5.39	1045.35
MW-17	4/28/2020	1050.74	5.51	1045.23
MW-17	7/20/2021	1050.74	6.22	1044.52
MW-17	10/18/2022	1050.74	7.85	1042.89
MW-17	3/28/2024	1050.74	4.81	1045.93
MW-17	8/27/2025	1050.74	7.28	1043.46

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-18	6/1/2000	1048.25	4.1	1044.15
MW-18	11/1/2000	1048.25	4.08	1044.17
MW-18	5/31/2001	1048.25	4.94	1043.31
MW-18	6/17/2002	1048.25	2.84	1045.41
MW-18	7/19/2002	1048.25	3.29	1044.96
MW-18	11/9/2002	1048.25	3.47	1044.78
MW-18	12/21/2002	1048.25	3.92	1044.33
MW-18	6/28/2003	1048.25	5.09	1043.16
MW-18	12/19/2003	1048.25	3.32	1044.93
MW-18	6/2/2004	1047.84	3.69	1044.15
MW-18	6/11/2004	1047.84	4.5	1043.34
MW-18	11/2/2004	1047.84	3.67	1044.17
MW-18	12/28/2004	1047.84	0.89	1046.95
MW-18	6/1/2005	1047.84	4.53	1043.31
MW-18	6/15/2005	1047.84	4.16	1043.68
MW-18	12/1/2005	1047.84	--	--
MW-18	2/5/2006	1047.84	3.34	1044.5
MW-18	3/29/2006	1047.84	1.94	1045.9
MW-18	6/29/2006	1047.84	4.31	1043.53
MW-18	7/20/2006	1047.84	2.88	1044.96
MW-18	9/19/2006	1047.84	5.03	1042.81
MW-18	12/15/2006	1047.84	2.45	1045.39
MW-18	12/22/2006	1047.84	3.51	1044.33
MW-18	3/28/2007	1047.84	2.17	1045.67
MW-18	6/19/2007	1047.84	3.96	1043.88
MW-18	6/29/2007	1047.84	4.68	1043.16
MW-18	10/3/2007	1047.84	1.93	1045.91
MW-18	12/14/2007	1047.84	3.03	1044.81
MW-18	12/20/2007	1047.84	2.91	1044.93
MW-18	6/12/2008	1047.84	4.5	1043.34
MW-18	7/5/2008	1047.84	4.57	1043.27
MW-18	11/28/2008	1047.84	4.33	1043.51
MW-18	12/29/2008	1047.84	0.89	1046.95
MW-18	6/2/2009	1047.84	2.51	1045.33
MW-18	6/16/2009	1047.84	4.16	1043.68
MW-18	2/6/2010	1047.84	3.34	1044.5
MW-18	3/30/2010	1047.84	1.94	1045.9
MW-18	6/30/2010	1047.84	4.31	1043.53
MW-18	9/20/2010	1047.84	5.03	1042.81
MW-18	12/16/2010	1047.84	2.45	1045.39
MW-18	3/29/2011	1047.84	2.17	1045.67
MW-18	6/20/2011	1047.84	3.96	1043.88
MW-18	10/4/2011	1047.84	1.93	1045.91
MW-18	12/15/2011	1047.84	3.03	1044.81
MW-18	7/6/2012	1047.84	4.57	1043.27
MW-18	11/29/2012	1047.84	4.33	1043.51
MW-18	6/3/2013	1047.84	2.51	1045.33
MW-18	12/23/2013	1047.84	1.11	1046.73
MW-18	5/31/2014	1047.84	3.33	1044.51
MW-18	12/23/2014	1047.84	2.83	1045.01
MW-18	6/26/2015	1047.84	3.34	1044.5
MW-18	12/10/2015	1047.84	3.02	1044.82
MW-18	4/27/2016	1047.84	3.51	1044.33
MW-18	8/30/2016	1047.84	4.31	1043.53
MW-18	12/20/2016	1047.84	1.78	1046.06
MW-18	4/19/2017	1047.84	2.84	1045
MW-18	5/11/2017	1047.84	1.93	1045.91
MW-18	8/23/2017	1047.84	3.97	1043.87
MW-18	4/28/2020	1047.84	2.61	1045.23
MW-18	7/20/2021	1047.84	2.54	1045.3

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-20	6/1/2000	1049.42	6.08	1043.34
MW-20	11/1/2000	1049.42	5.94	1043.48
MW-20	5/31/2001	1049.42	6.95	1042.47
MW-20	11/30/2001	1049.42	5.77	1043.65
MW-20	6/17/2002	1049.42	4.55	1044.87
MW-20	7/19/2002	1049.42	5.23	1044.19
MW-20	11/9/2002	1049.42	5.12	1044.3
MW-20	12/21/2002	1049.42	6.03	1043.39
MW-20	6/28/2003	1049.42	7.17	1042.25
MW-20	12/19/2003	1049.42	5.18	1044.24
MW-20	6/2/2004	1049.2	5.86	1043.34
MW-20	6/11/2004	1049.2	6.76	1042.44
MW-20	11/2/2004	1049.2	5.72	1043.48
MW-20	12/28/2004	1049.2	2.55	1046.65
MW-20	6/1/2005	1049.2	6.73	1042.47
MW-20	6/15/2005	1049.2	6.43	1042.77
MW-20	12/1/2005	1049.2	5.55	1043.65
MW-20	2/5/2006	1049.2	5.51	1043.69
MW-20	3/29/2006	1049.2	3.85	1045.35
MW-20	6/29/2006	1049.2	6.6	1042.6
MW-20	7/20/2006	1049.2	5.01	1044.19
MW-20	9/19/2006	1049.2	7.2	1042
MW-20	12/15/2006	1049.2	4.54	1044.66
MW-20	12/22/2006	1049.2	5.81	1043.39
MW-20	3/28/2007	1049.2	3.98	1045.22
MW-20	6/19/2007	1049.2	6.25	1042.95
MW-20	6/29/2007	1049.2	6.95	1042.25
MW-20	10/3/2007	1049.2	3.82	1045.38
MW-20	12/14/2007	1049.2	5.12	1044.08
MW-20	12/20/2007	1049.2	4.96	1044.24
MW-20	6/12/2008	1049.2	6.76	1042.44
MW-20	7/5/2008	1049.2	6.83	1042.37
MW-20	11/28/2008	1049.2	6.49	1042.71
MW-20	12/29/2008	1049.2	2.55	1046.65
MW-20	6/2/2009	1049.2	4.73	1044.47
MW-20	6/16/2009	1049.2	6.43	1042.77
MW-20	2/6/2010	1049.2	5.51	1043.69
MW-20	3/30/2010	1049.2	3.85	1045.35
MW-20	6/30/2010	1049.2	6.6	1042.6
MW-20	9/20/2010	1049.2	7.2	1042
MW-20	12/16/2010	1049.2	4.54	1044.66
MW-20	3/29/2011	1049.2	3.98	1045.22
MW-20	6/20/2011	1049.2	6.25	1042.95
MW-20	10/4/2011	1049.2	3.82	1045.38
MW-20	12/15/2011	1049.2	5.12	1044.08
MW-20	7/6/2012	1049.2	6.83	1042.37
MW-20	11/29/2012	1049.2	6.49	1042.71
MW-20	6/3/2013	1049.2	4.73	1044.47
MW-20	12/23/2013	1049.2	2.82	1046.38
MW-20	5/31/2014	1049.2	5.76	1043.44
MW-20	12/23/2014	1049.2	4.99	1044.21
MW-20	6/26/2015	1049.2	5.74	1043.46
MW-20	12/10/2015	1049.2	5.01	1044.19
MW-20	4/27/2016	1049.2	5.91	1043.29
MW-20	8/30/2016	1049.2	6.82	1042.38
MW-20	12/20/2016	1049.2	4.85	1044.35
MW-20	4/19/2017	1049.2	4.78	1044.42
MW-20	5/11/2017	1049.2	3.99	1045.21
MW-20	8/23/2017	1049.2	6.55	1042.65
MW-20	4/28/2020	1049.2	3.97	1045.23
MW-20	7/20/2021	1049.2	3.9	1045.3

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-21	6/1/2000	1050.33	7.2	1043.13
MW-21	11/1/2000	1050.33	7.06	1043.27
MW-21	5/31/2001	1050.33	8.06	1042.27
MW-21	11/30/2001	1050.33	6.84	1043.49
MW-21	6/17/2002	1050.33	5.54	1044.79
MW-21	7/19/2002	1050.33	6.24	1044.09
MW-21	11/9/2002	1050.33	6.14	1044.19
MW-21	12/21/2002	1050.33	7.08	1043.25
MW-21	6/28/2003	1050.33	8.34	1041.99
MW-21	12/19/2003	1050.33	6.28	1044.05
MW-21	6/2/2004	1049.97	6.84	1043.13
MW-21	6/11/2004	1049.97	7.8	1042.17
MW-21	11/2/2004	1049.97	6.7	1043.27
MW-21	12/28/2004	1049.97	3.62	1046.35
MW-21	6/1/2005	1049.97	7.7	1042.27
MW-21	6/15/2005	1049.97	7.41	1042.56
MW-21	12/1/2005	1049.97	6.48	1043.49
MW-21	2/5/2006	1049.97	6.46	1043.51
MW-21	3/29/2006	1049.97	4.8	1045.17
MW-21	6/29/2006	1049.97	7.61	1042.36
MW-21	7/20/2006	1049.97	5.88	1044.09
MW-21	9/19/2006	1049.97	8.19	1041.78
MW-21	12/15/2006	1049.97	5.51	1044.46
MW-21	12/22/2006	1049.97	6.72	1043.25
MW-21	3/28/2007	1049.97	4.99	1044.98
MW-21	6/19/2007	1049.97	7.31	1042.66
MW-21	6/29/2007	1049.97	7.98	1041.99
MW-21	10/3/2007	1049.97	4.82	1045.15
MW-21	12/14/2007	1049.97	6.18	1043.79
MW-21	12/20/2007	1049.97	5.92	1044.05
MW-21	6/12/2008	1049.97	7.8	1042.17
MW-21	7/5/2008	1049.97	7.92	1042.05
MW-21	11/28/2008	1049.97	7.57	1042.4
MW-21	12/29/2008	1049.97	3.62	1046.35
MW-21	6/2/2009	1049.97	5.73	1044.24
MW-21	6/16/2009	1049.97	7.41	1042.56
MW-21	2/6/2010	1049.97	6.46	1043.51
MW-21	3/30/2010	1049.97	4.8	1045.17
MW-21	6/30/2010	1049.97	7.61	1042.36
MW-21	9/20/2010	1049.97	8.19	1041.78
MW-21	12/16/2010	1049.97	5.51	1044.46
MW-21	3/29/2011	1049.97	4.99	1044.98
MW-21	6/20/2011	1049.97	7.31	1042.66
MW-21	10/4/2011	1049.97	4.82	1045.15
MW-21	12/15/2011	1049.97	6.18	1043.79
MW-21	7/6/2012	1049.97	7.92	1042.05
MW-21	11/29/2012	1049.97	7.57	1042.4
MW-21	6/3/2013	1049.97	5.73	1044.24
MW-21	12/23/2013	1049.97	3.88	1046.09
MW-21	5/31/2014	1049.97	6.75	1043.22
MW-21	12/23/2014	1049.97	5.95	1044.02
MW-21	6/26/2015	1049.97	6.67	1043.3
MW-21	12/10/2015	1049.97	6.04	1043.93
MW-21	4/27/2016	1049.97	6.85	1043.12
MW-21	8/30/2016	1049.97	7.75	1042.22
MW-21	12/20/2016	1049.97	4.73	1045.24
MW-21	4/19/2017	1049.97	5.61	1044.36
MW-21	5/11/2017	1049.97	4.87	1045.1
MW-21	8/23/2017	1049.97	7.5	1042.47
MW-21	4/28/2020	1049.97	4.74	1045.23
MW-21	7/20/2021	1049.97	4.67	1045.3

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-22	6/1/2000	1051.59	7.46	1044.13
MW-22	11/1/2000	1051.59	7.4	1044.19
MW-22	5/31/2001	1051.59	8.19	1043.4
MW-22	11/30/2001	1051.59	7.14	1044.45
MW-22	6/17/2002	1051.59	5.95	1045.64
MW-22	7/19/2002	1051.59	6.71	1044.88
MW-22	11/9/2002	1051.59	6.53	1045.06
MW-22	12/21/2002	1051.59	7.34	1044.25
MW-22	6/28/2003	1051.59	8.5	1043.09
MW-22	12/19/2003	1051.59	6.72	1044.87
MW-22	6/2/2004	1051.24	7.11	1044.13
MW-22	6/11/2004	1051.24	7.93	1043.31
MW-22	11/2/2004	1051.24	7.05	1044.19
MW-22	12/28/2004	1051.24	4.56	1046.68
MW-22	6/1/2005	1051.24	7.84	1043.4
MW-22	6/15/2005	1051.24	7.58	1043.66
MW-22	12/1/2005	1051.24	6.79	1044.45
MW-22	2/5/2006	1051.24	6.93	1044.31
MW-22	3/29/2006	1051.24	5.45	1045.79
MW-22	6/29/2006	1051.24	7.89	1043.35
MW-22	7/20/2006	1051.24	6.36	1044.88
MW-22	9/19/2006	1051.24	8.57	1042.67
MW-22	12/15/2006	1051.24	6.09	1045.15
MW-22	12/22/2006	1051.24	6.99	1044.25
MW-22	3/28/2007	1051.24	5.7	1045.54
MW-22	6/19/2007	1051.24	7.53	1043.71
MW-22	6/29/2007	1051.24	8.15	1043.09
MW-22	10/3/2007	1051.24	5.51	1045.73
MW-22	12/14/2007	1051.24	6.6	1044.64
MW-22	12/20/2007	1051.24	6.37	1044.87
MW-22	6/12/2008	1051.24	7.93	1043.31
MW-22	7/5/2008	1051.24	8.14	1043.1
MW-22	11/28/2008	1051.24	7.91	1043.33
MW-22	12/29/2008	1051.24	4.56	1046.68
MW-22	6/2/2009	1051.24	6.13	1045.11
MW-22	6/16/2009	1051.24	7.58	1043.66
MW-22	2/6/2010	1051.24	6.93	1044.31
MW-22	3/30/2010	1051.24	5.45	1045.79
MW-22	6/30/2010	1051.24	7.89	1043.35
MW-22	9/20/2010	1051.24	8.57	1042.67
MW-22	12/16/2010	1051.24	6.09	1045.15
MW-22	3/29/2011	1051.24	5.7	1045.54
MW-22	6/20/2011	1051.24	7.53	1043.71
MW-22	10/4/2011	1051.24	5.51	1045.73
MW-22	12/15/2011	1051.24	6.6	1044.64
MW-22	7/6/2012	1051.24	8.14	1043.1
MW-22	11/29/2012	1051.24	7.91	1043.33
MW-22	6/3/2013	1051.24	6.13	1045.11
MW-22	12/23/2013	1051.24	4.88	1046.36
MW-22	5/31/2014	1051.24	6.98	1044.26
MW-22	12/23/2014	1051.24	6.33	1044.91
MW-22	6/26/2015	1051.24	6.91	1044.33
MW-22	12/10/2015	1051.24	6.4	1044.84
MW-22	4/27/2016	1051.24	7.09	1044.15
MW-22	8/30/2016	1051.24	7.84	1043.4
MW-22	12/20/2016	1051.24	5.35	1045.89
MW-22	4/19/2017	1051.24	6.17	1045.07
MW-22	5/11/2017	1051.24	5.56	1045.68
MW-22	8/23/2017	1051.24	7.54	1043.7
MW-22	4/17/2018	1051.24	5.39	1045.85
MW-22	4/28/2020	1051.24	5.94	1045.3
MW-22	7/20/2021	1051.24	5.92	1045.32
MW-22	10/18/2022	1051.24	8.26	1042.98
MW-22	3/28/2024	1051.24	5.81	1045.43
MW-22	8/27/2025	1051.24	7.68	1043.56

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-23	6/1/2000	1051.18	7.43	1043.75
MW-23	11/1/2000	1051.18	7.34	1043.84
MW-23	5/31/2001	1051.18	8.22	1042.96
MW-23	11/30/2001	1051.18	7.11	1044.07
MW-23	6/17/2002	1051.18	5.8	1045.38
MW-23	7/19/2002	1051.18	6.58	1044.6
MW-23	11/9/2002	1051.18	6.43	1044.75
MW-23	12/21/2002	1051.18	7.33	1043.85
MW-23	6/28/2003	1051.18	8.53	1042.65
MW-23	12/19/2003	1051.18	6.61	1044.57
MW-23	6/2/2004	1050.84	7.09	1043.75
MW-23	6/11/2004	1050.84	7.98	1042.86
MW-23	11/2/2004	1050.84	7	1043.84
MW-23	12/28/2004	1050.84	3.96	1046.88
MW-23	6/1/2005	1050.84	7.88	1042.96
MW-23	6/15/2005	1050.84	7.62	1043.22
MW-23	12/1/2005	1050.84	6.77	1044.07
MW-23	2/5/2006	1050.84	6.77	1044.07
MW-23	3/29/2006	1050.84	5.04	1045.8
MW-23	6/29/2006	1050.84	7.82	1043.02
MW-23	7/20/2006	1050.84	6.24	1044.6
MW-23	9/19/2006	1050.84	8.45	1042.39
MW-23	12/15/2006	1050.84	5.81	1045.03
MW-23	12/22/2006	1050.84	6.99	1043.85
MW-23	3/28/2007	1050.84	5.35	1045.49
MW-23	6/19/2007	1050.84	7.53	1043.31
MW-23	6/29/2007	1050.84	8.19	1042.65
MW-23	10/3/2007	1050.84	5.17	1045.67
MW-23	12/14/2007	1050.84	6.45	1044.39
MW-23	12/20/2007	1050.84	6.27	1044.57
MW-23	6/12/2008	1050.84	7.98	1042.86
MW-23	7/5/2008	1050.84	8.08	1042.76
MW-23	11/28/2008	1050.84	7.79	1043.05
MW-23	12/29/2008	1050.84	3.96	1046.88
MW-23	6/2/2009	1050.84	5.85	1044.99
MW-23	6/16/2009	1050.84	7.62	1043.22
MW-23	2/6/2010	1050.84	6.77	1044.07
MW-23	3/30/2010	1050.84	5.04	1045.8
MW-23	6/30/2010	1050.84	7.82	1043.02
MW-23	9/20/2010	1050.84	8.45	1042.39
MW-23	12/16/2010	1050.84	5.81	1045.03
MW-23	3/29/2011	1050.84	5.35	1045.49
MW-23	6/20/2011	1050.84	7.53	1043.31
MW-23	10/4/2011	1050.84	5.17	1045.67
MW-23	12/15/2011	1050.84	6.45	1044.39
MW-23	7/6/2012	1050.84	8.08	1042.76
MW-23	11/29/2012	1050.84	7.79	1043.05
MW-23	6/3/2013	1050.84	5.85	1044.99
MW-23	12/23/2013	1050.84	4.22	1046.62
MW-23	5/31/2014	1050.84	6.96	1043.88
MW-23	12/23/2014	1050.84	6.12	1044.72
MW-23	6/26/2015	1050.84	6.88	1043.96
MW-23	12/10/2015	1050.84	6.05	1044.79
MW-23	4/27/2016	1050.84	7.03	1043.81
MW-23	8/30/2016	1050.84	7.9	1042.94
MW-23	12/20/2016	1050.84	4.99	1045.85
MW-23	4/19/2017	1050.84	5.94	1044.9
MW-23	5/11/2017	1050.84	5.21	1045.63
MW-23	8/23/2017	1050.84	7.43	1043.41

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-24	6/1/2000	1051.43	7.71	1043.72
MW-24	11/1/2000	1051.43	7.61	1043.82
MW-24	5/31/2001	1051.43	8.54	1042.89
MW-24	11/30/2001	1051.43	7.4	1044.03
MW-24	6/17/2002	1051.43	6.1	1045.33
MW-24	7/19/2002	1051.43	6.89	1044.54
MW-24	11/9/2002	1051.43	6.69	1044.74
MW-24	12/21/2002	1051.43	7.63	1043.8
MW-24	6/28/2003	1051.43	8.82	1042.61
MW-24	12/19/2003	1051.43	6.9	1044.53
MW-24	6/2/2004	1051.13	7.41	1043.72
MW-24	6/11/2004	1051.13	8.35	1042.78
MW-24	11/2/2004	1051.13	7.31	1043.82
MW-24	12/28/2004	1051.13	4.29	1046.84
MW-24	6/1/2005	1051.13	8.24	1042.89
MW-24	6/15/2005	1051.13	7.99	1043.14
MW-24	12/1/2005	1051.13	7.1	1044.03
MW-24	2/5/2006	1051.13	7.16	1043.97
MW-24	3/29/2006	1051.13	5.58	1045.55
MW-24	6/29/2006	1051.13	8.21	1042.92
MW-24	7/20/2006	1051.13	6.59	1044.54
MW-24	9/19/2006	1051.13	8.83	1042.3
MW-24	12/15/2006	1051.13	6.21	1044.92
MW-24	12/22/2006	1051.13	7.33	1043.8
MW-24	3/28/2007	1051.13	5.75	1045.38
MW-24	6/19/2007	1051.13	7.9	1043.23
MW-24	6/29/2007	1051.13	8.52	1042.61
MW-24	10/3/2007	1051.13	5.58	1045.55
MW-24	12/14/2007	1051.13	6.86	1044.27
MW-24	12/20/2007	1051.13	6.6	1044.53
MW-24	6/12/2008	1051.13	8.35	1042.78
MW-24	7/5/2008	1051.13	8.5	1042.63
MW-24	11/28/2008	1051.13	8.19	1042.94
MW-24	12/29/2008	1051.13	4.29	1046.84
MW-24	6/2/2009	1051.13	6.28	1044.85
MW-24	6/16/2009	1051.13	7.99	1043.14
MW-24	2/6/2010	1051.13	7.16	1043.97
MW-24	3/30/2010	1051.13	5.58	1045.55
MW-24	6/30/2010	1051.13	8.21	1042.92
MW-24	9/20/2010	1051.13	8.83	1042.3
MW-24	12/16/2010	1051.13	6.21	1044.92
MW-24	3/29/2011	1051.13	5.75	1045.38
MW-24	6/20/2011	1051.13	7.9	1043.23
MW-24	10/4/2011	1051.13	5.58	1045.55
MW-24	12/15/2011	1051.13	6.86	1044.27
MW-24	7/6/2012	1051.13	8.5	1042.63
MW-24	11/29/2012	1051.13	8.19	1042.94
MW-24	6/3/2013	1051.13	6.28	1044.85
MW-24	12/23/2013	1051.13	4.62	1046.51
MW-24	5/31/2014	1051.13	7.45	1043.68
MW-24	12/23/2014	1051.13	6.61	1044.52
MW-24	6/26/2015	1051.13	7.38	1043.75
MW-24	12/10/2015	1051.13	6.55	1044.58
MW-24	4/27/2016	1051.13	7.54	1043.59
MW-24	8/30/2016	1051.13	8.4	1042.73
MW-24	12/20/2016	1051.13	6.51	1044.62
MW-24	4/19/2017	1051.13	6.45	1044.68
MW-24	5/11/2017	1051.13	5.74	1045.39
MW-24	8/23/2017	1051.13	8.13	1043

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-25	6/1/2000	1051.53	7.77	1043.76
MW-25	11/1/2000	1051.53	7.68	1043.85
MW-25	5/31/2001	1051.53	8.57	1042.96
MW-25	11/30/2001	1051.53	7.47	1044.06
MW-25	6/17/2002	1051.53	6.15	1045.38
MW-25	7/19/2002	1051.53	6.95	1044.58
MW-25	11/9/2002	1051.53	6.76	1044.77
MW-25	12/21/2002	1051.53	7.69	1043.84
MW-25	6/28/2003	1051.53	8.86	1042.67
MW-25	12/19/2003	1051.53	6.91	1044.62
MW-25	6/2/2004	1051.16	7.4	1043.76
MW-25	6/11/2004	1051.16	8.31	1042.85
MW-25	11/2/2004	1051.16	7.31	1043.85
MW-25	12/28/2004	1051.16	4.2	1046.96
MW-25	6/1/2005	1051.16	8.2	1042.96
MW-25	6/15/2005	1051.16	7.94	1043.22
MW-25	12/1/2005	1051.16	7.1	1044.06
MW-25	2/5/2006	1051.16	7.09	1044.07
MW-25	3/29/2006	1051.16	5.49	1045.67
MW-25	6/29/2006	1051.16	8.13	1043.03
MW-25	7/20/2006	1051.16	6.58	1044.58
MW-25	9/19/2006	1051.16	8.77	1042.39
MW-25	12/15/2006	1051.16	6.13	1045.03
MW-25	12/22/2006	1051.16	7.32	1043.84
MW-25	3/28/2007	1051.16	5.67	1045.49
MW-25	6/19/2007	1051.16	7.82	1043.34
MW-25	6/29/2007	1051.16	8.49	1042.67
MW-25	10/3/2007	1051.16	5.48	1045.68
MW-25	12/14/2007	1051.16	6.78	1044.38
MW-25	12/20/2007	1051.16	6.54	1044.62
MW-25	6/12/2008	1051.16	8.31	1042.85
MW-25	7/5/2008	1051.16	8.4	1042.76
MW-25	11/28/2008	1051.16	8.11	1043.05
MW-25	12/29/2008	1051.16	4.2	1046.96
MW-25	6/2/2009	1051.16	6.18	1044.98
MW-25	6/16/2009	1051.16	7.94	1043.22
MW-25	2/6/2010	1051.16	7.09	1044.07
MW-25	3/30/2010	1051.16	5.49	1045.67
MW-25	6/30/2010	1051.16	8.13	1043.03
MW-25	9/20/2010	1051.16	8.77	1042.39
MW-25	12/16/2010	1051.16	6.13	1045.03
MW-25	3/29/2011	1051.16	5.67	1045.49
MW-25	6/20/2011	1051.16	7.82	1043.34
MW-25	10/4/2011	1051.16	5.48	1045.68
MW-25	12/15/2011	1051.16	6.78	1044.38
MW-25	7/6/2012	1051.16	8.4	1042.76
MW-25	11/29/2012	1051.16	8.11	1043.05
MW-25	6/3/2013	1051.16	6.18	1044.98
MW-25	12/23/2013	1051.16	4.46	1046.7
MW-25	5/31/2014	1051.16	7.2	1043.96
MW-25	12/23/2014	1051.16	6.42	1044.74
MW-25	6/26/2015	1051.16	7.19	1043.97
MW-25	12/10/2015	1051.16	6.4	1044.76
MW-25	4/27/2016	1051.16	7.35	1043.81
MW-25	8/30/2016	1051.16	8.2	1042.96
MW-25	12/20/2016	1051.16	5.34	1045.82
MW-25	4/19/2017	1051.16	6.27	1044.89
MW-25	5/11/2017	1051.16	5.53	1045.63
MW-25	8/23/2017	1051.16	7.94	1043.22

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-26	6/1/2000	1051.38	7.63	1043.75
MW-26	11/1/2000	1051.38	7.53	1043.85
MW-26	5/31/2001	1051.38	8.42	1042.96
MW-26	11/30/2001	1051.38	7.3	1044.08
MW-26	6/17/2002	1051.38	5.93	1045.45
MW-26	7/19/2002	1051.38	6.78	1044.6
MW-26	11/9/2002	1051.38	6.61	1044.77
MW-26	12/21/2002	1051.38	7.51	1043.87
MW-26	6/28/2003	1051.38	8.71	1042.67
MW-26	12/19/2003	1051.38	6.79	1044.59
MW-26	6/2/2004	1051.04	7.29	1043.75
MW-26	6/11/2004	1051.04	8.18	1042.86
MW-26	11/2/2004	1051.04	7.19	1043.85
MW-26	12/28/2004	1051.04	4.19	1046.85
MW-26	6/1/2005	1051.04	8.08	1042.96
MW-26	6/15/2005	1051.04	7.82	1043.22
MW-26	12/1/2005	1051.04	6.96	1044.08
MW-26	2/5/2006	1051.04	6.96	1044.08
MW-26	3/29/2006	1051.04	5.26	1045.78
MW-26	6/29/2006	1051.04	8.02	1043.02
MW-26	7/20/2006	1051.04	6.44	1044.6
MW-26	9/19/2006	1051.04	8.64	1042.4
MW-26	12/15/2006	1051.04	6.01	1045.03
MW-26	12/22/2006	1051.04	7.17	1043.87
MW-26	3/28/2007	1051.04	5.54	1045.5
MW-26	6/19/2007	1051.04	7.69	1043.35
MW-26	6/29/2007	1051.04	8.37	1042.67
MW-26	10/3/2007	1051.04	5.3	1045.74
MW-26	12/14/2007	1051.04	6.65	1044.39
MW-26	12/20/2007	1051.04	6.45	1044.59
MW-26	6/12/2008	1051.04	8.18	1042.86
MW-26	7/5/2008	1051.04	8.29	1042.75
MW-26	11/28/2008	1051.04	7.99	1043.05
MW-26	12/29/2008	1051.04	4.19	1046.85
MW-26	6/2/2009	1051.04	6.03	1045.01
MW-26	6/16/2009	1051.04	7.82	1043.22
MW-26	2/6/2010	1051.04	6.96	1044.08
MW-26	3/30/2010	1051.04	5.26	1045.78
MW-26	6/30/2010	1051.04	8.02	1043.02
MW-26	9/20/2010	1051.04	8.64	1042.4
MW-26	12/16/2010	1051.04	6.01	1045.03
MW-26	3/29/2011	1051.04	5.54	1045.5
MW-26	6/20/2011	1051.04	7.69	1043.35
MW-26	10/4/2011	1051.04	5.3	1045.74
MW-26	12/15/2011	1051.04	6.65	1044.39
MW-26	7/6/2012	1051.04	8.29	1042.75
MW-26	11/29/2012	1051.04	7.99	1043.05
MW-26	6/3/2013	1051.04	6.03	1045.01
MW-26	12/23/2013	1051.04	4.35	1046.69
MW-26	5/31/2014	1051.04	7.15	1043.89
MW-26	12/23/2014	1051.04	6.34	1044.7
MW-26	6/26/2015	1051.04	7.07	1043.97
MW-26	12/10/2015	1051.04	6.28	1044.76
MW-26	4/27/2016	1051.04	7.23	1043.81
MW-26	8/30/2016	1051.04	8.01	1043.03
MW-26	12/20/2016	1051.04	5.13	1045.91
MW-26	4/19/2017	1051.04	6.04	1045
MW-26	5/11/2017	1051.04	5.37	1045.67
MW-26	8/23/2017	1051.04	7.8	1043.24

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-27	6/1/2000	1051.41	7.68	1043.73
MW-27	11/1/2000	1051.41	7.57	1043.84
MW-27	5/31/2001	1051.41	8.45	1042.96
MW-27	11/30/2001	1051.41	7.33	1044.08
MW-27	6/17/2002	1051.41	5.96	1045.45
MW-27	7/19/2002	1051.41	6.75	1044.66
MW-27	11/9/2002	1051.41	6.64	1044.77
MW-27	12/21/2002	1051.41	7.55	1043.86
MW-27	6/28/2003	1051.41	8.73	1042.68
MW-27	12/19/2003	1051.41	6.79	1044.62
MW-27	6/2/2004	1051.07	7.34	1043.73
MW-27	6/11/2004	1051.07	8.21	1042.86
MW-27	11/2/2004	1051.07	7.23	1043.84
MW-27	12/28/2004	1051.07	4.07	1047
MW-27	6/1/2005	1051.07	8.11	1042.96
MW-27	6/15/2005	1051.07	7.85	1043.22
MW-27	12/1/2005	1051.07	6.99	1044.08
MW-27	2/5/2006	1051.07	6.99	1044.08
MW-27	3/29/2006	1051.07	5.21	1045.86
MW-27	6/29/2006	1051.07	8.07	1043
MW-27	7/20/2006	1051.07	6.41	1044.66
MW-27	9/19/2006	1051.07	8.68	1042.39
MW-27	12/15/2006	1051.07	5.99	1045.08
MW-27	12/22/2006	1051.07	7.21	1043.86
MW-27	3/28/2007	1051.07	5.48	1045.59
MW-27	6/19/2007	1051.07	7.7	1043.37
MW-27	6/29/2007	1051.07	8.39	1042.68
MW-27	10/3/2007	1051.07	5.33	1045.74
MW-27	12/14/2007	1051.07	6.71	1044.36
MW-27	12/20/2007	1051.07	6.45	1044.62
MW-27	6/12/2008	1051.07	8.21	1042.86
MW-27	7/5/2008	1051.07	8.23	1042.84
MW-27	11/28/2008	1051.07	8.02	1043.05
MW-27	12/29/2008	1051.07	4.07	1047
MW-27	6/2/2009	1051.07	6.04	1045.03
MW-27	6/16/2009	1051.07	7.85	1043.22
MW-27	2/6/2010	1051.07	6.99	1044.08
MW-27	3/30/2010	1051.07	5.21	1045.86
MW-27	6/30/2010	1051.07	8.07	1043
MW-27	9/20/2010	1051.07	8.68	1042.39
MW-27	12/16/2010	1051.07	5.99	1045.08
MW-27	3/29/2011	1051.07	5.48	1045.59
MW-27	6/20/2011	1051.07	7.7	1043.37
MW-27	10/4/2011	1051.07	5.33	1045.74
MW-27	12/15/2011	1051.07	6.71	1044.36
MW-27	7/6/2012	1051.07	8.23	1042.84
MW-27	11/29/2012	1051.07	8.02	1043.05
MW-27	6/3/2013	1051.07	6.04	1045.03
MW-27	12/23/2013	1051.07	4.51	1046.56
MW-27	5/31/2014	1051.07	7.16	1043.91
MW-27	12/23/2014	1051.07	6.34	1044.73
MW-27	6/26/2015	1051.07	7.11	1043.96
MW-27	12/10/2015	1051.07	6.35	1044.72
MW-27	4/27/2016	1051.07	7.27	1043.8
MW-27	8/30/2016	1051.07	7.85	1043.22
MW-27	12/20/2016	1051.07	5.12	1045.95
MW-27	4/19/2017	1051.07	6.11	1044.96
MW-27	5/11/2017	1051.07	5.35	1045.72
MW-27	8/23/2017	1051.07	7.84	1043.23
MW-28	6/17/2002	1051.38	5.71	1045.67
MW-28	11/9/2002	1051.38	6.24	1045.14
MW-28	6/2/2004	1051.02	6.96	1044.06
MW-28	11/2/2004	1051.02	6.82	1044.2
MW-28	6/1/2005	1051.02	7.73	1043.29
MW-28	12/1/2005	1051.02	6.42	1044.6
MW-28	7/20/2006	1051.02	6.16	1044.86
MW-28	6/29/2007	1051.02	7.97	1043.05
MW-28	11/28/2008	1051.02	--	--

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-29	6/1/2000	1049.72	5.49	1044.23
MW-29	11/1/2000	1049.72	5.45	1044.27
MW-29	5/31/2001	1049.72	6.24	1043.48
MW-29	11/30/2001	1049.72	5.22	1044.5
MW-29	6/17/2002	1049.72	4.01	1045.71
MW-29	7/19/2002	1049.72	4.75	1044.97
MW-29	11/9/2002	1049.72	4.6	1045.12
MW-29	12/21/2002	1049.72	5.38	1044.34
MW-29	6/28/2003	1049.72	6.54	1043.18
MW-29	12/19/2003	1049.72	4.8	1044.92
MW-29	6/2/2004	1049.37	5.14	1044.23
MW-29	6/11/2004	1049.37	5.98	1043.39
MW-29	11/2/2004	1049.37	5.1	1044.27
MW-29	12/28/2004	1049.37	2.65	1046.72
MW-29	6/1/2005	1049.37	5.89	1043.48
MW-29	6/15/2005	1049.37	5.63	1043.74
MW-29	12/1/2005	1049.37	4.87	1044.5
MW-29	2/5/2006	1049.37	4.88	1044.49
MW-29	3/29/2006	1049.37	3.46	1045.91
MW-29	6/29/2006	1049.37	5.86	1043.51
MW-29	7/20/2006	1049.37	4.4	1044.97
MW-29	9/19/2006	1049.37	6.54	1042.83
MW-29	12/15/2006	1049.37	4.06	1045.31
MW-29	12/22/2006	1049.37	5.03	1044.34
MW-29	3/28/2007	1049.37	3.67	1045.7
MW-29	6/19/2007	1049.37	5.48	1043.89
MW-29	6/29/2007	1049.37	6.19	1043.18
MW-29	10/3/2007	1049.37	3.51	1045.86
MW-29	12/14/2007	1049.37	4.54	1044.83
MW-29	12/20/2007	1049.37	4.45	1044.92
MW-29	6/12/2008	1049.37	5.98	1043.39
MW-29	7/5/2008	1049.37	6.11	1043.26
MW-29	11/28/2008	1049.37	5.88	1043.49
MW-29	12/29/2008	1049.37	2.65	1046.72
MW-29	6/2/2009	1049.37	4.1	1045.27
MW-29	6/16/2009	1049.37	5.63	1043.74
MW-29	2/6/2010	1049.37	4.88	1044.49
MW-29	3/30/2010	1049.37	3.46	1045.91
MW-29	6/30/2010	1049.37	5.86	1043.51
MW-29	9/20/2010	1049.37	6.54	1042.83
MW-29	12/16/2010	1049.37	4.06	1045.31
MW-29	3/29/2011	1049.37	3.67	1045.7
MW-29	6/20/2011	1049.37	5.48	1043.89
MW-29	10/4/2011	1049.37	3.51	1045.86
MW-29	12/15/2011	1049.37	4.54	1044.83
MW-29	7/6/2012	1049.37	6.11	1043.26
MW-29	11/29/2012	1049.37	5.88	1043.49
MW-29	6/3/2013	1049.37	4.1	1045.27
MW-29	12/23/2013	1049.37	2.82	1046.55
MW-29	5/31/2014	1049.37	5.04	1044.33
MW-29	12/23/2014	1049.37	4.31	1045.06
MW-29	6/26/2015	1049.37	4.89	1044.48
MW-29	12/10/2015	1049.37	4.3	1045.07
MW-29	4/27/2016	1049.37	5.06	1044.31
MW-29	8/30/2016	1049.37	5.81	1043.56
MW-29	12/20/2016	1049.37	3.72	1045.65
MW-29	4/19/2017	1049.37	4.15	1045.22
MW-29	5/11/2017	1049.37	3.56	1045.81
MW-29	8/23/2017	1049.37	5.53	1043.84

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-30	6/1/2000	1050.25	6.09	1044.16
MW-30	11/1/2000	1050.25	6.03	1044.22
MW-30	5/31/2001	1050.25	6.85	1043.4
MW-30	11/30/2001	1050.25	5.81	1044.44
MW-30	6/17/2002	1050.25	4.59	1045.66
MW-30	7/19/2002	1050.25	5.31	1044.94
MW-30	11/9/2002	1050.25	5.18	1045.07
MW-30	12/21/2002	1050.25	5.98	1044.27
MW-30	6/28/2003	1050.25	7.14	1043.11
MW-30	12/19/2003	1050.25	5.35	1044.9
MW-30	6/2/2004	1049.9	5.74	1044.16
MW-30	6/11/2004	1049.9	6.6	1043.3
MW-30	11/2/2004	1049.9	5.68	1044.22
MW-30	12/28/2004	1049.9	3.01	1046.89
MW-30	6/1/2005	1049.9	6.5	1043.4
MW-30	6/15/2005	1049.9	6.24	1043.66
MW-30	12/1/2005	1049.9	5.46	1044.44
MW-30	2/5/2006	1049.9	5.43	1044.47
MW-30	3/29/2006	1049.9	3.99	1045.91
MW-30	6/29/2006	1049.9	6.45	1043.45
MW-30	7/20/2006	1049.9	4.96	1044.94
MW-30	9/19/2006	1049.9	7.12	1042.78
MW-30	12/15/2006	1049.9	4.58	1045.32
MW-30	12/22/2006	1049.9	5.63	1044.27
MW-30	3/28/2007	1049.9	4.18	1045.72
MW-30	6/19/2007	1049.9	6.09	1043.81
MW-30	6/29/2007	1049.9	6.79	1043.11
MW-30	10/3/2007	1049.9	4.04	1045.86
MW-30	12/14/2007	1049.9	5.14	1044.76
MW-30	12/20/2007	1049.9	5	1044.9
MW-30	6/12/2008	1049.9	6.6	1043.3
MW-30	7/5/2008	1049.9	6.7	1043.2
MW-30	11/28/2008	1049.9	6.45	1043.45
MW-30	12/29/2008	1049.9	3.01	1046.89
MW-30	6/2/2009	1049.9	4.63	1045.27
MW-30	6/16/2009	1049.9	6.24	1043.66
MW-30	2/6/2010	1049.9	5.43	1044.47
MW-30	3/30/2010	1049.9	3.99	1045.91
MW-30	6/30/2010	1049.9	6.45	1043.45
MW-30	9/20/2010	1049.9	7.12	1042.78
MW-30	12/16/2010	1049.9	4.58	1045.32
MW-30	3/29/2011	1049.9	4.18	1045.72
MW-30	6/20/2011	1049.9	6.09	1043.81
MW-30	10/4/2011	1049.9	4.04	1045.86
MW-30	12/15/2011	1049.9	5.14	1044.76
MW-30	7/6/2012	1049.9	6.7	1043.2
MW-30	11/29/2012	1049.9	6.45	1043.45
MW-30	6/3/2013	1049.9	4.63	1045.27
MW-30	12/23/2013	1049.9	3.22	1046.68
MW-30	5/31/2014	1049.9	5.62	1044.28
MW-30	12/23/2014	1049.9	4.48	1045.42
MW-30	6/26/2015	1049.9	5.48	1044.42
MW-30	12/10/2015	1049.9	4.64	1045.26
MW-30	4/27/2016	1049.9	5.64	1044.26
MW-30	8/30/2016	1049.9	6.43	1043.47
MW-30	12/20/2016	1049.9	4.22	1045.68
MW-30	4/19/2017	1049.9	4.7	1045.2
MW-30	5/11/2017	1049.9	4.05	1045.85
MW-30	8/23/2017	1049.9	6.15	1043.75

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-31	11/30/2001	1050.54	6.09	1044.45
MW-31	7/19/2002	1050.54	5.65	1044.89
MW-31	12/21/2002	1050.54	6.26	1044.28
MW-31	6/28/2003	1050.54	7.42	1043.12
MW-31	12/19/2003	1050.54	5.68	1044.86
MW-31	6/11/2004	1050.54	7.2	1043.34
MW-31	12/28/2004	1050.54	3.92	1046.62
MW-31	6/15/2005	1050.54	6.85	1043.69
MW-31	12/1/2005	1050.54	6.09	1044.45
MW-31	2/5/2006	1050.54	6.11	1044.43
MW-31	3/29/2006	1050.54	4.68	1045.86
MW-31	6/29/2006	1050.54	7.09	1043.45
MW-31	7/20/2006	1050.54	5.65	1044.89
MW-31	9/19/2006	1050.54	7.75	1042.79
MW-31	12/15/2006	1050.54	5.29	1045.25
MW-31	12/22/2006	1050.54	6.26	1044.28
MW-31	3/28/2007	1050.54	4.9	1045.64
MW-31	6/19/2007	1050.54	6.71	1043.83
MW-31	6/29/2007	1050.54	7.42	1043.12
MW-31	10/3/2007	1050.54	4.72	1045.82
MW-31	12/14/2007	1050.54	5.79	1044.75
MW-31	12/20/2007	1050.54	5.68	1044.86
MW-31	6/12/2008	1050.54	7.2	1043.34
MW-31	7/5/2008	1050.54	7.35	1043.19
MW-31	11/28/2008	1050.54	7.11	1043.43
MW-31	12/29/2008	1050.54	3.92	1046.62
MW-31	6/2/2009	1050.54	5.33	1045.21
MW-31	6/16/2009	1050.54	6.85	1043.69
MW-31	2/6/2010	1050.54	6.11	1044.43
MW-31	3/30/2010	1050.54	4.68	1045.86
MW-31	6/30/2010	1050.54	7.09	1043.45
MW-31	9/20/2010	1050.54	7.75	1042.79
MW-31	12/16/2010	1050.54	5.29	1045.25
MW-31	3/29/2011	1050.54	4.9	1045.64
MW-31	6/20/2011	1050.54	6.71	1043.83
MW-31	10/4/2011	1050.54	4.72	1045.82
MW-31	12/15/2011	1050.54	5.79	1044.75
MW-31	7/6/2012	1050.54	7.35	1043.19
MW-31	11/29/2012	1050.54	7.11	1043.43
MW-31	6/3/2013	1050.54	5.33	1045.21
MW-31	12/23/2013	1050.54	4.1	1046.44
MW-31	5/31/2014	1050.54	6.21	1044.33
MW-31	12/23/2014	1050.54	5.55	1044.99
MW-31	6/26/2015	1050.54	6.1	1044.44
MW-31	12/10/2015	1050.54	5.48	1045.06
MW-31	4/27/2016	1050.54	6.3	1044.24
MW-31	8/30/2016	1050.54	7.04	1043.5
MW-31	12/20/2016	1050.54	4.59	1045.95
MW-31	4/19/2017	1050.54	5.38	1045.16
MW-31	5/11/2017	1050.54	4.79	1045.75
MW-31	8/23/2017	1050.54	6.73	1043.81
MW-31	4/17/2018	1050.54	4.61	1045.93
MW-31	4/17/2019	1050.54	4.91	1045.63
MW-31	4/28/2020	1050.54	5.16	1045.38
MW-31	7/20/2021	1050.54	5.88	1044.66
MW-31	10/18/2022	1050.54	7.46	1043.08
MW-31	3/28/2024	1050.54	4.55	1045.99
MW-31	8/27/2025	1050.54	6.95	1043.59

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-32	11/30/2001	1048.92	4.5	1044.42
MW-32	7/19/2002	1048.92	4.05	1044.87
MW-32	12/21/2002	1048.92	4.68	1044.24
MW-32	6/28/2003	1048.92	5.82	1043.1
MW-32	12/19/2003	1048.92	4.03	1044.89
MW-32	6/11/2004	1048.92	5.9	1043.02
MW-32	12/28/2004	1048.92	2.31	1046.61
MW-32	6/15/2005	1048.92	5.28	1043.64
MW-32	12/1/2005	1048.92	4.5	1044.42
MW-32	2/5/2006	1048.92	4.55	1044.37
MW-32	3/29/2006	1048.92	3	1045.92
MW-32	6/29/2006	1048.92	5.51	1043.41
MW-32	7/20/2006	1048.92	4.05	1044.87
MW-32	9/19/2006	1048.92	6.17	1042.75
MW-32	12/15/2006	1048.92	3.69	1045.23
MW-32	12/22/2006	1048.92	4.68	1044.24
MW-32	3/28/2007	1048.92	3.3	1045.62
MW-32	6/19/2007	1048.92	5.11	1043.81
MW-32	6/29/2007	1048.92	5.82	1043.1
MW-32	10/3/2007	1048.92	3.1	1045.82
MW-32	12/14/2007	1048.92	4.19	1044.73
MW-32	12/20/2007	1048.92	4.03	1044.89
MW-32	6/12/2008	1048.92	5.9	1043.02
MW-32	7/5/2008	1048.92	5.73	1043.19
MW-32	11/28/2008	1048.92	5.51	1043.41
MW-32	12/29/2008	1048.92	2.31	1046.61
MW-32	6/2/2009	1048.92	3.74	1045.18
MW-32	6/16/2009	1048.92	5.28	1043.64
MW-32	2/6/2010	1048.92	4.55	1044.37
MW-32	3/30/2010	1048.92	3	1045.92
MW-32	6/30/2010	1048.92	5.51	1043.41
MW-32	9/20/2010	1048.92	6.17	1042.75
MW-32	12/16/2010	1048.92	3.69	1045.23
MW-32	3/29/2011	1048.92	3.3	1045.62
MW-32	6/20/2011	1048.92	5.11	1043.81
MW-32	10/4/2011	1048.92	3.1	1045.82
MW-32	12/15/2011	1048.92	4.19	1044.73
MW-32	7/6/2012	1048.92	5.73	1043.19
MW-32	11/29/2012	1048.92	5.51	1043.41
MW-32	6/3/2013	1048.92	3.74	1045.18
MW-32	12/23/2013	1048.92	2.5	1046.42
MW-32	5/31/2014	1048.92	4.78	1044.14
MW-32	12/23/2014	1048.92	4.04	1044.88
MW-32	6/26/2015	1048.92	4.63	1044.29
MW-32	12/10/2015	1048.92	4	1044.92
MW-32	4/27/2016	1048.92	4.8	1044.12
MW-32	8/30/2016	1048.92	5.34	1043.58
MW-32	12/20/2016	1048.92	3.73	1045.19
MW-32	4/19/2017	1048.92	3.86	1045.06
MW-32	5/11/2017	1048.92	3.27	1045.65
MW-32	8/23/2017	1048.92	5.26	1043.66
MW-32	4/17/2018	1048.92	3.08	1045.84
MW-32	4/28/2020	1048.92	3.68	1045.24
MW-32	7/20/2021	1048.92	4.36	1044.56
MW-32	10/18/2022	1048.92	5.99	1042.93
MW-32	3/28/2024	1048.92	3.10	1045.82
MW-32	8/27/2025	1048.92	5.47	1043.45

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-33	11/30/2001	1049.13	4.86	1044.27
MW-33	7/19/2002	1049.13	4.47	1044.66
MW-33	12/21/2002	1049.13	5.14	1043.99
MW-33	6/28/2003	1049.13	6.3	1042.83
MW-33	12/19/2003	1049.13	4.5	1044.63
MW-33	6/11/2004	1049.13	6.1	1043.03
MW-33	12/28/2004	1049.13	2.55	1046.58
MW-33	6/15/2005	1049.13	5.75	1043.38
MW-33	12/1/2005	1049.13	4.86	1044.27
MW-33	2/5/2006	1049.13	4.96	1044.17
MW-33	3/29/2006	1049.13	3.32	1045.81
MW-33	6/29/2006	1049.13	6	1043.13
MW-33	7/20/2006	1049.13	4.47	1044.66
MW-33	9/19/2006	1049.13	6.65	1042.48
MW-33	12/15/2006	1049.13	4.09	1045.04
MW-33	12/22/2006	1049.13	5.14	1043.99
MW-33	3/28/2007	1049.13	3.67	1045.46
MW-33	6/19/2007	1049.13	5.6	1043.53
MW-33	6/29/2007	1049.13	6.3	1042.83
MW-33	10/3/2007	1049.13	3.48	1045.65
MW-33	12/14/2007	1049.13	4.63	1044.5
MW-33	12/20/2007	1049.13	4.5	1044.63
MW-33	6/12/2008	1049.13	6.1	1043.03
MW-33	7/5/2008	1049.13	6.2	1042.93
MW-33	11/28/2008	1049.13	5.96	1043.17
MW-33	12/29/2008	1049.13	2.55	1046.58
MW-33	6/2/2009	1049.13	4.1	1045.03
MW-33	6/16/2009	1049.13	5.75	1043.38
MW-33	2/6/2010	1049.13	4.96	1044.17
MW-33	3/30/2010	1049.13	3.32	1045.81
MW-33	6/30/2010	1049.13	6	1043.13
MW-33	9/20/2010	1049.13	6.65	1042.48
MW-33	12/16/2010	1049.13	4.09	1045.04
MW-33	3/29/2011	1049.13	3.67	1045.46
MW-33	6/20/2011	1049.13	5.6	1043.53
MW-33	10/4/2011	1049.13	3.48	1045.65
MW-33	12/15/2011	1049.13	4.63	1044.5
MW-33	7/6/2012	1049.13	6.2	1042.93
MW-33	11/29/2012	1049.13	5.96	1043.17
MW-33	6/3/2013	1049.13	4.1	1045.03
MW-33	12/23/2013	1049.13	2.73	1046.4
MW-33	5/31/2014	1049.13	5.15	1043.98
MW-33	12/23/2014	1049.13	4.5	1044.63
MW-33	6/26/2015	1049.13	5.08	1044.05
MW-33	12/10/2015	1049.13	4.65	1044.48
MW-33	4/27/2016	1049.13	5.25	1043.88
MW-33	8/30/2016	1049.13	6.03	1043.1
MW-33	12/20/2016	1049.13	3.45	1045.68
MW-33	4/19/2017	1049.13	4.27	1044.86
MW-33	5/11/2017	1049.13	3.65	1045.48
MW-33	8/23/2017	1049.13	5.74	1043.39

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-34	11/30/2001	1048.38	4.18	1044.2
MW-34	7/19/2002	1048.38	3.76	1044.62
MW-34	12/21/2002	1048.38	4.48	1043.9
MW-34	6/28/2003	1048.38	5.68	1042.7
MW-34	12/19/2003	1048.38	3.84	1044.54
MW-34	6/11/2004	1048.38	5.54	1042.84
MW-34	12/28/2004	1048.38	1.58	1046.8
MW-34	6/15/2005	1048.38	5.21	1043.17
MW-34	12/1/2005	1048.38	4.18	1044.2
MW-34	2/5/2006	1048.38	4.38	1044
MW-34	3/29/2006	1048.38	2.78	1045.6
MW-34	6/29/2006	1048.38	5.41	1042.97
MW-34	7/20/2006	1048.38	3.76	1044.62
MW-34	9/19/2006	1048.38	6.04	1042.34
MW-34	12/15/2006	1048.38	3.44	1044.94
MW-34	12/22/2006	1048.38	4.48	1043.9
MW-34	3/28/2007	1048.38	3.02	1045.36
MW-34	6/19/2007	1048.38	4.98	1043.4
MW-34	6/29/2007	1048.38	5.68	1042.7
MW-34	10/3/2007	1048.38	2.85	1045.53
MW-34	12/14/2007	1048.38	4.02	1044.36
MW-34	12/20/2007	1048.38	3.84	1044.54
MW-34	6/12/2008	1048.38	5.54	1042.84
MW-34	7/5/2008	1048.38	5.65	1042.73
MW-34	11/28/2008	1048.38	5.36	1043.02
MW-34	12/29/2008	1048.38	1.58	1046.8
MW-34	6/2/2009	1048.38	3.7	1044.68
MW-34	6/16/2009	1048.38	5.21	1043.17
MW-34	2/6/2010	1048.38	4.38	1044
MW-34	3/30/2010	1048.38	2.78	1045.6
MW-34	6/30/2010	1048.38	5.41	1042.97
MW-34	9/20/2010	1048.38	6.04	1042.34
MW-34	12/16/2010	1048.38	3.44	1044.94
MW-34	3/29/2011	1048.38	3.02	1045.36
MW-34	6/20/2011	1048.38	4.98	1043.4
MW-34	10/4/2011	1048.38	2.85	1045.53
MW-34	12/15/2011	1048.38	4.02	1044.36
MW-34	7/6/2012	1048.38	5.65	1042.73
MW-34	11/29/2012	1048.38	5.36	1043.02
MW-34	6/3/2013	1048.38	3.7	1044.68
MW-34	12/23/2013	1048.38	1.91	1046.47
MW-34	5/31/2014	1048.38	4.52	1043.86
MW-34	12/23/2014	1048.38	3.89	1044.49
MW-34	6/26/2015	1048.38	4.51	1043.87
MW-34	12/10/2015	1048.38	4.02	1044.36
MW-34	4/27/2016	1048.38	4.69	1043.69
MW-34	8/30/2016	1048.38	5.55	1042.83
MW-34	12/20/2016	1048.38	2.81	1045.57
MW-34	4/19/2017	1048.38	3.72	1044.66
MW-34	5/11/2017	1048.38	2.98	1045.4
MW-34	8/23/2017	1048.38	5.27	1043.11
MW-34	4/17/2018	1048.38	2.82	1045.56
MW-34	4/28/2020	1048.38	3.61	1044.77
MW-34	7/20/2021	1048.38	4.27	1044.11
MW-34	10/18/2022	1048.38	5.89	1042.49
MW-34	3/28/2024	1048.38	2.94	1045.44
MW-34	8/27/2025	1048.38	5.40	1042.98

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-35	11/30/2001	1049.85	5.69	1044.16
MW-35	7/19/2002	1049.85	5.18	1044.67
MW-35	12/21/2002	1049.85	5.9	1043.95
MW-35	6/28/2003	1049.85	7.08	1042.77
MW-35	12/19/2003	1049.85	5.22	1044.63
MW-35	6/11/2004	1049.85	6.88	1042.97
MW-35	12/28/2004	1049.85	2.86	1046.99
MW-35	6/15/2005	1049.85	6.54	1043.31
MW-35	12/1/2005	1049.85	5.69	1044.16
MW-35	2/5/2006	1049.85	5.68	1044.17
MW-35	3/29/2006	1049.85	4.09	1045.76
MW-35	6/29/2006	1049.85	6.71	1043.14
MW-35	7/20/2006	1049.85	5.18	1044.67
MW-35	9/19/2006	1049.85	7.36	1042.49
MW-35	12/15/2006	1049.85	4.74	1045.11
MW-35	12/22/2006	1049.85	5.9	1043.95
MW-35	3/28/2007	1049.85	4.33	1045.52
MW-35	6/19/2007	1049.85	6.42	1043.43
MW-35	6/29/2007	1049.85	7.08	1042.77
MW-35	10/3/2007	1049.85	4.14	1045.71
MW-35	12/14/2007	1049.85	5.35	1044.5
MW-35	12/20/2007	1049.85	5.22	1044.63
MW-35	6/12/2008	1049.85	6.88	1042.97
MW-35	7/5/2008	1049.85	6.98	1042.87
MW-35	11/28/2008	1049.85	6.69	1043.16
MW-35	12/29/2008	1049.85	2.86	1046.99
MW-35	6/2/2009	1049.85	5	1044.85
MW-35	6/16/2009	1049.85	6.54	1043.31
MW-35	2/6/2010	1049.85	5.68	1044.17
MW-35	3/30/2010	1049.85	4.09	1045.76
MW-35	6/30/2010	1049.85	6.71	1043.14
MW-35	9/20/2010	1049.85	7.36	1042.49
MW-35	12/16/2010	1049.85	4.74	1045.11
MW-35	3/29/2011	1049.85	4.33	1045.52
MW-35	6/20/2011	1049.85	6.42	1043.43
MW-35	10/4/2011	1049.85	4.14	1045.71
MW-35	12/15/2011	1049.85	5.35	1044.5
MW-35	7/6/2012	1049.85	6.98	1042.87
MW-35	11/29/2012	1049.85	6.69	1043.16
MW-35	6/3/2013	1049.85	5	1044.85
MW-35	12/23/2013	1049.85	3.17	1046.68
MW-35	5/31/2014	1049.85	5.78	1044.07
MW-35	12/23/2014	1049.85	5.13	1044.72
MW-35	6/26/2015	1049.85	5.76	1044.09
MW-35	12/10/2015	1049.85	5.1	1044.75
MW-35	4/27/2016	1049.85	5.9	1043.95
MW-35	8/30/2016	1049.85	6.77	1043.08
MW-35	12/20/2016	1049.85	4.01	1045.84
MW-35	4/19/2017	1049.85	4.9	1044.95
MW-35	5/11/2017	1049.85	4.14	1045.71
MW-35	8/23/2017	1049.85	6.47	1043.38

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-36	11/30/2001	1048.06	3.97	1044.09
MW-36	7/19/2002	1048.06	3.55	1044.51
MW-36	6/28/2003	1048.06	5.53	1042.53
MW-36	12/19/2003	1048.06	3.66	1044.4
MW-36	6/11/2004	1048.06	5.46	1042.6
MW-36	12/28/2004	1048.06	1.38	1046.68
MW-36	6/15/2005	1048.06	5.32	1042.74
MW-36	12/1/2005	1048.06	3.97	1044.09
MW-36	2/5/2006	1048.06	4.48	1043.58
MW-36	3/29/2006	1048.06	2.86	1045.2
MW-36	6/29/2006	1048.06	5.51	1042.55
MW-36	7/20/2006	1048.06	3.55	1044.51
MW-36	9/19/2006	1048.06	6.15	1041.91
MW-36	12/15/2006	1048.06	3.52	1044.54
MW-36	3/28/2007	1048.06	3.12	1044.94
MW-36	6/19/2007	1048.06	5.23	1042.83
MW-36	6/29/2007	1048.06	5.53	1042.53
MW-36	10/3/2007	1048.06	2.92	1045.14
MW-36	12/14/2007	1048.06	4.15	1043.91
MW-36	12/20/2007	1048.06	3.66	1044.4
MW-36	6/12/2008	1048.06	5.46	1042.6
MW-36	7/5/2008	1048.06	5.85	1042.21
MW-36	11/28/2008	1048.06	5.55	1042.51
MW-36	12/29/2008	1048.06	1.38	1046.68
MW-36	6/2/2009	1048.06	3.89	1044.17
MW-36	6/16/2009	1048.06	5.32	1042.74
MW-36	2/6/2010	1048.06	4.48	1043.58
MW-36	3/30/2010	1048.06	2.86	1045.2
MW-36	6/30/2010	1048.06	5.51	1042.55
MW-36	9/20/2010	1048.06	6.15	1041.91
MW-36	12/16/2010	1048.06	3.52	1044.54
MW-36	3/29/2011	1048.06	3.12	1044.94
MW-36	6/20/2011	1048.06	5.23	1042.83
MW-36	10/4/2011	1048.06	2.92	1045.14
MW-36	12/15/2011	1048.06	4.15	1043.91
MW-36	7/6/2012	1048.06	5.85	1042.21
MW-36	11/29/2012	1048.06	5.55	1042.51
MW-36	6/3/2013	1048.06	3.89	1044.17
MW-36	12/23/2013	1048.06	2.02	1046.04
MW-36	5/31/2014	1048.06	4.96	1043.1
MW-36	12/23/2014	1048.06	4.28	1043.78
MW-36	6/26/2015	1048.06	4.98	1043.08
MW-36	12/10/2015	1048.06	4.31	1043.75
MW-36	4/27/2016	1048.06	5.18	1042.88
MW-36	8/30/2016	1048.06	6.05	1042.01
MW-36	12/20/2016	1048.06	3.22	1044.84
MW-36	4/19/2017	1048.06	4.16	1043.9
MW-36	5/11/2017	1048.06	3.28	1044.78
MW-36	8/23/2017	1048.06	5.83	1042.23

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-37	11/30/2001	1049.5	5.71	1043.79
MW-37	7/19/2002	1049.5	5.14	1044.36
MW-37	12/21/2002	1049.5	5.93	1043.57
MW-37	6/28/2003	1049.5	7.15	1042.35
MW-37	12/19/2003	1049.5	5.12	1044.38
MW-37	6/11/2004	1049.5	6.96	1042.54
MW-37	12/28/2004	1049.5	2.91	1046.59
MW-37	6/15/2005	1049.5	6.58	1042.92
MW-37	12/1/2005	1049.5	5.71	1043.79
MW-37	2/5/2006	1049.5	5.62	1043.88
MW-37	3/29/2006	1049.5	3.47	1046.03
MW-37	6/29/2006	1049.5	6.8	1042.7
MW-37	7/20/2006	1049.5	5.14	1044.36
MW-37	9/19/2006	1049.5	7.38	1042.12
MW-37	12/15/2006	1049.5	4.72	1044.78
MW-37	12/22/2006	1049.5	5.93	1043.57
MW-37	3/28/2007	1049.5	4.23	1045.27
MW-37	6/19/2007	1049.5	6.45	1043.05
MW-37	6/29/2007	1049.5	7.15	1042.35
MW-37	12/14/2007	1049.5	5.36	1044.14
MW-37	12/20/2007	1049.5	5.12	1044.38
MW-37	6/12/2008	1049.5	6.96	1042.54
MW-37	7/5/2008	1049.5	7.07	1042.43
MW-37	11/28/2008	1049.5	6.73	1042.77
MW-37	12/29/2008	1049.5	2.91	1046.59
MW-37	6/2/2009	1049.5	4.75	1044.75
MW-37	6/16/2009	1049.5	6.58	1042.92
MW-37	2/6/2010	1049.5	5.62	1043.88
MW-37	3/30/2010	1049.5	3.47	1046.03
MW-37	6/30/2010	1049.5	6.8	1042.7
MW-37	9/20/2010	1049.5	7.38	1042.12
MW-37	12/16/2010	1049.5	4.72	1044.78
MW-37	3/29/2011	1049.5	4.23	1045.27
MW-37	6/20/2011	1049.5	6.45	1043.05
MW-37	12/15/2011	1049.5	5.36	1044.14
MW-37	7/6/2012	1049.5	7.07	1042.43
MW-37	11/29/2012	1049.5	6.73	1042.77
MW-37	6/3/2013	1049.5	4.75	1044.75
MW-37	12/23/2013	1049.5	3.1	1046.4
MW-37	5/31/2014	1049.5	5.96	1043.54
MW-37	12/23/2014	1049.5	5.21	1044.29
MW-37	6/26/2015	1049.5	5.9	1043.6
MW-37	12/10/2015	1049.5	5.2	1044.3
MW-37	4/27/2016	1049.5	6.12	1043.38
MW-37	8/30/2016	1049.5	6.96	1042.54
MW-37	12/20/2016	1049.5	4.74	1044.76
MW-37	4/19/2017	1049.5	4.93	1044.57
MW-37	5/11/2017	1049.5	4.2	1045.3
MW-37	8/23/2017	1049.5	6.7	1042.8

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
MW-38	11/30/2001	1049.61	5.73	1043.88
MW-38	7/19/2002	1049.61	5.17	1044.44
MW-38	12/21/2002	1049.61	5.93	1043.68
MW-38	6/28/2003	1049.61	7.12	1042.49
MW-38	12/19/2003	1049.61	5.19	1044.42
MW-38	6/11/2004	1049.61	6.94	1042.67
MW-38	12/28/2004	1049.61	2.76	1046.85
MW-38	6/15/2005	1049.61	6.57	1043.04
MW-38	12/1/2005	1049.61	5.73	1043.88
MW-38	2/5/2006	1049.61	5.69	1043.92
MW-38	3/29/2006	1049.61	4.06	1045.55
MW-38	6/29/2006	1049.61	6.74	1042.87
MW-38	7/20/2006	1049.61	5.17	1044.44
MW-38	9/19/2006	1049.61	7.36	1042.25
MW-38	12/15/2006	1049.61	4.72	1044.89
MW-38	12/22/2006	1049.61	5.93	1043.68
MW-38	3/28/2007	1049.61	4.27	1045.34
MW-38	6/19/2007	1049.61	6.46	1043.15
MW-38	6/29/2007	1049.61	7.12	1042.49
MW-38	10/3/2007	1049.61	4.1	1045.51
MW-38	12/14/2007	1049.61	5.38	1044.23
MW-38	12/20/2007	1049.61	5.19	1044.42
MW-38	6/12/2008	1049.61	6.94	1042.67
MW-38	7/5/2008	1049.61	7.04	1042.57
MW-38	11/28/2008	1049.61	6.71	1042.9
MW-38	12/29/2008	1049.61	2.76	1046.85
MW-38	6/2/2009	1049.61	4.97	1044.64
MW-38	6/16/2009	1049.61	6.57	1043.04
MW-38	2/6/2010	1049.61	5.69	1043.92
MW-38	3/30/2010	1049.61	4.06	1045.55
MW-38	6/30/2010	1049.61	6.74	1042.87
MW-38	9/20/2010	1049.61	7.36	1042.25
MW-38	12/16/2010	1049.61	4.72	1044.89
MW-38	3/29/2011	1049.61	4.27	1045.34
MW-38	6/20/2011	1049.61	6.46	1043.15
MW-38	10/4/2011	1049.61	4.1	1045.51
MW-38	12/15/2011	1049.61	5.38	1044.23
MW-38	7/6/2012	1049.61	7.04	1042.57
MW-38	11/29/2012	1049.61	6.71	1042.9
MW-38	6/3/2013	1049.61	4.97	1044.64
MW-38	12/23/2013	1049.61	3.07	1046.54
MW-38	5/31/2014	1049.61	5.82	1043.79
MW-38	12/23/2014	1049.61	5.14	1044.47
MW-38	6/26/2015	1049.61	5.84	1043.77
MW-38	12/10/2015	1049.61	5.12	1044.49
MW-38	4/27/2016	1049.61	6.5	1043.11
MW-38	8/30/2016	1049.61	6.85	1042.76
MW-38	12/20/2016	1049.61	4.43	1045.18
MW-38	4/19/2017	1049.61	4.85	1044.76
MW-38	5/11/2017	1049.61	4.09	1045.52
MW-38	8/23/2017	1049.61	6.52	1043.09
MW-39	12/1/2005	1049.31	5.36	1043.95
MW-39	7/20/2006	1049.31	4.97	1044.34
MW-39	12/22/2006	1049.31	5.71	1043.6
MW-39	6/29/2007	1049.31	6.96	1042.35
MW-39	12/20/2007	1049.31	5.08	1044.23
MW-39	6/12/2008	1049.31	6.85	1042.46
MW-39	11/28/2008	1049.31	6.81	1042.5
MW-39	12/29/2008	1049.31	2.67	1046.64
MW-39	6/16/2009	1049.31	6.65	1042.66
MW-39	2/6/2010	1049.31	5.86	1043.45
MW-39	3/30/2010	1049.31	4.27	1045.04
MW-39	6/30/2010	1049.31	6.86	1042.45
MW-39	9/20/2010	1049.31	7.48	1041.83
MW-39	12/16/2010	1049.31	4.9	1044.41
MW-39	3/29/2011	1049.31	4.54	1044.77
MW-39	6/20/2011	1049.31	6.65	1042.66

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
P-3	6/1/2000	1050.72	6.63	1044.09
P-3	11/1/2000	1050.72	6.56	1044.16
P-3	5/31/2001	1050.72	7.42	1043.3
P-3	11/30/2001	1050.72	6.35	1044.37
P-3	6/17/2002	1050.72	5.14	1045.58
P-3	7/19/2002	1050.72	5.84	1044.88
P-3	11/9/2002	1050.72	5.69	1045.03
P-3	12/21/2002	1050.72	6.53	1044.19
P-3	6/28/2003	1050.72	7.71	1043.01
P-3	12/19/2003	1050.72	5.89	1044.83
P-3	6/2/2004	1050.25	6.16	1044.09
P-3	6/11/2004	1050.25	7.04	1043.21
P-3	11/2/2004	1050.25	6.09	1044.16
P-3	12/28/2004	1050.25	3.33	1046.92
P-3	6/1/2005	1050.25	6.95	1043.3
P-3	6/15/2005	1050.25	6.68	1043.57
P-3	12/1/2005	1050.25	5.88	1044.37
P-3	2/5/2006	1050.25	5.84	1044.41
P-3	3/29/2006	1050.25	4.4	1045.85
P-3	6/29/2006	1050.25	6.85	1043.4
P-3	7/20/2006	1050.25	5.37	1044.88
P-3	9/19/2006	1050.25	7.53	1042.72
P-3	12/15/2006	1050.25	4.95	1045.3
P-3	12/22/2006	1050.25	6.06	1044.19
P-3	3/28/2007	1050.25	4.56	1045.69
P-3	6/19/2007	1050.25	6.51	1043.74
P-3	6/29/2007	1050.25	7.24	1043.01
P-3	10/3/2007	1050.25	4.39	1045.86
P-3	12/14/2007	1050.25	5.55	1044.7
P-3	12/20/2007	1050.25	5.42	1044.83
P-3	6/12/2008	1050.25	7.04	1043.21
P-3	7/5/2008	1050.25	7.13	1043.12
P-3	11/28/2008	1050.25	6.88	1043.37
P-3	12/29/2008	1050.25	3.33	1046.92
P-3	6/2/2009	1050.25	5.05	1045.2
P-3	6/16/2009	1050.25	6.68	1043.57
P-3	2/6/2010	1050.25	5.84	1044.41
P-3	3/30/2010	1050.25	4.4	1045.85
P-3	6/30/2010	1050.25	6.85	1043.4
P-3	9/20/2010	1050.25	7.53	1042.72
P-3	12/16/2010	1050.25	4.95	1045.3
P-3	3/29/2011	1050.25	4.56	1045.69
P-3	6/20/2011	1050.25	6.51	1043.74
P-3	10/4/2011	1050.25	4.39	1045.86
P-3	12/15/2011	1050.25	5.55	1044.7
P-3	7/6/2012	1050.25	7.13	1043.12
P-3	11/29/2012	1050.25	6.88	1043.37
P-3	6/3/2013	1050.25	5.05	1045.2
P-3	12/23/2013	1050.25	3.56	1046.69
P-3	5/31/2014	1050.25	5.88	1044.37
P-3	12/23/2014	1050.25	5.25	1045
P-3	6/26/2015	1050.25	5.9	1044.35
P-3	12/10/2015	1050.25	5.21	1045.04
P-3	4/27/2016	1050.25	6.08	1044.17
P-3	8/30/2016	1050.25	6.91	1043.34
P-3	12/20/2016	1050.25	4.29	1045.96
P-3	4/19/2017	1050.25	5.11	1045.14
P-3	5/11/2017	1050.25	4.45	1045.8
P-3	8/23/2017	1050.25	6.6	1043.65

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
P-8	6/1/2000	1051.73	7.64	1044.09
P-8	11/1/2000	1051.73	7.54	1044.19
P-8	5/31/2001	1051.73	8.42	1043.31
P-8	11/30/2001	1051.73	7.34	1044.39
P-8	6/17/2002	1051.73	6.15	1045.58
P-8	7/19/2002	1051.73	6.85	1044.88
P-8	11/9/2002	1051.73	6.71	1045.02
P-8	12/21/2002	1051.73	7.52	1044.21
P-8	6/28/2003	1051.73	8.7	1043.03
P-8	12/19/2003	1051.73	6.89	1044.84
P-8	6/2/2004	1051.32	7.23	1044.09
P-8	6/11/2004	1051.32	8.1	1043.22
P-8	11/2/2004	1051.32	7.13	1044.19
P-8	12/28/2004	1051.32	4.37	1046.95
P-8	6/1/2005	1051.32	8.01	1043.31
P-8	6/15/2005	1051.32	7.75	1043.57
P-8	12/1/2005	1051.32	6.93	1044.39
P-8	2/5/2006	1051.32	6.89	1044.43
P-8	3/29/2006	1051.32	5.44	1045.88
P-8	6/29/2006	1051.32	7.93	1043.39
P-8	7/20/2006	1051.32	6.44	1044.88
P-8	9/19/2006	1051.32	8.61	1042.71
P-8	12/15/2006	1051.32	5.99	1045.33
P-8	12/22/2006	1051.32	7.11	1044.21
P-8	3/28/2007	1051.32	5.62	1045.7
P-8	6/19/2007	1051.32	7.58	1043.74
P-8	6/29/2007	1051.32	8.29	1043.03
P-8	10/3/2007	1051.32	5.45	1045.87
P-8	12/14/2007	1051.32	6.63	1044.69
P-8	12/20/2007	1051.32	6.48	1044.84
P-8	6/12/2008	1051.32	8.1	1043.22
P-8	7/5/2008	1051.32	8.2	1043.12
P-8	11/28/2008	1051.32	7.95	1043.37
P-8	12/29/2008	1051.32	4.37	1046.95
P-8	6/2/2009	1051.32	6.09	1045.23
P-8	6/16/2009	1051.32	7.75	1043.57
P-8	2/6/2010	1051.32	6.89	1044.43
P-8	3/30/2010	1051.32	5.44	1045.88
P-8	6/30/2010	1051.32	7.93	1043.39
P-8	9/20/2010	1051.32	8.61	1042.71
P-8	12/16/2010	1051.32	5.99	1045.33
P-8	3/29/2011	1051.32	5.62	1045.7
P-8	6/20/2011	1051.32	7.58	1043.74
P-8	10/4/2011	1051.32	5.45	1045.87
P-8	12/15/2011	1051.32	6.63	1044.69
P-8	7/6/2012	1051.32	8.2	1043.12
P-8	11/29/2012	1051.32	7.95	1043.37
P-8	6/3/2013	1051.32	6.09	1045.23
P-8	12/23/2013	1051.32	4.64	1046.68
P-8	5/31/2014	1051.32	6.73	1044.59
P-8	12/23/2014	1051.32	5.42	1045.9
P-8	3/19/2015	1051.32	6.75	1044.57
P-8	6/26/2015	1051.32	6.93	1044.39
P-8	12/10/2015	1051.32	6.05	1045.27
P-8	4/27/2016	1051.32	7.1	1044.22
P-8	8/30/2016	1051.32	7.98	1043.34
P-8	12/20/2016	1051.32	5.31	1046.01
P-8	4/19/2017	1051.32	6.16	1045.16
P-8	5/11/2017	1051.32	5.48	1045.84
P-8	8/23/2017	1051.32	7.57	1043.75
P-8	12/7/2017	1051.32	7.32	1044
P-8	4/17/2018	1051.32	5.33	1045.99
P-8	4/17/2019	1051.32	5.87	1045.45
P-8	4/28/2020	1051.32	5.95	1045.37
P-8	7/20/2021	1051.32	6.7	1044.62
P-8	10/18/2022	1051.32	8.34	1042.98
P-8	3/28/2024	1051.32	5.29	1046.03
P-8	8/27/2025	1051.32	7.69	1043.63

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
P-10	6/1/2000	1049.98	5.76	1044.22
P-10	11/1/2000	1049.98	5.71	1044.27
P-10	5/31/2001	1049.98	6.51	1043.47
P-10	11/30/2001	1049.98	5.48	1044.5
P-10	6/17/2002	1049.98	4.27	1045.71
P-10	7/19/2002	1049.98	5.02	1044.96
P-10	11/9/2002	1049.98	4.86	1045.12
P-10	12/21/2002	1049.98	5.66	1044.32
P-10	6/28/2003	1049.98	6.83	1043.15
P-10	12/19/2003	1049.98	5.08	1044.9
P-10	6/2/2004	1049.64	5.42	1044.22
P-10	6/11/2004	1049.64	6.28	1043.36
P-10	11/2/2004	1049.64	5.37	1044.27
P-10	12/28/2004	1049.64	2.93	1046.71
P-10	6/1/2005	1049.64	6.17	1043.47
P-10	6/15/2005	1049.64	5.93	1043.71
P-10	12/1/2005	1049.64	5.14	1044.5
P-10	2/5/2006	1049.64	5.18	1044.46
P-10	3/29/2006	1049.64	3.76	1045.88
P-10	6/29/2006	1049.64	6.16	1043.48
P-10	7/20/2006	1049.64	4.68	1044.96
P-10	9/19/2006	1049.64	6.84	1042.8
P-10	12/15/2006	1049.64	4.35	1045.29
P-10	12/22/2006	1049.64	5.32	1044.32
P-10	3/28/2007	1049.64	3.97	1045.67
P-10	6/19/2007	1049.64	5.77	1043.87
P-10	6/29/2007	1049.64	6.49	1043.15
P-10	10/3/2007	1049.64	3.81	1045.83
P-10	12/14/2007	1049.64	4.84	1044.8
P-10	12/20/2007	1049.64	4.74	1044.9
P-10	6/12/2008	1049.64	6.28	1043.36
P-10	7/5/2008	1049.64	6.4	1043.24
P-10	11/28/2008	1049.64	6.18	1043.46
P-10	12/29/2008	1049.64	2.93	1046.71
P-10	6/2/2009	1049.64	4.4	1045.24
P-10	6/16/2009	1049.64	5.93	1043.71
P-10	2/6/2010	1049.64	5.18	1044.46
P-10	3/30/2010	1049.64	3.76	1045.88
P-10	6/30/2010	1049.64	6.16	1043.48
P-10	9/20/2010	1049.64	6.84	1042.8
P-10	12/16/2010	1049.64	4.35	1045.29
P-10	3/29/2011	1049.64	3.97	1045.67
P-10	6/20/2011	1049.64	5.77	1043.87
P-10	10/4/2011	1049.64	3.81	1045.83
P-10	12/15/2011	1049.64	4.84	1044.8
P-10	7/6/2012	1049.64	6.4	1043.24
P-10	11/29/2012	1049.64	6.18	1043.46
P-10	6/3/2013	1049.64	4.4	1045.24
P-10	12/23/2013	1049.64	3.12	1046.52
P-10	5/31/2014	1049.64	5.38	1044.26
P-10	12/23/2014	1049.64	4.62	1045.02
P-10	6/26/2015	1049.64	5.2	1044.44
P-10	12/10/2015	1049.64	4.51	1045.13
P-10	4/27/2016	1049.64	5.39	1044.25
P-10	8/30/2016	1049.64	6.15	1043.49
P-10	12/20/2016	1049.64	4.12	1045.52
P-10	4/19/2017	1049.64	4.48	1045.16
P-10	5/11/2017	1049.64	3.88	1045.76
P-10	8/23/2017	1049.64	5.85	1043.79

Location	Date	Reference Elevation (Feet AMSL)	Water Level Depth (Feet)	Water Level Elevation (Feet AMSL)
P-11	6/1/2000	1049.92	6.17	1043.75
P-11	11/1/2000	1049.92	6.07	1043.85
P-11	5/31/2001	1049.92	6.96	1042.96
P-11	11/30/2001	1049.92	5.85	1044.07
P-11	6/17/2002	1049.92	4.55	1045.37
P-11	7/19/2002	1049.92	5.31	1044.61
P-11	11/9/2002	1049.92	5.15	1044.77
P-11	12/21/2002	1049.92	6.07	1043.85
P-11	6/28/2003	1049.92	7.26	1042.66
P-11	12/19/2003	1049.92	5.35	1044.57
P-11	6/2/2004	1049.6	5.85	1043.75
P-11	6/11/2004	1049.6	6.75	1042.85
P-11	11/2/2004	1049.6	5.75	1043.85
P-11	12/28/2004	1049.6	2.73	1046.87
P-11	6/1/2005	1049.6	6.64	1042.96
P-11	6/15/2005	1049.6	6.38	1043.22
P-11	12/1/2005	1049.6	5.53	1044.07
P-11	2/5/2006	1049.6	5.52	1044.08
P-11	3/29/2006	1049.6	3.9	1045.7
P-11	6/29/2006	1049.6	6.58	1043.02
P-11	7/20/2006	1049.6	4.99	1044.61
P-11	9/19/2006	1049.6	7.2	1042.4
P-11	12/15/2006	1049.6	4.58	1045.02
P-11	12/22/2006	1049.6	5.75	1043.85
P-11	3/28/2007	1049.6	4.13	1045.47
P-11	6/19/2007	1049.6	6.62	1042.98
P-11	6/29/2007	1049.6	6.94	1042.66
P-11	10/3/2007	1049.6	3.94	1045.66
P-11	12/14/2007	1049.6	5.21	1044.39
P-11	12/20/2007	1049.6	5.03	1044.57
P-11	6/12/2008	1049.6	6.75	1042.85
P-11	7/5/2008	1049.6	6.85	1042.75
P-11	11/28/2008	1049.6	6.56	1043.04
P-11	12/29/2008	1049.6	2.73	1046.87
P-11	6/2/2009	1049.6	4.62	1044.98
P-11	6/16/2009	1049.6	6.38	1043.22
P-11	2/6/2010	1049.6	5.52	1044.08
P-11	3/30/2010	1049.6	3.9	1045.7
P-11	6/30/2010	1049.6	6.58	1043.02
P-11	9/20/2010	1049.6	7.2	1042.4
P-11	12/16/2010	1049.6	4.58	1045.02
P-11	3/29/2011	1049.6	4.13	1045.47
P-11	6/20/2011	1049.6	6.62	1042.98
P-11	10/4/2011	1049.6	3.94	1045.66
P-11	12/15/2011	1049.6	5.21	1044.39
P-11	7/6/2012	1049.6	6.85	1042.75
P-11	11/29/2012	1049.6	6.56	1043.04
P-11	6/3/2013	1049.6	4.62	1044.98
P-11	12/23/2013	1049.6	2.98	1046.62
P-11	5/31/2014	1049.6	5.72	1043.88
P-11	12/23/2014	1049.6	4.9	1044.7
P-11	6/26/2015	1049.6	5.63	1043.97
P-11	12/10/2015	1049.6	4.78	1044.82
P-11	4/27/2016	1049.6	5.79	1043.81
P-11	8/30/2016	1049.6	6.67	1042.93
P-11	12/20/2016	1049.6	4.12	1045.48
P-11	4/19/2017	1049.6	4.71	1044.89
P-11	5/11/2017	1049.6	3.96	1045.64
P-11	8/23/2017	1049.6	6.36	1043.24

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-2	MW-2	6/1/2000		--	--	--	--	1 U	--	--	2.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	60 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	11/1/2000		--	--	--	--	1 U	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	5/31/2001		--	--	--	--	1 U	--	--	3.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	11/30/2001		--	--	--	--	1 U	--	--	1.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	7/19/2002		--	--	--	--	1 U	--	--	2.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6 J	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	12/21/2002		--	--	--	--	1 U	--	--	3 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9 J	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	6/28/2003		--	--	--	--	1 U	--	--	5.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	26	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	12/19/2003		--	--	--	--	1 U	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	1 U
MW-2	MW-2	6/2/2004		--	--	--	--	1 U	--	--	2.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	60 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	6/10/2004		--	--	--	--	1 U	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	11/2/2004		--	--	--	--	1 U	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	6/1/2005		--	--	--	--	1 U	--	--	3.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	12/1/2005		--	--	--	--	1 U	--	--	1.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	7/20/2006		--	--	--	--	1 U	--	--	2.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6 J	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	12/22/2006		--	--	--	--	1 U	--	--	3 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9 J	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	6/29/2007		--	--	--	--	1 U	--	--	5.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	26	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	12/20/2007		--	--	--	--	1 U	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	1 U
MW-2	MW-2	6/11/2008		--	--	--	--	1 U	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2~DUP	12/29/2008	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	6/16/2009		--	--	--	--	1 U	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5 J	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2~DUP	6/16/2009	Duplicate	--	--	--	--	1 U	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5 J	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	1/7/2010		--	--	--	--	1 UJ	--	--	1.2 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	1 UJ	--	--	3 U	--	--	--	--	1 U	1 U
MW-2	MW-2	7/1/2010		--	--	--	--	1 U	--	--	2.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.7	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	6/20/2011		--	--	--	--	1 U	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.5	1 U	--	--	1 UR	--	--	--	--	1 U	1 U
MW-2	MW-2	12/15/2011		--	--	--	--	1 U	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.8	1 U	--	--	1 UJ	--	--	--	--	1 U	1 U
MW-2	MW-2	7/6/2012		--	--	--	--	1 U	--	--	3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2~DUP	7/6/2012	Duplicate	--	--	--	--	1 U	--	--	3.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-2	MW-2	11/29/2012		--	--	--	--	1 U	--	--	2.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-2	MW-2	6/4/2013		--	--	--	--	1 U	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.9 J	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-2	MW-2	12/23/2013		--	--	--	--	1 U	--	--	1.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-2	MW-2	5/27/2014		--	--	--	--	1 U	--	--	0.67 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-2	MW-2	12/23/2014		--	--	--	--	0.6 J	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-2	MW-2	6/25/2015		--	--	--	--	1 U	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 UJ	--	--	--	--	2 UJ	2 U
MW-2	MW-2	12/10/2015		--	--	--	--	1.4	--	--	2.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-2	MW-2	8/31/2016		--	--	--	--	0.79 J	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 UJ	--	2 UJ

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-2	MW-2	6/1/2000		3.9	--	1 U	--	--	1 U	0.24 J	--	--	0.76 J	1 U	1 U	1 U	--	--	1 U	1 U	1.6	--	2.8	--	--	1 U	3 U
MW-2	MW-2	11/1/2000		3.6	--	1 U	--	--	1 U	1 U	--	--	0.4 J	9.8	1 U	1 U	--	--	1 U	1 U	1.9	--	0.58 J	--	--	1 U	3 U
MW-2	MW-2	5/31/2001		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	11	1 U	1 U	--	--	1 U	1 U	1 U	--	0.6 J	--	--	0.6 J	3 U
MW-2	MW-2	11/30/2001		3.2	--	1 U	--	--	1 U	1 U	--	--	1 U	3.2	1 U	1 U	--	--	1 U	1 U	1 U	--	1.5	--	--	1 U	3 U
MW-2	MW-2	7/19/2002		2.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1.8	1 U	1 U	--	--	1 U	1 U	1.3	--	1.2	--	--	1 U	3 U
MW-2	MW-2	12/21/2002		6.8 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.8 J	--	0.95 J	--	--	1 U	3 U
MW-2	MW-2	6/28/2003		3.1	--	1 U	--	--	1 U	1 U	--	--	1 U	0.57 J	1 U	1 U	--	--	1	1 U	1.9	--	1 U	--	--	0.72 J	1 U
MW-2	MW-2	12/19/2003		2.4	--	1 U	--	--	1 U	1 U	--	--	1 U	5.7	1 U	1 U	--	--	1 U	1 U	1 U	--	2.5	--	--	1 U	3 U
MW-2	MW-2	6/2/2004		3.9	--	1 U	--	--	1 U	0.24 J	--	--	0.76 J	1 U	1 U	1 U	--	--	1 U	1 U	1.6	--	2.8	--	--	1 U	3 U
MW-2	MW-2	6/10/2004		2.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	2.1	--	1 U	--	--	1 U	3 U
MW-2	MW-2	11/2/2004		3.6	--	1 U	--	--	1 U	1 U	--	--	0.4 J	9.8	1 U	1 U	--	--	1 U	1 U	1.9	--	0.58 J	--	--	1 U	3 U
MW-2	MW-2	6/1/2005		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	11	1 U	1 U	--	--	1 U	1 U	1 U	--	0.6 J	--	--	0.6 J	3 U
MW-2	MW-2	12/1/2005		3.2	--	1 U	--	--	U	1 U	--	--	1 U	3.2	1 U	1 U	--	--	1 U	1 U	1 U	--	1.5	--	--	1 U	3 U
MW-2	MW-2	7/20/2006		2.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1.8	1 U	1 U	--	--	1 U	1 U	1.3	--	1.2	--	--	1 U	3 U
MW-2	MW-2	12/22/2006		6.8 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.8 J	--	0.95 J	--	--	1 U	3 U
MW-2	MW-2	6/29/2007		3.1	--	1 U	--	--	1 U	1 U	--	--	1 U	0.57 J	1 U	1 U	--	--	1	1 U	1.9	--	1 U	--	--	0.72 J	1 U
MW-2	MW-2	12/20/2007		2.4	--	1 U	--	--	1 U	1 U	--	--	1 U	5.7	1 U	1 U	--	--	1 U	1 U	1 U	--	2.5	--	--	1 U	3 U
MW-2	MW-2	6/11/2008		2.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.1	--	1 U	--	--	1 U	3 U
MW-2	MW-2	12/29/2008		0.81 J	--	1 U	--	--	1 U	1 U	--	--	1 U	2.1	1 U	1 U	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-2	MW-2~DUP	12/29/2008	Duplicate	0.88 J	--	1 U	--	--	1 U	1 U	--	--	1 U	2.1	1 U	1 U	--	--	1 U	1 U	1 U	--	3.2	--	--	1 U	3 U
MW-2	MW-2	6/16/2009		3.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.58 J	--	8.5	--	--	1 U	2 U
MW-2	MW-2~DUP	6/16/2009	Duplicate	3.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.59 J	--	8.9	--	--	1 U	2 U
MW-2	MW-2	1/7/2010		1.9 J	--	10 U	--	--	1 UJ	1 UJ	--	--	10 U	1 U	1 UJ	2 U	--	--	1 UJ	1 UJ	1 UJ	--	6.9 J	--	--	1 U	3 UJ
MW-2	MW-2	7/1/2010		1.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	7.1	--	3.8	--	--	1 U	3 U
MW-2	MW-2	12/17/2010		2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	4.4	--	--	1 U	3 U
MW-2	MW-2	6/20/2011		3.1	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	5.4	--	--	1 U	3 U
MW-2	MW-2	12/15/2011		3.4	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	6.8	--	--	1 U	3 U
MW-2	MW-2	7/6/2012		2.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1	--	2.1	--	--	1 U	3 U
MW-2	MW-2~DUP	7/6/2012	Duplicate	2.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.2	--	1.7	--	--	1 U	3 U
MW-2	MW-2	11/29/2012		2	--	5 U	--	--	1 U	5 U	--	--	5 U	2.4	2 U	5 U	--	--	1 U	1 U	1 U	--	6.3	--	--	1 U	1 U
MW-2	MW-2	6/4/2013		1.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	8.6	--	--	1 U	1 U
MW-2	MW-2	12/23/2013		2.7	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	5.7	--	--	1 U	1 U
MW-2	MW-2	5/27/2014		2.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	5.6	--	--	1 U	1 U
MW-2	MW-2	12/23/2014		2.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	6.8	--	--	1 U	1 U
MW-2	MW-2	6/25/2015		2.1 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 UJ	2 U	--	--	--	1 U	1 U	1 U	--	7.3	--	--	1 UJ	1 U
MW-2	MW-2	12/10/2015		1.6	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	7.2	--	--	1 UJ	1 U
MW-2	MW-2	8/31/2016		2.7	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	11.1	--	--	1 UJ	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-8	MW-8	6/1/2000		--	--	--	--	1 U	--	--	0.42 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.8 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	11/1/2000		--	--	--	--	1 U	--	--	0.52 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.44 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	5/31/2001		--	--	--	--	1 U	--	--	0.7 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	2.2	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1.8	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8(DUP)	11/30/2001	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1.6	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	7/19/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/21/2002		--	--	--	--	1 U	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	6/28/2003		--	--	--	--	1 U	--	--	1.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	2.0	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/19/2003		--	--	--	--	1 U	--	--	0.79 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-8	MW-8(DUP)	12/19/2003	Duplicate	--	--	--	--	1 U	--	--	0.8 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-8	MW-8	5/27/2004		--	--	--	--	1 U	--	--	0.85 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-8	MW-8	6/2/2004		--	--	--	--	1 U	--	--	0.42 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.8 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	6/11/2004		--	--	--	--	1 U	--	--	0.84 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6 J	5.2	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	11/2/2004		--	--	--	--	1 U	--	--	0.52 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.44 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	6/1/2005		--	--	--	--	1 U	--	--	0.7 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	2.2	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1.8	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8~DUP	12/1/2005	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1.6	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	7/20/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/22/2006		--	--	--	--	1 U	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	6/29/2007		--	--	--	--	1 U	--	--	1.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	2	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/20/2007		--	--	--	--	1 U	--	--	0.79 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-8	MW-8~DUP	12/20/2007	Duplicate	--	--	--	--	1 U	--	--	0.8 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-8	MW-8	5/1/2008		54	1.3	0.05	1500	1.0 U	--	--	1.0 U	1.0 U	--	1.0 U	--	--	1.0 U	--	--	--	--	--	--	5.0 U	--	--	5.0 U	1.5	--	--	--	--	--	1.0 U	--	1.0 U	--	--
MW-8	MW-8	6/12/2008		--	--	--	--	1 U	--	--	0.84 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6 J	5.2	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/29/2008		--	--	--	--	0.8 J	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	6/16/2009		--	--	--	--	1 U	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8~DUP	6/16/2009	Duplicate	--	--	--	--	1 U	--	--	3.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	1/7/2010		--	--	--	--	1 U	--	--	1.1 UJ	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 UJ	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.16	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	6/20/2011		--	--	--	--	1 U	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.2	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-8	MW-8~DUP	6/20/2011	Duplicate	--	--	--	--	1 U	--	--	1.2 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.8 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-8	MW-8	12/15/2011		--	--	--	--	1 U	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.8	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-8	MW-8	7/6/2012		--	--	--	--	1 U	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-8	MW-8	11/29/2012		--	--	--	--	2.4	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-8	MW-8	6/3/2013		--	--	--	--	1 U	--	--	1.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-8	MW-8	12/23/2013		--	--	--	--	1 U	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-8	MW-8~DUP	12/23/2013	Duplicate	--	--	--	--	1 U	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-8	MW-8~DUP	5/27/2014		--	--	--	--	1 U	--	--	0.79 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-8	MW-8	12/23/2014		--	--	--	--	1 U	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-8	MW-8	6/25/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 UJ	--	--	--	--	2 UJ	--	2 U
MW-8	MW-8	12/10/2015		--	--	--	--	1 U	--	--	2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	1.3 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-8	MW-8	6/1/2000		0.84 J	--	0.24 J	--	--	1 U	1 U	--	--	1 U	5.2	1 U	1 U	--	--	1 U	1 U	1 U	--	1.8	--	--	1 U	3 U
MW-8	MW-8	11/1/2000		0.8 J	--	1 U	--	--	1 U	1 U	--	--	1 U	2.1	1 U	1 U	--	--	1 U	1 U	1 U	--	2.6	--	--	1 U	3 U
MW-8	MW-8	5/31/2001		1.2	--	0.3 J	--	--	1 U	0.3 J	--	--	1 U	3	1 U	2.6	--	--	1 U	1 U	1 U	--	1.0	--	--	0.6 J	0.8 J
MW-8	MW-8	11/30/2001		0.92 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1.8	1 U	0.53 J	--	--	1 U	1 U	1 U	--	1.9	--	--	1 U	3 U
MW-8	MW-8(DUP)	11/30/2001	Duplicate	0.78 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1.7	1 U	0.52 J	--	--	1 U	1 U	1 U	--	1.8	--	--	1 U	3 U
MW-8	MW-8	7/19/2002		1.7	--	1 U	--	--	1 U	1 U	--	--	1 U	1.3	1 U	1 U	--	--	1 U	1 U	1 U	--	1.6	--	--	1 U	3 U
MW-8	MW-8	12/21/2002		1.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.73 J	--	--	1 U	3 U
MW-8	MW-8	6/28/2003		2.2	--	1 U	--	--	1 U	1 U	--	--	1 U	1	1 U	1 U	--	--	1 U	1 U	1 U	--	0.51 J	--	--	1 U	3 U
MW-8	MW-8	12/19/2003		0.66 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	0.8 U	--	--	1 U	1 U	1 U	--	0.9 J	--	--	1 U	3 U
MW-8	MW-8(DUP)	12/19/2003	Duplicate	0.69 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.84 J	--	--	1 U	3 U
MW-8	MW-8	5/27/2004		3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.84 J	1 U
MW-8	MW-8	6/2/2004		0.84 J	--	0.24 J	--	--	1 U	1 U	--	--	1 U	5.2	1 U	1 U	--	--	1 U	1 U	1 U	--	1.8	--	--	1 U	3 U
MW-8	MW-8	6/11/2004		1.1	--	1.3	--	--	1 U	1.2	--	--	0.72 J	1 U	1 U	3.2 J	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-8	MW-8	11/2/2004		0.8 J	--	1 U	--	--	1 U	1 U	--	--	1 U	2.1	1 U	1 U	--	--	1 U	1 U	1 U	--	2.6	--	--	1 U	3 U
MW-8	MW-8	6/1/2005		1.2	--	0.3 J	--	--	1 U	0.3 J	--	--	1 U	3	1 U	2.6	--	--	1 U	1 U	1 U	--	1	--	--	0.6 J	0.8 J
MW-8	MW-8	12/1/2005		0.92 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1.8	1 U	0.53 J	--	--	1 U	1 U	1 U	--	1.9	--	--	1 U	3 U
MW-8	MW-8~DUP	12/1/2005	Duplicate	0.78 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1.7	1 U	0.52 J	--	--	1 U	1 U	1 U	--	1.8	--	--	1 U	3 U
MW-8	MW-8	7/20/2006		1.7	--	1 U	--	--	1 U	1 U	--	--	1 U	1.3	1 U	1 U	--	--	1 U	1 U	1 U	--	1.6	--	--	1 U	3 U
MW-8	MW-8	12/22/2006		1.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.73 J	--	--	1 U	3 U
MW-8	MW-8	6/29/2007		2.2	--	1 U	--	--	1 U	1 U	--	--	1 U	1	1 U	1 U	--	--	1 U	1 U	1 U	--	0.51 J	--	--	1 U	3 U
MW-8	MW-8	12/20/2007		0.66 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	0.8 U	--	--	1 U	1 U	1 U	--	0.9 J	--	--	1 U	3 U
MW-8	MW-8~DUP	12/20/2007	Duplicate	0.69 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.84 J	--	--	1 U	3 U
MW-8	MW-8	5/1/2008		0.6 J	--	1.0 U	--	--	1.0 U	1.0 U	--	--	1.0 U	4.7	1.0 U	4.1	--	--	1.0 U	1.0 U	1.0 U	--	1.3	--	--	1.0 U	3.0 U
MW-8	MW-8	6/12/2008		1.1	--	1.3	--	--	1 U	1.2	--	--	0.72 J	1 U	1 U	3.2	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-8	MW-8	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-8	MW-8	6/16/2009		4.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2	--	--	0.85 J	2 U
MW-8	MW-8~DUP	6/16/2009	Duplicate	4.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2	--	--	0.57 J	2 U
MW-8	MW-8	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 UJ	1 U	1 UJ	--	1 UJ	--	--	1 U	3 U
MW-8	MW-8	7/1/2010		1.4	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	3.8	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-8	MW-8	12/17/2010		1.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-8	MW-8	6/20/2011		3	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1.3	--	--	1 U	3 U
MW-8	MW-8~DUP	6/20/2011	Duplicate	3.4 J	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1.1 J	--	--	1 U	3 U
MW-8	MW-8	12/15/2011		1.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-8	MW-8	7/6/2012		3.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-8	MW-8	11/29/2012		6.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.1	--	--	1 U	1 U
MW-8	MW-8	6/3/2013		1.3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.2	--	--	1 U	1 U
MW-8	MW-8	12/23/2013		1.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.49 J	--	--	1 U	1 U
MW-8	MW-8~DUP	12/23/2013	Duplicate	1.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-8	MW-8~DUP	5/27/2014		3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.9 J	1 U
MW-8	MW-8	12/23/2014		1.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	0.93 J	--	--	1 U	1 U
MW-8	MW-8	6/25/2015		2.2 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 UJ	2 U	--	--	--	1 U	1 U	1 U	--	1 U	--	--	1 UJ	1 U
MW-8	MW-8	12/10/2015		1.6	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	0.88 J	--	--	1 UJ	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-14	MW-14	7/20/2002		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
MW-14	MW-14	7/21/2006		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-14	MW-14	7/20/2002		--	--	--	--	--	1 U	--	--	--	--	7.1	--	1 U	--	--	--	1 U	--	--	--	--	--	--	3 U
MW-14	MW-14	7/21/2006		--	--	--	--	--	1 U	--	--	--	--	7.1	--	1 U	--	--	--	1 U	--	--	--	--	--	--	3 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-17	MW-17	6/1/2000		--	--	--	--	0.58 J	--	--	0.45 J	0.96 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.73 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	11/1/2000		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
MW-17	MW-17	5/31/2001		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
MW-17	MW-17	11/30/2001		--	--	--	--	4 U	--	--	4 U	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-17	MW-17	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	680	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-17	MW-17	7/19/2002		--	--	--	--	0.62 J	--	--	0.58 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	6/28/2003		--	--	--	--	1 U	--	--	3.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1.1	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	12/19/2003		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2 J	2 U	--	--	2 UJ	--	--	--	--	2 U	--	2 U
MW-17	MW-17	6/2/2004		--	--	--	--	0.58 J	--	--	0.45 J	0.96 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.73 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	6/11/2004		--	--	--	--	20 UJ	--	--	20 U	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
MW-17	MW-17	11/2/2004		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
MW-17	MW-17	6/1/2005		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
MW-17	MW-17	12/1/2005		--	--	--	--	4 U	--	--	4 U	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-17	MW-17	7/20/2006		--	--	--	--	0.62 J	--	--	0.58 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	6/29/2007		--	--	--	--	1 U	--	--	3.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1.1	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	12/20/2007		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2 J	2 U	--	--	2 UJ	--	--	--	--	2 U	--	2 U
MW-17	MW-17	6/12/2008		--	--	--	--	20 U	--	--	20 U	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
MW-17	MW-17	12/29/2008		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	2 U	--	--	2 U	--	--	--	--	2 UJ	--	2 U
MW-17	MW-17	6/16/2009		--	--	--	--	1 U	--	--	1 U	0.87 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.5	1 U	--	--	3 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.8	1 U	--	--	7.6	--	--	--	--	1 U	--	1 U
MW-17	MW-17	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	31	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	43.4	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	12/16/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.3	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-17	MW-17	6/1/2000		510 D	--	1 U	--	--	1 U	1 U	--	--	1 U	8.4	1 U	1 U	--	--	1 U	1 U	3.6	--	26	--	--	120 D	3 U
MW-17	MW-17	11/1/2000		420	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 U	--	--	20 U	20 U	20 U	--	26	--	--	98	60 U
MW-17	MW-17	5/31/2001		1700 D	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 U	--	--	20 U	20 U	7.2 J	--	19 J	--	--	380	60 U
MW-17	MW-17	11/30/2001		400	--	4 U	--	--	4 U	4 U	--	--	4 U	4 U	4 U	4 U	--	--	4 U	4 U	4 U	--	15	--	--	61	12 U
MW-17	MW-17	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	20	--	--	250	U
MW-17	MW-17	7/19/2002		140 D	--	1 U	--	--	1 U	1 U	--	--	1 U	2.2	1 U	1 U	--	--	1 U	1 U	1.1	--	18	--	--	36	3 U
MW-17	MW-17	12/21/2002		110	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1.6 J	1 U	--	--	1 U	1 U	1 U	--	6	--	--	6.4	3 U
MW-17	MW-17	6/28/2003		4500 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	11	--	9.8	--	--	620 D	3 U
MW-17	MW-17	12/19/2003		140	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	1.7 U	2 U	--	--	2 U	2 U	2 U	--	12	--	--	2 U	6 U
MW-17	MW-17	6/2/2004		510 D	--	1 U	--	--	1 U	1 U	--	--	1 U	8.4	1 U	1 U	--	--	1 U	1 U	3.6	--	26	--	--	120 D	3 U
MW-17	MW-17	6/11/2004		1700	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 U	--	--	20 U	20 U	20 U	--	12 J	--	--	160	60 U
MW-17	MW-17	11/2/2004		420	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 U	--	--	20 U	20 U	20 U	--	26	--	--	98	60 U
MW-17	MW-17	6/1/2005		1700 D	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 U	--	--	20 U	20 U	7.2 J	--	19 J	--	--	380	60 U
MW-17	MW-17	12/1/2005		400	--	4 U	--	--	4 U	4 U	--	--	4 U	4 U	4 U	4 U	--	--	4 U	4 U	4 U	--	15	--	--	61	12 U
MW-17	MW-17	7/20/2006		140 D	--	1 U	--	--	1 U	1 U	--	--	1 U	2.2	1 U	1 U	--	--	1 U	1 U	1.1	--	18	--	--	36	3 U
MW-17	MW-17	12/22/2006		110	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1.6 J	1 U	--	--	1 U	1 U	1 U	--	6	--	--	6.4	3 U
MW-17	MW-17	6/29/2007		4500 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	11	--	9.8	--	--	620 D	3 U
MW-17	MW-17	12/20/2007		140	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	1.7 U	2 U	--	--	2 U	2 U	2 U	--	12	--	--	2 U	6 U
MW-17	MW-17	6/12/2008		1700	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 U	--	--	20 U	20 U	20 U	--	12 J	--	--	160	60 U
MW-17	MW-17	12/29/2008		160	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	2 U	--	17	--	--	19	6 U
MW-17	MW-17	6/16/2009		1000 D	--	1.1	--	--	1 U	1 U	--	--	5	1 U	1 U	0.62 J	--	--	1 U	1 U	3.8	--	9.8	--	--	120 D	2 U
MW-17	MW-17	1/7/2010		216	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	2.9	--	--	44.4	3 U
MW-17	MW-17	3/31/2010		86.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1	--	4.9	--	--	21.2	3 U
MW-17	MW-17	7/1/2010		4.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	7.4	--	1 U	--	--	9	3 U
MW-17	MW-17	9/21/2010		2.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	2.1	3 U
MW-17	MW-17	12/16/2010		17.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1.9	1 U	--	1.7	--	--	3.3	3 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-17	MW-17	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.3	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.6 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-17	MW-17	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.5	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-17	MW-17	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17~DUP	11/29/2012	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	9/30/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17~DUP	9/30/2014	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	12/22/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	3/19/2015		--	--	--	--	1 U	--	--	1 U	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 UJ	--	--	--	--	2 U	--	2 UJ
MW-17	MW-17	6/25/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17~DUP	6/25/2015	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	4/27/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-17	MW-17	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.5 UJ	0.5 U	--	--	2 U	--	--	--	--	2 UJ	--	2 UJ
MW-17	MW-17	12/20/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	8/23/2017		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17 ~DUP	8/23/2017	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	4/17/2018		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.0 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	4/17/2019		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.0 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17 ~DUP	4/17/2019	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	4/28/2020		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17 ~DUP	4/28/2020	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-17	MW-17	7/20/2021		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-17	MW-17~DUP	7/20/2021	Duplicate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-17A	MW-17A	3/28/2024		--	--	--	--	2.5 U	0.50 U	1.5 U	2.5 U	0.50 U	2.5 U	2.5 U	2.5 U	2.0 U	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 U	5.0 U	5.0 U	5.0 U	2.5 J	0.50 U	0.50 U	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U
MW-17B	MW-17B	3/28/2024		--	--	--	--	2.5 U	0.50 U	1.5 U	2.5 U	0.50 U	2.5 U	2.5 U	2.5 U	2.0 U	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 U	5.0 U	5.0 U	5.0 U	3.2 J	0.50 U	0.50 U	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U
MW-17	WG-12595756-082725-IM-002	8/27/2025		--	--	--	--	2.5 U	0.50 U	1.5 UJ	2.5 UJ	0.50 U	2.5 UJ	2.5 UJ	2.5 U	2.0 UJ	2.5 U	0.50 U	--	1.0 UJ	2.5 U	2.5 U	250 UJ	5.6	5.0 U	5.0 UJ	15	0.50 U	0.50 UJ	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 UJ	2.5 U	2.5 UJ	2.5 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-17	MW-17	3/28/2011		6.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-17	MW-17	6/20/2011		3.7 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	2.3 J	1 U	--	1 U	--	--	1 U	3 U
MW-17	MW-17	10/3/2011		6.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1.1	--	--	1.1	3 U
MW-17	MW-17	12/15/2011		21	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1.5	--	--	3.1	3 U
MW-17	MW-17	7/6/2012		2.9	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-17	MW-17	11/29/2012		1.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1	1 U
MW-17	MW-17~DUP	11/29/2012	Duplicate	2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.98 J	1 U
MW-17	MW-17	6/3/2013		2.3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.83 J	--	--	1	1 U
MW-17	MW-17	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-17	MW-17	5/27/2014		9.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.9	--	--	2	1 U
MW-17	MW-17	9/30/2014		2.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	3.5	0.86 J	--	1 U	--	--	0.63 J	1 U
MW-17	MW-17~DUP	9/30/2014	Duplicate	2.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	3.4	0.84 J	--	1 U	--	--	0.68 J	1 U
MW-17	MW-17	12/22/2014		306	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1.7	--	35.4	--	--	16.9	1 U
MW-17	MW-17	3/19/2015		5.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	0.67 J	--	0.38 J	--	--	3.2	1 U
MW-17	MW-17	6/25/2015		56.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	5.4 J	--	2	--	--	17.7	1 U
MW-17	MW-17~DUP	6/25/2015	Duplicate	61.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	6.7 J	--	2.3	--	--	20.6	1 U
MW-17	MW-17	12/10/2015		2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.6	1 U
MW-17	MW-17	4/27/2016		15.8	--	5 U	--	--	1 U	5 U	--	--	5 UJ	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.4 J	--	--	1.8	1 U
MW-17	MW-17	8/31/2016		2.7	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1	1 U
MW-17	MW-17	12/20/2016		1.4	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-17	MW-17	8/23/2017		2.8	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.94 J	--	--	1 U	1 U
MW-17	MW-17 ~DUP	8/23/2017	Duplicate	3.1	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.92 J	--	--	1 U	1 U
MW-17	MW-17	4/17/2018		25.5	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	2.7	--	--	1 U	1 U
MW-17	MW-17	4/17/2019		10.1	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-17	MW-17 ~DUP	4/17/2019	Duplicate	11	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-17	MW-17	4/28/2020		1.5	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-17	MW-17 ~DUP	4/28/2020	Duplicate	1.6	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-17	MW-17	7/20/2021		0.89 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	1.0 U	--	--	1.0 U	--
MW-17	MW-17~DUP	7/20/2021	Duplicate	0.77 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	1.0 U	--	--	1.0 U	--
MW-17A	MW-17A	3/28/2024		2.5 U	0.50 U	10 U	0.50 U	5.0 UJ	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.50 U	2.5 UJ	2.5 U	0.12 J	--
MW-17B	MW-17B	3/28/2024		2.5 U	0.50 U	10 U	0.50 U	5.0 UJ	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.50 U	2.5 UJ	2.5 U	0.16 J	--
MW-17	WG-12595756-082725-IM-002	8/27/2025		2.5 UJ	0.50 UJ	10 U	0.50 UJ	5.0 U	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.50 UJ	2.5 U	2.5 U	0.31 J	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-18	MW-18	7/20/2002		--	--	--	--	1 U	--	--	2.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 J	0.52 J	--	--	1 U	--	--	--	--	1 U	--	0.54 J
MW-18	MW-18	12/21/2002		--	--	--	--	1 U	--	--	6.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1.8	--	--	1 U	--	--	--	--	4.7	--	1 U
MW-18	MW-18	6/28/2003		--	--	--	--	1 U	--	--	3.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	0.89 J	--	--	1 U	--	--	--	--	0.91 J	--	1 U
MW-18	MW-18	12/19/2003		--	--	--	--	1 U	--	--	8.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.2 J	2.9	--	--	1 UJ	--	--	--	--	1 U	--	5.4
MW-18	MW-18	6/10/2004		--	--	--	--	1 U	--	--	4.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1.3	--	--	1 U	--	--	--	--	1 U	--	1.8
MW-18	MW-18	7/21/2006		--	--	--	--	1 U	--	--	2.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 J	0.52 J	--	--	1 U	--	--	--	--	1 U	--	0.54 J
MW-18	MW-18	12/22/2006		--	--	--	--	1 U	--	--	6.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1.8	--	--	1 U	--	--	--	--	4.7	--	1 U
MW-18	MW-18	6/29/2007		--	--	--	--	1 U	--	--	3.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	0.89 J	--	--	1 U	--	--	--	--	0.91 J	--	1 U
MW-18	MW-18	12/20/2007		--	--	--	--	1 U	--	--	8.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.2 J	2.9	--	--	1 UJ	--	--	--	--	1 U	--	5.4
MW-18	MW-18	6/11/2008		--	--	--	--	1 U	--	--	4.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1.3	--	--	1 U	--	--	--	--	1 U	--	1.8
MW-18	MW-18	12/29/2008		--	--	--	--	1 U	--	--	3.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19	0.79 J	--	--	1 U	--	--	--	--	1.2	--	1 U
MW-18	MW-18	6/16/2009		--	--	--	--	1 U	--	--	6.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5 J	1.8	--	--	1 U	--	--	--	--	1 U	--	7.1
MW-18	MW-18	1/7/2010		--	--	--	--	1 U	--	--	6.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.9	--	--	3.2 U	--	--	--	--	1 U	--	1 U
MW-18	MW-18	7/1/2010		--	--	--	--	1 U	--	--	6.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.7	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-18	MW-18	12/17/2010		--	--	--	--	1 U	--	--	6.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.8	--	--	1 U	--	--	--	--	3.6	--	1 U
MW-18	MW-18	6/20/2011		--	--	--	--	1 U	--	--	4.7 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.8 J	1.2 J	--	--	1 UR	--	--	--	--	2.8 J	--	1 U
MW-18	MW-18	12/15/2011		--	--	--	--	1 U	--	--	5.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.8	1.7	--	--	1 UJ	--	--	--	--	3.6	--	1 U
MW-18	MW-18 ~DUP	12/15/2011	Duplicate	--	--	--	--	1 U	--	--	6.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.4	1.7	--	--	1 UJ	--	--	--	--	4	--	1 U
MW-18	MW-18	7/6/2012		--	--	--	--	1 U	--	--	3.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.6	--	--	1 U	--	--	--	--	3	--	1 U
MW-18	MW-18 ~DUP	7/6/2012	Duplicate	--	--	--	--	1 U	--	--	3.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.4	--	--	1 U	--	--	--	--	3.7	--	1 U
MW-18	MW-18	11/29/2012		--	--	--	--	1 U	--	--	4.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.1 U	1.4	--	--	2 U	--	--	--	--	3.1	--	2 U
MW-18	MW-18	6/3/2013		--	--	--	--	1 U	--	--	3.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.3	--	--	2 U	--	--	--	--	2.1	--	2 U
MW-18	MW-18	12/23/2013		--	--	--	--	1 U	--	--	1.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	0.97 J	--	2 U
MW-18	MW-18	5/27/2014		--	--	--	--	1 U	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.92	--	--	2 U	--	--	--	--	2.2	--	2 U
MW-18	MW-18	12/23/2014		--	--	--	--	1 U	--	--	2.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.3	--	--	2 U	--	--	--	--	2.9	--	2 U
MW-18	MW-18 ~DUP	12/23/2014	Duplicate	--	--	--	--	1 U	--	--	2.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1.4	--	--	2 U	--	--	--	--	3.3	--	2 U
MW-18	MW-18	6/25/2015		--	--	--	--	1 U	--	--	2.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	1.2	--	--	2 UJ	--	--	--	--	2.4 J	--	2 U
MW-18	MW-18	12/10/2015		--	--	--	--	1 U	--	--	2.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	1.4	--	--	2 U	--	--	--	--	4.4	--	1.1 J
MW-18	MW-18 ~DUP	12/10/2015	Duplicate	--	--	--	--	1 U	--	--	2.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	1.4	--	--	2 U	--	--	--	--	4.6	--	1.4 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-18	MW-18	7/20/2002		1.3	--	0.65 J	--	--	1.2	0.62 J	--	--	1.1	5.4	1 U	2	--	--	1 U	2	1.2	--	1.1	--	--	1.9	4.2
MW-18	MW-18	12/21/2002		1 U	--	1.2	--	--	5.8	0.9 J	--	--	1.6	1 U	1 U	12	--	--	1 U	12	1.2	--	1 U	--	--	10	18
MW-18	MW-18	6/28/2003		1 U	--	1.3	--	--	1.3	0.81 J	--	--	1.8	5	1 U	4.2 B	--	--	1 U	0.76 J	1.2	--	1 U	--	--	1 U	4.5
MW-18	MW-18	12/19/2003		1 U	--	2.4	--	--	6.6	1.5	--	--	2.5	0.56 J	1 U	3.6 B	--	--	1 U	9.6	1	--	1 U	--	--	30	18
MW-18	MW-18	6/10/2004		1 U	--	1.7	--	--	1.4	0.77 J	--	--	2.0	2.3	1 U	2.4 J	--	--	1 U	0.95 J	0.94 J	--	1 U	--	--	1 U	5.1
MW-18	MW-18	7/21/2006		1.3	--	0.65 J	--	--	1.2	0.62 J	--	--	1.1	5.4	1 U	2	--	--	1 U	2	1.2	--	1.1	--	--	1.9	4.2
MW-18	MW-18	12/22/2006		1 U	--	1.2	--	--	5.8	0.9 J	--	--	1.6	1 U	1 U	12	--	--	1 U	12	1.2	--	1 U	--	--	10	18
MW-18	MW-18	6/29/2007		1 U	--	1.3	--	--	1.3	0.81 J	--	--	1.8	5	1 U	4.2 B	--	--	1 U	0.76 J	1.2	--	1 U	--	--	1 U	4.5
MW-18	MW-18	12/20/2007		1 U	--	2.4	--	--	6.6	1.5	--	--	2.5	0.56 J	1 U	3.6 B	--	--	1 U	9.6	1	--	1 U	--	--	30	18
MW-18	MW-18	6/11/2008		1 U	--	1.7	--	--	1.4	0.77 J	--	--	2	2.3	1 U	2.4	--	--	1 U	0.95 J	0.94 J	--	1 U	--	--	1 U	5.1
MW-18	MW-18	12/29/2008		1 U	--	1.2	--	--	0.84 J	1 U	--	--	1.4	1 U	1 U	1 U	--	--	1 U	2	1 U	--	1 U	--	--	47	1.6 J
MW-18	MW-18	6/16/2009		1 U	--	1.4	--	--	1 U	0.58 J	--	--	1.6	1 U	1 U	1 U	--	--	1 U	2.5	0.78 J	--	1 U	--	--	1.1	1.2 J
MW-18	MW-18	1/7/2010		1 U	--	10 U	--	--	1.8	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	46.1	3 U
MW-18	MW-18	7/1/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	6.8	--	1 U	--	--	7.4	3 U
MW-18	MW-18	12/17/2010		1 U	--	10 U	--	--	1.2	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	16.4	3 U
MW-18	MW-18	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	2.9 J	1 U	--	1 U	--	--	1 U	3 U
MW-18	MW-18	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	3.8	3 U
MW-18	MW-18 ~DUP	12/15/2011	Duplicate	1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	4.4	3 U
MW-18	MW-18	7/6/2012		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-18	MW-18 ~DUP	7/6/2012	Duplicate	1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-18	MW-18	11/29/2012		1 U	--	1.4 J	--	--	1 U	5 U	--	--	1.2 J	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	2	1 U
MW-18	MW-18	6/3/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-18	MW-18	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	0.93 J	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-18	MW-18	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-18	MW-18	12/23/2014		1 U	--	1.6 J	--	--	1 U	5 U	--	--	1.5 J	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-18	MW-18 ~DUP	12/23/2014	Duplicate	1 U	--	2.1 J	--	--	0.38 J	5 U	--	--	1.6 J	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-18	MW-18	6/25/2015		1 UJ	--	5 U	--	--	1 U	5 U	--	--	5 U	1 UJ	2 U	--	--	--	1 U	1 U	1 U	--	1 U	--	--	1 UJ	1 U
MW-18	MW-18	12/10/2015		1 U	--	1.2 J	--	--	0.44 J	5 U	--	--	1.5 J	1 U	2 U	10 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 UJ	1 U
MW-18	MW-18 ~DUP	12/10/2015	Duplicate	1 U	--	1.1 J	--	--	0.43 J	5 U	--	--	1.5 J	1 U	2 U	10 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 UJ	0.25 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-20	MW-20	6/1/2000		--	--	--	--	2	--	--	2.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	11/1/2000		--	--	--	--	1.8	--	--	3.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20(DUP)	11/1/2000	Duplicate	--	--	--	--	1.9	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	5/31/2001		--	--	--	--	2.7	--	--	2.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	11/30/2001		--	--	--	--	2.4	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-20	MW-20	7/19/2002		--	--	--	--	2	--	--	2.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/21/2002		--	--	--	--	4.2	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20(DUP)	12/21/2002	Duplicate	--	--	--	--	3.8	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/28/2003		--	--	--	--	2.8	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/19/2003		--	--	--	--	2.9	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/2/2004		--	--	--	--	2	--	--	2.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/10/2004		--	--	--	--	3.2	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	11/2/2004		--	--	--	--	1.8	--	--	3.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20~DUP	11/2/2004	Duplicate	--	--	--	--	1.9	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/1/2005		--	--	--	--	2.7	--	--	2.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/1/2005		--	--	--	--	2.4	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	7/20/2006		--	--	--	--	2	--	--	2.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/22/2006		--	--	--	--	4.2	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20~DUP	12/22/2006	Duplicate	--	--	--	--	3.8	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/29/2007		--	--	--	--	2.8	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/20/2007		--	--	--	--	2.9	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/11/2008		--	--	--	--	3.2	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/29/2008		--	--	--	--	2.3	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/16/2009		--	--	--	--	2.7	--	--	0.89 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.4	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	1/7/2010		--	--	--	--	2.5	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.8 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20~DUP	1/7/2010	Duplicate	--	--	--	--	2.4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	7/1/2010		--	--	--	--	2.2	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20~DUP	7/1/2010	Duplicate	--	--	--	--	2.2	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/17/2010		--	--	--	--	2.4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20~DUP	12/17/2010	Duplicate	--	--	--	--	2.3	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	6/20/2011		--	--	--	--	1.7 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.8 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-20	MW-20~DUP	6/20/2011	Duplicate	--	--	--	--	1.8 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.3 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-20	MW-20	12/15/2011		--	--	--	--	2.4	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20.3	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-20	MW-20	7/6/2012		--	--	--	--	2	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-20	MW-20	11/29/2012		--	--	--	--	2.2	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.9 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20	6/4/2013		--	--	--	--	1.8	--	--	0.82 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20~DUP	6/4/2013	Duplicate	--	--	--	--	1.9	--	--	0.81 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.3 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20	12/23/2013		--	--	--	--	1.3	--	--	0.7 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20	5/27/2014		--	--	--	--	2	--	--	0.74 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20	12/23/2014		--	--	--	--	1.6	--	--	0.68 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20	6/26/2015		--	--	--	--	1.6	--	--	0.58 J	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20	12/10/2015		--	--	--	--	2.2 J	--	--	0.71 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-20	MW-20	8/31/2016		--	--	--	--	1.7	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	1.3 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-20	MW-20	6/1/2000		7.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1.9	1 U	1 U	--	--	1 U	1 U	0.38 J	--	3.3	--	--	1.6	3 U
MW-20	MW-20	11/1/2000		6.9	--	1 U	--	--	1 U	1 U	--	--	1 U	9.8	1 U	1 U	--	--	1 U	1 U	0.46 J	--	4.2	--	--	1.8	3 U
MW-20	MW-20(DUP)	11/1/2000	Duplicate	6.9	--	1 U	--	--	1 U	1 U	--	--	1 U	9.5	1 U	1 U	--	--	1 U	1 U	0.45 J	--	4.5	--	--	1.8	3 U
MW-20	MW-20	5/31/2001		8.4	--	1 U	--	--	1 U	1 U	--	--	1 U	5.6	1 U	1 U	--	--	1 U	1 U	0.4 J	--	6.9	--	--	2.4	3 U
MW-20	MW-20	11/30/2001		5.2	--	1 U	--	--	1 U	1 U	--	--	1 UJ	8.5	1 U	1 UJ	--	--	1 U	1 U	1 U	--	6.4	--	--	0.47 J	3 U
MW-20	MW-20	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	8.3	--	--	U	U
MW-20	MW-20	7/19/2002		5.2	--	1 U	--	--	1 U	1 U	--	--	1 U	--	--	1 U	--	--	1 U	1 U	1 U	--	8.7	--	--	0.66 J	3 U
MW-20	MW-20	12/21/2002		8.5	--	1 U	--	--	1 U	1 U	--	--	1 U	0.99 J	1 U	1 U	--	--	1 U	1 U	1 U	--	13	--	--	1 U	3 U
MW-20	MW-20(DUP)	12/21/2002	Duplicate	8.2	--	1 U	--	--	1 U	1 U	--	--	1 U	0.93 J	1 U	1 U	--	--	1 U	1 U	1 U	--	12	--	--	1 U	3 U
MW-20	MW-20	6/28/2003		3.9	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	1 U	1 U	1 U	--	9.9	--	--	1 U	3 U
MW-20	MW-20	12/19/2003		4.8	--	1 U	--	--	1 U	1 U	--	--	1 U	11	1 U	1 U	--	--	1 U	1 U	1 U	--	9.8	--	--	1 U	3 U
MW-20	MW-20	6/2/2004		7.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1.9	1 U	1 U	--	--	1 U	1 U	0.38 J	--	3.3	--	--	1.6	3 U
MW-20	MW-20	6/10/2004		3.7	--	1 U	--	--	1 U	1 U	--	--	1 U	1.9	1 U	1 UJ	--	--	1 U	1 U	1 U	--	9.9	--	--	1 U	3 U
MW-20	MW-20	11/2/2004		6.9	--	1 U	--	--	1 U	1 U	--	--	1 U	9.8	1 U	1 U	--	--	1 U	1 U	0.46 J	--	4.2	--	--	1.8	3 U
MW-20	MW-20~DUP	11/2/2004	Duplicate	6.9	--	1 U	--	--	1 U	1 U	--	--	1 U	9.5	1 U	1 U	--	--	1 U	1 U	0.45 J	--	4.5	--	--	1.8	3 U
MW-20	MW-20	6/1/2005		8.4	--	1 U	--	--	1 U	1 U	--	--	1 U	5.6	1 U	1 U	--	--	1 U	1 U	0.4 J	--	6.9	--	--	2.4	3 U
MW-20	MW-20	12/1/2005		5.2	--	1 U	--	--	1 U	1 U	--	--	1 UJ	8.5	1 U	1 UJ	--	--	1 U	1 U	1 U	--	6.4	--	--	0.47 J	3 U
MW-20	MW-20	7/20/2006		5.2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	8.7	--	--	0.66 J	3 U
MW-20	MW-20	12/22/2006		8.5	--	1 U	--	--	1 U	1 U	--	--	1 U	0.99 J	1 U	1 U	--	--	1 U	1 U	1 U	--	13	--	--	1 U	3 U
MW-20	MW-20~DUP	12/22/2006	Duplicate	8.2	--	1 U	--	--	1 U	1 U	--	--	1 U	0.93 J	1 U	1 U	--	--	1 U	1 U	1 U	--	12	--	--	1 U	3 U
MW-20	MW-20	6/29/2007		3.9	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	1 U	1 U	1 U	--	9.9	--	--	1 U	3 U
MW-20	MW-20	12/20/2007		4.8	--	1 U	--	--	1 U	1 U	--	--	1 U	11	1 U	1 U	--	--	1 U	1 U	1 U	--	9.8	--	--	1 U	3 U
MW-20	MW-20	6/11/2008		3.7	--	1 U	--	--	1 U	1 U	--	--	1 U	1.9	1 U	1 U	--	--	1 U	1 U	1 U	--	9.9	--	--	1 U	3 U
MW-20	MW-20	12/29/2008		2.4	--	1 U	--	--	1 U	1 U	--	--	1 U	2	1 U	1 U	--	--	1 U	1 U	1 U	--	7.8	--	--	1 U	3 U
MW-20	MW-20	6/16/2009		2.2	--	1 U	--	--	1 U	1 U	--	--	1 U	1	1 U	1 U	--	--	1 U	1 U	1 U	--	9.7	--	--	1 U	2 U
MW-20	MW-20	1/7/2010		2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	8.1	--	--	1 U	3 U
MW-20	MW-20~DUP	1/7/2010	Duplicate	2.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	8.1	--	--	1 U	3 U
MW-20	MW-20	7/1/2010		1.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	8.6	--	--	1 U	3 U
MW-20	MW-20~DUP	7/1/2010	Duplicate	1.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	8.3	--	--	1 U	3 U
MW-20	MW-20	12/17/2010		1.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	7.3	--	--	1 U	3 U
MW-20	MW-20~DUP	12/17/2010	Duplicate	1.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	7.4	--	--	1 U	3 U
MW-20	MW-20	6/20/2011		1.4 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	6.6 J	--	--	1 U	3 U
MW-20	MW-20~DUP	6/20/2011	Duplicate	1.1 J	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	7.2 J	--	--	1 U	3 U
MW-20	MW-20	12/15/2011		1.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	7.1	--	--	1 U	3 U
MW-20	MW-20	7/6/2012		1.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	7.8	--	--	1 U	3 U
MW-20	MW-20	11/29/2012		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	0.48 J	2 U	5 U	--	--	1 U	1 U	1 U	--	7.2	--	--	1 U	1 U
MW-20	MW-20	6/4/2013		0.71 J	--	5 U	--	--	1 U	5 U	--	--	5 U	3.9	2 U	5 U	--	--	1 U	1 U	1 U	--	8.1	--	--	1 U	1 U
MW-20	MW-20~DUP	6/4/2013	Duplicate	0.69 J	--	5 U	--	--	1 U	5 U	--	--	5 U	3.9	2 U	5 U	--	--	1 U	1 U	1 U	--	8.5	--	--	1 U	1 U
MW-20	MW-20	12/23/2013		0.6 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	6.4	--	--	1 U	1 U
MW-20	MW-20	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	7.5	--	--	1 U	1 U
MW-20	MW-20	12/23/2014		0.68 J	--	5 U	--	--	1 U	5 U	--	--	5 U	0.67 J	2 U	5 UJ	--	--	1 U	1 U	1 U	--	6.4	--	--	1 U	1 U
MW-20	MW-20	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	6.1	--	--	1 U	1 U
MW-20	MW-20	12/10/2015		1 U	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	6.6 J	--	--	1 UJ	1 U
MW-20	MW-20	8/31/2016		1 U	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	7.6	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-21	MW-21	6/1/2000		--	--	--	--	4.8	--	--	3.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	11/1/2000		--	--	--	--	4.3	--	--	3.4 J	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-21	MW-21	5/31/2001		--	--	--	--	4.8	--	--	2.9	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	11/30/2001		--	--	--	--	1.4	--	--	0.85 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	6/17/2002		--	--	--	--	5.7	--	--	--	--	--	--	--	--	--	--	33	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-21	MW-21 ~Dup-1	6/17/2002	Duplicate	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	26	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-21	MW-21	7/19/2002		--	--	--	--	2.8	--	--	1.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	0.8 J
MW-21	MW-21	12/21/2002		--	--	--	--	2.5	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	6/28/2003		--	--	--	--	2.8	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	12/19/2003		--	--	--	--	1.7	--	--	0.92 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-21	MW-21	6/2/2004		--	--	--	--	4.8	--	--	3.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	6/10/2004		--	--	--	--	2.6	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	11/2/2004		--	--	--	--	4.3	--	--	3.4 J	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-21	MW-21	6/1/2005		--	--	--	--	4.8	--	--	2.9	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	12/1/2005		--	--	--	--	1.4	--	--	0.85 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	7/20/2006		--	--	--	--	2.8	--	--	1.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	0.8 J
MW-21	MW-21	12/22/2006		--	--	--	--	2.5	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	6/29/2007		--	--	--	--	2.8	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	12/20/2007		--	--	--	--	1.7	--	--	0.92 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-21	MW-21	5/1/2008		41	0.21	U	2.7	1.8	--	--	0.98 J	1.0 U	--	1.0 U	--	--	1.0 U	--	--	--	--	--	--	5.0 U	--	--	5.0 U	1.0 U	--	--	--	--	--	1.0 U	--	1.0 U	--	--
MW-21	MW-21	6/11/2008		--	--	--	--	2.6	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	12/29/2008		--	--	--	--	2.2	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21~DUP	12/29/2008	Duplicate	--	--	--	--	0.66 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28	1 U	--	--	1 U	--	--	--	--	1 UJ	--	1 U
MW-21	MW-21	6/16/2009		--	--	--	--	2.1	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	1/7/2010		--	--	--	--	1.9	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	2.4	--	--	--	--	1 U	--	1 U
MW-21	MW-21~DUP	1/7/2010	Duplicate	--	--	--	--	1.8	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.6	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	7/1/2010		--	--	--	--	2	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	12/17/2010		--	--	--	--	1.7	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	6/20/2011		--	--	--	--	1.1 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.4 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-21	MW-21	12/15/2011		--	--	--	--	1.1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.3	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-21	MW-21	7/6/2012		--	--	--	--	1	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-21	MW-21	11/29/2012		--	--	--	--	1.3	--	--	0.68 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.7 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	6/4/2013		--	--	--	--	1 U	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.5 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21~DUP	6/4/2013	Duplicate	--	--	--	--	1 U	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.8 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	12/23/2013		--	--	--	--	1 U	--	--	0.77 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	5/27/2014		--	--	--	--	1.1	--	--	0.71 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	12/23/2014		--	--	--	--	1.1	--	--	0.72 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	6/26/2015		--	--	--	--	0.88 J	--	--	0.75 J	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-21	MW-21	12/10/2015		--	--	--	--	1.6 J	--	--	0.77 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	1.5 J
MW-21	MW-21	8/31/2016		--	--	--	--	1.1	--	--	0.68 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 UJ

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-21	MW-21	6/1/2000		87 D	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	0.34 J	1 U	0.48 J	--	100 D	--	--	12	3 U
MW-21	MW-21	11/1/2000		83	--	4 U	--	--	4 U	4 U	--	--	4 U	7.8	4 U	4 U	--	--	4 U	4 U	4 U	--	88	--	--	4 U	12 U
MW-21	MW-21	5/31/2001		72	--	2 U	--	--	2 U	2 U	--	--	2 U	6	2 U	2 U	--	--	2 U	2 U	2 U	--	59 D	--	--	4.4	6 U
MW-21	MW-21	11/30/2001		18	--	1 U	--	--	1 U	1 U	--	--	1 U	0.99 J	1 U	1 U	--	--	1 U	1 U	1 U	--	20	--	--	1 U	3 U
MW-21	MW-21	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	6.1	--	--	--	27	--	--	U	U
MW-21	MW-21 ~Dup-1	6/17/2002	Duplicate	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	25	--	--	U	U
MW-21	MW-21	7/19/2002		26	--	1 U	--	--	1 U	1 U	--	--	1 U	4.6	1 U	1 U	--	--	1 U	1 U	1 U	--	43	--	--	0.56 J	3 U
MW-21	MW-21	12/21/2002		28	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	56	--	--	1 U	3 U
MW-21	MW-21	6/28/2003		33	--	1 U	--	--	1 U	1 U	--	--	1 U	1.7	1 U	1 U	--	--	1 U	1 U	1 U	--	62	--	--	2.4	3 U
MW-21	MW-21	12/19/2003		17	--	1 U	--	--	1 U	1 U	--	--	1 U	5	1 U	1 U	--	--	1 U	1 U	1 U	--	26	--	--	1 U	3 U
MW-21	MW-21	6/2/2004		87 D	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	0.34 J	1 U	0.48 J	--	100 D	--	--	12	3 U
MW-21	MW-21	6/10/2004		29	--	1 U	--	--	1 U	1 U	--	--	1 U	1.1	1 U	1 UJ	--	--	1 U	1 U	1 U	--	67	--	--	1	3 U
MW-21	MW-21	11/2/2004		83	--	4 U	--	--	4 U	4 U	--	--	4 U	7.8	4 U	4 U	--	--	4 U	4 U	4 U	--	88	--	--	4 U	12 U
MW-21	MW-21	6/1/2005		72	--	2 U	--	--	2 U	2 U	--	--	2 U	6	2 U	2 U	--	--	2 U	2 U	2 U	--	59 D	--	--	4.4	6 U
MW-21	MW-21	12/1/2005		18	--	1 U	--	--	1 U	1 U	--	--	1 U	0.99 J	1 U	1 U	--	--	1 U	1 U	1 U	--	20	--	--	1 U	3 U
MW-21	MW-21	7/20/2006		26	--	1 U	--	--	1 U	1 U	--	--	1 U	4.6	1 U	1 U	--	--	1 U	1 U	1 U	--	43	--	--	0.56 J	3 U
MW-21	MW-21	12/22/2006		28	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	56	--	--	1 U	3 U
MW-21	MW-21	6/29/2007		33	--	1 U	--	--	1 U	1 U	--	--	1 U	1.7	1 U	1 U	--	--	1 U	1 U	1 U	--	62	--	--	2.4	3 U
MW-21	MW-21	12/20/2007		17	--	1 U	--	--	1 U	1 U	--	--	1 U	5	1 U	1 U	--	--	1 U	1 U	1 U	--	26	--	--	1 U	3 U
MW-21	MW-21	5/1/2008		18	--	1.0 U	--	--	1.0 U	1.0 U	--	--	1.0 U	2.7	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	--	40	--	--	1.0 U	3.0 U
MW-21	MW-21	6/11/2008		29	--	1 U	--	--	1 U	1 U	--	--	1 U	1.1	1 U	1 U	--	--	1 U	1 U	1 U	--	67	--	--	1	3 U
MW-21	MW-21	12/29/2008		13	--	1 U	--	--	1 U	1 U	--	--	1 U	2.1	1 U	1 U	--	--	1 U	1 U	1 U	--	29	--	--	1 U	3 U
MW-21	MW-21~DUP	12/29/2008	Duplicate	7.1	--	1 U	--	--	1 U	1 U	--	--	1 U	2	0.54 J	1 U	--	--	1 U	1 U	1 U	--	8.1	--	--	1 U	3 U
MW-21	MW-21	6/16/2009		15	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	46	--	--	1 U	2 U
MW-21	MW-21	1/7/2010		15.4	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	38.3	--	--	1 U	3 U
MW-21	MW-21~DUP	1/7/2010	Duplicate	15.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	37.3	--	--	1 U	3 U
MW-21	MW-21	7/1/2010		11.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	47	--	--	1 U	3 U
MW-21	MW-21	12/17/2010		6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	18.6	--	--	1 U	3 U
MW-21	MW-21	6/20/2011		3.4 J	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	22.4 J	--	--	1 U	3 U
MW-21	MW-21	12/15/2011		6.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	40.6	--	--	1 U	3 U
MW-21	MW-21	7/6/2012		7.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	57.9	--	--	1 U	3 U
MW-21	MW-21	11/29/2012		2.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	20.2	--	--	1 U	1 U
MW-21	MW-21	6/4/2013		4.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	38.4	--	--	1 U	1 U
MW-21	MW-21~DUP	6/4/2013	Duplicate	4.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	38.9	--	--	1 U	1 U
MW-21	MW-21	12/23/2013		5.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	48	--	--	1 U	1 U
MW-21	MW-21	5/27/2014		3.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	33.9	--	--	1 U	1 U
MW-21	MW-21	12/23/2014		2.3	--	5 U	--	--	1 U	5 U	--	--	5 U	0.41 J	2 U	5 UJ	--	--	1 U	1 U	1 U	--	18.8	--	--	1 U	1 U
MW-21	MW-21	6/26/2015		4.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	26.7	--	--	1 U	1 U
MW-21	MW-21	12/10/2015		2.2 J	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	17.3 J	--	--	1 UJ	1 U
MW-21	MW-21	8/31/2016		1.8	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	16.5	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-22	MW-22	6/1/2000		--	--	--	--	4 U	--	--	4 U	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-22	MW-22	11/1/2000		--	--	--	--	4 U	--	--	4 U	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-22	MW-22	5/31/2001		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	11/30/2001		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	100	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-22	MW-22	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	0.54 J	--	--	--	--	1 U	--	1 U
MW-22	MW-22	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-22	MW-22	6/2/2004		--	--	--	--	4 U	--	--	4 U	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-22	MW-22	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	11/2/2004		--	--	--	--	4 U	--	--	4 U	4 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U	4 U	--	--	4 U	--	--	--	--	4 U	--	4 U
MW-22	MW-22	6/1/2005		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	12/1/2005		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	0.54 J	--	--	--	--	1 U	--	1 U
MW-22	MW-22	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-22	MW-22	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.9 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.4	1 U	--	--	7.6	--	--	--	--	1 U	--	1 U
MW-22	MW-22	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22~DUP	7/1/2010	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-22	MW-22	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22~DUP	10/3/2011	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23.4	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.4	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-22	MW-22	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	8/31/2016		--	--	--	--	1 U	--	--	1 UJ	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-22	MW-22	8/23/2017		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	4/28/2020		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-22	MW-22	7/20/2021		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-22	MW-22	3/28/2024		--	--	--	--	2.5 U	0.50 U	1.5 U	2.5 U	0.50 U	2.5 U	2.5 U	2.5 U	2.0 U	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	0.50 U	0.50 U	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U
MW-22	WG-12595756-082725-IM-006	8/27/2025		--	--	--	--	2.5 U	0.50 U	1.5 UJ	2.5 U	0.50 U	2.5 UJ	2.5 UJ	2.5 UJ	2.0 UJ	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 UJ	7.0	5.0 U	5.0 U	10 J+	0.50 U	0.50 UJ	2.0 U	2.5 UJ	5.0 U	0.50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
MW-22	WG-12595756-082725-IM-007	8/27/2025	Duplicate	--	--	--	--	2.5 U	0.50 U	1.5 UJ	2.5 U	0.50 U	2.5 UJ	2.5 UJ	2.5 UJ	2.0 UJ	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 UJ	5.0 U	5.0 U	5.0 U	14	0.50 U	0.50 UJ	2.0 U	2.5 UJ	5.0 U	0.50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-22	MW-22	6/1/2000		90	--	4 U	--	--	4 U	4 U	--	--	4 U	4 U	4 U	4 U	--	--	4 U	4 U	5.6	--	25	--	--	4 U	12 U
MW-22	MW-22	11/1/2000		110	--	4 U	--	--	4 U	4 U	--	--	4 U	4 U	4 U	4 U	--	--	4 U	4 U	8.6	--	33	--	--	4 U	12 U
MW-22	MW-22	5/31/2001		70	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	2.5	--	19	--	--	2 U	6 U
MW-22	MW-22	11/30/2001		36	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	1.8 J	--	13	--	--	2 U	6 U
MW-22	MW-22	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	25	--	--	U	U
MW-22	MW-22	7/18/2002		41	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.8	--	12	--	--	1 U	3 U
MW-22	MW-22	12/21/2002		81	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.8	--	18	--	--	1 U	3 U
MW-22	MW-22	6/28/2003		72	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.6	--	15	--	--	1 U	3 U
MW-22	MW-22	12/19/2003		54	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.5	--	10	--	--	1 U	3 U
MW-22	MW-22	6/2/2004		90	--	4 U	--	--	4 U	4 U	--	--	4 U	4 U	4 U	4 U	--	--	4 U	4 U	5.6	--	25	--	--	4 U	12 U
MW-22	MW-22	6/11/2004		76	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	2.2	--	11	--	--	1 U	3 U
MW-22	MW-22	11/2/2004		110	--	4 U	--	--	4 U	4 U	--	--	4 U	4 U	4 U	4 U	--	--	4 U	4 U	8.6	--	33	--	--	4 U	12 U
MW-22	MW-22	6/1/2005		70	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	2.5	--	19	--	--	2 U	6 U
MW-22	MW-22	12/1/2005		36	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	1.8 J	--	13	--	--	2 U	6 U
MW-22	MW-22	7/19/2006		41	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.8	--	12	--	--	1 U	3 U
MW-22	MW-22	12/22/2006		81	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.8	--	18	--	--	1 U	3 U
MW-22	MW-22	6/29/2007		72	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.6	--	15	--	--	1 U	3 U
MW-22	MW-22	12/20/2007		54	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.5	--	10	--	--	1 U	3 U
MW-22	MW-22	6/12/2008		76	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.2	--	11	--	--	1 U	3 U
MW-22	MW-22	12/29/2008		3.9	--	1 U	--	--	1 U	1 UJ	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-22	MW-22	6/16/2009		63	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.9	--	11	--	--	1 U	2 U
MW-22	MW-22	1/7/2010		11.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	8	3 U
MW-22	MW-22	3/31/2010		4.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	3.6	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.8	3 U
MW-22	MW-22	7/1/2010		18.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	8.4	--	2.2	--	--	9.6	3 U
MW-22	MW-22~DUP	7/1/2010	Duplicate	19.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	8.4	--	2.4	--	--	9.6	3 U
MW-22	MW-22	9/21/2010		18.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	2.5	--	1.5	--	--	8.9	3 U
MW-22	MW-22	12/17/2010		15.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	3.2	--	1.1	--	--	5.8	3 U
MW-22	MW-22	3/28/2011		2.4	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.2	--	1 U	--	--	1 U	3 U
MW-22	MW-22	6/20/2011		5.6 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1.3 J	--	--	1.6 J	3 U
MW-22	MW-22	10/3/2011		5.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.5	--	--	1 U	3 U
MW-22	MW-22~DUP	10/3/2011	Duplicate	5.4	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.6	--	--	1 U	3 U
MW-22	MW-22	12/15/2011		6.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.5	--	1.4	--	--	2.6	3 U
MW-22	MW-22	7/6/2012		10	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.3	--	1.6	--	--	4.4	3 U
MW-22	MW-22	11/29/2012		21.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	2.3	--	1	--	--	6.5	1 U
MW-22	MW-22	6/3/2013		4.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.7 J	--	--	0.69 J	1 U
MW-22	MW-22	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-22	MW-22	5/27/2014		13.7	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.5	--	1 U	--	--	5.8	1 U
MW-22	MW-22	12/23/2014		17.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	0.9 J	--	1 U	--	--	2.9	1 U
MW-22	MW-22	6/26/2015		22.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	3.2 J	--	0.31 J	--	--	5.5	1 U
MW-22	MW-22	12/10/2015		31.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.1	--	1 U	--	--	3.1	1 U
MW-22	MW-22	8/31/2016		38.2	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.6	--	1 U	--	--	5.2	1 U
MW-22	MW-22	8/23/2017		26.6	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.3	--	0.48 J	--	--	3.6	1 U
MW-22	MW-22	4/28/2020		22.6	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.0	--	1 U	--	--	3.8	1 U
MW-22	MW-22	7/20/2021		37.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	--	1.0 U	--	--	5.6	--
MW-22	MW-22	3/28/2024		18	0.50 U	10 U	0.50 U	5.0 UJ	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	0.94 J	0.50 U	0.36 J	2.5 UJ	2.5 U	11 J	--
MW-22	WG-12595756-082725-IM-006	8/27/2025		22	0.50 U	10 U	0.50 U	5.0 U	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 UJ	--	2.5 U	2.5 U	0.50 U	2.5 U	0.89 J	0.50 U	0.19 J	2.5 U	2.5 UJ	2.8	--
MW-22	WG-12595756-082725-IM-007	8/27/2025	Duplicate	24	0.50 U	10 U	0.50 U	5.0 U	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 UJ	--	2.5 U	2.5 U	0.50 U	2.5 U	1.0 J	0.50 U	0.22 J	2.5 U	2.5 UJ	3.1	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-23	MW-23	6/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	11/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	5/31/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-23	MW-23	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 U	--	--	--	--	1 U	--	0.7 J
MW-23	MW-23	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.8 BJ	--	--	--	--	1 U	--	1 U
MW-23	MW-23	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	11/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 U	--	--	--	--	1 U	--	0.7 J
MW-23	MW-23	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.8 BJ	--	--	--	--	1 U	--	1 U
MW-23	MW-23	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	3.1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.2 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-23	MW-23	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.7	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-23	MW-23	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-23	MW-23	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-23	MW-23	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-23	MW-23	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-23	MW-23	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-23	MW-23	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-23	MW-23	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-23	MW-23	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-23	MW-23	6/1/2000		22	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.3	--	1.9	--	--	1.7	1 U
MW-23	MW-23	11/1/2000		23	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.4	--	2.2	--	--	2.6	3 U
MW-23	MW-23	5/31/2001		13	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.76 J	--	2.6	--	--	2	3 U
MW-23	MW-23	11/30/2001		8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.86 J	--	--	0.77 J	3 U
MW-23	MW-23	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
MW-23	MW-23	7/18/2002		3.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.62 J	--	--	1 U	3 U
MW-23	MW-23	12/21/2002		0.91 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	6/28/2003		3.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-23	MW-23	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	6/2/2004		22	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.3	--	1.9	--	--	1.7	1 U
MW-23	MW-23	6/11/2004		2.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	2	--	--	1 U	3 U
MW-23	MW-23	11/2/2004		23	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.4	--	2.2	--	--	2.6	3 U
MW-23	MW-23	6/1/2005		13	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.76 J	--	2.6	--	--	2	3 U
MW-23	MW-23	12/1/2005		8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.86 J	--	--	0.77 J	3 U
MW-23	MW-23	7/19/2006		3.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.62 J	--	--	1 U	3 U
MW-23	MW-23	12/22/2006		0.91 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	6/29/2007		3.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-23	MW-23	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	6/12/2008		2.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2	--	--	1 U	3 U
MW-23	MW-23	12/29/2008		1 U	--	1 U	--	--	1 U	1 UJ	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	6/16/2009		2.2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.98 J	--	--	1 U	2 U
MW-23	MW-23	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	3 U
MW-23	MW-23	7/1/2010		3.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	2.5	--	--	1 U	3 U
MW-23	MW-23	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-23	MW-23	7/6/2012		2.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	4	--	--	1 U	3 U
MW-23	MW-23	11/29/2012		1.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	1 U
MW-23	MW-23	6/3/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-23	MW-23	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-23	MW-23	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-23	MW-23	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-23	MW-23	6/26/2015		0.77 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	1 UJ	--	2	--	--	1 U	1 U
MW-23	MW-23	12/10/2015		0.66 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	2	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-24	MW-24	6/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	11/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	5/31/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-24	MW-24	7/17/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1.3
MW-24	MW-24	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.66 BJ	--	--	--	--	1 U	--	1 U
MW-24	MW-24	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.9 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	11/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	7/18/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1.3
MW-24	MW-24	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.66 BJ	--	--	--	--	1 U	--	1 U
MW-24	MW-24	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.9 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	3.1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.4 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-24	MW-24	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.6	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-24	MW-24	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-24	MW-24	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-24	MW-24	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-24	MW-24	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-24	MW-24~DUP	12/23/2013	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-24	MW-24	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-24	MW-24	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-24	MW-24	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-24	MW-24	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-24	MW-24	6/1/2000		0.75 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.41 J	--	--	1 U	1 U
MW-24	MW-24	11/1/2000		1.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.47 J	--	0.33 J	--	--	1.2	3 U
MW-24	MW-24	5/31/2001		1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.32 J	--	0.5 J	--	--	1 U	3 U
MW-24	MW-24	11/30/2001		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.77 J	--	--	0.62 J	3 U
MW-24	MW-24	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
MW-24	MW-24	7/17/2002		0.67 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.69 J	--	--	1 U	3 U
MW-24	MW-24	12/21/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-24	MW-24	6/28/2003		2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.2	3 U
MW-24	MW-24	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-24	MW-24	6/2/2004		0.75 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.41 J	--	--	1 U	1 U
MW-24	MW-24	6/11/2004		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1.1	3 U
MW-24	MW-24	11/2/2004		1.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.47 J	--	0.33 J	--	--	1.2	3 U
MW-24	MW-24	6/1/2005		1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.32 J	--	0.5 J	--	--	1 U	3 U
MW-24	MW-24	12/1/2005		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.77 J	--	--	0.62 J	3 U
MW-24	MW-24	7/18/2006		0.67 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.69 J	--	--	1 U	3 U
MW-24	MW-24	12/22/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-24	MW-24	6/29/2007		2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.2	3 U
MW-24	MW-24	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-24	MW-24	6/12/2008		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.1	3 U
MW-24	MW-24	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.68 J	--	--	1 U	3 U
MW-24	MW-24	6/16/2009		**9.4**	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	**6.8**	--	--	**2.9**	2 U
MW-24	MW-24	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	3 U
MW-24	MW-24	7/1/2010		**5.3**	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1.1	--	--	**2.6**	3 U
MW-24	MW-24	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-24	MW-24	6/20/2011		2.4 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-24	MW-24	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-24	MW-24	7/6/2012		4.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1	--	--	1.3	3 U
MW-24	MW-24	11/29/2012		**7.2**	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.1	--	--	**2.7 J**	1 U
MW-24	MW-24	6/3/2013		5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.91 J	1 U
MW-24	MW-24	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-24	MW-24~DUP	12/23/2013	Duplicate	3.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1	1 U
MW-24	MW-24	12/23/2014		0.56 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-24	MW-24	6/26/2015		1.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	1 U
MW-24	MW-24	12/10/2015		**8.4**	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	3.5	--	--	1 U	1 U
MW-24	MW-24	8/31/2016		**21.5**	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	**31.4**	--	--	**2.5**	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-25	MW-25	6/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.35 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	11/1/2000		--	--	--	--	1 U	--	--	1 U	0.24 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.68 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	5/31/2001		--	--	--	--	1 U	--	--	1 U	0.2 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.4 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	42	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-25	MW-25	7/19/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.63 BJ	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.35 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	11/2/2004		--	--	--	--	1 U	--	--	1 U	0.24 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.68 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/1/2005		--	--	--	--	1 U	--	--	1 U	0.2 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.4 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	7/20/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.63 BJ	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	38	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/16/2009		--	--	--	--	1 U	--	--	1 U	0.68 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.5 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.2 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-25	MW-25	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-25	MW-25	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-25	MW-25	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-25	MW-25	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-25	MW-25	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-25	MW-25	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-25	MW-25	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-25	MW-25	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-25	MW-25	12/10/2015		--	--	--	--	1 U	--	--	0.57 J	0.34 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-25	MW-25	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-25	MW-25	6/1/2000		7.6	--	2.3	--	--	1 U	6.1	--	--	3	1 U	1 U	1 U	--	--	1 U	1 U	0.44 J	--	1	--	--	3.6	7.8
MW-25	MW-25	11/1/2000		26	--	1.4	--	--	3.1	2.7	--	--	3.6	0.64 J	1 U	2.7	--	--	1 U	0.43 J	1.7	--	0.27 J	--	--	19	1.3 J
MW-25	MW-25	5/31/2001		26	--	1.5	--	--	3.8	2.8	--	--	2.9	1 U	1 U	5.4	--	--	1 U	1 U	0.86 J	--	0.7 J	--	--	15	2 J
MW-25	MW-25	11/30/2001		29	--	1 U	--	--	0.5 J	0.64 J	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.98 J	--	0.58 J	--	--	14	3 U
MW-25	MW-25	6/17/2002		--	--	--	--	--	20	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	15	18
MW-25	MW-25	7/19/2002		6.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	3.7	3 U
MW-25	MW-25	12/21/2002		8.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	5.4	3 U
MW-25	MW-25	6/28/2003		41	--	1 U	--	--	1 U	0.76 J	--	--	0.57 J	1 U	1 U	1 U	--	--	1 U	1 U	0.94 J	--	1 U	--	--	26	3 U
MW-25	MW-25	12/19/2003		0.92 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.57 J	3 U
MW-25	MW-25	6/2/2004		7.6	--	2.3	--	--	1 U	6.1	--	--	3	1 U	1 U	1 U	--	--	1 U	1 U	0.44 J	--	1	--	--	3.6	7.8
MW-25	MW-25	6/11/2004		41	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	29	3 U
MW-25	MW-25	11/2/2004		26	--	1.4	--	--	3.1	2.7	--	--	3.6	0.64 J	1 U	2.7	--	--	1 U	0.43 J	1.7	--	0.27 J	--	--	19	1.3 J
MW-25	MW-25	6/1/2005		26	--	1.5	--	--	3.8	2.8	--	--	2.9	1 U	1 U	5.4	--	--	1 U	1 U	0.86 J	--	0.7 J	--	--	15	2 J
MW-25	MW-25	12/1/2005		29	--	1 U	--	--	0.5 J	0.64 J	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.98 J	--	0.58 J	--	--	14	3 U
MW-25	MW-25	7/20/2006		6.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	3.7	3 U
MW-25	MW-25	12/22/2006		8.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	5.4	3 U
MW-25	MW-25	6/29/2007		41	--	1 U	--	--	1 U	0.76 J	--	--	0.57 J	1 U	1 U	1 U	--	--	1 U	1 U	0.94 J	--	1 U	--	--	26	3 U
MW-25	MW-25	12/20/2007		0.92 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.57 J	3 U
MW-25	MW-25	6/12/2008		41	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	29	3 U
MW-25	MW-25	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1.1	1 U	--	1 U	--	--	1 U	3 U
MW-25	MW-25	6/16/2009		100 D	--	1 U	--	--	1 U	1 U	--	--	0.95 J	1 U	1 U	1 U	--	--	1 U	1 U	1.3	--	5.5	--	--	45	2 U
MW-25	MW-25	1/7/2010		19.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	8.8	3 U
MW-25	MW-25	7/1/2010		48.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	34.9	3 U
MW-25	MW-25	12/17/2010		2.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-25	MW-25	6/20/2011		15.9 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	7.6 J	3 U
MW-25	MW-25	12/15/2011		7.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.9	3 U
MW-25	MW-25	7/6/2012		51.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	27.5	3 U
MW-25	MW-25	11/29/2012		65.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	37.4 J	1 U
MW-25	MW-25	6/3/2013		15.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.9	1 U
MW-25	MW-25	12/23/2013		2.6	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-25	MW-25	5/27/2014		18.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.5	--	--	7.8	1 U
MW-25	MW-25	12/23/2014		2.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-25	MW-25	6/26/2015		69.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1.3 J	--	1 U	--	--	24	1 U
MW-25	MW-25	12/10/2015		103	--	5 U	--	--	1 U	5 U	--	--	0.42 J	1 U	2 U	5 U	--	--	1 U	1 U	0.9 J	--	1 U	--	--	40.2	1 U
MW-25	MW-25	8/31/2016		115	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.2	--	1 U	--	--	42.8	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-26	MW-26	6/1/2000		--	--	--	--	1 U	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	11/1/2000		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	5/31/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-26	MW-26	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	0.63 BJ	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/2/2004		--	--	--	--	1 U	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	11/2/2004		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	6/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	0.63 BJ	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	27	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	3 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.9 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-26	MW-26	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-26	MW-26	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-26	MW-26	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-26	MW-26	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-26	MW-26	6/1/2000		49 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	4.2	--	2	--	--	1.4	3 U
MW-26	MW-26	11/1/2000		60	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	5.6	--	1.4 J	--	--	2	6 U
MW-26	MW-26	5/31/2001		39 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.9	--	1.6	--	--	1.7	3 U
MW-26	MW-26	11/30/2001		43	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.2	--	0.54 J	--	--	1	3 U
MW-26	MW-26	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
MW-26	MW-26	7/18/2002		37	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.3	--	0.5 J	--	--	1	3 U
MW-26	MW-26	12/21/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	6/28/2003		0.83 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	6/2/2004		49 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	4.2	--	2	--	--	1.4	3 U
MW-26	MW-26	6/11/2004		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1.3	3 U
MW-26	MW-26	11/2/2004		60	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	5.6	--	1.4 J	--	--	2	6 U
MW-26	MW-26	6/1/2005		39 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.9	--	1.6	--	--	1.7	3 U
MW-26	MW-26	12/1/2005		43	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.2	--	0.54 J	--	--	1	3 U
MW-26	MW-26	7/19/2006		37	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.3	--	0.5 J	--	--	1	3 U
MW-26	MW-26	12/22/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	6/29/2007		0.83 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	6/12/2008		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.3	3 U
MW-26	MW-26	12/29/2008		1 U	--	1 U	--	--	1 U	1 UJ	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	6/16/2009		1.7	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.78 J	2 U
MW-26	MW-26	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	3 U
MW-26	MW-26	7/1/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	7/6/2012		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-26	MW-26	11/29/2012		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-26	MW-26	6/3/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-26	MW-26	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-26	MW-26	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-26	MW-26	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-26	MW-26	6/26/2015		0.57 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	1 U
MW-26	MW-26	12/10/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-27	MW-27	5/31/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27(DUP)	5/31/2000	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	10/31/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 J	0.44 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	5/31/2001		--	--	--	--	1 U	--	--	1 U	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.3 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	29	--	--	--	--	--	--	--	--	--	--	--
MW-27	MW-27	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.1	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/1/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27~DUP	6/1/2004	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	11/1/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 J	0.44 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/1/2005		--	--	--	--	1 U	--	--	1 U	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.3 J	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.1	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.3	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.8 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.4 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-27	MW-27	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.7	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-27	MW-27	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-27	MW-27	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-27	MW-27	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-27	MW-27	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-27	MW-27	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-27	MW-27	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-27	MW-27	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-27	MW-27	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-28	MW-28	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-27	MW-27	5/31/2000		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	**2.3**	3 U
MW-27	MW-27(DUP)	5/31/2000	Duplicate	2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	**2.9**	3 U
MW-27	MW-27	10/31/2000		1.1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	**2.6**	3 U
MW-27	MW-27	5/31/2001		**9.7**	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.4 J	--	**8.8**	--	--	**12**	3 U
MW-27	MW-27	11/30/2001		1.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.59 J	--	--	1	3 U
MW-27	MW-27	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
MW-27	MW-27	7/18/2002		2.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	**14**	--	--	1 U	3 U
MW-27	MW-27	12/21/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	6/28/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	6/1/2004		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	**2.3**	3 U
MW-27	MW-27~DUP	6/1/2004	Duplicate	2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	**2.9**	3 U
MW-27	MW-27	6/11/2004		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	11/1/2004		1.1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	**2.6**	3 U
MW-27	MW-27	6/1/2005		**9.7**	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.4 J	--	**8.8**	--	--	**12**	3 U
MW-27	MW-27	12/1/2005		1.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.59 J	--	--	1	3 U
MW-27	MW-27	7/19/2006		2.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	**14**	--	--	1 U	3 U
MW-27	MW-27	12/22/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	6/29/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	6/12/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	6/16/2009		0.87 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.93 J	--	--	1 U	2 U
MW-27	MW-27	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	3 U
MW-27	MW-27	7/1/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	7/6/2012		1.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-27	MW-27	11/29/2012		2.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.5 J	1 U
MW-27	MW-27	6/3/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-27	MW-27	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-27	MW-27	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-27	MW-27	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-27	MW-27	6/26/2015		1.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	1 U
MW-27	MW-27	12/10/2015		2.6	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-28	MW-28	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-29	MW-29	6/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	11/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	5/31/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	7.4	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-29	MW-29	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.9 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	11/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.9 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.1 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.9 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.7 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-29	MW-29	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.1	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-29	MW-29	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-29	MW-29	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-29	MW-29	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-29	MW-29	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-29	MW-29	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-29	MW-29	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-29	MW-29	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-29	MW-29	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-29	MW-29	6/1/2000		4.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.9	--	--	1 U	3 U
MW-29	MW-29	11/1/2000		0.46 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.4	--	--	1 U	3 U
MW-29	MW-29	5/31/2001		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.7 J	--	--	1 U	3 U
MW-29	MW-29	11/30/2001		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.9 J	--	--	1 U	3 U
MW-29	MW-29	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
MW-29	MW-29	7/18/2002		4.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2.4	--	--	1 U	3 U
MW-29	MW-29	12/21/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.59 J	--	--	1 U	3 U
MW-29	MW-29	6/28/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.64 J	--	--	1 U	3 U
MW-29	MW-29	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.79 J	--	--	1 U	3 U
MW-29	MW-29	6/2/2004		4.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.9	--	--	1 U	3 U
MW-29	MW-29	6/11/2004		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	3.1	1 UJ	--	--	1 U	1 U	1 U	--	0.55 J	--	--	1 U	3 U
MW-29	MW-29	11/2/2004		0.46 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.4	--	--	1 U	3 U
MW-29	MW-29	6/1/2005		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.7 J	--	--	1 U	3 U
MW-29	MW-29	12/1/2005		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.9 J	--	--	1 U	3 U
MW-29	MW-29	7/19/2006		4.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2.4	--	--	1 U	3 U
MW-29	MW-29	12/22/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.59 J	--	--	1 U	3 U
MW-29	MW-29	6/29/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.64 J	--	--	1 U	3 U
MW-29	MW-29	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.79 J	--	--	1 U	3 U
MW-29	MW-29	6/12/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	3.1	1 U	--	--	1 U	1 U	1 U	--	0.55 J	--	--	1 U	3 U
MW-29	MW-29	6/16/2009		1.2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.57 J	--	--	1 U	2 U
MW-29	MW-29	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	3 U
MW-29	MW-29	7/1/2010		1.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-29	MW-29	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-29	MW-29	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-29	MW-29	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-29	MW-29	7/6/2012		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-29	MW-29	11/29/2012		0.91 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.2	--	--	1 U	1 U
MW-29	MW-29	6/3/2013		1.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	2	--	--	1 U	1 U
MW-29	MW-29	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-29	MW-29	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-29	MW-29	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	0.48 J	--	--	1 U	1 U
MW-29	MW-29	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	1 UJ	--	0.51 J	--	--	1 U	1 U
MW-29	MW-29	12/10/2015		1.7	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.2	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-30	MW-30	6/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	11/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	5/31/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
MW-30	MW-30	7/17/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	0.61 J
MW-30	MW-30	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	1 U	--	--	0.7 BJ	--	--	--	--	1 U	--	1 U
MW-30	MW-30	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.3	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	11/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	7/18/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	0.61 J
MW-30	MW-30	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	1 U	--	--	0.7 BJ	--	--	--	--	1 U	--	1 U
MW-30	MW-30	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.3	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.8	1 U	--	--	2.6 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.5 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-30	MW-30	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.6	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-30	MW-30	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-30	MW-30	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.1 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-30	MW-30	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-30	MW-30	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-30	MW-30	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-30	MW-30	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-30	MW-30	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-30	MW-30	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-30	MW-30	6/1/2000		6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1	1 U	--	--	1 U	1 U	1 U	--	3.3	--	--	1 U	3 U
MW-30	MW-30	11/1/2000		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.3	--	--	1 U	3 U
MW-30	MW-30	5/31/2001		1.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1	--	--	1 U	3 U
MW-30	MW-30	11/30/2001		0.44 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.42 J	--	--	1 U	3 U
MW-30	MW-30	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
MW-30	MW-30	7/17/2002		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.1	--	--	1 U	3 U
MW-30	MW-30	12/21/2002		0.61 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.56 J	--	--	1 U	3 U
MW-30	MW-30	6/28/2003		0.79 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.62 J	--	--	1 U	3 U
MW-30	MW-30	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	6/2/2004		6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1	1 U	--	--	1 U	1 U	1 U	--	3.3	--	--	1 U	3 U
MW-30	MW-30	6/11/2004		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	11/2/2004		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.3	--	--	1 U	3 U
MW-30	MW-30	6/1/2005		1.3	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1	--	--	1 U	3 U
MW-30	MW-30	12/1/2005		0.44 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.42 J	--	--	1 U	3 U
MW-30	MW-30	7/18/2006		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.1	--	--	1 U	3 U
MW-30	MW-30	12/22/2006		0.61 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.56 J	--	--	1 U	3 U
MW-30	MW-30	6/29/2007		0.79 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.62 J	--	--	1 U	3 U
MW-30	MW-30	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	6/12/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	6/16/2009		0.68 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.5 J	--	--	1 U	2 U
MW-30	MW-30	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	3 U
MW-30	MW-30	7/1/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	6/20/2011		1.9 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	7/6/2012		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-30	MW-30	11/29/2012		1.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.94 J	--	--	1 U	1 U
MW-30	MW-30	6/3/2013		3.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.85 J	--	--	1 U	1 U
MW-30	MW-30	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-30	MW-30	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-30	MW-30	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-30	MW-30	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	1 U
MW-30	MW-30	12/10/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.72 J	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-31	MW-31	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	6/28/2003		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.8 J	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-31	MW-31	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	6/29/2007		--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.8 J	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-31	MW-31	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.7 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.4	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	12/16/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.6 J	2.5 J	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-31	MW-31	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.6	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-31	MW-31	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	11/29/2012		--	--	--	--	1 U	--	--	1 U	0.48 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	8/31/2016		--	--	--	--	1 U	--	--	1 UJ	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-31	MW-31	8/23/2017		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	4/17/2018		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	4/17/2019		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	4/28/2020		--	--	--	--	2 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-31	MW-31	7/20/2021		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-31	MW-31	3/28/2024		--	--	--	--	2.5 U	0.50 U	1.5 U	2.5 U	0.50 U	2.5 U	2.5 U	2.5 U	2.0 U	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	0.50 U	0.50 U	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U
MW-31	WG-12595756-082725-IM-005	8/27/2025		--	--	--	--	2.5 U	0.50 U	1.5 UJ	2.5 UJ	0.50 U	2.5 UJ	2.5 UJ	2.5 U	2.0 UJ	2.5 U	0.50 U	--	1.0 UJ	2.5 U	2.5 U	250 UJ	6.7 J	5.0 U	5.0 UJ	16	0.50 U	0.50 UJ	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 UJ	2.5 U	2.5 UJ	2.5 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-31	MW-31	11/30/2001		99	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	1 U	1 U	8.2	--	48	--	--	1 U	3 U
MW-31	MW-31	7/18/2002		96	--	1 U	--	--	1 U	1 U	--	--	1 U	1	1 U	1 U	--	--	1 U	1 U	7	--	34	--	--	1 U	3 U
MW-31	MW-31	12/21/2002		120 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	7.7	--	40	--	--	1 U	3 U
MW-31	MW-31	6/28/2003		92	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	7.8	--	32	--	--	2 U	6 U
MW-31	MW-31	12/19/2003		91	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	6	--	33	--	--	1 U	3 U
MW-31	MW-31	6/11/2004		93 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	5.5	--	28	--	--	1 U	3 U
MW-31	MW-31	12/1/2005		99	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	1 U	1 U	8.2	--	48	--	--	1 U	3 U
MW-31	MW-31	7/19/2006		96	--	1 U	--	--	1 U	1 U	--	--	1 U	1	1 U	1 U	--	--	1 U	1 U	7	--	34	--	--	1 U	3 U
MW-31	MW-31	12/22/2006		120 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	7.7	--	40	--	--	1 U	3 U
MW-31	MW-31	6/29/2007		92	--	2 U	--	--	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	--	2 U	2 U	7.8	--	32	--	--	2 U	6 U
MW-31	MW-31	12/20/2007		91	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	6	--	33	--	--	1 U	3 U
MW-31	MW-31	6/12/2008		93 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	5.5	--	28	--	--	1 U	3 U
MW-31	MW-31	12/29/2008		40	--	1 U	--	--	1 U	1 U	--	--	1 U	0.55 J	1 U	1 U	--	--	1 U	1 U	1.1	--	10	--	--	1 U	3 U
MW-31	MW-31	6/16/2009		89	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	5.1	--	24	--	--	1 U	2 U
MW-31	MW-31	1/7/2010		104	--	10 U	--	--	1 U	1 U	--	--	10 U	1	1 U	2 U	--	--	1 U	1 U	1 UJ	--	18.7	--	--	1 U	3 U
MW-31	MW-31	3/31/2010		30	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.3	--	3	--	--	1 U	3 U
MW-31	MW-31	7/1/2010		108	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	11.1	--	6.2	--	--	1 U	3 U
MW-31	MW-31	9/21/2010		99.4	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	4.4	--	4.6	--	--	1.2	3 U
MW-31	MW-31	12/16/2010		43.4	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	2	--	1.5	--	--	1 U	3 U
MW-31	MW-31	3/28/2011		5.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-31	MW-31	6/20/2011		76.8 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	4 J	--	2.4 J	--	--	1.8 J	3 U
MW-31	MW-31	10/3/2011		40.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	2.1	--	1.9	--	--	2.2	3 U
MW-31	MW-31	12/15/2011		96.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	3.9	--	1.3	--	--	3.2	3 U
MW-31	MW-31	7/6/2012		74.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	3.7	--	4.5	--	--	1 U	3 U
MW-31	MW-31	11/29/2012		88.6	--	5 U	--	--	1 U	5 U	--	--	5 U	2.4	2 U	5 U	--	--	0.49 J	1 U	3.8	--	2.5	--	--	2.2	1 U
MW-31	MW-31	6/3/2013		81.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	2.7	--	2.1	--	--	0.78 J	1 U
MW-31	MW-31	12/23/2013		41.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-31	MW-31	5/27/2014		54.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	2.3	--	1.5	--	--	2.4	1 U
MW-31	MW-31	12/23/2014		56.8	--	5 U	--	--	1 U	5 U	--	--	5 U	0.32 J	2 U	5 UJ	--	--	1 U	1 U	1.8	--	0.81 J	--	--	1.2	1 U
MW-31	MW-31	6/26/2015		43	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	4.5 J	--	1.4	--	--	0.91 J	1 U
MW-31	MW-31	12/10/2015		66.6	--	5 U	--	--	1 U	5 U	--	--	5 U	0.36 J	2 U	5 U	--	--	1 U	1 U	1.6	--	1	--	--	1.5	1 U
MW-31	MW-31	8/31/2016		60.1	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	2.6	--	1.2	--	--	1 U	1 U
MW-31	MW-31	8/23/2017		62.0	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	2.7	--	2.3	--	--	0.86 J	1 U
MW-31	MW-31	4/17/2018		13.4	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	0.41 J	--	1.4	--	--	1.2	1 U
MW-31	MW-31	4/17/2019		37.9	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	0.92 J	--	1.7	--	--	1 U	1 U
MW-31	MW-31	4/28/2020		9.2	--	5 U	--	--	2 U	2 U	--	--	6 U	2 U	3 U	6 U	--	--	2 U	2 U	1 U	--	0.74 J	--	--	1 U	1 U
MW-31	MW-31	7/20/2021		60.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6	--	1.5	--	--	1.0 U	--
MW-31	MW-31	3/28/2024		12	0.50 U	10 U	0.50 U	5.0 UJ	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	1.6	2.5 UJ	2.5 U	1.0 UJ	--
MW-31	WG-12595756-082725-IM-005	8/27/2025		50 J	0.50 UJ	10 U	0.50 UJ	5.0 U	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	1.0 J	0.50 U	0.55 J	2.5 U	2.5 U	0.36 J	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-32	MW-32	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	7/19/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	0.93 J
MW-32	MW-32 (DUP)	7/19/2002	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.3	1 U	--	--	1 UJ	--	--	--	--	1 U	1 U
MW-32	MW-32	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	7/20/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	0.93 J
MW-32	MW-32~DUP	7/20/2006	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.3	1 U	--	--	1 UJ	--	--	--	--	1 U	1 U
MW-32	MW-32	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	27	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.6 U	--	--	--	--	1 U	1 U
MW-32	MW-32	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.1	1 U	--	--	**8.5**	--	--	--	--	1 U	1 U
MW-32	MW-32	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32~DUP	9/21/2010	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.3	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.7	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.7 J	1 U	--	--	1 UR	--	--	--	--	1 U	1 U
MW-32	MW-32	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.8	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 UJ	--	--	--	--	1 U	1 U
MW-32	MW-32	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	1 U
MW-32	MW-32	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32~DUP	12/23/2013	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32	8/31/2016		--	--	--	--	1 U	--	--	1 UJ	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	2 U
MW-32	MW-32	8/23/2017		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	1 U
MW-32	MW-32	4/28/2020		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	1 U
MW-32	MW-32	7/20/2021		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-32	MW-32	3/28/2024		--	--	--	--	2.5 U	0.50 U	1.5 U	2.5 U	0.50 U	2.5 U	2.5 U	2.5 U	2.0 U	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	0.50 U	0.50 U	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U
MW-32	WG-12595756-082725-IM-004	8/27/2025		--	--	--	--	2.5 U	0.50 U	1.5 UJ	2.5 UJ	0.50 U	2.5 UJ	2.5 UJ	2.5 U	2.0 UJ	2.5 U	0.50 U	--	1.0 UJ	2.5 U	2.5 U	250 UJ	6.3	5.0 U	5.0 UJ	15	0.50 U	0.50 UJ	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 UJ	2.5 U	2.5 UJ	2.5 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-32	MW-32	11/30/2001		91	--	1 U	--	--	1 U	1 U	--	--	1 UJ	2.5	1 U	1 UJ	--	--	1 U	1 U	5.7	--	75	--	--	1 U	3 U
MW-32	MW-32	7/19/2002		91	--	1 U	--	--	1 U	1 U	--	--	1 U	0.98 J	1 U	1 U	--	--	1 U	1 U	6.7	--	80	--	--	1 U	3 U
MW-32	MW-32 (DUP)	7/19/2002	Duplicate	86	--	1 U	--	--	1 U	1 U	--	--	1 U	0.9 J	1 U	1 U	--	--	1 U	1 U	6	--	74	--	--	1 U	3 U
MW-32	MW-32	12/21/2002		84	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	5.7	--	71	--	--	1 U	3 U
MW-32	MW-32	6/28/2003		80	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	6.1	--	68	--	--	1 U	3 U
MW-32	MW-32	12/19/2003		7.9	--	1 U	--	--	1 U	1 U	--	--	1 U	0.75 J	1 U	1 U	--	--	1 U	1 U	1 U	--	11	--	--	1 U	3 U
MW-32	MW-32	6/11/2004		89	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	5.8	--	65	--	--	1 U	3 U
MW-32	MW-32	12/1/2005		91	--	1 U	--	--	1 U	1 U	--	--	1 UJ	2.5	1 U	1 UJ	--	--	1 U	1 U	5.7	--	75	--	--	1 U	3 U
MW-32	MW-32	7/20/2006		91	--	1 U	--	--	1 U	1 U	--	--	1 U	0.98 J	1 U	1 U	--	--	1 U	1 U	6.7	--	80	--	--	1 U	3 U
MW-32	MW-32~DUP	7/20/2006	Duplicate	86	--	1 U	--	--	1 U	1 U	--	--	1 U	0.9 J	1 U	1 U	--	--	1 U	1 U	6	--	74	--	--	1 U	3 U
MW-32	MW-32	12/22/2006		84	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	5.7	--	71	--	--	1 U	3 U
MW-32	MW-32	6/29/2007		80	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	6.1	--	68	--	--	1 U	3 U
MW-32	MW-32	12/20/2007		7.9	--	1 U	--	--	1 U	1 U	--	--	1 U	0.75 J	1 U	1 U	--	--	1 U	1 U	1 U	--	11	--	--	1 U	3 U
MW-32	MW-32	6/12/2008		89	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	5.8	--	65	--	--	1 U	3 U
MW-32	MW-32	12/29/2008		2.5	--	1 U	--	--	1 U	1 UJ	--	--	1 U	0.36 J	1 U	1 U	--	--	1 U	1 U	1 U	--	3.5	--	--	1 U	3 U
MW-32	MW-32	6/16/2009		69	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	4.6	--	57	--	--	1 U	2 U
MW-32	MW-32	1/7/2010		99	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	6.9	--	--	1.8	3 U
MW-32	MW-32	3/31/2010		30.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.1	--	--	1 U	3 U
MW-32	MW-32	7/1/2010		136	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	10.3	--	1 U	--	--	3.4	3 U
MW-32	MW-32	9/21/2010		13.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	4	--	1 U	--	--	14	3 U
MW-32	MW-32~DUP	9/21/2010	Duplicate	12.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	4.1	--	1 U	--	--	13.7	3 U
MW-32	MW-32	12/17/2010		2.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.9	--	1 U	--	--	2.4	3 U
MW-32	MW-32	3/28/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.5	--	1 U	--	--	1 U	3 U
MW-32	MW-32	6/20/2011		38.8 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	3.4 J	--	9.5 J	--	--	12.1 J	3 U
MW-32	MW-32	10/3/2011		2.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-32	MW-32	12/15/2011		46	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	3.3	--	1.6	--	--	13.7	3 U
MW-32	MW-32	7/6/2012		79.9	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	3.4	--	1	--	--	11.7	3 U
MW-32	MW-32	11/29/2012		67.3	--	5 U	--	--	1 U	5 U	--	--	5 U	0.47 J	2 U	5 U	--	--	1 U	1 U	2.9	--	1 U	--	--	13.4	1 U
MW-32	MW-32	6/3/2013		32.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.1	--	1 U	--	--	4.7	1 U
MW-32	MW-32	12/23/2013		12	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.5	1 U
MW-32	MW-32~DUP	12/23/2013	Duplicate	38.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.5	--	0.51 J	--	--	14.4	1 U
MW-32	MW-32	12/23/2014		7.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-32	MW-32	6/26/2015		55.6	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	5.2 J	--	0.75 J	--	--	7.5	1 U
MW-32	MW-32	12/10/2015		82.8	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1.6	--	1 U	--	--	8.9	1 U
MW-32	MW-32	8/31/2016		79.3	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	2.1	--	1 U	--	--	7.1	1 U
MW-32	MW-32	8/23/2017		67.7	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.6	--	1 U	--	--	5.6	1 U
MW-32	MW-32	4/28/2020		19.9	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	3.3	1 U
MW-32	MW-32	7/20/2021		66.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	--	1.0 U	--	--	7	--
MW-32	MW-32	3/28/2024		8.9	0.50 U	10 U	0.50 U	5.0 UJ	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.50 U	2.5 UJ	2.5 U	5.3 J	--
MW-32	WG-12595756-082725-IM-004	8/27/2025		51 J	0.50 UJ	10 U	0.50 UJ	5.0 U	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	0.88 J	0.50 U	0.50 UJ	2.5 U	2.5 U	5.6	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-33	MW-33	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33 (DUP)	7/18/2002	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3 J	1 U	--	--	1 U	--	--	--	--	1 U	--	0.96 J
MW-33	MW-33	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.51 J	--	--	--	--	1 U	--	1 U
MW-33	MW-33	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-33	MW-33	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33~DUP	7/19/2006	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3 J	1 U	--	--	1 U	--	--	--	--	1 U	--	0.96 J
MW-33	MW-33	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.51 J	--	--	--	--	1 U	--	1 U
MW-33	MW-33	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-33	MW-33	5/1/2008		160	0.33	0.18	1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-33	MW-33	5/1/2008		--	--	--	--	1.0 U	--	--	1.0 U	1.0 U	--	1.0 U	--	--	1.0 U	--	--	--	--	--	--	--	5.0 U	--	--	5.0 U	1.0 U	--	--	--	--	--	1.0 U	--	1.0 U	--	--
MW-33	MW-33	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	2.7 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.5	1 U	--	--	7.3	--	--	--	--	1 U	--	1 U
MW-33	MW-33	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.3	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22.5 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-33	MW-33	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.7	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-33	MW-33	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-33	MW-33	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33~DUP	12/23/2013	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33~DUP	5/27/2014	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-33	MW-33	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 UJ

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-33	MW-33	11/30/2001		7	--	1 U	--	--	1 U	1 U	--	--	1 UJ	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-33	MW-33	7/18/2002		23	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.79 J	--	10	--	--	1 U	3 U
MW-33	MW-33 (DUP)	7/18/2002	Duplicate	24	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.68 J	--	10	--	--	1 U	3 U
MW-33	MW-33	12/21/2002		13	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6	--	--	1 U	3 U
MW-33	MW-33	6/28/2003		18	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	8.3	--	--	1 U	3 U
MW-33	MW-33	12/19/2003		9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	4	--	--	1 U	3 U
MW-33	MW-33	6/11/2004		19	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	6.5	--	--	1 U	3 U
MW-33	MW-33	12/1/2005		7	--	1 U	--	--	1 U	1 U	--	--	1 UJ	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-33	MW-33	7/19/2006		23	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.79 J	--	10	--	--	1 U	3 U
MW-33	MW-33~DUP	7/19/2006	Duplicate	24	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.68 J	--	10	--	--	1 U	3 U
MW-33	MW-33	12/22/2006		13	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6	--	--	1 U	3 U
MW-33	MW-33	6/29/2007		18	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	8.3	--	--	1 U	3 U
MW-33	MW-33	12/20/2007		9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	4	--	--	1 U	3 U
MW-33	MW-33	5/1/2008		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-33	MW-33	5/1/2008		5.8	--	1.0 U	--	--	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	--	3.1	--	--	1.0 U	3.0 U
MW-33	MW-33	6/12/2008		19	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6.5	--	--	1 U	3 U
MW-33	MW-33	12/29/2008		6.4	--	1 U	--	--	1 U	1 UJ	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.41 J	--	3.5	--	--	1 U	3 U
MW-33	MW-33	6/16/2009		16	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6	--	--	1 U	2 U
MW-33	MW-33	1/7/2010		19.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	3	--	--	1 U	3 U
MW-33	MW-33	3/31/2010		2.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-33	MW-33	7/1/2010		11.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	3.2	--	--	1 U	3 U
MW-33	MW-33	9/21/2010		8.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-33	MW-33	12/17/2010		1.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1.1	--	--	1 U	3 U
MW-33	MW-33	3/28/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-33	MW-33	6/20/2011		2.5 J	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1.8 J	--	--	1 U	3 U
MW-33	MW-33	10/3/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-33	MW-33	12/15/2011		2.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-33	MW-33	7/6/2012		5.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.8	--	--	1 U	3 U
MW-33	MW-33	11/29/2012		2.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.2	--	--	1 U	1 U
MW-33	MW-33	6/3/2013		3.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.9	--	--	1 U	1 U
MW-33	MW-33	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 UJ	1 U
MW-33	MW-33~DUP	12/23/2013	Duplicate	1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-33	MW-33	5/27/2014		1.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.4	--	--	1 U	1 U
MW-33	MW-33~DUP	5/27/2014	Duplicate	1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.4	--	--	1 U	1 U
MW-33	MW-33	12/23/2014		2.3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1.5	--	--	1 U	1 U
MW-33	MW-33	6/26/2015		2.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	1 UJ	--	1.6	--	--	1 U	1 U
MW-33	MW-33	12/10/2015		3.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.5	--	--	1 U	1 U
MW-33	MW-33	8/31/2016		4.4	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	2.2	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-34	MW-34	11/30/2001		--	--	--	--	1.1	--	--	0.82 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	7/19/2002		--	--	--	--	1.2	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/21/2002		--	--	--	--	0.7 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34(DUP)	12/21/2002	Duplicate	--	--	--	--	0.88 J	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	6/28/2003		--	--	--	--	0.6 J	--	--	0.75 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34(DUP)	6/28/2003	Duplicate	--	--	--	--	0.61 J	--	--	0.78 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/19/2003		--	--	--	--	0.74 J	--	--	0.55 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.1	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-34	MW-34	6/11/2004		--	--	--	--	0.6 J	--	--	0.75 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34(DUP)	6/11/2004	Duplicate	--	--	--	--	0.58 J	--	--	0.55 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/1/2005		--	--	--	--	1.1	--	--	0.82 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	7/20/2006		--	--	--	--	1.2	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/22/2006		--	--	--	--	0.7 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34~DUP	12/22/2006	Duplicate	--	--	--	--	0.88 J	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	6/29/2007		--	--	--	--	0.6 J	--	--	0.75 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34~DUP	6/29/2007	Duplicate	--	--	--	--	0.61 J	--	--	0.78 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/20/2007		--	--	--	--	0.74 J	--	--	0.55 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.1	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-34	MW-34	6/12/2008		--	--	--	--	0.6 J	--	--	0.75 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34~DUP	6/12/2008	Duplicate	--	--	--	--	0.58 J	--	--	0.55 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.7 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	6/16/2009		--	--	--	--	0.42 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.1 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	1/7/2010		--	--	--	--	1 U	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.1	1 U	--	--	**7.4**	--	--	--	--	1 U	--	1 U
MW-34	MW-34~DUP	3/31/2010	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.2	1 U	--	--	**7.1**	--	--	--	--	1 U	--	1 U
MW-34	MW-34	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.8	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.5 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-34	MW-34	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	26.8	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.9	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-34	MW-34~DUP	12/15/2011	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.2	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-34	MW-34	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.4 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34	6/4/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.5 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34	12/23/2013		--	--	--	--	1 U	--	--	0.39 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34	12/10/2015		--	--	--	--	1 U	--	--	0.64 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34~DUP	12/10/2015	Duplicate	--	--	--	--	1 U	--	--	0.59 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-34	MW-34	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 UJ	--	2 UJ
MW-34	MW-34	8/23/2017		--	--	--	--	1 U	--	--	0.39 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	4/28/2020		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
MW-34	MW-34	7/20/2021		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-34	MW-34	3/28/2024		--	--	--	--	2.5 U	0.50 U	1.5 U	2.5 U	0.50 U	2.5 U	2.5 U	2.5 U	2.0 U	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	0.50 U	0.50 U	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U
MW-34	WG-12595756-082725-IM-001	8/27/2025		--	--	--	--	2.5 U	0.50 U	1.5 UJ	2.5 UJ	0.50 U	2.5 UJ	2.5 UJ	2.5 U	2.0 UJ	2.5 U	0.50 U	--	1.0 UJ	2.5 U	2.5 U	250 UJ	6.9	5.0 U	5.0 UJ	16	0.50 U	0.50 UJ	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 UJ	2.5 U	2.5 UJ	2.5 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-34	MW-34	11/30/2001		110 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1.4	1 U	1 U	--	--	1 U	1 U	0.67 J	--	16	--	--	63	3 U
MW-34	MW-34	7/19/2002		51	--	1 U	--	--	1 U	1 U	--	--	1 U	4.7	1 U	1 U	--	--	1 U	1 U	1 U	--	12	--	--	16	3 U
MW-34	MW-34	12/21/2002		84	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.7 J	--	8.3	--	--	40	3 U
MW-34	MW-34(DUP)	12/21/2002	Duplicate	81	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.76 J	--	9.9	--	--	42	3 U
MW-34	MW-34	6/28/2003		98	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	1 U	1 U	0.79 J	--	7.9	--	--	34	3 U
MW-34	MW-34(DUP)	6/28/2003	Duplicate	98	--	1 U	--	--	1 U	1 U	--	--	1 U	2.3	1 U	1 U	--	--	1 U	1 U	0.72 J	--	7.5	--	--	32	3 U
MW-34	MW-34	12/19/2003		100 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.59 J	--	7.8	--	--	55	3 U
MW-34	MW-34	6/11/2004		140 D	--	1 U	--	--	1 U	1 U	--	--	1 U	0.83 J	1 U	1 UJ	--	--	1 U	1 U	0.97 J	--	7	--	--	78	3 U
MW-34	MW-34(DUP)	6/11/2004	Duplicate	160 D	--	1 U	--	--	1 U	1 U	--	--	1 U	0.83 J	1 U	1 UJ	--	--	1 U	1 U	0.96 J	--	6.5	--	--	69	3 U
MW-34	MW-34	12/1/2005		110 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1.4	1 U	1 U	--	--	1 U	1 U	0.67 J	--	16	--	--	63	3 U
MW-34	MW-34	7/20/2006		51	--	1 U	--	--	1 U	1 U	--	--	1 U	4.7	1 U	1 U	--	--	1 U	1 U	1 U	--	12	--	--	16	3 U
MW-34	MW-34	12/22/2006		84	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.7 J	--	8.3	--	--	40	3 U
MW-34	MW-34~DUP	12/22/2006	Duplicate	81	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.76 J	--	9.9	--	--	42	3 U
MW-34	MW-34	6/29/2007		98	--	1 U	--	--	1 U	1 U	--	--	1 U	2.4	1 U	1 U	--	--	1 U	1 U	0.79 J	--	7.9	--	--	34	3 U
MW-34	MW-34~DUP	6/29/2007	Duplicate	98	--	1 U	--	--	1 U	1 U	--	--	1 U	2.3	1 U	1 U	--	--	1 U	1 U	0.72 J	--	7.5	--	--	32	3 U
MW-34	MW-34	12/20/2007		100 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.59 J	--	7.8	--	--	55	3 U
MW-34	MW-34	6/12/2008		140 D	--	1 U	--	--	1 U	1 U	--	--	1 U	0.83 J	1 U	1 U	--	--	1 U	1 U	0.97 J	--	7	--	--	78	3 U
MW-34	MW-34~DUP	6/12/2008	Duplicate	160 D	--	1 U	--	--	1 U	1 U	--	--	1 U	0.83 J	1 U	1 U	--	--	1 U	1 U	0.96 J	--	6.5	--	--	69	3 U
MW-34	MW-34	12/29/2008		41	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	11	--	--	8.8	3 U
MW-34	MW-34	6/16/2009		100 D	--	1 U	--	--	1 U	1 U	--	--	1 U	0.41 J	1 U	1 U	--	--	1 U	1 U	0.7 J	--	7.3	--	--	52	2 U
MW-34	MW-34	1/7/2010		13.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	1 U	--	--	16.1	3 U
MW-34	MW-34	3/31/2010		1.9	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.1	3 U
MW-34	MW-34~DUP	3/31/2010	Duplicate	1.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.2	3 U
MW-34	MW-34	7/1/2010		1.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2.4	--	--	1 U	1 U	7.2	--	1 U	--	--	1 U	3 U
MW-34	MW-34	9/21/2010		1.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-34	MW-34	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-34	MW-34	3/28/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-34	MW-34	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	3.2 J	3 U
MW-34	MW-34	10/3/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-34	MW-34	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-34	MW-34~DUP	12/15/2011	Duplicate	1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-34	MW-34	7/6/2012		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	2.6	3 U
MW-34	MW-34	11/29/2012		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-34	MW-34	6/4/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.64 J	--	--	1 U	1 U
MW-34	MW-34	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-34	MW-34	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	3.1	1 U
MW-34	MW-34	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-34	MW-34	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	1 U
MW-34	MW-34	12/10/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-34	MW-34~DUP	12/10/2015	Duplicate	1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-34	MW-34	8/31/2016		0.52 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.3	1 U
MW-34	MW-34	8/23/2017		1 U	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.98 J	1 U
MW-34	MW-34	4/28/2020		1 U	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-34	MW-34	7/20/2021		1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	1.0 U	--	--	1.0 U	--
MW-34	MW-34	3/28/2024		2.5 U	0.50 U	10 U	0.50 U	5.0 UJ	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.50 U	2.5 UJ	2.5 U	0.53 J	--
MW-34	WG-12595756-082725-IM-001	8/27/2025		2.5 UJ	0.50 UJ	10 U	0.50 UJ	5.0 U	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.19 J	2.5 U	2.5 U	0.36 J	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-35	MW-35	11/30/2001		--	--	--	--	2.4	--	--	4.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35(DUP)	11/30/2001	Duplicate	--	--	--	--	2.3	--	--	4.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	7/19/2002		--	--	--	--	1.4	--	--	2.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/21/2002		--	--	--	--	1.1	--	--	2.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	6/28/2003		--	--	--	--	0.87 J	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/19/2003		--	--	--	--	1.1	--	--	3.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.2	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-35	MW-35	6/11/2004		--	--	--	--	0.82 J	--	--	2.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/1/2005		--	--	--	--	2.4	--	--	4.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35~DUP	12/1/2005	Duplicate	--	--	--	--	2.3	--	--	4.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	7/20/2006		--	--	--	--	1.4	--	--	2.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/22/2006		--	--	--	--	1.1	--	--	2.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	6/29/2007		--	--	--	--	0.87 J	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/20/2007		--	--	--	--	1.1	--	--	3.6	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.2	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-35	MW-35	6/12/2008		--	--	--	--	0.82 J	--	--	2.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/29/2008		--	--	--	--	1 U	--	--	1.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	31	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	6/16/2009		--	--	--	--	0.64 J	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	1/7/2010		--	--	--	--	1 U	--	--	1.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	2.8 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	7/1/2010		--	--	--	--	1 U	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.8 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.5 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-35	MW-35	10/3/2011		--	--	--	--	1 U	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20.6	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-35	MW-35	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-35	MW-35	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-35	MW-35	6/4/2013		--	--	--	--	1 U	--	--	0.54 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-35	MW-35	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-35	MW-35	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-35	MW-35	12/23/2014		--	--	--	--	0.47 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-35	MW-35	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-35	MW-35	12/10/2015		--	--	--	--	1.2	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	1.2 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-35	MW-35	11/30/2001		5.7	--	1 U	--	--	1 U	1 U	--	--	1 UJ	28	1 U	1 UJ	--	--	1 U	1 U	1 U	--	5.7	--	--	2	1.1 BJ
MW-35	MW-35(DUP)	11/30/2001	Duplicate	5.9	--	1 U	--	--	1 U	1 U	--	--	1 UJ	28	1 U	1 UJ	--	--	1 U	1 U	1 U	--	5.6	--	--	1.7	3 U
MW-35	MW-35	7/19/2002		2.2	--	1 U	--	--	1 U	1 U	--	--	1 U	12	1 U	1 U	--	--	1 U	1 U	1 U	--	4.3	--	--	1 U	3 U
MW-35	MW-35	12/21/2002		3.5	--	1 U	--	--	1 U	1 U	--	--	1 U	0.7 J	1 U	1 U	--	--	1 U	1 U	1 U	--	4.2	--	--	1	3 U
MW-35	MW-35	6/28/2003		1.2	--	1 U	--	--	1 U	1 U	--	--	1 U	6.7	1 U	1 U	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-35	MW-35	12/19/2003		3.2	--	1 U	--	--	1 U	1 U	--	--	1 U	9.4	1 U	1 U	--	--	1 U	1 U	1 U	--	3.8	--	--	0.63 J	3 U
MW-35	MW-35	6/11/2004		3.9	--	1 U	--	--	1 U	1 U	--	--	1 U	5.2	1 U	1 UJ	--	--	1 U	1 U	1 U	--	3.4	--	--	0.66 J	3 U
MW-35	MW-35	12/1/2005		5.7	--	1 U	--	--	1 U	1 U	--	--	1 UJ	28	1 U	1 UJ	--	--	1 U	1 U	1 U	--	5.7	--	--	2	1.1 BJ
MW-35	MW-35~DUP	12/1/2005	Duplicate	5.9	--	1 U	--	--	1 U	1 U	--	--	1 UJ	28	1 U	1 UJ	--	--	1 U	1 U	1 U	--	5.6	--	--	1.7	3 U
MW-35	MW-35	7/20/2006		2.2	--	1 U	--	--	1 U	1 U	--	--	1 U	12	1 U	1 U	--	--	1 U	1 U	1 U	--	4.3	--	--	1 U	3 U
MW-35	MW-35	12/22/2006		3.5	--	1 U	--	--	1 U	1 U	--	--	1 U	0.7 J	1 U	1 U	--	--	1 U	1 U	1 U	--	4.2	--	--	1	3 U
MW-35	MW-35	6/29/2007		1.2	--	1 U	--	--	1 U	1 U	--	--	1 U	6.7	1 U	1 U	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-35	MW-35	12/20/2007		3.2	--	1 U	--	--	1 U	1 U	--	--	1 U	9.4	1 U	1 U	--	--	1 U	1 U	1 U	--	3.8	--	--	0.63 J	3 U
MW-35	MW-35	6/12/2008		3.9	--	1 U	--	--	1 U	1 U	--	--	1 U	5.2	1 U	1 U	--	--	1 U	1 U	1 U	--	3.4	--	--	0.66 J	3 U
MW-35	MW-35	12/29/2008		2.1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2.4	--	--	1 U	3 U
MW-35	MW-35	6/16/2009		1.8	--	1 U	--	--	1 U	1 U	--	--	1 U	0.75 J	1 U	1 U	--	--	1 U	1 U	1 U	--	3.4	--	--	1 U	2 U
MW-35	MW-35	1/7/2010		4.9	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 UJ	--	3.5	--	--	1 U	3 U
MW-35	MW-35	3/31/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1.9	--	--	1 U	3 U
MW-35	MW-35	7/1/2010		3.9	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	3.4	--	--	1 U	3 U
MW-35	MW-35	9/21/2010		2.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	3.8	--	--	1 U	3 U
MW-35	MW-35	12/17/2010		2.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-35	MW-35	3/28/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1	--	--	1 U	3 U
MW-35	MW-35	6/20/2011		3 J	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	3.2 J	--	--	1 U	3 U
MW-35	MW-35	10/3/2011		1.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-35	MW-35	12/15/2011		2.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-35	MW-35	7/6/2012		1.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-35	MW-35	11/29/2012		1.3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	3	--	--	1 U	1 U
MW-35	MW-35	6/4/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	2.3	--	--	1 U	1 U
MW-35	MW-35	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.65 J	--	--	1 U	1 U
MW-35	MW-35	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.4	--	--	1 U	1 U
MW-35	MW-35	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	2.1	--	--	1 U	1 U
MW-35	MW-35	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	2.4	--	--	1 U	1 U
MW-35	MW-35	12/10/2015		0.66 J	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	3.4	--	--	1 UJ	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-36	MW-36	11/30/2001		--	--	--	--	5.3	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	7/19/2002		--	--	--	--	2.8	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/21/2002		--	--	--	--	4.1	--	--	2.4	0.55 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.4	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	6/28/2003		--	--	--	--	2.7	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/19/2003		--	--	--	--	3.5	--	--	2.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36(DUP)	12/19/2003	Duplicate	--	--	--	--	3.7	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.7	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-36	MW-36	6/11/2004		--	--	--	--	2.3	--	--	1.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36(DUP)	6/11/2004	Duplicate	--	--	--	--	2.6	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.1 UJ	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/1/2005		--	--	--	--	5.3	--	--	3.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	7/20/2006		--	--	--	--	2.8	--	--	1.8	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/22/2006		--	--	--	--	4.1	--	--	2.4	0.55 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.4	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	6/29/2007		--	--	--	--	2.7	--	--	1.7	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/20/2007		--	--	--	--	3.5	--	--	2.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36~DUP	12/20/2007	Duplicate	--	--	--	--	3.7	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.7	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-36	MW-36	4/30/2008		27	0.76	0.051	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36	MW-36	5/1/2008		--	--	--	--	3.3	--	--	2.2	1.0 U	--	1.0 U	--	--	1.0 U	--	--	--	--	--	--	5.0 U	--	--	5.0 U	1.0 U	--	--	--	--	--	1.0 U	--	1.0 U	--	--
MW-36	MW-36	6/12/2008		--	--	--	--	2.3	--	--	1.9	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.7 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36~DUP	6/12/2008	Duplicate	--	--	--	--	2.6	--	--	2.4	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/29/2008		--	--	--	--	0.99 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	41	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	6/16/2009		--	--	--	--	2.2	--	--	1.5	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.4 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	1/7/2010		--	--	--	--	2.5	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.5	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.5	1 U	--	--	7.1	--	--	--	--	1 U	--	1 U
MW-36	MW-36	7/1/2010		--	--	--	--	1.7	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.2 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	6/20/2011		--	--	--	--	2.2 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.1 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-36	MW-36	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.2	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	12/15/2011		--	--	--	--	1.4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25.7	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-36	MW-36	7/6/2012		--	--	--	--	1.7	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-36	MW-36	11/29/2012		--	--	--	--	2.4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.3 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-36	MW-36	6/4/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.6 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-36	MW-36	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-36	MW-36	5/27/2014		--	--	--	--	1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-36	MW-36	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-36	MW-36	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-36	MW-36	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	1.1 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-36	MW-36	11/30/2001		6.6	--	1 U	--	--	1 U	1 U	--	--	1 UJ	26	1 U	1 UJ	--	--	0.45 J	1 U	1 U	--	13	--	--	1.8	3 U
MW-36	MW-36	7/19/2002		3.7	--	1 U	--	--	1 U	1 U	--	--	1 U	14	1 U	1 U	--	--	1 U	1 U	1 U	--	9.6	--	--	1 U	3 U
MW-36	MW-36	12/21/2002		5.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1.1	1 U	1 U	--	--	1 U	1 U	1 U	--	12	--	--	0.84 J	3 U
MW-36	MW-36	6/28/2003		3.2	--	1 U	--	--	1 U	1 U	--	--	1 U	6.6	1 U	1 U	--	--	1 U	1 U	1 U	--	9.2	--	--	0.94 J	3 U
MW-36	MW-36	12/19/2003		4.5	--	1 U	--	--	1 U	1 U	--	--	1 U	10	1 U	1 U	--	--	1 U	1 U	1 U	--	11	--	--	0.52 J	3 U
MW-36	MW-36(DUP)	12/19/2003	Duplicate	4.5	--	1 U	--	--	1 U	1 U	--	--	1 U	11	1 U	1 U	--	--	1 U	1 U	1 U	--	11	--	--	0.6 J	3 U
MW-36	MW-36	6/11/2004		2.6	--	1 U	--	--	1 U	1 U	--	--	1 U	4.6	1 U	1 UJ	--	--	1 U	1 U	1 U	--	8.2	--	--	0.78 J	3 U
MW-36	MW-36(DUP)	6/11/2004	Duplicate	3.2	--	1 U	--	--	1 U	1 U	--	--	1 U	5.1	1 U	1 UJ	--	--	1 U	1 U	1 U	--	8.4	--	--	0.91 J	3 U
MW-36	MW-36	12/1/2005		6.6	--	1 U	--	--	1 U	1 U	--	--	1 UJ	26	1 U	1 UJ	--	--	0.45 J	1 U	1 U	--	13	--	--	1.8	3 U
MW-36	MW-36	7/20/2006		3.7	--	1 U	--	--	1 U	1 U	--	--	1 U	14	1 U	1 U	--	--	1 U	1 U	1 U	--	9.6	--	--	1 U	3 U
MW-36	MW-36	12/22/2006		5.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1.1	1 U	1 U	--	--	1 U	1 U	1 U	--	12	--	--	0.84 J	3 U
MW-36	MW-36	6/29/2007		3.2	--	1 U	--	--	1 U	1 U	--	--	1 U	6.6	1 U	1 U	--	--	1 U	1 U	1 U	--	9.2	--	--	0.94 J	3 U
MW-36	MW-36	12/20/2007		4.5	--	1 U	--	--	1 U	1 U	--	--	1 U	10	1 U	1 U	--	--	1 U	1 U	1 U	--	11	--	--	0.52 J	3 U
MW-36	MW-36~DUP	12/20/2007	Duplicate	4.5	--	1 U	--	--	1 U	1 U	--	--	1 U	11	1 U	1 U	--	--	1 U	1 U	1 U	--	11	--	--	0.6 J	3 U
MW-36	MW-36	4/30/2008		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-36	MW-36	5/1/2008		3.1	--	1.0 U	--	--	1.0 U	1.0 U	--	--	1.0 U	7.6	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	--	9.8	--	--	0.54 J	3.0 U
MW-36	MW-36	6/12/2008		2.6	--	1 U	--	--	1 U	1 U	--	--	1 U	4.6	1 U	1 U	--	--	1 U	1 U	1 U	--	8.2	--	--	0.78 J	3 U
MW-36	MW-36~DUP	6/12/2008	Duplicate	3.2	--	1 U	--	--	1 U	1 U	--	--	1 U	5.1	1 U	1 U	--	--	1 U	1 U	1 U	--	8.4	--	--	0.91 J	3 U
MW-36	MW-36	12/29/2008		1.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	7.4	--	--	1 U	3 U
MW-36	MW-36	6/16/2009		2.7	--	1 U	--	--	1 U	1 U	--	--	1 U	0.65 J	1 U	1 U	--	--	1 U	1 U	1 U	--	9.4	--	--	0.88 J	2 U
MW-36	MW-36	1/7/2010		2.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	8.5	--	--	1 U	3 U
MW-36	MW-36	3/31/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-36	MW-36	7/1/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	7.1	--	--	1 U	3 U
MW-36	MW-36	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-36	MW-36	3/28/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-36	MW-36	6/20/2011		1.5 J	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	6.6 J	--	--	1 U	3 U
MW-36	MW-36	10/3/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
MW-36	MW-36	12/15/2011		1.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-36	MW-36	7/6/2012		1.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	7.4	--	--	1 U	3 U
MW-36	MW-36	11/29/2012		0.74 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	6.6	--	--	1 U	1 U
MW-36	MW-36	6/4/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-36	MW-36	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.2	--	--	1 U	1 U
MW-36	MW-36	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	4.1	--	--	1 U	1 U
MW-36	MW-36	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
MW-36	MW-36	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	1 U
MW-36	MW-36	12/10/2015		1 U	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	1 UJ	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-37	MW-37	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	7/19/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	2.9	--	--	--	--	1 U	--	1 U
MW-37	MW-37	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37(DUP)	6/28/2003	Duplicate	--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.2	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-37	MW-37	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	7/20/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	2.9	--	--	--	--	1 U	--	1 U
MW-37	MW-37	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37~DUP	6/29/2007	Duplicate	--	--	--	--	2 U	--	--	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	2 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.2	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-37	MW-37	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.9 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-37	MW-37	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.8	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-37	MW-37	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-37	MW-37	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37~DUP	12/23/2014	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-37	MW-37	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	1.1 J
MW-37	MW-37	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 UJ

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-37	MW-37	11/30/2001		50	--	1 U	--	--	1 U	1 U	--	--	1 U	0.51 J	1 U	1 U	--	--	1 U	1 U	2.4	--	81	--	--	1 U	3 U
MW-37	MW-37	7/19/2002		74	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.5	--	200 D	--	--	1.4	3 U
MW-37	MW-37	12/21/2002		51	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.6	--	63	--	--	1 U	3 U
MW-37	MW-37	6/28/2003		43	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 J	--	160	--	--	1 U	3 U
MW-37	MW-37(DUP)	6/28/2003	Duplicate	45	--	2 U	--	--	2 U	2 U	--	--	1.4 J	2 U	2 U	2 U	--	--	2 U	2 U	1 J	--	160	--	--	2 U	6 U
MW-37	MW-37	12/19/2003		47	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.2	--	59	--	--	1 U	3 U
MW-37	MW-37	6/11/2004		38	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1.5	--	65	--	--	1 U	3 U
MW-37	MW-37	12/1/2005		50	--	1 U	--	--	1 U	1 U	--	--	1 U	0.51 J	1 U	1 U	--	--	1 U	1 U	2.4	--	81	--	--	1 U	3 U
MW-37	MW-37	7/20/2006		74	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	3.5	--	200 D	--	--	1.4	3 U
MW-37	MW-37	12/22/2006		51	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.6	--	63	--	--	1 U	3 U
MW-37	MW-37	6/29/2007		43	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 J	--	160	--	--	1 U	3 U
MW-37	MW-37~DUP	6/29/2007	Duplicate	45	--	2 U	--	--	2 U	2 U	--	--	1.4 J	2 U	2 U	2 U	--	--	2 U	2 U	1 J	--	160	--	--	2 U	6 U
MW-37	MW-37	12/20/2007		47	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	2.2	--	59	--	--	1 U	3 U
MW-37	MW-37	6/12/2008		38	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.5	--	65	--	--	1 U	3 U
MW-37	MW-37	12/29/2008		57	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.8	--	230 DJ	--	--	1 U	3 U
MW-37	MW-37	6/16/2009		45	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.7	--	160 D	--	--	1 U	2 U
MW-37	MW-37	1/7/2010		46.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1.8	--	38.9	--	--	1 U	3 U
MW-37	MW-37	7/1/2010		50.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	7.2	--	213	--	--	1 U	3 U
MW-37	MW-37	12/17/2010		27.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1.7	--	100	--	--	1 U	3 U
MW-37	MW-37	6/20/2011		21.6 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 J	--	116 J	--	--	1 U	3 U
MW-37	MW-37	12/15/2011		12.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	53.2	--	--	1 U	3 U
MW-37	MW-37	7/6/2012		7.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	40.7	--	--	1 U	3 U
MW-37	MW-37	11/29/2012		7	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	47.2	--	--	1 U	1 U
MW-37	MW-37	6/3/2013		9.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	29.1	--	--	1 U	1 U
MW-37	MW-37	12/23/2013		6.3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	38.9	--	--	1 U	1 U
MW-37	MW-37	5/27/2014		8.6	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	43.6	--	--	1 U	1 U
MW-37	MW-37	12/23/2014		8.5	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	37.1	--	--	1 U	1 U
MW-37	MW-37~DUP	12/23/2014	Duplicate	8.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	37.5	--	--	1 U	1 U
MW-37	MW-37	6/26/2015		9.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	39.8	--	--	1 U	1 U
MW-37	MW-37	12/10/2015		14.3	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	110	--	--	1 UJ	1 U
MW-37	MW-37	8/31/2016		53.6	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	459	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-38	MW-38	11/30/2001		--	--	--	--	6	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	7/19/2002		--	--	--	--	5.4	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/21/2002		--	--	--	--	4.6	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	6/28/2003		--	--	--	--	5.7	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/19/2003		--	--	--	--	4.9	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.8	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-38	MW-38	6/11/2004		--	--	--	--	5.1	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/1/2005		--	--	--	--	6	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	7/20/2006		--	--	--	--	5.4	--	--	1.2	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/22/2006		--	--	--	--	4.6	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	6/29/2007		--	--	--	--	5.7	--	--	1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/20/2007		--	--	--	--	4.9	--	--	1.1	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.8	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-38	MW-38	4/30/2008		30	U	U	3.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-38	MW-938	4/30/2008	Duplicate	31	U	U	3.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-38	MW-38	5/1/2008		--	--	--	--	1.9	--	--	1.0 U	1.0 U	--	1.0 U	--	--	1.0 U	--	--	--	--	--	--	--	5.0 U	--	--	5.0 U	1.0 U	--	--	--	--	--	1.0 U	--	1.0 U	--	--
MW-38	MW-938	5/1/2008	Duplicate	--	--	--	--	1.9	--	--	1.0 U	1.0 U	--	1.0 U	--	--	1.0 U	--	--	--	--	--	--	--	5.0 U	--	--	5.0 U	1.0 U	--	--	--	--	--	1.0 U	--	1.0 U	--	--
MW-38	MW-38	6/12/2008		--	--	--	--	5.1	--	--	1.3	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/29/2008		--	--	--	--	2.2	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	6/16/2009		--	--	--	--	3.7	--	--	0.89 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.5	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	1/7/2010		--	--	--	--	4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	7/1/2010		--	--	--	--	3.4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/17/2010		--	--	--	--	3.1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	6/20/2011		--	--	--	--	3.1 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.3 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-38	MW-38	12/15/2011		--	--	--	--	2.7	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.4	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-38	MW-38	7/6/2012		--	--	--	--	2.7	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-38	MW-38	11/29/2012		--	--	--	--	4.1	--	--	0.66 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-38	MW-38	6/4/2013		--	--	--	--	2.9	--	--	0.62 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-38	MW-38	12/23/2013		--	--	--	--	1.5	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-38	MW-38	5/27/2014		--	--	--	--	2.6	--	--	0.54 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-38	MW-38	12/23/2014		--	--	--	--	2.3	--	--	0.35 J	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-38	MW-38	6/26/2015		--	--	--	--	2	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-38	MW-38	12/10/2015		--	--	--	--	3.1 J	--	--	0.64 J	0.59 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
MW-38	MW-38	8/31/2016		--	--	--	--	2.1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	38.1	0.5 U	--	--	2 U	--	--	--	--	2 U	--	1.2 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-38	MW-38	11/30/2001		0.54 J	--	1 U	--	--	1 U	1 U	--	--	1 U	35	1 U	1 U	--	--	1 U	1 U	1 U	--	19	--	--	1 U	3 U
MW-38	MW-38	7/19/2002		0.54 J	--	1 U	--	--	1 U	1 U	--	--	1 U	8	1 U	1 U	--	--	0.61 J	1 U	1 U	--	20	--	--	1 U	3 U
MW-38	MW-38	12/21/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1.4	1 U	1 U	--	--	0.52 J	1 U	1 U	--	15	--	--	1 U	3 U
MW-38	MW-38	6/28/2003		0.63 J	--	1 U	--	--	1 U	1 U	--	--	1 U	4	1 U	1 U	--	--	0.66 J	1 U	1 U	--	20	--	--	1 U	3 U
MW-38	MW-38	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	19	1 U	1 U	--	--	0.66 J	1 U	1 U	--	16	--	--	1 U	3 U
MW-38	MW-38	6/11/2004		0.59 J	--	1 U	--	--	1 U	1 U	--	--	1 U	5.8	1 U	1 UJ	--	--	0.57 J	1 U	1 U	--	17	--	--	1 U	3 U
MW-38	MW-38	12/1/2005		0.54 J	--	1 U	--	--	1 U	1 U	--	--	1 U	35	1 U	1 U	--	--	1 U	1 U	1 U	--	19	--	--	1 U	3 U
MW-38	MW-38	7/20/2006		0.54 J	--	1 U	--	--	1 U	1 U	--	--	1 U	8	1 U	1 U	--	--	0.61 J	1 U	1 U	--	20	--	--	1 U	3 U
MW-38	MW-38	12/22/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1.4	1 U	1 U	--	--	0.52 J	1 U	1 U	--	15	--	--	1 U	3 U
MW-38	MW-38	6/29/2007		0.63 J	--	1 U	--	--	1 U	1 U	--	--	1 U	4	1 U	1 U	--	--	0.66 J	1 U	1 U	--	20	--	--	1 U	3 U
MW-38	MW-38	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	19	1 U	1 U	--	--	0.66 J	1 U	1 U	--	16	--	--	1 U	3 U
MW-38	MW-38	4/30/2008		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-38	MW-938	4/30/2008	Duplicate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-38	MW-38	5/1/2008		1.0 U	--	1.0 U	--	--	1.0 U	1.0 U	--	--	1.0 U	0.77 J	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	--	2.9	--	--	1.0 U	3.0 U
MW-38	MW-938	5/1/2008	Duplicate	1.0 U	--	1.0 U	--	--	1.0 U	1.0 U	--	--	1.0 U	0.78 J	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	--	2.9	--	--	1.0 U	3.0 U
MW-38	MW-38	6/12/2008		0.59 J	--	1 U	--	--	1 U	1 U	--	--	1 U	5.8	1 U	1 U	--	--	0.57 J	1 U	1 U	--	17	--	--	1 U	3 U
MW-38	MW-38	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	4.2	1 U	1 U	--	--	1 U	1 U	1 U	--	4.4	--	--	1 U	3 U
MW-38	MW-38	6/16/2009		0.45 J	--	1 U	--	--	1 U	1 U	--	--	1 U	2.6	1 U	1 U	--	--	0.57 J	1 U	1 U	--	15	--	--	1 U	2 U
MW-38	MW-38	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	14	--	--	1 U	3 U
MW-38	MW-38	7/1/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	14.6	--	--	1 U	3 U
MW-38	MW-38	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	10.4	--	--	1 U	3 U
MW-38	MW-38	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	11 J	--	--	1 U	3 U
MW-38	MW-38	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	7.8	--	--	1 U	3 U
MW-38	MW-38	7/6/2012		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	9.6	--	--	1 U	3 U
MW-38	MW-38	11/29/2012		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	0.61 J	2 U	5 U	--	--	0.53 J	1 U	1 U	--	12.6	--	--	1 U	1 U
MW-38	MW-38	6/4/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	3.8	2 U	5 U	--	--	1 U	1 U	1 U	--	13.7	--	--	1 U	1 U
MW-38	MW-38	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	7.2	--	--	1 U	1 U
MW-38	MW-38	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	7.7	--	--	1 U	1 U
MW-38	MW-38	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	0.41 J	2 U	5 UJ	--	--	1 U	1 U	1 U	--	4	--	--	1 U	1 U
MW-38	MW-38	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	5.7	--	--	1 U	1 U
MW-38	MW-38	12/10/2015		1 U	--	5 U	--	--	1 U	5 UJ	--	--	5 U	1 U	2 U	10 UJ	--	--	1 U	1 U	1 U	--	10.1 J	--	--	1 UJ	1 U
MW-38	MW-38	8/31/2016		1 U	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	7.9	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
MW-39	MW-39	11/30/2001		--	--	--	--	2.8	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	7/19/2002		--	--	--	--	2.4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/21/2002		--	--	--	--	2.3	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	6/28/2003		--	--	--	--	2.1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/19/2003		--	--	--	--	2.1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-39	MW-39	6/11/2004		--	--	--	--	2.0	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 UJ	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/1/2005		--	--	--	--	2.8	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	7/20/2006		--	--	--	--	2.4	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/22/2006		--	--	--	--	2.3	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	6/29/2007		--	--	--	--	2.1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/20/2007		--	--	--	--	2.1	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
MW-39	MW-39	6/12/2008		--	--	--	--	2	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/29/2008		--	--	--	--	1.5	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	6/16/2009		--	--	--	--	1.9	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.4 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	1/7/2010		--	--	--	--	1.9	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.6	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	7/1/2010		--	--	--	--	1.6	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/17/2010		--	--	--	--	1.9	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
MW-39	MW-39	6/20/2011		--	--	--	--	1.9 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
MW-39	MW-39	12/15/2011		--	--	--	--	2.3	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.8	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
MW-39	MW-39	11/30/2001		1 U	--	1 U	--	--	1 U	1 U	--	--	1 UJ	5.4	1 U	1 UJ	--	--	1 U	1 U	1 U	--	4	--	--	1 U	3 U
MW-39	MW-39	7/19/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	0.53 J	1 U	1 U	--	--	1 U	1 U	1 U	--	4.1	--	--	1 U	3 U
MW-39	MW-39	12/21/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.6	--	--	1 U	3 U
MW-39	MW-39	6/28/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.5	--	--	1 U	3 U
MW-39	MW-39	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	3.8	1 U	1 U	--	--	1 U	1 U	1 U	--	3.5	--	--	1 U	3 U
MW-39	MW-39	6/11/2004		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1.1	1 U	1 UJ	--	--	1 U	1 U	1 U	--	2.9 J	--	--	1 U	3 U
MW-39	MW-39	12/1/2005		1 U	--	1 U	--	--	1 U	1 U	--	--	1 UJ	5.4	1 U	1 UJ	--	--	1 U	1 U	1 U	--	4	--	--	1 U	3 U
MW-39	MW-39	7/20/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	0.53 J	1 U	1 U	--	--	1 U	1 U	1 U	--	4.1	--	--	1 U	3 U
MW-39	MW-39	12/22/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.6	--	--	1 U	3 U
MW-39	MW-39	6/29/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.5	--	--	1 U	3 U
MW-39	MW-39	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	3.8	1 U	1 U	--	--	1 U	1 U	1 U	--	3.5	--	--	1 U	3 U
MW-39	MW-39	6/12/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1.1	1 U	1 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
MW-39	MW-39	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2.8	--	--	1 U	3 U
MW-39	MW-39	6/16/2009		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.3	--	--	1 U	2 U
MW-39	MW-39	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	3	--	--	1 U	3 U
MW-39	MW-39	7/1/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	3.1	--	--	1 U	3 U
MW-39	MW-39	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	3	--	--	1 U	3 U
MW-39	MW-39	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 UJ	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	3 J	--	--	1 U	3 U
MW-39	MW-39	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	2.8	--	--	1 U	3 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
P-3	P-3	6/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.34 J	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	11/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.34 J	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	5/31/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	19	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
P-3	P-3	7/19/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	1 U	--	--	0.71 BJ	--	--	--	--	1 U	--	1 U
P-3	P-3	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.4	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-3	P-3	6/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.34 J	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	11/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.34 J	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	7/20/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	1 U	--	--	0.71 BJ	--	--	--	--	1 U	--	1 U
P-3	P-3	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.4	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-3	P-3	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	7	--	--	--	--	1 U	--	1 U
P-3	P-3	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3~DUP	12/17/2010	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3~DUP	3/28/2011	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.7 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
P-3	P-3	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.3	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.4	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-3	P-3	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-3	P-3	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-3	P-3	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.1 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-3	P-3	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-3	P-3	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-3	P-3	6/26/2015		--	--	--	--	1 U	--	--	1 UJ	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
P-3	P-3	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
P-3	P-3	6/1/2000		13	--	1 U	--	--	1 U	1 U	--	--	1 U	0.6 J	1 U	1 U	--	--	1 U	1 U	0.32 J	--	8.5	--	--	2.2	3 U
P-3	P-3	11/1/2000		15	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.44 J	--	11	--	--	5	3 U
P-3	P-3	5/31/2001		9.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.3 J	--	7	--	--	2.9	3 U
P-3	P-3	11/30/2001		13	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6.8	--	--	3.2	3 U
P-3	P-3	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	6.5	--	--	U	U
P-3	P-3	7/19/2002		18	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6.9	--	--	10	3 U
P-3	P-3	12/21/2002		1.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.8	--	--	1 U	3 U
P-3	P-3	6/28/2003		0.84 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.3	--	--	1 U	3 U
P-3	P-3	12/19/2003		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	6/2/2004		13	--	1 U	--	--	1 U	1 U	--	--	1 U	0.6 J	1 U	1 U	--	--	1 U	1 U	0.32 J	--	8.5	--	--	2.2	3 U
P-3	P-3	6/11/2004		2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	2	--	--	1 U	3 U
P-3	P-3	11/2/2004		15	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.44 J	--	11	--	--	5	3 U
P-3	P-3	6/1/2005		9.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.3 J	--	7	--	--	2.9	3 U
P-3	P-3	12/1/2005		13	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6.8	--	--	3.2	3 U
P-3	P-3	7/20/2006		18	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	6.9	--	--	10	3 U
P-3	P-3	12/22/2006		1.9	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.8	--	--	1 U	3 U
P-3	P-3	6/29/2007		0.84 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.3	--	--	1 U	3 U
P-3	P-3	12/20/2007		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	6/12/2008		2	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2	--	--	1 U	3 U
P-3	P-3	12/29/2008		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	6/16/2009		1.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.95 J	--	--	1 U	2 U
P-3	P-3	1/7/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	9.4 UJ	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	3/31/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	7/1/2010		5.5	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	4.9	--	1 U	--	--	1	3 U
P-3	P-3	9/21/2010		5.8	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	4.8	--	--	1.2	3 U
P-3	P-3	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3~DUP	12/17/2010	Duplicate	1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	3/28/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3~DUP	3/28/2011	Duplicate	1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	10/3/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	7/6/2012		1.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-3	P-3	6/3/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
P-3	P-3	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
P-3	P-3	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
P-3	P-3	12/23/2014		0.86 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	0.72 J	--	--	1 U	1 U
P-3	P-3	6/26/2015		1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 UJ	--	1 U	--	--	1 U	1 U
P-3	P-3	12/10/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
P-8	P-8	6/1/2000		--	--	--	--	1 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	11/1/2000		--	--	--	--	25 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	5/31/2001		--	--	--	--	25 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	11/30/2001		--	--	--	--	25 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	710	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
P-8	P-8	7/20/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.66 J	--	--	1 U	--	--	--	--	1 U	--	1
P-8	P-8	12/21/2002		--	--	--	--	10 U	--	--	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	10 U	--	--	10 U	--	--	--	--	10 U	--	10 U
P-8	P-8	6/28/2003		--	--	--	--	10 U	--	--	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	10 U	--	--	6.4 BJ	--	--	--	--	10 U	--	10 U
P-8	P-8	12/19/2003		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 UJ	--	--	--	--	20 U	--	20 U
P-8	P-8	6/2/2004		--	--	--	--	1 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	6/11/2004		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
P-8	P-8	11/2/2004		--	--	--	--	25 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	6/1/2005		--	--	--	--	25 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	12/1/2005		--	--	--	--	25 U	--	--	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120 U	25 U	--	--	25 U	--	--	--	--	25 U	--	25 U
P-8	P-8	7/21/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.66 J	--	--	1 U	--	--	--	--	1 U	--	1
P-8	P-8	12/22/2006		--	--	--	--	10 U	--	--	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	10 U	--	--	10 U	--	--	--	--	10 U	--	10 U
P-8	P-8	6/29/2007		--	--	--	--	10 U	--	--	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	10 U	--	--	6.4 BJ	--	--	--	--	10 U	--	10 U
P-8	P-8	12/20/2007		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 UJ	--	--	--	--	20 U	--	20 U
P-8	P-8	4/30/2008		46	32	16	1400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
P-8	P-8	5/1/2008		--	--	--	--	10 U	--	--	10 U	1.0 U	--	1.0 U	--	--	1 U	--	--	--	--	--	--	--	5 U	--	--	5.0 U	10 U	--	--	--	--	--	1 U	--	1 U	--	--
P-8	P-8	6/12/2008		--	--	--	--	20 U	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100 U	20 U	--	--	20 U	--	--	--	--	20 U	--	20 U
P-8	P-8	12/29/2008		--	--	--	--	5 U	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	27	5 U	--	--	5 U	--	--	--	--	5 U	--	5 U
P-8	P-8	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	3/31/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	7.4	--	--	--	--	1 U	--	1 U
P-8	P-8	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.2 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	9/21/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	3/28/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.5	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.3 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
P-8	P-8	10/3/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.9	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	12/15/2011		--	--	--	--	1 U	--	--	1 U	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.7	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-8	P-8	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-8	P-8	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8~DUP	11/29/2012	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.1 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
P-8	P-8	6/1/2000		830	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	1 U	--	--	1 U	1 U	25 U	--	320	--	--	25	75 U
P-8	P-8	11/1/2000		730	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	25 U	--	--	25 U	25 U	25 U	--	260	--	--	27	75 U
P-8	P-8	5/31/2001		700	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	25 U	--	--	25 U	25 U	25 U	--	230	--	--	37	75 U
P-8	P-8	11/30/2001		1400	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	25 U	--	--	25 U	25 U	25 U	--	680	--	--	16 J	75 U
P-8	P-8	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	190	--	--	95	U
P-8	P-8	7/20/2002		840 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1.4	1 U	1 U	--	--	0.64 J	1 U	4.8	--	260 D	--	--	210 D	3 U
P-8	P-8	12/21/2002		1700 D	--	10 U	--	--	10 U	10 U	--	--	10 U	10 U	8.1 J	10 U	--	--	10 U	10 U	10 U	--	860	--	--	5.0 J	30 U
P-8	P-8	6/28/2003		900	--	10 U	--	--	10 U	10 U	--	--	10 U	10 U	12 B	10 U	--	--	10 U	10 U	6.6 J	--	210	--	--	9.3 J	30 U
P-8	P-8	12/19/2003		1400	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	32	20 U	--	--	20 U	20 U	20 U	--	460	--	--	20 U	60 U
P-8	P-8	6/2/2004		830	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	1 U	--	--	1 U	1 U	25 U	--	320	--	--	25	75 U
P-8	P-8	6/11/2004		1200	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 UJ	--	--	20 U	20 U	20 U	--	260	--	--	20 U	60 U
P-8	P-8	11/2/2004		730	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	25 U	--	--	25 U	25 U	25 U	--	260	--	--	27	75 U
P-8	P-8	6/1/2005		700	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	25 U	--	--	25 U	25 U	25 U	--	230	--	--	37	75 U
P-8	P-8	12/1/2005		1400	--	25 U	--	--	25 U	25 U	--	--	25 U	25 U	25 U	25 U	--	--	25 U	25 U	25 U	--	680	--	--	16 J	75 U
P-8	P-8	7/21/2006		840 D	--	1 U	--	--	1 U	1 U	--	--	1 U	1.4	1 U	1 U	--	--	0.64 J	1 U	4.8	--	260 D	--	--	210 D	3 U
P-8	P-8	12/22/2006		1700 D	--	10 U	--	--	10 U	10 U	--	--	10 U	10 U	8.1 J	10 U	--	--	10 U	10 U	10 U	--	860	--	--	5 J	30 U
P-8	P-8	6/29/2007		900	--	10 U	--	--	10 U	10 U	--	--	10 U	10 U	12 B	10 U	--	--	10 U	10 U	6.6 J	--	210	--	--	9.3 J	30 U
P-8	P-8	12/20/2007		1400	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	32	20 U	--	--	20 U	20 U	20 U	--	460	--	--	20 U	60 U
P-8	P-8	4/30/2008		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
P-8	P-8	5/1/2008		600	--	1 U	--	--	1.0 U	1.0 U	--	--	1.0 U	10 U	9.4 J	10 U	--	--	1.0 U	1.0 U	1.0 U	--	280	--	--	28	3.0 U
P-8	P-8	6/12/2008		1200	--	20 U	--	--	20 U	20 U	--	--	20 U	20 U	20 U	20 U	--	--	20 U	20 U	20 U	--	260	--	--	20 U	60 U
P-8	P-8	12/29/2008		360	--	5 U	--	--	5 U	5 U	--	--	5 U	5 U	5 U	5 U	--	--	5 U	5 U	2.6 J	--	220	--	--	5 U	15 U
P-8	P-8	6/16/2009		600 D	--	1 U	--	--	1 U	1 U	--	--	0.85 J	1 U	1 U	1 U	--	--	0.9 J	1 U	6.4	--	200 D	--	--	4.9	2 U
P-8	P-8	1/7/2010		224	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1.5	--	259	--	--	1.8	3 U
P-8	P-8	3/31/2010		75.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	359	--	--	1.8	3 U
P-8	P-8	7/1/2010		381	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	7.3	--	318	--	--	8.2	3 U
P-8	P-8	9/21/2010		572	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	2.5	--	8.3	--	--	49.3	3 U
P-8	P-8	12/17/2010		1010	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	3.9	--	284	--	--	50.9	3 U
P-8	P-8	3/28/2011		774	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	2.6	--	211	--	--	40.4	3 U
P-8	P-8	6/20/2011		901 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	4 J	--	38.7 J	--	--	52.8 J	3 U
P-8	P-8	10/3/2011		776	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	3.5	--	84.6	--	--	37	3 U
P-8	P-8	12/15/2011		1430	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	6.5	--	386	--	--	31.6	3 U
P-8	P-8	7/6/2012		1310	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	5.2	--	3.4	--	--	66	3 U
P-8	P-8	11/29/2012		536	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.2	--	15.4	--	--	87.8	1 U
P-8	P-8~DUP	11/29/2012	Duplicate	524	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1.1	--	15.1	--	--	87.6	1 U
P-8	P-8	6/3/2013		205	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	279	--	--	3	1 U
P-8	P-8	12/23/2013		202	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	193	--	--	0.93 J	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
P-8	P-8	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8	9/30/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.3 J	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8	12/22/2014		--	--	--	--	1 U	--	--	1 U	0.88 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.9	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8	3/19/2015		--	--	--	--	5 U	--	--	5 U	5 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 UJ	2.5 U	--	--	10 UJ	--	--	--	--	10 U	--	10 UJ
P-8	P-8~DUP	3/19/2015	Duplicate	--	--	--	--	1 U	--	--	1 U	1.4 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.3 J	0.5 U	--	--	2 UJ	--	--	--	--	2 U	--	2 UJ
P-8	P-8	6/25/2015		--	--	--	--	5 U	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	2.5 U	--	--	10 U	--	--	--	--	10 U	--	10 U
P-8	P-8~DUP	6/25/2015	Duplicate	--	--	--	--	1 U	--	--	1 U	0.73 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8	12/10/2015		--	--	--	--	1 U	--	--	1 U	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.29 J	--	--	2 U	--	--	--	--	2 U	--	2 U
P-8	P-8	4/27/2016		--	--	--	--	1 U	--	--	1 U	1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 UJ	--	--	--	--	2 UJ	--	2 UJ
P-8	P-8~DUP	4/27/2016	Duplicate	--	--	--	--	1 U	--	--	1 U	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 UJ	--	--	--	--	2 UJ	--	2 UJ
P-8	P-8	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.52	--	--	2 U	--	--	--	--	2 UJ	--	2 UJ
P-8	P-8~DUP	8/31/2016	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.51	--	--	2 U	--	--	--	--	2 UJ	--	2 UJ
P-8	P-8	12/20/2016		--	--	--	--	5 U	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	2.5 U	--	--	10 U	--	--	--	--	5 U	--	5 U
P-8	P-8~DUP	12/20/2016	Duplicate	--	--	--	--	1 U	--	--	1 U	0.35 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.3 J	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8	4/19/2017		--	--	--	--	5 U	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	2.5 U	--	--	10 U	--	--	--	--	5 U	--	5 U
P-8	P-8~DUP	4/19/2017	Duplicate	--	--	--	--	5 U	--	--	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50 U	2.5 U	--	--	10 U	--	--	--	--	5 U	--	5 U
P-8	P-8	8/23/2017		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.35 J	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8	12/8/2017		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.26 J	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8~DUP	12/8/2017	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.32 J	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8	4/17/2018		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.1	0.26 J	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8~DUP	4/17/2018	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.7	0.25 J	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8	4/17/2019		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8	4/28/2020		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	1 U	--	1 U
P-8	P-8	7/20/2021		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
P-8	P-8	3/28/2024		--	--	--	--	2.5 U	0.50 U	1.5 U	2.5 U	0.50 U	2.5 U	2.5 U	2.5 U	2.0 U	2.5 U	0.50 U	--	1.0 U	2.5 U	2.5 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	0.50 U	0.50 U	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U
P-8	WG-12595756-082725-IM-003	8/27/2025		--	--	--	--	2.5 U	0.50 U	1.5 UJ	2.5 UJ	0.50 U	2.5 UJ	2.5 UJ	2.5 U	2.0 UJ	2.5 U	0.50 U	--	1.0 UJ	2.5 U	2.5 U	250 UJ	5.7	5.0 U	5.0 UJ	16	0.17 J	0.50 UJ	2.0 U	2.5 U	5.0 U	0.50 U	2.5 U	2.5 UJ	2.5 U	2.5 UJ	2.5 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
P-8	P-8	5/27/2014		390	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1.2 J	1 U	0.82 J	--	380	--	--	4.3	1 U
P-8	P-8	9/30/2014		72	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	2.7	--	1 U	--	--	114	1 U
P-8	P-8	12/22/2014		1340	--	5 U	--	--	1 U	5 U	--	--	0.59 J	1 U	2 U	5 UJ	--	--	1 U	1 U	3.9	--	55.8	--	--	116	1 U
P-8	P-8	3/19/2015		1760	--	25 U	--	--	5 U	25 U	--	--	25 U	5 U	10 U	25 UJ	--	--	5 U	5 U	11.5	--	217	--	--	94.9	5 U
P-8	P-8~DUP	3/19/2015	Duplicate	1810	--	5 U	--	--	1 U	5 U	--	--	1.8 J	1 U	2 U	5 UJ	--	--	1 U	1 U	3.1	--	231	--	--	111	1 U
P-8	P-8	6/25/2015		791 J	--	25 U	--	--	5 U	25 U	--	--	25 U	5 U	10 U	--	--	--	5 U	5 U	106 J	--	4.2 J	--	--	111	5 U
P-8	P-8~DUP	6/25/2015	Duplicate	1040 J	--	0.39 J	--	--	1 U	5 U	--	--	0.62 J	1 U	2 U	--	--	--	1 U	0.39 J	54 J	--	5.2	--	--	151	1 U
P-8	P-8	12/10/2015		699	--	5 U	--	--	1 U	5 U	--	--	0.33 J	1 U	2 U	5 U	--	--	1 U	1 U	4	--	5.5	--	--	369	1 U
P-8	P-8	4/27/2016		1550	--	5 U	--	--	1 U	5 U	--	--	1 J	1 U	2 U	5 U	--	--	1 U	1 U	2.9	--	14.2	--	--	179	1 U
P-8	P-8~DUP	4/27/2016	Duplicate	1510	--	5 U	--	--	1 U	5 U	--	--	0.93 J	1 U	2 U	5 U	--	--	1 U	1 U	2.9	--	13.5	--	--	171	1 U
P-8	P-8	8/31/2016		380	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	0.6 J	1.3	--	0.76 J	--	--	119	1 U
P-8	P-8~DUP	8/31/2016	Duplicate	393	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	0.57 J	1.5	--	0.86 J	--	--	120	1 U
P-8	P-8	12/20/2016		996	--	25 U	--	--	5 U	5 U	--	--	25 U	5 U	10 U	25 U	--	--	5 U	5 U	3 J	--	17.1	--	--	143	5 U
P-8	P-8~DUP	12/20/2016	Duplicate	984	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	0.32 J	2.4	--	17.2	--	--	137	1 U
P-8	P-8	4/19/2017		692 J	--	25 U	--	--	5 U	5 U	--	--	25 U	5 U	10 U	25 U	--	--	5 U	5 U	5 U	--	2.3 J	--	--	161	5 U
P-8	P-8~DUP	4/19/2017	Duplicate	698	--	25 U	--	--	5 U	5 U	--	--	25 U	5 U	10 U	25 U	--	--	5 UJ	5 U	5 U	--	2.4 J	--	--	167	5 U
P-8	P-8	8/23/2017		379	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	0.6 J	1.4	--	0.83 J	--	--	95.4 J	1 U
P-8	P-8	12/8/2017		286	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	0.9 J	--	0.56 J	--	--	64.8	1 U
P-8	P-8~DUP	12/8/2017	Duplicate	254	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	0.91 J	--	0.44 J	--	--	74.3	1 U
P-8	P-8	4/17/2018		98.4	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	0.28 J	0.7 J	--	3.3	--	--	75.1	1 U
P-8	P-8~DUP	4/17/2018	Duplicate	98.3	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	0.28 J	0.67 J	--	3.4	--	--	75.0	1 U
P-8	P-8	4/17/2019		118	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	0.71 J	--	1 U	--	--	66.3	1 U
P-8	P-8	4/28/2020		19.8	--	5 U	--	--	1 U	1 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	12.3	1 U
P-8	P-8	7/20/2021		2.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	1.0 U	--	--	6.0	--
P-8	P-8	3/28/2024		2.5 U	0.50 U	0.46 J	0.50 U	5.0 UJ	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.50 U	2.5 UJ	2.5 U	0.48 J	--
P-8	WG-12595756-082725-IM-003	8/27/2025		2.5 UJ	0.50 UJ	10 U	0.50 UJ	5.0 U	2.5 U	2.5 U	2.5 U	2.0 U	10 U	2.5 U	2.5 U	--	2.5 U	2.5 U	0.50 U	2.5 U	2.5 U	0.50 U	0.50 UJ	2.5 U	2.5 U	0.37 J	--

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
P-10	P-10	6/1/2000		--	--	--	--	0.38 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	11/1/2000		--	--	--	--	0.3 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	5/31/2001		--	--	--	--	0.3 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
P-10	P-10	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5 J	1 U	--	--	1 U	--	--	--	--	1 U	--	0.71 J
P-10	P-10	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	1 U	--	--	0.52 BJ	--	--	--	--	1 U	--	1 U
P-10	P-10	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-10	P-10	6/2/2004		--	--	--	--	0.38 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	11/2/2004		--	--	--	--	0.3 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	6/1/2005		--	--	--	--	0.3 J	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5 J	1 U	--	--	1 U	--	--	--	--	1 U	--	0.71 J
P-10	P-10	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	1 U	--	--	0.52 BJ	--	--	--	--	1 U	--	1 U
P-10	P-10	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-10	P-10	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.7	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.3 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
P-10	P-10	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.9	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-10	P-10	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-10	P-10	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-10	P-10	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-10	P-10	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-10	P-10	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-10	P-10	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-10	P-10	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-10	P-10	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
P-10	P-10	6/1/2000		14	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	5.1	--	--	1 U	3 U
P-10	P-10	11/1/2000		18	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.35 J	--	4.2	--	--	1 U	3 U
P-10	P-10	5/31/2001		20	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.5	--	--	0.6 J	3 U
P-10	P-10	11/30/2001		16	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.3	--	--	1 U	3 U
P-10	P-10	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
P-10	P-10	7/18/2002		15	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	5.5	--	--	1 U	3 U
P-10	P-10	12/21/2002		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.95 J	--	--	1 U	3 U
P-10	P-10	6/28/2003		8.1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	4.1	--	--	1 U	3 U
P-10	P-10	12/19/2003		0.56 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1	--	--	1 U	3 U
P-10	P-10	6/2/2004		14	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	5.1	--	--	1 U	3 U
P-10	P-10	6/11/2004		4.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	1 U	--	3.6	--	--	1 U	3 U
P-10	P-10	11/2/2004		18	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.35 J	--	4.2	--	--	1 U	3 U
P-10	P-10	6/1/2005		20	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.5	--	--	0.6 J	3 U
P-10	P-10	12/1/2005		16	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.3	--	--	1 U	3 U
P-10	P-10	7/19/2006		15	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	5.5	--	--	1 U	3 U
P-10	P-10	12/22/2006		1 U	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	0.95 J	--	--	1 U	3 U
P-10	P-10	6/29/2007		8.1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	4.1	--	--	1 U	3 U
P-10	P-10	12/20/2007		0.56 J	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1	--	--	1 U	3 U
P-10	P-10	6/12/2008		4.8	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	3.6	--	--	1 U	3 U
P-10	P-10	12/29/2008		0.53 J	--	1 U	--	--	1 U	1 UJ	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1.7	--	--	1 U	3 U
P-10	P-10	6/16/2009		4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	2.4	--	--	1 U	2 U
P-10	P-10	1/7/2010		1.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-10	P-10	7/1/2010		5.6	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	2.9	--	--	1 U	3 U
P-10	P-10	12/17/2010		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-10	P-10	6/20/2011		1 U	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1.1 J	--	--	1 U	3 U
P-10	P-10	12/15/2011		1 U	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-10	P-10	7/6/2012		2.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1.3	--	--	1 U	3 U
P-10	P-10	11/29/2012		5.9	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	0.69 J	1 U	1 U	--	1.5	--	--	1 U	1 U
P-10	P-10	6/3/2013		1.2	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1.3	--	--	1 U	1 U
P-10	P-10	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
P-10	P-10	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.54 J	--	--	1 U	1 U
P-10	P-10	12/23/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	0.64 J	--	--	1 U	1 U
P-10	P-10	6/26/2015		0.44 J	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	--	--	--	1 U	1 U	1 U	--	0.75 J	--	--	1 U	1 U
P-10	P-10	12/10/2015		4.4	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	0.94 J	--	--	1 U	1 U

Sample Location:	Sample ID:	Sample Date:	Sample Type:	Carbon dioxide	Ethane	Ethene	Methane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (Ethylene dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	2-Butanone (Methyl ethyl ketone) (MEK)	2-Hexanone	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform (Trichloromethane)	Chloromethane (Methyl chloride)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				--	--	--	--	5	5	1	5	5	5	5	0.04	0.0006	3	0.6	--	1	3	3	--	--	--	--	--	1	--	--	5	60	5	5	5	5	7	5
P-11	P-11	6/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	11/1/2000		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	5/31/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11(DUP)	5/31/2001	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	11/30/2001		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	6/17/2002		--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	--	--
P-11	P-11	7/18/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	12/21/2002		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	6/28/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.78 J	--	--	--	--	1 U	--	1 U
P-11	P-11	12/19/2003		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.7 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-11	P-11	6/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	6/11/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	11/2/2004		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	6/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11~DUP	6/1/2005	Duplicate	--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	12/1/2005		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	7/19/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8 J	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	12/22/2006		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	6/29/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	1 U	--	--	0.78 J	--	--	--	--	1 U	--	1 U
P-11	P-11	12/20/2007		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.7 J	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-11	P-11	6/12/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	12/29/2008		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	6/16/2009		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	1/7/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	7/1/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	12/17/2010		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	6/20/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.5 J	1 U	--	--	1 UR	--	--	--	--	1 U	--	1 U
P-11	P-11	12/15/2011		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.5	1 U	--	--	1 UJ	--	--	--	--	1 U	--	1 U
P-11	P-11	7/6/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	1 U	--	--	--	--	1 U	--	1 U
P-11	P-11	11/29/2012		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-11	P-11	6/3/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-11	P-11	12/23/2013		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-11	P-11	5/27/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-11	P-11	12/23/2014		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-11	P-11	6/26/2015		--	--	--	--	1 U	--	--	1 U	1 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	0.5 UJ	--	--	2 U	--	--	--	--	2 U	--	2 U
P-11	P-11	12/10/2015		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 UJ	0.5 U	--	--	2 U	--	--	--	--	2 U	--	2 U
P-11	P-11	8/31/2016		--	--	--	--	1 U	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	84.3	0.5 U	--	--	2 U	--	--	--	--	2 U	--	0.85 J

Sample Location:	Sample ID:	Sample Date:	Sample Type:	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane (CFC-12)	Ethylbenzene	Isopropyl benzene	m&p-Xylenes	Methyl acetate	Methyl cyclohexane	Methyl tert butyl ether (MTBE)	Methylene chloride	Naphthalene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (CFC-11)	Trifluorotrichloroethane (CFC-113)	Vinyl chloride	Xylenes (total)
			GA TOGs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				5	0.4	--	--	5	5	5	5	--	--	--	5	--	5	5	5	5	5	0.4	5	5	5	2	5
P-11	P-11	6/1/2000		14	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.6 J	--	0.9 J	--	--	1.3	3 U
P-11	P-11	11/1/2000		11	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.6	--	0.29 J	--	--	3.5	3 U
P-11	P-11	5/31/2001		10	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.5	--	0.3 J	--	--	5.6	3 U
P-11	P-11(DUP)	5/31/2001	Duplicate	10	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.5	--	0.3 J	--	--	5.6	3 U
P-11	P-11	11/30/2001		12	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.3	--	1 U	--	--	7.4	3 U
P-11	P-11	6/17/2002		--	--	--	--	--	U	--	--	--	--	--	--	--	--	--	U	--	--	--	U	--	--	U	U
P-11	P-11	7/18/2002		8.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.4	--	1 U	--	--	5.1	3 U
P-11	P-11	12/21/2002		2.1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-11	P-11	6/28/2003		1.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.73 J	--	1 U	--	--	1	3 U
P-11	P-11	12/19/2003		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-11	P-11	6/2/2004		14	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.6 J	--	0.9 J	--	--	1.3	3 U
P-11	P-11	6/11/2004		1.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 UJ	--	--	1 U	1 U	0.83 J	--	1 U	--	--	1.1	3 U
P-11	P-11	11/2/2004		11	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.6	--	0.29 J	--	--	3.5	3 U
P-11	P-11	6/1/2005		10	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.5	--	0.3 J	--	--	5.6	3 U
P-11	P-11~DUP	6/1/2005	Duplicate	10	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.5	--	0.3 J	--	--	5.6	3 U
P-11	P-11	12/1/2005		12	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.3	--	1 U	--	--	7.4	3 U
P-11	P-11	7/19/2006		8.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.4	--	1 U	--	--	5.1	3 U
P-11	P-11	12/22/2006		2.1	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-11	P-11	6/29/2007		1.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.73 J	--	1 U	--	--	1	3 U
P-11	P-11	12/20/2007		1.5	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-11	P-11	6/12/2008		1.4	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	0.83 J	--	1 U	--	--	1.1	3 U
P-11	P-11	12/29/2008		2.9	--	1 U	--	--	1 U	1 UJ	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.2	3 U
P-11	P-11	6/16/2009		2.6	--	1 U	--	--	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.2	2 U
P-11	P-11	1/7/2010		4.2	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 UJ	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	2.3	3 U
P-11	P-11	7/1/2010		1.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	7	--	1 U	--	--	1.9	3 U
P-11	P-11	12/17/2010		2.1	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.2	3 U
P-11	P-11	6/20/2011		3.5 J	--	10 UJ	--	--	1 U	1 U	--	--	10 U	1 UJ	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	3 U
P-11	P-11	12/15/2011		1.7	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.7	3 U
P-11	P-11	7/6/2012		1.3	--	10 U	--	--	1 U	1 U	--	--	10 U	1 U	1 U	2 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.4	3 U
P-11	P-11	11/29/2012		2.3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.1	1 U
P-11	P-11	6/3/2013		2.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.2	1 U
P-11	P-11	12/23/2013		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	1.3	1 U
P-11	P-11	5/27/2014		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	0.65 J	1 U
P-11	P-11	12/23/2014		3	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 UJ	--	--	1 U	1 U	1 U	--	1 U	--	--	2.4	1 U
P-11	P-11	6/26/2015		1 U	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 UJ	--	--	--	1 U	1 U	1 U	--	1 U	--	--	1 U	1 U
P-11	P-11	12/10/2015		3.1	--	5 U	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	3.1	1 U
P-11	P-11	8/31/2016		1.3	--	5 UJ	--	--	1 U	5 U	--	--	5 U	1 U	2 U	5 U	--	--	1 U	1 U	1 U	--	1 U	--	--	2.7	1 U

	Sample ID:		SS-1	SS-2	SS-3	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15	SS-16	SS-17
	Sample Depth Interval:		0'-2'	0'-2'	2'-4'	0'-2'	0'-2'	2'-4'	2'-4'	2'-4'	0'-4'	0'-4'	2'-4'	0'-4'	0'-4'	0'-2'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**														
SVOCs																
Benzoic Acid	NE	NE	-	-	-	0.31 E	-	0.10 E	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Napthalene	12	1000	0.20 E	-	-	-	0.13 E	-	-	-	-	-	-	-	0.039	0.93
2-Methylnapthalene	NE	NE	0.27 E	-	-	-	0.073 E	-	-	-	-	-	3.3	0.061	0.049	2.5
acenaphthylene	100	1000	0.041 E	-	-	0.061 E	0.18 E	0.073 E	-	-	-	0.61	-	-	-	-
acenapthene	20	1000	0.92	-	-	0.093 E	0.30 E	0.082 E	-	-	0.092	-	-	-	-	-
Dibenzofuran	7	1000	0.62	-	-	0.05 E	0.22 E	0.032 E	-	-	0.072	0.1	0.67	-	-	0.16
diethylphthalate	NE	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
fluorene	30	1000	0.66	-	-	0.08 E	0.34 E	0.078 E	-	-	0.12	0.22	-	-	-	-
4-nitroaniline	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-nitrosodimethylamine	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	100	1000	6.1	0.1 E	0.038 E	1.1	3.5	1.1	-	-	0.57	3.7	2.30 E	0.11	0.081	0.68
Anthracene	100	1000	1.2	-	-	0.16 E	0.83	0.10 E	-	-	0.17	0.62	-	-	-	-
di-n-butylphthalate	NE	1000	0.037 E	-	-	0.041 E	0.023 E	0.023 E	-	-	0.11	-	-	0.05	0.028	-
fluoranthene	100	1000	6.9	0.3 E	0.087 E	2.1	5.7	1.9	-	-	0.77	6.4	-	0.14	0.095	0.35
Pyrene	100	1000	3.3	0.2 E	0.045 E	0.96	2.9	1	-	-	0.45 E	4.6	0.22	0.099	0.053 E	0.18 E
Butylbenzylphthalate	NE	NE	-	-	-	-	-	-	-	-	0.095	-	-	-	-	-
benzo(a)anthracene	1	11	**2.2**	0.14 E	0.034 E	0.78	**1.9**	0.82	-	-	0.38	**2.8**	-	0.055	-	0.20 E
Chrysene	1	110	**2.1**	0.15 E	-	0.77	**2.2**	0.82	-	-	0.39	**2.5**	0.078	0.063	-	0.21 E
bis(2-ethylhexyl) phthalate	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
di-n-octyl phthalate	NE	1000	-	-	-	0.032 E	-	-	-	-	0.12 E	-	0.007	-	-	-
benzo(b)fluoranthene	1	11	**1.2**	0.13 E	-	**1.2**	**1.2**	**1.1**	-	-	0.42 E	1.2 E	-	-	-	0.20 E
benzo(k)fluoranthene	0.8	110	**1.4**	-	-	0.71	**3.1**	0.77	-	-	0.41 E	-	-	-	-	0.027 E
benzo(a)pyrene	1	1.1	**2**	0.18 E	-	0.82	**1.8**	0.68	-	-	0.68 E	**2.4**	-	-	-	0.18 E
indeno(1 2 3-cd)pyrene	0.5	11	0.32 E	-	-	0.18 E	**0.62**	0.12 E	-	-	0.24 E	**0.83**	-	-	-	0.14 E
dibenzo(a h)anthracene	0.33	1.1	-	-	-	-	0.094 E	-	-	-	-	-	-	-	-	-
benzo (g h i) perylene	100	1000	0.2 E	-	-	-	0.38	0.22 E	-	-	0.28 E	0.48	-	-	-	0.13 E

	Sample ID:		SS-18	SS-19	SS-20	SS-25	SS-25A	SS-26	SS-27	SS-28	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8	SB-9
	Sample Depth Interval:		0'-2'	0'-4'	0'-4'	0-'4'	0'-4'	0'-2'	2'	N/A	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**																	
SVOCs																			
Benzoic Acid	NE	NE	-	-	-	-	-	-	-	-	-	0.082 E	0.008 E	-	-	-	0.13 E	-	-
bis(2-Chloroethoxy)methane	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Napthalene	12	1000	-	-	-	-	-	0.59	0.22 E	-	-	-	-	-	-	-	0.18	2.3	-
2-Methylnapthalene	NE	NE	0.063 E	-	-	-	-	4.1	1.1	-	-	-	-	-	-	1.8	0.45	8.6	-
acenaphthylene	100	1000	-	-	-	-	0.04	-	0.27 E	-	-	-	-	-	-	0.14	-	-	-
acenapthene	20	1000	-	-	-	-	-	-	0.064 E	-	-	-	-	-	-	-	0.096 E	-	-
Dibenzofuran	7	1000	-	-	-	-	-	-	0.046 E	-	-	-	-	-	-	-	-	-	-
diethylphthalate	NE	1000	-	-	-	-	-	-	-	-	0.12 E	-	-	-	-	-	0.023 E	-	-
fluorene	30	1000	-	-	-	-	-	1.1	0.18 E	-	-	-	-	-	-	0.36 E	0.16 E	1.4	-
4-nitroaniline	NE	NE	-	-	-	-	0.37	-	-	-	-	-	-	-	-	-	-	-	-
n-nitrosodimethylamine	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.052 E	-	-
Phenanthrene	100	1000	0.089 E	-	-	0.16	0.22	2.1	1.2	0.04 E	-	-	-	-	-	0.64	1.2	2.0	-
Anthracene	100	1000	-	-	-	0.087	0.058	0.27 E	0.28 E	-	-	-	-	-	-	0.16 E	0.15 E	-	-
di-n-butylphthalate	NE	1000	-	0.07	0.020 E	0.053	0.06	-	-	-	-	-	-	-	-	-	-	-	-
fluoranthene	100	1000	0.044 E	-	-	0.22	0.32	0.82	2.6	0.064 E	-	-	-	-	0.47 E	0.97	1.6	-	-
Pyrene	100	1000	0.061 E	-	-	0.16 E	0.21 E	0.59	2.3	0.036 E	-	-	-	-	0.38 E	0.57	1.1	-	-
Butylbenzylphthalate	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
benzo(a)anthracene	1	11	-	-	-	0.18	0.16	0.30 E	**1.6**	-	-	-	-	-	0.27 E	0.42	0.52	-	-
Chrysene	1	110	-	-	-	0.17	0.18	0.34 E	**1.7**	0.037 E	-	-	-	-	0.35 E	0.46	0.55	-	-
bis(2-ethylhexyl) phthalate	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	4.3	2.5	-	-
di-n-octyl phthalate	NE	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	0.077 E	0.016 E	-	-
benzo(b)fluoranthene	1	11	-	-	-	0.13	-	0.27 E	**1.6**	-	-	-	-	-	0.42 E	0.47	0.44 E	-	-
benzo(k)fluoranthene	0.8	110	-	-	-	0.072	-	0.16 E	**1.6**	-	-	-	-	-	0.096 E	0.11 E	0.076 E	-	-
benzo(a)pyrene	1	1.1	-	-	-	0.14	-	0.27 E	**1.6**	-	-	-	-	-	0.32 E	0.38 E	0.42 E	-	-
indeno(1 2 3-cd)pyrene	0.5	11	-	-	-	-	-	0.10 E	**0.68**	-	-	-	-	-	0.44 E	0.36 E	0.38 E	-	-
dibenzo(a h)anthracene	0.33	1.1	-	-	-	-	-	-	-	-	-	-	-	-	0.16 E	0.059 E	0.048 E	-	-
benzo (g h i) perylene	100	1000	-	-	-	-	-	0.063 E	0.32 E	-	-	-	-	-	0.36 E	0.38 E	0.28 E	-	-

	Sample ID:		SS-1	SS-2	SS-3	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15	SS-16	SS-17
	Sample Depth Interval:		0'-2'	0'-2'	2'-4'	0'-2'	0'-2'	2'-4'	2'-4'	2'-4'	0'-4'	0'-4'	2'-4'	0'-4'	0'-4'	0'-2'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**														
VOCs																
Methylene chloride	0.05	1000	-	-	-	-	-	-	-	-	-	-	-	0.013 E	0.002 E	-
1,1-dichloroethene	0.33	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	0.27	480	-	-	-	-	-	-	-	-	-	-	0.04	0.018	0.009	0.012
1,2-dichloroethene (total)	0.02	1000	-	-	-	-	-	-	-	-	-	-	-	**0.051**	**0.022**	0.015
chloroform	0.37	700	-	-	-	-	-	-	-	-	-	-	-	0.007 E	0.001 E	0.007 E
2-butanone (MEK)	0.12	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-trichloroethane	0.68	1000	-	-	-	-	-	-	-	-	-	-	0.27	0.39	-	0.01
carbon tetrachloride	0.76	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trichloroethene	0.47	400	-	-	-	-	-	-	-	-	-	-	-	0.17	-	0.011
benzene	0.06	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-hexanone	NE	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tetrachloroethene	1.3	300	-	-	-	-	-	-	-	-	-	-	-	0.004 E	-	-
toluene	0.7	1000	-	-	-	-	-	-	-	-	-	-	-	0.018 E	-	0.003 E
chlorobenzene	1.1	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ehtylbenzene	1	780	-	-	-	-	-	-	-	-	-	-	0.012 E	0.023 E	-	0.015
xylene	0.26	1000	-	-	-	-	-	-	-	-	-	-	0.14	0.16	0.004 E	0.057

	Sample ID:		SS-18	SS-19	SS-20	SS-25	SS-25A	SS-26	SS-27	SS-28	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8	SB-9
	Sample Depth Interval:		0'-2'	0'-4'	0'-4'	0-'4'	0'-4'	0'-2'	2'	N/A	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**																	
VOCs																			
Methylene chloride	0.05	1000	-	-	-	-	-	**0.15 E**	-	-	-	-	-	-	-	**0.46 E**	**0.58 E**	**0.32 E**	-
1,1-dichloroethene	0.33	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	0.27	480	-	-	-	-	-	-	-	-	-	-	-	-	0.046	-	-	-	-
1,2-dichloroethene (total)	0.02	1000	-	-	-	-	-	-	-	-	-	-	-	-	0.018	-	-	**1.9**	**0.026**
chloroform	0.37	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-butanone (MEK)	0.12	1000	-	-	-	-	-	-	-	-	-	-	-	-	0.065	-	-	-	-
1,1,1-trichloroethane	0.68	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	**7.4 E**	-	-	-
carbon tetrachloride	0.76	44	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.94**	-	-	-
trichloroethene	0.47	400	0.005 E	-	-	-	-	-	-	-	-	-	-	-	0.006 E	0.70 E	-	**1.5**	0.012
benzene	0.06	89	-	-	-	-	-	-	0.006 E	-	-	-	-	-	-	**0.062 E**	-	-	-
2-hexanone	NE	NE	-	-	-	-	-	-	-	-	-	-	-	0.14	-	-	-	-	-
tetrachloroethene	1.3	300	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13 E	-	0.53 E	-
toluene	0.7	1000	-	-	-	-	-	0.10 E	0.032 E	-	-	-	-	0.013 E	0.006	0.15 E	**1.5**	0.23 E	0.003 E
chlorobenzene	1.1	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13 E	-	-	-
ehtylbenzene	1	780	-	-	-	-	-	-	-	-	-	-	-	0.013 E	0.003 E	-	**1.1**	0.43 E	-
xylene	0.26	1000	-	-	-	-	-	**6.4**	**0.26**	-	-	-	0.006	0.12	0.016	-	**13**	**2.1**	0.004 E

		Sample ID:	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15	SS-16	SS-17	SS-25	SS-25A	SS-26	SS-27	SS-28
		Sample Depth Interval:	2'-4'	2'-4'	0'-4'	0'-4'	2'-4'	0'-4'	0'-4'	0'-2'	0-'4'	0'-4'	0'-2'	2'	N/A
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**													
Metals															
Aluminum	NE	NE	9980	15700	12800	14500	22200	22200	20800	12200	11200	12400	14400	13100	4410
Antimony	NE	NE	2.6	2.6	2.8	3.1	2.8	3.1	3	2.5	2.9	3.3	2.8	2.9	2.3
Arsenic	13	16	5.5	6.3	8.3	8	4.2	4.7	4.7	4.8	4.4	5.1	6.5	7.3	3.1
Barium	350	10000	35.6	65.8	77.7	95.5	141	125	118	57.3	65.8	92.5	91.3	85.6	30
Beryllium	7.2	2700	0.22	0.51	0.64	0.62	0.94	1.2	1.1	0.82	0.38	0.45	0.83	0.67	0.32
Cadmium	2.5	60	-	-	-	-	0.82	2.1	0.85	**15.9**	-	-	0.81	0.84	0.66
Calcium	NE	NE	71000	6380	12700	31100	-	-	-	-	40200	33800	9340	16000	213000
chromium	NE	NE	-	-	-	-	29.8	34.7	27.4	26.7	-	-	22.3	19.9	7.2
Cobalt	NE	NE	5	10.8	6.8	7.4	12.8	13.5	12.8	8.9	5.8	5.8	11.5	9.9	4.9
Copper	50	10000	28.9	20.3	26.5	51	18	34	19.2	37.4	**64**	**64**	18.5	18.6	10.3
Iron	NE	NE	20400	29200	22200	21600	30500	30000	30400	21400	19700	17600	25800	22800	8780
Lead	63	3900	11.7	11.3	37.1	55.2	11.6	21.4	14.4	23.9	**67.1**	45.2	31.3	**65.2**	8
Magnesium	NE	NE	-	-	-	-	4840	48880	5110	8370	-	-	5140	5060	10800
Manganese	1600	10000	484	641	238	344	502	448	611	550	493	376	577	624	356
Mercury	0.18	5.7	0.04	0.06	0.05	0.09	0.06	0.09	**0.25**	0.06	**0.22**	**0.43**	0.05	0.13	0.05
Nickel	30	10000	18.8	25.8	20.1	22.9	**30.3**	**41.7**	**31.7**	22.7	17.9	18.7	25.7	22	10.8
Potassium	NE	NE	1060	1320	1130	1350	1540	1600	1460	1420	986	937	1130	1210	743
Selenium	3.9	6800	0.28	0.32	0.42	0.35	0.24	0.26	0.25	0.21	0.33	0.68	0.41	0.3	0.26
Silver	2	6800	0.37	0.39	0.42	0.46	0.57	1.2	0.45	**19.8**	**7.1**	**5.4**	0.42	0.44	0.35
Sodium	NE	NE	54.9	58	63	69	229	260	244	224	149	877	83.6	470	143
Thallium	NE	NE	0.28	0.32	0.35	0.35	0.34	0.37	0.35	0.3	0.33	0.38	0.28	0.28	0.25
Vanadium	NE	10000	13.2	21.3	19	22.4	30.6	29	27.9	18.6	16.7	15.8	19.2	20.5	8.7
Zinc	109	1000	62.8	68.8	**175**	**276**	79.5	**133**	91.5	88.5	**206**	**428**	94.1	**121**	39.2
Cyanide	27	27	0.54	0.6	2.2	0.67	0.63	0.68	0.63	4.1	6.9	4.4	0.63	0.65	0.53

Notes:

All concentrations are in micrograms per kilogram (mg/kg)

E - Estimated concentration.

Bold and Outlined cell indicates result exceeds unrestricted use SCO

Bold, outlined, and highlighted text indicates result exceeds industrial use SCO

- indicates that the result was not historically reported

NE - Indicates that the SCO has not been established

Soil Cleanup Objectives (SCOs) from 6 NYCRR Part 375-6.8(b) (December 2006) and Supplemental Soil Cleanup Objectives from CP-51 (October 2010)

	Sample ID:		SS-4	SS-5	SS-6	SS-21	SS-22	SS-23	SS-24	Sed-1	Sed-2
	Sample Depth Interval:		0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	2'-4'	2'-4'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**									
SVOCs											
Benzoic Acid	NE	NE	-	-	-	-	-	-	-	1.1 E	-
bis(2-Chloroethoxy)methane	NE	NE	-	-	-	-	-	-	-	-	-
Napthalene	12	1000	-	-	-	0.094 E	0.27 E	-	-	-	-
2-Methylnapthalene	NE	NE	-	-	-	0.14 E	-	-	-	-	-
acenaphthylene	100	1000	-	-	0.120 E	0.71	1.4 E	-	-	-	-
acenapthene	20	1000	-	-	-	0.14 E	0.44 E	-	-	-	-
Dibenzofuran	7	1000	-	-	-	0.12 E	0.89 E	-	-	-	-
diethylphthalate	NE	1000	-	-	-	-	-	-	-	-	-
fluorene	30	1000	-	-	0.046 E	0.30 E	1.4 E	-	-	-	-
4-nitroaniline	NE	NE	-	-	-	-	-	-	-	-	-
n-nitrosodimethylamine	NE	NE	-	-	-	-	-	-	-	-	-
Phenanthrene	100	1000	-	-	0.51	2.3	14	-	-	0.054 E	0.17 E
Anthracene	100	1000	-	-	0.098 E	0.8	2.2	-	-	-	-
di-n-butylphthalate	NE	1000	0.065 E	-	0.041 E	0.066 E	-	-	-	-	0.072 E
fluoranthene	100	1000	0.040 E	0.045 E	0.72	4.1	18	-	-	0.092 E	0.26 E
Pyrene	100	1000	0.043 E	0.030 E	0.68	2.8	13	-	-	0.049 E	0.32 E
Butylbenzylphthalate	NE	NE	-	-	-	0.048 E	-	-	-	-	-
benzo(a)anthracene	1	11	-	-	0.20 E	**1.5**	**7.7**	-	-	0.045 E	0.18 E
Chrysene	1	110	-	-	0.45	**1.9**	**8.6**	-	-	0.052 E	0.20 E
bis(2-ethylhexyl) phthalate	NE	NE	-	-	-	1.1	-	-	-	-	-
di-n-octyl phthalate	NE	1000	-	-	-	-	-	-	-	-	-
benzo(b)fluoranthene	1	11	-	-	0.23 E	**1.6**	**8.2**	-	-	0.072 E	0.21 E
benzo(k)fluoranthene	0.8	110	-	-	0.046 E	**1.2**	**4.2**	-	-	-	0.15 E
benzo(a)pyrene	1	1.1	-	-	0.33 E	**1.2**	**5.8**	-	-	-	0.15 E
indeno(1 2 3-cd)pyrene	0.5	11	-	-	0.058 E	0.35 E	**1.9 E**	-	-	-	-
dibenzo(a h)anthracene	0.33	1.1	-	-	-	-	-	-	-	-	-
benzo (g h i) perylene	100	1000	-	-	-	0.16	1.3 E	-	-	-	-

		Sample ID:	SS-4	SS-5	SS-6	SS-21	SS-22	SS-23	SS-24	Sed-1	Sed-2
		Sample Depth Interval:	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	2'-4'	2'-4'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**									
VOCs											
Methylene chloride	0.05	1000	-	-	-	-	-	-	-	-	-
1,1-dichloroethene	0.33	1000	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	0.27	480	-	-	-	-	-	-	-	-	-
1,2-dichloroethene (total)	0.02	1000	-	-	-	-	-	-	-	-	-
chloroform	0.37	700	-	-	-	-	-	-	-	-	-
2-butanone (MEK)	0.12	1000	-	-	-	-	-	-	-	-	-
1,1,1-trichloroethane	0.68	1000	-	-	-	-	-	-	-	-	-
carbon tetrachloride	0.76	44	-	-	-	-	-	-	-	-	-
trichloroethene	0.47	400	-	-	-	0.005 E	-	-	-	-	-
benzene	0.06	89	-	-	-	-	-	-	-	-	-
2-hexanone	NE	NE	-	-	-	-	-	-	-	-	-
tetrachloroethene	1.3	300	-	-	-	-	-	-	-	-	-
toluene	0.7	1000	-	-	-	-	-	-	-	-	-
chlorobenzene	1.1	1000	-	-	-	-	-	-	-	-	-
ehtylbenzene	1	780	-	-	-	-	-	-	-	-	-
xylene	0.26	1000	-	-	-	-	-	-	-	-	-

		Sample ID:	SS-4	SS-5	SS-6	SS-21	SS-22	SS-23	SS-24	Sed-1	Sed-2
		Sample Depth Interval:	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	2'-4'	2'-4'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**									
Metals											
Aluminum	NE	NE	21000	18200	13600	8260	14400	15700	19600	18700	19200
Antimony	NE	NE	-	-	3.4 E	2.9	2.6	2.8	3.2	-	-
Arsenic	13	16	5.9	5.5	4.5	12.4	9	8.8	7.6	3.7	6.9
Barium	350	10000	125	99.1	64.3	121	128	117	113	**1200**	317
Beryllium	7.2	2700	1	0.95	0.47	0.73	0.81	0.56	1.1	1.0 E	2.8 E
Cadmium	2.5	60	0.83	0.85	0.86	**8.6**	0.79	0.82	0.92	**12.1**	**24.6**
Calcium	NE	NE	2480	2970	6030	10200	20600	4670	2800	2660	2450
chromium	NE	NE	27.5	24.8	15.8	82	23.9	24.3	25.3	42.9	256
Cobalt	NE	NE	13.3	13.1	5.7	7.7	11.9	9.6	12.8	10.1	9
Copper	50	10000	13.7	12	15.5	**56.2**	**52.2**	20.5	14.9	**70.4**	**426**
Iron	NE	NE	29200	28500	21800	19700	25400	23900	27200	25000	27700
Lead	63	3900	30.7	18.1	23	**91.8**	**178**	**130**	34.9	**73.3**	**238**
Magnesium	NE	NE	4570	4140	2370	3480	3930	3830	3850	3910	3600
Manganese	1600	10000	633	516	379	337	516	453	612	238	205
Mercury	0.18	5.7	0.11	0.07	0.06	0.08	**0.41**	0.12	0.12	**0.28**	**0.64**
Nickel	30	10000	**30.2**	28.8	12.9	21.7	23.3	20.8	26.6	29.2	29.3
Potassium	NE	NE	-	-	-	1010	-	-	-	-	-
Selenium	3.9	6800	0.38	0.41	0.42	0.87	0.58	0.31	0.57	0.81	2.1
Silver	2	6800	0.44	0.45	0.46	**7.7**	0.42	0.43	0.48	1.4	**22.5**
Sodium	NE	NE	186	102	162	105	170	106	109	323	394
Thallium	NE	NE	0.29	0.3	0.3	0.28	0.28	0.29	0.3	0.37	0.52
Vanadium	NE	10000	28.1	25.4	22.6	15.2	21	25.3	29.2	25.3	35.1
Zinc	109	1000	108	93.5	69	**222**	**259**	**181**	95.1	**335**	**513**
Cyanide	27	27	-	-	-	1.9	0.64	0.65	0.7	-	-

Notes:

All concentrations are in micrograms per kilogram (mg/kg)

E - Estimated concentration.

Bold and Outlined cell indicates result exceeds unrestricted use SCO

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- indicates that the result was not historically reported

NE - Indicates that the SCO has not been established

Soil Cleanup Objectives (SCOs) from 6 NYCRR Part 375-6.8(b) (December 2006)
and Supplemental Soil Cleanup Objectives from CP-51 (October 2010)

		Sample ID:	B-1	B-1	B-2	B-2	B-3	B-3	B-4	B-4	B1A	B2A	B3A	B4A	B5A	B6A	B7A	B8A	B9A	B10A
		Sample Depth Interval:	1'-3'	5'-7'	1'-3'	5'-7'	1'-3'	5'-7'	1'-3'	5'-7'	5'-7'	5'-7'	5'-7'	5'-7'	5'-7'	5'-7'	5'-7'	5'-7'	5'-7'	5'-7'
Analyte	**Unrestricted Use SCO**	**Industrial Use SCO**																		
VOCs																				
Carbon Disulfide	NE	1000	-	-	-	-	-	-	-	-	-	0.066	0.038	0.034	-	0.702	-	-	-	-
Chlorobenzene	1.1	1000	-	-	-	-	-	-	-	-	-	0.061	-	-	-	-	-	-	-	-
Chloroethane	NE	NE	-	-	-	-	0.048	-	-	-	0.843	0.142	1.88	-	-	-	-	-	-	-
Chloroform	0.37	700	-	-	-	-	-	-	-	-	-	0.055	-	-	-	-	-	-	-	-
1,1-dichloroethane	0.33	1000	-	-	-	-	-	-	0.024	**2.38**	-	**0.648**	0.016	-	0.028	-	-	-	-	-
1,2-dichloroethane	0.27	480	-	-	-	-	-	-	-	**16.7**	-	-	-	-	-	-	-	-	-	-
1,2-dichloroethene	0.02	1000	-	-	-	-	-	-	**0.022**	**2.64**	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	0.05	1000	-	-	-	-	-	-	-	-	**1.54**	0.02	**0.073**	-	-	-	-	0.006	0.035	-
1,1,2,2-tretrachloroethane	NE	NE	-	-	-	-	-	-	-	1.7	-	-	-	-	-	-	-	-	-	-
1,1,2-trichloroethane	0.12	1000	-	-	-	-	-	-	-	0.097	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	0.68	1000	-	0.121	-	0.368	-	-	0.02	**51.1**	-	-	-	-	-	-	-	-	-	-
Trichloroethene	0.47	400	0.053	-	-	0.053	-	-	0.079	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	0.02	27	-	-	-	**0.142**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
benzene	0.06	89	-	-	-	-	-	-	-	-	-	-	**0.32**	0.032	-	-	-	-	-	-
toluene	0.7	1000	-	-	-	**3.87**	-	-	-	-	0.244	**1.37**	0.037	-	-	0.011	-	-	-	-
ehtylbenzene	1	780	-	-	-	-	0.125	-	-	-	0.07	**3.99**	**1.224**	0.212	-	0.037	0.856	-	-	-
xylene	0.26	1000	-	-	0.012	**2.35**	0.153	-	0.039	-	**0.263**	**12.7**	**3.94**	0.129	0.149	0.048	-	-	-	-

Notes:

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Soil Cleanup Objectives (SCOs) from 6 NYCRR Part 375-6.8(b) (December 2006)
and Supplemental Soil Cleanup Objectives from CP-51 (October 2010)

Table 6
Indoor Air and Sub-Slab Vapor Sampling Analytical Results Summary

Former General Instrument Corporation Site
Site #709010
Sherburne, NY

Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-7	SS-7	2022 Recommended Action (c)	IA-7	SS-7	2023 Recommended Action (c)	IA-7	SS-7	2024 Recommended Action (c)	IA-7	SS-7	2025 Recommended Action (c)
Sample ID:				IA-7	SS-7		IA7-12595756-033123-BP-001	SS7-12595756-033123-BP-007		IA-7	SS-7		12595756-020725-SK-IA-7	12595756-020725-SK-SS-7	
Sample Date:				04/29/22	04/29/22		03/31/23	03/31/23		3/27/2024	3/27/2024		2/7/2025	2/7/2025	
Sample Type:															
Matrix Code:				IA	SVSS		IA	SVSS		IA	SVSS		IA	SVSS	
Volatile Organic Compounds (ug/m^3)															
1,1,1-Trichloroethane	--	--	B	--	--	--	6.0	1.4	NFA	2.64	6.82 U	NFA	--	1.61	NFA
1,1-Dichloroethane	--	--	--	--	--	--	0.81 U	3.2	--	0.809 U	5.06	--	0.809 U	3.78	--
1,1-Dichloroethene	--	--	A	--	--	--	0.30 J	0.79 U	NFA	1.04	4.96 U	ISR	--	0.793 U	ISR
1,2,4-Trimethylbenzene	--	--	D	--	--	--	1.6	8.2	NFA	3.73	1580	MIT	1.24	0.983 U	MIT
1,2-Dichlorobenzene	--	--	--	--	--	--	1.2 U	1.2 U	--	1.20 U	7.52 U	--	1.20 U	1.20 U	--
1,2-Dichloroethene (total)	--	--	--	--	--	--	0.25 J	3.8	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	D	--	--	--	0.67 J	1.9	NFA	0.983 U	468	NFA	0.983 U	0.983 U	NFA
1,4-Dichlorobenzene	--	--	--	--	--	--	1.2 U	1.2 U	--	1.20 U	7.52 U	--	1.20 U	1.20 U	--
2,2,4-Trimethylpentane	--	--	D	--	--	--	0.93 U	0.93 U	NFA	0.934 U	70.1	NFA	0.934 U	0.934 U	NFA
2-Butanone (MEK)	--	--	--	--	--	--	5.5	1.5	--	13.7	79.9	--	1.47 U	1.47 U	--
2-Chlorotoluene	--	--	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--	2.0 U	2.0 U	--	0.820 U	5.12 U	--	0.820 U	0.820 U	--
4-Ethyl toluene	--	--	--	--	--	--	0.61 J	2.0	--	0.983 U	213	--	0.983 U	0.983 U	--
4-Methyl-2-pentanone (MIBK)	--	--	--	--	--	--	2.0 U	2.0 U	--	2.05 UJ	12.8 U	--	2.05 U	2.05 U	--
Acetone	--	--	--	--	--	--	28	12	--	93.8	36.1	--	5.84	3.99	--
Benzene	--	--	D	--	--	--	0.64 U	0.68 U	NFA	0.834	3.99 U	NFA	0.639 U	0.639 U	NFA
Butane	--	--	--	--	--	--	10	1.2 U	--	--	--	--	--	--	--
Carbon disulfide	--	--	--	--	--	--	1.6 U	0.62 J	--	0.623 U	3.89 U	--	0.623 U	0.623 U	--
Carbon tetrachloride	--	--	A	--	--	--	0.30 J	0.24 J	NFA	0.528	7.86 U	NFA	--	1.26 U	NFA
Chlorobenzene	--	--	--	--	--	--	0.92 U	0.92 U	--	0.921 U	5.76 U	--	0.921 U	0.921 U	--
Chlorodifluoromethane	--	--	--	--	--	--	1.8 U	1.8 U	--	--	--	--	--	--	--
Chloroform (Trichloromethane)	--	--	--	--	--	--	0.98 U	0.98 U	--	0.977 U	6.10 U	--	0.977 U	0.977 U	--
Chloromethane (Methyl chloride)	--	--	--	--	--	--	2.4	1.0 U	--	5.12	2.58 U	--	1.20	0.413 U	--
cis-1,2-Dichloroethene	--	--	A	0.16 U	5.4	NFA	0.25 J	3.8	NFA	0.079 U	4.96 U	NFA	--	3.39	NFA
Cyclohexane	--	--	D	--	--	--	0.60 J	0.69 U	NFA	1.18	42.0	NFA	0.688 U	0.688 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--	--	0.42 J	1.1 U	--	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	--	--	--	--	--	--	2.2 J	1.8 J	--	2.24 U	6.18 U	--	2.12	2.04	--
Ethanol				--	--	--	--	--	--	477	58.8 U	--	11.2	9.42 U	--
Ethyl acetate	--	--	--	--	--	--	--	--	--	71.7	11.2 U	--	1.80 U	1.80 U	--
Ethylbenzene	--	--	D	--	--	--	0.87 U	2.5	NFA	0.869 U	298	NFA	0.869 U	0.869 U	NFA
Hexane	--	--	E	--	--	--	1.8 U	1.8 U	NFA	0.705 U	21.6	NFA	1.87	1.56	NFA
Isopropyl alcohol	--	--	--	--	--	--	32	12 U	--	52.1	7.67 U	--	10.8	7.82	--
Isopropyl benzene	--	--	--	--	--	--	0.98 U	0.98 U	--	--	--	--	--	--	--
m&p-Xylenes	--	--	E	--	--	--	2.6	12	NFA	2.79	1200	NFA	1.74 U	1.74 U	NFA
Methylene chloride	60	--	B	--	--	--	1.7 U	1.7 U	NFA	1.74 U	10.8 U	NFA	1.74 U	1.74 U	NFA
Naphthalene	--	--	D	--	--	--	2.6 U	2.6 U	NFA	11.3	89.7	MON	1.51	0.996 U	MON
N-Heptane	--	--	E	--	--	--	1.2	1.2	NFA	1.02	152	NFA	0.820 U	0.820 U	NFA
N-Propylbenzene	--	--	--	--	--	--	0.98 U	1.1	--	--	--	--	--	--	--
o-Xylene	--	--	D	--	--	--	1.3 U	3.5	NFA	1.58	995	MIT	0.869 U	0.869 U	MIT
Styrene	--	--	--	--	--	--	0.85 U	0.85 U	--	0.852 U	5.32 U	--	0.852 U	0.852 U	--
tert-Butyl alcohol	--	--	--	--	--	--	15 U	15 U	--	1.52 U	9.46 U	--	1.52 U	1.52 U	--
Tetrachloroethene	30	300	B	1 U	1 U	NFA	0.60 J	1.4 U	NFA	0.136 U	8.48 U	NFA	--	2.43	NFA
Tetrahydrofuran	--	--	--	--	--	--	15 U	15 U	--	1.47 U	9.20 U	--	1.47 U	1.47 U	--
Toluene	--	--	F	--	--	--	4.2	7.4	NFA	3.99 U	261	NFA	0.754 U	0.874	NFA
trans-1,2-Dichloroethene	--	--	--	0.59 U	0.59 U	--	0.79 U	0.79 U	--	0.793 U	4.96 U	--	0.793 U	0.793 U	--
Trichloroethene	2	20	A	4.3[a]	20	MIT	4.4[a]	17	MIT	1.76	22.0	MIT	--	12.3	MIT
Trichlorofluoromethane (CFC-11)	--	--	--	--	--	--	45	1.8	--	53.7	7.02 U	--	24.1	2.84	--
Vinyl chloride	--	--	C	0.1 U	0.38 U	NFA	0.51 U	0.51 U	NFA	0.051 U	3.20 U	NFA	--	0.511 U	NFA
Xylenes (total)	--	--	--	--	--	--	3.9	16	--	--	--	--	--	--	--

Footnotes:

ug/m^3 = micrograms per cubic meter; U = Not detected at the associated reporting limit;
J = Estimated concentration; UJ = Not detected, associated reporting limit is estimated;
J- = Estimated concentration, result may be biased low.

Only compounds detected above the laboratory method detection limit are shown on this table for clarity. See original laboratory analytical reports for complete analytical results.

CFC - Chlorofluorocarbon; MIBK - Methyl Isobutyl Ketone; MEK - Methyl Ethyl Ketone

(a) Exceedance of NYSDOH Guidance Value taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda, shown as **red bold text**.

(b) Exceedance of NYSDOH Immediate Action Level taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda, shown as **red bold text with yellow highlight**.

(c) NYSDOH Matrices A through F taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda.

Matrices are used to compare indoor air concentrations to sub-slab vapor concentrations in order to determine recommended actions, which include:

NFA No Further Action
ISR Identify Source(s) and Resample or Mitigate
MON Monitor
MIT Mitigate

Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-8	SS-8	2022 Recommended Action (c)	IA-8	SS-8	SS-8	2023 Recommended Action (c)	IA-8	IA-8	SS-8	SS-8	2024 Recommended Action (c)	IA-8	SS-8	2025 Recommended Action (c)
Sample ID:				IA-8	SS-8		IA8-12595756-033123-BP-002	SS8-12595756-033123-BP-008	SS8-12595756-033123-BP-020		IA-8	IA-8	SS-8	SS-8		12595756-020725-SK-IA-8	12595756-020725-SK-SS-8	
Sample Date:				04/29/22	04/29/22		03/31/23	03/31/23	03/31/23		3/27/2024	3/27/2024	3/27/2024	3/27/2024		2/7/2025	2/7/2025	
Sample Type:									Duplicate			Duplicate		Duplicate				
Matrix Code:				IA	SVSS		IA	SVSS	SVSS		IA	IA	SVSS	SVSS		IA	SVSS	
Volatile Organic Compounds (ug/m^3)																		
1,1,1-Trichloroethane	--	--	B	--	--		2.9 J-	11 U	5.8 U	NFA	2.26	1.79	10.9 U	10.9 U	NFA	--	9.11 U	NFA
1,1-Dichloroethane	--	--	--	--	--		0.81 UJ	8.1 U	4.3 U	--	0.809 U	0.809 U	8.09 U	8.09 U	--	0.809 U	6.76 U	--
1,1-Dichloroethene	--	--	A	--	--		0.79 UJ	7.9 U	4.2 U	NFA	0.975	0.825	7.93 U	7.93 U	NFA	--	6.62 U	NFA
1,2,4-Trimethylbenzene	--	--	D	--	--		2.4 J-	6.0 J	6.9	NFA	4.40	3.28	2160	2260	MIT	1.42	8.21 U	MIT
1,2-Dichlorobenzene	--	--	--	--	--		1.2 UJ	12 U	6.4 U	--	1.20 U	1.20 U	12.0 U	12.0 U	--	1.20 U	10.0 U	--
1,2-Dichloroethene (total)	--	--	--	--	--		1.6 UJ	80 J	33 J	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	D	--	--		0.86 J-	9.8 U	2.0 J	NFA	1.14	0.983 U	595	619	MIT	0.983 U	8.21 U	MIT
1,4-Dichlorobenzene	--	--	--	--	--		1.2 UJ	12 U	6.4 U	--	1.20 U	1.20 U	12.0 U	12.0 U	--	1.20 U	10.0 U	--
2,2,4-Trimethylpentane	--	--	D	--	--		0.93 UJ	9.3 U	3.9 J	NFA	0.934 U	0.934 U	155	153	NFA	0.934 U	7.80 U	NFA
2-Butanone (MEK)	--	--	--	--	--		5.1 J-	15 U	7.8 U	--	13.8	11.9	27.3	25.1	--	1.47 U	12.3 U	--
2-Chlorotoluene	--	--	--	--	--		1.0 UJ	10 U	5.5 U	--	--	--	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--		2.0 UJ	20 U	11 U	--	0.820 U	0.820 U	8.20 U	8.20 U	--	0.820 U	6.84 U	--
4-Ethyl toluene	--	--	--	--	--		0.66 J-	9.8 U	1.8 J	--	0.983 U	0.983 U	335	345	--	0.983 U	8.21 U	--
4-Methyl-2-pentanone (MIBK)	--	--	--	--	--		2.0 UJ	20 U	11 U	--	2.05 UJ	2.05 UJ	20.5 U	20.5 U	--	2.05 U	17.1 U	--
Acetone	--	--	--	--	--		16 J-	120 U	23 J	--	94.1	85.3	23.8 U	23.8 U	--	4.37	19.8 U	--
Benzene	--	--	D	--	--		0.64 UJ	2.2 J	2.3 J	NFA	0.840	0.751	8.08	7.86	NFA	0.639 U	5.34 U	NFA
Butane	--	--	--	--	--		6.4 J-	12 U	16	--	--	--	--	--	--	--	--	--
Carbon disulfide	--	--	--	--	--		1.6 UJ	16 U	8.3 U	--	0.623 U	0.623 U	6.23 U	6.23 U	--	0.623 U	5.20 U	--
Carbon tetrachloride	--	--	A	--	--		0.32 J-	13 U	6.7 U	NFA	0.528	0.535	12.6 U	12.6 U	NFA	--	10.5 U	NFA
Chlorobenzene	--	--	--	--	--		0.92 UJ	9.2 U	4.9 U	--	0.921 U	0.921 U	9.21 U	9.21 U	--	0.921 U	7.69 U	--
Chlorodifluoromethane	--	--	--	--	--		1.8 UJ	18 U	9.4 U	--	--	--	--	--	--	--	--	--
Chloroform (Trichloromethane)	--	--	--	--	--		0.98 UJ	3.5 J	1.6 J	--	0.977 U	0.977 U	9.77 U	9.77 U	--	0.977 U	8.16 U	--
Chloromethane (Methyl chloride)	--	--	--	--	--		2.0 J-	10 U	2.4 J	--	5.47	4.73	4.13 U	4.13 U	--	1.16	3.45 U	--
cis-1,2-Dichloroethene	--	--	A	0.16 U	330	MIT	0.79 UJ	72 J	29 J	MIT	0.079 U	0.079 U	59.5	60.7	MIT	--	30.3	MIT
Cyclohexane	--	--	D	--	--		0.49 J-	6.9 U	3.6 U	NFA	1.25	1.05	84.0	83.0	NFA	0.688 U	5.75 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--		0.60 J-	11 U	5.8 U	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	--	--	--	--	--		1.9 J-	25 U	13 U	--	2.17 U	2.31 U	9.89 U	9.89 U	--	2.05	8.26 U	--
Ethanol				--	--		--	--	--	--	599	469	94.2 U	94.2 U	--	9.42 U	78.6 U	--
Ethyl acetate	--	--	--	--	--		--	--	--	--	83.6	75.0	18.0 U	18.0 U	--	1.80 U	15.0 U	--
Ethylbenzene	--	--	D	--	--		0.87 UJ	4.5 J	4.4 J	NFA	0.869 U	0.869 U	556	565	NFA	0.869 U	7.25 U	NFA
Hexane	--	--	E	--	--		2.1 UJ	18 U	9.3 U	NFA	0.705 U	0.705 U	87.1	86.3	NFA	0.705 U	5.89 U	NFA
Isopropyl alcohol	--	--	--	--	--		19 J-	120 U	65 U	--	54.6	46.2	12.3 U	12.3 U	--	2.46 U	20.5 U	--
Isopropyl benzene	--	--	--	--	--		0.98 UJ	9.8 U	5.2 U	--	--	--	--	--	--	--	--	--
m&p-Xylenes	--	--	E	--	--		2.7 J-	9.6 J	12	NFA	3.28	2.61	2050	2100	MIT	1.74 U	14.5 U	MIT
Methylene chloride	60	--	B	--	--		1.7 UJ	11 J	9.2 U	NFA	1.74 U	15.0 U	17.4 U	17.4 U	NFA	1.74 U	14.5 U	NFA
Naphthalene	--	--	D	--	--		2.6 UJ	26 U	14 U	NFA	8.76	6.55	106	153	MON	1.82	8.28 U	MON
N-Heptane	--	--	E	--	--		0.82 UJ	8.2 U	3.1 J	NFA	1.17 J+	0.832	247	242	NFA	0.820 U	6.84 U	NFA
N-Propylbenzene	--	--	--	--	--		0.98 UJ	9.8 U	1.3 J	--	--	--	--	--	--	--	--	--
o-Xylene	--	--	D	--	--		1.3 UJ	5.2 J	5.4	NFA	1.80	1.42	1490	1530	MIT	0.869 U	7.25 U	MIT
Styrene	--	--	--	--	--		0.85 UJ	8.5 U	4.5 U	--	0.852 U	0.852 U	8.52 U	8.52 U	--	0.852 U	7.11 U	--
tert-Butyl alcohol	--	--	--	--	--		15 UJ	150 U	80 U	--	1.52 U	1.52 U	15.2 U	15.2 U	--	1.52 U	12.6 U	--
Tetrachloroethene	30	300	B	1 U	10	NFA	0.14 J-	28 J	6.2 J	NFA	0.136 U	0.136 U	13.6 U	13.6 U	NFA	--	11.3 U	NFA
Tetrahydrofuran	--	--	--	--	--		15 UJ	150 U	78 U	--	1.57	1.47 U	14.7 U	14.7 U	--	1.47 U	12.3 U	--
Toluene	--	--	F	--	--		4.1 J-	9.8	14	NFA	4.22 U	3.50 U	535	539	NFA	0.754 U	6.29 U	NFA
trans-1,2-Dichloroethene	--	--	--	0.59 U	0.59 U		0.79 UJ	8.3 J	4.0 J	--	0.793 U	0.793 U	7.93 U	7.93 U	--	0.793 U	6.62 U	--
Trichloroethene	2	20	A	1.6	8000	MIT	1.8 J-	4100 J	1700 J	MIT	1.47	1.17	2780	2880	MIT	--	2650	MIT
Trichlorofluoromethane (CFC-11)	--	--	--	--	--		31 J-	12 J	20 J	--	54.2	44.0	12.0	11.4	--	29.1	9.38 U	--
Vinyl chloride	--	--	C	0.1 U	0.38	NFA	0.51 UJ	5.1 U	2.7 U	NFA	0.051 U	0.051 U	5.11 U	5.11 U	NFA	--	4.27 U	NFA
Xylenes (total)	--	--	--	--	--		4.0 J-	15 J	17	--	--	--	--	--	--	--	--	--

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Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-9	SS-9	2022 Recommended Action (c)	IA-9	SS-9	2023 Recommended Action (c)	IA-9	SS-9	2024 Recommended Action (c)	IA-9	SS-9	2025 Recommended Action (c)
Sample ID:				IA-9	SS-9		IA9-12595756-033123-BP-003	SS9-12595756-033123-BP-009		IA-9	SS-9		12595756-020725-SK-IA-9	12595756-020725-SK-SS-9	
Sample Date:				04/29/22	04/29/22		03/31/23	03/31/23		3/27/2024	3/27/2024		2/7/2025	2/7/2025	
Sample Type:															
Matrix Code:				IA	SVSS		IA	SVSS		IA	SVSS		IA	SVSS	
Volatile Organic Compounds (ug/m^3)															
1,1,1-Trichloroethane	--	--	B	--	--		3.0	5.6	NFA	2.68	5.46 U	NFA	--	1.48	NFA
1,1-Dichloroethane	--	--	--	--	--		0.81 U	0.81 U		0.809 U	4.05 U		0.809 U	0.809 U	
1,1-Dichloroethene	--	--	A	--	--		0.36 J	0.79 U	NFA	1.20	3.96 U	ISR	--	0.793 U	ISR
1,2,4-Trimethylbenzene	--	--	D	--	--		4.8	13	NFA	4.43	1780	**MIT**	1.49	2.09	**MIT**
1,2-Dichlorobenzene	--	--	--	--	--		1.2 U	1.2 U		1.20 U	6.01 U		1.20 U	1.20 U	
1,2-Dichloroethene (total)	--	--	--	--	--		1.6 U	1.6 U		--	--		--	--	
1,3,5-Trimethylbenzene	--	--	D	--	--		1.5	3.4	NFA	1.09	521	NFA	0.983 U	0.983 U	NFA
1,4-Dichlorobenzene	--	--	--	--	--		1.2 U	0.83 J		1.20 U	6.01 U		1.20 U	1.20 U	
2,2,4-Trimethylpentane	--	--	D	--	--		0.93 U	1.2 U	NFA	0.934 U	263	NFA	0.934 U	0.934 U	NFA
2-Butanone (MEK)	--	--	--	--	--		6.1	6.1		14.8	112		1.47 U	1.47 U	
2-Chlorotoluene	--	--	--	--	--		1.0 U	1.0 U		--	--		--	--	
2-Hexanone	--	--	--	--	--		2.0 U	2.0 U		0.820 U	4.10 U		0.820 U	0.820 U	
4-Ethyl toluene	--	--	--	--	--		1.1	3.1		0.983 U	202		0.983 U	0.983 U	
4-Methyl-2-pentanone (MIBK)	--	--	--	--	--		2.0 U	2.0 U		2.05 UJ	10.2 U		2.05 U	2.05 U	
Acetone	--	--	--	--	--		25	26		96.0	29.5		5.18	4.87	
Benzene	--	--	D	--	--		0.64 U	3.5	NFA	0.863	13.0	NFA	0.639 U	1.55	NFA
Butane	--	--	--	--	--		10	2.4 U		--	--		--	--	
Carbon disulfide	--	--	--	--	--		1.2 J	1.2 J		0.623 U	3.11 U		0.623 U	0.623 U	
Carbon tetrachloride	--	--	A	--	--		0.41 J	0.18 J	NFA	0.692	6.29 U	NFA	--	1.26 U	NFA
Chlorobenzene	--	--	--	--	--		0.92 U	0.52 J		0.921 U	4.61 U		0.921 U	1.06	
Chlorodifluoromethane	--	--	--	--	--		1.8 U	1.8 U		--	--		--	--	
Chloroform (Trichloromethane)	--	--	--	--	--		0.98 U	0.31 J		0.977 U	4.88 U		0.977 U	0.977 U	
Chloromethane (Methyl chloride)	--	--	--	--	--		2.8	1.0 U		5.37	2.07 U		1.29	0.712	
cis-1,2-Dichloroethene	--	--	A	0.16 U	0.59 U	NFA	0.79 U	0.79 U	NFA	0.079 U	3.96 U	NFA	--	0.793 U	NFA
Cyclohexane	--	--	D	--	--		0.56 J	0.44 J	NFA	1.32	148	NFA	0.688 U	0.688 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--		0.94 J	0.50 J		--	--		--	--	
Dichlorodifluoromethane (CFC-12)	--	--	--	--	--		2.2 J	1.9 J		2.14 U	4.94 U		2.12	2.09	
Ethanol				--	--		--	--		659	64.8		10.4	9.42 U	
Ethyl acetate	--	--	--	--	--		--	--		85.4	14.5		1.80 U	1.80 U	
Ethylbenzene	--	--	D	--	--		1.0 U	12	NFA	0.869 U	433	NFA	0.869 U	0.869 U	NFA
Hexane	--	--	E	--	--		1.8 U	2.2 U	NFA	0.705 U	158	NFA	0.705 U	1.29	NFA
Isopropyl alcohol	--	--	--	--	--		45	24		59.7	9.54		2.46 U	6.66	
Isopropyl benzene	--	--	--	--	--		0.98 U	0.98 U		--	--		--	--	
m&p-Xylenes	--	--	E	--	--		4.0	40	NFA	3.22	1570	NFA	1.74 U	2.54	NFA
Methylene chloride	60	--	B	--	--		1.7 U	6.0	NFA	1.74 U	8.69 U	NFA	1.74 U	1.74 U	NFA
Naphthalene	--	--	D	--	--		2.6 U	2.6 U	NFA	7.24	119	MON	2.00	0.996 U	MON
N-Heptane	--	--	E	--	--		0.87 U	3.8	NFA	1.25	400	NFA	0.820 U	0.820 U	NFA
N-Propylbenzene	--	--	--	--	--		0.66 J	2.1		--	--		--	--	
o-Xylene	--	--	D	--	--		2.1	8.9	NFA	1.72	1220	**MIT**	0.869 U	1.61	**MIT**
Styrene	--	--	--	--	--		0.85 U	0.80 J		0.852 U	4.26 U		0.852 U	0.852 U	
tert-Butyl alcohol	--	--	--	--	--		15 U	15 U		1.52 U	7.58 U		1.52 U	1.52 U	
Tetrachloroethene	30	300	B	1 U	1 U	NFA	0.17 J	0.22 J	NFA	0.149	6.78 U	NFA	--	1.36 U	NFA
Tetrahydrofuran	--	--	--	--	--		15 U	15 U		1.81	7.37 U		1.47 U	1.47 U	
Toluene	--	--	F	--	--		4.5	22	NFA	4.15 U	524	NFA	0.754 U	29.2	NFA
trans-1,2-Dichloroethene	--	--	--	0.59 U	0.59 U		0.79 U	0.79 U		0.793 U	3.96 U		0.793 U	0.793 U	
Trichloroethene	2	20	A	1.5	70	**MIT**	2.0	40	**MIT**	1.72	15.3	**MIT**	--	13.8	**MIT**
Trichlorofluoromethane (CFC-11)	--	--	--	--	--		52	41		57.3	51.3		29.9	23.4	
Vinyl chloride	--	--	C	0.1 U	0.33 J	NFA	0.51 U	0.51 U	NFA	0.051 U	2.56 U	NFA	--	0.511 U	NFA
Xylenes (total)	--	--	--	--	--		6.1	49		--	--		--	--	

Footnotes:

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Only compounds detected above the laboratory method detection limit are shown on this table for clarity. See original laboratory analytical reports for complete analytical results.

CFC - Chlorofluorocarbon; MIBK - Methyl Isobutyl Ketone; MEK - Methyl Ethyl Ketone

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(c) NYSDOH Matrices A through F taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda.

Matrices are used to compare indoor air concentrations to sub-slab vapor concentrations in order to determine recommended actions, which include:

NFA No Further Action
ISR Identify Source(s) and Resample or Mitigate
MON Monitor
MIT **Mitigate**

Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-10	SS-10	2022 Recommended Action (c)	IA-10	SS-10	2023 Recommended Action (c)	IA-10	SS-10	2024 Recommended Action (c)	IA-10	SS-10	2025 Recommended Action (c)
Sample ID:				IA-10	SS-10		IA10-12595756-033123-BP-004	SS10-12595756-033123-BP-010		IA-10	SS-10		12595756-020725-SK-IA-10	12595756-020725-SK-SS-10	
Sample Date:				04/29/22	04/29/22		03/31/23	03/31/23		3/27/2024	3/27/2024		2/7/2025	2/7/2025	
Sample Type:															
Matrix Code:				IA	SVSS		IA	SVSS		IA	SVSS		IA	SVSS	
Volatile Organic Compounds (ug/m^3)															
1,1,1-Trichloroethane	--	--	B	--	--		1.6	1.1 U	NFA	2.48	7.80 U	NFA	--	1.09 U	NFA
1,1-Dichloroethane	--	--	--	--	--		0.81 U	0.81 U		0.809 U	5.79 U		0.809 U	0.809 U	
1,1-Dichloroethene	--	--	A	--	--		0.29 J	0.79 U	NFA	1.48	5.67 U	ISR	--	0.793 U	ISR
1,2,4-Trimethylbenzene	--	--	D	--	--		5.3	6.6	NFA	4.30	1980	**MIT**	1.67	1.45	**MIT**
1,2-Dichlorobenzene	--	--	--	--	--		1.2 U	1.2 U		1.20 U	8.60 U		1.20 U	1.20 U	
1,2-Dichloroethene (total)	--	--	--	--	--		1.6 U	1.6 U		--	--		--	--	
1,3,5-Trimethylbenzene	--	--	D	--	--		1.5	2.0	NFA	0.983 U	600	**MIT**	0.983 U	0.983 U	**MIT**
1,4-Dichlorobenzene	--	--	--	--	--		1.2 U	1.2 U		1.20 U	8.60 U		1.20 U	1.20 U	
2,2,4-Trimethylpentane	--	--	D	--	--		1.7	0.93 U	NFA	0.934 U	188	NFA	0.934 U	0.934 U	NFA
2-Butanone (MEK)	--	--	--	--	--		6.8	3.8		19.2	88.2		1.47 U	1.47 U	
2-Chlorotoluene	--	--	--	--	--		1.0 U	1.0 U		--	--		--	--	
2-Hexanone	--	--	--	--	--		2.0 U	2.0 U		1.85	5.86 U		0.820 U	0.820 U	
4-Ethyl toluene	--	--	--	--	--		1.1	1.8		0.983 U	272		0.983 U	0.983 U	
4-Methyl-2-pentanone (MIBK)	--	--	--	--	--		2.0 U	2.0 U		2.05 U	14.6 U		2.05 U	2.05 U	
Acetone	--	--	--	--	--		23	19		120	41.8		5.13	3.78	
Benzene	--	--	D	--	--		0.79	0.86	NFA	0.780	7.86	NFA	0.639 U	0.639 U	NFA
Butane	--	--	--	--	--		11	1.2 U		--	--		--	--	
Carbon disulfide	--	--	--	--	--		1.6 U	7.1		0.623 U	4.45 U		0.623 U	0.623 U	
Carbon tetrachloride	--	--	A	--	--		0.35 J	1.3 U	NFA	0.610	9.00 U	NFA	--	1.26 U	NFA
Chlorobenzene	--	--	--	--	--		0.92 U	0.92 U		0.921 U	6.59 U		0.921 U	0.921 U	
Chlorodifluoromethane	--	--	--	--	--		1.8 U	1.8 U		--	--		--	--	
Chloroform (Trichloromethane)	--	--	--	--	--		0.98 U	0.23 J		0.977 U	6.98 U		0.977 U	0.977 U	
Chloromethane (Methyl chloride)	--	--	--	--	--		2.7	1.0 U		6.13	2.95 U		1.20	0.413 U	
cis-1,2-Dichloroethene	--	--	A	0.16 U	0.59 U	NFA	0.79 U	0.79 U	NFA	0.079 U	5.67 U	NFA	--	0.793 U	NFA
Cyclohexane	--	--	D	--	--		0.70	0.22 J	NFA	1.25	103	NFA	0.688 U	0.688 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--		0.62 J	1.1 U		--	--		--	--	
Dichlorodifluoromethane (CFC-12)	--	--	--	--	--		2.0 J	1.8 J		2.97	7.07 U		2.09	2.02	
Ethanol				--	--		--	--		622	67.3 U		10.1	9.42 U	
Ethyl acetate	--	--	--	--	--		--	--		106	12.9 U		1.80 U	1.80 U	
Ethylbenzene	--	--	D	--	--		1.2	3.0	NFA	0.869	534	NFA	0.869 U	0.869 U	NFA
Hexane	--	--	E	--	--		1.8 U	1.8 U	NFA	0.705 U	63.8	NFA	0.705 U	1.39	NFA
Isopropyl alcohol	--	--	--	--	--		52	12 U		46.9	8.78 U		2.46 U	9.32	
Isopropyl benzene	--	--	--	--	--		0.98 U	0.98 U		--	--		--	--	
m&p-Xylenes	--	--	E	--	--		4.6	13	NFA	3.50	1820	NFA	1.74 U	1.74 U	NFA
Methylene chloride	60	--	B	--	--		1.7 U	1.7 U	NFA	1.74 U	12.4 U	NFA	1.74 U	5.32	NFA
Naphthalene	--	--	D	--	--		2.7	2.6 U	NFA	6.66	109	MON	2.02	0.996 U	MON
N-Heptane	--	--	E	--	--		1.9	2.2	NFA	0.820 U	320	NFA	0.820 U	0.820 U	NFA
N-Propylbenzene	--	--	--	--	--		0.61 J	1.0		--	--		--	--	
o-Xylene	--	--	D	--	--		2.2	4.5	NFA	1.97	1460	**MIT**	0.869 U	0.869 U	**MIT**
Styrene	--	--	--	--	--		0.26 J	0.85 U		0.852 U	6.09 U		0.852 U	0.852 U	
tert-Butyl alcohol	--	--	--	--	--		15 U	15 U		1.61	10.8 U		1.52 U	1.52 U	
Tetrachloroethene	30	300	B	1 U	1 U	NFA	0.20 J	0.27 J	NFA	0.136 U	9.70 U	NFA	--	1.36 U	NFA
Tetrahydrofuran	--	--	--	--	--		15 U	15 U		1.87	10.5 U		1.47 U	2.50	
Toluene	--	--	F	--	--		6.3	9.8	NFA	4.90 U	603	NFA	0.754 U	0.923	NFA
trans-1,2-Dichloroethene	--	--	--	0.59 U	0.59 U		0.79 U	0.79 U		0.793 U	5.67 U		0.793 U	0.793 U	
Trichloroethene	2	20	A	1.3	73	**MIT**	1.1	37	**MIT**	1.68	16.9	**MIT**	--	7.20	**MIT**
Trichlorofluoromethane (CFC-11)	--	--	--	--	--		46	8.1		75.3	36.6		34.5	3.24	
Vinyl chloride	--	--	C	0.1 U	0.38 U	NFA	0.51 U	0.51 U	NFA	0.051 U	3.66 U	NFA	--	0.511 U	NFA
Xylenes (total)	--	--	--	--	--		6.8	18		--	--		--	--	

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Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-11	SS-11	2022 Recommended Action (c)	IA-11	SS-11	2023 Recommended Action (c)	IA-11	SS-11	2024 Recommended Action (c)	IA-11	SS-11	2025 Recommended Action (c)
Sample ID:				IA-11	SS-11		IA11-12595756-033123-BP-005	SS11-12595756-033123-BP-011		IA-11	SS-11		12595756-020725-SK-IA-11	12595756-020725-SK-SS-11	
Sample Date:				04/29/22	04/29/22		03/31/23	03/31/23		3/27/2024	3/27/2024		2/7/2025	2/7/2025	
Sample Type:															
Matrix Code:				IA	SVSS		IA	SVSS		IA	SVSS		IA	SVSS	
Volatile Organic Compounds (ug/m^3)															
1,1,1-Trichloroethane	--	--	B	--	--		1.1	0.57 J-	NFA	1.22	14.1 U	NFA	--	1.09 U	NFA
1,1-Dichloroethane	--	--	--	--	--		0.81 U	0.81 UJ		0.809 U	10.4 U		0.809 U	0.809 U	
1,1-Dichloroethene	--	--	A	--	--		0.29 J	0.79 UJ	NFA	0.785	10.2 U	NFA	--	0.793 U	NFA
1,2,4-Trimethylbenzene	--	--	D	--	--		1.4	14 J-	NFA	3.88	3370	MIT	1.68	1.54	MIT
1,2-Dichlorobenzene	--	--	--	--	--		1.2 U	1.2 UJ		1.20 U	15.5 U		1.20 U	1.20 U	
1,2-Dichloroethene (total)	--	--	--	--	--		1.6 U	1.6 UJ		--	--		--	--	
1,3,5-Trimethylbenzene	--	--	D	--	--		0.49 J	2.9 J-	NFA	0.983 U	973	MIT	0.983 U	0.983 U	MIT
1,4-Dichlorobenzene	--	--	--	--	--		1.2 U	1.2 UJ		1.20 U	15.5 U		1.20 U	1.20 U	
2,2,4-Trimethylpentane	--	--	D	--	--		0.93 U	0.98 UJ	NFA	0.934 U	315	NFA	0.934 U	0.934 U	NFA
2-Butanone (MEK)	--	--	--	--	--		6.1	3.9 J-		13.7	125		1.47 U	1.94	
2-Chlorotoluene	--	--	--	--	--		1.0 U	1.1 J-		--	--		--	--	
2-Hexanone	--	--	--	--	--		2.0 U	2.0 UJ		0.820 U	10.6 U		0.820 U	0.820 U	
4-Ethyl toluene	--	--	--	--	--		0.40 J	3.2 J-		0.983 U	466		0.983 U	0.983 U	
4-Methyl-2-pentanone (MIBK)	--	--	--	--	--		2.0 U	2.0 UJ		2.05 U	26.5 U		2.05 U	2.05 U	
Acetone	--	--	--	--	--		27	17 J-		101	36.8		5.27	13.4	
Benzene	--	--	D	--	--		1.3	0.99 J-	NFA	0.719	15.1	NFA	0.639 U	0.639 U	NFA
Butane	--	--	--	--	--		9.2	5.0 J-		--	--		--	--	
Carbon disulfide	--	--	--	--	--		1.8	2.5 J-		0.623 U	8.03 U		0.623 U	0.623 U	
Carbon tetrachloride	--	--	A	--	--		0.34 J	0.33 J-	NFA	0.547	16.2 U	NFA	--	1.26 U	NFA
Chlorobenzene	--	--	--	--	--		0.92 U	0.92 UJ		0.921 U	11.9 U		0.921 U	0.921 U	
Chlorodifluoromethane	--	--	--	--	--		1.8 U	1.8 UJ		--	--		--	--	
Chloroform (Trichloromethane)	--	--	--	--	--		0.38 J	0.25 J-		0.977 U	12.6 U		0.977 U	0.977 U	
Chloromethane (Methyl chloride)	--	--	--	--	--		2.5	1.0 UJ		5.82	5.33 U		1.27	0.917	
cis-1,2-Dichloroethene	--	--	A	0.16 U	0.59 U	NFA	0.79 U	0.79 UJ	NFA	0.079 U	10.2 U	NFA	--	0.793 U	NFA
Cyclohexane	--	--	D	--	--		0.59 J	0.69 UJ	NFA	0.878	175	NFA	0.688 U	0.688 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--		1.1 U	0.77 J-		--	--		--	--	
Dichlorodifluoromethane (CFC-12)	--	--	--	--	--		1.9 J	2.0 J-		2.98	12.8 U		2.27	2.18	
Ethanol				--	--		--	--		712	122 U		10.6	9.42 U	
Ethyl acetate	--	--	--	--	--		--	--		67.0	23.3 U		1.80 U	1.80 U	
Ethylbenzene	--	--	D	--	--		2.8	3.7 J-	NFA	0.973	808	NFA	0.869 U	0.869 U	NFA
Hexane	--	--	E	--	--		1.8 U	1.8 UJ	NFA	3.98	166	NFA	0.948	1.71	NFA
Isopropyl alcohol	--	--	--	--	--		67	11 J-		35.9	15.9 U		4.97	7.60	
Isopropyl benzene	--	--	--	--	--		0.98 U	1.4 J-		--	--		--	--	
m&p-Xylenes	--	--	E	--	--		9.0	18 J-	NFA	4.34	2960	MIT	1.74 U	1.74 U	MIT
Methylene chloride	60	--	B	--	--		3.8 U	1.7 UJ	NFA	1.74 U	22.4 U	NFA	1.74 U	1.74 U	NFA
Naphthalene	--	--	D	--	--		2.6 U	2.2 J-	NFA	5.45	234	MON	1.93	0.996 U	MON
N-Heptane	--	--	E	--	--		1.7	2.2 J-	NFA	1.08	512	NFA	0.820 U	0.820 U	NFA
N-Propylbenzene	--	--	--	--	--		0.35 J	1.7 J-		--	--		--	--	
o-Xylene	--	--	D	--	--		3.0	5.7 J-	NFA	2.10	2320	MIT	0.869 U	0.903	MIT
Styrene	--	--	--	--	--		0.85 U	0.85 UJ		0.852 U	11.0 U		0.852 U	0.852 U	
tert-Butyl alcohol	--	--	--	--	--		15 U	15 UJ		1.52 U	19.6 U		1.52 U	1.52 U	
Tetrachloroethene	30	300	B	1 U	1 U	NFA	0.22 J	4.8 J-	NFA	0.136 U	17.5 U	NFA	--	1.36 U	NFA
Tetrahydrofuran	--	--	--	--	--		15 U	15 UJ		2.07	19.1 U		1.47 U	1.47 U	
Toluene	--	--	F	--	--		14	12 J-	NFA	4.37 U	908	NFA	0.754 U	1.50	NFA
trans-1,2-Dichloroethene	--	--	--	0.59 U	0.59 U		0.79 U	0.79 UJ		0.793 U	10.2 U		0.793 U	0.793 U	
Trichloroethene	2	20	A	0.7	5.4	NFA	0.47 J	3.9 J-	NFA	0.887 U	13.9 U	NFA	--	2.72	NFA
Trichlorofluoromethane (CFC-11)	--	--	--	--	--		43	16 J-		52.9	14.5 U		29.7	4.46	
Vinyl chloride	--	--	C	0.1 U	0.33 J	NFA	0.51 U	0.51 UJ	NFA	0.051 U	6.60 U	NFA	--	0.511 U	NFA
Xylenes (total)	--	--	--	--	--		12	24 J-		--	--		--	--	

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Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-12	IA-12	SS-12	2022 Recommended Action (c)	IA-12	SS-12	2023 Recommended Action (c)	IA-12	SS-12	2024 Recommended Action (c)	IA-12	SS-12	2025 Recommended Action (c)
Sample ID:				IA-12	IA-100	SS-12		IA12-12595756-033123-BP-006	SS12-12595756-033123-BP-012		IA-12	SS-12		12595756-020725-SK-IA-12	12595756-020725-SK-SS-12	
Sample Date:				04/29/22	04/29/22	04/29/22		03/31/23	03/31/23		3/27/2024	3/27/2024		2/7/2025	2/7/2025	
Sample Type:					Duplicate											
Matrix Code:				IA	IA	SVSS		IA	SVSS		IA	SVSS		IA	SVSS	
Volatile Organic Compounds (ug/m^3)																
1,1,1-Trichloroethane	--	--	B	--	--	--		1.5 J-	2.0	NFA	0.807	10.9 U	NFA	--	1.37	NFA
1,1-Dichloroethane	--	--	--	--	--	--		0.81 UJ	0.81 U		0.809 U	8.09 U		0.809 U	0.809 U	
1,1-Dichloroethene	--	--	A	--	--	--		0.32 J-	0.79 U	NFA	0.515	7.93 U	NFA	--	0.793 U	NFA
1,2,4-Trimethylbenzene	--	--	D	--	--	--		1.7 J-	7.1	NFA	3.09	2160	**MIT**	1.69	1.18	**MIT**
1,2-Dichlorobenzene	--	--	--	--	--	--		0.54 J-	1.2 U		1.20 U	12.0 U		1.20 U	1.20 U	
1,2-Dichloroethene (total)	--	--	--	--	--	--		1.6 UJ	1.6 U		--	--		--	--	
1,3,5-Trimethylbenzene	--	--	D	--	--	--		0.81 J-	1.3	NFA	0.983 U	629	**MIT**	0.983 U	0.983 U	**MIT**
1,4-Dichlorobenzene	--	--	--	--	--	--		1.2 UJ	1.2 U		1.20 U	12.0 U		1.20 U	1.20 U	
2,2,4-Trimethylpentane	--	--	D	--	--	--		0.93 UJ	0.93 U	NFA	0.934 U	188	NFA	0.934 U	0.934 U	NFA
2-Butanone (MEK)	--	--	--	--	--	--		8.3 J-	3.9		10.6	79.6		1.47 U	1.47 U	
2-Chlorotoluene	--	--	--	--	--	--		1.0 UJ	1.0 U		--	--		--	--	
2-Hexanone	--	--	--	--	--	--		1.6 J-	2.0 U		0.820 U	8.20 U		0.820 U	0.820 U	
4-Ethyl toluene	--	--	--	--	--	--		0.68 J-	1.4		0.983 U	265		0.983 U	0.983 U	
4-Methyl-2-pentanone (MIBK)	--	--	--	--	--	--		0.65 J-	2.0 U		2.05 U	20.5 U		2.05 U	2.05 U	
Acetone	--	--	--	--	--	--		36 J-	14		89.3	24.5		5.42	4.63	
Benzene	--	--	D	--	--	--		0.92 J-	0.64 U	NFA	0.671	8.75	NFA	0.639 U	0.639 U	NFA
Butane	--	--	--	--	--	--		9.6 J-	1.2 U		--	--		--	--	
Carbon disulfide	--	--	--	--	--	--		1.6 UJ	1.6 U		0.623 U	6.23 U		0.623 U	0.623 U	
Carbon tetrachloride	--	--	A	--	--	--		1.3 UJ	0.15 J	NFA	0.560	12.6 U	NFA	--	1.26 U	NFA
Chlorobenzene	--	--	--	--	--	--		0.92 UJ	0.92 U		0.921 U	9.21 U		0.921 U	0.921 U	
Chlorodifluoromethane	--	--	--	--	--	--		1.8 UJ	1.8 U		--	--		--	--	
Chloroform (Trichloromethane)	--	--	--	--	--	--		0.98 UJ	0.98 U		0.977 U	9.77 U		0.977 U	0.977 U	
Chloromethane (Methyl chloride)	--	--	--	--	--	--		2.7 J-	1.0 U		4.77	4.13 U		1.25	0.413 U	
cis-1,2-Dichloroethene	--	--	A	0.16 U	0.16 U	0.59 U	NFA	0.79 UJ	0.79 U	NFA	0.079 U	7.93 U	NFA	--	0.793 U	NFA
Cyclohexane	--	--	D	--	--	--		0.54 J-	0.69 U	NFA	0.692	105	NFA	0.688 U	0.688 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--	--		0.55 J-	1.1 U		--	--		--	--	
Dichlorodifluoromethane (CFC-12)	--	--	--	--	--	--		2.3 J-	2.1 J		2.97	9.89 U		2.08	2.16	
Ethanol				--	--	--		--	--		716	94.2 U		9.42 U	9.42 U	
Ethyl acetate	--	--	--	--	--	--		--	--		46.1	18.0 U		1.80 U	1.80 U	
Ethylbenzene	--	--	D	--	--	--		14 J-	2.0	NFA	1.04	495	NFA	0.869 U	0.869 U	NFA
Hexane	--	--	E	--	--	--		1.8 UJ	7.7 U	NFA	0.705 U	82.5	NFA	0.871	0.705 U	NFA
Isopropyl alcohol	--	--	--	--	--	--		160 J-	5.8 J		40.6	12.3 U		4.20	2.46 U	
Isopropyl benzene	--	--	--	--	--	--		0.98 UJ	0.98 U		--	--		--	--	
m&p-Xylenes	--	--	E	--	--	--		55 J-	9.0	NFA	4.78	1810	NFA	1.74 U	1.74 U	NFA
Methylene chloride	60	--	B	--	--	--		1.7 UJ	2.6 U	NFA	1.74 U	17.4 U	NFA	1.74 U	1.74 U	NFA
Naphthalene	--	--	D	--	--	--		2.5 J-	2.6 U	NFA	3.19	154	MON	1.44	0.996 U	MON
N-Heptane	--	--	E	--	--	--		1.3 J-	1.1	NFA	0.947	309	NFA	0.820 U	0.820 U	NFA
N-Propylbenzene	--	--	--	--	--	--		0.59 J-	0.77 J		--	--		--	--	
o-Xylene	--	--	D	--	--	--		12 J-	3.1	ISR	2.25	1460	**MIT**	0.869 U	0.869 U	**MIT**
Styrene	--	--	--	--	--	--		0.85 UJ	0.29 J		0.852 U	8.52 U		0.852 U	0.852 U	
tert-Butyl alcohol	--	--	--	--	--	--		15 UJ	15 U		1.52 U	15.2 U		1.52 U	1.52 U	
Tetrachloroethene	30	300	B	1 U	1 U	2	NFA	0.22 J-	3.8	NFA	0.136 U	13.6 U	NFA	--	2.29	NFA
Tetrahydrofuran	--	--	--	--	--	--		15 UJ	15 U		1.47 U	14.7 U		1.47 U	1.47 U	
Toluene	--	--	F	--	--	--		5.2 J-	5.8	NFA	4.26 U	546	NFA	0.754 U	1.28	NFA
trans-1,2-Dichloroethene	--	--	--	0.59 U	0.59 U	0.59 U		0.79 UJ	0.79 U		0.793 U	7.93 U		0.793 U	0.793 U	
Trichloroethene	2	20	A	0.54	0.59	1.3	NFA	0.87 J-	1.5	NFA	0.634 U	10.7 U	NFA	--	1.07 U	NFA
Trichlorofluoromethane (CFC-11)	--	--	--	--	--	--		45 J-	43		40.7	72.5		27.8	17.0	
Vinyl chloride	--	--	C	0.1 U	0.1 U	0.38 U	NFA	0.51 UJ	0.51 U	NFA	0.051 U	5.11 U	NFA	--	0.511 U	NFA
Xylenes (total)	--	--	--	--	--	--		67 J-	12		--	--		--	--	

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CFC - Chlorofluorocarbon; MIBK - Methyl Isobutyl Ketone; MEK - Methyl Ethyl Ketone

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Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-13	SSV-13	2024 Recommended Action (c)	IA-13	SSV-13	2025 Recommended Action (c)	IA-14	SSV-14	2024 Recommended Action (c)	IA-14	IA-14	SSV-14	SSV-14	2025 Recommended Action (c)
Sample ID:				IA-13	SSV-13		12595756-020725-SK-IA-13	12595756-020725-SK-SS-13		IA-14	SSV-14		12595756-020725-SK-IA-14	12595756-020725-SK-IA-14-DUP	12595756-020725-SK-SS-14	12595756-020725-SK-SS-14-DUP	
Sample Date:				3/27/2024	3/27/2024		2/7/2025	2/7/2025		3/27/2024	3/27/2024		2/7/2025	2/7/2025	2/7/2025	2/7/2025	
Sample Type:														Duplicate		Duplicate	
Matrix Code:				IA	SVSS		IA	SVSS		IA	SVSS		IA	IA	SVSS	SVSS	
Volatile Organic Compounds (ug/m^3)																	
1,1,1-Trichloroethane	--	--	B	2.67	10.9 U	NFA	--	6.77	NFA	2.21	10.9 U	NFA	--	--	1.95 U	1.52 U	NFA
1,1-Dichloroethane	--	--	--	0.809 U	8.09 U		0.809 U	0.809 U		0.809 U	8.09 U		0.809 U	0.809 U	1.44 U	1.13 U	
1,1-Dichloroethene	--	--	A	1.18	7.93 U	ISR	--	0.793 U	ISR	1.03	7.93 U	ISR	--	--	1.42 U	1.10 U	ISR
1,2,4-Trimethylbenzene	--	--	D	3.37	1940	**MIT**	1.53	1.24	**MIT**	4.28	2440	**MIT**	1.40	1.45	1.76 U	1.39	**MIT**
1,2-Dichlorobenzene	--	--	--	1.20 U	12.0 U		1.20 U	1.20 U		1.20 U	12.0 U		1.20 U	1.20 U	2.15 U	1.67 U	
1,2-Dichloroethene (total)	--	--	--	--	--		--	--		--	--		--	--	--	--	
1,3,5-Trimethylbenzene	--	--	D	0.983 U	551	NFA	0.983 U	0.983 U	NFA	1.08	678	**MIT**	0.983 U	0.983 U	1.76 U	1.37 U	**MIT**
1,4-Dichlorobenzene	--	--	--	1.20 U	12.0 U		1.20 U	1.20 U		1.20 U	12.0 U		1.20 U	1.20 U	2.15 U	1.67 U	
2,2,4-Trimethylpentane	--	--	D	0.958	159	NFA	0.934 U	0.934 U	NFA	0.934 U	153	NFA	0.934 U	0.934 U	1.67 U	1.30 U	NFA
2-Butanone (MEK)	--	--	--	14.6	38.0		1.47 U	1.47 U		14.3	54.3		1.47 U	1.47 U	2.63 U	2.68	
2-Chlorotoluene	--	--	--	--	--		--	--		--	--		--	--	--	--	
2-Hexanone	--	--	--	0.820 U	8.20 U		0.820 U	0.820 U		0.820 U	8.20 U		0.820 U	0.820 U	1.46 U	1.14 U	
4-Ethyl toluene	--	--	--	0.983 U	237		0.983 U	0.983 U		0.983 U	371		0.983 U	0.983 U	1.76 U	1.37 U	
4-Methyl-2-pentanone (MIBK)	--	--	--	2.05 UJ	20.5 U		2.05 U	2.05 U		2.05 UJ	20.5 U		2.05 U	2.05 U	3.66 U	2.84 U	
Acetone	--	--	--	103	85.8		5.08	5.46		105	23.8 U		5.04	4.82	5.70	7.89	
Benzene	--	--	D	0.827	8.05	NFA	0.639 U	0.639 U	NFA	0.834	7.95	NFA	0.639 U	0.639 U	1.14 U	0.888 U	NFA
Butane	--	--	--	--	--		--	--		--	--		--	--	--	--	
Carbon disulfide	--	--	--	0.623 U	6.23 U		0.623 U	0.623 U		0.623 U	6.23 U		0.623 U	0.623 U	1.11 U	0.866 U	
Carbon tetrachloride	--	--	A	0.541	12.6 U	NFA	--	1.26 U	NFA	0.560	12.6 U	NFA	--	--	2.25 U	1.75 U	NFA
Chlorobenzene	--	--	--	0.921 U	9.21 U		0.921 U	0.921 U		0.921 U	9.21 U		0.921 U	0.921 U	1.64 U	1.28 U	
Chlorodifluoromethane	--	--	--	--	--		--	--		--	--		--	--	--	--	
Chloroform (Trichloromethane)	--	--	--	0.977 U	9.77 U		0.977 U	0.977 U		0.977 U	9.77 U		0.977 U	0.977 U	1.85	1.61	
Chloromethane (Methyl chloride)	--	--	--	5.25	4.13 U		1.31	0.413 U		5.51	4.13 U		1.33	1.26	0.737 U	0.574 U	
cis-1,2-Dichloroethene	--	--	A	0.079 U	7.93 U	NFA	--	0.793 U	NFA	0.087 U	7.93 U	NFA	--	--	1.42 U	1.10 U	NFA
Cyclohexane	--	--	D	1.39	83.6	NFA	0.688 U	0.688 U	NFA	1.33	87.1	NFA	0.688 U	0.688 U	1.23 U	0.957 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--		--	--		--	--		--	--	--	--	
Dichlorodifluoromethane (CFC-12)	--	--	--	2.32 U	9.89 U		2.11	2.14		2.25 U	9.89 U		0.989 UJ	2.11 J	2.18	2.34	
Ethanol				571	110		9.91	11.8		682	94.2 U		9.42 U	9.70	16.8 U	13.1 U	
Ethyl acetate	--	--	--	104	18.0 U		1.80 U	1.80 U		149	51.2		1.80 U	1.80 U	3.22 U	2.50 U	
Ethylbenzene	--	--	D	0.869 U	491	NFA	0.869 U	0.869 U	NFA	1.54	508	NFA	0.869 U	0.869 U	1.55 U	1.21 U	NFA
Hexane	--	--	E	0.705 U	87.4	NFA	0.705 U	0.705 U	NFA	0.705 U	93.4	NFA	0.705 U	0.705 U	1.26 U	2.41	NFA
Isopropyl alcohol	--	--	--	68.1	176		2.90	2.46 U		59.5	12.3 U		3.24	2.46 U	4.40 UJ	10.7 J	
Isopropyl benzene	--	--	--	--	--		--	--		--	--		--	--	--	--	
m&p-Xylenes	--	--	E	2.83	1870	NFA	1.74 U	1.74 U	NFA	7.73	2020	**MIT**	1.74 U	1.74 U	3.10 U	2.42 U	**MIT**
Methylene chloride	60	--	B	1.74 U	17.4 U	NFA	1.74 U	1.74 U	NFA	1.74 U	17.4 U	NFA	1.74 U	1.74 U	3.10 U	2.41 U	NFA
Naphthalene	--	--	D	4.54	77.1	MON	2.01	0.996 U	MON	6.71	145	MON	1.89	1.62	1.78 U	1.38 U	MON
N-Heptane	--	--	E	1.84	245	NFA	0.820 U	0.820 U	NFA	1.11	259	NFA	0.820 U	0.820 U	1.46 U	1.14 U	NFA
N-Propylbenzene	--	--	--	--	--		--	--		--	--		--	--	--	--	
o-Xylene	--	--	D	1.54	1390	**MIT**	0.869 U	0.869 U	**MIT**	5.21	1540	**MIT**	0.869 U	0.869 U	1.55 U	1.21 U	**MIT**
Styrene	--	--	--	0.852 U	8.52 U		0.852 U	0.852 U		0.852 U	8.52 U		0.852 U	0.852 U	1.52 U	1.18 U	
tert-Butyl alcohol	--	--	--	1.57	15.2 U		1.52 U	1.52 U		1.52 U	15.2 U		1.52 U	1.52 U	2.71 U	2.10 U	
Tetrachloroethene	30	300	B	0.136 U	13.6 U	NFA	--	2.86	NFA	0.136 U	13.6 U	NFA	--	--	4.82	4.50	NFA
Tetrahydrofuran	--	--	--	3.42	14.7 U		1.47 U	1.47 U		1.90	14.7 U		1.47 U	1.47 U	2.63 U	2.05 U	
Toluene	--	--	F	4.26 U	494	NFA	0.754 U	1.25	NFA	5.13 U	464	NFA	0.754 U	0.754 U	1.68	1.71	NFA
trans-1,2-Dichloroethene	--	--	--	0.793 U	7.93 U		0.793 U	0.793 U		0.793 U	7.93 U		0.793 U	0.793 U	1.42 U	1.10 U	
Trichloroethene	2	20	A	1.70	250	**MIT**	--	296	**MIT**	1.57	580	**MIT**	--	--	534	496	**MIT**
Trichlorofluoromethane (CFC-11)	--	--	--	56.2	54.5		33.4	62.4		54.5	56.2		28.4	28.5	4.54	5.30	
Vinyl chloride	--	--	C	0.051 U	5.11 U	NFA	--	0.511 U	NFA	0.051 U	5.11 U	NFA	--	--	0.913 U	0.711 U	NFA
Xylenes (total)	--	--	--	--	--		--	--		--	--		--	--	--	--	

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Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-15	SSV-15	2024 Recommended Action (c)	IA-15	SSV-15	2025 Recommended Action (c)
Sample ID:				IA-15	SSV-15		12595756-020725-SK-IA-15	12595756-020725-SK-SS-15	
Sample Date:				3/27/2024	3/27/2024		2/7/2025	2/7/2025	
Sample Type:									
Matrix Code:				IA	SVSS		IA	SVSS	
Volatile Organic Compounds (ug/m^3)									
1,1,1-Trichloroethane	--	--	B	2.26	5.46 U	NFA	--	1.09 U	NFA
1,1-Dichloroethane	--	--	--	0.809 U	4.05 U		0.809 U	0.809 U	
1,1-Dichloroethene	--	--	A	1.10	3.96 U	ISR	--	0.793 U	ISR
1,2,4-Trimethylbenzene	--	--	D	4.64	1840	**MIT**	1.63	1.26	**MIT**
1,2-Dichlorobenzene	--	--	--	1.20 U	6.01 U		1.20 U	1.20 U	
1,2-Dichloroethene (total)	--	--	--	--	--		--	--	
1,3,5-Trimethylbenzene	--	--	D	1.20	556	NFA	0.983 U	0.983 U	NFA
1,4-Dichlorobenzene	--	--	--	1.20 U	6.01 U		1.20 U	1.20 U	
2,2,4-Trimethylpentane	--	--	D	0.934 U	210	NFA	0.934 U	0.934 U	NFA
2-Butanone (MEK)	--	--	--	15.2	122		1.47 U	1.47 U	
2-Chlorotoluene	--	--	--	--	--		--	--	
2-Hexanone	--	--	--	0.820 U	4.10 U		0.820 U	0.820 U	
4-Ethyl toluene	--	--	--	0.983 U	214		0.983 U	0.983 U	
4-Methyl-2-pentanone (MIBK)	--	--	--	2.05 UJ	10.2 U		2.05 U	2.05 U	
Acetone	--	--	--	100	123		5.06	14.2	
Benzene	--	--	D	0.859	10.3	NFA	0.639 U	0.639 U	NFA
Butane	--	--	--	--	--		--	--	
Carbon disulfide	--	--	--	0.623 U	3.30		0.623 U	0.623 U	
Carbon tetrachloride	--	--	A	0.566	6.29 U	NFA	--	1.26 U	NFA
Chlorobenzene	--	--	--	0.921 U	4.61 U		0.921 U	0.921 U	
Chlorodifluoromethane	--	--	--	--	--		--	--	
Chloroform (Trichloromethane)	--	--	--	0.977 U	4.88 U		0.977 U	0.977 U	
Chloromethane (Methyl chloride)	--	--	--	5.58	4.67		1.28	1.11	
cis-1,2-Dichloroethene	--	--	A	0.079 U	3.96 U	NFA	--	0.793 U	NFA
Cyclohexane	--	--	D	1.59	121	NFA	0.688 U	0.688 U	NFA
Cymene (p-Isopropyltoluene)	--	--	--	--	--		--	--	
Dichlorodifluoromethane (CFC-12)	--	--	--	2.44	4.94 U		2.08	2.12	
Ethanol				622	458		9.72	22.4	
Ethyl acetate	--	--	--	116	95.1		1.80 U	1.80 U	
Ethylbenzene	--	--	D	0.869 U	412	NFA	0.869 U	0.869 U	NFA
Hexane	--	--	E	0.705 U	132	NFA	0.705 U	5.64	NFA
Isopropyl alcohol	--	--	--	61.0	53.8		2.46 U	27.5	
Isopropyl benzene	--	--	--	--	--		--	--	
m&p-Xylenes	--	--	E	3.48	1510	NFA	1.74 U	1.74 U	NFA
Methylene chloride	60	--	B	1.78 U	8.69 U	NFA	1.74 U	1.74 U	NFA
Naphthalene	--	--	D	7.81	164	MON	1.69	0.996 U	MON
N-Heptane	--	--	E	1.22	339	NFA	0.820 U	0.820 U	NFA
N-Propylbenzene	--	--	--	--	--		--	--	
o-Xylene	--	--	D	1.93	1220	**MIT**	0.869 U	0.947	**MIT**
Styrene	--	--	--	0.852 U	4.26 U		0.852 U	0.852 U	
tert-Butyl alcohol	--	--	--	1.52 U	7.58 U		1.52 U	1.52 U	
Tetrachloroethene	30	300	B	0.136 U	6.78 U	NFA	--	1.36 U	NFA
Tetrahydrofuran	--	--	--	2.71	7.37 U		1.47 U	1.47 U	
Toluene	--	--	F	4.30 U	452	NFA	0.754 U	1.59	NFA
trans-1,2-Dichloroethene	--	--	--	0.793 U	3.96 U		0.793 U	0.793 U	
Trichloroethene	2	20	A	1.47	5.37 U	ISR	--	1.07 U	ISR
Trichlorofluoromethane (CFC-11)	--	--	--	56.2	44.4		28.3	18.8	
Vinyl chloride	--	--	C	0.051 U	2.56 U	NFA	--	0.511 U	NFA
Xylenes (total)	--	--	--	--	--		--	--	

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MON Monitor
MIT Mitigate

Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	NYSDOH Matrix (c)	IA-16	SSV-16	2024 Recommended Action (c)	SSV-16	2025 Recommended Action (c)	OA	OA	OA	OA
Sample ID:				IA-16	SSV-16		12595756-020725-SsniK-SS-16		OA-2	OA-12595756-033123-BP-021	OA	12595756-020725-SK-OA-1
Sample Date:				3/27/2024	3/27/2024		2/7/2025		04/29/22	03/31/23	3/27/2024	2/7/2025
Sample Type:												
Matrix Code:				IA	SVSS		SVSS		AA	AA	AA	AA
Volatile Organic Compounds (ug/m^3)												
1,1,1-Trichloroethane	--	--	B	2.49	10.9 U	NFA	2.82	NFA	--	1.1 U	0.109 U	--
1,1-Dichloroethane	--	--	--	0.809 U	8.09 U		0.809 U		--	0.81 U	0.809 U	0.809 U
1,1-Dichloroethene	--	--	A	1.40	7.93 U	ISR	0.793 U	ISR	--	0.79 U	0.079 U	--
1,2,4-Trimethylbenzene	--	--	D	4.13	2120	**MIT**	1.60	**MIT**	--	0.52 J	0.983 U	0.983 U
1,2-Dichlorobenzene	--	--	--	1.20 U	12.0 U		1.20 U		--	1.2 U	1.20 U	1.20 U
1,2-Dichloroethene (total)	--	--	--	--	--		--		--	1.6 U	--	--
1,3,5-Trimethylbenzene	--	--	D	0.983 U	624	**MIT**	0.983 U	**MIT**	--	0.98 U	0.983 U	0.983 U
1,4-Dichlorobenzene	--	--	--	1.20 U	12.0 U		1.20 U		--	1.2 U	1.20 U	1.20 U
2,2,4-Trimethylpentane	--	--	D	0.934 U	158	NFA	0.934 U	NFA	--	0.93 U	0.934 U	0.934 U
2-Butanone (MEK)	--	--	--	15.4	97.6		3.01		--	1.4 J	1.47 U	1.47 U
2-Chlorotoluene	--	--	--	--	--		--		--	1.0 U	--	--
2-Hexanone	--	--	--	0.820 U	8.20 U		0.820 U		--	2.0 U	0.820 U	0.820 U
4-Ethyl toluene	--	--	--	0.983 U	221		0.983 U		--	0.98 U	0.983 U	0.983 U
4-Methyl-2-pentanone (MIBK)	--	--	--	2.05 UJ	20.5 U		2.05 U		--	2.0 U	2.05 U	2.05 U
Acetone	--	--	--	108	323		19.0		--	7.2 J	8.74 U	3.23
Benzene	--	--	D	0.834	7.89	NFA	0.639 U	NFA	--	0.64 U	0.639 U	0.639 U
Butane	--	--	--	--	--		--		--	3.9	--	--
Carbon disulfide	--	--	--	0.623 U	6.23 U		0.623 U		--	1.6 U	0.623 U	0.623 U
Carbon tetrachloride	--	--	A	0.572	12.6 U	NFA	1.26 U	NFA	--	1.3 U	0.591	--
Chlorobenzene	--	--	--	0.921 U	9.21 U		0.921 U		--	0.92 U	0.921 U	0.921 U
Chlorodifluoromethane	--	--	--	--	--		--		--	1.8 U	--	--
Chloroform (Trichloromethane)	--	--	--	0.977 U	9.77 U		0.977 U		--	0.98 U	0.977 U	0.977 U
Chloromethane (Methyl chloride)	--	--	--	5.47	4.13 U		1.17		--	1.0 U	1.42	1.22
cis-1,2-Dichloroethene	--	--	A	0.079 U	7.93 U	NFA	0.793 U	NFA	0.16 U	0.79 U	0.079 U	--
Cyclohexane	--	--	D	1.32	91.9	NFA	0.688 U	NFA	--	0.69 U	0.688 U	0.688 U
Cymene (p-Isopropyltoluene)	--	--	--	--	--		--		--	1.1 U	--	--
Dichlorodifluoromethane (CFC-12)	--	--	--	2.36 U	9.89 U		2.05		--	1.7 J	3.00	2.19
Ethanol				533	103		22.8		--	--	9.42 U	9.42 U
Ethyl acetate	--	--	--	89.0	18.0 U		1.80 U		--	--	1.80 U	1.80 U
Ethylbenzene	--	--	D	0.869 U	412	NFA	0.869 U	NFA	--	0.87 U	0.869 U	0.869 U
Hexane	--	--	E	0.705 U	96.6	NFA	0.705 U	NFA	--	1.8 U	0.705 U	0.705 U
Isopropyl alcohol	--	--	--	61.2	207		4.33		--	12 U	1.23 U	2.46 U
Isopropyl benzene	--	--	--	--	--		--		--	0.98 U	--	--
m&p-Xylenes	--	--	E	2.93	1640	NFA	1.74 U	NFA	--	2.2 U	1.74 U	1.74 U
Methylene chloride	60	--	B	3.22 U	17.4 U	NFA	1.74 U	NFA	--	1.7 U	1.74 U	1.74 U
Naphthalene	--	--	D	7.87	144	MON	0.996 U	MON	--	2.6 U	1.05 U	0.996 U
N-Heptane	--	--	E	1.14	280	NFA	0.820 U	NFA	--	0.82 U	0.820 U	0.820 U
N-Propylbenzene	--	--	--	--	--		--		--	0.98 U	--	--
o-Xylene	--	--	D	1.65	1360	**MIT**	0.869 U	**MIT**	--	0.87 U	0.869 U	0.869 U
Styrene	--	--	--	0.852 U	8.52 U		0.852 U		--	0.85 U	0.852 U	0.852 U
tert-Butyl alcohol	--	--	--	1.52 U	15.2 U		1.52 U		--	15 U	1.52 U	1.52 U
Tetrachloroethene	30	300	B	0.136 U	13.6 U	NFA	1.36 U	NFA	1 U	1.4 U	0.136 U	--
Tetrahydrofuran	--	--	--	1.47 U	14.7 U		7.90		--	15 U	1.47 U	1.47 U
Toluene	--	--	F	3.92 U	396	NFA	1.86	NFA	--	1.8 U	0.754 U	0.754 U
trans-1,2-Dichloroethene	--	--	--	0.793 U	7.93 U		0.793 U		0.59 U	0.79 U	0.793 U	0.793 U
Trichloroethene	2	20	A	1.49	507	**MIT**	67.7	**MIT**	0.16 U	1.1 U	0.107 U	--
Trichlorofluoromethane (CFC-11)	--	--	--	61.8	22.3		23.5		--	0.92 J	2.06	1.39
Vinyl chloride	--	--	C	0.051 U	5.11 U	NFA	0.511 U	NFA	0.1 U	0.51 U	0.051 U	--
Xylenes (total)	--	--	--	--	--		--		--	3.0 U	--	--

Footnotes:

ug/m^3 = micrograms per cubic meter; U = Not detected at the associated reporting limit;
J = Estimated concentration; UJ = Not detected, associated reporting limit is estimated;
J- = Estimated concentration, result may be biased low.

Only compounds detected above the laboratory method detection limit are shown on this table for clarity. See original laboratory analytical reports for complete analytical results.

CFC - Chlorofluorocarbon; MIBK - Methyl Isobutyl Ketone; MEK - Methyl Ethyl Ketone

(a) Exceedance of NYSDOH Guidance Value taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda, shown as **red bold text**.

(b) Exceedance of NYSDOH Immediate Action Level taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda, shown as **red bold text with yellow highlight**.

(c) NYSDOH Matrices A through F taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda.

Matrices are used to compare indoor air concentrations to sub-slab vapor concentrations in order to determine recommended actions, which include:

NFA No Further Action
ISR Identify Source(s) and Resample or Mitigate
MON Monitor
MIT Mitigate

Table 7
Soil Gas Sampling Analytical Results Summary

Former General Instrument Corporation Site
Site #709010
Sherburne, NY

Sample Location:	SG1	SG2	SG3	SG7	SG-12	SG4	SG5	SG-11	SG6	SG8	SG8	SG-13	SG9	SG10	SG-14	SG-14
Sample ID:	SG-1	SG-2	SG-3	SG7-12595756-033123-BP-019	SG-12	SG4-12595756-033123-BP-016	SG5-12595756-033123-BP-017	SG-11	SG6-12595756-033123-BP-018	SG8-12595756-033123-BP-013	SG8-12595756-033123-BP-024	SG-13	SG9-12595756-033123-BP-014	SG10-12595756-033123-BP-015	SG-14	SG-14
Sample Date:	04/29/22	04/29/22	04/29/22	03/31/23	3/26/2024	03/31/23	03/31/23	3/26/2024	03/31/23	03/31/23	03/31/23 Duplicate	3/26/2024	03/31/23	03/31/23	3/26/2024	3/26/2024 Duplicate
Sample Type:																
Matrix Code:	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS
Volatile Organic Compounds (ug/m^3)																
1,1-Dichloroethene	--	--	--	7.9 UJ	0.793 U	7.9 U	7.9 UJ	0.793 U	7.9 U	7.9 U	7.9 UJ	0.793 U	7.9 U	7.9 U	11.0	10.1
1,2,4-Trimethylbenzene	--	--	--	9.8 UJ	2.67	9.8 U	9.8 UJ	2.30	9.8 U	8.7 J	9.8 UJ	7.67	9.8 U	9.8 U	1230	1250
1,3,5-Trimethylbenzene	--	--	--	9.8 UJ	0.983 U	9.8 U	9.8 UJ	0.983 U	9.8 U	4.1 J	9.8 UJ	1.37	9.8 U	9.8 U	228	236
1,3-Butadiene	--	--	--	4.4 UJ	0.442 U	4.4 U	4.4 UJ	1.05	4.4 U	4.4 U	4.4 UJ	0.442 U	4.4 U	4.4 U	2.77 U	2.77 U
2,2,4-Trimethylpentane	--	--	--	9.3 UJ	0.934 U	9.3 U	2.3 J-	4.04	9.3 U	2.3 J	9.3 UJ	0.934 U	9.3 U	9.3 U	80.8	72.4
2-Butanone (MEK)	--	--	--	51 J-	1.47 U	47	280 J-	3.57	15 U	15 U	15 UJ	2.12	15 U	15 U	15.9	17.3
4-Ethyl toluene	--	--	--	9.8 UJ	0.983 U	9.8 U	9.8 UJ	0.983 U	9.8 U	9.8 U	9.8 UJ	0.983 U	9.8 U	9.8 U	297	269
4-Methyl-2-pentanone (MIBK)	--	--	--	20 UJ	2.05 U	20 U	20 UJ	2.64	20 U	20 U	20 UJ	2.05 U	20 U	20 U	12.8 U	12.8 U
Acetone	--	--	--	80 J-	18.2	78 J	380 J-	19.8	120 U	120 U	120 UJ	24.5	120 U	120 U	14.8 U	14.8 U
Benzene	--	--	--	6.4 UJ	0.639 U	6.4 U	6.4 UJ	7.16	6.4 U	6.4 U	1.5 J-	0.639 U	6.4 U	6.4 U	78.0	71.6
Butane	--	--	--	12 J-	--	12	80 J-	--	12 U	12 U	12 UJ	--	5.8 J	12 U	--	--
Carbon disulfide	--	--	--	16 UJ	0.623 U	16 U	16 UJ	4.45	16 U	16 U	16 UJ	0.623 U	16 U	16 U	29.1	27.7
Chlorodifluoromethane	--	--	--	18 UJ	--	18 U	4.5 J-	--	18 U	18 U	18 UJ	--	18 U	18 U	--	--
Chloroethane	--	--	--	13 UJ	0.528 U	13 U	13 UJ	0.528 U	13 U	13 U	13 UJ	0.528 U	13 U	13 U	4.12	3.54
Chloromethane (Methyl chloride)	--	--	--	10 UJ	1.75	10 U	10 UJ	0.413 U	10 U	10 U	10 UJ	1.53	10 U	10 U	2.58 U	2.58 U
cis-1,2-Dichloroethene	0.59 U	0.59 U	0.59 U	7.9 UJ	0.793 U	7.9 U	7.9 UJ	0.793 U	7.9 U	7.9 U	7.9 UJ	0.793 U	7.9 U	7.9 U	258	228
Cyclohexane	--	--	--	6.9 UJ	0.688 U	6.9 U	6.9 UJ	14.5	6.9 U	6.9 U	6.9 UJ	0.688 U	6.9 U	6.9 U	379	330
Dichlorodifluoromethane (CFC-12)	--	--	--	25 UJ	2.18	25 U	25 UJ	2.17	25 U	25 U	25 UJ	2.16	25 U	25 U	6.18 U	6.18 U
Ethylbenzene	--	--	--	8.7 UJ	0.869 U	8.7 U	8.7 UJ	1.23	2.3 J	9.7 J	2.7 J-	0.869 U	8.7 U	8.7 U	186	190
Hexane	--	--	--	18 UJ	0.705 U	18 U	19 J-	34.0	18 U	18 U	18 UJ	0.705 U	18 U	18 U	458	395
Isopropyl alcohol	--	--	--	120 UJ	2.04	120 U	120 UJ	1.67	120 U	120 U	120 UJ	1.23 U	120 U	120 U	7.67 U	7.67 U
m&p-Xylenes	--	--	--	22 UJ	1.74 U	22 U	22 UJ	3.30	22 U	26	22 UJ	2.25	22 U	5.7 J	371	430
Methylene chloride	--	--	--	17 UJ	1.82	17 U	11 J-	1.74 U	17 U	17 U	17 UJ	1.74 U	17 U	17 U	10.8 U	10.8 U
Naphthalene	--	--	--	26 UJ	1.38	26 U	26 UJ	1.05 U	26 U	26 U	26 UJ	3.60	26 U	26 U	33.0	34.7
N-Heptane	--	--	--	8.2 UJ	0.820 U	8.2 U	3.5 J-	16.9	8.2 U	8.2 U	8.2 UJ	0.820 U	4.2 J	8.2 U	305	279
o-Xylene	--	--	--	8.7 UJ	0.882	8.7 U	8.7 UJ	1.35	8.7 U	2.6 J	8.7 UJ	1.29	8.7 U	3.0 J	116	186
Tetrachloroethene	1 U	1 U	1 U	26 J-	1.36 U	14 U	14 UJ	3.25	14 U	14 U	3.4 J-	1.36 U	14 U	14 U	8.48 U	8.48 U
Tetrahydrofuran	--	--	--	150 UJ	1.47 U	150 U	150 UJ	1.47 U	150 U	150 U	150 UJ	1.66	150 U	150 U	9.20 U	9.20 U
Toluene	--	--	--	3.3 J-	1.62	4.2 J	8.3 J-	32.3	5.4 J	5.1 J	5.3 J-	1.03	7.5	5.0 J	49.0	54.3
trans-1,2-Dichloroethene	0.59 U	0.59 U	0.59 U	7.9 UJ	0.793 U	7.9 U	7.9 UJ	0.793 U	7.9 U	7.9 U	7.9 UJ	0.793 U	7.9 U	7.9 U	29.7	24.0
Trichloroethene	1.5	1	18	11 UJ	1.07 U	11 U	5.0 J-	1.81	11 U	11 U	4.9 J-	1.07 U	5.9 J	11 U	111	100
Trichlorofluoromethane (CFC-11)	--	--	--	11 UJ	1.34	11 U	11 UJ	8.32	11 U	11 U	11 UJ	1.29	11 U	11 U	7.02 U	7.02 U
Vinyl chloride	0.38 U	0.38 U	0.38 U	5.1 UJ	0.511 U	5.1 U	5.1 UJ	0.511 U	5.1 U	5.1 U	5.1 UJ	0.511 U	5.1 U	5.1 U	200	177
Xylenes (total)	--	--	--	30 UJ	--	30 U	30 UJ	--	30 U	29 J	30 UJ	--	30 U	8.7 J	--	--

Notes:

ug/m^3 = micrograms per cubic meter; U = Not detected at the associated reporting limit; J = Estimated concentration; UJ = Not detected; associated reporting limit is estimated; J- = Estimated concentration; result may be biased low

Only compounds detected above the reporting limit or estimated results are shown on this table for clarity. See original laboratory analytical reports for complete analytical results.

MIBK - Methyl Isobutyl Ketone; MEK - Methyl Ethyl Ketone

Where applicable, sample results with different location identifications are grouped together for comparison purposes as they represent results from repeating sampling at soil gas points installed in the same general vicinity as one another since the sample points were decommissioned immediately following sample collection.

Table 8
Historical Indoor Air and Sub-Slab Vapor Sampling Analytical Results Summary

Former General Instrument Corporation Site
Site #709010
Sherburne, NY

Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	SS-1	IA-1	SS-1	IA-1	SS-1	SS-2	IA-2	SS-2	IA-2	SS-2	SS-3	SS-3	IA-3	SS-3	IA-3	SS-3	SS-3
Sample ID:			SS-1	IA-1	SS-1	IA-1	SS-1	SS-2	IA-2	SS-2	IA-2	SS-2	SS-3	SS-3	IA-3	SS-3	IA-3	SS-3	SS-3~DUP
Sample Date:			08/09/06	02/18/07	02/18/07	04/06/07	04/06/07	08/09/06	02/18/07	02/18/07	04/06/07	04/06/07	08/09/06	08/09/06	02/18/07	02/18/07	04/06/07	04/06/07	04/06/07
Sample Type:														Duplicate					Duplicate
Matrix Code:			SVSS	IA	SVSS	IA	SVSS	SVSS	IA	SVSS	IA	SVSS	SVSS	SVSS	IA	SVSS	IA	SVSS	SVSS
Volatile Organic Compounds (ug/m^3)																			
1,1,1-Trichloroethane	--	--	38.3	11.1 J	1.16 J	4.88	0.67 J	0.832 U	8.32 UJ	8.32 UJ	0.832 U	0.83 U	0.832 U	0.832 U	8.32 U	8.32 UJ	0.832 U	0.83 U	0.83 U
1,1-Dichloroethane	--	--	0.658	6.17 U	0.617 U	0.617 U	0.62 U	0.617 U	6.17 U	6.17 U	0.617 U	0.62 U	0.617 U	0.617 U	6.17 U	6.17 U	0.617 U	0.62 U	0.62 U
1,2,4-Trimethylbenzene	--	--	62.5	192	73.4	1400 D	52	456	4300 D	1700 D	5700 D	300	1090	172	4400 D	1200 D	11000 D	82	2700 D
1,2-Dichloroethane	--	--	0.617 U	6.17 U	0.617 U	0.617 U	0.62 U	0.617 U	6.17 U	6.17 U	0.617 U	0.62 U	0.617 U	0.741	6.17 U	6.17 U	0.617 U	0.74	0.62 U
1,3,5-Trimethylbenzene	--	--	20	50	17.5	320 D	13	192	282	530 D	1900 D	62	326	60	1400 D	286	3700 D	47	1100 D
1,4-Dioxane	--	--	6.19	11.0 U	1.1 U	1.1 U	1.1 U	1.1 U	11.0 U	11 U	1.1 U	1.1 U	1.1 U	1.1 U	11.0 U	11 U	1.1 U	1.1 U	1.1 U
2,2,4-Trimethylpentane	--	--	0.902	10.4	0.712 U	5.6	0.71 U	0.665 J	7.12 U	7.12 U	0.712	0.71 U	0.712 U	0.522 J	7.12 U	7.12 U	0.855	2	0.95
2-Butanone (MEK)	--	--	8.09 J	8.99 U	0.899 U	0.899 U	0.9 U	11.1	8.99 U	8.99 U	0.899 U	0.9 U	2.46	3.66	8.99 U	8.99 U	21	53	0.9 U
2-Hexanone	--	--	1.08 J	12.5 U	1.25 U	1.25 UJ	1.2 UJ	5.37	12.5 U	12.5 U	1.25 UJ	1.2 UJ	1.25 U	1.25 U	12.5 U	12.5 U	1.25 UJ	1.2 U	1.2 U
4-Ethyl toluene	--	--	24	81.9	29.5	460 D	26	90.4	1700 D	660 D	2800 D	120	452	80	1700	416	5300 D	87	1800
4-Methyl-2-pentanone (MIBK)	--	--	1.58	12.5 U	1.25 U	1.25 U	1.2 U	14.2	12.5 U	12.5 U	1.25 U	1.2 U	2.37	5.12	12.5 U	12.5 U	1.25 U	1.2 U	1.2 U
Acetone	--	--	57.9	2100 D	25.6	6700 D	50	1540	120	156	740 D	48	95.6	44.4	151	189	1400 D	920 D	940
Benzene	--	--	3.67	15.3	0.487	5.42	1.4	3.41	15.3	5.84	19.5	1.3	2.21	4.42	18.8	3.25 J	10.4	20	9.7
Carbon disulfide	--	--	3.92	4.75 U	3.92	0.475 U	0.47 U	4.24	6.33	4.75 U	0.886	0.47 U	2.98	11.1	8.55	15.2	1.3	14	1.4
Chloroethane	--	--	0.402 U	4.02 U	0.475 U	0.402 U	0.4 U	0.831	4.02 U	4.02 U	0.402 U	0.4 U	0.402 U	0.402 U	4.02 U	4.02 U	0.402 U	0.4 U	0.4 U
Chloroform (Trichloromethane)	--	--	0.744 U	7.44 U	0.744 U	0.744 U	0.74 U	0.744 U	7.44 U	7.44 U	0.744 U	0.74 U	0.744 J	1.29	7.44 U	10.9	0.744 U	0.65 J	0.74 U
Chloromethane (Methyl chloride)	--	--	0.315 U	3.15 U	0.315 U	0.315 U	0.31 U	1.07	3.15 U	3.15 U	0.315 U	0.31 U	0.504	0.315 U	3.15 U	3.15 U	4.62 J	0.31 U	0.31 U
cis-1,2-Dichloroethene	--	--	0.604 U	6.04 U	0.604 U	0.443 J	0.6 U	2.18	6.04 U	6.04 U	0.604 U	0.6 U	0.766	2.5	6.04 U	7.66	0.604 U	2.8	0.6 U
Cyclohexane	--	--	1.68	12.9	0.49 J	22.4	0.63	1.26	10.1	4.55 J	75 D	0.66	35.7	9.1	12.6	5.25 U	92.4	51	71
Dichlorodifluoromethane (CFC-12)	--	--	1.51	7.54 U	0.754 U	1.36	1.8	1.46	7.54 U	7.54 U	0.754 U	1.9	1.41	1.46	7.54 U	7.54 U	1.11	0.85	0.75 U
Ethyl acetate	--	--	0.916 U	9.16 U	0.916 U	0.916 U	0.92 U	0.916 U	9.16 U	9.16 U	0.916 U	0.92 U	1.87	2.09	9.16 U	9.16 U	31.5	0.92 U	0.92 U
Ethylbenzene	--	--	2.6	28.7	1.28	60	0.97	64	48.1	19	100 D	2	6.36	6.66	62.7	8.83	141	12	76
Hexane	--	--	6.34	40.5	1.36	43	1.8	6.23	13.3	6.09	22.9	0.79	11.5	15.8	16.8	4.66 J	12.2	58	15
Isopropyl alcohol	--	--	0.375 U	22.2	0.375 U	0.375 U	0.37 U	118	53	148	2300 D	0.37 U	33	40.5	310	3.75 U	4000 D	760 D	2700 D
m&p-Xylenes	--	--	10.2 J	105	4.55	235	3.5	565	24.7 J	76.8	400 D	16	29.1	31.3	182	35.8	560 D	34	270
Methylene chloride	60	--	0.353 J	10.9	0.565	7.77	1.2	0.53 U	5.30 U	5.3 U	2.19	2.3	0.53 U	0.671	5.30 U	5.3 U	2.97	9.2	6.1
N-Heptane	--	--	4.33	10.8	0.583 J	25	0.71	6.08	8.75	4.58 J	20	0.83	4.29	11.7	10.4	6.25 U	12.5	28	15
o-Xylene	--	--	4.68	79.4	3.71	83 D	3.6	328	37.1	93.6	430 D	12	36.6	25.6	251	30	740 D	16	260
Styrene	--	--	1.21	6.49 U	0.649 U	0.649 U	0.65 U	0.649 U	6.49 U	6.49 U	0.649 U	0.65 U	0.649 U	0.649 U	6.49 U	6.49 U	0.649 U	0.65 U	0.65 U
Tetrachloroethene	30	300	4.48	15.9	2.28	5.79	1.4	0.827 J	7.58 J	10.3 U	5.86	1 U	1.03 U	0.621 J	10.3	10.3 U	4.9	1.2	3.9
Tetrahydrofuran	--	--	4.62	106	0.45 U	0.45 U	0.45 U	0.45 U	4.50 U	4.5 U	0.45 U	0.45 U	0.45 U	0.45	4.5 U	4.5 U	0.45 U	0.45 U	0.45 U
Toluene	--	--	22.2	23	5.06	57 D	6.4	65.1	18.4 J	43.7	140 D	5.4	20.3	36	88.9	29.9	175	61	110
Trichloroethene	2	20	66.1	**4.92**[a]	7.1	**3.11**[a]	9.7	190	2.18 U	10.9	0.601	0.82	20.8	45.3	2.18 U	740 D	0.819	21	1.4
Trichlorofluoromethane (CFC-11)	--	--	2.28	5.71 J	1.83	1.31	0.74 J	7.71	36.0	12.6	9.08	0.91	8.68	8.45	45.1	13.7	22.2	8.5	10
Trifluorotrichloroethane (CFC-113)	--	--	--	11.7 U	3.43	1.17 U	1.2 U	--	11.7 U	11.7 U	1.17 U	1.2 U	--	--	11.7 U	11.7 U	1.17 U	1.2 U	1.2 U

Notes:

ug/m^3 = micrograms per cubic meter; U = Not detected at the associated reporting limit; J = Estimated concentration; UJ = Not detected; associated reporting limit is estimated; J- = Estimated concentration; result may be biased low

Only compounds detected above the reporting limit or estimated results are shown on this table for clarity. See original laboratory analytical reports for complete analytical results.

MIBK - Methyl Isobutyl Ketone; MEK - Methyl Ethyl Ketone

Exceedances[ab] - Exceeded NYSDOH Criteria.

(a) NYSDOH Guidance Values taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda.

(b) NYSDOH Immediate Action Levels taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda.

Sample Location:	NYSDOH Guidance Value (a)	NYSDOH Immediate Action Level (b)	IA-4	SS-4	IA-4	IA-5	SS-5	IA-6	SS-6	OA	OA	Trip Blank	Trip Blank
Sample ID:			IA-4	SS-4	IA-4 DUPE	IA-5	SS-5	IA-6	SS-6	OA-1	OA-1	Trip Blank	Trip Blank
Sample Date:			02/18/07	02/18/07	02/18/07	02/18/07	02/18/07	02/18/07	02/18/07	02/18/07	04/06/07	02/22/07	04/06/07
Sample Type:					Duplicate							(other)	(other)
Matrix Code:			IA	SVSS	IA	IA	SVSS	IA	SVSS	AA	AA	GSQ	GSQ
Volatile Organic Compounds (ug/m^3)													
1,1,1-Trichloroethane	--	--	8.32 UJ	8.32 U	8.32 U	8.32 UJ	8.32 U	8.32 UJ	8.32 UJ	0.832 U	0.832 U	0.832 U	0.832 U
1,1-Dichloroethane	--	--	6.17 U	6.17 U	6.17 U	6.17 U	6.17 U	6.17 U	6.17 U	0.617 U	0.617 U	0.617 U	0.617 U
1,2,4-Trimethylbenzene	--	--	6600 D	2700 D	4500 D	3800 D	444	3300 D	3100 D	324	32	0.749 U	0.749 U
1,2-Dichloroethane	--	--	6.17 U	6.17 U	6.17 U	6.17 U	6.17 U	6.17 U	6.17 U	0.617 U	0.617 U	0.617 U	0.617 U
1,3,5-Trimethylbenzene	--	--	2000 D	800 D	1400 D	1200 D	76	1000 D	940 D	41.5	7.35	0.750 U	0.750 U
1,4-Dioxane	--	--	11 U	11 U	11 U	11 U	11 U	11 U	11 U	1.1 U	1.1 U	1.10 U	1.10 U
2,2,4-Trimethylpentane	--	--	7.12 U	7.12 U	7.12 U	7.12 U	7.12 U	7.12 U	7.12 U	0.712 U	0.712 U	0.712 U	0.712 U
2-Butanone (MEK)	--	--	8.99 U	8.99 U	8.99 U	8.99 U	8.99 U	8.99 U	8.99 U	0.899 U	0.899 U	0.899 U	0.899 U
2-Hexanone	--	--	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	1.25 U	1.25 UJ	1.25 U	1.25 U
4-Ethyl toluene	--	--	2500 D	1000 D	1700 D	1400 D	180	1200 D	1200 D	68.0	12	0.750 U	0.750 U
4-Methyl-2-pentanone (MIBK)	--	--	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	1.25 U	1.25 U	1.25 U	1.25 U
Acetone	--	--	97.5	113	96.6	149	177	139	142	19.6	11.8	0.724 U	0.724 U
Benzene	--	--	21.1	8.12	16.6	12.3	4.87 U	10.4	9.09	0.714	0.487 U	0.487 U	0.487 U
Carbon disulfide	--	--	4.43 J	4.75 U	3.48 J	3.17 J	4.75 U	4.75 U	4.75 U	0.475 U	0.475 U	0.475 U	0.475 U
Chloroethane	--	--	4.02 U	4.02 U	4.02 U	4.02 U	4.02 U	4.02 U	4.02 U	0.402 U	0.402 U	0.402 U	0.402 U
Chloroform (Trichloromethane)	--	--	7.44 U	7.44 U	7.44 U	7.44 U	7.44 U	7.44 U	7.44 U	0.744 U	0.744 U	0.744 U	0.744 U
Chloromethane (Methyl chloride)	--	--	3.15 U	3.15 U	3.15 U	3.15 U	3.15 U	3.15 U	3.15 U	0.861	0.315 U	0.315 U	0.315 U
cis-1,2-Dichloroethene	--	--	6.04 U	6.04 U	6.04 U	6.04 U	6.04 U	6.04 U	6.04 U	0.604 U	0.604 U	0.604 U	0.604 U
Cyclohexane	--	--	20.6	7.7	15	21.7	5.25 U	18.5	16.8	0.525 U	0.525 U	0.525 U	0.525 U
Dichlorodifluoromethane (CFC-12)	--	--	7.54 U	7.54 U	7.54 U	7.54 U	7.54 U	7.54 U	7.54 U	2.61	1.56	0.754 U	0.754 U
Ethyl acetate	--	--	9.16 U	9.16 U	9.16 U	9.16 U	9.16 U	9.16 U	9.16 U	0.916 U	0.916 U	0.916 U	0.916 U
Ethylbenzene	--	--	60.5	22.1	45.9	49.4	5.74 J	38.8	34	1.24	0.662 U	0.662 U	0.662 U
Hexane	--	--	26.5	10	19	30.4	7.16	26.5	25.8	0.681	0.394 J	0.537 U	0.537 U
Isopropyl alcohol	--	--	176	180	198	160 D	48.2	140 D	120 D	0.375 U	0.375 U	0.375 U	0.375 U
m&p-Xylenes	--	--	138	90.5	194	217	18.5	230	222	4.55	0.706 J	1.32 U	1.32 U
Methylene chloride	60	--	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	0.706	1.13	0.530 U	0.530 U
N-Heptane	--	--	13.3	5.42 J	12.5	15.8	4.17 J	13.3	11.7	0.625 U	0.625 U	0.625 U	0.625 U
o-Xylene	--	--	196	154	194	282	16.3	290	282	5.43	0.839	0.662 U	0.662 U
Styrene	--	--	6.49 U	6.49 U	6.49 U	6.49 U	6.49 U	6.49 U	6.49 U	0.649 U	0.649 U	0.649 U	0.649 U
Tetrachloroethene	30	300	10.3 U	10.3 U	10.3 U	10.3 U	10.3 U	10.3 U	10.3 U	1.03 U	1.03 U	1.03 U	1.03 U
Tetrahydrofuran	--	--	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	0.45 U	0.45 U	0.450 U	0.450 U
Toluene	--	--	78.1	52.9	85.8	126	21.8	138	133	2.49	0.575 U	0.575 U	0.575 U
Trichloroethene	2	20	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	0.218 U	0.218 U	0.218 U	0.218 U
Trichlorofluoromethane (CFC-11)	--	--	50.8	28	33.1	34.3	8.57 U	30.3	32.6	2	0.628 J	0.857 U	0.857 U
Trifluorotrichloroethane (CFC-113)	--	--	11.7 U	11.7 U	11.7 U	11.7 U	11.7 U	11.7 U	11.7 U	1.17 U	1.17 U	1.17 U	1.17 U

Notes:

ug/m^3 = micrograms per cubic meter; U = Not detected at the associated reporting limit; J = Estimated concentration; UJ = Not detected; associated reporting limit is estimated; J- = Estimated concentration; result may be biased low

Only compounds detected above the reporting limit or estimated results are shown on this table for clarity. See original laboratory analytical reports for complete analytical results.

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(a) NYSDOH Guidance Values taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda.

(b) NYSDOH Immediate Action Levels taken from the NYSDOH Soil Vapor Intrusion Guidance, October 2006 and subsequent addenda.

APPENDICES

APPENDIX A – EXAMPLE ENVIRONMENTAL EASEMENT

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

THIS INDENTURE made this _____day of _____, 20__, between Owner(s) Enter property owner(s) name, having an office at Enter property owner's address, County of Dutchess, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of Enter street address of property in the Choose municipality type of Enter property municipality, County of Enter property county and State of New York, known and designated on the tax map of the County Clerk of Enter clerk county as tax map parcel numbers: Section Enter Tax ID Section #. Block Enter Tax ID Block # Lot Enter Tax ID Lot #, being the same as that property conveyed to Grantor by deed dated Enter Deed Date and recorded in the Enter county name or leave blank for NY City deeds County Clerk's Office in Liber and Page Enter Instrument # or Liber and Page #s. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately Enter Acreage +/- acres, and is hereinafter more fully described in the Land Title Survey dated Enter original survey date and, if applicable, "and revised on" and revised survey date prepared by Enter revised surveyor's name or original surveyor's name if not revised, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

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

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Choose an Oversight Document TypeNumber: Enter SAC# or BCA/Consent Order Index # and "as amended by Amendment(s) #(s)" as applicable, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

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

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

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

Choose the allowable land use if current land use is selected, enter current use.

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

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

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

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

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

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

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

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

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

B. The Controlled Property shall not be used for Choose the correct list of inapplicable uses., and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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

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

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

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

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

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

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

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

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

(i) are in-place;

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

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

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

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

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

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

(7) the information presented is accurate and complete.

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

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

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

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

5. Enforcement

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

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

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

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

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

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

Parties shall address correspondence to:

Site Number: Enter DEC Site #
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

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

communicating notices and responses to requests for approval.

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

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

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

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

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

Enter Grantor's Name:

By: _____

Print Name: _____

Title:_____ Date:_____

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the _____ day of _____, in the year 20 __, before me, the undersigned, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

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

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the _____ day of _____, in the year 20__, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

SCHEDULE “A” PROPERTY DESCRIPTION

Enter Property Description

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
Site Owner – Sherburne Agricultural Services, LLC, Lydia Denworth	(917) 453-3943 ldenworth@gmail.com
Remedial Party – Vishay GSI, Inc. – Luis Muñoz	(610) 407-4897 Luis.Munoz@vishay.com
Remedial Engineer – GHD Consulting Services Inc. – Jeffrey P. Lambert, PE	(860) 747-8245 jeffrey.lambert@ghd.com
NYSDEC Project Manager – Jasmine Stefansky	(518) 402-9575 jasmine.stefansky@dec.ny.gov
NYSDEC Project Manager's Supervisor – Jeffrey Dyber	(518) 402-9698 jeffrey.dyber@dec.ny.gov
NYSDEC Site Control	DERSiteControl@dec.ny.gov
NYSDOH Project Manager – Mark Sergott	(518) 402-7897 mark.sergott@health.ny.gov
Remedial Party Attorney – Askin & Hooker, LLC – Todd M. Hooker	(973) 729-7711 Todd@askinlaw.com

APPENDIX C – EXCAVATION WORK PLAN (EWP)

C-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination or breach or alter the Site's surface, the Site owner or their representative will notify the NYSDEC contacts listed in the table below. Table C-1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix B of the SMP.

Table C-1: Notifications*

NYSDEC Project Manager – Jasmine Stefansky	(518)402-9575 jasmine.stefansky@dec.ny.gov
NYSDEC Project Manager's Supervisor – Jeffrey Dyber	(518) 402-9698 jeffrey.dyber@dec.ny.gov
NYSDEC Site Control	DERSiteControl@dec.ny.gov
Site Owner – Sherburne Agricultural Services, LLC, Lydia Denworth	(917) 453-3943 ldenworth@gmail.com
Remedial Party – Vishay GSI, Inc. – Luis Muñoz	(610) 407-4897 Luis.Munoz@vishay.com
Remedial Engineer – GHD Consulting Services Inc. – Jeffrey P. Lambert, PE	(860) 747-8245 jeffrey.lambert@ghd.com
NYSDOH Project Manager – Mark Sergott	(518) 402-7897 mark.sergott@health.ny.gov
Remedial Party Attorney – Askin & Hooker, LLC – Todd M. Hooker	(973) 729-7711 Todd@askinlaw.com

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

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for Site re-grading, intrusive elements or utilities to be installed below the surface, estimated volumes of contaminated soil to be excavated, any modifications of truck routes, and any work that may impact the Site;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work, and submittals (e.g., reports) to the NYSDEC documenting the completed intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP, 29 CFR 1910.120 and 29 CFR 1926 Subpart P;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix I of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required request to import form and all supporting documentation including, but not limited to, chemical testing results.

The NYSDEC project manager will review the notification and may impose additional requirements for the excavation that are not listed in this EWP. The alteration, restoration and modification of ECs must conform with Article 145 Section 7209 of the Education Law regarding the application professional seals and alterations.

C-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed during all excavations into known or potentially contaminated material (remaining contamination) or a breach of the Site's surface. A qualified

environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will perform the screening. Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC or other closure documentation.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-Site as soil beneath a cover or if the material can be used as cover soil. Based on historical knowledge of the Site and the contaminants present, soils that are observed to be stained, discolored, have a sheen, or produce elevated PID readings (i.e., sustained 10 parts per million [ppm] or greater) will be considered potentially contaminated and stockpiled for further assessment per Sections C-6 and C-7. Further discussion of off-site disposal of materials and on-Site reuse is provided in Sections C-6 and C-7 of this Appendix.

C-3 SOIL STAGING METHODS

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

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

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

C-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will oversee all invasive work and the excavation and load-out of all excavated material.

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

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site. A Site utility stakeout will be completed for all utilities prior to any ground intrusive activities at the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements). Trucks transporting contaminated soil must have either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides.

A decontamination pad will be constructed and utilized on-Site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be decontaminated before leaving the Site until the activities performed under this section are complete. Decontamination water will be collected and disposed of off-site in an appropriate manner.

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

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed off-site at a permitted landfill facility in accordance with all applicable local, State, and Federal regulations.

C-5 MATERIALS TRANSPORT OFF-SITE

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

Material transported by trucks exiting the Site will be secured with either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

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

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

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

C-6 MATERIALS DISPOSAL OFF-SITE

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

Off-Site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, (e.g. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the PRR. This documentation will include, but will not be limited to: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled consistent with 6 NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State C&D debris recovery facility (6 NYCRR Subpart 361-5 registered or permitted facility).

C-7 MATERIALS REUSE ON-SITE

The qualified environmental professional, as defined in 6 NYCRR Part 375, will ensure that procedures defined for materials reuse in this SMP are followed and that

unacceptable material (i.e. contaminated) does not remain on-Site. Contaminated on-Site material, including historic fill and contaminated soil, that is acceptable for reuse on-Site will be placed below the demarcation layer or impervious surface, and will not be reused within the cover system or within landscaping berms. Contaminated on-Site material may only be used beneath the Site cover as backfill for subsurface utility lines with prior approval from the DEC project manager.

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

Soil/fill material for reuse on-Site will be segregated and staged as described in Sections C-2 and C-3 of this EWP. The anticipated size and location of stockpiles will be provided in the 15-day notification to the NYSDEC project manager. Stockpile locations will be based on the location of Site excavation activities and proximity to nearby Site features. Material reuse on-Site will comply with requirements of NYSDEC DER-10 Section 5.4(e)4. Any modifications to the requirements of DER-10 Section 5.4(e)4 must be approved by the NYSDEC project manager.

Any demolition material proposed for reuse on-Site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-Site will not be performed without prior NYSDEC approval. Organic matter

(wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site may only be reused on-Site with written approval from the NYSDEC project manager.

C-8 FLUIDS MANAGEMENT

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

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

C-9 SURFACE RESTORATION

After the completion of soil removal and any other invasive activities the existing surface will be restored in a manner that complies with the Record of Decision. The existing surface is comprised of clean soil, asphalt pavement, concrete covered sidewalks, and/or concrete building slabs. A demarcation layer, consisting of orange snow fencing material, white geotextile, or equivalent material will be placed prior to backfilling the excavation to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP, if appropriate, and approved by the NYSDEC based on their review and approval of either the EWP or pre-work notification associated with the proposed work. If the type of surface changes from that which exists prior to the excavation (i.e., soil is replaced by asphalt), this will constitute a modification of the Site surface and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent PRR and in an updated SMP. The alteration, restoration and

modification of Site surface conditions must conform with Article 145 Section 7209 of the Education Law regarding the application professional seals and alterations.

C-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the Site will be approved by the qualified environmental professional, as defined in 6 NYCRR Part 375, and will be in compliance with provisions in this SMP prior to receipt at the Site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

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

All imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d) and DER-10 Appendix 5 for commercial use. Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Appendix P of the SMP. Soils that meet 'general' fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC project manager. Soil material will be sampled for the full suite of analytical parameters, including PFAS and 1, 4-dioxane. Solid waste will not be imported onto the Site.

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

C-11 STORMWATER POLLUTION PREVENTION

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

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

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

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

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

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

C-12 EXCAVATION CONTINGENCY PLAN

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

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes [Target Analyte List (TAL) metals, Target Compound List (TCL) volatiles and semi-volatiles (including 1,4-dioxane), TCL pesticides and PCBs, and PFAS], unless the Site history and previous sampling results provide sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC project manager for approval prior to sampling. Any tanks will be closed as per NYSDEC regulations and guidance.

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

C-13 COMMUNITY AIR MONITORING PLAN

Air monitoring will be conducted during Site work, in accordance with a Community Air monitoring Plan (CAMP), as required by Appendix A-I of NYSDEC's DER-10. The CAMP is included in the SMP as Appendix I. The objective of this CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that might arise as a result of work conducted on Site. The CAMP will include monitoring for volatile organic compounds (VOCs) and particulate matter (e.g. airborne "dust"). The CAMP specifies methods that must be used to conduct air monitoring, the specific instruments to be used, and action levels for VOCs and dust.

The location of air sampling stations, based on generally prevailing wind conditions, will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations. These locations will be shown on a figure provided to the NYSDEC at the time the CAMP is implemented.

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

C-13A: Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of ECs such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 part-per-million, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 micrograms per cubic meter, work activities should be suspended until controls are implemented and are successful in reducing the total

particulate concentration to 150 micrograms per cubic meter or less at the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

C-13B: Special Requirements for Indoor Work with Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other ECs be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.

C-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-Site and on-Site. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project.

Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the PRR.

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

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

C-15 DUST CONTROL PLAN

Particulate monitoring must be conducted according to the CAMP provided in Appendix I of the SMP. If particulate levels at the Site exceed the thresholds listed in the CAMP or if airborne dust is observed on the Site or leaving the Site, the dust suppression techniques listed below will be employed. The remedial party will also take measures listed below to prevent dust production on the Site.

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

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

C-16 OTHER NUISANCES

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

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

APPENDIX D - RESPONSIBILITIES OF OWNER AND REMEDIAL PARTY

Responsibilities

The responsibilities for implementing the Site Management Plan (SMP) for the Former General Instrument Corporation Site, located at 1 BrightPet Drive (formerly Kenyon Press Drive), in Sherburne, New York (Site), number 709010, are divided between the Site owner and a Remedial Party, as defined below. The Owner is currently listed as:

Sherburne Agricultural Services, LLC

Solely for the purposes of this document and based upon the facts related to a particular Site and the remedial program being carried out, the term Remedial Party (RP) refers to any of the following: COC holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation (NYSDEC) is carrying out remediation or Site management, the NYSDEC and/or an agent acting on its behalf.

The RP is currently listed as:

Vishay GSI, Inc, a corporate successor of General Instrument Corporation (GIC);

Contact:	Luis Muñoz
Phone:	(610) 407-4897
E-mail:	Luis.Muñoz@vishay.com
Address:	63 Lancaster Avenue Malvern, Pennsylvania 19355

Nothing on this page shall supersede the provisions of an EE, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the Site.

Site Owner's Responsibilities:

1) The Owner shall follow the provisions of the SMP as they relate to future construction and excavation at the Site, including completion of a Soil Vapor Intrusion (SVI) evaluation for any future buildings constructed on the Site.

2) In accordance with a periodic time frame determined by the NYSDEC, the Owner shall periodically certify, in writing, that all ICs set forth in an EE remain in place and continue to be complied with. The Owner shall provide a written certification to the RP, upon the RP's request, to allow the RP to include the certification in the Site's PRR certification to the NYSDEC.

3) In the event the Site is delisted, the Owner remains bound by the EE and shall submit, upon request by the NYSDEC, a written certification that the EE is still in place and has been complied with.

4) The Owner shall grant access to the Site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5) The Owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. If damage to the remedial components or vandalism is evident, the Owner shall notify the Site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3 of the SMP.

6) If some action or inaction by the Owner adversely impacts the Site, the Owner must notify the Site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3 of the SMP and coordinate the performance of necessary corrective actions with the RP.

7) The Owner must notify the RP and the NYSDEC of any change in ownership of the Site properties (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the Site properties. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the SMP. A change of use includes, but is not limited to, any activity that may increase direct human or environmental exposure (e.g., day care, school or park). A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8) The Owner will maintain Site fences, conduct periodic Site mowing, maintain integrity of and access to environmental sampling points, etc. on behalf of the RP. The RP remains ultimately responsible for maintaining the ECs.

9) In accordance with the tenant notification law, within 15 days of receipt, the Owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the Site, whether produced by the NYSDEC, RP, or Owner, to the tenants on the property. The Owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the Site, including completion of an SVI evaluation for any future buildings constructed on the Site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, PRRs and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the Site property to undertake a specific activity, the RP shall provide the Owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the Owner, upon the Owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the Site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the Owner.

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of the Site. The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html .

6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3 - Notifications of the SMP.

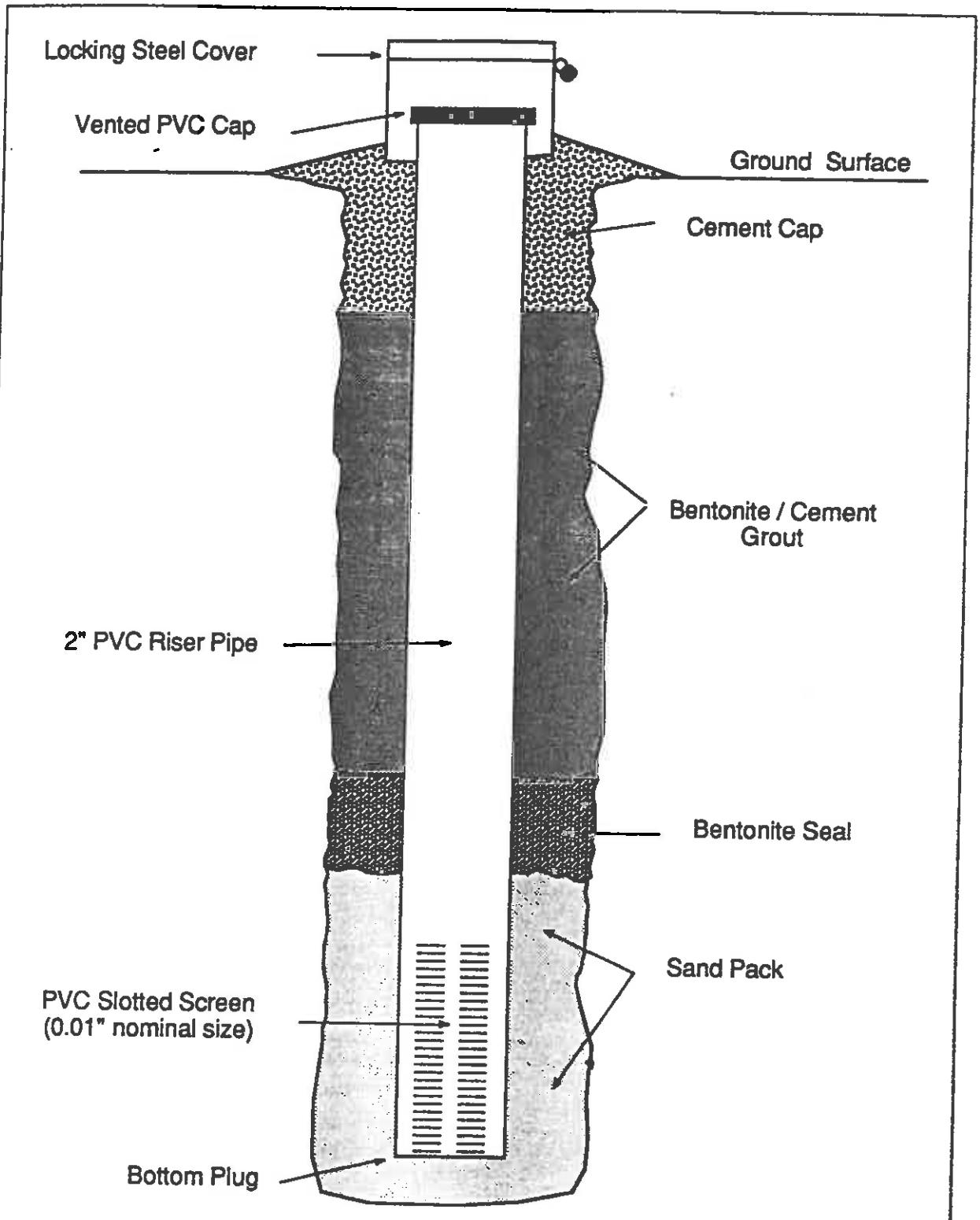
7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

8) Any change in use, change in ownership, change in Site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the Site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the NYSDEC project manager to discuss the need to update such documents.

Change in RP ownership and/or control and/or Site ownership does not affect the RP's obligations with respect to the Site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

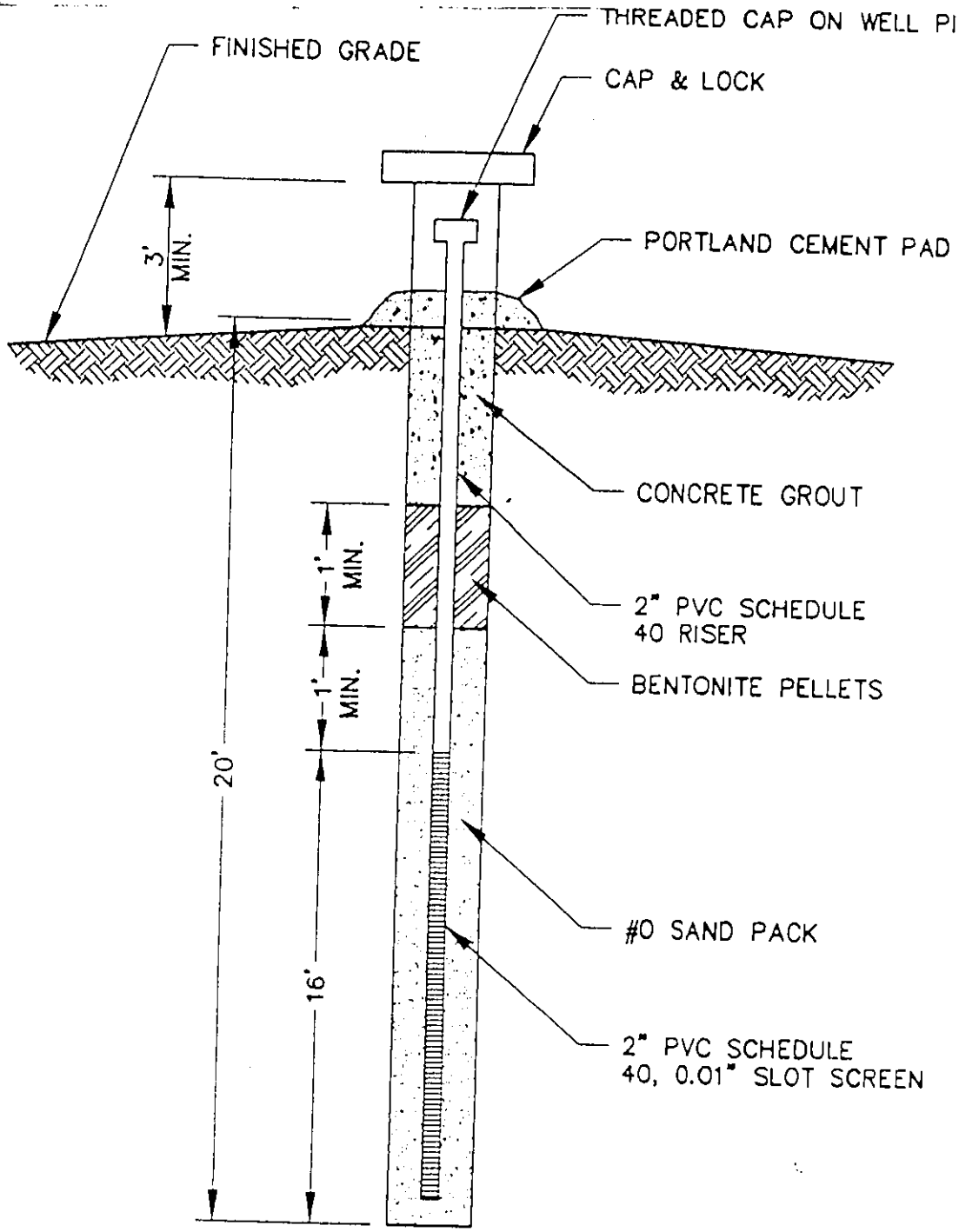
Future Site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

APPENDIX E – GEOLOGIC CROSS SECTIONS, BORING LOGS, AND WELL CONSTRUCTION LOGS



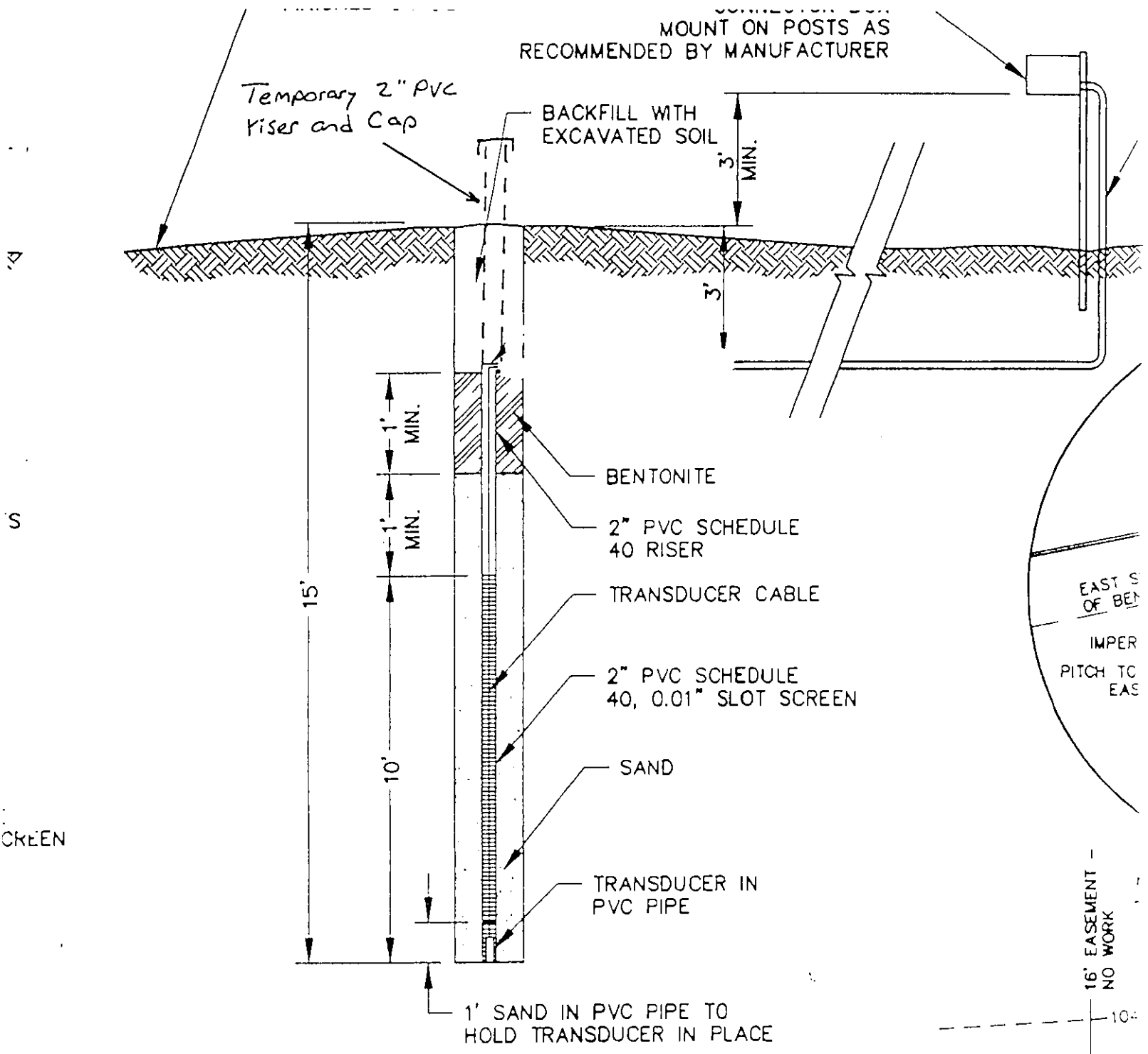
Job Number:	Drawn by:	Stearns & Wheler Environmental Engineers and Scientists Cazenovia, NY Darien, CT Watertown, NY Tampa, FL	General Instrument Corporation TACO Street, Sherburne, NY
Approved by:	Date:		Figure 4 Representative Well Construction

SW004721



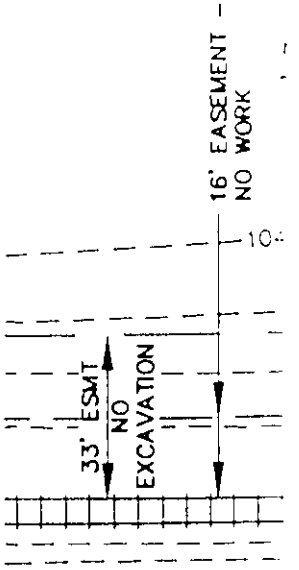
MONITORING WELL DETAIL

NOT TO SCALE



TRANSDUCER PIEZOMETER DETAIL

NOT TO SCALE



Boring Log: MW-31

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 18, 2005

Surface Elevation (feet AMSL*): 1,048.40
TOC Elevation (feet AMSL*): 1,050.54
Total Depth (feet): 20
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
2	1	0.7	0 0 2 3	25		***Silt*** Dark yellowish-brown (10YR 3/4) silt, trace woody debris; loose; dry.	
4	2	0.0	5 5 7 7	75		***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/4) silt, trace fine-grained sand; dense; dry, becoming moist between 3.4 and 3.5 feet.	
6	3	NA	2 3 3 3	50		***Poorly-Graded Sand with Gravel (SP)*** Olive brown (2.5Y 4/4) fine to medium-grained sand, little to some gravel, trace silt; loose; wet.	
8	4	NA	3 1 1 1	75		***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/4) fine to medium-grained sand, trace fine-grained gravel, trace silt; medium dense to dense; wet; faint solvent-like odor between 5.0 and 6.0 feet.	
10	5	NA	1 1 1 1	25		***Silty Gravel (GM)*** Olive brown (2.5Y 4/4) gravel, some silt, trace fine to medium-grained sand; dense; wet.	
12	6	NA	2 3 2 3	25		***Silty Sand with Gravel (SM)*** Olive brown (2.5Y 4/4) fine-grained sand, little to some silt, little to some fine to coarse-grained gravel; loose; wet.	
14	7	NA	2 2 3 5	50			
16	8	NA	4 4 5 5	100		***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/4) fine to medium-grained sand, trace fine-grained gravel, trace silt; loose; wet.	
18	9	NA	5 6 7 8	50		***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/4) fine to coarse-grained sand, trace gravel; loose; wet.	
20	10	NA	7 3 5 6	25		***Silty Sand with Gravel (SM)*** Olive brown (2.5Y 4/4) fine to medium-grained sand, some silt, little fine to coarse-grained gravel; medium dense; wet.	

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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(315) 655-3900

Boring Log: MW-31

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 18, 2005

Surface Elevation (feet AMSL*): 1,048.40
TOC Elevation (feet AMSL*): 1,050.54
Total Depth (feet): 20
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
22						***Poorly-Graded Sand with Gravel (SP)*** Olive brown (2.5Y 4/4) silt, little to some gravel; medium dense; wet.	
						Silt (ML) Dark gray (2.5Y 4/1) silt, little clay; dense; wet.	
24						Bottom of Boring at 20 feet	
26							
28							
30							
32							
34							
36							
38							
40							

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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Boring Log: MW-32

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 18, 2005

Surface Elevation (feet AMSL*): 1,047.42
TOC Elevation (feet AMSL*): 1,048.92
Total Depth (feet): 16
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
0–2	1	0.0	2 2 3 3	50		***Silt (ML)*** Olive brown (2.5Y 4/4) silt; medium dense to very dense; dry, mottled and iron-oxide stained between 3.0 and 4.0 feet.	
2–4	2	0.0	3 3 3 5	75			
4–6	3	NA	2 2 2 1	50		***Gravelly Silt with Sand (ML)*** Olive brown (2.5Y 4/3) silt, some gravel, little fine to medium-grained sand; medium dense; wet.	
6–8	4	NA	1 1 1 1	25		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/3) fine to coarse-grained gravel, some silt, little fine to medium-grained sand; loose; wet.	
8–10	5	NA	5 7 4 4	50		***Gravelly Silt with Sand (ML)*** Olive brown (2.5Y 4/3) silt, little fine-grained sand, little fine to coarse-grained gravel; loose; wet.	
10–12	6	NA	4 5 6 6	50		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/3) fine to coarse-grained gravel, little silt, little fine to medium-grained sand; loose; wet.	
12–14	7	NA	6 7 4 3	100		***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/3) fine to coarse-grained sand, trace gravel; medium dense; wet.	
14–16	8	NA	2 2 2 2	75		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/3) gravel, little silt, little fine to medium-grained sand; loose; wet.	
16						***Silt (ML)*** Very dark gray (2.5Y 3/1) silt, little clay; medium dense; moist.	
18						Bottom of Boring at 16 feet	
20							

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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Boring Log: MW-33

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 17, 2005

Surface Elevation (feet AMSL*): 1,047.03
TOC Elevation (feet AMSL*): 1,049.13
Total Depth (feet): 16
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
	1	NR	1 2 2 3	50		***Silt (ML)*** Dark grayish-brown (2.5Y 4/2) silt; medium dense; moist.	
2	2	NR	3 3 4 4	75		***Silt (ML)*** Light olive brown (2.5Y 5/3) silt, little clay; dense; moist, mottled.	
4	3	NA	3 4 3 4	25		***Sandy Silt (ML)*** Light olive brown (2.5Y 5/3) silt, little to some fine-grained sand; dense; dry, some mottling and iron-oxide staining.	
6	4	NA	3 3 2 3	50		***Poorly-Graded Sand with Gravel (SP)*** Olive brown (2.5Y 4/3) fine to coarse-grained sand, some fine to coarse-grained gravel; loose to medium dense; wet.	
8	5	NA	1 1 2 1	50		***Poorly-Graded Gravel with Sand (GP)*** Dark olive brown (2.5Y 3/3) fine to coarse-grained gravel, little fine to coarse-grained sand, little silt; loose; wet.	
10	6	NA	2 1 1 1	25			
12	7	NA	- - - -	50		***Poorly-Graded Gravel with Silt and Sand (GP-GM)*** Dark olive brown (2.5Y 3/3) fine to coarse-grained gravel, some medium to coarse-grained sand, trace to little silt; loose; wet.	
14	8	NA	0 2 3 3	50		***Silt (ML)*** Very dark gray (2.5Y 3/1) silt, trace fine-grained sand; medium dense; wet, becoming moist between 15.2 and 16.0 feet.	
16						Bottom of Boring at 16 feet	
18							
20							

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

Environmental Strategies Consulting LLC
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(315) 655-3900

Boring Log: MW-34

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 18, 2005

Surface Elevation (feet AMSL*): 1,046.39
TOC Elevation (feet AMSL*): 1,048.38
Total Depth (feet): 16
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
	1	0.0	0 2 4 4	50		***Silt (ML)*** Olive brown (2.5Y 4/4) silt; medium dense; dry.	
2	2	0.0	5 5 5 5	50		***Silt (ML)*** Olive brown (2.5Y 4/4) silt, little clay; moist, becoming wet at 4.0 feet, mottled between 3.5 and 4.0 feet.	
4	3	NA	2 3 2 3	25		***Gravelly Silt with Sand (ML)*** Olive brown (2.5Y 4/4) silt, some gravel, little fine to medium-grained sand; loose; wet.	
6	4	NA	3 3 5 8	50		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/4) gravel, little fine to medium-grained sand, little silt; medium dense; wet; faint solvent-like odor.	
8	5	NA	4 5 4 4	25		***Poorly-Graded Gravel with Sand (GP)*** Olive brown (2.5Y 4/4)fine to coarse-grained gravel, little to some medium to coarse-grained sand; loose; wet.	
10	6	NA	3 3 5 4	75		***Poorly-Graded Sand with Gravel (SP)*** Olive brown (2.5Y 4/3) fine to medium-grained sand and gravel, little silt; loose; wet.	
12	7	NA	7 11 14 14	75		***Poorly-Graded Sand (SP)*** Dark olive brown (2.5Y 3/3) fine to medium-grained sand, trace gravel; loose; wet.	
14	8	NA	- - - -	50		***Poorly-Graded Gravel with Sand (GP)*** Olive brown (2.5Y 4/3) fine to coarse-grained gravel, some medium to coarse-grained sand, trace silt; medium dense; wet.	
16						***Silt (ML)*** Very dark gray (2.5Y 3/1) silt, little clay; very dense; moist.	
18						Bottom of Boring at 16 feet	
20							

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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Boring Log: MW-35

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 21, 2005

Surface Elevation (feet AMSL*): 1,047.32
TOC Elevation (feet AMSL*): 1,049.85
Total Depth (feet): 24
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
2	1	0.0	2 2 4 4	50		***Silt (ML)*** Dark olive brown (2.5Y 3/3) silt, trace gravel; medium dense; dry.	
4	2	0.0	3 3 3 3	100		***Silt with Sand (ML)*** Dark olive brown (2.5Y 3/3) silt, little fine-grained sand; moist, becoming wet at 4.0 feet, mottled between 3.6 and 4.0 feet.	
6	3	NA	2 3 5 5	25		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/4) fine to coarse-grained gravel, little to some silt, little fine to coarse-grained sand; loose to medium dense; wet.	
8	4	NA	3 5 7 10	25			
10	5	NA	5 8 9 9	50			
12	6	NA	5 5 6 8	50			
14	7	NA	6 8 10 11	50			
16	8	NA	3 5 8 10	75			
18	9	NA	10 12 10 8	100		***Poorly-Graded Sand (SP)*** Dark olive brown (2.5Y 3.3) fine to medium-grained sand; medium dense; wet.	
20	10	NA	4 7 8 12	0		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/4) gravel, some fine to coarse-grained sand, little silt; loose to dense; wet.	

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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5 Sullivan Street
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Boring Log: MW-35

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 21, 2005

Surface Elevation (feet AMSL*): 1,047.32
TOC Elevation (feet AMSL*): 1,049.85
Total Depth (feet): 24
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
22	11	NA	8 10 6 7	50		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/4) gravel, some fine to coarse-grained sand, little silt; loose to dense; wet.*(continued)*	
	12	NA	10 11 5 6	75			
24						***Silt (ML)*** Very dark gray (2.5Y 3/1) silt, little clay; dense; moist.	
						Bottom of Boring at 24 feet	
26							
28							
30							
32							
34							
36							
38							
40							

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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5 Sullivan Street
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Boring Log: MW-36

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 21, 2005

Surface Elevation (feet AMSL*): 1,046.80
TOC Elevation (feet AMSL*): 1,048.06
Total Depth (feet): 22
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
2	1	0.0	5 4 16 4	50		***Silt (ML)*** Olive brown (2.5Y 4/3) silt, trace coarse-grained gravel; medium dense; dry.	
4	2	0.0	3 3 3 3	50		***Silt (ML)*** Very dark gray (2.5Y 3/1) silt, trace organic material; medium dense; moist.	
6	3	0.0	1 1 5 9	25		***Silt (ML)*** Olive brown (2.5Y 4/3) silt, trace gravel, wood debris in cutting shoe; medium dense; moist.	
8	4	NA	9 6 9 10	12.5		***Silt (ML)*** Olive brown (2.5Y 4/3) silt, trace gravel and fine-grained sand; loose; wet.	
10	5	NA	4 6 10 10	100		***Silt (ML)*** Very dark grayish-brown (2.5Y 3/2) silt, trace to little fine to coarse-grained gravel, gravel increases with depth; loose wet.	
12	6	NA	6 8 7 10	75		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/3) gravel, little to some fine to coarse-grained sand, little silt; medium dense; wet.	
14	7	NA	10 14 15 18	75		***Poorly-Graded Sand (SP)*** Very dark gray (2.5Y 3/1) fine to coarse-grained sand, trace fine to medium-grained gravel; loose; wet.	
16	8	NA	8 12 17 20	75		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/3) gravel, some fine to coarse-grained sand, little silt; medium dense to dense; wet.	
18	9	NA	11 16 20 10	50			
20	10	NA	6 7 7 8	25			

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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5 Sullivan Street
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Boring Log: MW-36

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 21, 2005

Surface Elevation (feet AMSL*): 1,046.80
TOC Elevation (feet AMSL*): 1,048.06
Total Depth (feet): 22
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
22	11	NA	4 11 8 6	50		***Silt (ML)*** Very dark grayish-brown (2.5Y 3/3) silt, little clay; very dense; moist. Bottom of Boring at 22 feet	

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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Boring Log: MW-37

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 17, 2005

Surface Elevation (feet AMSL*): 1,047.70
TOC Elevation (feet AMSL*): 1,049.50
Total Depth (feet): 16
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
0–2	1	NR	1 2 4 3	50		***Silt (ML)*** Dark olive brown (2.5Y 3/3) silt; medium dense; dry.	
2–4	2	NR	2 3 5 6	50		***Silt (ML)*** Dark olive brown (2.5Y 3/3) silt; medium dense, trace fine-grained sand and gravel; moist, becoming wet between 3.3 and 3.4 feet.	
4–6	3	NA	3 4 4 3	50		***Poorly-Graded Gravel with Silt and Sand (GP-GM)*** Dark olive brown (2.5Y 3/3) fine to coarse-grained gravel, little to some fine to coarse-grained sand, trace to little silt; loose to medium dense; wet.	
6–8	4	NA	5 4 6 5	50			
8–10	5	NA	8 9 8 8	25			
10–12	6	NA	8 6 5 8	50			
12–14	7	NA	- - - -	100			
14–16	8	NA	3 2 3 2	100		***Silt (ML)*** Olive brown (2.5Y 4/4) silt, trace fine grained-sand; medium dense; wet.	
16–18						***Silt (ML)*** Very dark gray (2.5Y 3/1) silt, little clay; very dense; moist.	
18–20						Bottom of Boring at 16 feet	

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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Boring Log: MW-38

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 17, 2005

Surface Elevation (feet AMSL*): 1,047.50
TOC Elevation (feet AMSL*): 1,049.61
Total Depth (feet): 14
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
2	1	NR	2 2 3 3	50		***Silt (ML)*** Olive brown (2.5Y 4/3) silt, trace fine-grained sand; medium dense; dry, becoming moist between 2.25 feet and 3.5 feet, becoming wet between 3.5 and 3.8 feet.	
4	2	NA	3 4 5 5	88			
6	3	NA	0 0 2 2	25		***Silt with Sand (ML)*** Olive brown (2.5Y 4/4) silt, some fine to medium-grained sand; medium dense; wet.	
8	4	NA	3 4 4 5	50		***Poorly-Graded Sand with Gravel (SP)*** Olive brown (2.5Y 4/3) fine to medium-grained sand, some fine gravel; loose; wet.	
10	5	NA	5 5 6 7	25		***Poorly-Graded Sand with Silt and Gravel (SP-SM)*** Olive brown (2.5Y 4/3) fine to coarse-grained sand, some fine to coarse-grained gravel, trace to little silt; loose to medium dense; wet.	
12	6	NA	4 5 6 7	50			
14	7	NA	7 8 5 4	100		***Silt (ML)*** Olive brown (2.5Y 4/3) silt, little clay; medium dense; moist.	
16						Bottom of Boring at 14 feet	
18							
20							

Geologist(s): David P. Bouchard
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

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Boring Log: MW-39

Project: Former General Instrument
Project No.: 148992
Location: Sherburne, NY
Completion Date: November 22, 2005

Surface Elevation (feet AMSL*): 1,047.36
TOC Elevation (feet AMSL*): 1,049.31
Total Depth (feet): 12
Borehole Diameter (inches): 8.25

**AMSL = Above mean sea level*

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Ground Surface	
2	1	0.0	1 1 2 3	37.5		***Silt (ML)*** Olive brown (2.5Y 4/3) silt, trace gravel; loose to medium dense; moist.	
4	2	0.0	3 3 3 3	75			
6	3	NA	1 1 2 2	25		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/3) gravel, little silt and fine-grained sand; loose wet.	
8	4	NA	4 5 5 6	25			
10	5	NA	3 3 5 5	50		***Silty Gravel with Sand (GM)*** Olive brown (2.5Y 4/3) gravel, some coarse-grained sand, little silt; loose; wet.	
12	6	NA	1 2 2 2	75		***Silt (ML)*** Olive brown (2.5Y 4/3) to gray (2.5Y 5/1) silt; trace to little clay; dense; wet.	
14						Bottom of Boring at 12 feet	
16							
18							
20							

Geologist(s): Erik S. Reinert
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Ian Grassy
Method: Hollow Stem Auger

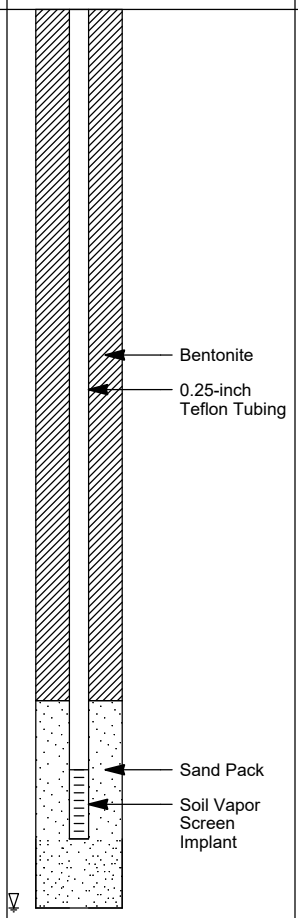
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Cazenovia, NY 13035
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-4
DATE COMPLETED: 27 February 2023
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
0	TOPSOIL/overburden, grass							
	SILT, little fine sand, little gravel and clay, clay increases with depth	0.50						0.7
	SILT, little sand, wet	4.70						
	END OF BOREHOLE @ 6.50ft BGS	6.50						



COMPLETION DETAILS
Screened interval:
5.50 to 6.00ft BGS
Length: 0.5ft
Diameter: 1in
Slot Size: 0.006
Material: Stainless Steel
Seal:
0.00 to 5.00ft BGS
Material: Bentonite
Sand Pack:
5.00 to 6.50ft BGS
Material: Silica

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

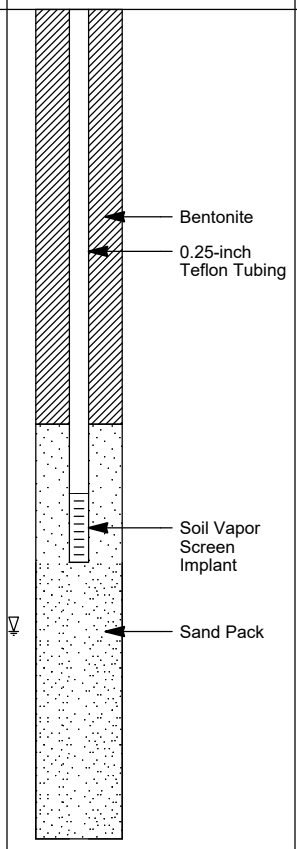
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-5
DATE COMPLETED: 27 February 2023
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
0	TOPSOIL/overburden, grass						
	CLAY AND SILT, little fine grained sand	0.70					
4.70	SILT, little sand and clay, trace gravel, very moist	4.70					
6	END OF BOREHOLE @ 6.00ft BGS	6.00					



COMPLETION DETAILS
Screened interval:
3.50 to 4.00ft BGS
Length: 0.5ft
Diameter: 1in
Slot Size: 0.006
Material: Stainless Steel
Seal:
0.00 to 3.00ft BGS
Material: Bentonite
Sand Pack:
3.00 to 6.00ft BGS
Material: Silica

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

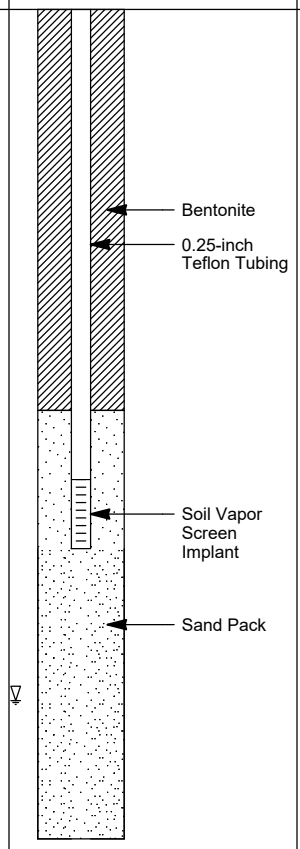
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-6
DATE COMPLETED: 27 February 2023
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
0	TOPSOIL/overburden, grass						
	SILT AND GRAVEL, some gravel, some fine sand, moist	0.50					
2	SILT, some sand, wet	2.50					
6	END OF BOREHOLE @ 6.00ft BGS Note: 0 ppm throughout	6.00					



COMPLETION DETAILS
Screened interval:
3.40 to 3.90ft BGS
Length: 0.5ft
Diameter: 1in
Slot Size: 0.006
Material: Stainless Steel
Seal:
0.00 to 2.90ft BGS
Material: Bentonite
Sand Pack:
2.90 to 6.00ft BGS
Material: Silica

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

File: \\GHDNET\GHD\US\CAZENOVIA\PROJECTS\56412595756\TECH\GINT\12595756-MI.GPJ Library File: GHD_ENVIRO_V08.GLB Report: OVERBURDEN LOG Date: 7/6/23

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-7
DATE COMPLETED: 27 February 2023
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
0	TOPSOIL/overburden, grass						
	SILT, sand and some gravel, little clay, very moist to wet	0.50	Bentonite; 0.25-inch Teflon Tubing; Sand Pack; Soil Vapor Screen Implant				
4	END OF BOREHOLE @ 4.00ft BGS	4.00					

COMPLETION DETAILS
Screened interval:
3.50 to 4.00ft BGS
Length: 0.5ft
Diameter: 1in
Slot Size: 0.006
Material: Stainless Steel
Seal:
0.00 to 3.00ft BGS
Material: Bentonite
Sand Pack:
3.00 to 4.00ft BGS
Material: Silica

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

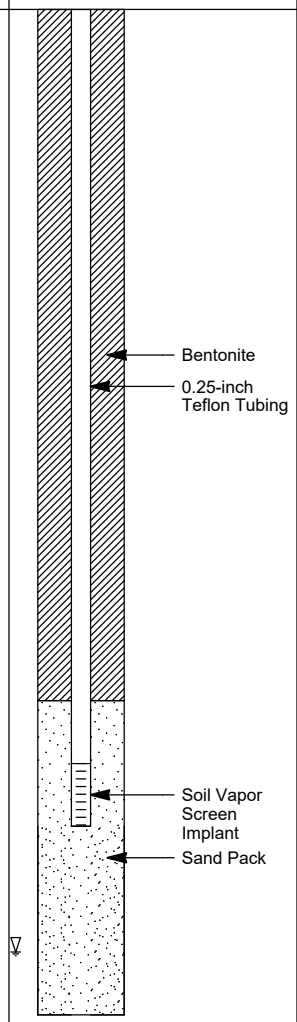
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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-8
DATE COMPLETED: 27 February 2023
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
0	CLAYEY SILT, little gravel, brown						
6	- increasing sand from 6.00 to 8.00ft BGS						
7.5	- wet at 7.50ft BGS						
8	END OF BOREHOLE @ 8.00ft BGS Note: 0 ppm throughout	8.00					



COMPLETION DETAILS
Screened interval:
6.00 to 6.50ft BGS
Length: 0.5ft
Diameter: 1in
Slot Size: 0.006
Material: Stainless Steel
Seal:
0.00 to 5.50ft BGS
Material: Bentonite
Sand Pack:
5.50 to 8.00ft BGS
Material: Silica

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

File: \\GHDNET\GHD\US\CAZENOVIA\PROJECTS\56412595756\TECH\GINT\12595756-MI.GPJ Library File: GHD_ENVIRO_V08.GLB Report: OVERBURDEN LOG Date: 7/6/23

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-9
DATE COMPLETED: 27 February 2023
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
0	SAND AND GRAVEL, little clay, moist						
1	CLAY AND SILT, little gravel	1.00	Bentonite; 0.25-inch Teflon Tubing				
2							
3							
4	- wet from 4.00 to 6.00ft BGS		Soil Vapor Screen Implant				
5							
6	END OF BOREHOLE @ 6.00ft BGS	6.00	Sand Pack				
7	Note: 0 ppm throughout						
8							
9							

COMPLETION DETAILS
Screened interval:
3.50 to 4.00ft BGS
Length: 0.5ft
Diameter: 1in
Slot Size: 0.006
Material: Stainless Steel
Seal:
0.00 to 3.00ft BGS
Material: Bentonite
Sand Pack:
3.00 to 6.00ft BGS
Material: Silica

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\CAZENOVIA\PROJECTS\5641\12595756\TECH\GINT\12595756-MI.GPJ Library File: GHD_ENVIRO_V08.GLB Report: OVERBURDEN LOG Date: 7/6/23

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-10
DATE COMPLETED: 27 February 2023
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
0	SAND AND GRAVEL							
1	SILT, gravel, and fine sand, very moist	1.00						
2			Bentonite; 0.25-inch Teflon Tubing					
3								0.2
4	SILTY CLAY, sand, trace gravel, wet	4.00	Sand Pack; Soil Vapor Screen Implant					
5								
6	END OF BOREHOLE @ 6.00ft BGS	6.00						
7								
8								
9								

COMPLETION DETAILS
Screened interval:
4.50 to 5.00ft BGS
Length: 0.5ft
Diameter: 1in
Slot Size: 0.006
Material: Stainless Steel
Seal:
0.00 to 4.00ft BGS
Material: Bentonite
Sand Pack:
4.00 to 6.00ft BGS
Material: Silica

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

File: \\GHDNET\GHD\US\CAZENOVIA\PROJECTS\56412595756\TECH\GINT\12595756-MI.GPJ Library File: GHD_ENVIRO_V08.GLB Report: OVERBURDEN LOG Date: 7/6/23

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-11
DATE COMPLETED: 25 March 2024
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert, Sarah King

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
0	SILT, with gravel and sand, trace clay							212
1			Bentonite					
2			0.25-inch Teflon Tubing					73
3								25
4	END OF BOREHOLE @ 4.00ft BGS Note: Wells decommissioned March 25, 2024	4.00	Metal implant					17
5								
6								
7								
8								
9								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\CAZENOVIA\PROJECTS\56412595756\TECH\GINT\12595756-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 31/5/24

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-12
DATE COMPLETED: 25 March 2024
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert, Sarah King

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
0	SILT, with trace sand and gravel - cobble at 0.50ft BGS		Bentonite 0.25-inch Teflon Tubing					0.0
1								0.0
2								0.0
3	GRAVEL, with silt	3.00	Metal implant					0.0
4	END OF BOREHOLE @ 4.00ft BGS Note: The PID had no detections throughout the boring. Wells decommissioned March 25, 2024	4.00						
5								
6								
7								
8								
9								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\CAZENOVIA\PROJECTS\56412595756\TECH\GINT\12595756-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 31/5/24

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-13
DATE COMPLETED: 25 March 2024
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert, Sarah King

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
1	Overburden		Bentonite					0.0
2			0.25-inch Teflon Tubing					0.0
3								0.0
4	END OF BOREHOLE @ 4.00ft BGS Note: The PID had no detections throughout the boring. Wells decommissioned March 25, 2024	4.00	Metal implant					0.0
5								
6								
7								
8								
9								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\CAZENOVIA\PROJECTS\56412595756\TECH\GINT\12595756-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 31/5/24

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

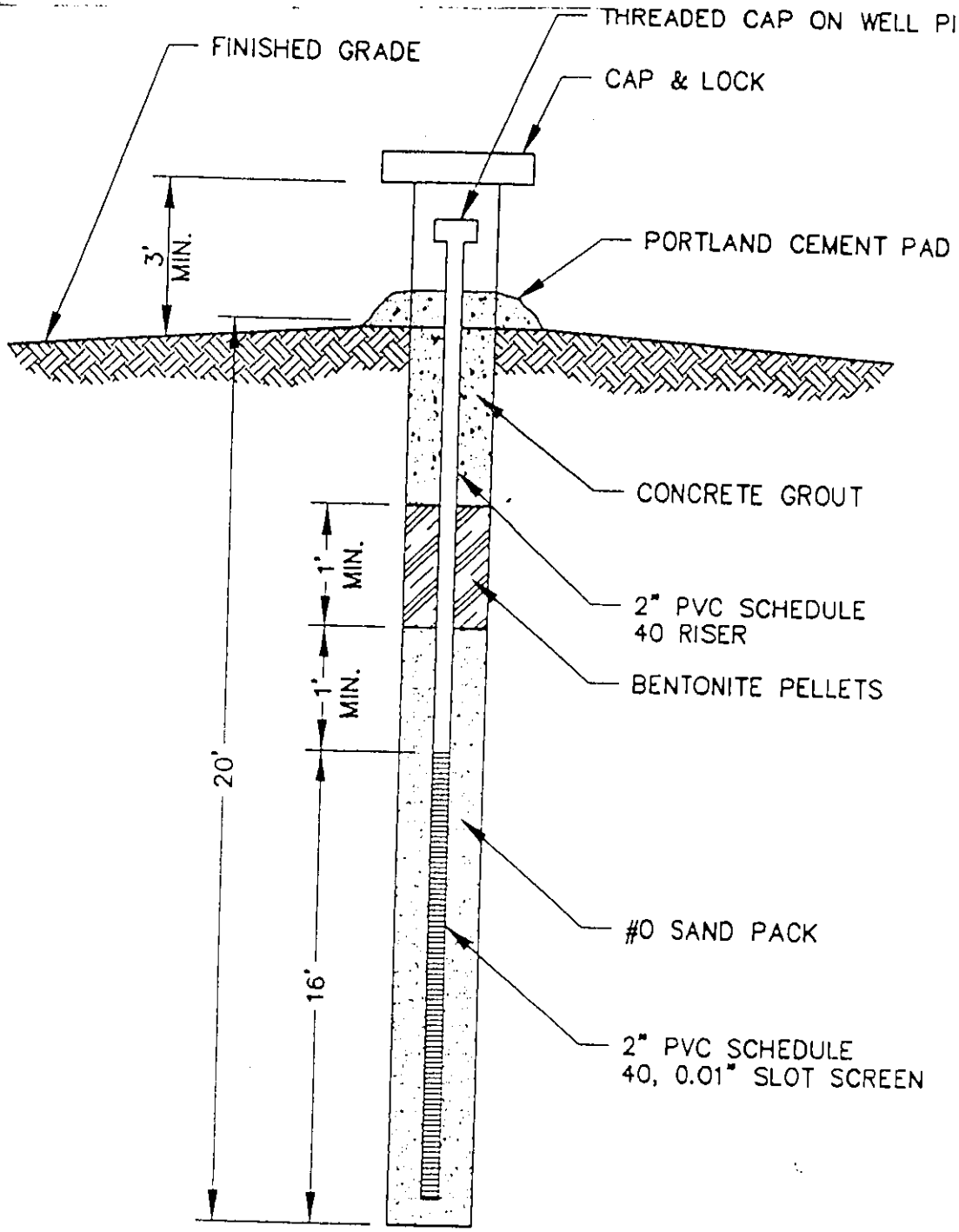
PROJECT NAME: Former GIC Site
PROJECT NUMBER: 12595756
CLIENT: Askin & Hooker, LLC
LOCATION: Sherburne, New York

HOLE DESIGNATION: SG-14
DATE COMPLETED: 25 March 2024
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Brian Pickert, Sarah King

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	VAPOR MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
0	CLAYEY SILT, odor present		Bentonite; 0.25-inch Teflon Tubing					
2	GRAVEL, with silt	2.00						130
4	END OF BOREHOLE @ 4.00ft BGS Note: Wells decommissioned March 25, 2024	4.00	Metal implant					>2,000

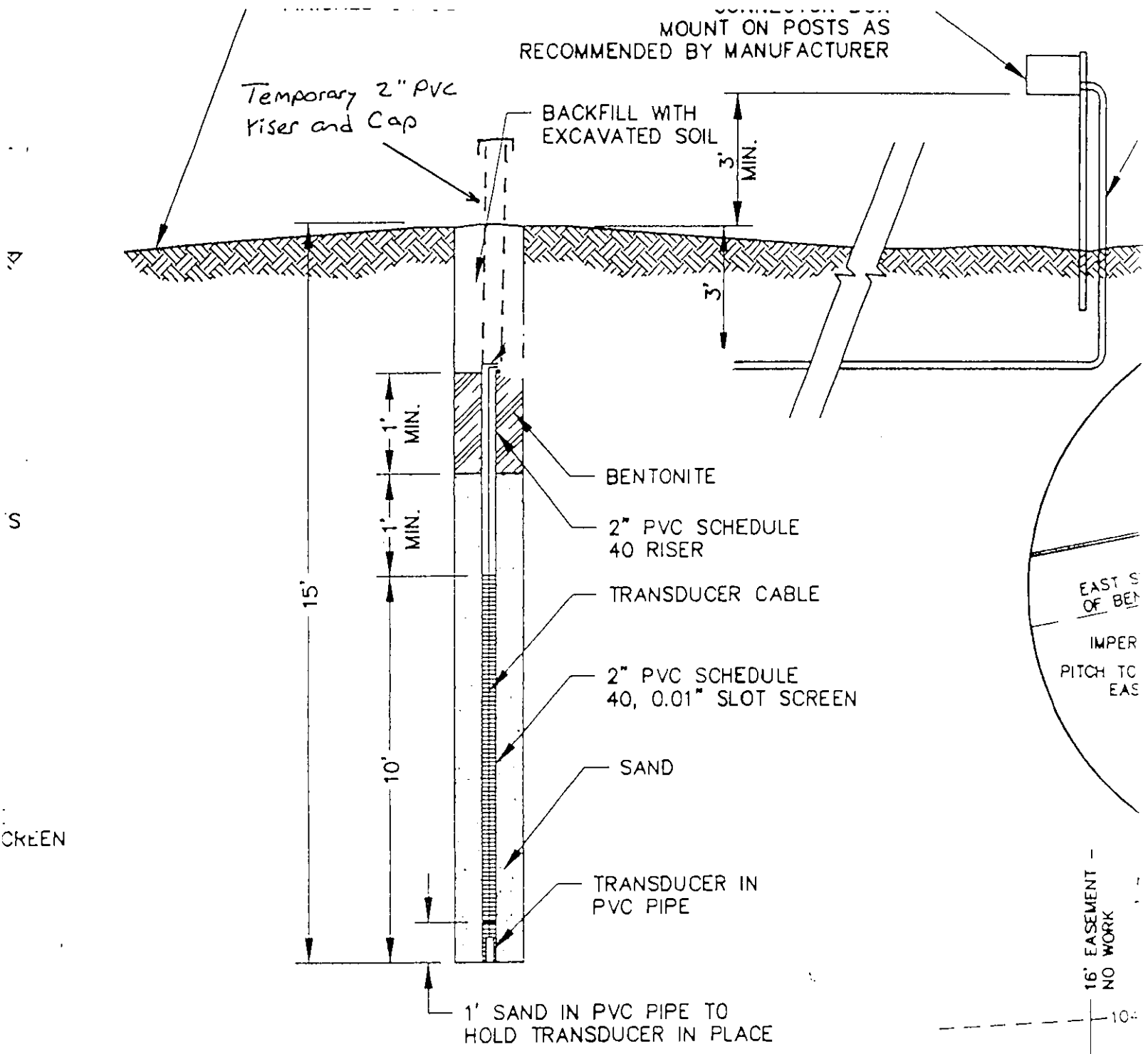
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

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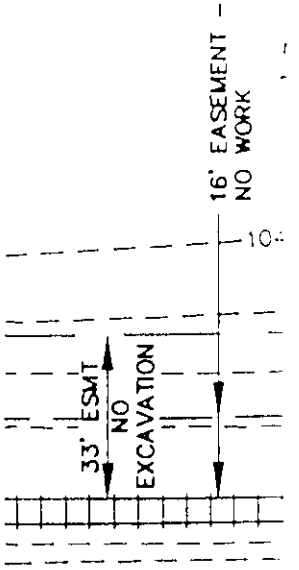
MONITORING WELL DETAIL

NOT TO SCALE



TRANSDUCER PIEZOMETER DETAIL

NOT TO SCALE



Boring/Well ID: **30U**

Project Name: General Semiconductor Sherburne
Job No: 41587ZA
Start Date & Time: 11/19/98 1045
Finish Date & Time: 11/19/98 1130
Drilling Co:Parratt-Wolff
Driller: Mark
S&W Inspector: TLH
Drill Rig Type: CME Track
Drilling Method: 4.25" HSA
Weather:

Groundwater Observations

Time:
Casing Depth:
Boring Depth:15'
Depth to Water:
below surface _____ below meas. pt. _____
Surface Elevation:
Measuring Point Elevation:
Groundwater Elevation:

Depth (ft)	Blow Counts	PID (PPM)	Sample Log	Recovery (ft)	NAPL	Lithology	Sample Log Key: ▼ Depth to Groundwater Sample Description
1–4							Moist brown SILT
5–7							Moist brown SILT, some coarse gravel ▼
8–15							Wet coarse GRAVEL, some silt
16–19							Wet coarse GRAVEL
20–30							

Depth (ft): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Well Diagram

Concrete Pad
Bentonite
2" ID PVC Riser
#0 Sand Pack
2" ID, .01" PVC Screen

Boring/Well ID: **P-11**

Project Name: General Semiconductor Sherburne
Job No: 41587ZA
Start Date & Time: 11/18/98 1345
Finish Date & Time: 11/19/98 1430
Drilling Co: Parratt-Wolff
Driller: Mark
S&W Inspector: TLH
Drill Rig Type: CME Track
Drilling Method: 4.25" HSA
Weather:

Groundwater Observations

Time:
Casing Depth:
Boring Depth: 15'
Depth to Water:
below surface _____ below meas. pt. _____
Surface Elevation:
Measuring Point Elevation:
Groundwater Elevation:

Depth (ft)	Blow Counts	PID (PPM)	Sample Log	Recovery (ft)	NAPL	Lithology	Sample Log Key: ▼ Depth to Groundwater / Sample Description	Depth (ft)	Well Diagram	
1							Moist brown SILT	1		Concrete Pad
2								2		
3								3		Bentonite
4								4		2" ID PVC
5							▼	5		Riser
6							Wet brown SILT	6		
7								7		
8								8		
9								9		#0 Sand Pack
10								10		
11								11		
12								12		2" ID, .01"
13							Wet brown SILT, some coarse gravel	13		PVC Screen
14								14		
15								15		
16								16		
17								17		
18								18		
19								19		
20								20		
21								21		
22								22		
23								23		
24								24		
25								25		
26								26		
27								27		
28								28		
29								29		
30								30		

Boring/Well ID: **P-10**

Project Name: General Semiconductor Sherburne
Job No: 41587ZA
Start Date & Time: 11/19/98 1145
Finish Date & Time: 11/19/98 1245
Drilling Co:Parratt-Wolff
Driller: Mark
S&W Inspector: TLH
Drill Rig Type: CME Track
Drilling Method: 4.25" HSA
Weather:

Groundwater Observations

Time:
Casing Depth:
Boring Depth:15'
Depth to Water:
below surface _____ below meas. pt. _____
Surface Elevation:
Measuring Point Elevation:
Groundwater Elevation:

Depth (ft)	Blow Counts	PID (PPM)	Sample Log	Recovery (ft)	NAPL	Lithology	Sample Log Key: ▼ Depth to Groundwater Sample Description	Depth (ft)	Well Diagram	
1								1		Concrete Pad
2							Moist brown SILT	2		
3								3		Bentonite
4								4		2" ID PVC
5							▼	5		Riser
6								6		
7							Wet brown SILT	7		
8								8		
9								9		#0 Sand Pack
10								10		
11								11		
12							Wet coarse GRAVEL	12		2" ID, .01"
13								13		PVC Screen
14								14		
15								15		
16								16		
17								17		
18								18		
19								19		
20								20		
21								21		
22								22		
23								23		
24								24		
25								25		
26								26		
27								27		
28								28		
29								29		
30								30		

Boring/Well ID: 30U

Project Name: General Semiconductor Sherburne
Job No: 41587ZA
Start Date & Time: 11/19/98 1045
Finish Date & Time: 11/19/98 1130
Drilling Co:Parratt-Wolff
Driller: Mark
S&W Inspector: TLH
Drill Rig Type: CME Track
Drilling Method: 4.25" HSA
Weather: _____

Groundwater Observations

Time: _____
Casing Depth: _____
Boring Depth:15'
Depth to Water: _____
below surface _____ below meas. pt. _____
Surface Elevation: _____
Measuring Point Elevation: _____
Groundwater Elevation: _____

Depth (ft)	Blow Counts	PID (PPM)	Sample Log	Recovery (ft)	NAPL	Lithology	Sample Log Key: ▼ Depth to Groundwater Sample Description	Depth (ft)	Well Diagram	
1								1		Concrete Pad
2							Moist brown SILT	2		
3								3		Bentonite
4								4		2" ID PVC Riser
5								5		
6							Moist brown SILT, some coarse gravel ▼	6		
7								7		
8								8		
9								9		#0 Sand Pack
10							Wet coarse GRAVEL, some silt	10		
11								11		
12								12		2" ID, .01" PVC Screen
13								13		
14								14		
15								15		
16								16		
17							Wet coarse GRAVEL	17		
18								18		
19								19		
20								20		
21								21		
22								22		
23								23		
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30								30		

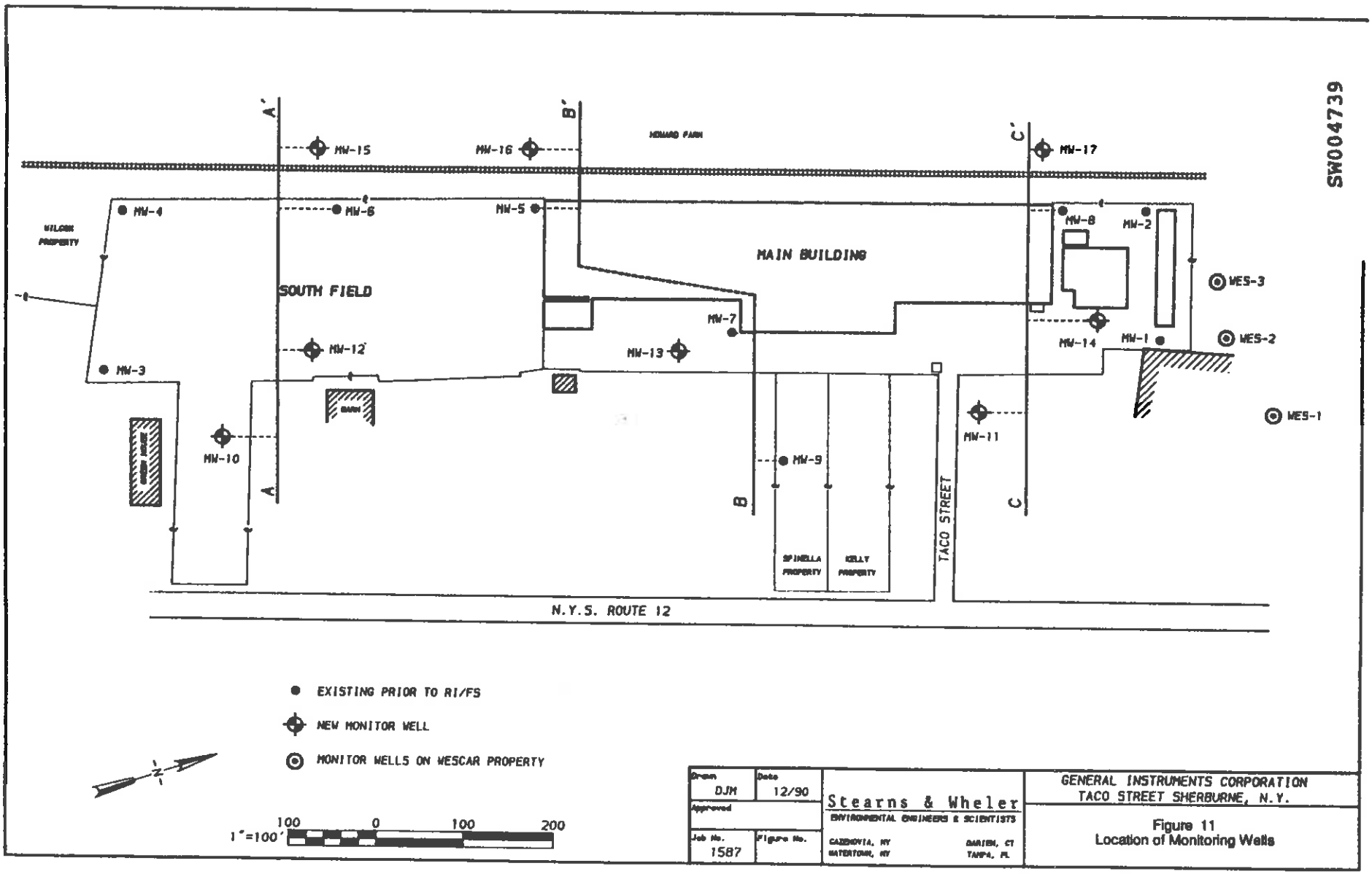
Boring/Well ID:**29 U**

Project Name: General Semiconductor Sherburne
Job No: 41587ZA
Start Date & Time: 11/18/98 1300
Finish Date & Time: 11/19/98 1330
Drilling Co:Parratt-Wolff
Driller: Mark
S&W Inspector: TLH
Drill Rig Type: CME Track
Drilling Method: 4.25" HSA
Weather:

Groundwater Observations

Time:
Casing Depth:
Boring Depth:15'
Depth to Water:
below surface _____ below meas. pt. _____
Surface Elevation:
Measuring Point Elevation:
Groundwater Elevation:

Depth (ft)	Blow Counts	PID (PPM)	Sample Log	Recovery (ft)	NAPL	Lithology	Sample Log Key: ▼ Depth to Groundwater Sample Description	Depth (ft)	Well Diagram	
1								1		Concrete Pad
2							Moist brown SILT	2		
3								3		Bentonite
4								4		2" ID PVC
5							Moist tan SILT ▼	5		Riser
6								6		
7							Wet brown SILT	7		
8								8		
9								9		#0 Sand Pack
10								10		
11								11		
12								12		2" ID, .01"
13								13		PVC Screen
14							Wet brown SILT, some coarse gravel	14		
15								15		
16								16		
17								17		
18								18		
19								19		
20								20		
21								21		
22								22		
23								23		
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29								29		
30								30		

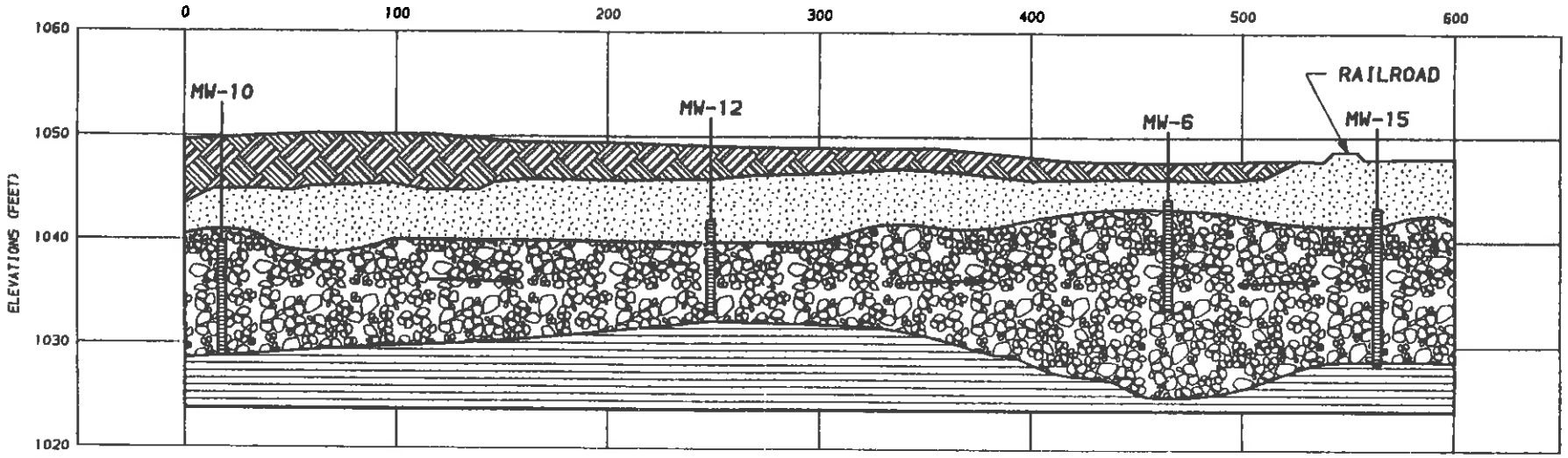


Drawn DJM	Date 12/90	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY WATERTOWN, NY GARDEN, CT TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved			Figure 11 Location of Monitoring Wells
Job No. 1587	Figure No.		

SW004741

A
SOUTHEAST

A'
NORTHWEST

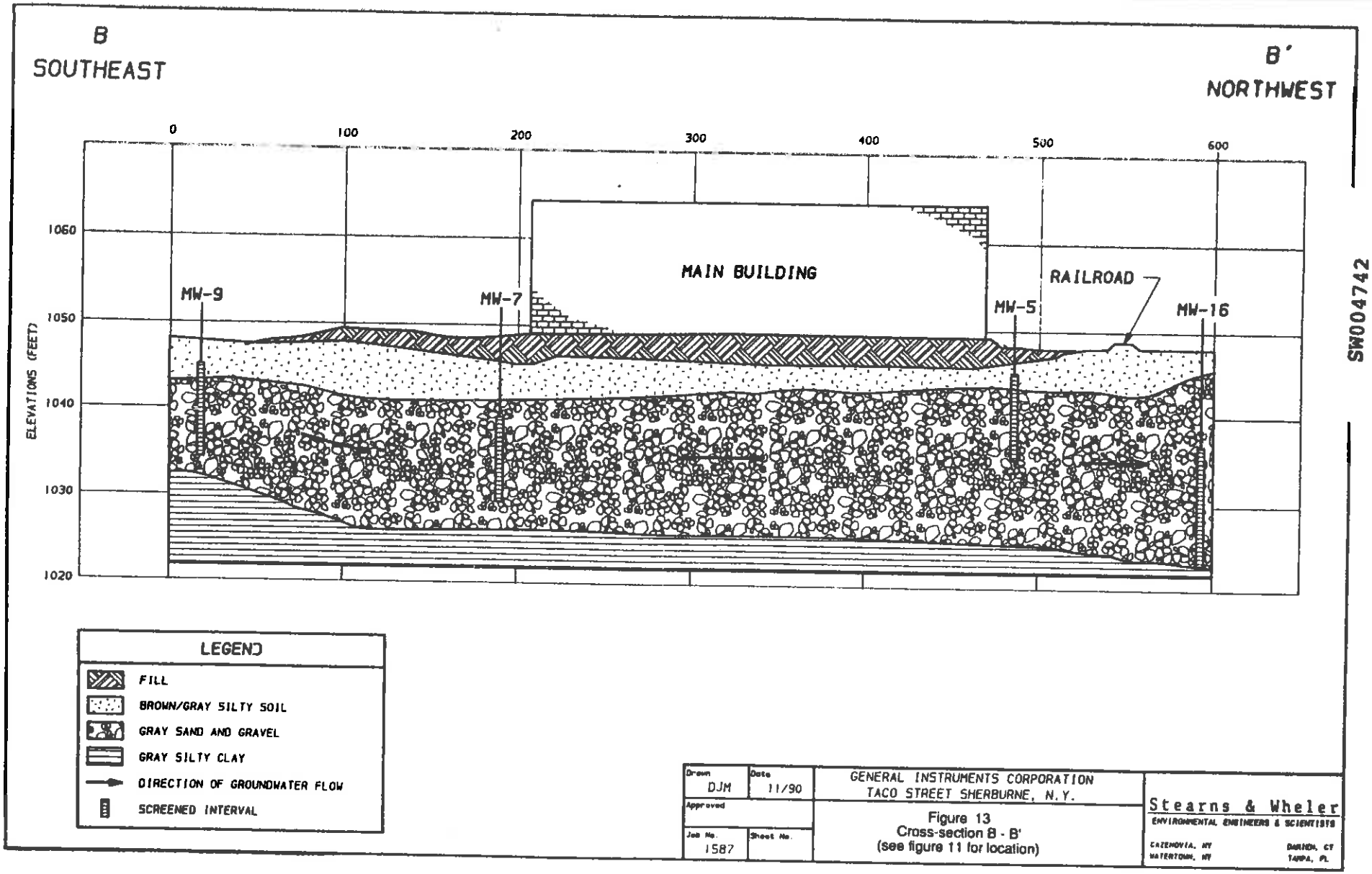


LEGEND

- FILL
- BROWN/GRAY SILTY SOIL
- GRAY SAND AND GRAVEL
- GRAY SILTY CLAY
- DIRECTION OF GROUNDWATER FLOW
- SCREENED INTERVAL

Drawn: DJM	Date: 11/90	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved:		Figure 12 Cross-section A - A' (see figure 11 for location)
Job No.: 1587	Sheet No.:	

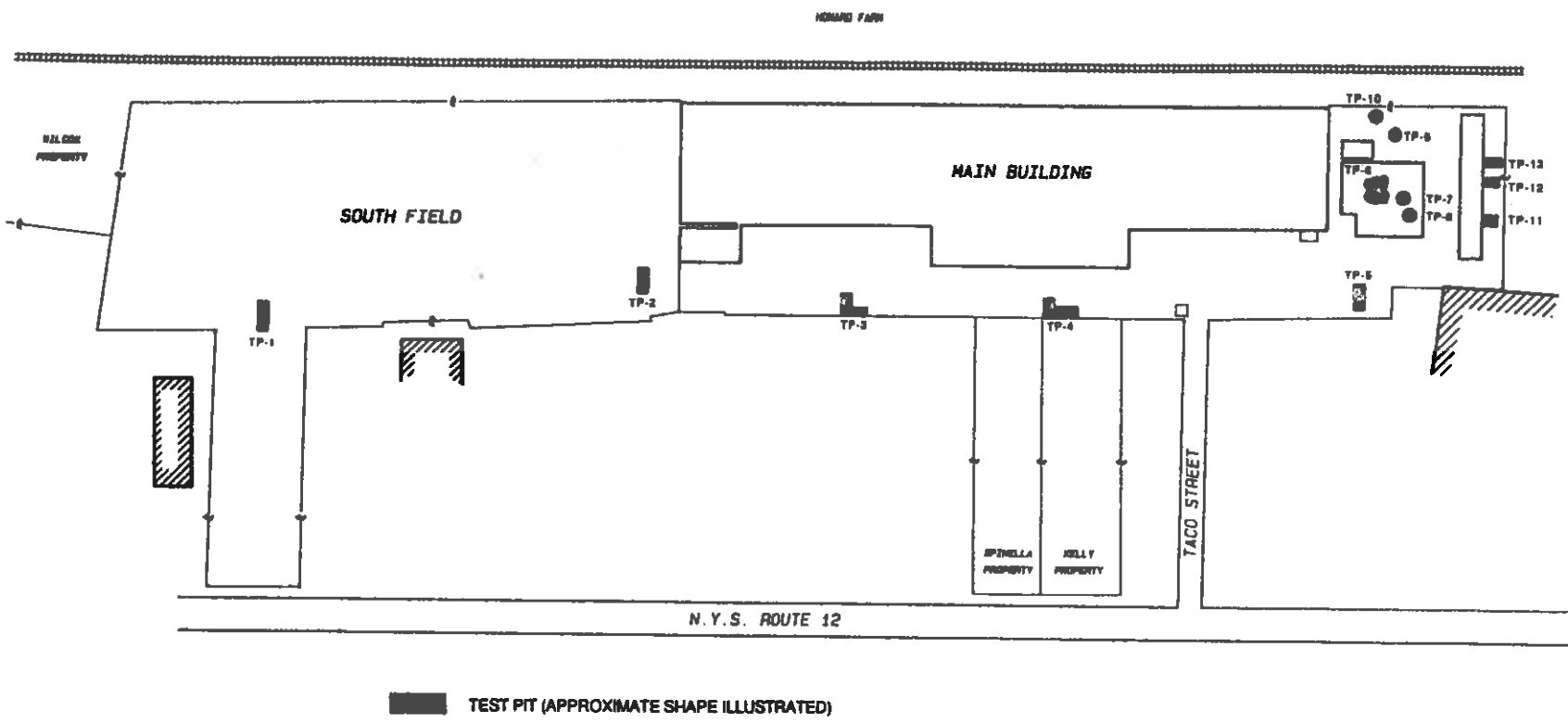
Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NY — DARIEN, CT
WATERTOWN, NY — TAMPA, FL



Drawn: DJM	Date: 11/90	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY · WATERTOWN, NY · DARIEN, CT · TAMPA, FL
Approved		Figure 13 Cross-section B - B' (see figure 11 for location)	
Job No.: 1587	Sheet No.		

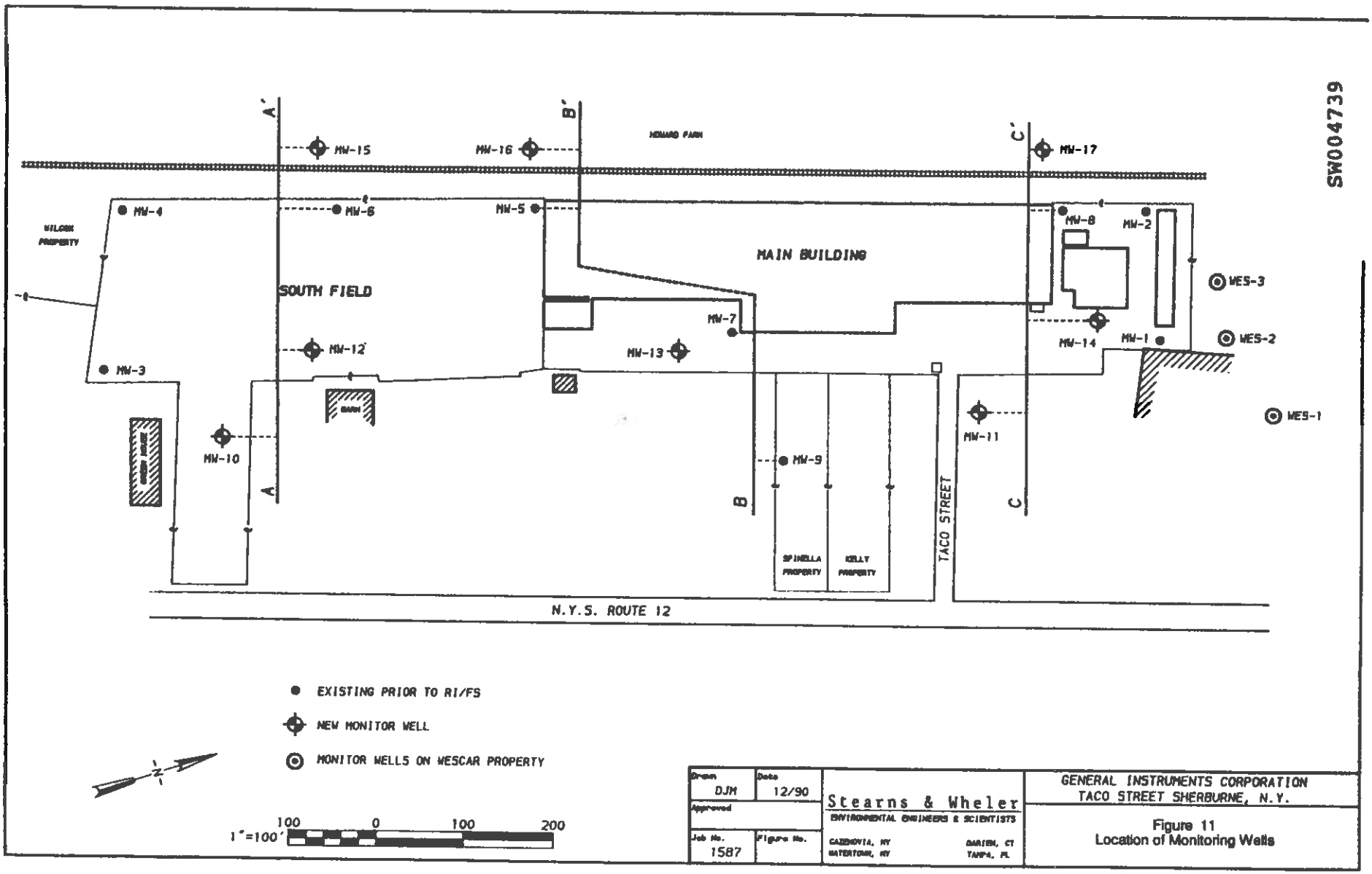
SW004742

SW004744

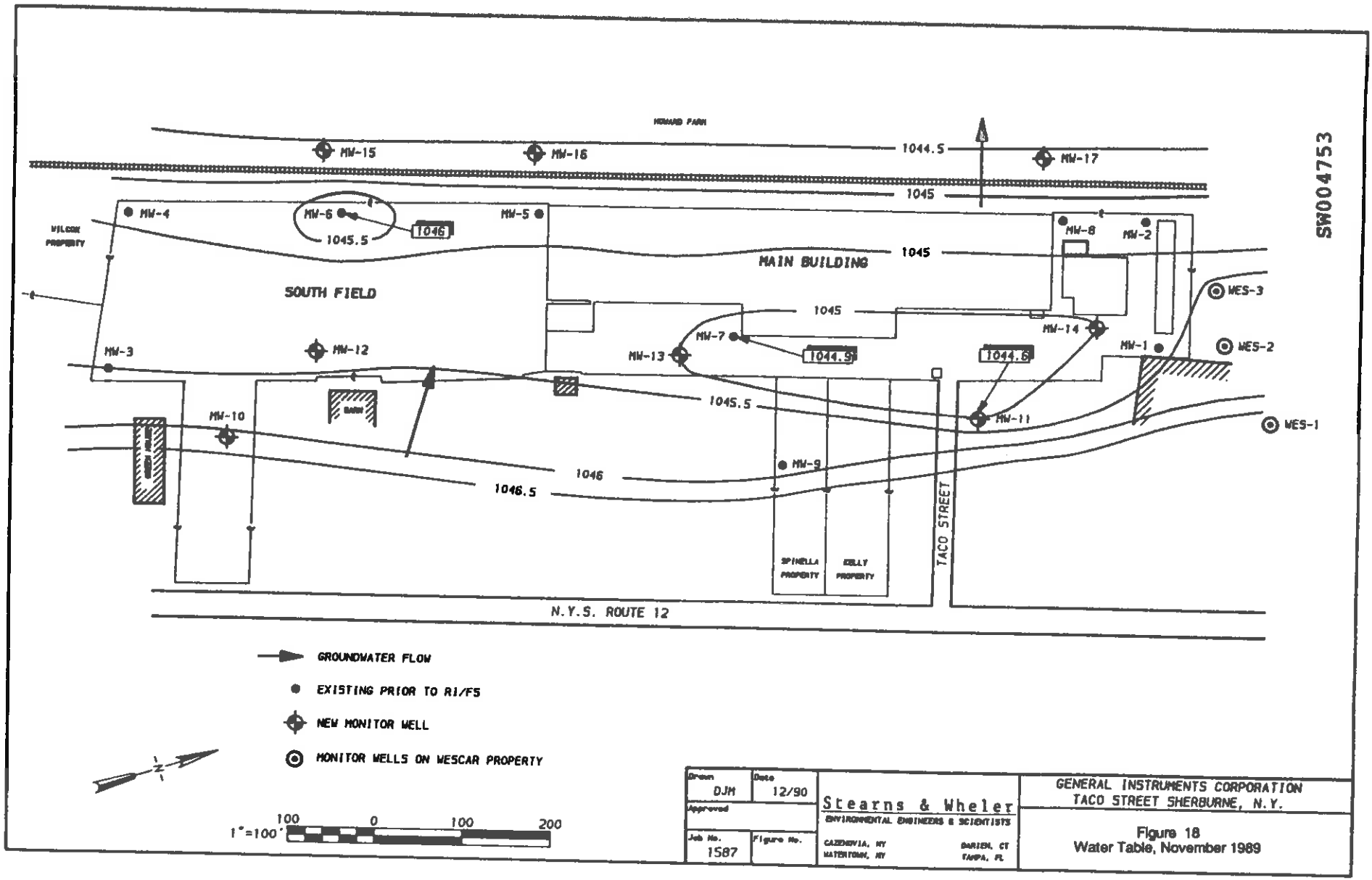


Drawn	Date	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY GARDEN, CT WATERTOWN, NY TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y. Figure 15 Test Pit Locations
Approved			
Job No. 1587	Sheet No.		

APPENDIX F – HISTORICAL GROUNDWATER INFORMATION

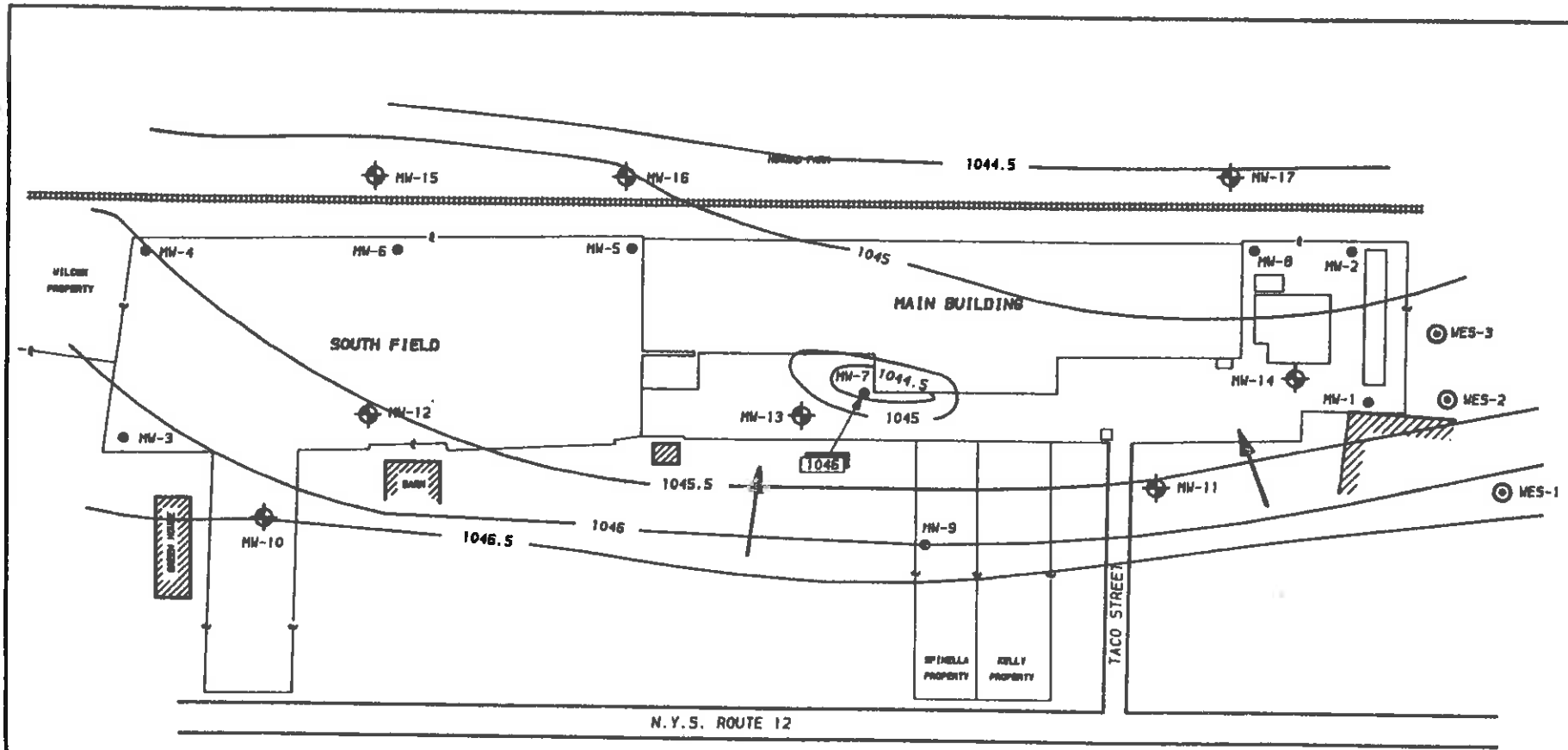


Drawn DJM	Date 12/90	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY WATERTOWN, NY GARDEN, CT TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved			Figure 11 Location of Monitoring Wells
Job No. 1587	Figure No.		


HOWARD FARM
MW-15
MW-16
1044.5
MW-17
1045
MW-4
MW-6
1045.5
1046
MW-5
WILCOX PROPERTY
SOUTH FIELD
MW-8
MW-2
MAIN BUILDING
1045
WES-3
1045
MW-7
MW-14
MW-1
WES-2
MW-3
MW-12
MW-13
1044.5
1044.6
1045.5
MW-10
MW-11
WES-1
1046
MW-9
1046.5
SPINELLA PROPERTY
KELLY PROPERTY
TACO STREET
N.Y.S. ROUTE 12
GROUNDWATER FLOW
EXISTING PRIOR TO RI/FS
NEW MONITOR WELL
MONITOR WELLS ON WESCAR PROPERTY
N
100 0 100 200
1"=100'
Drawn DJM
Date 12/90
Approved
Job No. 1587
Figure No.
Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NY
WATERTOWN, NY
DARIEN, CT
TAMPA, FL
GENERAL INSTRUMENTS CORPORATION
TACO STREET SHERBURNE, N.Y.
Figure 18
Water Table, November 1989

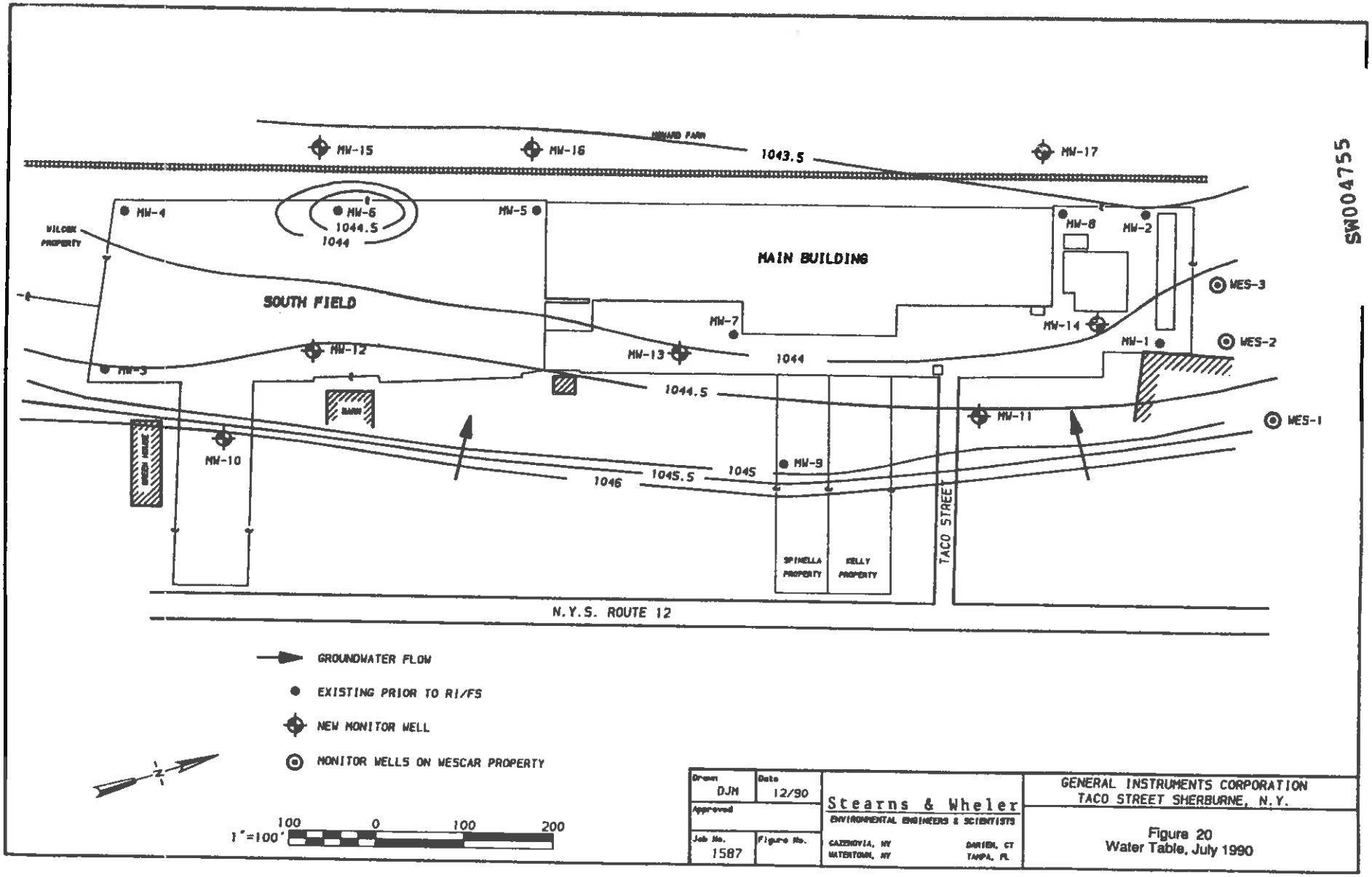
SW004753

SW004754



Drawn: DJM	Date: 12/90	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY WATERTOWN, NY GARDEN, CT TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved			Figure 19 Water Table, January 1990
Job No. 1587	Figure No.		

SW004755



Drawn: DJM	Date: 12/90	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY WATERTOWN, NY DARIEN, CT TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved			Figure 20 Water Table, July 1990
Job No. 1587	Figure No.		

LEGEND

PROPERTY LINE
RAILROAD
PRB WALL
MONITORING WELL
PIEZOMETER
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

MICRO, INC., N/F
BK 754 PG 52

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 167

KENYON PRESS, INC., N/F
BK 739 PG 371

MW-21 1043.13
MW-20 1043.34
MW-25 1043.76
MW-24 1043.72
MW-27 1044.16
MW-28 1044.06
P-3 1044.09
MW-17 1044.07
P-11 1043.75
P-8 1044.09
MW-23 1043.75
P-10
MW-30 1043.76
MW-26 1043.75
1044.22
MW-29 1044.23
MW-22 1044.13
MW-8 1044.26
MW-18 1044.15
MW-2 1044.09
MW-14
BLDG
SHED
MAIN PRESS BLDG
WEST STREET
TACO ROAD

1043.2 1043.3 1043.4 1043.5 1043.6 1043.7 1043.8 1043.9 1044.0 1044.2 1044.4

N

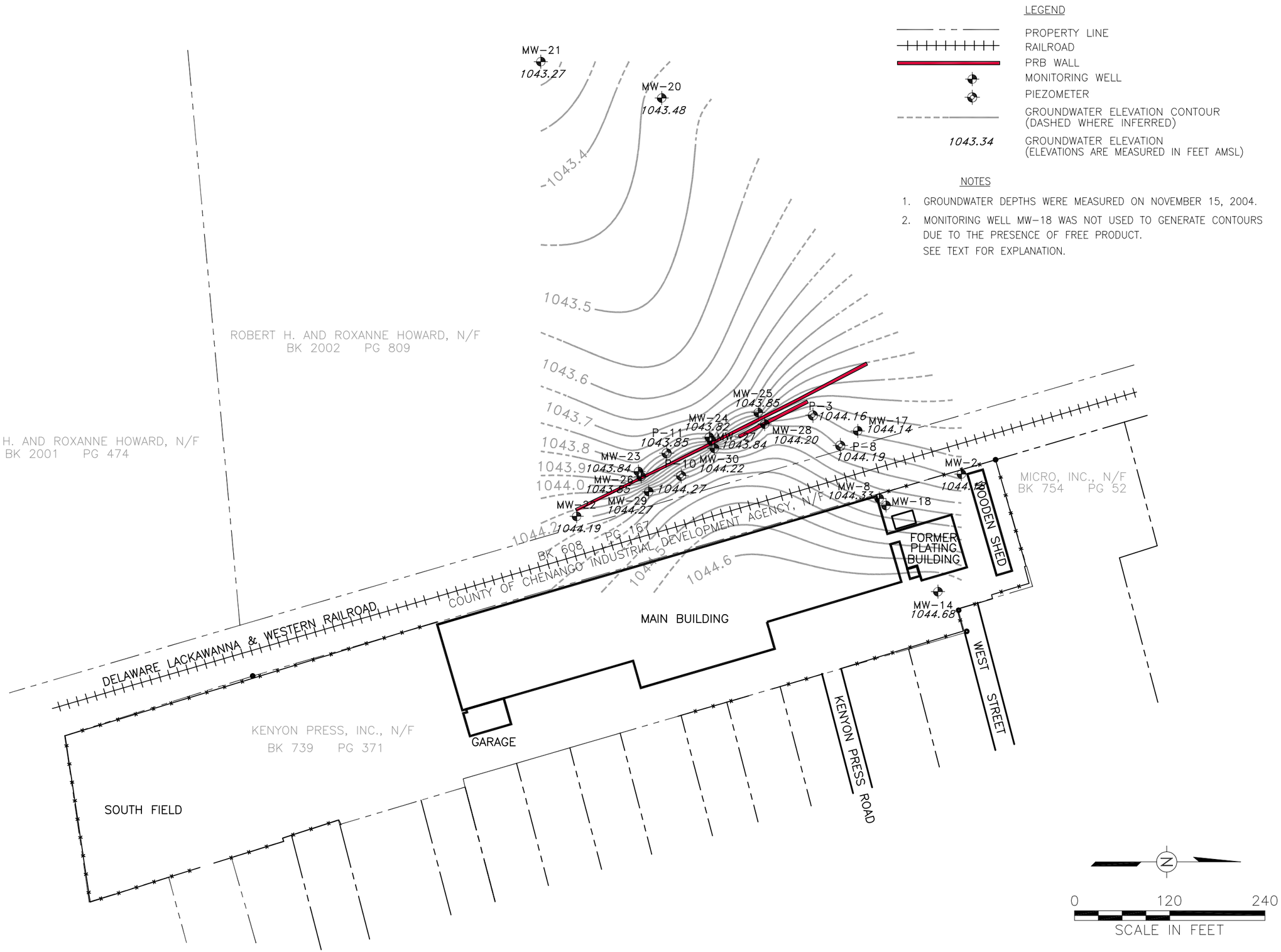
0 120 240
SCALE IN FEET

Drawn By: JME
Checked:
Approved:
DWG Name: 14899206

FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
PREPARED FOR
LOWENSTEIN SANDLER, P.C.

Figure 3
GROUNDWATER CONTOUR MAP

ESC ENGINEERING OF NEW YORK, P.C.



Drawn By: JME
Checked: ESR
Approved: DPB
DWG Name: 14899208

FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
PREPARED FOR
LOWENSTEIN SANDLER, P.C.
ROSELAND, NEW JERSEY

Figure 3
GROUNDWATER CONTOUR MAP
NOVEMBER 2004

ESC ENGINEERING OF NEW YORK, P.C.

LEGEND

PROPERTY LINE
RAILROAD
PRB WALL
MONITORING WELL
PIEZOMETER
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)

NOTES

1. GROUNDWATER DEPTHS WERE MEASURED ON JUNE 6 AND 7, 2005.
2. MONITORING WELL MW-18 WAS NOT USED TO GENERATE CONTOURS DUE TO THE PRESENCE OF FREE-PHASE PRODUCT. SEE TEXT FOR EXPLANATION.

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

MW-21 1042.27
MW-20 1042.47
MW-25 1042.96
MW-24 1042.89
P-11 1042.96
MW-27 1042.96
MW-28 1043.29
P-3 1043.3
MW-17 1043.28
P-8 1043.31
MW-23 1042.96
MW-26 1042.96
P-10 MW-30 1043.4
MW-29 1043.48
MW-22 1043.4
MW-2 1043.
MW-8 1043.36
MW-18
MW-14 1043.89

1042.4 1042.5 1042.6 1042.7 1042.8 1042.9 1043 1043.1 1043.2 1043.3 1043.4 1043.5 1043.6 1043.7 1043.8

DELAWARE LACKAWANNA & WESTERN RAILROAD
COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 508 PG 167

MICRO, INC., N/F
BK 754 PG 52

MAIN BUILDING
FORMER PLATING BUILDING
WOODEN SHED
GARAGE
SOUTH FIELD
KENYON PRESS, INC., N/F
BK 739 PG 371
KENYON PRESS ROAD
WEST STREET

0 120 240
SCALE IN FEET

Drawn By: JME
Checked: ESR
Approved: DPB
DWG Name: 14899211

FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
PREPARED FOR
LOWENSTEIN SANDLER, P.C.
ROSELAND, NEW JERSEY

Figure 3
GROUNDWATER CONTOUR MAP
JUNE 2005

ESC ENGINEERING OF NEW YORK, P.C.

LEGEND

PROPERTY LINE
RAILROAD
PRB WALL
MONITORING WELL
PIEZOMETER
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)

NOTES

1. GROUNDWATER DEPTHS WERE MEASURED ON DECEMBER 20, 2005.
2. MONITORING WELL MW-18 WAS NOT USED TO GENERATE CONTOURS DUE TO THE PRESENCE OF FREE-PHASE PRODUCT. SEE TEXT FOR EXPLANATION.

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

MW-21 1043.49
MW-20 1043.65
MW-39 1043.95
MW-38 1043.88
MW-37 1043.79
MW-36 1044.09
MW-35 1044.16
MW-34 1044.2
MW-25 1044.06
MW-24 1044.03
P-3 1044.37
MW-17 1044.36
P-11 1044.07
MW-27 1044.08
MW-28 1044.6
P-8 1044.39
MW-33 1044.27
MW-23 1044.07
P-10
MW-30 1044.44
MW-26 1044.08
MW-8 1044.43
MW-2 1044.39
MW-32 1044.42
MW-22
MW-29 1044.5
P-5 1044.5
MW-31 1044.45
MW-18
MW-14 1044.88

1043.6
1043.7
1043.9
1044
1044.1
1044.2
1044.3
1044.4
1044.5
1044.8

DELAWARE LACKAWANNA & WESTERN RAILROAD
COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 167

MAIN BUILDING
FORMER PLATING BUILDING
WOODEN SHED
GARAGE
SOUTH FIELD
KENYON PRESS ROAD
WEST STREET

MICRO, INC., N/F
BK 754 PG 52

KENYON PRESS, INC., N/F
BK 739 PG 371

0 120 240
SCALE IN FEET

Drawn By: JME
Checked: ESR
Approved: DPB
DWG Name: 14899213

FORMER GENERAL INSTRUMENT CORPORATION SITE
SHERBURNE, NEW YORK
PREPARED FOR
LOWENSTEIN SANDLER, P.C.
ROSELAND, NEW JERSEY

Figure 3
GROUNDWATER CONTOUR MAP
DECEMBER 2005

ESC ENGINEERING OF NEW YORK, P.C.

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)

NOTES

1. GROUNDWATER DEPTHS WERE MEASURED ON JULY 17, 2006.
2. MONITORING WELL MW-18 IS DAMAGED AND, THUS, WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®, TO REPRESENT THE DISCONTINUITY CREATED BY THE PRB, CONTOURS WERE INDEPENDENTLY GENERATED USING WATER LEVELS FOR WELLS EAST AND WEST OF THE WALL.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.
5. THE SITE WAS FLOODED IN JUNE 2006 AND THESE RESULTS MAY NOT REPRESENT A STEADY STATE CONDITION.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

TANK PIT

QUICKWAY STATION

CANOPY & PUMP ISLAND

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

MW-2 1044.88

MW-14 1045.35

MW-8 1044.95

MW-18 1044.96

KENYON PRESS ROAD

MW-35 1044.67

MW-34 1044.62

MW-39 1044.34

MW-36 1044.51

MW-17 1044.85

P-8 1044.88

P-3 1044.86

MW-28

MW-25 1044.58

MW-38 1044.44

MW-27 1044.66

MW-30 1044.94

MW-24 1044.54

P-10 1044.96

P-11 1044.61

MW-26 1044.6

MW-29 1044.97

MW-23 1044.6

MW-22 1044.88

MW-33 1044.66

MW-31 1044.89

MW-32 1044.87

MW-20 1044.19

MW-21 1044.09

MW-37 1044.36

1044.2 1044.3 1044.4 1044.5 1044.6 1044.7 1044.8 1044.9 1045

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F BK 608 PG 161

DELAWARE LACKAWANNA & WESTERN RAILROAD

MAIN BUILDING

GARAGE

SOUTH FIELD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

N

0 60 120 180
SCALE IN FEET

REVISIONS

REV	DESCRIPTION		
1	Revised	Chkd:	Appr.:
2	Revised	Chkd:	Appr.:
3	Revised	Chkd:	Appr.:

SEAL

DATE

DRAWN BY JME
CHECKED DB
APPROVED

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GROUNDWATER CONTOUR MAP (JULY 2006)

FORMER GENERAL INSTRUMENT CORPORATON SITE
SHERBURNE, NEW YORK

PREPARED FOR
MORRIS, DOWNING & SHERRED, LLP
NEWTON, NEW JERSEY

ESC ENGINEERING OF NEW YORK, P.C.

SHEET 2

Drawing Number
14899222

LEGEND

PROPERTY LINE
RAILROAD
PRB WALL
MONITORING WELL
PIEZOMETER
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
NM NOT MEASURED

NOTES

1. GROUNDWATER DEPTHS WERE MEASURED ON DECEMBER 21 AND 22 (MW-18 ONLY), 2006.
2. MONITORING WELL MW-18 IS DAMAGED AND, THUS, WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER® TO REPRESENT THE DISCONTINUITY CREATED BY THE PRB, WHICH WERE INPUT AS FAULTS IN THE GRIDDING ALGORITHM.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.
5. THE SITE WAS FLOODED IN DECEMBER 2006 AND THESE RESULTS MAY NOT REPRESENT A STEADY STATE CONDITION.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION
CANOPY & PUMP ISLAND
TANK PIT
WOODEN SHED
WEST STREET
KENYON PRESS ROAD
FORMER PLATING BUILDING
MAIN BUILDING
GARAGE
SOUTH FIELD

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 67

DELAWARE LACKAWANNA & WESTERN RAILROAD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

MW-02 *1044.2*
MW-14 *1044.75*
MW-08 *1044.27*
MW-18 *1044.33*
MW-17 *1044.16*
P-08 *1044.21*
P-03 *1044.19*
MW-35 *1043.95*
MW-34 *1043.9*
MW-36 *NM*
MW-39 *1043.6*
MW-28 *NM*
MW-25 *1043.84*
MW-38 *1043.68*
MW-27 *1043.86*
MW-30 *1044.27*
MW-24 *1043.8*
P-10 *1044.32*
P-11 *1043.85*
MW-26 *1043.87*
MW-29 *1044.34*
MW-23 *1043.85*
MW-22 *1044.25*
MW-33 *1043.99*
MW-31 *1044.28*
MW-32 *1044.24*
MW-37 *1043.57*
MW-20 *1043.39*
MW-21 *1043.25*

1044.1 1044.3 1044.5 1043.9 1043.7 1043.5 1043.3

0 60 120 180
SCALE IN FEET

REV	DESCRIPTION		
1	Revised	CHKD	APPD
2	Revised	CHKD	APPD
3	Revised	CHKD	APPD

SEAL

DATE

DRAWN BY JME
CHECKED DB
APPROVED

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GROUNDWATER CONTOUR MAP (DECEMBER 2006)

FORMER GENERAL INSTRUMENT CORPORATON SITE
SHERBURNE, NEW YORK

PREPARED FOR
MORRIS, DOWNING & SHERRED, LLP
NEWTON, NEW JERSEY

ESC ENGINEERING OF NEW YORK, P.C.

SHEET 2

Drawing Number
14899226

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- *1043.34* GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- *NM* NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON JUNE 29, 2007.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS. THE GROUNDWATER ELEVATION AT MONITORING WELL MW-18 WAS AFFECTED BY FLOATING FREE-PHASE PRODUCT, AND, THUS, THIS MEASUREMENT WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

KENYON PRESS ROAD

MAIN BUILDING

GARAGE

SOUTH FIELD

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 167

DELAWARE LACKAWANNA & WESTERN RAILROAD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

MW-01 *1043.02*
MW-02 *1043.16*
MW-03 *1043.1*
MW-14 *1043.52*
MW-17 *1043.02*
MW-18 *1043.09*
MW-19 *1043.12*
MW-20 *1042.25*
MW-21 *1041.99*
MW-22 *1043.09*
MW-23 *1042.65*
MW-24 *1042.61*
MW-25 *1042.67*
MW-26 *1042.67*
MW-27 *1042.68*
MW-28 *1043.05*
MW-29 *1043.18*
MW-30 *1043.11*
MW-31 *1043.12*
MW-32 *1043.1*
MW-33 *1042.88*
MW-34 *1042.7*
MW-35 *1042.77*
MW-36 *1042.53*
MW-37 *1042.35*
MW-38 *1042.49*
MW-39 *1042.35*
P-03 *1043.01*
P-08 *1043.03*
P-10 *1043.15*
P-11 *1042.66*

1042.1 1042.3 1042.5 1042.7 1042.9 1043.1 1043.3

0 60 120 180
SCALE IN FEET

REVISIONS

REV	DESCRIPTION		
1	Revised:	Chkd:	Appr:
2	Revised:	Chkd:	Appr:
3	Revised:	Chkd:	Appr:

SEAL DATE

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CHECKED DB
APPROVED

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GROUNDWATER CONTOUR MAP (JUNE 2007)

FORMER GENERAL INSTRUMENT CORPORATON SITE
SHERBURNE, NEW YORK

PREPARED FOR
MORRIS, DOWNING & SHERRED, LLP
NEWTON, NEW JERSEY

ESC ENGINEERING OF NEW YORK, P.C.

SHEET 2

Drawing Number
14899229

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- NM NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON DECEMBER 20, 2007.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

KENYON PRESS ROAD

MAIN BUILDING

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 67

DELAWARE LACKAWANNA & WESTERN RAILROAD

GARAGE

SOUTH FIELD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

MW-02 1044.83
MW-14 1045.22
MW-08 1044.90
MW-18 1044.93
MW-35 1044.63
MW-34 1044.54
MW-39 1044.23
MW-36 1044.40
MW-17 1044.81
P-08 1044.84
P-03 1044.83
MW-25 1044.62
MW-28
MW-38 1044.42
MW-27 1044.82
MW-30 1044.90
MW-24 1044.53
P-10 1044.90
P-11 1044.57
MW-26 1044.59
MW-29 1044.92
MW-23 1044.57
MW-22 1044.87
MW-33 1044.63
MW-31 1044.88
MW-32 1044.89
MW-20 1044.24
MW-21 1044.05
MW-37 1044.38

1044.65
1044.85
1044.05
1044.25
1044.45

0 60 120 180
SCALE IN FEET

REVISIONS

REV	DESCRIPTION		
1	Revised	Chkd	Appr.
2	Revised	Chkd	Appr.
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GROUNDWATER CONTOUR MAP (DECEMBER 2007)

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NEWTON, NEW JERSEY

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SHEET 2

Drawing Number
14899232

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1043.34 — GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- NM — NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON JUNE 11, 2008.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

KENYON PRESS ROAD

MAIN BUILDING

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 167

DELAWARE LACKAWANNA & WESTERN RAILROAD

GARAGE

SOUTH FIELD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

MW-39 1042.46
MW-35 1042.97
MW-34 1042.84
MW-36 1042.6
MW-38 1042.67
MW-20 1042.44
MW-21 1042.17
MW-37 1042.54
MW-02 1043.21
MW-08 1043.26
MW-18 1043.34
MW-14 1043.68
MW-17 1043.18
P-08 1043.22
P-03 1043.21
MW-25 1042.85
MW-28
MW-27 1042.86
MW-24 1042.78
MW-30 1043.3
P-10 1043.36
P-11 1042.85
MW-26 1042.86
MW-29 1043.39
MW-23 1042.86
MW-22 1043.31
MW-33 1043.03
MW-31 1043.34
MW-32 1043.02

1042.65 1042.85 1043.05 1043.45 1042.85 1042.25 1042.45 1042.65 1042.85 1043.05 1043.25

N

0 60 120 180
SCALE IN FEET

REVISIONS

REV	DESCRIPTION		
1	Revised	Date	Appr.
2	Revised	Date	Appr.
3	Revised	Date	Appr.

SEAL

DATE

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GROUNDWATER CONTOUR MAP (JUNE 2008)

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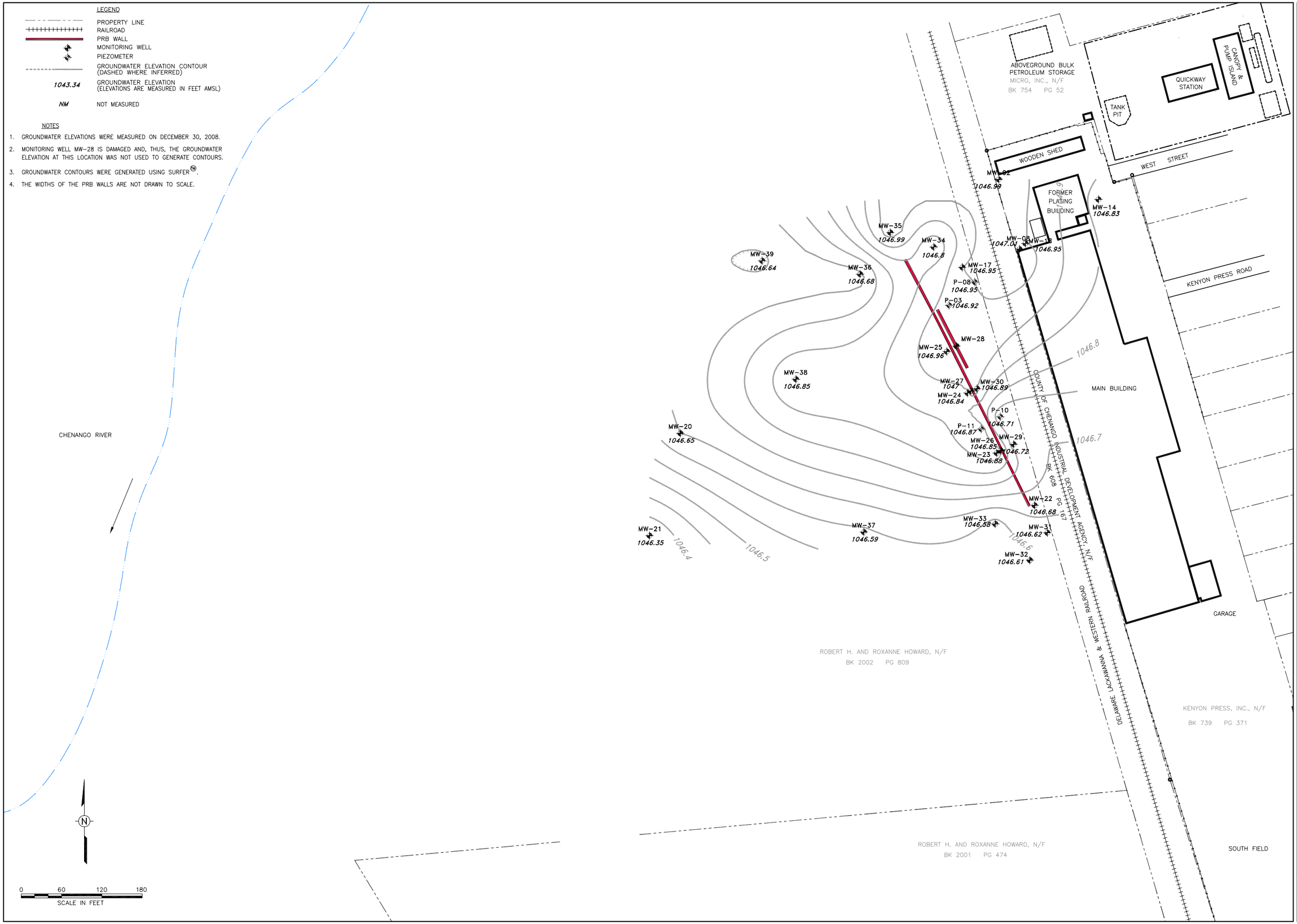
Drawing Number
14899236

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- NM NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON DECEMBER 30, 2008.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.



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GROUNDWATER CONTOUR MAP (DECEMBER 2008)

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WSP ENGINEERING OF NEW YORK, P.C.

SHEET 2

Drawing Number
14899241

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- NM NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON JUNE 16, 2009.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

KENYON PRESS ROAD

MAIN BUILDING

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 187

DELAWARE LACKAWANNA & WESTERN RAILROAD

GARAGE

SOUTH FIELD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

MW-02 1043.54
MW-14 1044.25
MW-08 1043.64
MW-18 1043.68
MW-35 1043.31
MW-34 1043.17
MW-39 1042.66
MW-36 1042.74
MW-17 1043.53
P-08 1043.57
P-03 1043.57
MW-28
MW-25 1043.22
MW-38 1043.04
MW-27 1043.22
MW-30 1043.66
MW-24 1043.14
P-10 1043.71
P-11 1043.22
MW-29 1043.74
MW-26 1043.22
MW-23 1043.22
MW-22 1043.66
MW-33 1043.38
MW-31 1043.69
MW-32 1043.64
MW-20 1042.77
MW-21 1042.56
MW-37 1042.92

1042.6 1042.7 1042.8 1042.9 1043 1043.1 1043.2 1043.3 1043.4 1043.5 1043.6 1043.7 1043.8 1043.9

0 60 120 180
SCALE IN FEET

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DATE

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GROUNDWATER CONTOUR MAP (JUNE 2009)

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Reston, Virginia 20191
(703) 709-6500

SHEET 2

Drawing Number
14899250

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- *1043.34* GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- *NM* NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON JANUARY 6, 2010 DURING THE GROUNDWATER SAMPLING EVENT; HOWEVER, DUE TO A MALFUNCTIONING WATER LEVEL INDICATOR, GROUNDWATER ELEVATIONS WERE RE-MEASURED ON FEBRUARY 8, 2010.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

KENYON PRESS ROAD

MAIN BUILDING

GARAGE

CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 167

DELAWARE LACKAWANNA & WESTERN RAILROAD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

SOUTH FIELD

MW-02 *1044.38*
MW-08 *1044.45*
MW-13 *1044.5*
MW-14
MW-17 *1044.37*
P-08 *1044.43*
P-03 *1044.41*
MW-25 *1044.07*
MW-28 *NM*
MW-27 *1044.08*
MW-30 *1044.47*
MW-24 *1043.97*
P-10 *1044.46*
P-11 *1044.08*
MW-26 *1044.08*
MW-29 *1044.49*
MW-23 *1044.07*
MW-22 *1044.31*
MW-33 *1044.17*
MW-31 *1044.43*
MW-32 *1044.37*
MW-34 *1044.00*
MW-35 *1044.17*
MW-36 *1043.58*
MW-37 *1043.88*
MW-38 *1043.92*
MW-39 *1043.45*
MW-20 *1043.69*
MW-21 *1043.51*

1044.4 1044.5 1044.6 1044.7 1044.2 1044.1 1044 1043.9 1043.8 1043.7 1043.6 1043.5 1043.6 1043.7 1043.8 1043.9 1044 1044.1 1044.2 1044.3

N

0 60 120 180
SCALE IN FEET

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GROUNDWATER CONTOUR MAP (FEBRUARY 2010)

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11190 Sunrise Valley Drive Suite 300
Reston, Virginia 20191
(703) 709-6500

SHEET 2

Drawing Number
14899253

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- *1043.34* GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- *NM* NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON MARCH 30, 2010 DURING THE QUARTERLY AND SEMIANNUAL SAMPLING ACTIVITIES ASSOCIATED WITH THE SUPPLEMENTAL REMEDIAL ACTION.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

MW-02 *1045.83*

MW-14 *not Surveyed*

MW-08 *1045.86*

MW-18 *1045.9*

KENYON PRESS ROAD

MW-35 *1045.76*

MW-34 *1045.6*

MW-39 *1045.04*

MW-36 *1045.2*

MW-17 *1045.94*

P-08 *1045.88*

P-03 *1045.85*

MW-28

MW-25 *1045.67*

MW-38 *1045.55*

MW-27 *1045.86*

MW-30 *1045.91*

MW-24 *1045.55*

P-10 *1045.88*

P-11 *1045.7*

MW-20 *1045.35*

MW-26 *1045.78*

MW-29 *1045.91*

MW-23 *1045.8*

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY N/F
BK 608 PG 167

MW-22 *1045.79*

MW-33 *1045.81*

MW-31 *1045.86*

MW-37 *1046.03*

MW-32 *1045.92*

MW-21 *1045.17*

MAIN BUILDING

GARAGE

1045.2

1045.4

1045.6

1045.8

1046

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

DELAWARE LACKAWANNA & WESTERN RAILROAD

KENYON PRESS, INC., N/F
BK 739 PG 371

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

SOUTH FIELD

N

0 60 120 180
SCALE IN FEET

REVISIONS

REV	DESCRIPTION	
1	Revised	Apr. OMd
2	Revised	Apr. OMd
3	Revised	Apr. OMd

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QUARTERLY SRAP GROUNDWATER ELEVATION MAP (MARCH 2010)

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SHEET 2

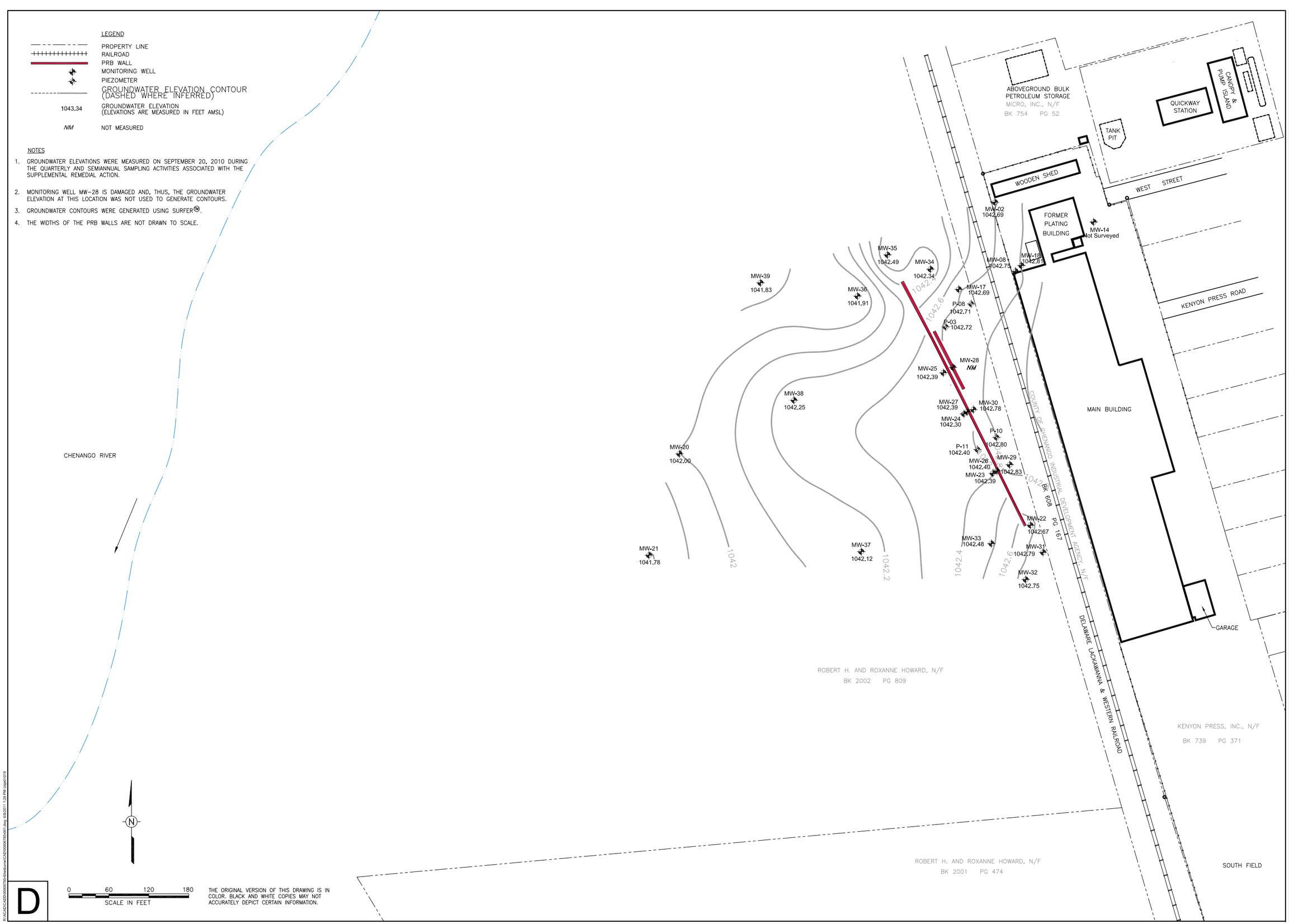
Drawing Number
14899255

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1043.34 — GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- *NM* — NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON SEPTEMBER 20, 2010 DURING THE QUARTERLY AND SEMIANNUAL SAMPLING ACTIVITIES ASSOCIATED WITH THE SUPPLEMENTAL REMEDIAL ACTION.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.



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0 60 120 180
SCALE IN FEET

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1	Revised:	CHKD	APPR.
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QUARTERLY SRAP GROUNDWATER ELEVATION MAP (SEPTEMBER 2010)

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300 Trade Center, Suite 4690
Woburn, Massachusetts 01801
(781) 933-7340
www.wspenvironmental.com/usa

SHEET 2

Drawing Number
00006785–001

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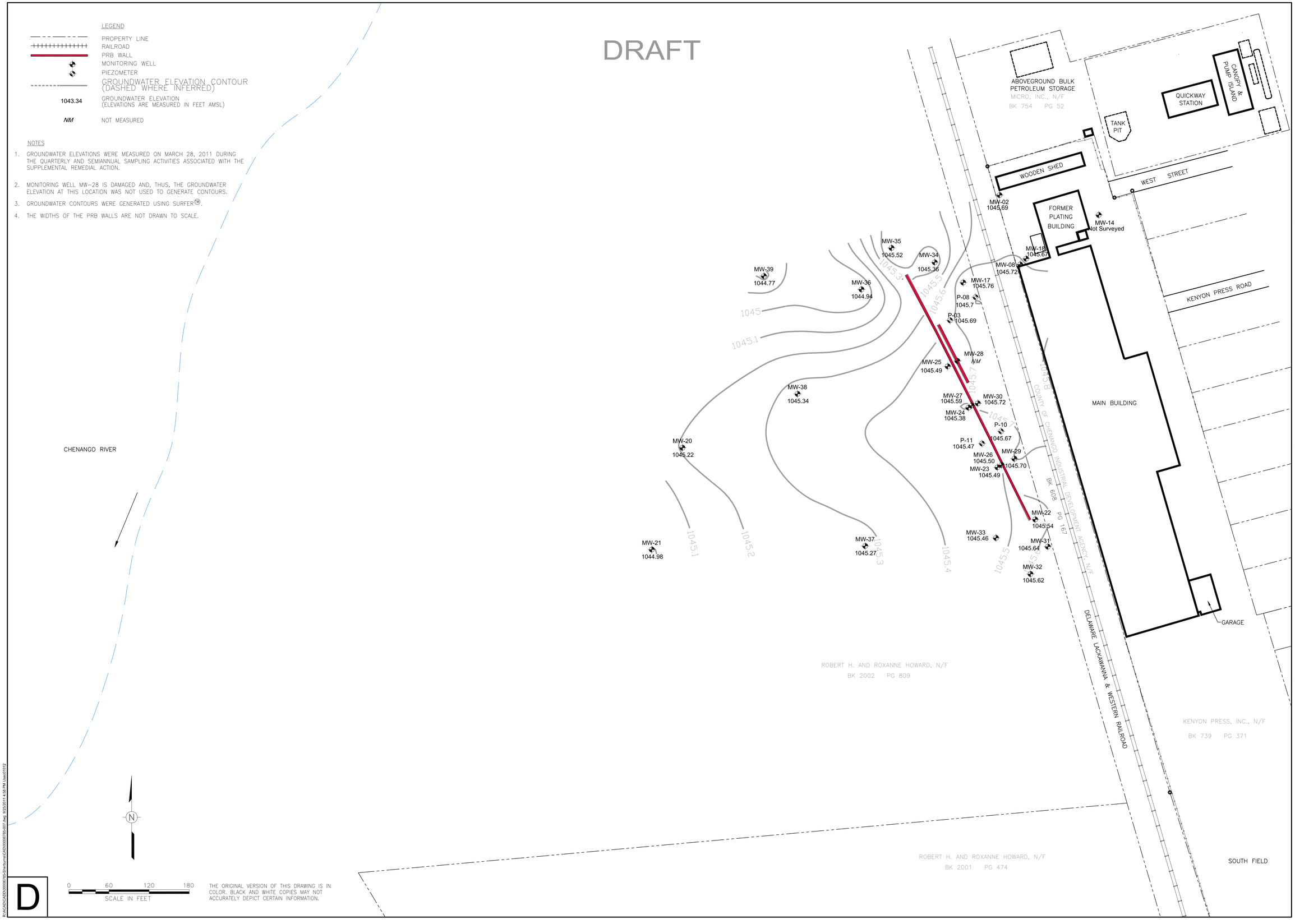
DRAFT

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1043.34 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- *NM* NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON MARCH 28, 2011 DURING THE QUARTERLY AND SEMIANNUAL SAMPLING ACTIVITIES ASSOCIATED WITH THE SUPPLEMENTAL REMEDIAL ACTION.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER™.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.



D

0 60 120 180
SCALE IN FEET

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QUARTERLY SRAP GROUNDWATER ELEVATION MAP (MARCH 2011)

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NEWTON, NEW JERSEY

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5 Sullivan Street
Cazenovia, New York 13035
(315) 655-3900
www.wspenvironmental.com/usa

SHEET 2

Drawing Number
00006785–007

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1045.38 — GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- *NM* — NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON MARCH 28, 2011 DURING THE QUARTERLY AND SEMIANNUAL SAMPLING ACTIVITIES ASSOCIATED WITH THE SUPPLEMENTAL REMEDIAL ACTION.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

MW-14 Not Surveyed

MW-02 1045.83

MW-16 1045.91

MW-08 1045.90

KENYON PRESS ROAD

MAIN BUILDING

GARAGE

MW-35 1045.71

MW-34 1045.53

MW-39 NM

MW-36 1045.14

MW-17 1045.84

P-08 1045.87

P-03 1045.86

MW-28 *NM*

MW-25 1045.68

MW-38 1045.51

MW-27 1045.74

MW-30 1045.86

MW-24 1045.55

P-10 1045.83

P-11 1045.66

MW-29 1045.86

MW-23 1045.67

MW-26 1045.74

MW-22 1045.73

MW-33 1045.65

MW-31 1045.82

MW-32 1045.82

MW-20 1045.38

MW-21 1045.15

MW-37 NM

1045.2 1045.3 1045.4 1045.5 1045.6 1045.7 1045.8

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
Bk 608 PG 167

DELAWARE LACKAWANNA & WESTERN RAILROAD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

SOUTH FIELD

N

0 60 120 180
SCALE IN FEET

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REVISIONS

REV	DESCRIPTION	DRAWN	CHKD	APPD
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2	Revised:			
3	Revised:			

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QUARTERLY SRAP GROUNDWATER ELEVATION MAP (OCTOBER 2011)

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SHEET 2

Drawing Number
00006785-011

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LEGEND

PROPERTY LINE
RAILROAD
PRB WALL
MONITORING WELL
PIEZOMETER
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
1045.38 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
NM NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON JULY 6, 2012.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION
CANOPY & PUMP ISLAND
TANK PIT
WOODEN SHED
WEST STREET
KENYON PRESS ROAD
FORMER PLATING BUILDING
MAIN BUILDING
GARAGE
COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY N/F
BK 608 PG 167
DELAWARE LACKAWANNA & WESTERN RAILROAD

MW-02 1043.12
MW-14 Not Surveyed
MW-18 1043.27
MW-08 1043.15
MW-35 1042.87
MW-34 1042.73
MW-39 NM
MW-36 1042.21
MW-17 1043.08
P-08 1043.12
P-03 1043.12
MW-28 NM
MW-25 1042.76
MW-38 1042.57
MW-27 1042.84
MW-30 1043.20
MW-24 1042.63
P-10 1043.24
P-11 1042.75
MW-29 1043.26
MW-23 1042.76
MW-26 1042.75
MW-22 1043.10
MW-33 1042.93
MW-31 1043.19
MW-32 1043.19
MW-20 1042.37
MW-21 1042.05
MW-37 1042.43

1042.1 1042.2 1042.3 1042.4 1042.5 1042.6 1042.7 1042.8 1042.9 1043.0 1043.1 1043.2 1043.3 1043.4

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

SOUTH FIELD

N

D

0 60 120 180
SCALE IN FEET

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REVISIONS

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1	Revised:			
2	Revised:			
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SEMIANNUAL GROUNDWATER ELEVATION MAP (JULY 2012)

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SHEET 2

Drawing Number
00006785–018

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1042.71 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- NM NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON NOVEMBER 28, 2012.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

KENYON PRESS ROAD

MAIN BUILDING

GARAGE

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 608 PG 167

DELAWARE LACKAWANNA & WESTERN RAILROAD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

SOUTH FIELD

MW-02 1043.12
MW-08 1043.44
MW-12 1043.51
MW-14 1043.95
MW-17 1043.35
MW-20 1042.71
MW-21 1042.40
MW-22 1043.33
MW-23 1043.05
MW-24 1042.94
MW-25 1043.05
MW-26 1043.05
MW-27 1043.05
MW-28 NM
MW-29 1043.49
MW-30 1043.45
MW-31 1043.43
MW-32 1043.41
MW-33 1043.17
MW-34 1043.02
MW-35 1042.16
MW-36 1042.51
MW-37 1042.77
MW-38 1042.90
MW-39 1042.50
P-03 1043.37
P-08 1043.37
P-10 1043.46
P-11 1043.04

1042.5 1042.6 1042.7 1042.8 1042.9 1043.0 1043.1 1043.2 1043.3 1043.4 1043.5 1043.6 1043.7 1043.8 1043.9

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SCALE IN FEET

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SEMIANNUAL GROUNDWATER ELEVATION MAP (NOVEMBER 2012)

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SHEET 3

Drawing Number
00006785–020

LEGEND

PROPERTY LINE
RAILROAD
PRB WALL
MONITORING WELL
PIEZOMETER
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
1045.38 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
NM NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON JUNE 3, 2013.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION
CANOPY & PUMP ISLAND
TANK PIT
WOODEN SHED
WEST STREET
FORMER PLATING BUILDING
KENYON PRESS ROAD
MAIN BUILDING
GARAGE
COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/E
BK 1002 PG 167
DELAWARE LACKAWANNA & WESTERN RAILROAD

MW-02 1045.23
MW-14 1045.53
MW-18 1045.33
MW-08 1045.29
MW-17 1045.21
P-08 1045.23
P-03 1045.2
MW-35 1044.85
MW-34 1044.68
MW-36 1044.17
MW-39 NM
MW-38 1044.64
MW-20 1044.47
MW-21 1044.24
MW-25 1044.98
MW-28 NM
MW-27 1045.03
MW-30 1045.27
MW-24 1044.85
P-10 1045.24
P-11 1044.98
MW-29 1045.27
MW-23 1044.99
MW-26 1045.01
MW-22 1045.11
MW-33 1045.03
MW-31 1045.21
MW-32 1045.18
MW-37 1044.75

1044.2 1044.3 1044.4 1044.5 1044.6 1044.7 1044.8 1044.9 1045.0 1045.1 1045.2 1045.3 1045.4 1045.5

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
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SOUTH FIELD

N

D

0 60 120 180
SCALE IN FEET

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QUARTERLY SRAP GROUNDWATER ELEVATION MAP (JUNE 2013)

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SHEET 2

Drawing Number
00037142–001

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1045.38 GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- NM NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON DECEMBER 23, 2013.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION

CANOPY & PUMP ISLAND

TANK PIT

WOODEN SHED

WEST STREET

FORMER PLATING BUILDING

MW-02 1046.73

MW-14 1046.78

MW-18 1046.73

MW-08 1046.77

KENYON PRESS ROAD

MAIN BUILDING

GARAGE

MW-39 NM

MW-36 1046.04

MW-35 1046.66

MW-34 1046.47

MW-17 1046.66

P-08 1046.68

P-03 1046.69

MW-28 NM

MW-25 1046.70

MW-38 1046.54

MW-27 1046.56

MW-30 1046.68

MW-24 1046.51

P-10 1046.52

P-11 1046.62

MW-23 1046.62

MW-26 1046.69

MW-29 1046.55

MW-20 1044.47

MW-22 1046.36

MW-33 1046.40

MW-31 1046.44

MW-37 1046.40

MW-32 1046.42

MW-21 1046.09

1046.1 1046.2 1046.3 1046.4 1046.5 1046.6 1046.7

COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY N/F
BK 608 PG 167

DELAWARE LACKAWANNA & WESTERN RAILROAD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

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SOUTH FIELD

N

0 60 120 180
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SEMIANNUAL SRAP GROUNDWATER ELEVATION MAP (DECEMBER 2013)

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SHEET 2

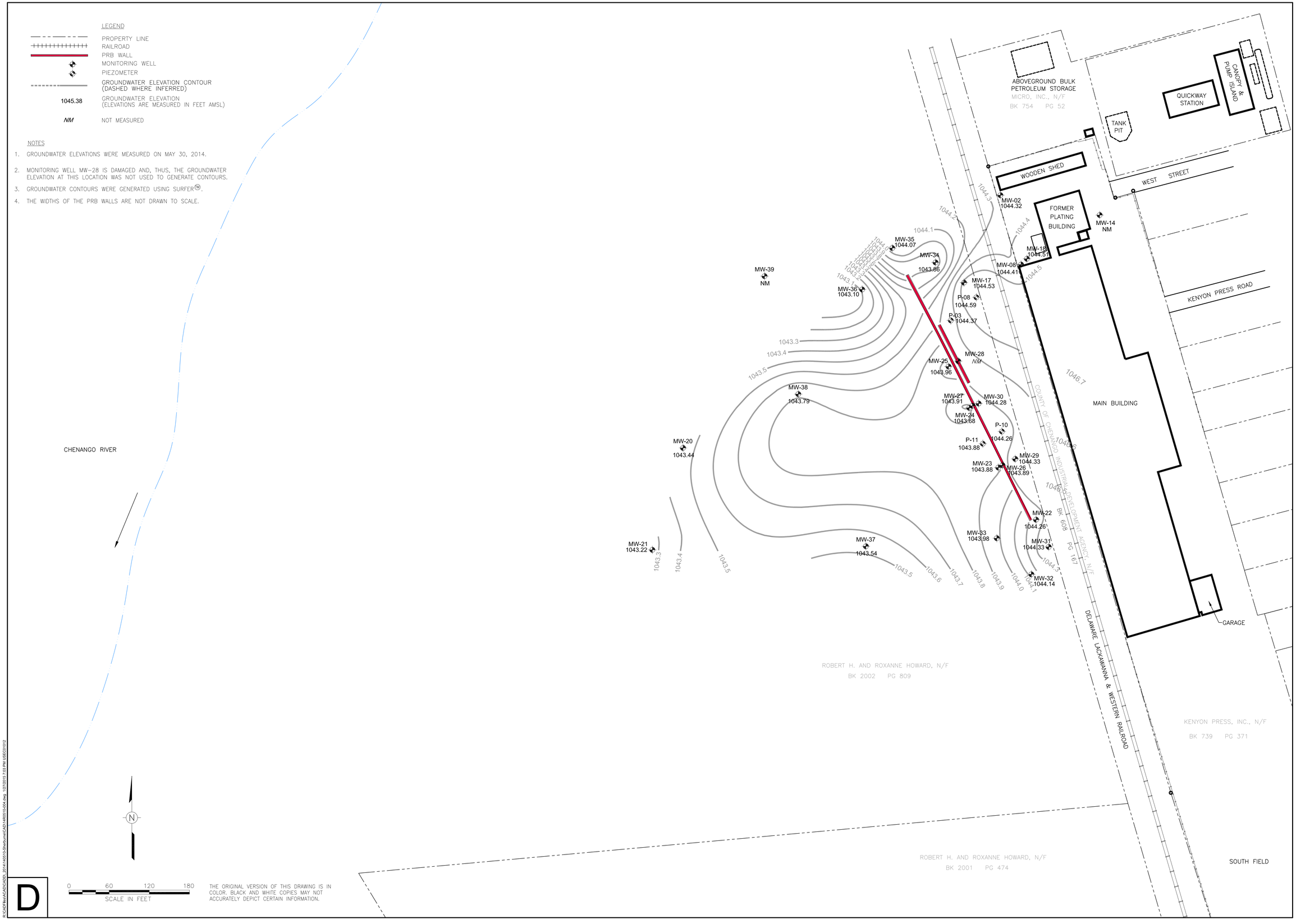
Drawing Number
14R0510–001

LEGEND

- PROPERTY LINE
- RAILROAD
- PRB WALL
- MONITORING WELL
- PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 1045.38 — GROUNDWATER ELEVATION (ELEVATIONS ARE MEASURED IN FEET AMSL)
- *NM* — NOT MEASURED

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED ON MAY 30, 2014.
2. MONITORING WELL MW-28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. GROUNDWATER CONTOURS WERE GENERATED USING SURFER™.
4. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.



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SCALE IN FEET

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1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:

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SEMIANNUAL SRAP GROUNDWATER ELEVATION MAP (MAY 2014)

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SHEET 3

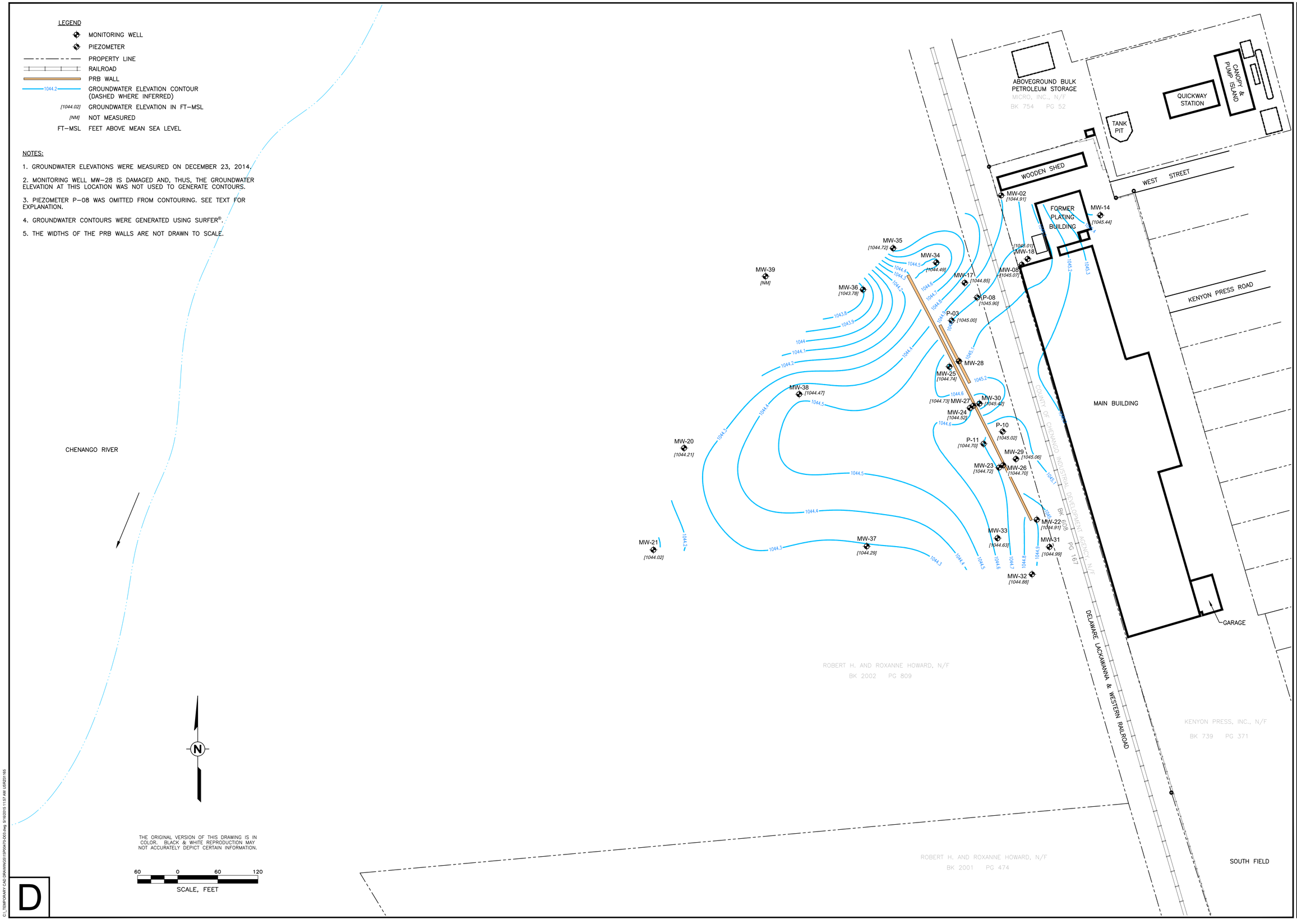
Drawing Number
14R0510–004

LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY LINE
- RAILROAD
- PRB WALL
- 1044.2 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- [1044.02] — GROUNDWATER ELEVATION IN FT–MSL
- [NM] — NOT MEASURED
- FT–MSL — FEET ABOVE MEAN SEA LEVEL

NOTES:

1. GROUNDWATER ELEVATIONS WERE MEASURED ON DECEMBER 23, 2014.
2. MONITORING WELL MW–28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. PIEZOMETER P–08 WAS OMITTED FROM CONTOURING. SEE TEXT FOR EXPLANATION.
4. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
5. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.



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SEMIANNUAL SRAP GROUNDWATER ELEVATION MAP – DECEMBER 2014

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LADDEY, CLARK & RYAN, LLP
SPARTA, NEW JERSEY

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Cazenovia, New York 13035
(315) 655-3900
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SHEET 3

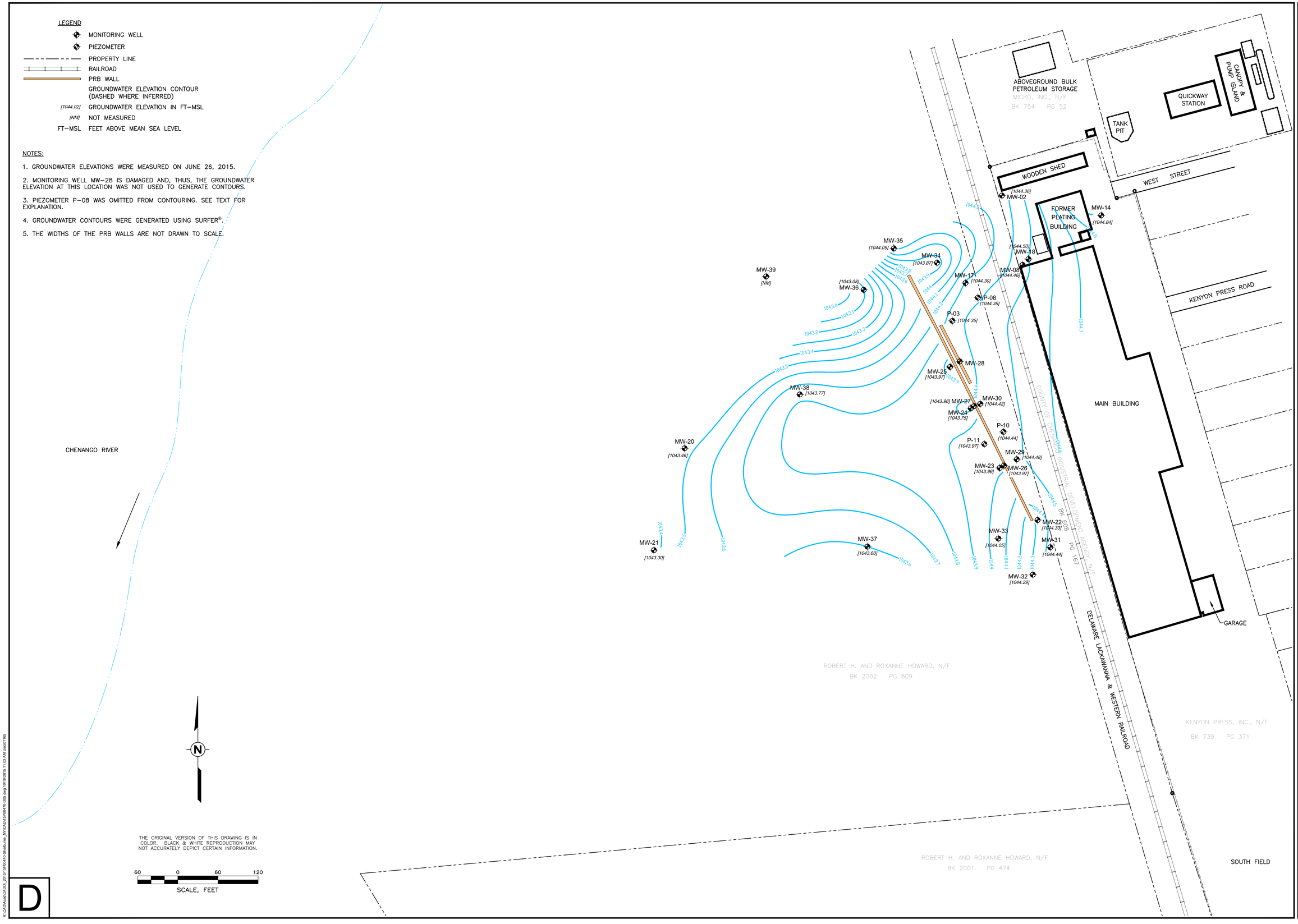
Drawing Number
15P00470–D03

LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY LINE
- RAILROAD
- PRB WALL
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- [1044.02] GROUNDWATER ELEVATION IN FT–MSL
- [NM] NOT MEASURED
- FT–MSL FEET ABOVE MEAN SEA LEVEL

NOTES:

1. GROUNDWATER ELEVATIONS WERE MEASURED ON JUNE 26, 2015.
2. MONITORING WELL MW–28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. PIEZOMETER P–08 WAS OMITTED FROM CONTOURING. SEE TEXT FOR EXPLANATION.
4. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
5. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.



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SCALE, FEET

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REVISIONS

REV	DESCRIPTION	Chkd:	Appr.:
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
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SEMIANNUAL SRAP GROUNDWATER ELEVATION MAP – JUNE 2015

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SHEET 3

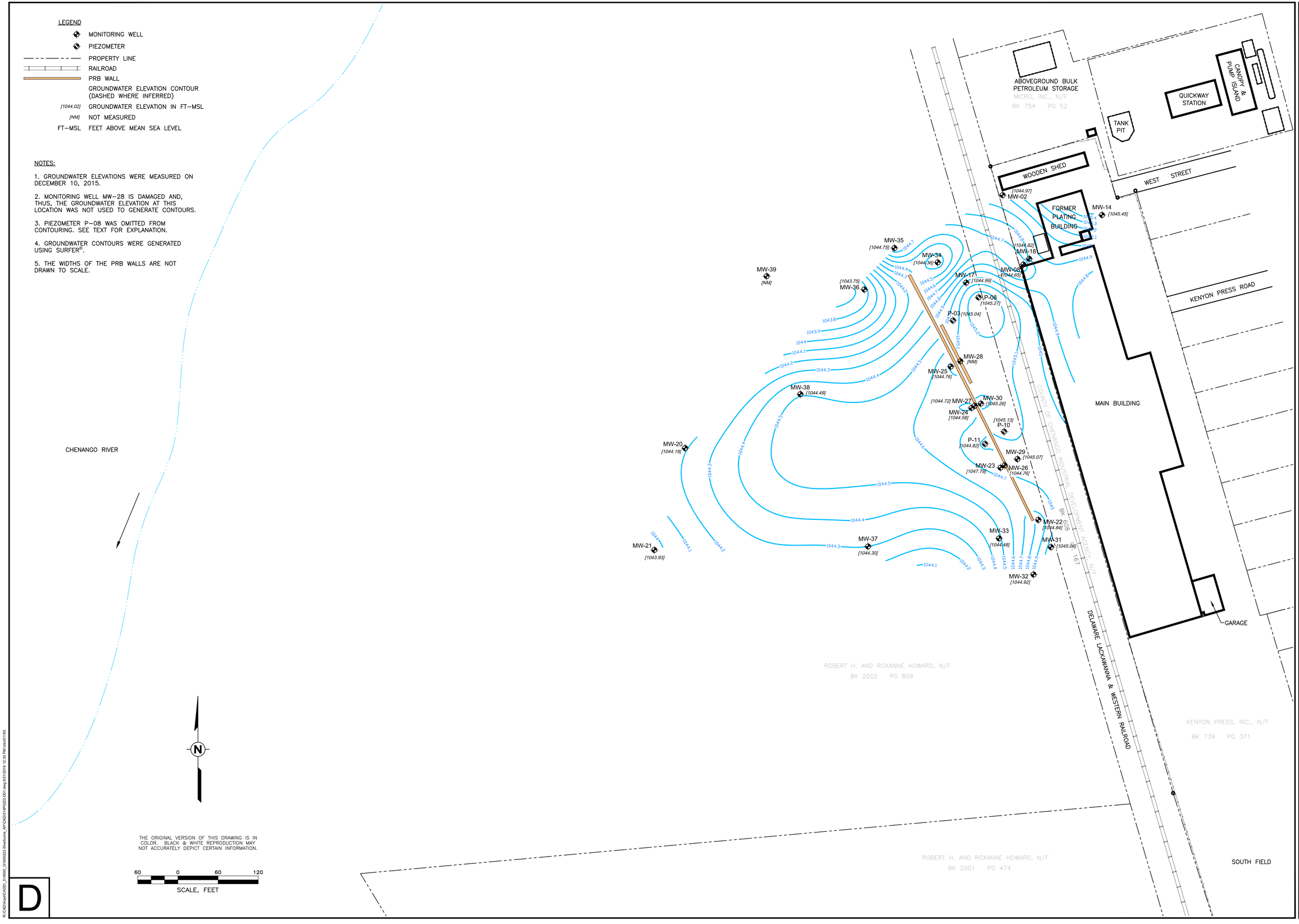
Drawing Number
15P00470–D05

LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY LINE
- RAILROAD
- PRB WALL
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- [1044.02] GROUNDWATER ELEVATION IN FT–MSL
- [NM] NOT MEASURED
- FT–MSL FEET ABOVE MEAN SEA LEVEL

NOTES:

1. GROUNDWATER ELEVATIONS WERE MEASURED ON DECEMBER 10, 2015.
2. MONITORING WELL MW–28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. PIEZOMETER P–08 WAS OMITTED FROM CONTOURING. SEE TEXT FOR EXPLANATION.
4. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
5. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.



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SEMIANNUAL SRAP GROUNDWATER ELEVATION MAP – DECEMBER 2015

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(617) 426-7330
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SHEET 3

Drawing Number
314P0222–D01

LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY LINE
- RAILROAD
- PRB WALL
- 1042 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- [1043.34] GROUNDWATER ELEVATION IN FT–MSL
- [NM] NOT MEASURED
- FT–MSL FEET ABOVE MEAN SEA LEVEL

NOTES:

1. GROUNDWATER ELEVATIONS WERE MEASURED ON DECEMBER 10, 2015.
2. MONITORING WELL MW–28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. PIEZOMETER P–08 WAS OMITTED FROM CONTOURING. SEE TEXT FOR EXPLANATION.
4. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
5. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

QUICKWAY STATION
CANOPY & PUMP ISLAND
TANK PIT
WOODEN SHED
WEST STREET
KENYON PRESS ROAD
FORMER PLATING BUILDING
MAIN BUILDING
GARAGE
COUNTY OF DELAWARE INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 1167 PG 167
DELAWARE LACKAWANNA & WESTERN RAILROAD
SOUTH FIELD

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

MW-2 [1043.34]
MW-14 [1044.33]
MW-18 [1043.53]
MW-8 [1043.58]
MW-17 [1043.28]
P-8 [1043.34]
P-3 [1043.34]
MW-35 [1043.08]
MW-34 [1042.83]
MW-39 [NM]
MW-36 [1042.01]
MW-28 [NM]
MW-25 [1042.86]
MW-38 [1042.76]
MW-27 [1043.22]
MW-30 [1043.47]
MW-24 [1042.73]
P-10 [1043.49]
P-11 [1042.93]
MW-20 [1042.38]
MW-29 [1043.56]
MW-23 [1042.94]
MW-26 [1043.03]
MW-22 [1043.40]
MW-33 [1043.10]
MW-31 [1043.50]
MW-37 [1042.54]
MW-21 [1042.22]
MW-32 [1043.58]

1042.1 1042.2 1042.3 1042.4 1042.5 1042.6 1042.7 1042.8 1042.9 1043 1043.1 1043.2 1043.3 1043.4 1043.5 1043.6 1043.7 1043.8 1043.9 1044

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SCALE, FEET

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PRB/SRAP GROUNDWATER ELEVATION MAP (AUGUST 2016)

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Boston, Massachusetts 02116
(617) 426-7330
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SHEET 4

Drawing Number
314P0639–D03

LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY LINE
- RAILROAD
- PRB WALL
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- [1043.34] GROUNDWATER ELEVATION IN FT–MSL
- [NM] NOT MEASURED
- FT–MSL FEET ABOVE MEAN SEA LEVEL

NOTES:

1. GROUNDWATER ELEVATIONS WERE MEASURED ON AUGUST 23, 2017.
2. MONITORING WELL MW–28 IS DAMAGED AND, THUS, THE GROUNDWATER ELEVATION AT THIS LOCATION WAS NOT USED TO GENERATE CONTOURS.
3. PIEZOMETER P–08 WAS OMITTED FROM CONTOURING. SEE TEXT FOR EXPLANATION.
4. GROUNDWATER CONTOURS WERE GENERATED USING SURFER®.
5. THE WIDTHS OF THE PRB WALLS ARE NOT DRAWN TO SCALE.

CHENANGO RIVER

ABOVEGROUND BULK PETROLEUM STORAGE
MICRO, INC., N/F
BK 754 PG 52

CANOPY & PUMP ISLAND
QUICKWAY STATION
TANK PIT
WOODEN SHED
WEST STREET
FORMER PLATING BUILDING
MAIN BUILDING
KENYON PRESS ROAD
GARAGE
COUNTY OF CHENANGO INDUSTRIAL DEVELOPMENT AGENCY, N/F
BK 738 PG 167
DELAWARE LACKAWANNA & WESTERN RAILROAD

MW-2 [1043.66]
MW-14 [1044.61]
MW-18 [1043.87]
MW-8 [1043.76]
MW-17 [1043.60]
MW-35 [1043.38]
MW-34 [1043.11]
MW-39 [NM]
MW-36 [1042.23]
P-8 [1043.75]
P-3 [1043.65]
MW-28 [NM]
MW-25 [1043.22]
MW-38 [1043.09]
MW-27 [1043.23]
MW-30 [1043.75]
MW-24 [1043.00]
P-10 [1043.79]
P-11 [1043.24]
MW-29 [1043.84]
MW-23 [1043.41]
MW-26 [1043.24]
MW-22 [1043.70]
MW-33 [1043.39]
MW-31 [1043.81]
MW-32 [1043.66]
MW-20 [1042.65]
MW-21 [1042.47]
MW-37 [1042.80]

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2002 PG 809

ROBERT H. AND ROXANNE HOWARD, N/F
BK 2001 PG 474

KENYON PRESS, INC., N/F
BK 739 PG 371

SOUTH FIELD

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SCALE, FEET

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ANNUAL MODIFIED SRAP GROUNDWATER ELEVATION MAP (AUGUST 2017)

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75 ARLINGTON STREET, 4th FLOOR
BOSTON, MA 02116
TEL: +1 617.426.7330

SHEET 3

Drawing Number
314P1203.418–D03

LEGEND

MW-34 MONITORING WELL

P-8 PIEZOMETER

MW-36 FORMER MONITORING WELL OR PIEZOMETER (DECOMMISSIONED)

PROPERTY LINE

RAILROAD

PERMEABLE REACTIVE BARRIER

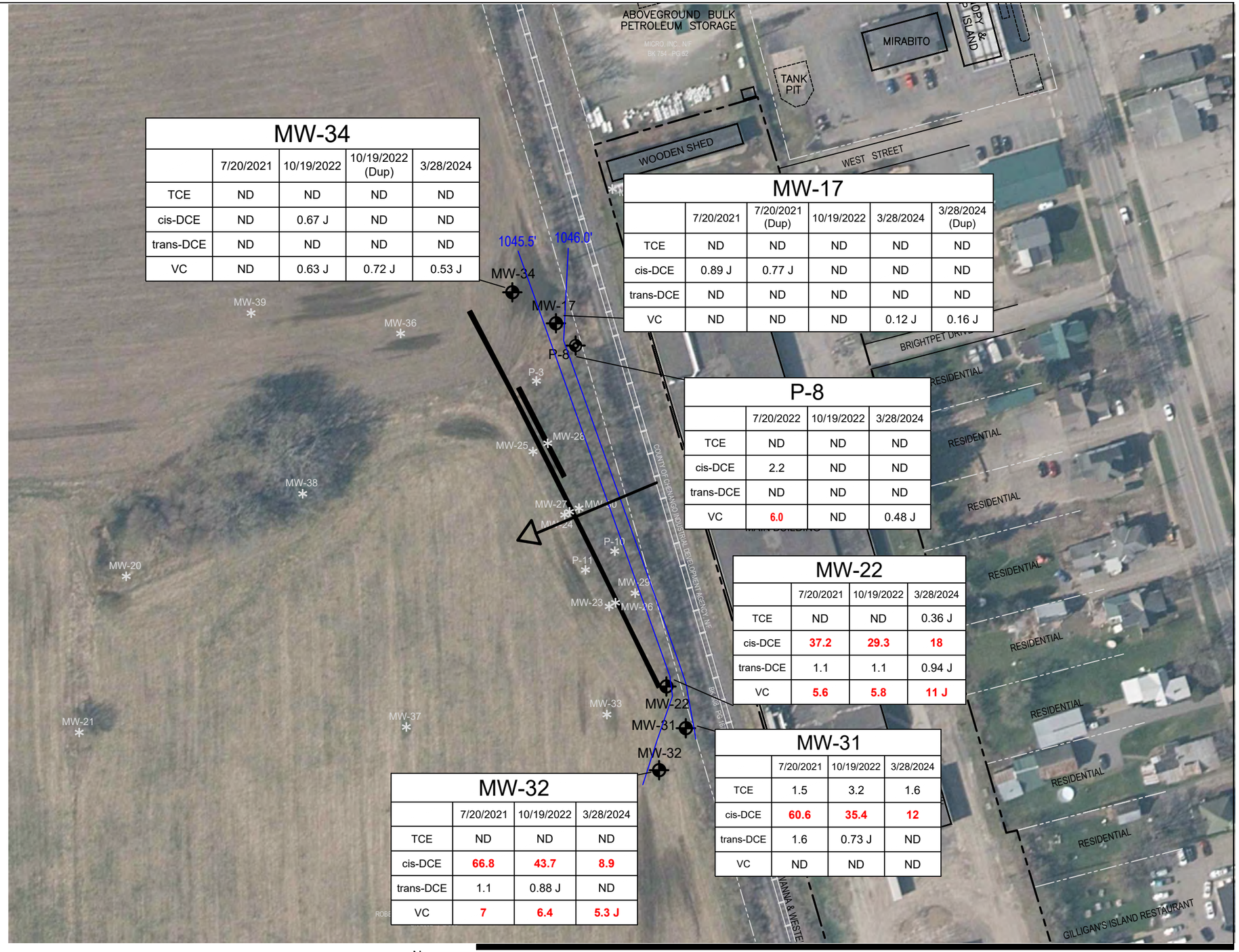
APPROXIMATE GROUNDWATER FLOW DIRECTION

APPROXIMATE GROUNDWATER POTENTIOMETRIC SURFACE

NOTES:

1. ALL CONCENTRATIONS ARE IN MICROGRAMS PER LITER (µg/L).
2. RED AND BOLD INDICATES CONCENTRATION EXCEEDED THE CLASS GA GROUNDWATER STANDARD FOR THE RESPECTIVE ANALYTE (NYSDEC TOGS 1.1.1, JUNE 1998 AND SUBSEQUENT ADDENDA).
3. ND FOR OCTOBER 2022 AND JULY 2021 DATA INDICATES CONCENTRATION WAS BELOW THE LABORATORY REPORTING LIMIT.
4. ND FOR MARCH 2024 DATA INDICATES CONCENTRATION WAS BELOW THE METHOD DETECTION LIMIT.
5. DUP INDICATES THE SAMPLE WAS A BLIND FIELD DUPLICATE.
6. J INDICATES THAT THE REPORTED CONCENTRATION IS AN ESTIMATED VALUE.
7. SITE FEATURES TAKEN FROM PREVIOUS REPORTS PREPARED BY OTHERS.
8. AERIAL IMAGES ARE 1-FOOT RESOLUTION TRUE COLOR IMAGERY DATED 2022 AND TAKEN FROM THE NYS GIS CLEARINGHOUSE WEBSITE.

ANALYTE	CLASS GA TOGS 1.1.1 (µg/L)
TCE	5
cis-DCE	5
trans-DCE	5
VC	2



MW-34

	7/20/2021	10/19/2022	10/19/2022 (Dup)	3/28/2024
TCE	ND	ND	ND	ND
cis-DCE	ND	0.67 J	ND	ND
trans-DCE	ND	ND	ND	ND
VC	ND	0.63 J	0.72 J	0.53 J

MW-17

	7/20/2021	7/20/2021 (Dup)	10/19/2022	3/28/2024	3/28/2024 (Dup)
TCE	ND	ND	ND	ND	ND
cis-DCE	0.89 J	0.77 J	ND	ND	ND
trans-DCE	ND	ND	ND	ND	ND
VC	ND	ND	ND	0.12 J	0.16 J

P-8

	7/20/2022	10/19/2022	3/28/2024
TCE	ND	ND	ND
cis-DCE	2.2	ND	ND
trans-DCE	ND	ND	ND
VC	**6.0**	ND	0.48 J

MW-22

	7/20/2021	10/19/2022	3/28/2024
TCE	ND	ND	0.36 J
cis-DCE	**37.2**	**29.3**	**18**
trans-DCE	1.1	1.1	0.94 J
VC	**5.6**	**5.8**	**11 J**

MW-31

	7/20/2021	10/19/2022	3/28/2024
TCE	1.5	3.2	1.6
cis-DCE	**60.6**	**35.4**	**12**
trans-DCE	1.6	0.73 J	ND
VC	ND	ND	ND

MW-32

	7/20/2021	10/19/2022	3/28/2024
TCE	ND	ND	ND
cis-DCE	**66.8**	**43.7**	**8.9**
trans-DCE	1.1	0.88 J	ND
VC	**7**	**6.4**	**5.3 J**

N

0 75 150 225 300'

SCALE 1"=150' AT ORIGINAL SIZE

GHD

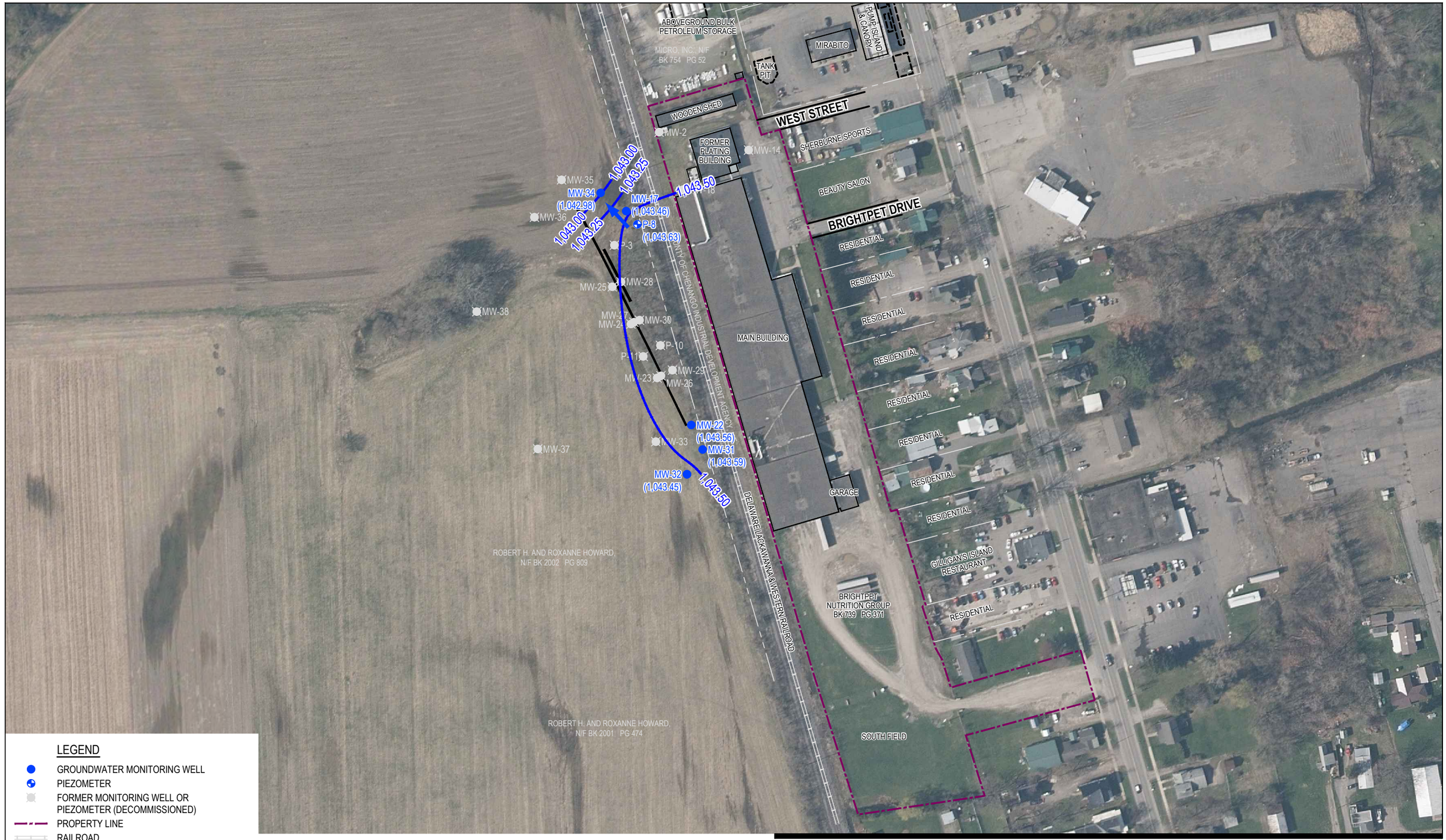
ASKIN & HOOKER, LLC
FORMER GENERAL INSTRUMENT CORPORATION SITE, SHERBURNE, NEW YORK
2024 GROUNDWATER MONITORING REPORT

GROUNDWATER MONITORING RESULTS

Project No. **12595756**
Date **04.2024**

FIGURE 3

Filename: G:\564\12595756\Digital_Design\ACAD\Figures\12595756-RPT-Groundwater-2024-FIG03-Results.dwg
Plot Date: 07 October 2024 9:59 AM



LEGEND

- GROUNDWATER MONITORING WELL
- PIEZOMETER
- FORMER MONITORING WELL OR PIEZOMETER (DECOMMISSIONED)
- PROPERTY LINE
- RAILROAD
- PERMEABLE REACTIVE BARRIER
- (1,043.45) ELEVATION OF GROUNDWATER (FT)
- APPROXIMATE GROUNDWATER POTENTIOMETRIC SURFACE
- APPROXIMATE GROUNDWATER FLOW DIRECTION

0 75 150 ft

1" = 150 ft
Coordinate System:
NAD 1983 State Plane-
New York Central (US Feet)

N

GHD

ASKIN & HOOKER, LLC
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SHERBURNE, NEW YORK
2025 GROUNDWATER MONITORING REPORT

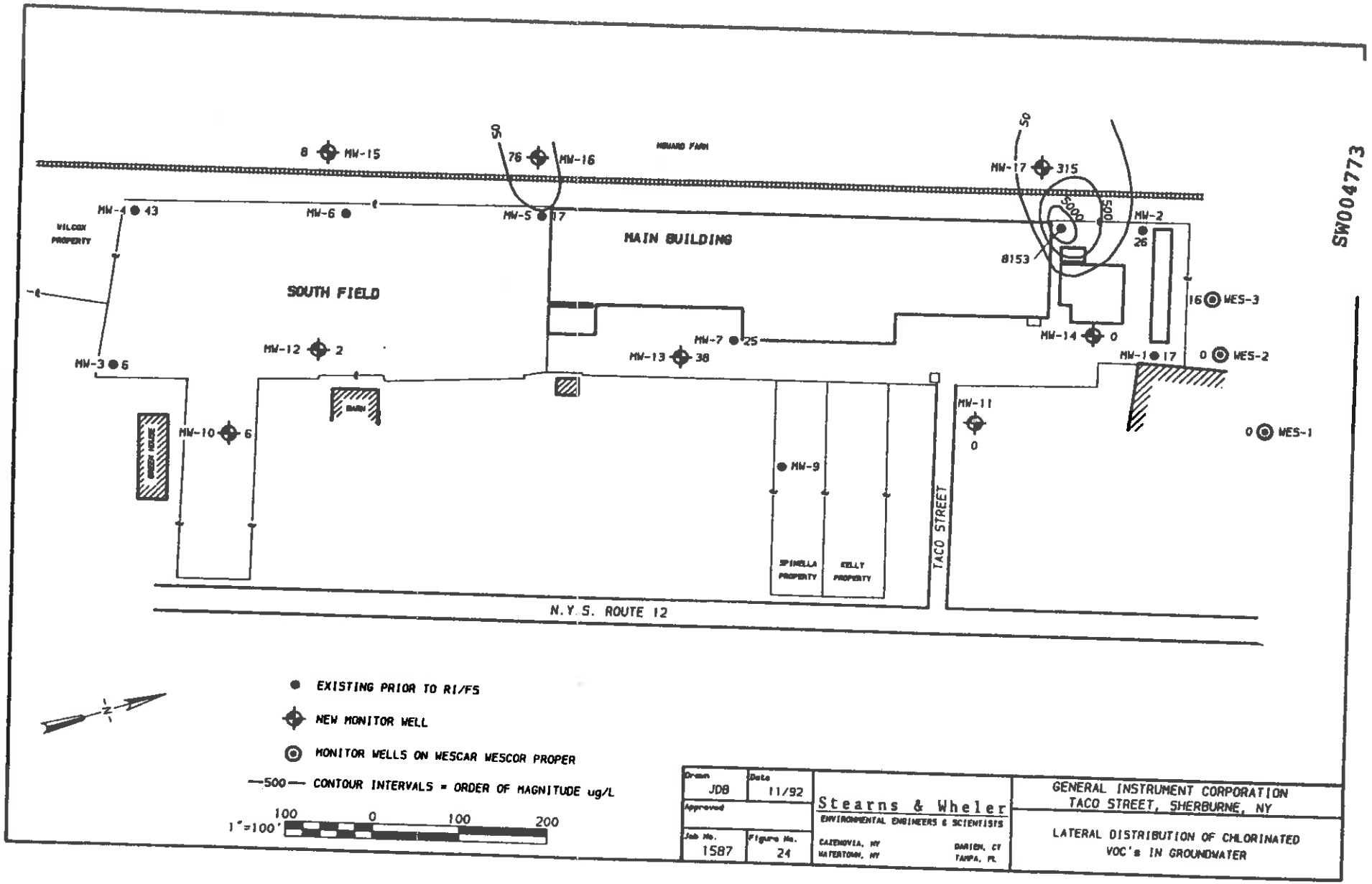
AUGUST 2025
COMPOSITE POTENTIOMETRIC SURFACE

Project No. **12595756**
Date **November 2025**

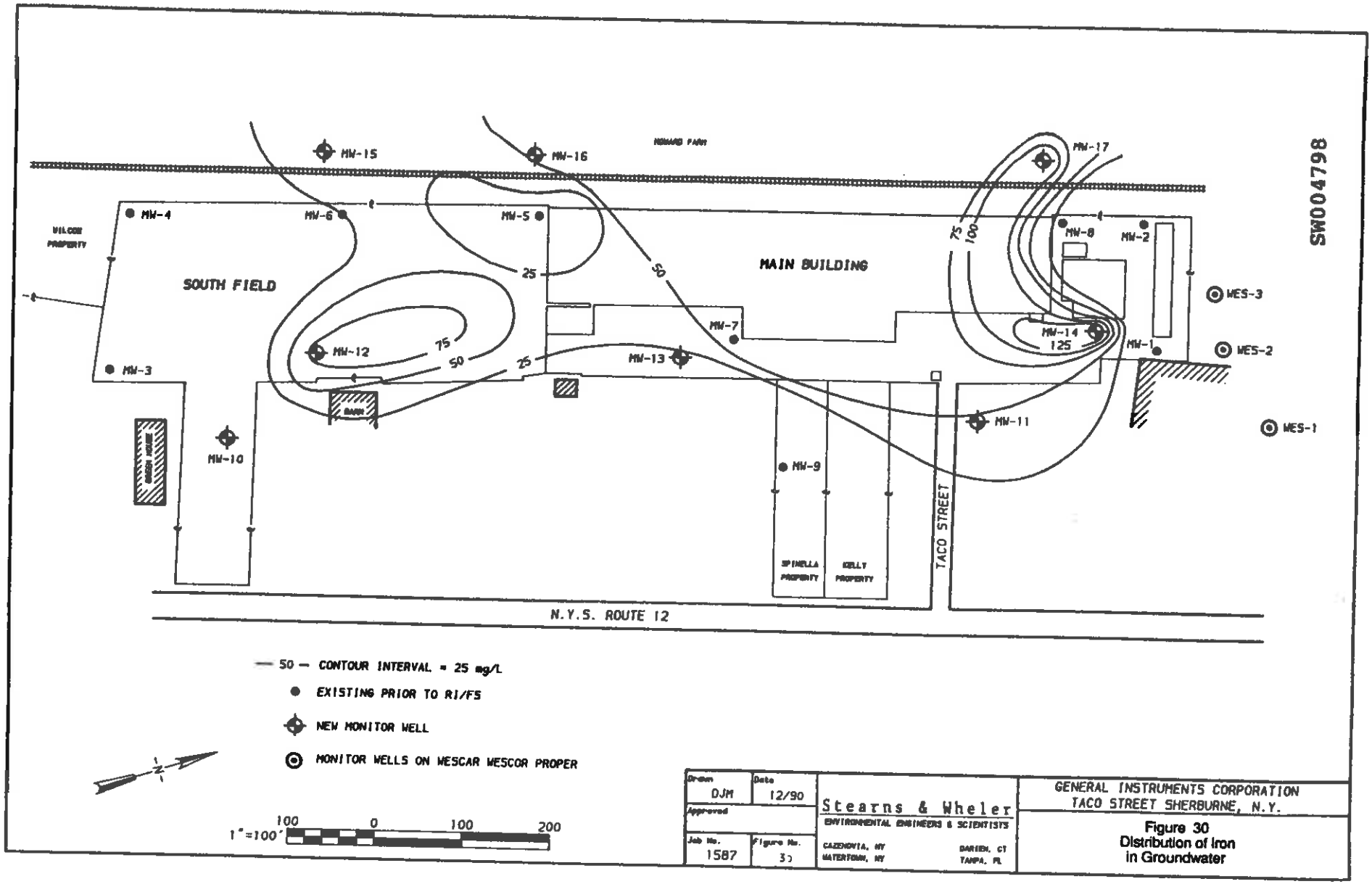
FIGURE 3

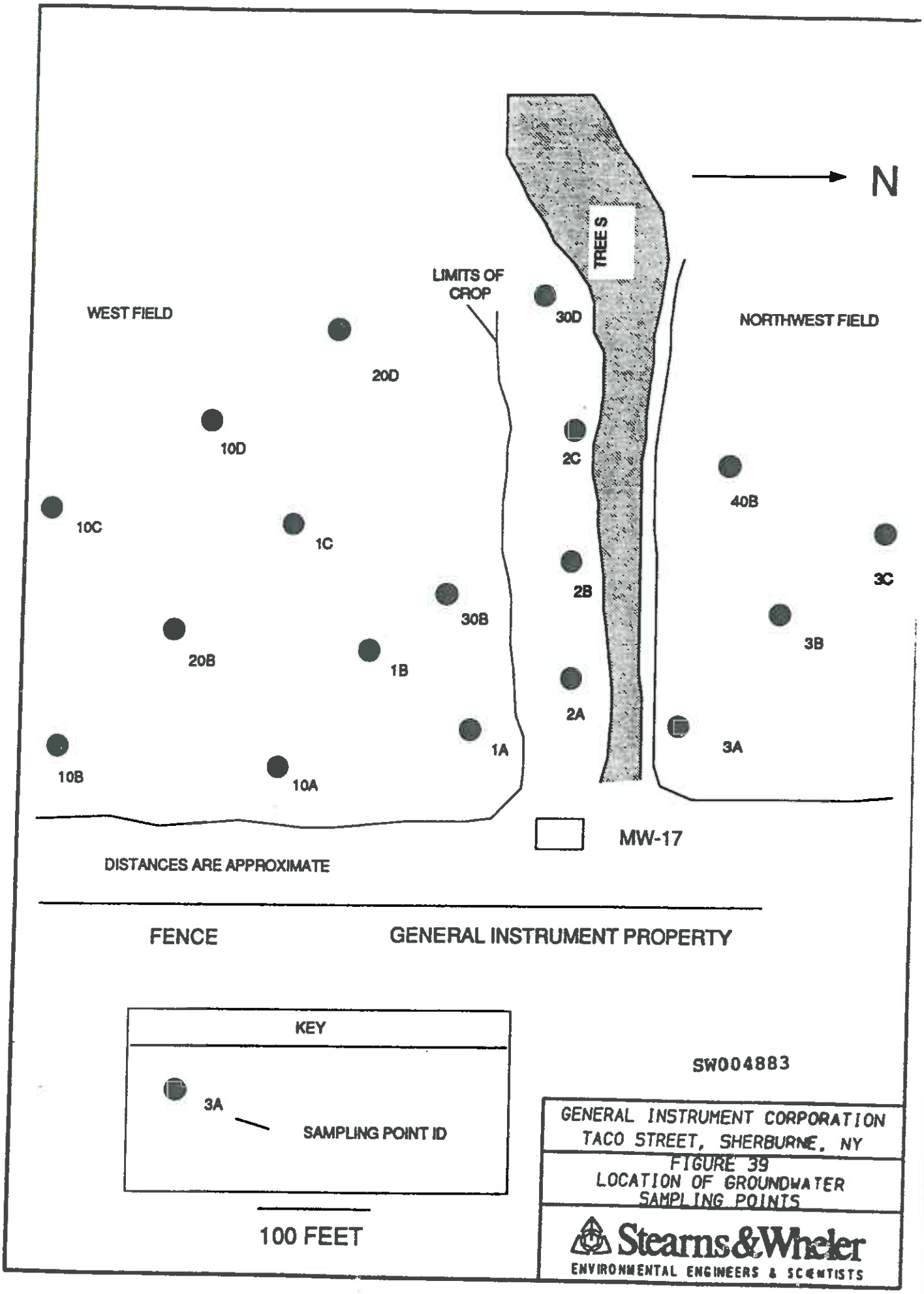
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Plot Date: 20 November 2025 6:30 PM

Data Source: NYS GIS Clearinghouse Website - Imagery Date: 2022
Lat/Long: 42.682845° North, 75.502328° West


8 MW-15
76 MW-16
MW-17 315
MW-4 43
MW-6
MW-5 17
MW-2
26
WILCOX PROPERTY
MAIN BUILDING
SOUTH FIELD
8153
16 WES-3
MW-12 2
MW-7 25
MW-14 0
MW-3 6
MW-13 38
MW-1 17
0 WES-2
MW-11
0
MW-10 6
BARN
MW-9
0 WES-1
SPINELLA PROPERTY
KELLY PROPERTY
TACO STREET
N.Y.S. ROUTE 12
EXISTING PRIOR TO RI/FS
NEW MONITOR WELL
MONITOR WELLS ON WESCAR WESCOR PROPER
—500— CONTOUR INTERVALS = ORDER OF MAGNITUDE ug/L
1"=100'
100 0 100 200
Drawn JDB
Date 11/92
Approved
Job No. 1587
Figure No. 24
Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NY
WATERTOWN, NY
DARIEN, CT
TAMPA, FL
GENERAL INSTRUMENT CORPORATION
TACO STREET, SHERBURNE, NY
LATERAL DISTRIBUTION OF CHLORINATED VOC's IN GROUNDWATER

SW004773


SW004798
MW-15
MW-16
MW-17
MW-4
MW-6
MW-5
MW-8
MW-2
WILCOX PROPERTY
SOUTH FIELD
MAIN BUILDING
25
50
75
100
MW-7
MW-14
125
MW-1
MES-3
MES-2
MES-1
MW-12
75
50
25
MW-13
MW-3
BARN
BARN HOUSE
MW-10
MW-11
MW-9
SPINELLA PROPERTY
KELLY PROPERTY
TACO STREET
N.Y.S. ROUTE 12
50 — CONTOUR INTERVAL = 25 mg/L
EXISTING PRIOR TO RI/FS
NEW MONITOR WELL
MONITOR WELLS ON MESCAR MESCOR PROPER
N
1"=100'
100 0 100 200
Drawn DJM
Date 12/90
Approved
Job No. 1587
Figure No. 30
Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NY
WATERTOWN, NY
DARIEN, CT
TAMPA, FL
GENERAL INSTRUMENTS CORPORATION
TACO STREET SHERBURNE, N.Y.
Figure 30
Distribution of Iron
in Groundwater

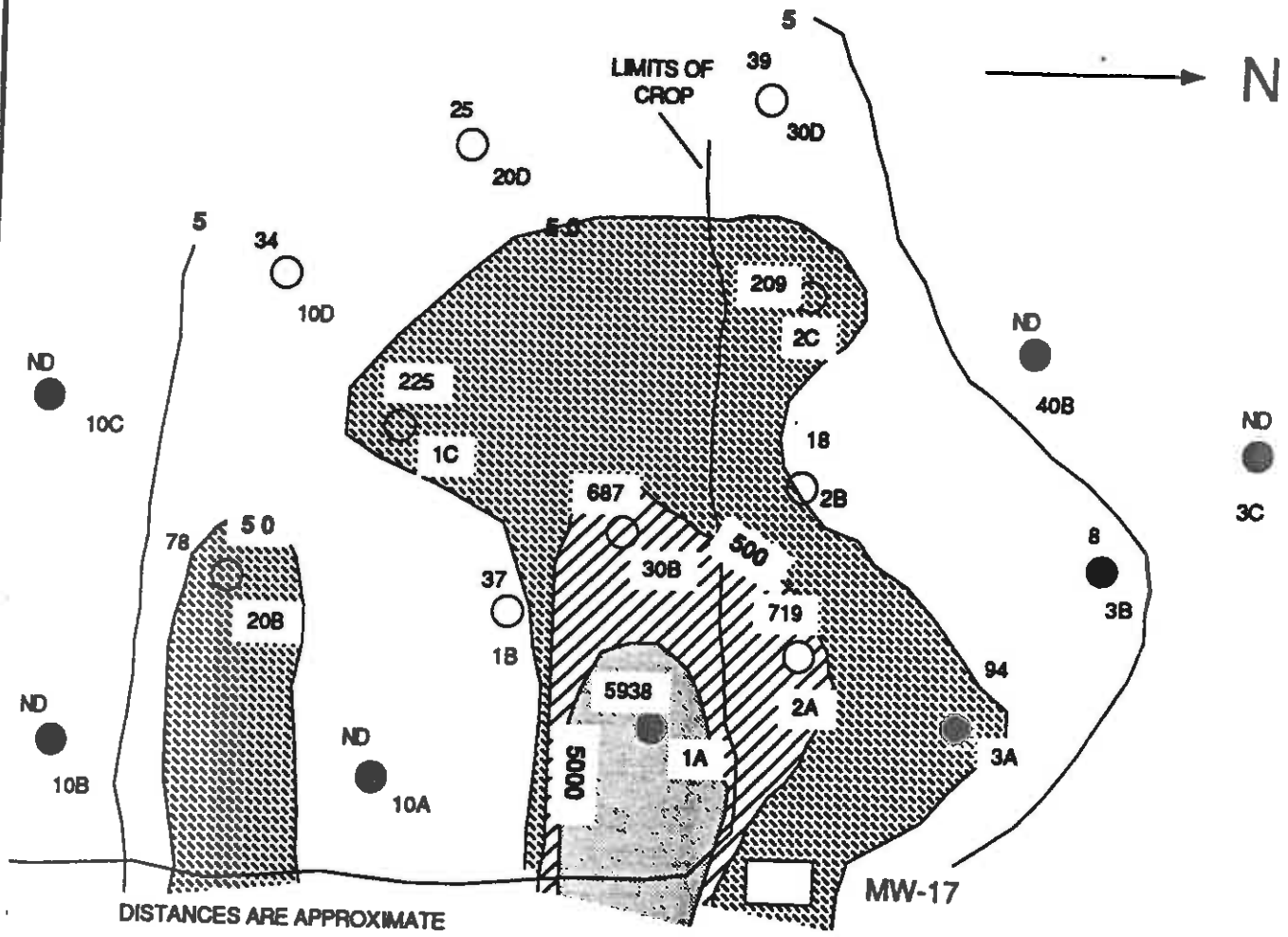


SW004883

GENERAL INSTRUMENT CORPORATION
TACO STREET, SHERBURNE, NY

FIGURE 39
LOCATION OF GROUNDWATER SAMPLING POINTS

Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS



ND — TOTAL VOC IN PPB

3A — SAMPLING POINT ID

CONTOUR INTERVAL = ORDER OF MAGNITUDE PPB

100 FEET

SW004888

GENERAL INSTRUMENT CORPORATION
TACO STREET, SHERBURNE, NY

FIGURE 4I
ANALYTICAL RESULTS
WEST FIELD GROUNDWATER

Stearns&Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS

Table 3.1
WATER LEVEL DATA

Monitor Wells Static Water Level Elevation (feet above mean Sea Level)						
Well Number	Measuring Point Elevation	Land Surface Elevation	2-Nov-89	8-Nov-89	5-Jan-90	26-Jul-90
MW-1	1052.80	1050.70	1045.10	1045.00	1045.10	na
MW-2	1050.60	1048.50	1044.70	1044.80	1044.70	1043.43
MW-3	1050.30	1048.10	1045.30	1045.30	1045.60	1044.52
MW-4	1048.90	1046.80	1044.70	1045.10	1045.50	1043.86
MW-5	1050.60	1048.30	1044.80	1045.20	1045.00	1043.70
MW-6	1050.30	1047.50	1045.60	1046.00	1045.90	1044.56
MW-7	1051.40	1049.50	1044.70	1044.90	1044.00	1043.43
MW-8	1051.00	1048.50	1041.70	1043.00	1043.10	1043.03
MW-9	1050.20	1048.30	1045.80	1045.80	1046.00	1044.75
MW-10	1050.40	1048.00	1046.40	1046.40	1046.50	1046.89
MW-11	1049.63	1049.80	1044.73	1044.63	1044.73	1044.58
MW-12	1050.30	1048.30	1045.50	1045.40	1045.50	1044.58
MW-13	1049.30	1049.30	1045.10	1045.00	1045.20	1044.02
MW-14	1050.01	1050.13	1045.11	1045.01	1045.11	1043.98
MW-15	1050.20	1048.00	1044.40	1044.80	1045.10	1043.76
MW-16	1051.00	1048.50	1044.80	1044.70	1045.00	na
MW-17	1051.20	1047.80	1044.60	1044.60	1044.60	na
*WES-1	1048.80	1049.20	na	1046.80	1046.60	1045.38
*WES-2	1049.70	1050.08	na	1045.60	1045.40	1044.14
*WES-3	1049.00	1049.43	na	1045.60	1045.40	1044.09

* Measuring point elevation approximated from survey and field measurements
MW-8 data was not used because of the confirmed presence of floating hydrocarbon product

Table 3.2
Seepage Velocity as calculated from Slug Test data

Well Location	Hydraulic Gradient	Hydraulic Conductivity K (cm/sec)	Seepage Velocity *Vmin (ft/day)	Seepage Velocity *Vmin (ft/yr)	Seepage Velocity **Vmax (ft/day)	Seepage Velocity **Vmax (ft/yr)
MW-3	0.0032	8.07E-02	0.183	66.805	0.366	133.610
MW-4	0.0032	6.73E-02	0.153	55.712	0.305	111.425
MW-9	0.0091	5.94E-02	0.383	139.834	0.766	279.669
MW-10	0.0032	2.91E-02	0.066	24.090	0.132	48.179
MW-11	0.00032	1.29E-02	0.003	1.068	0.006	2.136
MW-12	0.0018	4.60E-02	0.059	21.420	0.117	42.840
MW-15	0.0018	5.55E-03	0.007	2.584	0.014	5.169
MW-16	0.0091	3.10E-02	0.200	72.978	0.400	145.955
MW-17	0.00032	3.58E-02	0.008	2.964	0.016	5.927

* Based on a porosity of 25%
** Based on a porosity of 50%

SW004759

TABLE 4.1
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Sample Number	GW-01	GW-02	GW-03	GW-04	GW-05	GW-07	GW-08	GW-10	GW-12	GW-13	GW-15	GW-16	GW-17	GW-19	GW-20
Location	MW-1	MW-2	MW-3	MW-4	MW-5	MW-7	*biased low* MW-8	MW-10	MW-12	MW-13	MW-15	MW-16	MW-17	WES-2	WES-3
Compound															
Vinyl Chloride							280 E			2 E			6 E		
1,1-Dichloroethene		7													
1,1-Dichloroethane		5	3 E	30	8	25	7700			36		11	7		6
1,2-Dichloroethene (total)	10	2E		4 E			63 E						76		2 E
Chloroform	3 E	6	3 E	9	9		110 E	6	2E		8	65	96		5
Trichloroethene	4 E												130		3 E
Tetrachloroethene				2 E			110 E		2E					2 E	2 E
Toluene							51 E								
Xylene (total)															
SUMMARY															
TOTAL HALOCARBONS	17.0	20.0	6.0	43.0	17.0	25.0	8153.0	6.0	2.0	38.0	8.0	76.0	315.0	0.0	16.0
% OF VOC'S PRESENT	100.0	100.0	100.0	95.6	100.0	100.0	98.1	88.2	50.0	100.0	89.9	100.0	100.0	0.0	88.9
TOTAL BTEX COMPOUNDS	0.0	0.0	0.0	2.0	0.0	0.0	161.0	0.8	2.0	0.0	0.9	0.0	0.0	2.0	2.0
% OF VOC'S PRESENT	0.0	0.0	0.0	4.4	0.0	0.0	1.9	11.8	50.0	0.0	10.1	0.0	0.0	100.0	11.1
TOTAL VOLATILES	17.0	20.0	6.0	45.0	17.0	25.0	8314.0	6.8	4.0	38.0	8.9	76.0	315.0	2.0	18.0

All concentrations reported in µg/l.
"E" denotes estimated value below detection limit
No Volatile compounds were detected in GW-6, GW-9, GW-11, GW-14 and GW-18
Shaded area indicates data was rejected during data validation.

SW004772

Table 4.3

SEMI-VOLATILE COMPOUNDS IN GROUNDWATER

Sample Number		GW-8	GW-10	GW-14	GW-20
Location		*biased high* MW-8	MW-10	MW-14	WES-3
Compound	Type				
Naphthalene	PNA	510			
2-Methylnaphthalene	PNA	510			
Dibenzofuran	MISC	88			0.2 E
Diethylphthalate	PHTH				
Fluorene	PNA	120			
Phenanthrene	PNA	220			
Di-n-butylphthalate	PHTH				0.9 E
Fluoranthene	PNA	12 E			
Pyrene	PNA	25 E		0.8 E	
Benzo (a) Anthracene			0.3 E		
Butylbenzylphthalate	PHTH	3 E			
Chrysene	PNA	4 E			
bis(2-Ethylhexyl)phthalate	PHTH				
Di-n-octylphthalate	PHTH				
Summary					
TOTAL PNA's		1401	0	0.8	
% OF SVOL'S PRESENT		92.9	0	100	0
TOTAL PHTHALATES		19	0	0	
% OF SVOL'S PRESENT		1.26	0	0	0
Misc. Semi-Voaltiles		88	0	0	
% OF SVOL'S PRESENT		5.836	0	0	0
TOTAL SEMI-VOLS		1508	0	0.8	0

All Concentrations are in µg/l.
Shaded areas indicate analyte was found in blank.
"E" denotes estimated value below detection limit.

TABLE 8-1: TOTAL VOCs IN WEST FIELD GROUNDWATER

	CONCENTRATION (ug/L)												
ANALYTE	A-1	A-2	A-3	B-1	B-2	B-3	C-1	C-2	10-D	20-B	20-D	30-B	30-D
CHLOROBENZENE				37**									
CHLOROETHANE		102											
1,1 DICHLOROETHANE		132	26		6			48					8.9
1,2 DICHLOROETHANE								10					
1,2 DICHLOROETHENE	5650	132	42			8	83	40		32		478*	
1,1,2,2 TETRACHLOROETHANE							7						
1,1,1 TRICHLOROETHANE		97	6					53				6	14
TRICHLOROETHENE	288**	56	20		12		135	58	34	46	25	203	16
VINYL CHLORIDE		220***											
TOTALS	5938	719	94	37	18	8	225	209	34	78	25	687	39

NON DETECT 10A,10B,10C,3C,4OB

* ESTIMATED CONCENTRATION - ABOVE, BUT WITHIN 20% OF CALIBRATION
** PRESENT, BUT BELOW DETECTION LIMIT
*** ESTIMATED CONCENTRATION - ABOVE CALIBRATION

SW004894

TABLE 6-3: VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Location / Compound	G.W.Std.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-11	MW-12	MW-13	MW-14	MW-15	MW-17	MW-18
Vinyl Chloride	2	10 U	1 J	10 U	10 U	10 U	10 U	10 U	630 J	10 U	10 U	10 U	10 U	10 U	10 U	8 J	65
Methylene Chloride	5	10 J	10 U	10 U	10 U	2 J	2 J	10 U	2504	13 U	10 U	10 U	10 U	10 U	10 U	10 U	3 J
Acetone	*	1 J	10 U	10 U	10 U	10 U	10 U	10 U	UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J
1,1-Dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	5	10 U	9 J	10 U	1 J	10 U	10 U	10 U	44 J	10 U	10 U	10 U	10 U	10 U	10 U	5 J	6 J
1,2-Dichloroethene (total)	*	10 U	3 J	2 J	36	9 J	10 U	20	9700 R	10 U	10 U	4 J	26	10 U	10 U	92	210
Chloroform	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	5	10 U	10 U	10 U	1 J	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	42	30
cis-1,3-Dichloropropene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	4 J	3 J	3 J	6 J	6 J	2 J	10 U	250 U	10 U	4 J	10 U	10 U	10 U	5 J	90	22
Tetrachloroethene	5	5 J	10 U	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	*	10 U	1 J	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J
Toluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	100 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	13
Ethylbenzene	5	10 U	1 J	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	100 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8 J
TOTAL VOLATILES		20.0	18.0	5.0	44.0	17.0	4.0	20.0	13078	0.0	14.0	4.0	26.0	0.0	5.0	207.0	360.0
1990 RESULTS		17.0	20.0	6.0	45.0	17.0	ND	25.0	8314	ND	ND	4.0	36.0	ND	8.9	315.0	NI

All concentrations reported in µg/l.

U = Not detected substantially above the level reported in laboratory or field blanks.

J = Analyte present. Reported value may not be accurate or precise.

R = Unreliable result. Analyte may or may not be preent. Supporting data necessary.

NI = Well MW-18 had not been installed in 1990

MW-10 and MW-16 were damaged between 1990 and 1992 and could not be accessed. 1990 results: MW-10 = 6.8 ug/l., MW-16 = 76 ug/l.

SW004896

TABLE 8-4: SEMI-VOLATILE ORGANIC COMPOUNDS IN MW-8 AND MW-18

	CONCENTRATION ug/L	
	MW-8	MW-18
COMPOUND		
Naphthalene	860 E	
2- Methylnaphthalene	3000 E	25
2,6-Dinitrotoluene		6 J
Acenaphthene	160	4 J
2,4-Dinitrophenol	64	
Dibenzofuran	130	
Fluorene	300	6 J
N-Nitrosodiphenylamine	660	
Phenanthrene	1600 J	8 J
Anthracene	280	2 J
Fluoranthene	66 J	
Pyrene	43 J	1 J
Chrysene	23 J	
bis(2-Ethylhexyl)phthalate		2 BJ

J = Analyte present. Reported value may not be accurate or precise.

U = Not detected substantially above the level reported in laboratory or field blanks.

TABLE 8-5: TOTAL METALS IN GROUNDWATER

LOCATION	G.W.Std	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-11	MW-12	MW-13	MW-14	MW-15	MW-17	MW-18
ANALYTE																	
Aluminum	none	9100	462	1700	1940	1930	7660	4870	263	407	1170	31900	14500	30700	5300	9510	6120
Antimony	3G	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U
Arsenic	25	5.0 U	5.0 U	5.0 U	7.0	25.3	5.0 U	15.1	5.0 U	5.0 U	5.0 U	5.0 U	6.3	5.0 U	5.0 U	5.0 U	5.0 U
Barium	1000	118	78.7	133	119	224	86.8	144	69.2	82.8	78.7	384	132	349	74.6	129	114
Berrylilium	3G	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	10	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
Calcium	none	97100	94200	112000	87600	82100	82700	77600	91900	93100	93700	209000	109000	184000	88300	127000	106000
Chromium	50	16.2	6.5 U	6.5 U	6.5 U	219.0	31.8	13.9	6.5 U	6.5 U	6.5 U	59.0	25.3	59.7	14.6	13.3	6.5 U
Cobalt	5	8.4	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	10.1	7.3 U	7.3 U	7.3 U	38.6	16.9	80.0	7.6	7.3 U	7.3 U
Copper	200	26.3 J	9.1 J	43.5 J	6.4 U	6.4 U	21.7 J	23.6 J	12.7 J	10.9 J	8.2 J	114.0	31.7 J	57.1 J	26.3 J	21.7 J	6.4 U
Iron	300	16300	2380	2540	10400	34500	14200	28600	1410	552	2090	73900	39700	82200	12000	20200	8890
Lead	25	8.6	3.0 U	3.0 U	4.2	3.6	9.9	9.4	3.0 U	3.0 U	3.0 U	38.8	3.0	30.7	8.2	3.0 U	6.6
Magnesium	35G	20300	10900	17400	13400	10900	15700	14400	13000	12800	15900	56800	27000	50900	13700	29900	18300
Manganese	300	639	1010	2130	627	424	258	1470	1450	281	3000	2130	1120	6950	316	1700	703
Mercury	2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	none	44.4	16.8 U	16.8 U	16.8 U	23.8	16.8 U	23.8	16.8 U	16.8 U	16.8 U	87.2	47.6	61.2	29.2	22.2	16.8 U
Potassium	none	5740	4050	2380	1610	39490	2760	7530	2070	6070	3340	7410	6600	8390	3460	3620	2910
Selenium	10	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Silver	50	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.8 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ
Sodium	20000	29500	19600	17000	13200	57000	10400	13300	45700	21100	35400	19800	15000	91300	8440	49900	47600
Thallium	4G	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Vanadium	none	18.9	6.0 U	6.3	6.0 U	10.9	12.3	15.6	6.0 U	6.0 U	7.4	56.3	28.4	54.6	15.8	16.1	6.3
Zinc	300	99.8 J	128 J	144 J	101 J	62.4 J	294 J	378 J	204 J	28.5 J	26.6 J	267 J	959 J	232 J	71.2 J	96.1 J	39.5 J

All concentrations reported in ug/L.

U = Not detected substantially above the level reported in laboratory or field blanks.

J = Analyte present. Reported value may not be accurate or precise.

UJ = The reported quantitation limits are qualified estimated.

G - Indicates a NYSDEC guidance value where a standard has not been established.

Shaded column indicates groundwater standards or guidelines.

Shaded rows indicate exceedance of standards or guidelines.

SW004898

TABLE 8-6: DISSOLVED METALS IN GROUNDWATER

LOCATION	G.W.Std.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-11	MW-12	MW-13	MW-14	MW-15	MW-17	MW-18
ANALYTE																	
Aluminum	none	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ	32.6 UJ
Antimony	3G	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U	55.2 U
Arsenic	25	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Barium	1000	64.8	73.3	124	109	38.0	38.6	107	71.9	60.3	63.4	193	77.5	56.4	46.5	62	76.1
Berryllium	3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	10	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
Calcium	none	99000	101000	132000	102000	88000	97000	71100	103000	101000	104000	120000	723000	104000	88200	102000	101000
Chromium	50	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U
Cobalt	5	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U
Copper	200	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ	6.4 UJ
Iron	300	10.8 UJ	393	10.8 UJ	10.8 UJ	39.8 U	17.1 U	41.7 U	10.8 UJ	10.8 UJ	10.8 UJ	128 J	3220 J	10.8 UJ	10.8 UJ	10.8 UJ	15.4 U
Lead	25	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Magnesium	35G	14400	11400	19200	15000	11500	15200	9860	14700	13300	15900	19000	11000	14100	9780	15800	15700
Manganese	300	1.2 U	967	1450	658	176	36.7	1460	1690	47.6	113	1150	779	151	90.9	380	486
Mercury	2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	none	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U
Potassium	none	3520	3870	2570	1880	3310	3070	6170	2130	6290	2510	2720	5650	1950	1610	3500	2790
Selenium	10	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Silver	50	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ	9.3 UJ
Sodium	20000	33200	20300	19000	14300	29800	11300	13900	50000	22000	38000	21100	16000	101000	8980	53600	53300
Thallium	4G	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Vanadium	none	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Zinc	300	5.0 U	7.0 J	6.6 J	7.3 J	9.5 J	7.6 J	7.5 J	4.3 UJ	9.8 J	5.3 J	7.0 J	4.3 UJ	4.3 UJ	12.0 J	4.3 UJ	7.5 J

All concentrations reported in ug/L.

U = Not detected substantially above the level reported in laboratory or field blanks.

J = Analyte present. Reported value may not be accurate or precise.

UJ = The reported quantitation limits are qualified estimated.

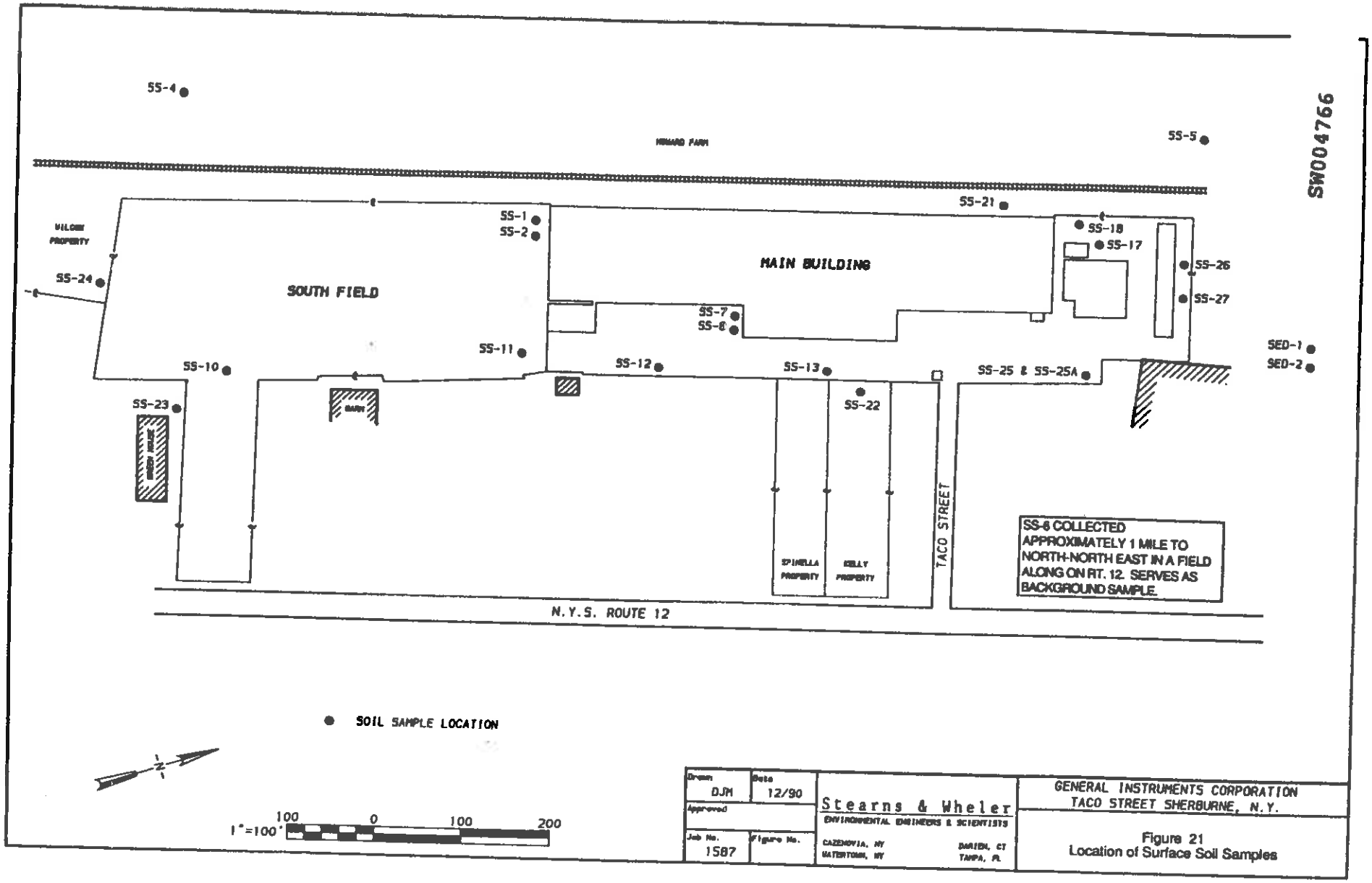
G - Indicates a NYSDEC guidance value where a standard has not been established.

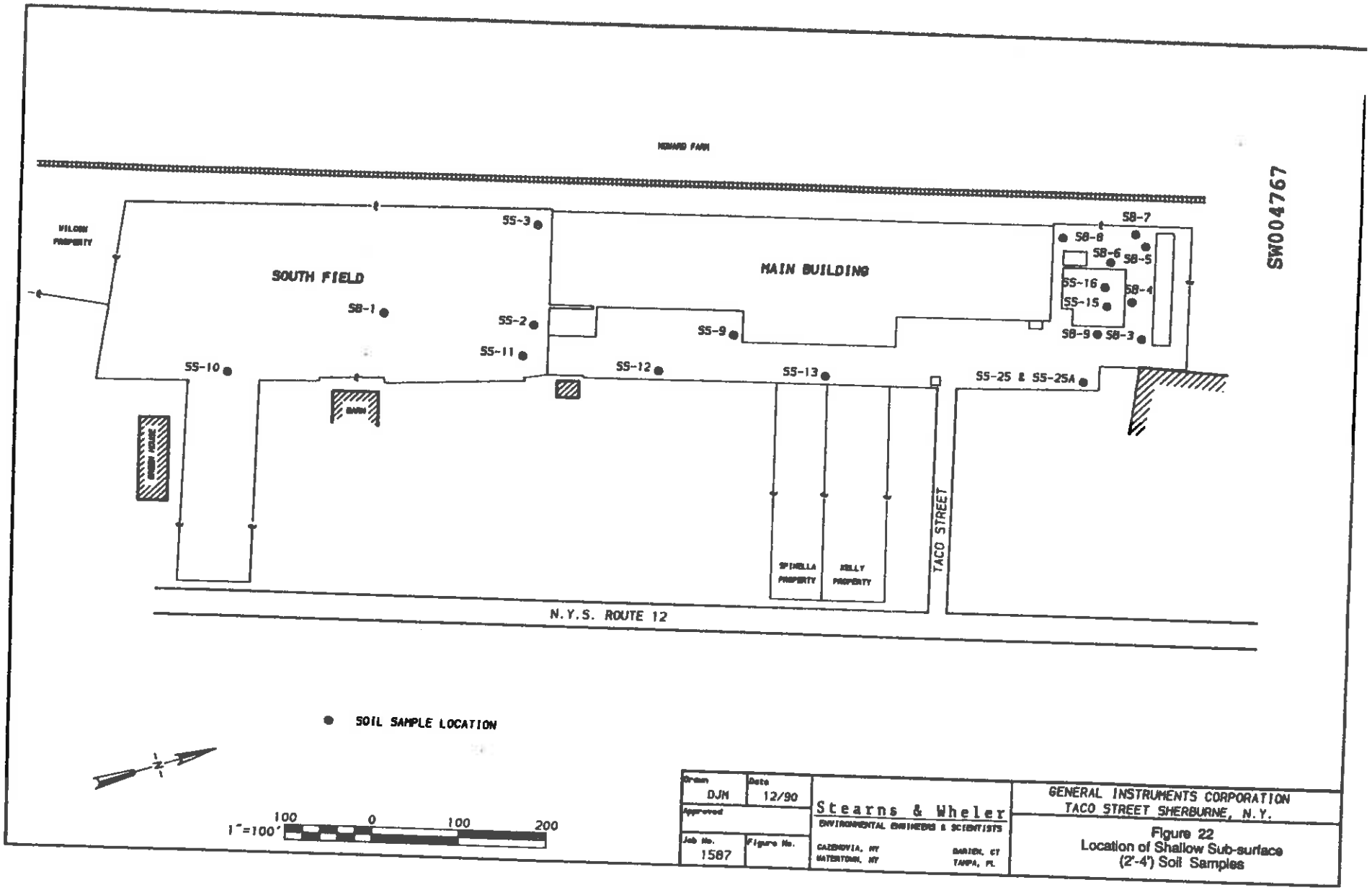
Shaded column indicates groundwater standards or guidelines.

Shaded rows indicate exceedance of standards or guidelines.

SW004899

APPENDIX G – SOIL DATA FROM PREVIOUS REPORTS

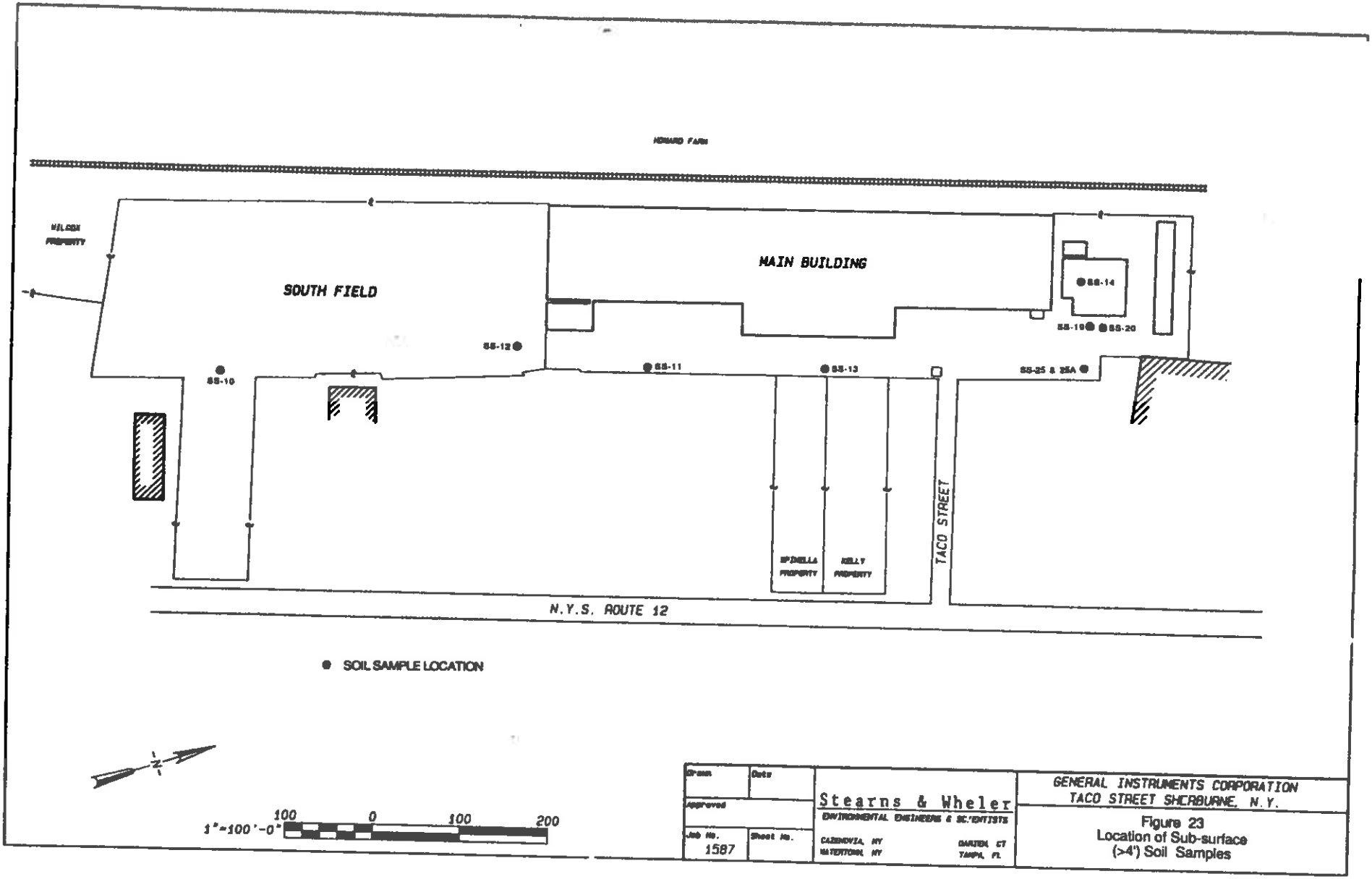

SW004766
SS-4
HOWARD FARM
SS-5
SS-21
SS-1
SS-2
SS-18
SS-17
WILCOX PROPERTY
SS-24
SOUTH FIELD
MAIN BUILDING
SS-26
SS-27
SS-7
SS-8
SED-1
SED-2
SS-11
SS-10
SS-12
SS-13
SS-25 & SS-25A
SS-23
SS-22
BARN
SPINELLA PROPERTY
KELLY PROPERTY
TACO STREET
SS-6 COLLECTED APPROXIMATELY 1 MILE TO NORTH-NORTH EAST IN A FIELD ALONG ON RT. 12. SERVES AS BACKGROUND SAMPLE.
N.Y.S. ROUTE 12
SOIL SAMPLE LOCATION
N
1"=100'
100 0 100 200
Drawn DJM
Date 12/90
Approved
Job No. 1587
Figure No.
Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NY
WATERTOWN, NY
DARIEN, CT
TAMPA, FL
GENERAL INSTRUMENTS CORPORATION
TACO STREET SHERBURNE, N.Y.
Figure 21
Location of Surface Soil Samples



SW004767

Drawn: DJM	Date: 12/90	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY · WATERTOWN, NY · DARIEN, CT · TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved			Figure 22 Location of Shallow Sub-surface (2'-4') Soil Samples
Job No.: 1587	Figure No.		

SW004768



Drawn	Date	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY GARDEN, CT WATERTOWN, NY TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved			Figure 23 Location of Sub-surface (>4') Soil Samples
Job No. 1587	Sheet No.		

Table 4.4

SEMI VOLATILE ORGANIC COMPOUNDS IN SOIL

Sample Number		SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS12	SS13	SS25	SS25A	SS14	SS15	SS16	SS17	SS18	SS19	SS20
Location		Well #5	Well #5	Well #5	Farmer's Field	Farmer's Field	Off Site Field	Well #7	Well #7	Well #7	T.P. #3	T.P. #4	T.P. #5	T.P. #5	T.P. #6	T.P. #7	T.P. #8	T.P. #9	T.P. #10	MW-14	Mw-14
Depth		0' - 2'	0' - 2'	2' - 4'	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 2'	2' - 4'	0' - 4'	0' - 4'	0' - 4'	0' - 4'	> 4'	2' - 4'	2' - 4'	0' - 2'	0' - 2'	10'	20'
Compound	Type																				
Benzoic acid	MSC																				
bis(2-Chloroethoxy)methane	MSC							310 E		190 E											
Naphthalene	PNA	200 E							130 E												
2-Methylnaphthalene	PNA	270 E							73 E												
Acenaphthylene	PNA	41 E															39	830			
Acenaphthene	PNA	820					120 E	61 E	180 E	73 E		510			3300	61	49	2500	63 E		
Dibenzofuran	MSC	820						93 E	300 E	82 E	92			40							
Diethylphthalate	PHTH							50 E	220 E	32 E	72	100									
Fluorene	PNA	860													870			180			
4-Nitroaniline	MSC						46 E	88 E	340 E	78 E	120	220									
N-Nitrosodiphenylamine (1)	MSC																				
Phenanthrene	PNA	6100	190 E	38 E										370							
Anthracene	PNA	1200					510	1100	3500	1100	670	3700	160	220	2300 E	110	81	880	80 E		
Di-n-butylphthalate	PHTH	37 E			63 E		98 E	160 E	630	190 E	170	820	67	58							
Fluoranthene	PNA	5900	390 E	67 E	46 E	45 E	41 E	41 E	73 E	23 E	110		53	60							
Pyrene	PNA	3300	200 E	45 E	43 E	30 E	720	2100	6700	1900	770	6400	320	320		60	26			70	29 E
Butylbenzylphthalate	PHTH						580	960	2000	1000	450 E	4600	160 E	210 E	220	140	95	350	44 E		
Benzo(a)anthracene	PNA	2200	140 E	34 E							85					99	53 E	160 E	61 E		
Chrysene	PNA	2100	150 E				260 E	780	1900	820	380	2900	150	160							
bis(2-Ethylhexyl)phthalate	PHTH						450	770	2200	820	390	2500	170	180	78	63		200 E			
Di-n-octylphthalate	PHTH																	210			
Benzo(b)fluoranthene	PNA	1200	130 E					32 E			120 E				7						
Benzo(k)fluoranthene	PNA	1400					530 E	1200	1200	1100	420 E	1200 E	130								
Benzo(a)pyrene	PNA	2000	130 E				46 E	770	2100	770	410 E		72					340			
Indeno(1,2,3-cd)pyrene	PNA	320 E					330 E	820	1900	880	660 E	2400	140					87			
Dibenzo(a,h)anthracene	PNA						58 E	180 E	620	120 E	240 E	630						180			
Benzo(g,h,i)perylene	PNA	260 E							94 E									140			
							82 E		360 E	220 E	260 E	480									
Summary																		130			
TOTAL PNA's		26971	1310	184	91	75	3548	9102	23927	8153	4952	26380	1356	1186	5809	518	317	5667	257	0	0
% OF SVOL PRESENT		99.9	100.0	100.0	58.3	100.0	98.9	98.5	99.0	97.4	95.4	99.6	96.2	73.4	99.7	91.2	82.4	97.3	100.0	0.0	0.0
TOTAL PHTHALATES		37	0	0	65	0	41	73	23	23	185	0	53	60	7	50	26	0	0	70	29
% OF SVOL PRESENT		0.1	0.0	0.0	41.7	0.0	1.1	0.8	0.1	0.2	3.2	0.0	3.8	3.7	0.1	8.8	7.6	0.0	0.0	100.0	100.0
TOTAL PHENOLICS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% OF SVOL PRESENT		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MISC. SEMI-VOLATILES		520	0	0	0	0	0	360	220	222	72	100	0	370	670	0	0	100	0	0	0
% OF SVOL PRESENT		1.9	0.0	0.0	0.0	0.0	0.0	3.8	0.9	2.4	1.4	0.4	0.0	22.9	10.2	0.0	0.0	2.7	0.0	0.0	0.0
TOTAL SEMI-VOLATILES		27528	1310	184	156	75	3589	9535	24170	8398	5189	26480	1412	1616	6575	568	343	5827	257	70	29

SS-9, SS-10, and SS-11 contained no semi-volatile compounds

SS-4 was rejected for poor surrogate recovery.

All concentrations reported as µg/kg.

"E" denotes estimated value below detection limit.

Shaded area indicates analyte found in blank.

Table 4.4 (continued)

SEMI-VOLATILE COMPOUNDS IN SOIL

Sample Number	SS-21	SS-22	SS-23	SS-24	SS25	SS25A	SS-26	SS-27	SS-28	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8 DL	SED-1	SED-2
Location	Adjacent R/R Tracks	Kelly Property	Southeast Property	Wilcox Property	T.P. #5	T.P. #5	Spill Area	Spill Area	Dirt in Shed	S. Field Middle	Garage S. Wall	East W. Shed	N. Wall Plat. Bldg	Shed West	Plat. Rm. W. Door	NW Boundary	MW-8	Creek (-18")	Creek Surf. Sed
Depth	0'-2'	0'-2'	0'-2'	0'-2'	0'-4'	0'-4'	0'-2'	2'	N/A	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'
Compound																			
Benzoic acid				35 E															
bis(2-Chloroethoxy)methane											82E	8E							
Naphthalene	94 E	270 E														130 E		1100 E	
2-Methylnaphthalene	140 E						590	220 E											
Acenaphthylene	710	1400 E		41 E		40	4100	1100								180	2300		
Acenaphthene	140 E	440 E						270 E							1600	450	8600		
Dibenzofuran	120 E	690 E						84 E							140				
Diethylphthalate								46 E								96 E			
Fluorene	300 E	1400 E								120 E									
4-Nitroaniline							1100	180 E								23 E			
N-Nitrosodiphenylamine (1)						370									360 E	160 E	1400		
Phenanthrene	2300	14000	71 E	77 E	160	220	2100	1200	40 E							52 E			
Anthracene	600	2200			57	58	270 E	280 E							640	1200	2000	54 E	170 E
Di-n-butylphthalate	66 E			25 E	53	60									160 E	150 E			
Fluoranthene	4100	18000	110 E	160 E	320	320	820	2600	64 E										72 E
Pyrene	2900	13000	79 E	93 E	160 E	210 E	590	2300	36 E					470 E	970	1600		92 E	260 E
Butylbenzylphthalate	48 E													380 E	670	1100		49 E	320 E
Benzo(a)anthracene	1500	7700	51 E	65 E	150	160	300 E	1600											
Chrysene	1900	8600	59 E	96 E	170	180	340 E	1700	37 E					270 E	420	520		45 E	180 E
bis(2-Ethylhexyl)phthalate	1100													350 E	460	550		52 E	200 E
Di-n-octylphthalate															4300	2500			
Benzo(b)fluoranthene	1600	8200	63 E	85 E	130		270 E	1600							77 E	18 E			
Benzo(k)fluoranthene	1200	4200			72		160 E	1600						420 E	470	440 E		72 E	210 E
Benzo(a)pyrene	1200	6800			140		270 E	1600						96 E	110 E	76 E			150 E
Indeno(1,2,3-cd)pyrene	350 E	1900 E					100 E	660						320 E	380 E	420 E			150 E
Dibenzo(a,h)anthracene														440 E	360 E	380 E			
Benzo(g,h,i)perylene	160 E	1300 E					63 E	320 E						160 E	59 E	48 E			
Summary														380 E	380 E	280 E			
TOTAL PNA's	19294	89410	433	617	1359	1188	11073	17514	177	0	0	0		3286	7379	7650	14300	384	1640
% OF SVOL PRESENT	99.8	99.2	100.0	91.1	96.2	73.4	100.0	99.7	100.0	0.0	0.0	0.0		100.0	99.0	97.1	100.0	24.9	95.8
TOTAL PHTHALATES	114	0	0	25	53	60	0	0	0	120	0	0		0	77	44	0	0	72
% OF SVOL PRESENT	0.6	0.0	0.0	3.7	3.8	3.7	0.0	0.0	0.0	100.0	0.0	0.0		0.0	1.0	0.6	0.0	0.0	4.2
TOTAL PHENOLICS	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
% OF SVOL PRESENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
MISC. SEMI-VOLATILES	120	690	0	35	0	370	0	46	0	0	82	8		0	0	182	0	1100	0
% OF SVOL PRESENT	0.6	0.8	0.0	5.2	0.0	22.9	0.0	0.3	0.0	0.0	100.0	100.0		0.0	0.0	2.3	0.0	75.1	0.0
TOTAL SEMI-VOLATILES	19528	90100	433	677	1412	1618	11073	17560	177	120	82	8		3286	7456	7876	14300	1484	1712

SB-9, SS-10, and SS-11 contained no semi-volatile compounds
SB-4 was rejected for poor surrogate recovery.
All concentrations reported as µg/kg.
"E" denotes estimated value below detection limit.
Shaded area indicates analyte found in blank.

SW004779

TABLE 4.5: POLYNUCLEAR AROMATIC COMPOUNDS IN SOIL

Sample Number		SS17	SS18	SS-21	SS-22	SS-23	SS-24	SS-26	SS-27	SS-28	SB-5	SB-6	SB-7	SB-8 DL	SED-1	SED-2
Location		T.P. #9	T.P. #10	Adjacent RR Tracks	Kelly Property	Southeast Property	Wilcox Property	North of Wood shed	North of Wood shed	Dirt in Shed	Shed West	Pit Room W. Door	N/W Boundary	MW-8	Creek (-18")	Creek Surf. Sed
Depth		0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	2'	N/A	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'
Compound	Type															
Naphthalene	PNA	838		94 E	270 E			990	220 E				160 E	2300		
2-Methylnaphthalene	PNA	2500	63 E	140 E				4100	1100			1600	450	8600		
Acenaphthylene	PNA			710	1400 E		41 E		270 E			140 E				
Acenaphthene	PNA			140 E	440 E				84 E				96 E			
Fluorene	PNA			300 E	1400 E			1100	180 E			360 E	160 E	1400		
Phenanthrene	PNA	880	89 E	2300	14000	71 E	77 E	2100	1200	40 E		840	1200	2000	54 E	170 E
Anthracene	PNA			800	2200			270 E	280 E			160 E	150 E			
Fluoranthene	PNA	350	44 E	4100	19000	110 E	160 E	820	2800	64 E	470 E	970	1600		92 E	260 E
Pyrene	PNA	180 E	61 E	2800	13000	79 E	93 E	590	2300	36 E	380 E	670	1100		49 E	320 E
Benzo(a)anthracene	PNA	200 E		1500	7700	51 E	65 E	300 E	1600		270 E	420	520		45 E	180 E
Chrysene	PNA	210 E		1900	8600	59 E	96 E	340 E	1700	37 E	350 E	460	550		52 E	200 E
Benzo(b)fluoranthene	PNA	240 E		1600	8200	63 E	85 E	270 E	1600		420 E	470	440 E		72 E	210 E
Benzo(k)fluoranthene	PNA	27 E		1200	4200			160 E	1600		96 E	110 E	76 E			150 E
Benzo(a)pyrene	PNA	180 E		1200	6800			270 E	1600		320 E	380 E	420 E			150 E
Indeno(1,2,3-cd)pyrene	PNA	140 E		350 E	1900 E			100 E	650		440 E	360 E	360 E			
Dibenzo(a,h)anthracene	PNA										160 E	69 E	48 E			
Benzo(g,h,i)perylene	PNA	130 E		160 E	1300 E			93 E	320 E		380 E	380 E	280 E			
TOTAL PNA's		5667	257	19294	89410	433	617	11073	17514	177	3286	7379	7650	14300	364	1640
% OF SVOL PRESENT		97.3	100.0	98.8	13206.8	100.0	91.1	100.0	99.7	100.0	100.0	99.0	97.1	100.0	24.9	95.8
TOTAL SEMI-VOLATILES		5827	257	19528	677	433	677	11073	17560	177	3286	7456	7876	14300	1464	1712

All concentrations reported as µg/l.
"E" denotes estimated value below detection limit.
Shaded area indicates analyte found in blank.

SW004780

TABLE 4.2

VOLATILE ORGANIC COMPOUNDS IN SOIL

Sample Number	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8	SB-9	SS-14	SS-15	SS-16	SS-17	SS-21	SS-26	SS-27
Location	S. Field Middle	S. Wall of Garage	South of Plating Bg.	N. Wall of Plating Bg.	Shed West	Pit Room W. Door	N/W Boundary	MW - 8	Pit Room E. Door	biased high T.P. #6	biased high T.P. #7	T.P. #8	T.P. #9	by R/R Tracks	Spill Surface	Spill (-20')
Depth	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-5'	2'-4'	2'-4'	2'-4'	>4'	2'-4'	2'-4'	0'-2'	0'-2'	0'-2'	0'-2'
Compound																
Methylene Chloride						460 E	580 E	320 E								
1,1-Dichloroethene															150 E	
1,1-Dichloroethane					46					40	18	9	12			
1,2-Dichloroethene (total)	8				18			1900	28		51	22	15			
Chloroform											7 E	1 E	.7 E			
2-Butanone		.6 E			65 E											
1,1,1-Trichloroethane						7400 E				270	390		10			
Carbon Tetrachloride						940										
Trichloroethene	9				6 E	700 E		1600	12		170		11	8 E		
Benzene						82 E										5 E
2-Hexanone				140												
Tetrachloroethene						130 E		530 E			4 E					
Toluene	3 E			13 E	6	150 E	1500	230 E	3 E		18 E		3 E		100 E	32 E
Chlorobenzene						130E										
Ethylbenzene				13 E	3 E		1100	430 E		12 E	23 E		15			
Xylene (total)	17	5 E	6	120	16		13000	2100	4 E	140	160	4 E	57		6400	260
SUMMARY																
TOTAL BTEX	20.0	5.0	6.0	146.0	27.0	222.0	15600.0	2760.0	7.0	152.0	201.0	4.0	75.0	0.0	6500.0	297.0
% OF VOC'S PRESENT	55.6	89.3	100.0	91.0	16.7	2.4	98.4	38.8	15.6	32.9	23.9	10.5	59.7	0.0	97.7	100.0
TOTAL HALOCARBONS	16.0	0.6	0.0	140.0	135.0	9630.0	580.0	4350.0	38.0	310.0	640.0	34.0	50.7	5.0	150.0	0.0
% OF VOC'S PRESENT	44.4	10.7	0.0	49.0	83.3	97.6	3.6	61.2	84.4	67.1	76.1	89.5	40.3	100.0	2.3	0.0
TOTAL VOLATILES	36.0	5.6	6.0	286.0	162.0	9852.0	16180.0	7110.0	45.0	462.0	841.0	38.0	125.7	5.0	6650.0	297.0

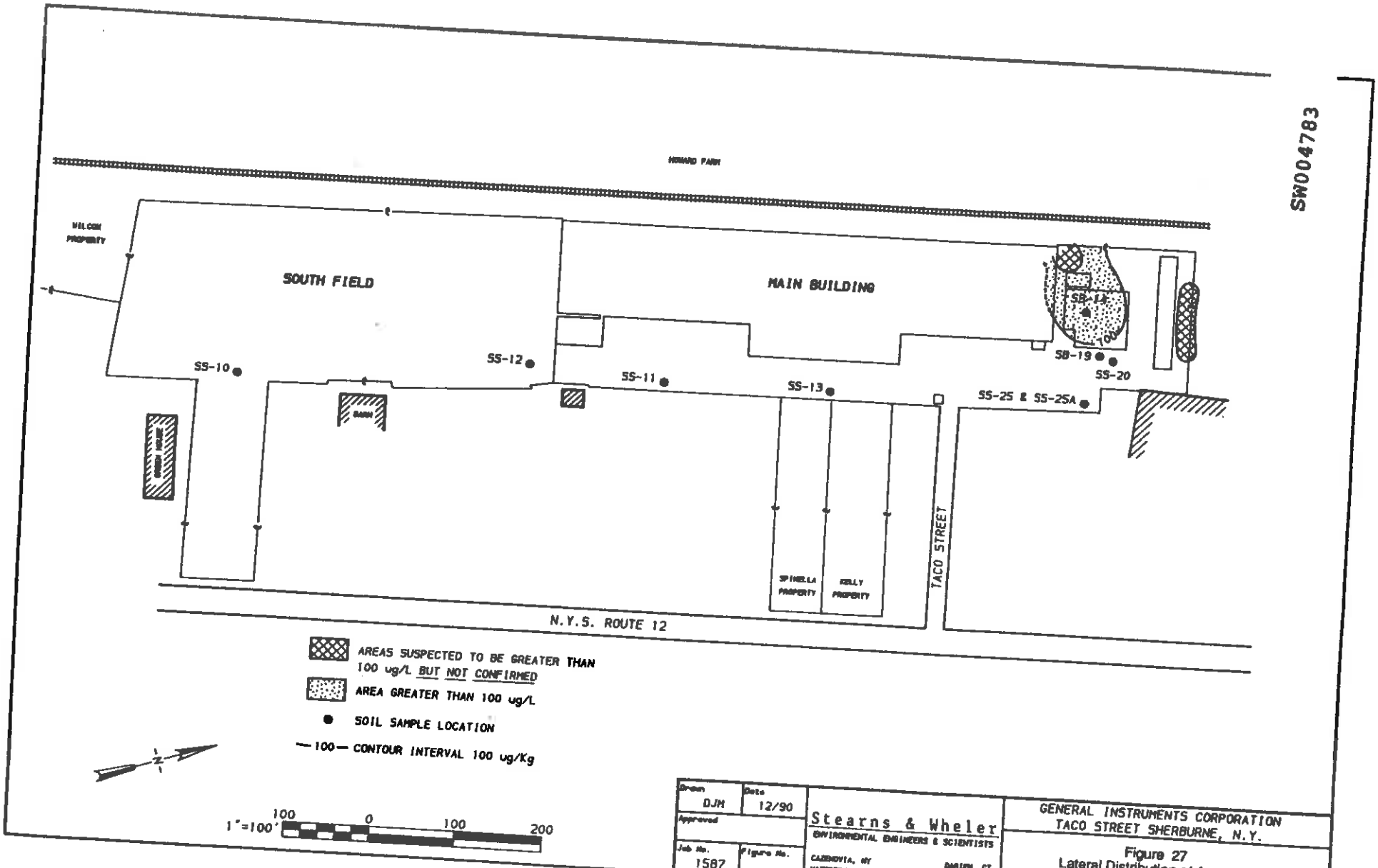
All concentrations reported in µg/kg.

"E" denotes estimated value below detection limit

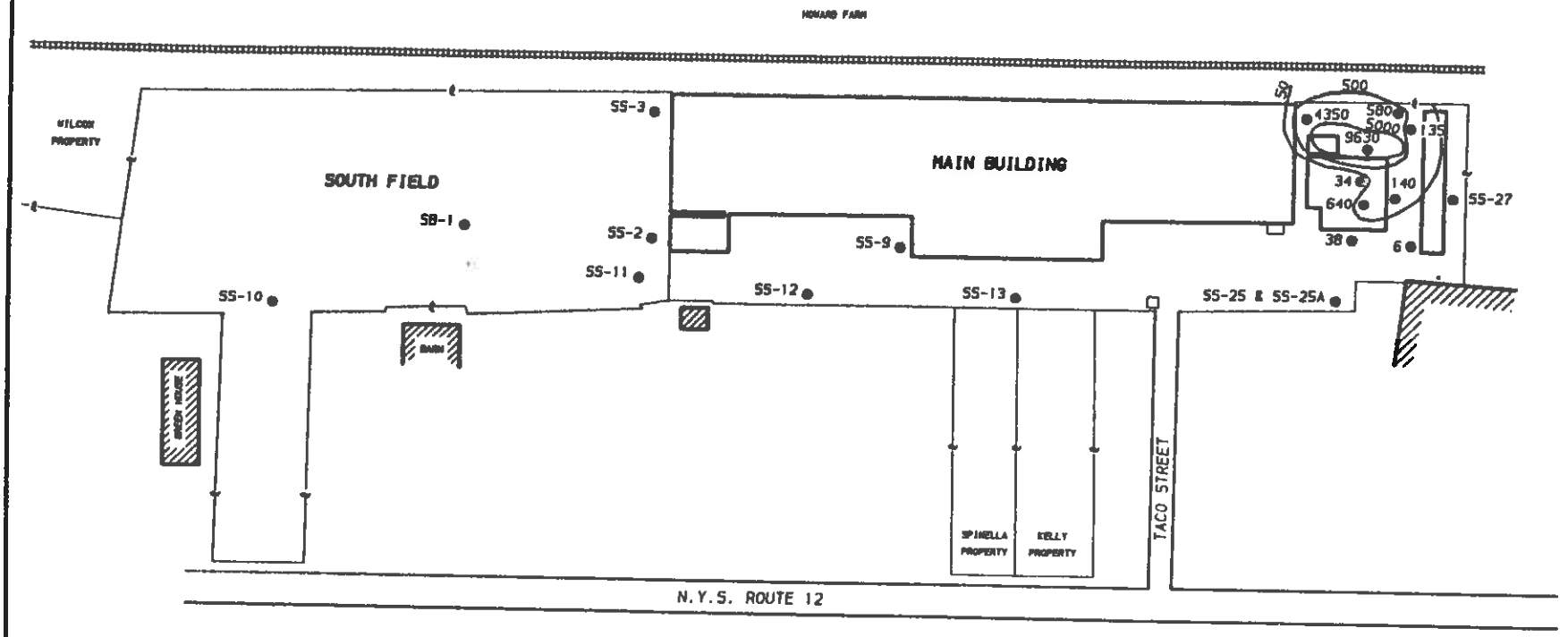
Shaded area indicates analyte was found in blank or sample was rejected for QA/QC.

SW004781

SW004783



Drawn DJM	Date 12/90	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY WATERTOWN, NY DARIEN, CT TAMPA, FL	GENERAL INSTRUMENTS CORPORATION TACO STREET SHERBURNE, N.Y.
Approved			Figure 27 Lateral Distribution of Aromatic VOC's in Sub-surface soil
Job No. 1587	Figure No.		

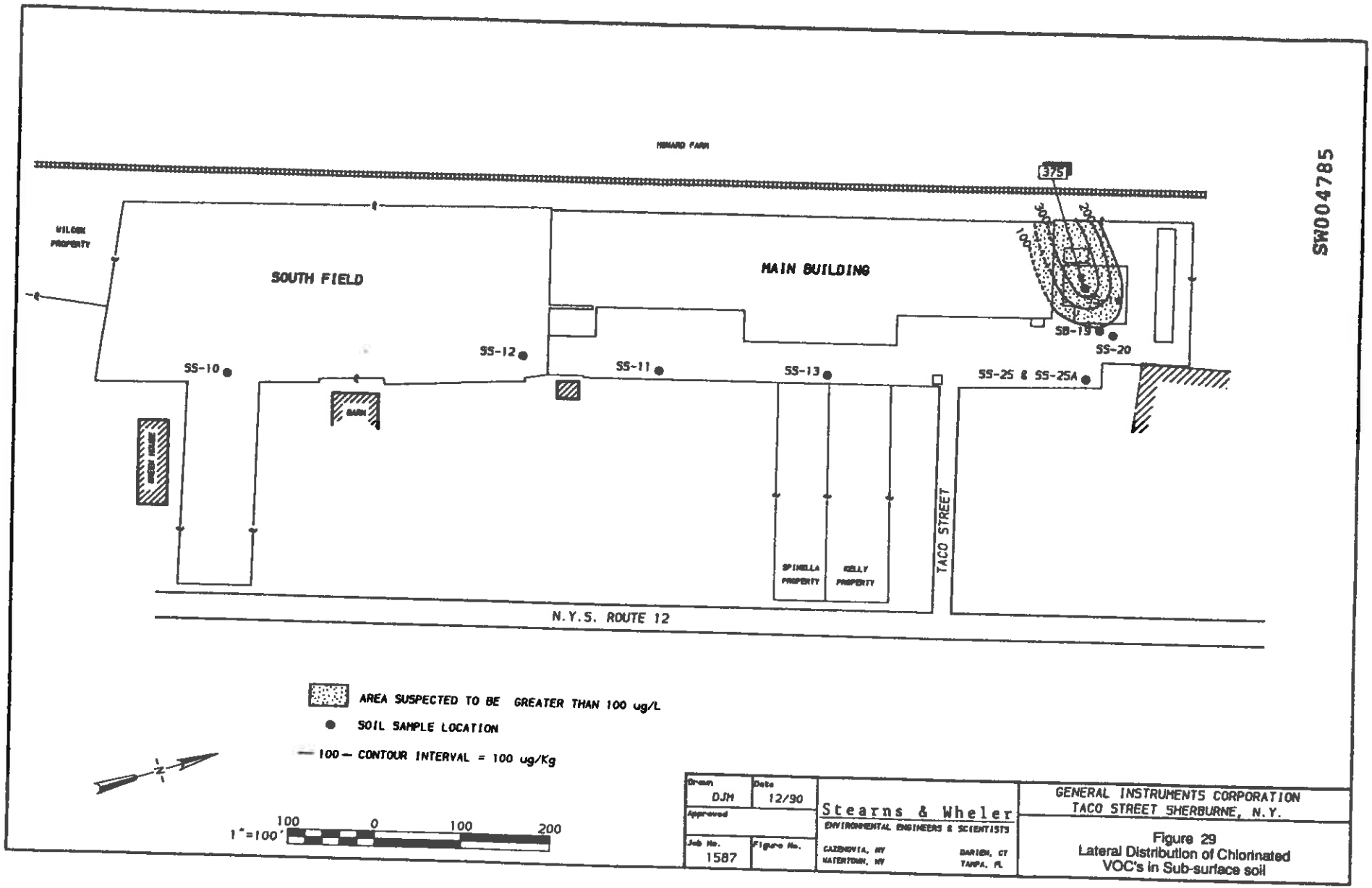


● SOIL SAMPLE LOCATION

—50— CONTOUR INTERVAL = ORDER OF MAGNITUDE, ug/Kg

1"=100' 100 0 100 200

Drawn JDB	Date 11/92	Stearns & Wheler ENVIRONMENTAL ENGINEERS & SCIENTISTS CAZENOVIA, NY WATERTOWN, NY DARIEN, CT TAMPA, FL	GENERAL INSTRUMENT CORPORATION TACO STREET, SHERBURNE, NY
Approved			LATERAL DISTRIBUTION OF CHLORINATED VOC's IN SHALLOW SUB-SURFACE SOIL
Job No. 1587	Figure No. 28		


HOWARD FARM
WILCOX PROPERTY
SOUTH FIELD
MAIN BUILDING
375
SB-19
SS-20
SS-10
SS-12
SS-11
SS-13
SS-25 & SS-25A
BARN
SPINELLA PROPERTY
KELLY PROPERTY
TACO STREET
N.Y.S. ROUTE 12
AREA SUSPECTED TO BE GREATER THAN 100 ug/L
SOIL SAMPLE LOCATION
100 — CONTOUR INTERVAL = 100 ug/Kg
N
1"=100'
100 0 100 200
Drawn DJH
Date 12/90
Approved
Job No. 1587
Figure No.
Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS
CAZENOVIA, NY
WATERTOWN, NY
BARIEN, CT
TAMPA, FL
GENERAL INSTRUMENTS CORPORATION
TACO STREET SHERBURNE, N.Y.
Figure 29
Lateral Distribution of Chlorinated VOC's in Sub-surface soil

SW004785

TABLE 4.5: POLYNUCLEAR AROMATIC COMPOUNDS IN SOIL

Sample Number		SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS12	SS13	SS25	SS25A	SS14	SS15	SS16
Location		Well #5	Well #5	Well #5	Farmer's Field	Farmer's Field	Off Site Field	Well #7	Well #7	Well #7	T.P. #3	T.P. #4	T.P. #5	T.P. #5	T.P. #6	T.P. #7	T.P. #8
Depth		0'-2'	0'-2'	2'-4'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	2'-4'	0' - >4'	0' - >4'	0' - >4'	0' - >4'	>4'	2'-4'	2'-4'
Compound	Type																
Naphthalene	PNA	200 E							130 E								39 E
2-Methylnaphthalene	PNA	270 E							73 E						3300	51 E	49 E
Acenaphthylene	PNA	41 E					120 E	61 E	180 E	79 E		610 E		40			
Acenaphthene	PNA	520						93 E	300 E	82 E	92 E						
Fluorene	PNA	680					46 E	88 E	340 E	78 E	120 E	220 E					
Phenanthrene	PNA	5100	190 E	38 E			510	1100	3500	1100	970 E	3700	160 E	220 E	2300	110 E	81 E
Anthracene	PNA	1200					96 E	180 E	630	190 E	170 E	820	57 E	58 E			
Fluoranthene	PNA	5900	380 E	67 E	48 E	45 E	720	2100	5700	1900	770	6400	320 E	320 E		140 E	95 E
Pyrene	PNA	3300	200 E	45 E	43 E	30 E	580	960	2900	1000	450	4600	160 E	210 E	220 E	99 E	53 E
Benzo(a)anthracene	PNA	2200	140 E	34 E			280 E	780	1900	820	380 E	2800	150 E	160 E		56 E	
Chrysene	PNA	2100	150 E				450	770	2200	820	390 E	2500	170 E	180 E	78 E	63	
Benzo(b)fluoranthene	PNA	1200	130 E				250 E	1200	1200	1100	420	1300	130 E				
Benzo(k)fluoranthene	PNA	1400					46 E	770	2100	770	410		72 E				
Benzo(a)pyrene	PNA	2000	120 E				330 E	820	1800	880	660	2400	140 E				
Indeno(1,2,3-cd)pyrene	PNA	320 E					58 E	180 E	520	120 E	240 E	530 E					
Dibenzo(a,h)anthracene	PNA								94 E								
Benzo(g,h,i)perylene	PNA	260 E					82 E		360 E	220 E	260 E	480 E					
TOTAL PNA's		26971	1310	184	91	75	3540	9102	23927	9163	4952	26360	1359	1188	5898	518	317
% OF SVOL PRESENT		98.0	100.0	100.0	58.3	100.0	98.9	97.3	99.0	97.4	95.4	99.6	96.2	73.4	89.7	91.2	92.4
TOTAL SEMI-VOLATILES		27528	1310	184	156	75	3589	9353	24170	9398	5189	26480	1412	1618	6575	568	343

All concentrations reported as µg/L

"E" denotes estimated value below detection limit.

Shaded area indicates analyte found in blank.

SW004788

TABLE 4.6
BACKGROUND CONCENTRATION OF SEMI-VOLATILES

Sample Number		SS-4	SS-5	SS-6
Location		Farmer's Field	Farmer's Field	Off Site Field
Depth		0'-2'	0'-2'	0'-2'
Compound	Type			
Benzoic acid	MISC			
bis(2-Chloroethoxy)methane	MISC			
Naphthalene	PNA			
2-Methylnaphthalene	PNA			
Acenaphthylene	PNA			*120 E*
Acenaphthene	PNA			
Dibenzofuran	MISC			
Diethylphthalate	PHTH			
Fluorene	PNA			*46 E*
4-Nitroaniline	MISC			
N-Nitrosodiphenylamine (1)	MISC			
Phenanthrene	PNA			510
Anthracene	PNA			*96 E*
Di-n-butylphthalate	PHTH	*65 E*		*41 E*
Fluoranthene	PNA	*48 E*	*45 E*	720
Pyrene	PNA	*43 E*	*30 E*	580
Butylbenzylphthalate	PHTH			
Benzo(a)anthracene	PNA			*280 E*
Chrysene	PNA			450
bis(2-Ethylhexyl)phthalate	PHTH			
Di-n-octylphthalate	PHTH			
Benzo(b)fluoranthene	PNA			*250 E*
Benzo(k)fluoranthene	PNA			*46 E*
Benzo(a)pyrene	PNA			*330 E*
Indeno(1,2,3-cd)pyrene	PNA			*58 E*
Dibenzo(a,h)anthracene	PNA			
Benzo(g,h,i)perylene	PNA			*62 E*
Summary				
TOTAL PNA's		91	75	3548
% OF SVOL PRESENT		58.3	100.0	98.9
TOTAL PHTHALATES		65	0	41
% OF SVOL PRESENT		41.7	0.0	1.1
TOTAL PHENOLICS		0	0	0
% OF SVOL PRESENT		0.0	0.0	0.0
MISC. SEMI-VOLATILES		0	0	0
% OF SVOL PRESENT		0.0	0.0	0.0
TOTAL SEMI-VOLATILES		156	75	3589

All concentrations reported as µg/kg
"E" denotes estimated value below detection limit
Shaded area indicates analyte found in blank

Table 4.7
PHTHALATES IN SOIL

Sample Number		SS-1	SS-4	SS-6	SS-7	SS-9	SS12	SS15	SS16	SS19	SS20	SS-21	SS-24	SS25	SS25A	SB-1	SB-6	SB-7	SED-2
Location		Well #5	Farmer's Field	Off Site Field	Well #7	Well #7	T.P. #3	T.P. #7	T.P. #8	MW-14	Mw-14	Adjacent R/R Tracks	Wilcox Property	T.P. #5	T.P. #5	S. Field Middle	Pit Room W. Door	NW Boundary	Creek Surf. Sed
Depth		0'-2'	0'-2'	0'-2'	0'-2'	2'-4'	0' - >4'	2'-4'	2'-4'	-10	20'	0'-2'	0'-2'	0' - >4'	0' - >4'	2'-4'	2'-4'	2'-4'	2'-4'
Compound	Type																		
Diethylphthalate	PHTH																		
Di-n-butylphthalate	PHTH	37 E	65 E	41 E	41 E	23 E	110 E	50 E	26 E	70 E	26 E	66 E	25 E	53 E	60 E	120 E		26 E	
Butylbenzylphthalate	PHTH						65 E					48 E							72 E
bis(2-Ethylhexyl)phthalate	PHTH				32		130 E										4300	2500	
Di-n-octylphthalate	PHTH																77 E	16 E	
Summary																			
TOTAL PHTHALATES		37	65	41	73	23	315	50	26	70	26	114	25	53	60	120	4377	2544	72
% OF SVOL PRESENT		0.1	21.2	1.1	0.8	0.2	5.7	7.1	6.4	57.4	37.8	0.6	3.3	3.6	3.5	39.4	37.1	24.4	3.4
TOTAL SEMI-VOLATILES		27708	308	3715	9645	9478	5489	708	404	122	74	20438	755	1476	1716	330	11790	10444	2142

All concentrations reported as µg/kg.
"E" denotes estimated value below detection limit.
Shaded area indicates analyte found in blank.

SW004791

Table 4.8
MISCELLANEOUS SEMI-VOLATILES IN SOIL

Sample Number		SS-1	SS-7	SS-8	SS-9	SS12	SS13	SS14	SS17	SS-21	SS-22	SS-24	SS25A	SS-27	SB-2	SB-3	SB-7	SED-1
Location		Well #5	Well #7	Well #7	Well #7	T.P. #3	T.P. #4	T.P. #6	T.P. #9	Adjacent R/R Tracks	Kelly Property	Wilcox Property	T.P. #5	North of Wood shed	Garage S. Wall	East W. Shed	NW Boundary	Creek (-18")
Depth		0'-2'	0'-2'	0'-2'	2'-4'	0' - >4'	0' - >4'	>4'	0'-2'	0'-2'	0'-2'	0'-2'	0' - >4'	2'	2'-4'	2'-4'	2'-4'	2'-4'
Compound	Type																	
Benzoic acid	MISC		310 E		180 E							35 E					130 E	1100 E
bis(2-Chloroethoxy)methane	MISC														82 E	8 E		
Dibenzofuran	MISC	828	50 E	220 E	32 E	72 E	100 E	870	160	120 E	690 E			46 E				
4-Nitroaniline	MISC												370 E					
N-Nitrosodiphenylamine (1)	MISC																52 E	
Summary																		
MISC. SEMI-VOLATILES		520	360	220	222	72	100	870	160	120	690	35	370	46	82	8	182	1100
TOTAL SEMI-VOLATILES		27709	9685	24300	9478	5489	26480	8685	5997	20626	90100	750	1716	17730	186	178	10444	1834

All concentrations reported as µg/kg.
"E" denotes estimated value below detection limit.
Shaded area indicates analyte found in blank.

SW004792

Table 4.10
BACKGROUND METAL CONCENTRATION IN SOIL

Sample Number	SS-04	SS-05	SS-06				
	BACKGROUND						
Location	Farmer Field	Farmer Field	Farmer Field	AVERAGE		COMPARISONS	
Metal	Conc. mg/kg	Conc. mg/kg	Conc. mg/kg	Conc. mg/kg	STD. DEV	MAXIMUM BCKGRND*	USGS +
Aluminum	21000	18200	13600	17600.0	3736.3	21336.3	N/A
Antimony			3.4 E	3.4	0.0	3.4	2.9
Arsenic	5.9	5.5	4.5	5.3	0.7	6.0	7.4
Barium	125	99.1	64.3	96.1	30.5	126.6	292.2
Beryllium	1	0.95	0.47	0.8	0.3	1.1	3.1
Cadmium	0.83	0.85	0.86	0.8	0.0	0.9	N/A
Calcium	2480	2970	6030	3826.7	1923.8	5750.5	N/A
Chromium	27.5	24.8	15.8	22.7	6.1	28.8	35.6
Cobalt	13.3	13.1	5.7	10.7	4.3	15.0	8.5
Copper	13.7	12	15.5	13.7	1.8	15.5	15.8
Iron	29200	26500	21800	25833.3	3744.8	29578.1	N/A
Lead	30.7	18.1	23	23.9	6.4	30.3	15.9
Magnesium	4570	4140	2370	3693.3	1166.0	4859.4	N/A
Manganese	633	516	379	509.3	127.1	636.5	263.8
Mercury	0.11	0.07	0.06	0.1	0.0	0.1	2.6
Nickel	30.2	28.8	12.9	24.0	9.6	33.6	13.6
Potassium	1760	1550	973	1427.7	407.5	1835.2	N/A
Selenium	0.38	0.41	0.42	0.4	0.0	0.4	2.7
Silver	0.44	0.45	0.46	0.5	0.0	0.5	N/A
Sodium	186	102	162	150.0	43.3	193.3	N/A
Thallium	0.29	0.3	0.3	0.3	0.0	0.3	9.3
Vanadium	28.1	25.4	22.6	25.4	2.8	28.1	N/A
Zinc	108	93.5	69	90.2	19.7	109.9	42.11
Cyanide				N/A	N/A	N/A	N/A

All values reported as mg/kg of dry soil.
Shaded areas considered non-detect based on field or method blank contamination.
Smaller type denotes levels below ICP Analytical detection limit.
" E " denotes estimated value.
* Calculated from the average offsite samples plus one standard deviation.
+ Source: Shacklette, H.T. and Boerngen, (1984)

SW004807

Table 4.11
OFFSITE METAL CONCENTRATION IN SOIL

Sample Number	SS-21			SS-22			SS-23			SS-24			SED-1			SED-2		
Location	OFFSITE			OFFSITE			OFFSITE			OFFSITE			OFFSITE			OFFSITE		
Metal	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*
Aluminum	8260			14400			15700			19600			18700			19200		
Antimony	2.9			2.6			2.8			3.2	X							
Arsenic	12.4	X	X	9	X	X	8.8	X	X	7.6	X	X	3.7			6.9		X
Barium	121			128		X	117			113			1200	X	X	317	X	X
Beryllium	0.73			0.81			0.56			1.1		X	1.0 E	X	X	2.8 E	X	X
Cadmium	8.6		X	0.79			0.82			0.92		X	12.1		X	24.8		X
Calcium	10200		X	20600		X	4670			2800			2660			3450		
Chromium	62	X	X	23.9			24.3			25.3			42.9	X	X	256	X	X
Cobalt	7.7			11.9	X		9.6	X		12.8	X		10.1	X		9	X	
Copper	56.2	X	X	52.2	X	X	20.6	X	X	14.9			70.4	X	X	426	X	X
Iron	19700			25400			23900			27200			25000			27700		
Lead	81.6	X	X	178	X	X	130	X	X	34.9	X	X	73.3	X	X	238	X	X
Magnesium	3480			3930			3630			3850			3910			3600		
Manganese	337	X		516	X		453	X		612	X		238			205		
Mercury	0.08			0.41		X	0.12		X	0.12		X	0.28		X	0.64		X
Nickel	21.7	X		23.3	X		20.6	X		26.6	X		29.2	X		29.3	X	
Potassium	1010			1350			1460			1250			1630			1750		
Selenium	0.87		X	0.58		X	0.31			0.57		X	0.81		X	2.1		X
Silver	7.7		X	0.42			0.43			0.48		X	1.4		X	22.5		X
Sodium	105			170			106			109			323		X	394		X
Thallium	0.28			0.28			0.29			0.3			0.37		X	0.52		X
Vanadium	15.2			21			25.3			29.2		X	25.3			35.1		X
Zinc	222	X	X	259	X	X	181	X	X	95.1	X		335	X	X	513	X	X
Cyanide	1.9			0.64			0.65			0.7								

All values reported as mg/kg of dry soil.
Shaded areas considered non-detect based on field or method blank contamination.
Smaller type denotes levels below ICP analytical detection limit.
" E " denotes estimated value.
* Compared to the average offsite samples plus one standard deviation.
+ Compare the USGS value, Shacklette, H.T. and Boerngen, (1984)
"X" Indicates exceedance of either the background or USGS value

SW004808

Table 4.12
METAL CONCENTRATIONS IN SOIL FROM TEST PITS

Sample Number	SS-10			SS-11			SS-12			SS-13			SS-14			SS-15			SS-16			SS-17			SS-18			SS-25			SS-25A		
Location	ONSITE			ONSITE			ONSITE			ONSITE			ONSITE			ONSITE			ONSITE			ONSITE			ONSITE			ONSITE			ONSITE		
Metal	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*
Aluminum	9980			15700			12800			14600			22200		X	22200		X	20800			12200			13000			11200			12400		
Antimony	2.8			2.6			2.8			3.1	X		2.8			3.1	X		3	X		2.5			2.5			2.9			3.3	X	
Arsenic	5.5			6.3		X	8.3	X	X	8	X	X	4.2			4.7			4.7			4.8			6			4.4			5.1		
Barium	35.6			65.8			77.7			95.5			141		X	125			118			57.3			46.7			65.8			92.5		
Beryllium	0.22			0.51			0.64			0.62			0.94			1.2		X	1.1		X	0.62			0.51			0.38			0.45		
Cadmium			X										0.82			2.1		X	0.85			15.9		X	0.95		X						
Calcium	71000		X	6380		X	12700		X	31100		X																40200		X	33800		X
Chromium													29.8		X	34.7		X	27.4			26.7			21								
Cobalt	5			10.8	X		6.8			7.4			12.8	X		13.8	X		12.6	X		8.9	X		11.7	X		6.8			5.8		
Copper	28.9	X	X	20.3	X	X	26.5	X	X	51	X	X	18	X	X	34	X	X	19.2	X	X	37.4	X	X	20.1	X	X	64	X	X	64	X	X
Iron	20400			29200			22200			21600			30500		X	30000		X	30400		X	21400			27100			19700			17600		
Lead	11.7			11.3			37.1	X	X	55.2	X	X	11.6			21.4	X		14.4			23.9	X		15.3			67.1	X	X	45.2	X	X
Magnesium													4840			4880		X	5110		X	6370		X	6240		X						
Manganese	484	X		641	X	X	238			344	X		502	X		448	X		611	X		550	X		462	X		493	X		276	X	
Mercury	0.04			0.06			0.05			0.09			0.06			0.09			0.25		X	0.06			0.04			0.22		X	0.43		X
Nickel	18.8	X		26.8	X		20.1	X		22.9	X		30.3	X		41.7	X	X	31.7	X		22.7	X		26.5	X		17.9	X		18.7	X	
Potassium	1060			1320			1130			1350			1540			1600			1460			1420			1110			986			937		
Selenium	0.28			0.32			0.42			0.35			0.24			0.26			0.25			0.21			0.22			0.33			0.68		X
Silver	0.37			0.39			0.42			0.46		X	0.57		X	1.2		X	0.45			19.8		X	0.52		X	7.1		X	5.4		X
Sodium	54.9			58			63			59			229		X	260		X	244		X	224		X	168			149			977		X
Thallium	0.28			0.32		X	0.35		X	0.35		X	0.34		X	0.37		X	0.35		X	0.3			0.31		X	0.33		X	0.38		X
Vanadium	13.2			21.3			19			22.4			30.6		X	29		X	27.9			18.6			17			16.7			15.8		
Zinc	62.8	X		68.8	X		175	X	X	276	X	X	79.5	X		133	X	X	91.5	X		88.5	X		78.5	X		208	X	X	428	X	X
Cyanide	0.54			0.6			2.2			0.67			0.63			0.68			0.63			4.1			0.59			6.9			4.4		

All values reported as mg/kg of dry soil.
Shaded areas considered non-detect based on field or method blank contamination.
Smaller type denotes levels below ICP analytical detection limit.
" E " denotes estimated value.
* Compared to the average offsite samples plus one standard deviation.
+ Compared the USGS value, Shacklette, H.T. and Boerngen, (1984)
"X" Indicates exceedance of either the background or USGS value

SW004809

Table 4.13
METAL CONCENTRATION IN SOILS FROM SPILL AREA

Sample Number	SS-26			SS-27			S-28		
Location	ONSITE			ONSITE			ONSITE		
Metal	Conc. mg/kg	+	*	Conc. mg/kg	+	*	Conc. mg/kg	+	*
Aluminum	14400			13100			4410		
Antimony	2.8			2.9			2.3		
Arsenic	6.5		X	7.3		X	3.1		
Barium	91.3			85.6			30		
Beryllium	0.93			0.87			0.32		
Cadmium	0.91			0.84			0.66		
Calcium	9340		X	16000		X	213000		X
Chromium	22.3			19.9			7.2		
Cobalt	11.5	X		9.9	X		4.9		
Copper	18.6	X	X	18.6	X	X	10.3		
Iron	25800			22800			8780		
Lead	31.3	X	X	65.2	X	X	8		
Magnesium	5140		X	5060		X	10800		X
Manganese	577	X		624	X		356	X	
Mercury	0.05			0.13		X	0.05		
Nickel	25.7	X		22	X		10.8		
Potassium	1130			1210			743		
Selenium	0.41			0.3			0.26		
Silver	0.42			0.44			0.35		
Sodium	83.6			470		X	143		
Thallium	0.28			0.28			0.25		
Vanadium	19.2			20.5			8.7		
Zinc	94.1	X		121	X	X	39.2		
Cyanide	0.63			0.65			0.53		

All values reported as mg/kg of dry soil.
Shaded areas considered non-detect based on field or method blank contamination.
Smaller type denotes levels below ICP analytical detection limit.
" E " denotes estimated value.
* Compared to the average offsite samples plus one standard deviation.
+ Compared the USGS value, Shacklette, H.T. and Boerngen, (1984)
"X" indicates exceedance of either the background or USGS value

TABLE 6-3. VOLATILE EMISSIONS FROM TEST PIT NINE

EXPOSURE ASSESSMENT: GENERAL INSTRUMENT CORP., SHERBURNE NY
Rate of volatilization of chemicals from surface soils

Chemical	DI (10)	DI (30)	HI' (10)	HI'(30)	D (10)	D(30)	conc, ug/kg	conc, g/cm3	numerator 10 ° C	numerator 30° C	denom 10° C	denom 30 30° C	E (10)	E (30)
1,1-dichloroethane	0.08557	0.09643	0.251	0.237	0.0065	0.0091	12	1.56E-08	1.33E-04	1.42E-04	4.00	4.00	3.33E-05	3.54E-05
1,2-dichloroethane	0.08557	0.09643	0.042	0.039	0.0014	0.0016	15	1.95E-08	2.78E-05	2.91E-05	4.00	4.00	6.96E-06	7.28E-06
chloroform	0.08345	0.09404	0.188	0.175	0.0062	0.0065	7	9.1E-09	5.81E-05	5.95E-05	4.00	4.00	1.40E-05	1.49E-05
1,1,1-TCA	0.07638	0.08606	0.342	0.323	0.0104	0.0110	10	1.3E-08	1.35E-04	1.43E-04	4.00	4.00	3.37E-05	3.58E-05
TCE	0.07638	0.08606	0.44	0.415	0.0133	0.0142	11	1.43E-08	1.91E-04	2.03E-04	4.00	4.00	4.77E-05	5.07E-05
toluene	0.07367	0.08301	0.264	0.24	0.0074	0.0079	3	3.9E-09	2.90E-05	3.08E-05	4.00	4.00	7.24E-06	7.71E-06
ethylbenzene	0.08274	0.0797	0.214	0.202	0.0063	0.0067	15	1.95E-08	1.04E-04	1.11E-04	4.00	4.00	2.60E-05	2.76E-05
xylene	0.08742	0.07579	0.283	0.267	0.0078	0.0080	57	7.41E-08	5.81E-04	5.95E-04	4.00	4.00	1.40E-04	1.49E-04

KEY

DI is the diffusion coefficent of chemical I in air (cm2/sec)
Data are presented at 10 and 30 degrees (average and worst case)

HI' is Henry's Law constant

D is the phase transfer coefficent of chemical I in air (cm2/sec)

Numerator refers to the numerator of equation 1 (2DCaA)

Denominator refers to the denominator of equation 1 (d+SQRT((2DCa/Cb)+d^2))

EI is the emission rate of chemical I at temperature

SW004850

TABLE 6-4. TRANSPORT OF VOLATILE ORGANICS WITH DISTANCE

EXPOSURE ASSESSMENT: GENERAL INSTRUMENT CORP., SHERBURNE NY
Downwind transport and dilution of volatile compounds

Chemical	EMMISSIONS		CONC., 0.1 KM		CONC., 0.2 KM		CONC., 0.5 KM		CONC., 1 KM		CONC., 2KM	
	10° C	30° C	10° C	30° C	10° C	30° C	10° C	30° C	10° C	30° C	10° C	30° C
	(GRAMS PER SECOND)		(GRAMS PER CUBIC METER)		(GRAMS PER CUBIC METER)		(GRAMS PER CUBIC METER)		(GRAMS PER CUBIC METER)		(GRAMS PER CUBIC METER)	
1,1-dichloroethane	3E-05	4E-05	9E-08	1E-07	3E-08	3E-08	5E-09	5E-09	2E-09	2E-09	5E-10	5E-10
1,2-dichloroethane	7E-06	7E-06	2E-08	2E-08	5E-09	6E-09	1E-09	1E-09	3E-10	3E-10	1E-10	1E-10
chloroform	1E-05	1E-05	4E-08	4E-08	1E-08	1E-08	2E-09	2E-09	7E-10	7E-10	2E-10	2E-10
1,1,1-TCA	3E-05	4E-05	9E-08	1E-07	3E-08	3E-08	5E-09	6E-09	2E-09	2E-09	5E-10	5E-10
TCE	5E-05	5E-05	1E-07	1E-07	4E-08	4E-08	7E-09	8E-09	2E-09	2E-09	7E-10	7E-10
toluene	7E-06	8E-06	2E-08	2E-08	6E-09	6E-09	1E-09	1E-09	3E-10	4E-10	1E-10	1E-10
ethylbenzene	3E-05	3E-05	7E-08	8E-08	2E-08	2E-08	4E-09	4E-09	1E-09	1E-09	4E-10	4E-10
xylene	1E-04	1E-04	4E-07	4E-07	1E-07	1E-07	2E-08	2E-08	7E-09	7E-09	2E-09	2E-09

SW004853

APPENDIX H – HEALTH AND SAFETY PLAN



Site-Specific Health and Safety Plan

Former GIC Site - Sherburne

Askin & Hooker, LLC

September 24 2024
12595756|---|--
Approval Date: 2-14-2023

HEALTH AND SAFETY PLAN

Signature page

This HASP was electronically signed by the Project Manager and Safety Group within the HASP Builder Software. Fully approved HASP is printed without a DRAFT watermark.

Project Name: Former GIC Site - Sherburne

Project Manager Approval Date: Ian Mcnamara, 2-14-2023
Safety Group Approval Date: John Maurer, 2-14-2023

Project Number: 12595756

Emergency Information

1 Kenyon Press Drive Sherburne

<table>
<tr><th>Contact</th><th>Phone Number</th><th></th></tr>
<tr><td>Local Police

Sherburne Police Department
15 West State Street
Sherburne, New York
United States 13460</td><td>607-674-2203
911</td><td rowspan="4">Hospital Directions

Directions:

1. Head north on West St toward Kenyon Press Dr
2. West St turns right and becomes Kenyon Press Dr
3. Turn left onto N Main St
4. Continue straight onto NY-12B N/N Main St
Continue to follow NY-12B N
5. Turn left
6. Turn left
Destination will be on the right

Driving Time: 16 mins

Driving Distance: 10.6 mi</td></tr>
<tr><td>Fire Department

Sherburne Fire Department
15 West State Street
Sherburne, New York
United States 13460</td><td>607-674-2204
911</td></tr>
<tr><td>Ambulance

Southern Madison County Ambulance
86 Lebanon St.
Hamilton, New York
United States 13346</td><td>315-824-6867
911</td></tr>
<tr><td>Local Hospital

Community Memorial Hospital
150 Broad Street
Hamilton, New York
United States 13346</td><td>315-824-1100</td></tr>
<tr><td>National Poison Center</td><td></td><td rowspan="9">GHD - HSE Help Line

Please call (866) 529-4886 and provide:

• Name and location of caller
• Description of incident
• Name of injured person(s)
• Description of injuries
• Phone number for return call</td></tr>
<tr><td>Project Manager

Ian Mcnamara</td><td>Work: 315-802-0312
Cell: 315-368-8432</td></tr>
<tr><td>Site Supervisor

Brian Pickert</td><td>Work: 716-205-1892
Cell: 518-248-1970</td></tr>
<tr><td>GHD Regional S&H Manager

John Maurer</td><td>Work: 716-297-6150
Cell: 716-545-0112</td></tr>
<tr><td>Client Contact

Todd Hooker</td><td>973-729-7711</td></tr>
<tr><td>Client Site Contact

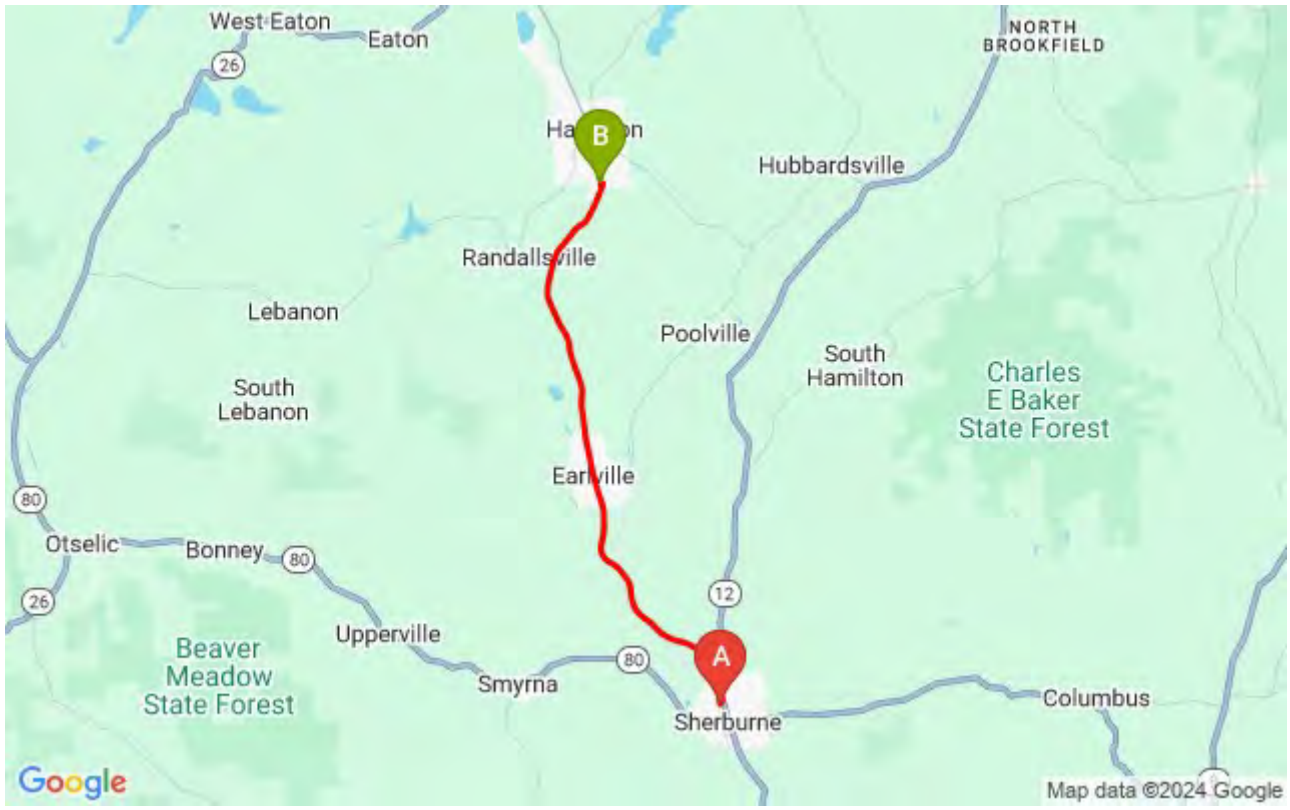
Bill Hufnagle</td><td>

Work: 607-316-6553
Cell:</td></tr>
<tr><td>Other Contact

The Upstate New York Poison Center</td><td>

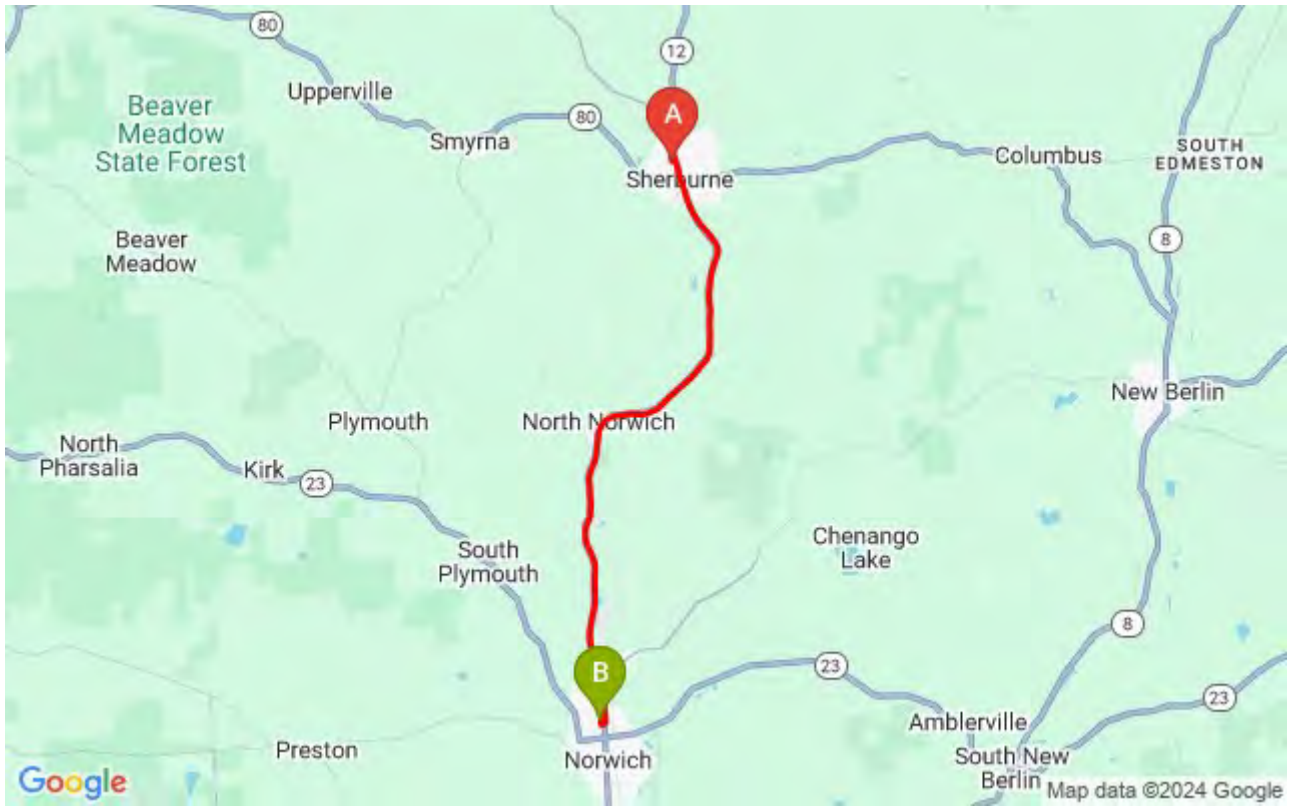
Work: 1-800-222-1222
Cell:</td></tr>
<tr><td>Site Health Officer</td><td>Phone:</td></tr>
<tr><td>Person to verify hospital route:</td><td colspan="2">Signature:</td></tr>
</table>

Hospital Driving Directions



1. Head **north** on **West St** toward **Kenyon Press Dr**
2. **West St** turns **right** and becomes **Kenyon Press Dr**
3. Turn **left** onto **N Main St**
4. Continue straight onto **NY-12B N/N Main St**
   Continue to follow NY-12B N
5. Turn **left**
6. Turn **left**
   Destination will be on the right

Medical Clinic Driving Directions



1. Head **north** on **West St** toward **Kenyon Press Dr**
2. **West St** turns **right** and becomes **Kenyon Press Dr**
3. Turn **right** onto **NY-12 S/N Main St**
   Continue to follow NY-12 S
4. Turn **right** onto **Parking Lot**
5. Turn **left**
6. Turn **right**
   Destination will be on the right

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Appendix

Chemical Table

Appendix A - GHD Mandatory Documents

Table 2 - Chemical Action Levels
Tailgate Safety Meeting - Small

HASP Acknowledgement Sheet
Tailgate Safety Meeting - Large
QSF-019 Underground Utilities Checklist
HASP Amendment Form
QSF-006 - Management of Change
Sherburne Site Layout.pdf

Appendix B - JSAs

Environmental-Soil Sampling
Environmental-Decontamination of Sampling Equipment and Personnel (PPE Level D)
O_M-Derived Waste Drum Moving and Handling
Motor Vehicle - Driving
Environmental-Drum Sampling for Non Hazardous Material
Remediation-Derived Waste Drum Moving and Handling
Mobilization-Demobilization
Environmental- Monitoring Well Sampling
Environmental-Site Recon and Walkthrough
Environmental-Oversight of Monitoring Well Installation and/or Soil Boring
Environmental-Vapor Well Sampling

Appendix C - Safety Data Sheets (SDS)

Alconox SDS

Appendix D - Training Records

Record of Training Form

1. Introduction

1.1 GHD Values and Integrity Management Policy

At GHD, we commit to safe, ethical and respectful business behaviour in regard to both the internal conduct of our business and our engagement with external stakeholders and the public. The core values of Safety, Teamwork, Respect and Integrity will guide all of our activities. We will only seek work and participate in business transactions under high standards of corporate ethics and with complete integrity. Our projects will be undertaken in a manner that places safety as the top priority, with each of our employees empowered with Stop Work Authority throughout the execution of project work. GHD expects that all of its projects will be undertaken in an environment of teamwork and mutual respect, free from discrimination, harassment, bullying or other inappropriate behavior. We foster an open environment in which our people can report any improper practices or behaviour without fear of reprisal. All reported incidents will be investigated promptly with appropriate and equitable follow-up. GHD's integrity management policy and guidelines are available at http://www.ghdcanada.com/global/about-us/integrity-management.

1.2 Purpose

The purpose of this site specific health and safety plan (HASP) is to provide guidelines and establish procedures for reducing and controlling hazard exposure to the public, property, and personnel. The HASP is a living document and must continually evolve as site conditions and knowledge of the site activities develop.

This document has been developed to meet or exceed the requirements set forth by federal, state, and provincial legislation. If any procedure outlined in this plan conflicts with federal, state/provincial, and/or municipal law, prescribed standards, or client requirements, then the most stringent set of standards applies.

1.3 Stop Work Authority

All employees are empowered and expected to stop the work of coworkers, subcontractors, client employees, or other contractors if any person's safety or the environment are at risk. No repercussions will result from this action. Reporting of unsafe acts/condition (UA or UC) or Stop Work Authority (SWA) is completed with BWise and/or the GHD HSE app. Unsafe acts, conditions, stop work authority are now reported via the GHD HSE app.

The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated results in the removal of site personnel from that area and re-evaluation of the hazard and the levels of protection.

1.4 Short Service Employee

The Employee is considered a Short Service Employee (SSE) if he/she has less than 6 months experience with his/her present employee, or in his/her present role. The individual is required to wear a fluorescent orange hardhat, as an obvious indicator of SSE status. Training and mentoring allows them to gain knowledge and experience in procedures and methods. In order for a new employee to work in the field, the following minimum training requirements must be met:

1. GHD New Employee Safety & Health Orientation training (on-line).
2. GHD HAZCOM (US)/WHIMIS (Canada)(on-line).
3. On-boarding completed with Human Resources.
4. Compliance training defined on the QSF-20 as it applies to field work to be conducted.
5. Client specific safety training.

A SSE's primary mentor is their direct Supervisor. GHD Supervisors are responsible for ensuring that a SSE completes the safety, field method, and quality training as appropriate to the work they are assigned. A SSE requires an On-site Mentor for all fieldwork. The On-site Mentor must have experience in the work they are mentoring and they are responsible for the close monitoring of the SSE.

Project team SSE make-up requirements are:

- A one-person project team cannot be a SSE.
- A two-person to four-person project team can have only one SSE.
- A five-person or more project team cannot have more than 20 percent SSE without a written variance from the GHD Corporate Manager of Safety & Health.

New hire employees that can provide sufficient documentation supporting previous experience in working under HSE program(s) similar to GHD's may be exempt from GHD's SSE program These exemptions are handled on a case-by-case basis and must be authorized by one of the following staff: the Corporate Manager of Safety & Health or a Senior Regional Safety & Health Manager. Details of the exemptions are covered in the full SSE Policy.

Clients may define specific SSE requirements for work at their facility or on their project. It is the responsibility of the Project Manager to communicate a client's specific requirements to the appropriate staff within GHD and project subcontractors. Client-specific SSE standards shall be posted on the Safety & Health Portal SSE Folder.

1.5 Project Management And Safety Organization

Project Manager – GHD – Ian Mcnamara

The GHD Project Manager (PM) is responsible for the overall implementation, review, and approval of the HASP, and for ensuring that all safety and health (S&H) responsibilities are carried out. The PM will also ensure that appropriate resources are provided to support the project.

Site Supervisor – GHD – Brian Pickert

The Site Supervisor (SS) is responsible for:

- Ensuring that the HASP is reviewed, approved, and implemented.
- Communicating site requirements to site project personnel and subcontractors through site orientation.
- Consulting with the client/site representative regarding appropriate changes to the HASP.

- Conducting a daily pre-start/tailgate safety meeting that communicates the site specific hazards. This meeting must be documented on the HSE097 Pre-Start/Tailgate Safety Meeting form in the appendix.
- Ensuring that all necessary cleanup and maintenance of safety equipment is conducted by project personnel.
- Verifying emergency phone numbers and services, including hospital and clinic locations.
- Completing, filing, and correctly submitting the forms attached to the HASP, including daily pre-start/tailgate meetings, job safety analysis, and daily inspection checklists.
- Implementing risk-based safety procedures on all activities and enforcing safe work practices for project employees
- Observing ill effects on any crew member, especially those symptoms caused by cold/heat stress or chemical exposure.
- Overseeing the safety of visitors who enter the site.
- Maintaining communication with the client/site representative(s) and/or government inspectors/agencies.
- Providing and enforcing the use of safety equipment, personal protective equipment (PPE), and other items necessary for employee or community safety.
- Conducting job site inspections as a part of quality assurance for safety and health.
- Ordering the immediate shutdown of site activities in case of a medical emergency, unsafe condition, or unsafe practice.
- Reporting safety and health concerns to site and/or project management as necessary.

Regional HSE Manager GHD – John Maurer

The Regional HSE Manager is a full time GHD employee who is trained as a safety and health professional and serves in a consulting role to the PM and SS regarding potential safety and health issues. The HSE Manager or trained designee must review, coordinate required changes with PM and provide the final approval of the HASP prior to work beginning on site.

Site personnel

All employees have a role in GHD's HSE program and a responsibility to implement the program. GHD personnel are responsible for:

- Engaging in all aspects of their tasks and jobs when they are prepared to do the job safely, well rested, and mentally prepared for work.
- Utilizing the STAR process before initiating work.
- Implementing Stop Work Authority for any operations that may cause injury, illness, or unsafe conditions to employees, subcontractors, or others.
- Assisting in the development and revision of Job Safety Analysis (JSA) forms that are appropriate to their current scope of work.
- Use, inspect and maintain PPE as required by JSA and site conditions.
- Preparing, submitting and reviewing safety observations using the GHD HSE app or appropriate forms
- Inspecting tools and other equipment before each use or as manufacturer dictates and documenting any defects.
- Correcting job site hazards when possible without endangering life or health.
- Reporting safety and health concerns to the SS, PM, HSE Manager, or SHO (if appointed).

Subcontractors

Subcontractors are responsible for:

- Developing and implementing their own HASP and complying with its contents.
- Attending an initial site orientation and subsequent safety meetings.
- Ensuring that their employees adhere to all site personnel requirements.
- Submitting required documentation to the SS regarding federal, state, or provincial requirements before beginning any work.

- Obtaining approval for the use of GHD's equipment.
- Observing and obeying all GHD/client requirements as well as any specific direction given by GHD's management team.
- Wearing any personal protective equipment required by their HASP and GHD at all times.
- Meeting all governing legislation/regulation/industry standards for equipment used on GHD projects.
- Verifying that all subcontractor employees have required training, medical clearance, and substance abuse testing as required by project.
- Not being in possession or under the influence of alcohol, incapacitating drugs, or medications.

In the event of conflicting safety procedures or requirements, personnel must implement those safety practices that afford the highest level of safety and protection. In addition, noncompliance with safety and health policies and procedures may subject the subcontractor to disciplinary action up to and including termination of their contract with GHD.

Equipment Operators

All equipment operators must meet all the requirements of site personnel listed above and are responsible for the safe operation of heavy equipment. Operators are responsible for conducting documented daily inspections on their equipment to ensure safe performance. Brakes, hydraulic lines, backup alarms, and fire extinguishers must be inspected routinely throughout the project. Equipment will be taken out of service if an unsafe condition occurs. Daily inspections must be provided to the GHD site supervisor prior to the equipment being used.

Authorized Visitors

Authorized visitors, as approved by **Ian Mcnamara**, are provided with all relevant information regarding site operations and hazards as applicable to the purpose of their visit. Visitors may be required to be accompanied by authorized personnel.

1.6 Site Safety And Health Officer

The site safety and health officer (SHO) is responsible for assisting in the communication of site requirements to site project personnel and subcontractors and for carrying out the health and safety responsibilities include the ones listed under the site supervisor. The SHO has prior experience in working at similar sites. The SHO operates under the supervision of the PM, SS, and HSE Manager.

1.7 Recordkeeping

The SS shall establish and maintain records of all necessary and prudent monitoring activities as described below:

- Name and job classification of the employees involved on specific tasks.
- Air monitoring/sampling results and instrument calibration logs.
- Records of training acknowledgment forms (site specific training, toolbox meetings, etc.).
- Documentation of site inspections, results of inspections, and corrective actions implemented.
- Emergency reports describing any incidents or accidents.

1.8 Site HASP Amendments

Any change to the scope of work must be evaluated for its impact on the overall health and safety of the project and associated personnel. A minor change is one that adjusts already-documented hazards within the HASP and does not expose site personnel to chemicals above exposure limits, such as the introduction of a new JSA, or PPE that does not involve a change in respiratory protection. Amendments must be documented on the Site Health and Safety Plan Amendment Form located in Appendix, in addition to notifications to key personnel.

Significant changes to the scope of work require a rewrite by the PM and review/approval of the HASP by a HSE Manager.

1.9 Training Requirements

All personnel conducting work at this site shall have completed the appropriate safety and health training, as applicable to their job/task duties as it relates to the GHD Tiered Training System. The required training is referenced throughout the HASP and identified on each JSA form

1.10 Site Specific Training

An initial site specific training session or briefing shall be conducted by the PM or SS prior to commencement of work activities. During this initial training session, employees shall be instructed on the following topics:

- Personnel responsibilities
- Content and implementation of the HASP
- Site hazards and controls
- Site specific hazardous procedures (e.g., drilling, excavations, etc.)
- Training requirements
- PPE requirements
- Emergency information, including local emergency response team phone numbers, route to nearest hospital, incident reporting procedures, and emergency response procedures
- Instruction in the completion of required inspections and forms
- Location of safety equipment, such as portable eyewash, first aid kit, fire extinguishers, etc.

The various components of the project HASP will be presented, followed by an opportunity to ask questions to ensure that each attendee understands the HASP. Personnel will not be permitted to enter or work in potentially contaminated areas of the site until they have completed the site specific training session. Personnel successfully completing the training session shall sign the HASP Acknowledgement Form, which is presented as an Appendix.

In addition to the initial site briefing conducted at the commencement of the project, supplemental brief safety meetings shall be conducted by the SS to discuss potential safety and health hazards associated with upcoming tasks and necessary precautions to be taken.

1.11 Safety Meeting/ HASP Review

"Pre-Start/Tailgate Safety Meetings" will take place each day prior to beginning the day's work. All site personnel will attend these safety meetings conducted by the SS. The safety meetings will cover specific safety and health issues, including the appropriate JSAs, site activities, changes in site conditions, and a review of topics covered in the site specific pre-entry briefing. The safety meetings will be documented each day with written sign in sheets containing a list of topics discussed. To assist with the compliance of documentation of the tailgate safety meetings, there is a HSE097 Pre-Start/Tailgate Safety Meeting form located in the Appendix.

1.12 Fatigue Management

GHD employees and subcontractors are responsible for ensuring they are both physically and mentally fit to perform their job functions safely as part of GHD's Fatigue Management Program. GHD will use the following control measures to minimize fatigue during the project:

- Alter the work schedule to reduce the overall time a worker will perform physically demanding work.
- Monitoring employee behaviors for signs of fatigue.
- Eliminate or reduce where practicable the need to work extended hours, night shifts, or overtime.
- Use work-rest patterns during repetitive tasks to control fatigue and increase mental fitness.

GHD's work/rest balance requirements are referenced based on weight of the vehicle. Less than 10,000 lbs/4536 kg (passenger cars, pickup trucks, SUV) will follow the following guidelines:

- Maximum working time and/or driving and working time within one work day: 14 hours (extendable up to 16 hours if drive time < 4 hours and/or airplane travel is involved; this approach can be taken three times in a 7 day period)
- Maximum continuous drive time: 3 hours followed by a 15 minute break
- Maximum drive time per day: 9 hours (extendable up to 10 hours twice in 7 day period)

Employees that drive vehicles greater than 10,000 lbs/4,536 kg must meet the requirements of the transportation agency for which they work and travel.

Management, as represented by an employee's manager, Project Manager or any Principal, may grant a documented variance to the standard work/rest balance for specific employees for a period covering no longer than one week. Additional variances can be issued after for each week. For further information see Fatigue Management Program on the portal.

1.13 Management Of Change

Safety incidents are known to occur when key changes are not communicated to all stakeholders related to a project. Management of Change is covered by the GHD Quality Manual Section 7.3.7 Control of Project Changes and is documented using QSF-006 Management of Change Form (see Appendix).

The types of changes that are to be documented and communicated are:

- Project management/Resources (key personnel)
- Equipment
- Safety – this would not include daily changes to JSA when dirtied in the field.
- Field Operations/SOP

Form QSF-006 is the tool to document and communicate the change. The completed QSF-006 is to be filed in the GHD field folder of the project file.

1.14 Field Notes

All activities undertaken in the field must be correctly and completely recorded in bound field books, Quality System Field Data Record forms (QSF 200, QSF 400 , and QSF 500 Series D), or in some other GHD approved format (i.e., electronically, loose paper). All records will be kept in the GHD approved format specified for the activities undertaken. The formats have been established to ensure completeness and to provide consistency amongst the field staff regardless of which office they are from. Refer to Section 7 - Control of Monitoring and Measuring Equipment of the GHD Quality System Manual and Section 3.4.1 – Field Notes of the GHD Field Training Manual for more information regarding field note content requirements.

These field notes may be called as evidence in a court of law.

In addition to the formal field notes, field personnel are expected to keep running tables that summarize the field activities so that when questioned at any time during the project, a detailed status of the work completed and that yet to be done can be provided. These lists also serve as checklists to confirm that the correct number and sequence of samples, wells, boreholes, etc. have been collected or completed.

Upon completion of each project, all of the field documentation is brought back and suitably stored at the GHD office in which the field staff who performed the field work are located.

> *GHD demands that all field note entries are factual and accurate. Everyone recognizes that errors and omissions will be made on occasion. While GHD does not condone a level of effort that is incomplete or inaccurate, it is recognized that it may happen and most of our clients will understand these situations. However, anyone who is caught falsifying any record, no matter how small, will be immediately dismissed.*

2. History & Scope

2.1 Site History/Background

The former General Instrument Corporation (GIC) site is located at 1 Kenyon Press Drive in Sherburne, Chenango County, New York. The 5.5-acre site is currently occupied by BrightPet Nutrion, a commercial pet food and supply distributor, and was formerly occupied by Kenyon Press Inc., a commercial printer. The site consists of four buildings: a 75,000 square-foot main building currently used for warehousing, distribution, and administration; a 4,900 square-foot former plating building historically used for applying metal plating material and for degreasing; a 1,600 square-foot garage historically used as a maintenance shop; and a 2,800 square-foot wooden shed formerly used to store machinery and material. The main building is abutted to the east by paved and gravel parking lots and driving lanes and grass landscaping. The southern and northern portions of the site consist of gravel driving lanes and grass landscaping. The western side of the site consists of grass landscaping. Several concrete pads, areas of gravel fill, and old building foundations are visible within the grassy areas, especially within the two-acre field on the south side of the property.

The site is 250 feet west of Route 12 and 1,300 feet north of Route 80 and is bordered by the Norfolk-Southern Railroad line and agricultural fields to the west, residential and light commercial properties to the east and south, and a petroleum bulk storage facility and gas station to the north. Property boundaries are delineated by a chain link fence around the main plant. A small, unfenced parcel of property borders Route 12. The site is accessible by road via Route 12 and Kenyon Press Drive. The neighboring agricultural field to the west is accessible by road via a private gravel drive that intersects Route 80 about 2,000 feet southwest of the former GIC facility.

From 1947 to 1983, the GIC facility was used to manufacture antennas and other electronic components. Onsite processes included etching with chromic acid, parts cleaning with halogenated solvents, and vapor degreasing with chlorinated solvents. In 1983, GIC decided to close the Sherburne facility. A Resource Conservation and Recovery Act (RCRA) closure plan for decommissioning the plant was submitted to the NYSDEC and approved in 1984. Under the plan, production equipment was cleaned and relocated to other GIC facilities and all building surfaces were cleaned and structurally repaired. The decommissioning activities were completed in 1989.

An environmental investigation performed as part of the closure plan revealed the presence of inorganic contaminants in the soil, and both organic and inorganic contaminants in the groundwater beneath the site. The compounds included metals, chlorinated volatile organic compounds (CVOCs) such as trichloroethylene (TCE), and fuel oil. The preliminary investigation results led the New York State Department of Environmental Conservation (NYSDEC) to issue a Consent Order (#A701578810) in December 1987 that required GIC to conduct a Remediation Investigation/Feasibility Study (RI/FS) at the site. The RI/FS was completed in the early 1990s and a NYSDEC Record of Decision (ROD) was signed on December 13, 1994. The selected remedy called for: the installation and operation of an in-situ soil vapor extraction (SVE) system to address contaminated on-site soils; the installation and operation of a limited groundwater extraction (pump-and-treat) system for fuel product recovery from the groundwater; and for the remediation of fuel contaminated off-site soils. Remedial activities began in 1996 with the installation of the SVE system, the limited pump-and-treat system, and the construction of soil bioremediation (landfarming) cells. In 1997, a zero-valent granular iron permeable reactive barrier (PRB) wall was added to the remedial systems at the site. The PRB was designed to treat CVOC-affected groundwater that had migrated off-site.

By 2004, all of the remedial systems except the PRB had achieved their goals and were decommissioned. Performance monitoring of the PRB since its installation in 1997 raised concerns regarding the flow of groundwater in the vicinity of the barrier and low concentrations of CVOCs, primarily TCE and its breakdown products, downgradient of the treatment area. In 2006 through 2008, WSP conducted predesign investigations at the site that included soil and groundwater sampling in potential source areas of CVOCs around the barrier. The data were used to determine target zones for in situ amendment fluid injections and enhanced biological remediation of CVOC affected groundwater that were completed in 2009.

2.2 Scope of Work Tasks

Activities to be completed at the site include:

1. Completion of a subsurface utility scan using ground penetrating radar and other appropriate means.
2. Installation of soil borings and soil gas sampling probes to approximately 4-feet below ground surface along the eastern side of the site.
3. Collection of soil gas samples from the soil gas probes.
4. Collection of indoor air and sub-slab vapor samples within the site building.
5. Collection of an outdoor air sample.
6. Collection of groundwater samples from existing monitoring wells on-site and off-site to the west.
7. Management of investigation derived wastes.

This HASP covers the specific site activities that will be conducted by GHD personnel and their subcontractors. These activities listed here, and in the attached JSAs cover the tasks being performed onsite.

Driving, Site Reconnaissance and Walk through Activities, Mob/Demob of personnel, material, and equipment, Monitoring Well Sampling, Collection of Soil Samples, Decontamination of Sampling Equipment and Personnel, Soil Boring (Drilling), Derived Waste Drum Moving and Handling, Vapor Probe Installation and Sampling, Haz/Non-Haz Waste Sampling (Drums)

If site operations are altered or if additional tasks are assigned, an addendum to this HASP shall be developed to address the specific hazards associated with these changes.

All addendums will be required to be developed in conjunction with project management and a GHD safety professional.

3. Chemical Hazards

3.1 Introduction To Chemical Hazards

This section identifies and evaluates the potential chemical hazards that may be encountered during the completion of this project. These hazards and the anticipated initial exposure levels are based on client data, historical data, etc.

Chemical exposures occur via four major routes of entry: absorption, inhalation, ingestion, and injection. A listing of the chemical contaminants of concern is found in the **Chemical Table** (Table 1) and The **Safety Data Sheets (SDSs),** for chemical products used on site, are also included in the Appendices. Both the Chemical Table and SDSs include exposure limits, signs and symptoms of exposure, chemical properties, and physical characteristics.

3.2 Control Measures

Before the proper control(s) can be selected, GHD personnel conduct a hazard evaluation of the process, activity, or material. A hazard evaluation may include reviewing information from a chemical container label, SDS, manufacturer, National Institute for Occupational Safety and Health (NIOSH) website, and other resources as needed; identifying route(s) of exposure; and evaluating the process/activity to determine if an exposure evaluation is needed. If necessary, a HSE Manager conducts and documents exposure evaluations.

Exposure to potential on site contaminants/chemicals, such as those listed in Table 1.0 and SDSs, include the following methods:

- Engineering controls such as wetting methods, ventilation, elimination, or substation.
- Administrative controls such as work rotation, training, or proper hygiene practices (washing facilities).
- Monitoring air concentrations with appropriate equipment in the breathing zone.
- Selecting and using personal protective equipment (PPE) such as gloves or respiratory protection.

JSAs are developed and revised to list the associated hazard controls on a task-specific basis.

3.3 Safety Data Sheets

SDSs are documents created by the chemical manufacturer that describe the substance. Some information found on an SDS includes: hazardous and physical characteristics, handling requirements, storage and disposal information, and signs and symptoms of exposure.

When working with hazardous chemicals, readily available and up-to-date SDSs are required for each chemical. GHD personnel and its subcontractors are responsible for obtaining and maintaining SDSs for their controlled products and for products that they are bringing onto site. All projects maintain an inventory of SDS and are made readily available to all employees and visitors.

3.4 Container Labels

All hazardous materials, hazardous waste, chemical containers, and chemical storage areas are appropriately labeled indicating the chemical identity, hazards present, and any relevant regulatory requirements. Labeling of all chemical containers assists emergency personnel and others in identifying hazards if a spill occurs or emergency situation arises.

Chemical container labeling is the responsibility of the individual who fills and/or uses the chemicals. All containers into which chemicals are transferred are legibly labeled in the language that can be understood by the employees who work with or in proximity (English, French, Spanish, etc.) and include the name of the chemical and appropriate hazard warnings.

3.5 Workers Training

All employees who may work in proximity to controlled products has and maintains current applicable training as appropriate to client, state, provincial or federal requirements, which may include: HAZCOM, WHMIS, TDG, or DOT. Records of training are readily available upon request.

4. Physical Hazards

4.1 Introduction To Physical Hazards

Physical Hazards are factors within the environment that can harm the body without necessarily touching it. Vibration and noise are examples of physical hazards. Physical hazards for this site have been identified in the following section. If the hazards change due to site conditions or additions to the scope of work, a Stop Work must be implemented and the conditions identified to the PM and RHSM.

In addition, personnel must be aware that the protective equipment identified in the JSA may limit dexterity and visibility and may increase the difficulty of performing some tasks.

4.2 Heavy Equipment

The following practices are adhered to by personnel operating heavy equipment (such as backhoes, excavators, bull dozers, rock trucks) and personnel working in the vicinity of heavy equipment.

- Heavy equipment is only operated by authorized, qualified operators.
- All equipment is inspected when equipment is initially mobilized, delivered to a job site, or after it is repaired and returned to service, to ensure that it meets all manufacturer and legislative specifications. Documentation of maintenance records must be available upon request.
- The operator inspects the equipment prior to each use and documents the first use on a daily basis. Documentation of this daily pre operational inspection is available upon request, and, if required, filed with the project files.
- Ensure operator conducts a 360-degree walk around of the equipment prior to entering the equipment
- Seat belts/restraining devices are used on heavy equipment that is not designed for stand up operation.
- Equipment/vehicles that are loaded by crane, excavator, loader, etc. have a cab shield and/or canopy to protect the operator.
- Personnel only ride in equipment that is designed for transporting individuals and have a fully functional seat and available restraining devices. “Piggybacking,” such as riding on fender steps or any place outside the cab, is not allowed.
- Personnel are not raised/lowered in buckets.
- Before leaving the equipment controls, the equipment is in its safe resting position or cribbed in a “dead” or neutral position. No controls are abandoned while under load.
- Before raising any booms, buckets, etc., overhead obstructions are checked.
- A competent spotter is used when moving heavy equipment, working within 10 feet of a stationary object, encroaching overhead utilities clearance minimums, in tight quarters, or with limited visibility.
- Employees involved in the operation do not wear any loose fitting clothing, as it can be caught in moving machinery.
- Personnel must wear an approved high-visibility safety vest where any vehicular traffic occurs.
- The work site should be designed to limit the operations being performed in reverse.
- Working areas are properly delineated to keep unauthorized individuals out. Personnel should never proceed into a work zone without making eye contact and receiving authorization from the operator or spotter to cross the path of heavy equipment. Authorization is given from outside the blind or crushing zones of the equipment.

4.3 Drilling Equipment

GHD field staff should minimize time spent in close proximity to an operating drill rig, including during set-up/teardown time. It is critical to maintain a safe work distance from the drill rig crew to allow them the necessary room to perform their tasks. GHD field personnel should only be near the drill rig when their work activity, such as air monitoring, soil sampling, and confirmation of borehole locations, dictates.

Drill staff are responsible for all activities related to drill rig setup and operations. The drilling contractor briefs GHD personnel and crew during the pre-start/tailgate safety meeting on the rig's critical safety features and identifies known hazards when working near the rig.

The GHD site supervisor ensures the following:

- All PPE and protective hazard mitigation is in place prior to work starting.
- JSAs are reviewed and applied.
- The Daily Pre-Use Inspection checklist is completed by the operator to ensure that the equipment is functioning as intended.
- The emergency switches are functional and verified to be operational during the documented daily equipment check.
- **The QSF-019 Property Access/Utility Clearance Data Sheet is signed and that all utility clearances are obtained, reviewed, understood, and confirmed before drilling activities begin.**
- No rig operators are wearing any loose fitting clothing, including untied shoe/boot laces, drawstrings, etc., due to the potential of being caught in rotating machinery.
- Overhead hazards including utility lines are checked .
- Before the mast of a drill rig is raised, the drill rig is first leveled and stabilized with leveling jacks and/or cribbing, the drill rig is re-leveled if settling occurs after initial setup, the mast is lowered only when the leveling jacks are down, and the leveling jack pads remain deployed until the mast is lowered completely.
- The work area is properly demarcated with rope, caution tape, and fencing, and marked or posted to keep the area clear of pedestrian traffic or spectators.
- Before leaving the controls, the operator shifts the transmission controlling the rotary drive into neutral and places the feed lever in the neutral position.
- Before leaving the vicinity of the drill, the operator shuts down the drill engine.

4.4 Utility Clearances - OSHA

Extreme caution is needed when working around electrical power lines. Electricity flows through metal, wood, and many other conducting materials, including human beings. Elevated equipment such as drill rigs, backhoes, scaffolding, ladders, etc must remain the required distance away according to the local/state/provincial regulations.

These minimum requirements are:

Occupational safety and health act 1926.550(a)(15)

Operating voltage of overhead power	Operating voltage of overhead power safe limit of approach distance for persons and equipment

<50 kv	10 feet
>50 kv	20 feet

For lines rated over 50 kv, minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kv, over 50 kv, or twice the length of the line insulator, but never less than 10 feet.

- If any part of a machine may encroach these parameters, SWA is implemented, a review of the SOW is conducted with the PM and RHSM, and a spotter is used.
- If the client has requirements that exceed the above minimums, then the client requirements are used.

Underground Utilities

Underground utilities, if present, are to be clearly marked and identified prior to commencement of work. Follow applicable regulations and client requirements with regards to utility-locating requirements (e.g., One Call).

Personnel involved in intrusive work will:

- Confirm proposed excavation(s) and heavy truck routes are not in the area of subsurface utilities. This meeting is to be documented.
- Review and adhere to GHD's Subsurface Utility Clearance Protocol SOP at a minimum. Use air knifing or vacuum truck digging techniques inside 5 feet of the outside edge of an underground facility.
- Pre-clear holes to 120% of the drill diameter to a minimum depth of 5 feet below ground surface. Consider pre-clearing to greater depths in close proximity to process piping such as loading racks
- Locate boreholes a minimum distances of 5 feet perpendicular from utility mark-out lines
- **Complete the Property Access/Utility Clearance Data Sheet (QSF 019) prior to initiating excavation activities.**
- On private property, request that the owner of the service, locate and mark the service.
- If a service may pose a hazard and cannot be shut off or disconnected, request that the owner of the service supervise the uncovering of the service during the work.
- Identify the work that can be conducted with the assistance of the locator line service, coordinate document/drawing review, and inspect the site for manholes, catch basins, valve boxes, etc. that may indicate the direction/depth of underground installations. Marking indicates only the approximate location of buried lines.

The following are the Uniform Color Codes for utility locates

white proposed excavation
pink temporary survey marking
red electrical power lines,cables, conduit and lighting cables
yellow gas,oil, steam,petroleum or gaseous material
orange communication, alarm or signal lines,cables or conduit
blue potable water
purple reclaimed water, irrigation and slurry lines
green sewers and drain lines

4.5 Railroad

Main Track And Sidings

Machinery and equipment cannot be operated within 25 feet (8.12 meters) of a main track (nearest rail) or siding without Railroad authority and protection. Written authority and Safety Guidelines for Contractors as per specific company can be found in the Appendix. Materials, snow piles, equipment, or other obstructions must not be left where they can affect the ability to see approaching train traffic at public or private railroad crossings. This applies to all manner of equipment, including snow clearing equipment. Contract railroad site representative in advance to arrange protection.

Train Movements and Working Near Tracks

Be alert to train movement. Expect the movement of trains, engines, cars, or other equipment at any time, on any track, and in either direction, even cars on sidings that appear to be stationary, and never climb on, under, or between cars.

- Never rely on others to protect you from train or car movement. Watch for yourself!
- Do not stand on the track in front of an approaching engine, car, or other equipment.
- Be aware of the location of structures or obstructions where clearances are close.
- Never stand or walk on railway tracks, either between the rails or on the ends of ties, unless absolutely necessary. Stay clear of tracks whenever possible. Trains can approach with little or no warning. You may not be able to hear them due to atmospheric conditions, terrain, noisy work equipment, or passing trains in multiple track territory.
- Increased vigilance is required near railway tracks when visibility is poor, such as during fog or blizzard conditions.
- Before undertaking any work on or about railway infrastructure, or that will encroach within 25 feet (8.12 meters) of any railway track prior notification and approval is required.

Protection of Railway Traffic and Work Site

Signs, signals, and flags are necessary for the safe operation of the railway, and shall not be obstructed, removed, relocated, or altered in any way without proper authorization. Blue flag protection on tracks signifies railway employees are on, under, or between rolling equipment. Blue flags are important safety devices and must not be touched or obstructed.

Anyone other than qualified railroad employees, unless specifically authorized by the rail company, you are prohibited from handling track switches, derails, electric locking mechanisms, or other appliances. Personnel operating equipment of any type on the railway tracks must comply with all applicable federal rules and regulations, including but not limited to Canadian Railway Operating Rule (CROR) qualifications.

4.6 Material Handling

Material handling and storage practices are conducted at the project site. Proper lifting reduces the hazard out of moving objects. No one person should handle, lift, or move 50 pounds or more by themself. Even if the object weighs less than 50 pounds, the configuration or shape of the object should be evaluated to see if two people should be used to lift the object.

Manual Lifting

Consider the following prior to a lift.

- Establish that you can lift the load safely.
- Inspect route to be travelled, confirming sufficient clearance.
- Look for any obstructions or spills.
- Inspect the object to determine how it should be grasped.
- Select and use containers with handles where practical.
- Look for any sharp edges, slivers, or other things that may cause personal injury.
- Do not move any object that will obstruct your field of vision when transporting the load.
- When lifting objects, use proper lifting techniques. Position the body so that the weight of the body is centered over the feet, which provides a more powerful line of thrust and ensures better balance. Start the lift with a thrust of the rear foot. Do not twist.

General Storage Practices

Storage of materials and supplies must not create a hazard. General storage area practices include the following:

- Bags, containers, bundles, etc. stored in tiers must be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.
- All stacked materials, cargo, etc. must be examined for sharp edges, protrusions, signs of damage, or other factors likely to cause injury to persons handling these objects. Defects are to be corrected as they are detected.
- Storage areas must be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage.
- Storage areas have provisions to minimize manual lifting and carrying. Aisles and passageways provide for the movement of mechanical lifting and conveyance devices.
- Stored materials do not block or obstruct access to emergency exits, fire extinguishers, alarm boxes, first aid equipment, lights, electrical control panels, or other control boxes.
- Hazardous materials are stored in accordance with the details outlined in the MSDS, or accepted guidelines from reputable agencies. Guidelines include details about the materials reactivity, corrosivity, flammability, etc., as well as appropriate signage.

4.7 Noise

Hearing protection is required for project activities when working in close proximity to machinery, drilling operations, or impact/power tools where noise levels may exceed the decibel range of 85 dBA.

When hearing a coworker at normal conversation distance is difficult or the noise level is approaching or exceeding 85 dBA, hearing protection such as earplugs or muffs must be available/worn by all site personnel and visitors that may be exposed to elevated levels of noise. Individuals who wear hearing protection are to be adequately trained in the safe use and handling of hearing PPE.

GHD employees who have the potential to be exposed to noise exceeding 85dba in the work environment will be enrolled in the GHD Hearing Conservation Program.

4.8 Electrical Safety

Employees do not accept unnecessary exposure to hazards, such as working on energized electrical installations. When possible, circuits are de - energized according to the GHD Lockout/Tagout program and client requirements to achieve safe working conditions. When it is not possible to de - energize circuits, the Workplace Electrical Safety Program (WESP) requirements ensure that safe conditions and work practices are implemented.

The WESP is the electrical safety program that covers all electrical work performed at GHD facilities and work performed by GHD at client facilities. It also provides mandatory program requirements and is used in conjunction with all other procedures and practices on the site to ensure that electrical work is accomplished safely.

To protect employees from shock and/or arc flash hazards, only individuals who are "qualified" in accordance with the NFPA 70E or CSA Z462 Standards will be allowed to perform Arc Flash Hazards Analysis, LOTO, diagnostic testing, work on live electrical circuits or perform electrical work on equipment. The term "qualified" does not relate to a job title or job assignment, but rather to the activity being performed. Employees who perform electrical work must successfully complete the “Electrical Safety for Qualified Persons” training to be authorized as “qualified”. Only persons who have received this training and are knowledgeable in the construction and operation of equipment or a specific work method, and are trained to recognize and avoid the electrical hazards that may be present with respect to that equipment or work practice are allowed to perform this type of work. Consult the GHD Workplace Electrical Safety Program for additional program requirements and permits.

4.9 Control Of Hazardous Energy (Loto)

Hazardous energy sources may be encountered during the servicing and maintenance of machines and equipment, in which the unexpected energization or start-up of the machines or equipment could cause injury to employees.

The minimum performance requirements to control hazardous energy requires that employers develop and implement an energy control program. The elements of an energy control program are as follows:

- Lockout/tagout
- Employee protection
- Energy control procedure
- Protective materials and hardware
- Periodic inspections
- Training and communication
- Energy isolation
- Employee notification

Project personnel who are required to conduct operations and maintenance activities that will require the isolation of an energy hazard through the use of a lockout/tagout device shall follow the GHD program requirements and written procedures for that operation. The program requirements can be located in the Appendix.

Employee Training

Employees authorized to attach and remove lockout/tagout devices shall be provided with initial training regarding the safe application, usage, and removal of such devices. Each authorized employee will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the associated energy, and the methods necessary for energy isolation and control.

All authorized employees will be provided with refresher training annually, or at more frequent intervals whenever the following conditions apply:

- A job assignment change.
- A change in machinery or equipment, or a process change that presents new hazards.
- A change in the energy control procedures.
- Possible deficiencies in the employee's understanding of the following:
  - The hazards associated with the energy that controls the machinery or equipment in the employee's work area.
  - Application and removal procedures for lockout/tagout devices.

Employees who work in areas where lockout/tagout procedures are used shall receive initial and annual refresher training in the purpose and use of lockout/tagout devices and principles behind their use.

4.10 Compressed Gas Cylinders

Compressed gases cylinders present several hazards from the gas itself and contents under pressure. In addition to being properly stored or handled, the cylinder is properly labeled, hazardous properties are identified (toxicity, flammability, presence of an oxidizer, etc.), and an SDS is supplied by the manufacturer.

Regardless of the gas properties, any gas under pressure can explode if the cylinder is improperly stored or handled. The following are general safe storage and handling procedures for compressed gas cylinders.

- Store cylinders in an area specifically designated for that purpose. This area protects the cylinders from being struck by another object. The area is well ventilated, away from sources of heat, and at least 20 feet away from highly combustible materials. Oxidizers are stored at least 20 feet away from flammable gases.
- Chain and rack cylinders in an upright position during use and storage. When transporting cylinders, secure them from falling.
- When moving a cylinder, even for a short distance, all the valves are closed, the regulators removed, and valve caps installed. Never use a valve cap, sling, or magnet to move a cylinder. If using a crane or some other lifting device to move a cylinder, use a cradle or boat designed for that purpose.
- Never permit cylinders to contact live electrical equipment or grounding cables.
- Protect cylinders from temperature extremes, the sun's direct rays, and ice and snow accumulation.
- Before the gas is used, install the proper pressure reducing regulator on the valve. After installation, verify the regulator is working, all gauges are operating correctly, and all connections are tight with no leaks. When using the gas, open the valve with your hands. Never use a wrench or other tool. If you cannot open it with your hands, do not use it.

4.11 Heat Stress

Heat stress is one of the most common illnesses faced by project personnel when working in elevated temperatures and/or humidity.

Prevention

The following procedures will be carried out to reduce heat stress:

- Heat stress monitoring.
- Acclimatization.
- Sun exposures.
- Work/rest regimes (schedule of breaks) in accordance with Occupational Health Clinics for Ontario Workers (OHCOW).
- Humidex Heat Stress Response Plan – mandatory breaks scheduled in summer months or during high risk activities for heat stress (based on ACGIH)
- Heat stress safety PPE (e.g., cool vests, bandanas)
- Cool potable water available
- Use of buddy system
- Seek shade - Shade is a good source of protection, but keep in mind that shade structures (e.g., trees, umbrellas, canopies) do not offer complete sun protection.

OHCOW Humidex Heat Stress Response Plan		
°F	**°C**	**Response**
77-84°F	25-29°C	•supply water to workers on an "as needed" basis
86-91°F	30-33°C	•post "heat stress alert" notice •encourage workers to drink extra water •start recording hourly temperature and relative humidity
93-98°F	34 37°C	•post "heat stress warning" notice •notify workers that they are drinking extra water •ensure workers are trained to recognize symptoms
100-102°F	38 39°C	•provide 15 minutes relief per hour •provide adequate cool (10 15°C) water, at least 1 cup (240 ml) of water every 20 minutes •workers with symptoms should seek medical attention
104-107°F	40 42°C	•provide 30 minutes relief per hour in addition to the provisions listed previously
109-111°F	43 44°C	•if feasible provide 45 minutes relief per hour in addition to the provisions listed above •if a 75% relief period is not feasible then stop work until the humidex is 42°C or less
113°F	45°C or over	•stop work until the humidex is 44°C or less
Note: Humidex plan is a simplified way of protecting workers from heat stress which is based on the 2007 ACGIH heat stress TLV® (threshold limit value®) which uses wet bulb globe temperatures (WBGT) to estimate heat strain. These WBGT's were translated into humidex		

Sun Exposure

Overexposure to sunlight is a common concern when field activities occur during warm weather conditions. Overexposure can occur on clear, sunny days, as well as on overcast and cloudy days. The following steps should be taken to protect against overexposure to sunlight:

- Always use sunscreen on exposed body parts.
- Cover up.
- Wear safety rated sunglasses.
- Limit time in the midday sun.

4.12 Cold Stress

Cold stress is similar to heat stress in that it is caused by a number of interacting factors including environmental conditions, clothing, and workload, as well as the physical and conditioning characteristics of the individual.

Prevention

A variety of measures can be implemented to prevent or reduce the likelihood of employees developing cold related ailments and disorders.

- Acclimatization.
- Fluid and electrolyte replenishment.
- Eat a well-balanced diet.
- Wear warm clothing.
- Follow work/rest regimes.

The parts of the body most important to keep warm are the feet, hands, head, and face. As much as 40 percent of body heat can be lost when the head is exposed.

TLVs Work/Warm Up Schedule for 4 Hour Shift

THRESHOLD LIMIT VALUES WORK/WARM-UP SCHEDULE FOR FOUR-HOUR SHIFT*

Air Temperature Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind	
°C (approx)	°F (approx)	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26° to -28°	-15° to -19°	(Norm breaks) 1		(Norm breaks) 1		75 min.	2	55 min.	3	40 min.	4
-29° to -31°	-20° to -24°	(Norm breaks) 1		75 min.	2	55 min.	3	40 min.	4	30 min.	5
-32° to -34°	-25° to -29°	75 min.	2	55 min.	3	40 min.	4	30 min.	5		
-35° to -37°	-30° to -34°	55 min.	3	40 min.	4	30 min.	5			Non-emergency work should cease ↓	
-38° to -39°	-35° to -39°	40 min.	4	30 min.	5			Non-emergency work should cease ↓			
-40° to -42°	-40° to -44°	30 min.	5	Non-emergency work should cease ↓		Non-emergency work should cease ↓					
-43° to below	-45° & below	Non-emergency work should cease									

*2014 TLVs and BEIs - Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. Cincinnati: American Conference of Governmental Industrial Hygienists (ACGIH), 2014

4.13 Hand And Power Tools

Hand Tools

- Hand tools must meet the manufacturer's safety standards.
- Hand tools are not to be altered in any way.
- At a minimum, appropriate eye and face protection that meets current applicable standards (ANSI/CSA) must be used.
- Wrenches, including adjustable, pipe, end, and socket wrenches, are not used when jaws are sprung to the point that slippage occurs.
- Impact tools such as drift pins, wedges, and chisels are kept free of mushroom heads.
- Wooden handles are free of splinters or cracks and secured tightly to the tool.
- Any damaged or defective tools are immediately removed from service and tagged for destruction.

Power Tools

- All power tools must be inspected regularly and used in accordance with the manufacturer's instructions and the tool's capabilities.
- Electric tools are not used in areas subject to fire or explosion hazards, unless they are approved for that purpose.
- Corded portable electric tools are connected to a ground fault circuit interrupter (GFCI) when working in wet areas.
- Coiled cords/extension cords are uncoiled when plugged in to allow for dissipation of heat.
- Cords/extension cords rated appropriately for the temperature are used.
- Appropriate eye and face protection that meets current applicable standards (ANSI/CSA) are used.
- Personnel are trained in the proper use of the tool.
- Any damaged or defective power tools must be immediately tagged and removed from service.
- Repairs to hand or power tools are only made by qualified individuals and in accordance with the manufacturer’s standards.
- Field or shop modifications to tools or equipment are only made by qualified individuals and in accordance with either manufacturer or engineer-approved specifications.

4.14 Slip, Trip, Hit, Fall

Slip/trip/hit/fall injuries are the most frequent of all injuries to workers. They occur for a wide variety of reasons, but can be minimized by the following prudent practices:

- Spot-check the work area to identify hazards and communicate hazards to on site personnel.
- Update/dirty the JSA to reflect changes.
- Keep work areas clean and free of clutter, especially in storage areas and walkways.
- Secure all loose clothing and ties, and remove jewelry that may pose an entanglement hazard.
- Establish, maintain, and utilize walkways that are free of slip and trip hazards.
- Utilize/install appropriate lighting for walking paths and working areas.
- Beware of slip/trip hazards such as wet floors, slippery floors, and uneven surfaces or terrain.
- Carry only loads you can see over (Refer to Material Handling for additional information).
- Refrain from the use of portable communication devices (cell phones, two-way radios) while traversing the site.
- Keep a safe buffer zone between workers using equipment and tools.

4.15 Agriculture

Special Note for Farm Visits

- The need to be aware of the dangers associated with heavy equipment still exists when on location. Ensure that the operator is aware of your presence, be mindful of the blind spots the operator may have, and wear reflective vests if you are in an area where farm equipment traffic is a potential hazard.
- Ensure that the farm operator is aware of your presence before beginning sampling activities. Wear the life vest provided at the facility or your own. If at all possible, have the farm operator accompany you for the sampling. Provide the farm operator with your anticipated completion time. Do not lean past the edge of the tank or place your center of gravity above the top of the tank. Ensure that your sampling pole is securely tethered outside the tank so that no tank entry or other measures will be required to retrieve a dropped sampling pole.
- Pathogen Exposure: Wear impervious gloves while collecting samples. Wear safety glasses to avoid eye contact with sample material/manure. Ensure that sampling equipment, gloves, boots, glasses, hands, and clothing (if necessary) are cleaned with a disinfecting soap/solution before leaving the site. Ensure that sufficient PPE and cleanup materials are taken for the day's activities. Take extra plastic bags to place any contaminated material in as may be required. Take every reasonable precaution to avoid any site–to site contamination.

4.16 Aggressive Or Menacing Behavior

When confronted by an individual whose behavior becomes aggressive or menacing, remain as calm as possible. Avoid arguing with or physically confronting the individual. Attempt to distance yourself from the individual. Advise others in the area to leave the scene and request police assistance by having someone call the emergency number listed on the Emergency Contact Sheet. Use the team approach. A staff member who is physically unable to break away from an attacker should shout for help.

The use of physical force is justified when a person believes that such force is necessary to protect himself or herself against the use or imminent use of unlawful physical force by another person.

Should an aggressor only be interested in the taking or damaging of property, do not interfere. Obtain a description of the individual to provide to local authorities, including height, weight, race, sex, clothing, accent, unusual markings such as tattoos, piercings, scars, hair color, and weapon, if any.

Contact the HSE Help Line and file an incident report with your immediate supervisor as soon as it's safe to do so.

4.17 Adverse Weather Conditions

Adverse weather is the existence of or impending weather conditions such as heavy rain, freezing rain, sleet, snow, high winds (50km/30mph), dust storms, tornadoes, hurricanes, lightning, or any combination of weather that is either not reasonable or not safe for employee exposure. Stop Work Authority (SWA) is executed prior to these conditions as reasonably possible. The site is evacuated according to the emergency plan developed and listed in this Health and Safety Plan.

Based on their expertise and knowledge of manufacturer's recommendations for the equipment being operated, heavy equipment operators such as crane and drill rigs are responsible for advising the site supervisor whether it is safe to continue operations.

The site supervisor decides on the continuation or discontinuation of work based on current and pending weather conditions, the equipment manufacturer recommendations, and the equipment operator's recommendations.

4.18 Flammable & Combustible Liquids

The storage, dispensing, and handling of flammable and combustible liquids must be in accordance with industry standards such as National Fire Protection Agency (NFPA) guidelines. The specific flammable or combustible liquids used at the site may include gasoline, diesel, kerosene, oils, and solvents.

Flammable and combustible liquids are classified according to flash point. This is the temperature at which the liquid gives off sufficient vapors to readily ignite. Flammable liquids have flash points below 100 ºF (37.8ºC). Combustible liquids have flash points above 100 ºF (37.8 ºC) and below 200 ºF (93.3 ºC).

Storage

Many flammables can ignite at temperatures at or below room temperature. They are far more dangerous than combustibles when they are heated. As a result, these products must be handled very carefully. At normal temperatures, these liquids can release vapors that are explosive and hazardous to employee health. Exposure to heat can cause some of these liquids to break down into acids, corrosives, or toxic gases. For this reason, flammable and combustible liquids should be stored in cool, well ventilated areas away from any source of ignition. Always consult the MSDS of the product for specific information.

Flammable and combustible liquids must be stored in designated areas. Such areas must be isolated from equipment and work activity that may produce flames, sparks, heat, or any form of ignition, including smoking. The most practical method is the use of one or more approved (commercially available) flammable/combustible liquid storage cabinets.

Cabinets must be labeled "Flammable – Keep Fire Away." Doors must be kept closed and labeled accordingly. Containers must be kept in the cabinet when not in use.

General Requirements:

- Keep containers of flammable/combustible liquids closed when not in use.
- Keep flammable/combustible liquids in designated areas and approved cabinets.
- Do not allow use of unapproved containers for transfer or storage. Use only approved safety cans (5 gallon maximum) with a spring closing lid and spout cover, designated to safely relieve internal pressure when exposed to heat or fire.
- Use only approved self closing spigots, faucets, and manual pumps when drawing flammable/combustible liquids from larger containers/barrels.
- Use only approved metal waste cans with lids for disposal of shop towels/oily rags.
- Designate "Smoking" and "No Smoking" areas.
- Designate fueling areas.
- Observe all signs indicating "No Smoking," "No Flames," and "No Ignition."

Transferring Flammable/Combustible Liquids

This seemingly routine task can be hazardous if certain precautions are not followed. Grounding and bonding must be observed at all times to prevent the accumulation of static electricity when transferring containers/barrels/drums one to another.

- Drums should be grounded to a grounding rod using a #4 copper conductor.
- Bonding is necessary between conductive containers (e.g., a barrel/drum and a 5 gallon container).

5. Biological Hazards

5.1 Infection Control

Infection Control

During an infectious outbreak (e.g., epidemic, or pandemic virus), all persons experiencing flu-like symptoms must stay home and away from the workplace to protect themselves, co-workers and the community. Persons, who believe they have been exposed to another illustrating symptoms or developed symptoms themselves, must notify their Supervisor, Project Manager, People Team or HSE Team member for advice and completion of a risk assessment when applicable.

In the event of an infectious outbreak in the community the GHD Standard Operating Procedure HSE Infection Control HSE339 will be initiated along with the activation of the local Crisis Management Team. Should the above occur, both office and field employees will be required to:

· Know the symptoms

· Adhere to local government Public Health and GHD protocols

· Complete personal health screening (including GHD vendors and/or visitors) as required

· Not attend work if they exhibit any of the symptoms

· Sneeze and cough into their sleeve or a tissue which is then disposed of

· If air borne transmission is confirmed, wear appropriate respiratory protection (surgical style or cloth mask)

· Carry and use infection control cleaning/disinfection supplies and PPE (e.g. nitrile gloves, etc.)

· Wash their hands with soap and water for at least 20 seconds followed by alcohol-based hand sanitizer that contains > 60% alcohol

· Maintain physical distancing of 2 meter/6 feet at all times from others

· Discontinue face-to-face meetings

· Avoid close contact exposure defined as:

- Greater than 15 minutes face to face less than 2meter/6 feet apart without the use of face mask/covering
- Sharing of a closed space with suspected/confirmed case(s)

Note: This is not the exhaustive list. Further protective measures will be included in the HASP should Public Health Authorities provide additional guidance specific to the biological hazard.

5.2 Introduction To Biological Hazards

GHD employees conduct numerous project activities where they may encounter biological hazards such as listed in the following table. This section identifies the problems associated with these biological hazards and the precautions to be taken if these hazards are encountered.

The biological hazards identified are applicable to this site. If you are bitten, stung, or attacked by any of the listed hazards, contact the GHD HSE Help Line at 1-866-529-4886

5.3 Wildlife

Tick and Chiggers	•Wear light colored clothing •Keep clothing buttoned or zipped •Keep socks tucked in •Apply repellent containing DEET or Permethrin to clothing and exposed skin •Check hair and clothing periodically using buddy system	•Remove tick with tweezers or fingers and tissue •Grab tick as close as possible to attachment site and pull firmly •Inspect tick to ensure that no parts remain in attachment site •Apply AfterBite containing antiseptic to affected areas •Call GHD HSE Help Line
Flying, Stinging, Biting Insects: Bees, Wasps	•Avoid wearing perfume, hairspray, cologne, and scented deodorant while working outside •If eating outside, keep all food and drinks covered; sweet foods and strong scents attract stinging insects •Never swat or swing at the insect; wait for it to leave, softly blow it away, or gently brush it aside •Inspect areas carefully as bees, wasps, and hornets can nest both in the ground and above ground •If the nests pose a threat, have them professionally removed	•Apply AfterBite containing antiseptic to affected areas or place an ice cube or ice pack over the sting to reduce pain •Remove the stinger with tweezers or scratch with a credit card (catch barbs with card and pull out) •Seek medical attention when the reaction to a sting includes swelling, itching, dizziness, and shortness of breath •Call GHD HSE Help Line
Mosquitoes	•Wear light colored clothing •Keep your body covered as much as possible; wear a hat or mosquito screen •Apply repellent containing DEET or Permethrin to clothing and exposed skin	•Apply AfterBite containing antiseptic to affected areas •If moderate to extreme itchiness is experienced, use over the counter antihistamines
Canadian Geese	•Easily recognized by black head and grey breasts •Weigh up to 13 lbs and territorial and aggressive •Be aware of nesting areas •Bird and dropping carry several diseases that affect humans	•Remain calm and do not act aggressive or afraid •Gradually back away while keeping eye contact •Wear appropriate PPE when handling nests or dead animals •Wash hands with soap and warm running water •Disinfect hands with sanitizer •If attacked and injured, call GHD HSE Help Line

5.4 Biological

Histoplasmosis	Look for evidence of bird or bat colonies. •Before you work in or dig soil that's likely to harbor the fungus that causes histoplasmosis, spray it thoroughly with water. •Wear appropriate PPE for the task. •Clean footwear before leaving the site to prevent spore dissemination in cars, the office, at home, and elsewhere	•Wash hands with soap and warm water after removing your gloves. •If you have persistent flu like symptoms, see your doctor. Tell then if you have been around a bird or bat colony. •Call GHD HSE Help Line
Hantavirus	•Inspect work area for rodent droppings •For low amounts of droppings, use Level C with N95 disposable respiratory protection •For heavy accumulation, use Level C Full Face PAPR with P100 cartridge or, in severe cases, Level B •Soak dead mice, nests, and droppings thoroughly with a 1:10 solution of sodium hypochlorite (household bleach); bleach kills the virus and reduces the chance of further transmission •Place contaminated material in a plastic bag and seal for disposal •Disinfect all equipment	•Wash gloved hands with soap and water or spray a disinfectant or bleach solution on gloves before taking them off. •Wash hands with soap and warm water after removing your gloves. •If you have been around rodents and have symptoms of fever, deep muscle aches, and severe shortness of breath, see your doctor immediately •Call GHD HSE Help Line
Blood-borne Pathogens	• Exposure comes through work activities such as landfill, sewage treatment, sewers, contaminated medical waste • Virus, Bacteria, Fungus, and Parasites are considered blood-borne • Proper hygiene is extremely important to prevent ingestion • Wear proper PPE in known areas (gloves, long sleeves, long pants, safety glasses)	• All human blood and human body fluids treated as infectious • Cover all nicks and cuts to prevent cross-contamination. • Disinfect hands with sanitizer • Proper hygiene extremely important to prevent ingestion and eye contact • More information review GHD blood-borne policy • Call GHD HSE Help Line if exposed.
Psitticosis - Bird Droppings	• Breathing in the organism when the urine, respiratory secretion, or dried feces • Other sources of exposure include mouth-to-beak contact, a bite from an infected bird. • Bacteria starts an infection that varies in severity from a mild flu-like illness to severe pneumonia • PPE may include gloves, protective clothing, boots, and where appropriate, a respirator	• Adequate ventilation systems including the use of high efficiency particulate air (HEPA) filters to reduce the spread of contaminated air. • Disinfectants area with ammonium compounds, isopropyl alcohol, 70% ethanol, household bleach (diluted to 1%) • Wetting the wastes before removal decreases aerosolization • Call GHD HSE Help Line if exposed

Legionella	•Minimize water misting, stagnant water, and dead zones •Manage water temperature •Implement a preventative maintenance and inspection program to monitor equipment •Conduct Legionella testing of water systems and equipment	•If you are suffering a respiratory ailment, notify your supervisor and contact the GHD HSE Help Line

5.5 Poisonous Plants

Poison Ivy/Poison Oak	•Learn to identify poison ivy and poison oak (leaves of three, let them be) •Urushiol oil is in the wood portion of the plant and is active all year long •Wear proper PPE in known areas (gloves, long sleeves, long pants, safety glasses) •Proper hygiene extremely important to prevent ingestion and eye contact	•You may only have 30 minutes to get the oil off skin before it absorbs, and less time in hotter climates •Rinse with cold water, as hot water will open your pores •Apply alcohol to dissolve oils •Watch for an itchy red skin rash, which is the most common reaction; over time, large blisters may form •Use topical cream to assist with the itching (consult your pharmacy) •In severe cases, contact your doctor •Call GHD HSE Help Line
Vegetation Overgrowth	•common weeds and tall grasses •increase in trip hazard, and entanglement •risk of fire during summer season •wear proper PPE, long pants, eye protection •increase in rodent, snake, stinging insect hazards	•discuss clearing area with management to reduce risks •use extra caution when walking due to unseen holes or trip hazards •watch for grass cuts on arms, contact GHD HSE Help Line if reaction occurs

6. Personal Protective Equipment

6.1 Introduction To PPE

Controlling a hazard at the source is the best way to protect employees. When engineering, work practice, and administrative controls are not able to protect our employees, GHD provides personal protective equipment (PPE) to its employees and ensures that the PPE is used appropriately. PPE is equipment worn as a barrier to minimize exposure to a variety of hazards.

This section covers applicable PPE requirements, which include eye, face, hand, head, foot, and respiratory protection.

6.2 Types of Personal Protective Equipment (PPE)

The type of PPE required for work varies based on the task being performed. The specific PPE required for each individual task is documented in the appropriate task-specific JSA. The recommended minimum PPE for GHD site work is as follows:

- Shirts with a minimum 6-inch sleeve.
- Long pants made from suitable sturdy material .
- Grade 1 protective footwear meeting CSA Z195 M92 (Canada)/ ANSI Z41.1 (US), green patched (triangle), steel-toed/puncture-resistant and electric shock-resistant sole with a 6-inch cuff, fully laced and secured, in material appropriate for weather and task.
- Safety glasses or goggles (based on the type of hazard – dust, splash, etc.), meeting CSA Z94.3 (Canada) or ANSI Z87.1 (US) standards.
- Hand protection such as gloves meeting standards EN 388 and ANSI 105-2000 as appropriate for the task as per JSA, with selection based on the hazards (abrasion, blade cut, tearing, puncture, and impact) associated with the task being performed.
- Reflective garment meeting CSA Z96 02 or ANSI 107 (as required).
- Type 1 Class E hardhat, meeting either CSA Z94.1 05, Z94.1 92, ANSI Z89.1, or Z89.1.
- Hearing protection meeting CSA/ANSI approved NRR of at least 20 dBA if noise levels exceed 85 dBA.

Additional minimum requirements for PPE include:

- All PPE are maintained in good condition with no rips, tears, or damage that compromise integrity.
- PPE is not loose fitting as to avoid entanglement issues.
- All PPE is disposed of and/or decontaminated at the conclusion of each workday. The most contaminated PPE is decontaminated first.
- All disposable equipment is removed before meal breaks and at the conclusion of the workday, and replaced with new equipment prior to commencing work.
- Reusable equipment (safety glasses, hard hats, goggles, etc.) is cleaned and sanitized according to GHD and/or manufacturer guidelines.
- Eating, drinking, chewing gum or tobacco, and smoking are prohibited while working in areas where the potential for chemical and/or explosive hazards may be present. Personnel must wash thoroughly before initiating any of the aforementioned activities.

6.3 Types Of Protective Material

No universal protective material exists. All materials will decompose, be permeated, or otherwise fail to protect under certain circumstances. Protective clothing can be constructed from a variety of materials for protection against exposure to specific physical, chemical, or biological hazards.

Fortunately, most manufacturers list guidelines for the use of their products. These guidelines usually concern gloves or coveralls and generally only measure rate of degradation, which is failure to maintain structure. A protective material may not necessarily degrade, but may allow a particular chemical to permeate its surface. For this reason, guidelines must be used with caution. When permeation tables are available, they are used in conjunction with degradation tables.

To obtain optimum usage from PPE, the following procedures are followed by all site personnel using PPE:

- When using disposable coveralls, don a clean, new garment after each rest break or at the beginning of each shift
- Inspect all clothing, gloves, and boots both prior to and during use for:
  - Imperfect seams
  - Non uniform coatings
  - Tears
  - Poorly functioning closures
- Inspect reusable garments, boots, and gloves both prior to and during use for:
  - Visible signs of chemical permeation
  - Swelling
  - Discoloration
  - Stiffness
  - Brittleness
  - Cracks
  - Any sign of puncture
  - Any sign of abrasion

Reusable gloves, boots, or coveralls exhibiting any of the characteristics listed above are discarded. PPE used in areas known or suspected to exhibit elevated concentrations of chemicals are not reused.

6.4 Respiratory Protection

Respiratory protection is sometimes required for personnel during project activities when action levels exceed the occupational exposure levels. When respirators are required, personnel identify and select the appropriate air purifying respirator and supporting cartridge medium, and follow the procedures and guidelines in their respective written Respiratory Protection program.

At a minimum, all personnel required to use this equipment are:

- Instructed in how to properly fit a respirator to achieve the required face piece to face seal for respiratory protective purposes.
- Medically cleared for the use of respiratory protection.
- Appropriately fitted for the selected respirator through established recognized fit testing methods (quantitative/qualitative), and documentation of fit is readily available.
- Free of beards, sideburns, eyeglasses, and upper or lower dentures that could affect the face seal.

Further regulations for the use of respiratory protection include:

- Cartridges are changed prior to breakthrough, daily, or when personnel begin to experience increased inhalation resistance or breakthrough of a chemical warning property.
- Respiratory equipment and other non disposable equipment are fully decontaminated.
- Appropriate action levels are established and documented based on the applicable occupational exposure limits.

NOTE: This HASP is not intended for the use of supplied air operations. For supplied air operations, the project manager and a GHD safety professional conduct a review of the scope of work.

GHD identifies the type of respirator and cartridge and documents on the applicable JSA for the affected tasks and on Table 2.

6.5 Respirator Cleaning

Respirator decontamination is conducted once daily at a minimum. Face pieces are disassembled, the cartridges are thrown away, and all other parts are placed in a cleansing solution. After an appropriate amount of time in the solution, the parts are removed and re seated with tap water.

Face pieces are allowed to air dry before being placed in sanitized bags and stored in a clean area.

6.6 Levels Of Protection

Protection levels provided by PPE selection are upgraded or downgraded based upon a change in site conditions or the review of the results of air monitoring or the initial exposure assessment monitoring program, if one was conducted.

When a significant change occurs, the hazards are reassessed. Some indicators of the need for reassessment are:

- Commencement of a new work phase.
- Change in job tasks during a work phase.
- Change of season/weather.
- Temperature extremes or individual medical considerations limiting the effectiveness of PPE.
- Chemicals other than those expected to be encountered are identified.
- Change in ambient levels of chemicals.
- Change in work scope that affects the degree of contact with areas of potentially elevated chemical presence MUST be re-evaluated.

All proposed changes to protection levels and PPE requirements are reviewed and approved prior to implementation by the SS.

7. Air Monitoring

7.1 Introduction To Air Monitoring

Inhalation hazards are caused from the intake of vapors and contaminated dust. Air monitoring shall be performed while intrusive activities are taking place to detect the presence and relative level of those air contaminants that are inhalation hazards. The purpose of air monitoring is to identify and quantify airborne contaminants in order to determine the level of worker protection needed. Initial screening for identification is often qualitative, but the determination of its concentration (quantification) must await subsequent testing.

All instruments will be calibrated on a daily basis in accordance with the manufacturer's guidelines. Records of all calibrations and real time measurements will be kept in a bound field logbook or documented via air monitoring and calibration log sheets.

Correction factors have been determined by the air monitoring equipment manufacturers that enable the user to quantify a large number of chemicals using only a single calibration gas, typically isobutylene for PIDs and methane for LEL. Applicable Correction Factors (CF) for either LEL or PIDs must be applied for known chemicals of concern. These CFs and how to apply them can be found in the air monitoring instrument operating manual or online from the manufacturers website under “Technical Notes”.

When air monitoring is required, the workers breathing zone(s) will be monitored and the results recorded. Additionally, when necessary, area samples at the following locations will be taken daily. Record time, location, and results of monitoring and actions taken based on the readings:

- Upwind of work areas to establish background concentrations.
- In support zone to check for contamination or migration of emissions.
- Downwind of work area to track any contaminants/emissions leaving the site.

The data collected throughout the monitoring effort shall be used to determine the appropriate levels of protection. **Action levels for upgrading or downgrading of PPE have been established on Table 2 and must be reviewed by your HSE Manager/Safety Professional**

7.2 Types Of Devices

Air monitoring equipment to be used during site activities shall consist of:

PHOTOIONIZATION DETECTOR (PID)

Exposure to volatile organic compounds (VOCs) shall be monitored with a photoionization detector (PID) with required eV lamp as per Table 1. The PID has the ability to detect organic vapor concentrations from 1 part per million (ppm) to 2,000 ppm. All PID monitoring shall be conducted in the breathing zone.

VISUAL DUST CONTROL

No special equipment will be used to monitor dust. Engineering techniques to reduce dust such as wetting methods, staying upwind of potential sources and operating equipment such that little dust is created will be implemented at the site.

7.3 Monitoring Frequency

Monitoring will be conducted continuously during ground intrusive activities or during any activity where airborne hazards (e.g., organic vapors) may be present. The monitoring equipment listed in this HASP for the work activity, relates to the initial levels of protection listed on the TABLE 2. If the results of the first hour of monitoring indicates contaminant concentrations are non detect, and no differing site conditions are observed, then the monitoring frequency may be decreased.

Monitoring results will be legibly documented each work day. They will note project name/number, date, time, serial number, date of last calibration, and the name of person performing calibration, name of person performing monitoring, monitor location within the site, and monitoring results. Daily documentation will be kept with the SS and included in the project file.

7.4 Safety And Health Action Levels

An action level is a point at which increased protection or cessation of activities is required due to the concentration of contaminants in the work area. All activities shall be initiated as per JSA requirements. The appropriate actions are to be taken at designated action levels. The initial action level(s) for site work can be located in **Table 2**.

In addition to the action level, an upgrade to Level C is required if:

- Any symptoms occur, as described on the Table 1 Signs and Symptoms
- Requested by an individual performing the task
- Any irritation to eye, nose, throat, or skin occurs

A work stoppage and evacuation (cease and desist) at the specific work area is required if levels in the breathing zone exceed the protection factor of the respirator.

8. Site Control

8.1 Introduction To Site Control

The purpose of site control is to minimize potential contamination of workers and protect the public from hazards found on site. Site control also includes site security for the protection of GHD employee and subcontractor when working in public areas. Site Control is especially important in emergency situations.

Site control, work area demarcation, and site security will be achieved through posting of signage and placement of barricades and or personnel. All controlled areas will have the appropriate signage posted. Barricades and warning signs will be placed to warn personnel of potential hazards. A standby person (spotter) may be utilized in place of barricades, where appropriate. The following materials may be used to barricade the work area and protect both public and GHD:

- Traffic Cones

Approved pedestrian and vehicle traffic paths will be determined during Pre-Start/Tailgate Safety Meetings based upon current site conditions and work locations. When applicable, one pathway should be established for heavy equipment and one for personnel decontamination.

The majority of site operations, as well as access to the site, could be controlled from the support zone. The support zone will provide for team communications, emergency response, and sanitary facilities. Appropriate safety and support equipment also will be located in this zone.

The support zone will be located upwind of site operations if possible, and would be used as a potential evacuation point if appropriate. No potentially contaminated personnel or materials are allowed in this zone.

8.2 Work Zone Demarcation

When performing work that could put yourself or others at risk, you must demarcate an Exclusion Zone around your work. This is typically done with yellow and black plastic "barricade tape." Use signs, placards, and other postings as necessary to warn others not to enter the demarcated area unless they have business in the area and have authorization to enter. Where appropriate, post special requirements for entry.

The levels and requirements for work zone demarcation is based on the task being performed or the requirements of the client.

8.3 Work Zone Demarcation Level 2

Is required for active or inactive retail sites when there is heavy equipment operation. Level 2 is to be set up to isolate the work area from public access.

- Excavation including test pitting and tank pulls
- Crane and Aerial lifts
- Anytime an excavation is being left open for any duration

These task require sawhorse barrier or temporary fencing which prevents the public from entering the work area. Signs must be posted indicating the required PPE.

8.4 Two-Person Crew/Buddy System

A Two-Person Crew or Buddy System shall be implemented to protect the employees and public when conducting high risk activies such as:

- Working near traffic
- Working ON or NEAR water
- Excessive noise to which hearing traffic or communication is difficult
- Confined or restricted spaces
- In an isolated area such as landfills or wooded areas
- Areas with high crime rates

When using the buddy system, visual contact must be maintained between crew members at all times, and crew members must observe each other for signs of chemical exposure, heat, or cold stress. Indications of adverse effects include, but are not limited to:

- Changes in complexion and skin coloration
- Changes in coordination
- Excessive salivation and pupillary response
- Changes in speech pattern.

Project personnel must also be aware of potential exposure to possible safety hazards, unsafe acts, or noncompliance with safety procedures. Individuals must inform their partners or fellow team members of non visible effects of exposure to toxic materials. The symptoms of such exposure may include:

- Headaches
- Dizziness
- Nausea
- Blurred vision
- Cramps
- Irritation of eyes, skin, or respiratory tract.

If protective equipment or noise levels impair communications, prearranged hand signals must be used for communication. Personnel must stay within line of sight of another team member.

8.5 Communication

Each member of the project team will be able to communicate with other team members at all times. Communications will be by way of:

- Cell Phones/Smart Phones
- Hand Signals

The primary means for external communication are telephones and radio. If telephone lines are not installed at a site, all team members should:

- Know the location of the nearest telephone
- Have the necessary telephone numbers readily available

Note: The authorized use of cellular phones must be cleared by the client prior to entering site.

The following procedures will be followed by all site workers when using a cell phone on site:

- No cell phone use while driving or operating equipment.
- No cell phone use while in the Exclusion Zone.
- If using a cell phone on site, find a location where you can safely use the phone. Do not walk around the site while using a cell phone.

Understanding of the following standard hand signals will be mandatory for all employees, regardless of other means of communication:

- Hand gripping throat — Cannot breathe
- Hands on top of head — Need assistance
- Thumbs up — OK, I'm alright, I understand
- Thumbs down — No, negative
- Gripping partner's wrist, or gripping both of your own hands on wrist (if partner is out of reach) – Leave area immediately

8.6 Decontamination And Hygiene

Decontamination

In general, everything that enters the site must either be decontaminated or properly discarded upon exit from the site. Prior to demobilization, potentially contaminated equipment will be decontaminated on a wash pad (decontamination pad), drum, or containment pad which then will be placed into appropriate container and labeled as hazardous waste and will be stored in a designated area until disposal arrangements are made.

The type of decontamination solution to be used is dependent on the type of chemical hazards. The decontamination solution for heavy equipment and for any reusable PPE is Alconox/Liqui nox soap. The MSDSs for Alconox/Liquinox will be located in the Appendix.

Personnel Decontamination Procedures

Personnel decontamination will be completed in accordance with the GHD Safety and Health Program for personnel decontamination. Wash water and sediments will be collected and stored with any runoff water collected for subsequent treatment/disposal. PPE, trash, etc. will be sent

off-Site for disposal. It will be kept separate from trash generated in clean areas of the Site.

All disposable equipment shall be doffed before meal breaks and at the conclusion of the workday and replaced with new equipment prior to commencing work.

Procedures for decontamination must be followed to prevent the spread of contamination and to eliminate the potential for chemical exposure.

Personnel - Decontamination will take place prior to exiting the contaminated work area.

Decontamination procedures are as follows:

Step 1 Remove all visible contamination and loose debris by washing with clean water.

Step 2 Remove all outer clothing that came in contact with the contamination (i.e., boot covers and outer gloves) and either dispose of in disposable container or wash in detergent solution and rinse.

Step 3 Remove protective clothing; dispose of in disposable container.

Step 4 Remove respirator, sanitize prior to reuse.

Step 5 Remove inner gloves, dispose of in disposable container.

Step 6 Wash and rinse hands.

General Safety and Personnel Hygiene

1. Eating at the site is prohibited, except in specifically designated areas. Designation of eating areas will be identified to each employee. The location of these areas may change over the duration of the project to maintain adequate separation from the active work area(s).
2. Smoking at the site is prohibited.
3. Individuals getting wet to the skin with effluent from the washing operation must wash the affected area immediately. If clothes in contact with skin are wet, then these must be changed.
4. Hands, face, neck, and other exposed areas must be washed with soap and water before eating, drinking, smoking, before using toilets, and before leaving the site.
5. All disposable coveralls and soiled gloves will be placed in covered containers at the end of every shift or sooner, if deemed necessary by the SHO. Wastes will be stored until proper disposal arrangements have been made.
6. Personnel working on site will not be permitted to wear facial hair that interferes with the mask to face seal on air purifying respirators.
7. All personnel performing or supervising work within the EZ must wear appropriate PPE, observe, and adhere to the personal hygiene related provisions of this section.
8. Personnel found to be disregarding the personal hygiene related provisions of this HASP will, at the discretion of the SHO, be barred from the site.

8.7 Social Protection

Security Measures

A site assessment should be made prior to performing work in high risk areas for violent crime. Additionally, it may be important to gather as much information as possible from the client, describing the location and social conditions of the area where work will be performed.

In the event it has been determined that this work will occur in an area of high risk, consideration

shall be given to providing on site security for the protection of the employee. This option may include services from a security agency, local law enforcement (if available), or the services of an off duty law enforcement officer. The Project Manager and/or Project Coordinator shall be contacted and provide authorization prior to making these arrangements.

Anti-social behavior means different things to different people – noisy neighbors who ruin the lives of those around them, 'crack houses' run by drug dealers, loitering by drunkards, people begging by cash points, abandoned cars, litter and graffiti, young people using airguns to threaten and intimidate or people using fireworks as weapons.

When in this situation, there is no single strategy that always works. Remember these tips when faced with work conditions in volatile neighborhoods:

Street Precautions

When walking to and from your vehicle, or in and around the work site:

- Be alert to your surroundings and the people around you, especially if you are alone or it is dark
- Whenever possible, travel with a colleague
- Stay in well lighted areas as much as possible
- Walk close to the curb; avoid doorways, bushes, and alleys where someone could hide
- Walk confidently, and at a steady pace; make eye contact with people when walking
- Do not respond to conversation from strangers on the street, continue walking

Harm Reduction

Do as much as you can to avoid a confrontation "anticipation and avoidance" are the key words.

- If you get caught up in a situation, try to talk to an aggressor without provoking them.
- Practice relaxation, as appearing fearful or stressed can actually provoke an attack.
- Remember that body language is important in aggressive situations, so maintain a comfortable distance between you and the aggressor.
- It may be more advisable to submit than to resist and risk severe injury or death. You will have to make this decision based on the circumstances. Be especially careful, if your attacker has a weapon.
- Avoid arguing with or physically confronting the individual. Attempt to distance yourself from the individual. Advise others in the area to leave the scene and request police assistance by having someone call the emergency number listed on the Emergency Contact Sheet. Use the team approach. A staff member who is physically unable to break away from an attacker should shout for help.
- Steady yourself if danger threatens. Panic can disable you, so again it's useful to learn how to keep control in a difficult situation.
- If you must fight back, adopt what police term the "bash and dash" approach. Primary targets are the eyes, nose, mouth, ears, throat, groin, knees, or shins; choose whichever is easiest to get to.
- Be aware that your attacker might be stronger than you, or may take what you are using in self defense and use it against you. It is often better just to shout loudly and run away.
- When confronted by an individual whose behavior becomes aggressive or menacing, remain as calm as possible. Avoid arguing with or physically confronting the individual. Attempt to distance yourself from the individual. Advise others in the area to leave the scene and request police assistance by having someone call the emergency number listed on the Emergency Contact Sheet. Use the team approach. If you are physically unable to break away from an attacker, shout for help.
- The use of physical force is justified when a person believes that such force is necessary to protect him or herself against the use or imminent use of unlawful physical force by another person. The use of physical force is also justified in the defense of another party, such as a co worker, who is being subjected to unlawful physical force. You can use any technique of legal self defense in order to halt or distract an attacker until law officers arrive on the scene.

- Should an aggressor only be interested in taking or damaging property, do not interfere. Obtain a description of the individual to provide to local authorities, including height, weight, race, sex, clothing, accent, unusual markings such as tattoos, facial piercing, scars, hair color, and weapon, if any.
- Shout 'fire' rather than 'help' – it can get more results.
- Stay alert and observant so that you can better describe your attacker and the assault to the police.
- Report the incident to the GHD Help Line and BWise and work with your PM and HSE Manager to complete the investigation

Drug Activity

The safe retrieval and disposal of used hypodermic needles and syringes:

- GHD employees must not handle or remove any hypodermic needles or syringes. You should contact the local Police Department, Fire Department, or Health Department for removal from the job site.
- If you are injured by a discarded needle you can receive a vaccination against Hepatitis B within 48 hours of the incident. Notify the GHD Help Line and seek medical attention, call 911 if necessary.
- If an accident occurs where a needle or other sharp object has punctured the skin, then the injured person should:
  - Encourage the wound to bleed gently
  - Wash well with soap under cold running water
  - Cover the wound with a waterproof dressing
  - Seek medical attention as soon as possible
  - Inform the SS and/or PM
  - Complete a GHD Incident Reporting Form

Car Jacking

You can help prevent yourself being a victim of car jacking by:

- Keeping your doors locked in built up areas, and trying to keep the windows wound up, especially at traffic lights
- Being aware of what people are doing around you
- Using the middle lane, if there is one, when waiting at junctions or lights, so that your car is harder to get to from the pavement
- Not stopping to help someone who has broken down (if you really want to help, pull over at the next garage or police station and call for help)
- Driving to the next garage or police station and reporting them if someone tries to pull you over for no reason

A car jackers may 'accidentally' bump into your car, aiming to get you out of the car so they can steal it. If this happens, you may choose not to get out of the car – especially if you do not think it is a genuine accident. Wind the window down a little bit to talk to them if you want to.

Aggressive or Menacing Behavior

Report to the GHD HSE Help Line, BWise and work with your PM and HSE Manager to complete the investigation.

8.8 Site Security

Site security is necessary to prevent the exposure of unauthorized, unprotected people to site hazards and to avoid interference with safe working procedures. Security shall be maintained outside of the actual work area(s) so as to prevent unauthorized entry into the work area(s). Members of the general public are to be protected from site hazards.

9. Emergency Procedures

9.1 Introduction Emergency Procedures

Emergencies can range from minor to serious conditions. Various procedures for responding to site emergencies are listed in this section. The PM or SS is responsible for contacting local emergency services, if necessary, for specific emergency situations. Various individual site characteristics will determine preliminary action to ensure that these entry procedures are successfully implemented in the event of an emergency. The project team will address necessary facility/client emergency protocols to ensure compatibility between this document and facility/client programs and expectations.

Field employees will identify the primary (on site) and secondary (off site) evacuation routes to muster locations prior to initiating work. A site map is provided in the Appendix.

At client facilities, site emergencies may be indicated by a fog horn or other loud audible sound. If an adjacent facility's alarm is activated, work will stop immediately, equipment will be de energized and/or secured as necessary for safety reasons and personnel will go immediately to the secondary evacuation location as indicated in pre-start/tailgate meetings.

Emergency evacuation drills will be conducted as deemed necessary by the SS, and documentation of the drills will be maintained by the SS in project file.

An Emergency Information Sheet containing the hospital location, directions, government agency phone numbers, emergency phone numbers, and a map with directions to the hospital is located in the Appendix.

9.2 Incident, Injury, Illness Reporting And Investigation

Any work related incident, injury, illness, exposure, vehicle accident, property loss and or security issues must be reported to your supervisor, the SS immediately. Stop Work Authority will be implemented. Provide care for any injured persons and secure the scene.

GHD will call the GHD PM and the GHD HSE Help Line. Personnel on site should maintain the work area as it was at the time of the incident until further directions are given by the GHD PM, a GHD Safety Professional. No GHD person on site has the authority to call a regulatory agency (environmental or OSHA); this shall be completed by GHD Leadership Team in conjunction with the client. Emergency medical care or support of fire departments is not a restricted call if immediately necessary to protect life and property.

The GHD PM and HSE Manager will coordinate with on site personnel to gather critical information. The GHD PM is responsible (or their designee) to enter the information into BWise within a 24 period from time of incident. The GHD PM is also responsible to contact the client, which a positive verbal contact is required. The GHD staff listed above will coordinate the completion of the investigation and placement of information into BWise. This same group of GHD staff will manage further communications with the client.

The report must be filed for the following circumstances:

- Incident, injury, illness, or exposure of an employee.
- Injury of a subcontractor.
- Damage, loss, or theft of property.
- Any motor vehicle accident, regardless of fault, which involves a company vehicle, rental vehicle, or personal vehicle while the employee is acting in the course of employment.
- Any sting, involving a puncture of the skin must immediately be reported to Work Care and follow all GHD reporting requirements
- Security Issues
- Environmental releases or loss of containment.

Occupational incidents resulting in employee injury or illness will be investigated by the SS. This investigation will focus on determining the cause of the incident and modifying future work activities to eliminate the hazard.

All employees have the right and obligation to report unsafe work conditions, previously unrecognized safety hazards, or safety violations of others. If you wish to make such a report, it may be made orally to your supervisor or other member of management, or you may submit your concern in writing, either signed or anonymously.

9.3 Emergency Equipment/First Aid

Safety equipment will be available for use by site personnel, located within 30 feet of the work area(s), and maintained at the site.

- First Aid kit(s), compliant with local jurisdictional requirements according to number of workers present
- Automated External Defibrillators (AEDs) are optional first aid response equipment for conditions related to heart stoppage. If a unit is on site, designated personnel must be trained in the specific AED unit in addition to First Aid and CPR certification, conduct monthly inspections, and contact listed AED Unit coordinator.
- Emergency eyewash bottles and/or an eyewash station lasting 15 minutes.
- Emergency alarms as a means to alert all personnel instantaneously for an emergency.
- Fire extinguisher (at a minimum, a 2A/10BC will be on site).

9.4 Emergency Procedures For Contaminated Personnel

Whenever possible, personnel should be decontaminated in the contamination reduction zone before administering first aid, without causing further harm to the patient.

- Skin Contact: Remove contaminated clothing, wash immediately with water, and use soap, if available.
- Inhalation: Remove victim from contaminated atmosphere. Remove any respiratory protection equipment. Initiate artificial respiration, if necessary. Transport to the hospital.
- Ingestion: Remove from contaminated atmosphere. Do not induce vomiting if victim is unconscious. Never induce vomiting when acids, alkalis, or petroleum products are suspected. Transport to the hospital, if necessary.

Any person transporting an injured/exposed person to a clinic or hospital for treatment should take with them directions to the hospital and a listing of the contaminants of concern to which they may have been exposed.

Any vehicle used to transport contaminated personnel will be cleaned or decontaminated, as necessary.

9.5 Site Evacuations

In the event of an emergency situation such as fire, explosion, or significant release of toxic gases, project personnel in the field will be notified by established communications to evacuate the area. In the event of an emergency, GHD personnel will gather at their primary mustering point for a head count. The SS will determine a primary and secondary muster point to be used as an assembly area in the event of an emergency. The secondary muster point will be located at least 90 degrees from the primary. These locations will be communicated to the work crew(s) during the Pre-Start/Tailgate Safety Meeting as part of the site specific training prior to commencement of work activities, weekly thereafter, and prior to the advent of potentially threatening weather. Muster points will be identified in the site map attached to the HASP.

9.6 Spill And Release Contingencies

If a spill has occurred, the first step is personal safety, then controlling the spread of contamination, if possible. GHD personnel will immediately contact site management to inform them of the spill and activate emergency spill procedures.

9.7 HAZWOPER Addendum

9.7.1 General Safety Practices

9.7.1.1 Duration of Work Tasks

The duration of activities involving the usage of PPE will be established by the SS or SHO based upon ambient temperature and weather conditions, the capacity of personnel to work in the designated level of PPE and limitations of the protective equipment (i.e., ensemble permeation rates, life expectancy of the APR cartridges, etc.) As a minimum, rest breaks will be observed at the following intervals:

i) 15 minutes midway between shift start-up and lunch

ii) One-half to one hour for lunch

iii) 15 minutes in the afternoon, between lunch and shift end

All rest breaks will be taken in the clean area (Support Zone [SZ]) after full decontamination and PPE removal. Additional rest breaks will be observed based upon the heat stress monitoring guidelines presented in Section 4.2.

9.7.2 Personal Protective Equipment

9.7.2.1 Buddy System

All project personnel must use the buddy system. Visual contact must be maintained between crew members at all times, and crew members must observe each other for signs of chemical exposure, heat, or cold stress. Indications of adverse effects include, but are not limited to:

i) Changes in complexion and skin coloration

ii) Changes in coordination

iii) Excessive salivation and pupillary response

iv) Changes in speech pattern.

Project personnel must also be aware of potential exposure to possible safety hazards, unsafe acts, or noncompliance with safety procedures. Individuals must inform their partners or fellow team members of non-visible effects of exposure to toxic materials. The symptoms of such exposure may include:

i) Headaches

ii) Dizziness

iii) Nausea

iv) Blurred vision

v) Cramps

vi) Irritation of eyes, skin, or respiratory tract.

If protective equipment or noise levels impair communications, prearranged hand signals must be used for communication. Personnel must stay within line of sight of another team member.

9.7.3 Site Control

9.7.3.1 Authorization to Enter

All personnel working in Exclusion Zones (EZs) must have completed hazardous waste operations initial training as defined under OSHA Regulation 29 CFR 1926.65; have completed their training or refresher training within the past 12 months, and have been certified by a physician as fit for hazardous waste operations in order to enter a site area designated as an EZ or Contaminant Reduction Zone (CRZ).

Personnel without such training or medical certification may enter the designated Support Zone (SZ) only. The SS or SHO will maintain a list of authorized persons; only personnel on the authorized list will be allowed within the EZ or CRZ.

9.7.3.2 Site Orientation and Hazard Briefing

No person will be allowed in the general work area during project operations without first being given a Site orientation and hazard briefing. This orientation will be presented by the SS or SHO, and will consist of a review of this HASP. This review must cover the chemical, physical, and biological hazards, protective equipment, safe work procedures, and emergency procedures for the project. A Training Acknowledgement Form is provided in Appendix A for documentation purposes. In addition to this meeting, Daily Safety Meetings will be held each day before work begins. All individuals on the Site, including visitors, must document their attendance to the initial briefing as well as attending the Daily Safety Meetings. Appendix A also presents the forms that will be used for documenting the Daily Safety Meeting.

9.7.3.3 Certification Documents

The PM, SS and SHO are responsible for ensuring that all personnel working at the Site meet the training and medical surveillance requirements. Subcontractor personnel must provide their training and medical documentation to the SHO prior to the start of fieldwork.

9.7.3.4 Entry Requirements

In addition to the authorization, hazard briefing and certification requirements listed above, no person will be allowed to enter the Site unless he or she is wearing the minimum support zone PPE as described in Section 4.0. Personnel entering the EZ or CRZ must wear the required PPE for those locations.

9.7.3.5 Emergency Entry and Exit

Individuals who must enter the Site on an emergency basis will be briefed of the hazards by the SS or SHO. All hazardous activities will cease in the event of an emergency and any sources of emissions will be controlled, if possible.

People exiting the Site because of an emergency will gather in a safe area for a head count. The SS or SHO is responsible for ensuring that all people who entered the work area have exited in the event of an emergency.

9.7.3.6 Contamination Control Zones

Contamination control zones are maintained to prevent the spread of contamination and to prevent unauthorized people from entering hazardous areas.

Exclusion Zone (EZ)

The EZ consists of the specific work area, or may be the entire area of suspected contamination. All personnel entering the EZ must use the required PPE, and must have the appropriate training and medical clearance for hazardous waste work. The EZ is the defined area where there is a possible respiratory and/or contact health hazard. Cones, caution tape, or other appropriate means will identify the location of each EZ.

Contamination Reduction Zone (CRZ)

The CRZ or transition area will be established, if necessary, to perform decontamination of personnel and equipment. All personnel entering or leaving the EZ will pass through this area to prevent any cross- contamination. Tools, equipment, and machinery will be decontaminated in a specific location. The decontamination of all personnel will be performed on-Site adjacent to the EZ. Personal protective outer garments and respiratory protection will be removed in the CRZ and prepared for cleaning or disposal.

This zone is the only appropriate corridor between the EZ and the SZ.

Support Zone (SZ)

The SZ is a clean area outside the CRZ located to prevent personnel from exposure to hazardous substances. Eating and drinking will be permitted in the support area only after proper decontamination. Smoking may be permitted in the SZ, subject to Site requirements.

9.7.4 Personnel Training

9.7.4.1 General

Required project personnel as discussed in Section 1.0 must have completed hazardous waste operations-related training, as required by the OSHA Standard 29 CFR 1926.65. Field personnel must also receive a minimum of 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Personnel who completed their training more than 12 months prior to the start of the project must have, if required, completed an 8-hour refresher course within the past 12 months. The SS must also have completed an additional 8 hours of training that is required by OSHA for supervisors.

9.7.4.2 Basic 40-Hour Course

The following is a list of the topics typically covered in a 40-hour training course:

i) General safety procedures

ii) Physical hazards (fall protection, noise, and heat stress, cold stress)

iii) Names and job descriptions of key personnel responsible for Site health and safety

iv) Safety, health, and other hazards typically present at hazardous waste sites

v) Use, application, and limitations of PPE

vi) Work practices by which individuals can minimize risks from hazards

vii) Safe use of engineering controls and equipment onsite

viii) Medical surveillance requirements

ix) Recognition of symptoms and signs, which might indicate overexposure to hazards

x) Worker right-to-know (Hazard Communication OSHA1926.59/1910.1200)

xi) Routes of exposure to contaminants

xii) Engineering controls and safe work practices

xiii) Components of a Site HASP

xiv) Decontamination practices for personnel and equipment

xv) Confined space entry procedures

xvi) General emergency response procedures

9.7.4.3 Supervisor Course

Management and supervisors receive an additional 8 hours of training which typically includes:

i) General Site safety and health procedures

ii) Emergency procedures

iii) PPE programs

iv) Air monitoring techniques

9.7.5 Medical Surveillance Program

9.7.5.1 Medical Examination

All required personnel who will enter a Site EZ or CRZ must have successfully completed a

replacement and/or annual physical examination prior to entering one of these work zones. This medical surveillance program must comply with OSHA 29 CFR 1926.65(f).

9.7.5.2 Pre- Placement Medical Examination

All on-Site project personnel who will enter an EZ or CRZ must have completed a comprehensive medical examination within the past 12 months that meets the requirements of applicable OSHA Regulations. The annual medical examination typically includes the following elements:

i) Medical and occupational history questionnaire

ii) Physical examination

iii) Complete blood count, with differential

iv) Liver enzyme profile

v) Chest X-ray, once every 3 years, for non-asbestos workers

vi) Pulmonary function test

vii) Audiogram

viii) Electrocardiogram for persons older than 45 years of age, or if indicated during the physical examination

ix) Drug and alcohol screening, as required by job assignment

x) Visual acuity

xi) Follow-up examinations, at the discretion of the examining physician or the corporate medical director

The examining physician provides the individual and employer with a report summarizing the findings confirming the worker's fitness for work and ability to wear a respirator. Documentation of medical clearance will be available for project personnel during all project work. Subcontractors will certify that all of their personnel have successfully completed a physical examination by a qualified physician. The physical examination must meet the requirements of 29 CFR 1926.65 and 29 CFR 1910.134 as described above. Subcontractors will supply copies of the medical examination certificate for each of their on-Site workers.

9.7.5.3 Other Medical Examination

In addition to pre-employment, annual, and exit physicals, personnel may be examined:

i) At any individual request after known or suspected exposure to toxic or hazardous materials

ii) At the discretion of the client, SS, SHO, or occupational physician in anticipation of, or after known or suspected exposure to toxic or hazardous materials

iii) At the discretion of the occupational physician

9.7.5.4 Periodic Exam

Following the placement examination, all personnel must undergo a periodic examination, similar in scope to the placement examination. For individuals potentially exposed over 30 days per year, the frequency of periodic examinations will be annual. For personnel potentially exposed less than 30 days per year, the frequency for periodic examinations may be 24 months or as determined by the physician.

9.7.5.5 Medical Restriction

When the examining physician identifies a need to restrict work activity, the individual's supervisor must communicate the restriction to the individual, the individual's supervisor, and the SHO. The terms of the restriction will be discussed with the individual and his/her supervisor. Every attempt should be made to keep the individual working, while not violating the terms of the medical restriction.

10. Environmental Control Program

10.1 Introduction

This section of the HASP outlines measures to be implemented at the site to prevent hazards associated with environmental conditions.

10.2 Weather Monitoring

The SS will be responsible for checking weather forecasts for the next day and week of work to provide advance notification of any severe weather conditions. Severe weather conditions (e.g., heavy rains) may cause unsafe conditions at the site and in some situations work may have to be stopped.

10.3 Tornado Safety Policy And Procedures

Tornadoes occur most frequently between April and October from 3:00 to 7:00 p.m. but can occur any time. In most cases, tornadoes move from a west/southwest direction. A typical tornado is a swirling storm of short duration with winds up to 300 miles per hour and a near vacuum at its center. It appears as a rotating funnel shaped cloud, from gray to black in color, extending towards the ground from the base of a thundercloud.

Tornadoes usually only cover a limited geographical area and give off a roaring sound. A tornado is the most concentrated and destructive potential weather event at the Site. Tornadoes are usually the result of the interaction of a warm, moist air mass with a cool or cold air mass. Secondary effects of tornadoes include flash flooding, electric power outages, transportation system and communication system disruption, and fires.

Whenever weather conditions develop that indicate tornadoes are expected, the National Weather Service will issue a tornado watch to alert people in a designated area for a specific time period (normally 6 hours) to remain alert for approaching storms. The tornado watch is upgraded to a tornado warning when a funnel cloud (tornado) is actually sighted or indicated by weather radar.

When a tornado is approaching, Site personnel will only have a short time to react. Therefore, Site personnel must be prepared to react during periods of severe weather. Memorize the following tornado danger signs:

i) Approaching clouds of debris can mark the location of a tornado even if a funnel cloud is not visible

ii) Before a tornado hits, the wind may die down and the air can become very still/calm

iii) It is not uncommon to see clear, sunlit skies behind a tornado as they usually occur at/near the trailing edge of thunderstorms.

Tornado Evacuation Procedures

GHD and contractor personnel monitor weather related information provided by National Weather Service. If the National Weather Service issues a tornado warning, Site supervisor will activate the emergency response plan.

The "take shelter" warning signal is a "slow wail" of the alarm system. GHD Site personnel will evacuate the work zone(s) when a tornado watch has been issued by the National Weather Service. Personnel will contact the Project Management team to inform them they are leaving the site and provide them a location of the muster point (shelter) they are going. The Site Supervisor are responsible for work areas, they will check remote areas of the work zone(s) to ensure personnel have reacted to the alert. Personnel must proceed to the Site mustering point (shelter) and wait for further instructions. If a tornado watch is upgraded to a tornado warning, personnel will proceed to the designated tornado shelters. Once inside the shelter, conduct a head count to ensure that personnel are accounted for. In general, stay away from all windows and doors that lead to the outside. Remain in the shelter until the "all clear" signal is given by the Site Supervisor.

The tornado shelter most accessible to GHD personnel should be noted on the site map attached to this HASP

Directions to the shelter are to be communicated to Site personnel during initial Site safety orientation and throughout the tornado season during subsequent safety meetings.

If unable to reach the designated shelter, the best protection in a tornado is usually an underground area. If an underground area is not available, consider small interior rooms on the lowest floor without windows, hallways on the lowest floor away from doors and windows, rooms constructed with reinforced concrete/brick/block with a heavy concrete floor and roof, and protected areas away from doors and windows.

10.4 Rain And Snow

Excessive amounts of precipitation may cause potential safety hazards for work tasks. The hazards that would be most commonly associated are slipping, tripping, or falling due to slippery surfaces.

Severe weather conditions will result in work stoppage and the implementation of further emergency measures.

10.5 Temperature

Site activities are expected to be conducted year round. Temperature extremes may be experienced which require measures to be implemented to prevent health and safety hazards from occurring. Potential hazards arising from temperature extremes are heat stress and cold exposure.

10.6 Wind

High winds may be encountered at the site and these can cause hazards that may affect site personnel health and safety. Preventative measures that will be implemented if necessary are as follows:

i) Restrict site activities.

ii) Batten down light equipment or building materials.

iii) Partially enclose work areas.

iv) Reduce or Stop Work activities.

10.7 Lightning & Thunder

Light travels at a faster speed than sound, you can see a lightning bolt before the sound of thunder reaches you.

To judge how close lightning is, count the seconds between the flash and the thunder clap. Each second represents about 328 yards/300 meters. If you can count less than 30 seconds between the lightning strike and the thunder, the storm is less than 6.2 miles/10 km away and there is an 80 percent chance the next strike will happen within that 6.2 miles/10 kilometers.

Lightning may strike several miles/kilometers away from the parent cloud and therefore precautions should be taken even if the thunderstorm is not directly overhead.

If you hear thunder or see lightning, stop work immediately and seek safe shelter.

Remain sheltered for 30 minutes after hearing the last thunder before returning to work.

10.8 Outdoor Precautions During Severe Weather

- Keep a safe distance from tall objects, such as trees, hilltops, and telephone poles.
- Avoid projecting above the surrounding landscape. Seek shelter in low lying areas such as valleys, ditches, and depressions, but also be aware of flooding.
- Stay away from water. Don't go boating if a storm threatens. Move to land as quickly as possible if you are on the water. Lightning can strike the water and travel some distance from its point of contact. Don't stand in puddles even if you are wearing rubber boots.
- Stay away from objects that conduct electricity, such as tractors, metal fences, motorcycles, lawnmowers, and tall metal objects.
- Avoid being the highest point in an open area. Holding a conductive tool, holding an umbrella, can make you the tallest object and a target for lightning.
- You are safe inside a car during lightning, but don't park near or under trees or other tall objects, which may topple over during a storm. Be aware of downed power lines, which may be touching your car.
- In a forest, seek shelter in a low lying area under a thick growth of small trees or bushes.
- Be alert for flash floods, which are sometimes caused by heavy rainfall, if seeking shelter in a ditch or low lying area.
- If caught in a level field far from shelter and you feel your hair stand on end, lightning may be about to hit you. Kneel on the ground immediately, with feet together, place your hands on your knees and bend forward. Don't lie flat.
- If you are in a group in the open, spread out, keeping people several yards/meters apart.

10.9 Indoor Precautions During Severe Weather

- Before the storm hits, disconnect electrical appliances including radios and television sets. Do not touch them during the storm.
- Don't go outside unless absolutely necessary.
- Stay away from doors, windows, fireplaces, and anything that will conduct electricity, such as radiators, stoves, sinks, and metal pipes. Keep as many walls as possible between you and the outside.
- Don't handle electrical equipment or telephones. Use battery operated appliances only.

10.10 Flash Flooding

Floods are one of the most common hazards in low lying areas, however not all floods are alike. Some floods develop slowly, while others such a flash floods, can develop in just a few minutes and without visible signs of rain. Additionally, floods can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states.

Flash floods can occur within a few minutes or hours of excessive rainfall, a dam or levee failure, or a sudden release of water held by an ice jam. Flash floods often have a dangerous wall of roaring water carrying rocks, mud and other debris.
Be aware of flood hazards no matter where you live or work, but especially if you are in low-lying areas, near water, behind a levee or downstream from a dam. Even very small streams, gullies, creeks, culverts, dry streambeds or low-lying ground that appear harmless in dry weather can flood.

During the flood

- If any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move.
- Be aware of stream, drainage channels, canyons and other areas known to flood suddenly.

If you must prepare to evacuate, you should do the following:

- Do not walk through moving water. Six inches of moving water can make you fall.
- If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness or depth of the ground in front of you.
- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely.
- Observe weather in the distance, rain in the hills can cause flooding in the valleys..Do not park your vehicle along streams, rivers or creeks, particularly during threatening conditions.

APPENDIX DOCUMENTS

Chemical Table

Chemical/CAS #	Chemical Name (Synonyms)	Exposure Limits	Routes Of Entry	Symptoms/Health Effects	Chemical Properties	Physical Characteristics	Concentration at Site
cis-1,2-Dichloroethene CAS-540-59-0	cis-1,2-Dichloroethene Acetylene dichloride 1,2-Dichloroethylene CAS-540-59-0	TLV: 200 ppm PEL: 200 ppm STEL: NE IDLH: 1000 ppm	Inhalation Ingestion Skin contact Eye contact	ACUTE: Irritation of the eyes and respiratory tract. CNS depression. Exposure could cause lowering of consciousness. CHRONIC: Defatting of the skin. May cause damage to liver.	(FP) 36-39°F (VP) 180-265 mm (IP) 9.65 eV (UEL) 12.8% (LEL) 5.6%	Colorless liquid (usually a mixture of the cis and trans isomers) with a slightly acrid, chloroform-like odor.	50 ug/L
TCE CAS-79-01-6	Trichloroethene TCE Trichloroethylene Ethylene trichloride CAS-79-01-6	TLV: 10ppm PEL: 100ppm STEL: 25ppm IDLH: 1,000 ppm	Inhalation Ingestion Absorption	ACUTE: Irritation to eyes and skin. Ingestion may cause chemical pneumonitis. Affects CNS. Unconsciousness due to exposure. CHRONIC: Dermatitis. Affects CNS, loss of memory. May damage liver and kidneys. Probable human carcinogen.	(FP) NE (VP) 58 mm (IP) 9.45 eV (UEL) 10.5% @ 77°F (LEL) 8.0% @ 77°F	Colorless liquid with a chloroform-like odor. Sometimes dyed blue.	5 ug/L

Chemical/CAS #	Chemical Name (Synonyms)	Exposure Limits	Routes Of Entry	Symptoms/Health Effects	Chemical Properties	Physical Characteristics	Concentration at Site
Vinyl Chloride CAS-75-01-4	Vinyl Chloride Chloroethene VCM Chloroethylene CAS-75-01-4	TLV: 1 ppm PEL: 1 ppm STEL: NE IDLH: NE	Inhalation Skin contact Eye contact	ACUTE: Irritation to eyes. Affects CNS. May cause unconsciousness. CHRONIC: Affects liver, spleen, blood and peripheral blood vessels, tissue and bones in fingers. Human carcinogen.	(FP) NA (gas) (VP) 3.3 atm (IP) 9.99 eV (UEL) 33.0% (LEL) 3.6%	Colorless gas or liquid (<7°F) with a pleasant odor at high concentrations.	10 ug/L
trans-1,2-Dichloroethylene 156-60-5	trans-1,2-Dichloroethene trans-Acetylene dichloride trans-1,2-DCE	TLV: 200ppm (TWA) PEL: 200ppm IDLH: 1000ppm	Inhalation, Absorption (skin), Ingestion	Acute: Eye, respiratory system irritation; CNS depression, light-headedness, dizziness, euphoria, nausea, vomiting, weakness, tremor, epigastric cramps; dermatitis. Chronic: The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the liver.	FP: 6.0 °C (42.8 °F) - closed cup VP: No data available IP: 9.65 ev UEL: 12.8%(v) LEL: 9.7%(v)	Form: liquid, clear Colour: light yellow	5 ug/L

Table 2

On-Site Air Monitoring Program Action Levels
Health and Safety Plan
Former GIC Site - Sherburne
Sherburne, New York

Monitoring Device	*Action Level*	*Action*
Photoionization Detector (PID)		
10.6 or greater eV lamp	<1.0 ppm or Background	Full-Face Respirator Available
To be used to investigate any odor	≥1.0 ppm and ≤5 ppm	Full-face air purifying respirator Level C PPE MSA GME P100 Cartridge
	≥5 ppm	Shut down activities. Notify SHO. Implement additional engineering controls
Dust/Particulate - (Impacted Soils/Sludges/Sediments)	<2.0 mg/m³ or Background	Full-Face Respirator Available
	≥2.0 mg/m³ and <50 mg/m³	Wear Full-Face Respirator - Level C PPE
	>50 mg/m³	Shut down activities. Notify SHO.
Carbon Monoxide	>35 ppm	Shut down activities. Notify SHO. Implement additional engineering controls
Combustible Gas Indicator	>10 Percent LEL	Cease operations and move to a safe place. Notify SHO. Do not continue working until conditions are constantly below 10 percent LEL
Oxygen Meter	<19.5 Percent or >23.5 Percent When oxygen levels are outside this range, percent LEL readings are not reliable	Cease operations and move to a safe place. Notify SHO. Do not continue working until oxygen levels are between 19.5 and 23.5 percent

Notes:

SHO Safety and Health Officer
LEL Lower Explosive Limit
PPE Personnel Protective Equipment
ppm parts per million

Tailgate Safety Meeting Form
Small Group Format - Multiple Days

Date:		Time:		Project No.:	
Presenter:			Project Name:		

Safety topics/items discussed:

Emergency preparedness:

First Aid Provider(s):		Muster Point:	
		Method of Communication:	
AED Responder:		Fire Extinguisher Location:	
First Aid Kit Location:		Eye Wash Location:	

Print Name	Signature	Company

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Presenter:			Project Name:		

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Print Name	Signature	Company

HASP Acknowledgment Sheet

Project Name:_____ Project Number: _____

This is to certify that I have received a pre-entry briefing regarding this HASP, and I understand its contents. My failure to follow and comply with the requirements contained in this plan may result in disciplinary action and/or termination.

Print Name	Signature	Date

HASP Acknowledgment Sheet

Project Name:_____ Project Number: _____

This is to certify that I have received a pre-entry briefing regarding this HASP, and I understand its contents. My failure to follow and comply with the requirements contained in this plan may result in disciplinary action and/or termination.

Print Name	Signature	Date

Tailgate Safety Meeting Form
Large Group Format - Single Day

Date:		Time:		Project No.:	
Presenter:		Project Name:			

Safety topics/items discussed:

Emergency preparedness:

First Aid Provider(s):		Muster Point:	
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AED Responder:		Fire Extinguisher Location:	
First Aid Kit Location:		Eye Wash Location:	

Site personnel in attendance:

Print Name:	Signature:	Company:

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Large Group Format - Single Day

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Safety topics/items discussed:

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Site personnel in attendance:

Print Name:	Signature:	Company:

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Large Group Format - Single Day

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Print Name:	Signature:	Company:

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Site personnel in attendance:

Print Name:	Signature:	Company:

Underground Utilities Checklist

(QSF-019)

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Project number:	**Project name:**
Date:	**Project location:**
Public utility locator:	**Public utility locator phone number:**
Date of public utility locator request:	**Public locator call reference number:**
Private utility locator (If applicable):	**Private utility locator phone number:**

Utilities (indicate that location/utility presence was checked)

Borehole/ Excavation location	Date (mm/dd/yyyy)	Telephone	Water	Storm sewer	Sanitary sewer	Process sewer	Gas	Electrical	Cable	Overhead utilities	Other	Comments/Warnings
Utility owner												

Instructions: This checklist is to be completed by GHD personnel prior to initiation of field activities as a safety measure, to ensure that all underground utility lines, other underground structures, and above-ground power lines are clearly marked in the area selected for boring or excavation.

Notes: _____

Client: _____ **Client representative:** _____ **Phone number:** _____

Client or property owner acknowledgement of utility clearance: _____ **(Client, property owner, or authorized agent signature)**

Subcontractor acknowledgement of utility clearance: _____ **(Subcontractor or subcontractor representative signature)**

GHD field representative name: _____ **Signature:** _____

GHD project manager's review/confirmation of locate completion: _____

In the event that client or property owner acknowledgement cannot be obtained, all boreholes shall be hydro vacuumed and the costs passed on to the client. Attach any clearance documentation from utility owner/operator to this document.

Underground Utilities Checklist for GHD Personnel

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Drilling or excavation work may not proceed if any of the questions answered below are answered "No." Implement stop work authority and contact the GHD project manager to discuss and resolve any concerns or issues. Document the reason for a "No" answer in the comments section below.

Yes	No	N/A	Pre-Mobilization
☐	☐	☐	1. Has a utility locator request been completed within the last 30 days (verify time limit with state or provincial law)? If no, stop work and comment below.
☐	☐	☐	2. Is a scaled site plan, map or drawing showing the proposed borehole locations attached to this form?
☐	☐	☐	3. Does each borehole and excavation location allow for clear entry and exit, adequate workspace, and a clear path for raising the mast (or boom) and operating the drill rig and all support equipment? Ensure that the minimum OSHA/state/provincial utility clearance requirements between the mast or boom and the power line(s) are met. For instance, OSHA requires a minimum approach distance of 10 feet for systems below 50 kV and an increase of 4" for every 10 kV over 50 kV. Confirm if additional permits are required if the boom or mast will be working 5 meters (15 feet) or less from the electrical lines.
☐	☐	☐	4. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on client's building plans? Check here ☐ if plans not provided by client (therefore not applicable to this job.
☐	☐	☐	5. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on public right-of-way street improvement or other public property plan or site map?
☐	☐	☐	6. Has the site representative, familiar with the site, indicated no knowledge of any subsurface or above-ground utilities within 3 metres (10 feet) of the proposed borehole and excavation locations? (Review locations with site representative)
☐	☐	☐	7. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface utilities identified during a geophysical survey? Check here ☐ if no geophysical survey has been completed (therefore not applicable to this job).
☐	☐	☐	8. Have all utility locating service providers, notified by the public line locator, marked out their facilities in the vicinity of the borehole and excavation locations or otherwise notified us that they do not have any facilities near the proposed locations? (Attached confirmation and utility locate sheets from public locator)
☐	☐	☐	9. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line connecting two similar looking manhole covers?
☐	☐	☐	10. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line perpendicular to the street from the water, gas, and electrical meters?
☐	☐	☐	11. Are all proposed boring and excavation locations clear of pavement joints, curbs, crash posts, or other engineered structures?
☐	☐	☐	12. Does the ground surface/pavement lack signs of previous excavation (e.g., no pavement subsidence, no differences in pavement texture or relief, no pavement patching)?
			Pre-Drilling and Excavation
☐	☐	☐	13. Has it been verified that the proposed drilling or excavation work will not affect any work currently in progress?
☐	☐	☐	14. Has the drill rig or heavy equipment been inspected prior to use and documented? (See Drill Rig Inspection Checklist or Mobile Equipment Safety Inspection Checklist)
			15. Have barricades been erected to prevent unauthorized access, where applicable?
☐	☐	☐	16. Have all known live electrical or product lines within 3 meters (10 feet) of the dig path been visually verified? If no, comment below.
			17. For boreholes that have not been cleared or are within 3 meters of a utility:
☐	☐	☐	a. Before drilling have you cleared a hole to 2.4 meters (8 feet) below grade using an air-knife, or equivalent, before drilling and is the diameter of this hole greater than the final outside diameter of the boring? If not required comment below.
☐	☐	☐	b. Does the soil you encountered in the hand-dug hole appear to be native material (i.e., free of clean gravel, clean sand, aggregate base [gravelly sand ~ 10% fines] or other non-native looking material)? If not required comment below.

Have the above concerns been discussed with the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Has the start of subsurface work been communicated to the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Have the above concerns been discussed with the client? ☐ Yes ☐ No ☐ Not Applicable
Has the scope of work been approved by the client? ☐ Yes ☐ No ☐ Not Applicable

Comments: _____

GHD field representative name: _____ **Date:** _____

Underground Utilities Checklist

(QSF-019)

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Project number:	**Project name:**
Date:	**Project location:**
Public utility locator:	**Public utility locator phone number:**
Date of public utility locator request:	**Public locator call reference number:**
Private utility locator (If applicable):	**Private utility locator phone number:**

Utilities (indicate that location/utility presence was checked)

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GHD field representative name: _____ **Signature:** _____

GHD project manager's review/confirmation of locate completion: _____

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Underground Utilities Checklist for GHD Personnel

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Drilling or excavation work may not proceed if any of the questions answered below are answered "No." Implement stop work authority and contact the GHD project manager to discuss and resolve any concerns or issues. Document the reason for a "No" answer in the comments section below.

Yes	No	N/A	Pre-Mobilization
☐	☐	☐	1. Has a utility locator request been completed within the last 30 days (verify time limit with state or provincial law)? If no, stop work and comment below.
☐	☐	☐	2. Is a scaled site plan, map or drawing showing the proposed borehole locations attached to this form?
☐	☐	☐	3. Does each borehole and excavation location allow for clear entry and exit, adequate workspace, and a clear path for raising the mast (or boom) and operating the drill rig and all support equipment? Ensure that the minimum OSHA/state/provincial utility clearance requirements between the mast or boom and the power line(s) are met. For instance, OSHA requires a minimum approach distance of 10 feet for systems below 50 kV and an increase of 4" for every 10 kV over 50 kV. Confirm if additional permits are required if the boom or mast will be working 5 meters (15 feet) or less from the electrical lines.
☐	☐	☐	4. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on client's building plans? Check here ☐ if plans not provided by client (therefore not applicable to this job.
☐	☐	☐	5. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on public right-of-way street improvement or other public property plan or site map?
☐	☐	☐	6. Has the site representative, familiar with the site, indicated no knowledge of any subsurface or above-ground utilities within 3 metres (10 feet) of the proposed borehole and excavation locations? (Review locations with site representative)
☐	☐	☐	7. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface utilities identified during a geophysical survey? Check here ☐ if no geophysical survey has been completed (therefore not applicable to this job).
☐	☐	☐	8. Have all utility locating service providers, notified by the public line locator, marked out their facilities in the vicinity of the borehole and excavation locations or otherwise notified us that they do not have any facilities near the proposed locations? (Attached confirmation and utility locate sheets from public locator)
☐	☐	☐	9. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line connecting two similar looking manhole covers?
☐	☐	☐	10. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line perpendicular to the street from the water, gas, and electrical meters?
☐	☐	☐	11. Are all proposed boring and excavation locations clear of pavement joints, curbs, crash posts, or other engineered structures?
☐	☐	☐	12. Does the ground surface/pavement lack signs of previous excavation (e.g., no pavement subsidence, no differences in pavement texture or relief, no pavement patching)?
			Pre-Drilling and Excavation
☐	☐	☐	13. Has it been verified that the proposed drilling or excavation work will not affect any work currently in progress?
☐	☐	☐	14. Has the drill rig or heavy equipment been inspected prior to use and documented? (See Drill Rig Inspection Checklist or Mobile Equipment Safety Inspection Checklist)
			15. Have barricades been erected to prevent unauthorized access, where applicable?
☐	☐	☐	16. Have all known live electrical or product lines within 3 meters (10 feet) of the dig path been visually verified? If no, comment below.
			17. For boreholes that have not been cleared or are within 3 meters of a utility:
☐	☐	☐	a. Before drilling have you cleared a hole to 2.4 meters (8 feet) below grade using an air-knife, or equivalent, before drilling and is the diameter of this hole greater than the final outside diameter of the boring? If not required comment below.
☐	☐	☐	b. Does the soil you encountered in the hand-dug hole appear to be native material (i.e., free of clean gravel, clean sand, aggregate base [gravelly sand ~ 10% fines] or other non-native looking material)? If not required comment below.

Have the above concerns been discussed with the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Has the start of subsurface work been communicated to the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Have the above concerns been discussed with the client? ☐ Yes ☐ No ☐ Not Applicable
Has the scope of work been approved by the client? ☐ Yes ☐ No ☐ Not Applicable

Comments: _____

GHD field representative name: _____ **Date:** _____

Underground Utilities Checklist

(QSF-019)

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Project number:	**Project name:**
Date:	**Project location:**
Public utility locator:	**Public utility locator phone number:**
Date of public utility locator request:	**Public locator call reference number:**
Private utility locator (If applicable):	**Private utility locator phone number:**

Utilities (indicate that location/utility presence was checked)

Borehole/ Excavation location	Date (mm/dd/yyyy)	Telephone	Water	Storm sewer	Sanitary sewer	Process sewer	Gas	Electrical	Cable	Overhead utilities	Other	Comments/Warnings
Utility owner												

Instructions: This checklist is to be completed by GHD personnel prior to initiation of field activities as a safety measure, to ensure that all underground utility lines, other underground structures, and above-ground power lines are clearly marked in the area selected for boring or excavation.

Notes: _____

Client: _____ **Client representative:** _____ **Phone number:** _____

Client or property owner acknowledgement of utility clearance: _____ **(Client, property owner, or authorized agent signature)**

Subcontractor acknowledgement of utility clearance: _____ **(Subcontractor or subcontractor representative signature)**

GHD field representative name: _____ **Signature:** _____

GHD project manager's review/confirmation of locate completion: _____

In the event that client or property owner acknowledgement cannot be obtained, all boreholes shall be hydro vacuumed and the costs passed on to the client. Attach any clearance documentation from utility owner/operator to this document.

Underground Utilities Checklist for GHD Personnel

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Drilling or excavation work may not proceed if any of the questions answered below are answered "No." Implement stop work authority and contact the GHD project manager to discuss and resolve any concerns or issues. Document the reason for a "No" answer in the comments section below.

Yes	No	N/A	Pre-Mobilization
☐	☐	☐	1. Has a utility locator request been completed within the last 30 days (verify time limit with state or provincial law)? If no, stop work and comment below.
☐	☐	☐	2. Is a scaled site plan, map or drawing showing the proposed borehole locations attached to this form?
☐	☐	☐	3. Does each borehole and excavation location allow for clear entry and exit, adequate workspace, and a clear path for raising the mast (or boom) and operating the drill rig and all support equipment? Ensure that the minimum OSHA/state/provincial utility clearance requirements between the mast or boom and the power line(s) are met. For instance, OSHA requires a minimum approach distance of 10 feet for systems below 50 kV and an increase of 4" for every 10 kV over 50 kV. Confirm if additional permits are required if the boom or mast will be working 5 meters (15 feet) or less from the electrical lines.
☐	☐	☐	4. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on client's building plans? Check here ☐ if plans not provided by client (therefore not applicable to this job.
☐	☐	☐	5. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on public right-of-way street improvement or other public property plan or site map?
☐	☐	☐	6. Has the site representative, familiar with the site, indicated no knowledge of any subsurface or above-ground utilities within 3 metres (10 feet) of the proposed borehole and excavation locations? (Review locations with site representative)
☐	☐	☐	7. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface utilities identified during a geophysical survey? Check here ☐ if no geophysical survey has been completed (therefore not applicable to this job).
☐	☐	☐	8. Have all utility locating service providers, notified by the public line locator, marked out their facilities in the vicinity of the borehole and excavation locations or otherwise notified us that they do not have any facilities near the proposed locations? (Attached confirmation and utility locate sheets from public locator)
☐	☐	☐	9. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line connecting two similar looking manhole covers?
☐	☐	☐	10. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line perpendicular to the street from the water, gas, and electrical meters?
☐	☐	☐	11. Are all proposed boring and excavation locations clear of pavement joints, curbs, crash posts, or other engineered structures?
☐	☐	☐	12. Does the ground surface/pavement lack signs of previous excavation (e.g., no pavement subsidence, no differences in pavement texture or relief, no pavement patching)?
			Pre-Drilling and Excavation
☐	☐	☐	13. Has it been verified that the proposed drilling or excavation work will not affect any work currently in progress?
☐	☐	☐	14. Has the drill rig or heavy equipment been inspected prior to use and documented? (See Drill Rig Inspection Checklist or Mobile Equipment Safety Inspection Checklist)
			15. Have barricades been erected to prevent unauthorized access, where applicable?
☐	☐	☐	16. Have all known live electrical or product lines within 3 meters (10 feet) of the dig path been visually verified? If no, comment below.
			17. For boreholes that have not been cleared or are within 3 meters of a utility:
☐	☐	☐	a. Before drilling have you cleared a hole to 2.4 meters (8 feet) below grade using an air-knife, or equivalent, before drilling and is the diameter of this hole greater than the final outside diameter of the boring? If not required comment below.
☐	☐	☐	b. Does the soil you encountered in the hand-dug hole appear to be native material (i.e., free of clean gravel, clean sand, aggregate base [gravelly sand ~ 10% fines] or other non-native looking material)? If not required comment below.

Have the above concerns been discussed with the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Has the start of subsurface work been communicated to the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Have the above concerns been discussed with the client? ☐ Yes ☐ No ☐ Not Applicable
Has the scope of work been approved by the client? ☐ Yes ☐ No ☐ Not Applicable

Comments: _____

GHD field representative name: _____ **Date:** _____

Underground Utilities Checklist

(QSF-019)

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Project number:	**Project name:**
Date:	**Project location:**
Public utility locator:	**Public utility locator phone number:**
Date of public utility locator request:	**Public locator call reference number:**
Private utility locator (If applicable):	**Private utility locator phone number:**

Utilities (indicate that location/utility presence was checked)

Borehole/ Excavation location	Date (mm/dd/yyyy)	Telephone	Water	Storm sewer	Sanitary sewer	Process sewer	Gas	Electrical	Cable	Overhead utilities	Other	Comments/Warnings
Utility owner												

Instructions: This checklist is to be completed by GHD personnel prior to initiation of field activities as a safety measure, to ensure that all underground utility lines, other underground structures, and above-ground power lines are clearly marked in the area selected for boring or excavation.

Notes: _____

Client: _____ **Client representative:** _____ **Phone number:** _____

Client or property owner acknowledgement of utility clearance: _____ **(Client, property owner, or authorized agent signature)**

Subcontractor acknowledgement of utility clearance: _____ **(Subcontractor or subcontractor representative signature)**

GHD field representative name: _____ **Signature:** _____

GHD project manager's review/confirmation of locate completion: _____

In the event that client or property owner acknowledgement cannot be obtained, all boreholes shall be hydro vacuumed and the costs passed on to the client. Attach any clearance documentation from utility owner/operator to this document.

Underground Utilities Checklist for GHD Personnel

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Drilling or excavation work may not proceed if any of the questions answered below are answered "No." Implement stop work authority and contact the GHD project manager to discuss and resolve any concerns or issues. Document the reason for a "No" answer in the comments section below.

Yes	No	N/A	Pre-Mobilization
☐	☐	☐	1. Has a utility locator request been completed within the last 30 days (verify time limit with state or provincial law)? If no, stop work and comment below.
☐	☐	☐	2. Is a scaled site plan, map or drawing showing the proposed borehole locations attached to this form?
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☐	☐	☐	4. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on client's building plans? Check here ☐ if plans not provided by client (therefore not applicable to this job.
☐	☐	☐	5. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on public right-of-way street improvement or other public property plan or site map?
☐	☐	☐	6. Has the site representative, familiar with the site, indicated no knowledge of any subsurface or above-ground utilities within 3 metres (10 feet) of the proposed borehole and excavation locations? (Review locations with site representative)
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☐	☐	☐	9. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line connecting two similar looking manhole covers?
☐	☐	☐	10. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line perpendicular to the street from the water, gas, and electrical meters?
☐	☐	☐	11. Are all proposed boring and excavation locations clear of pavement joints, curbs, crash posts, or other engineered structures?
☐	☐	☐	12. Does the ground surface/pavement lack signs of previous excavation (e.g., no pavement subsidence, no differences in pavement texture or relief, no pavement patching)?
			Pre-Drilling and Excavation
☐	☐	☐	13. Has it been verified that the proposed drilling or excavation work will not affect any work currently in progress?
☐	☐	☐	14. Has the drill rig or heavy equipment been inspected prior to use and documented? (See Drill Rig Inspection Checklist or Mobile Equipment Safety Inspection Checklist)
			15. Have barricades been erected to prevent unauthorized access, where applicable?
☐	☐	☐	16. Have all known live electrical or product lines within 3 meters (10 feet) of the dig path been visually verified? If no, comment below.
			17. For boreholes that have not been cleared or are within 3 meters of a utility:
☐	☐	☐	a. Before drilling have you cleared a hole to 2.4 meters (8 feet) below grade using an air-knife, or equivalent, before drilling and is the diameter of this hole greater than the final outside diameter of the boring? If not required comment below.
☐	☐	☐	b. Does the soil you encountered in the hand-dug hole appear to be native material (i.e., free of clean gravel, clean sand, aggregate base [gravelly sand ~ 10% fines] or other non-native looking material)? If not required comment below.

Have the above concerns been discussed with the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Has the start of subsurface work been communicated to the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Have the above concerns been discussed with the client? ☐ Yes ☐ No ☐ Not Applicable
Has the scope of work been approved by the client? ☐ Yes ☐ No ☐ Not Applicable

Comments: _____

GHD field representative name: _____ **Date:** _____

Underground Utilities Checklist

(QSF-019)

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Project number:	**Project name:**
Date:	**Project location:**
Public utility locator:	**Public utility locator phone number:**
Date of public utility locator request:	**Public locator call reference number:**
Private utility locator (If applicable):	**Private utility locator phone number:**

Utilities (indicate that location/utility presence was checked)

Borehole/ Excavation location	Date (mm/dd/yyyy)	Telephone	Water	Storm sewer	Sanitary sewer	Process sewer	Gas	Electrical	Cable	Overhead utilities	Other	Comments/Warnings
Utility owner												

Instructions: This checklist is to be completed by GHD personnel prior to initiation of field activities as a safety measure, to ensure that all underground utility lines, other underground structures, and above-ground power lines are clearly marked in the area selected for boring or excavation.

Notes: _____

Client: _____ **Client representative:** _____ **Phone number:** _____

Client or property owner acknowledgement of utility clearance: _____ **(Client, property owner, or authorized agent signature)**

Subcontractor acknowledgement of utility clearance: _____ **(Subcontractor or subcontractor representative signature)**

GHD field representative name: _____ **Signature:** _____

GHD project manager's review/confirmation of locate completion: _____

In the event that client or property owner acknowledgement cannot be obtained, all boreholes shall be hydro vacuumed and the costs passed on to the client. Attach any clearance documentation from utility owner/operator to this document.

Underground Utilities Checklist for GHD Personnel

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Drilling or excavation work may not proceed if any of the questions answered below are answered "No." Implement stop work authority and contact the GHD project manager to discuss and resolve any concerns or issues. Document the reason for a "No" answer in the comments section below.

Yes	No	N/A	Pre-Mobilization
☐	☐	☐	1. Has a utility locator request been completed within the last 30 days (verify time limit with state or provincial law)? If no, stop work and comment below.
☐	☐	☐	2. Is a scaled site plan, map or drawing showing the proposed borehole locations attached to this form?
☐	☐	☐	3. Does each borehole and excavation location allow for clear entry and exit, adequate workspace, and a clear path for raising the mast (or boom) and operating the drill rig and all support equipment? Ensure that the minimum OSHA/state/provincial utility clearance requirements between the mast or boom and the power line(s) are met. For instance, OSHA requires a minimum approach distance of 10 feet for systems below 50 kV and an increase of 4" for every 10 kV over 50 kV. Confirm if additional permits are required if the boom or mast will be working 5 meters (15 feet) or less from the electrical lines.
☐	☐	☐	4. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on client's building plans? Check here ☐ if plans not provided by client (therefore not applicable to this job.
☐	☐	☐	5. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on public right-of-way street improvement or other public property plan or site map?
☐	☐	☐	6. Has the site representative, familiar with the site, indicated no knowledge of any subsurface or above-ground utilities within 3 metres (10 feet) of the proposed borehole and excavation locations? (Review locations with site representative)
☐	☐	☐	7. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface utilities identified during a geophysical survey? Check here ☐ if no geophysical survey has been completed (therefore not applicable to this job).
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☐	☐	☐	9. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line connecting two similar looking manhole covers?
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☐	☐	☐	11. Are all proposed boring and excavation locations clear of pavement joints, curbs, crash posts, or other engineered structures?
☐	☐	☐	12. Does the ground surface/pavement lack signs of previous excavation (e.g., no pavement subsidence, no differences in pavement texture or relief, no pavement patching)?
			Pre-Drilling and Excavation
☐	☐	☐	13. Has it been verified that the proposed drilling or excavation work will not affect any work currently in progress?
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			17. For boreholes that have not been cleared or are within 3 meters of a utility:
☐	☐	☐	a. Before drilling have you cleared a hole to 2.4 meters (8 feet) below grade using an air-knife, or equivalent, before drilling and is the diameter of this hole greater than the final outside diameter of the boring? If not required comment below.
☐	☐	☐	b. Does the soil you encountered in the hand-dug hole appear to be native material (i.e., free of clean gravel, clean sand, aggregate base [gravelly sand ~ 10% fines] or other non-native looking material)? If not required comment below.

Have the above concerns been discussed with the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Has the start of subsurface work been communicated to the GHD project manager? ☐ Yes ☐ No ☐ Not Applicable
Have the above concerns been discussed with the client? ☐ Yes ☐ No ☐ Not Applicable
Has the scope of work been approved by the client? ☐ Yes ☐ No ☐ Not Applicable

Comments: _____

GHD field representative name: _____ **Date:** _____

Site Health and Safety Plan Amendment Form

This document is to be completed for ANY changes that occur within the Site Health and Safety Plan (HASP). This document is to be sent to the Regional Safety & Health Manager (RSHM) for review, verification and sign off of the HASP.

Amendment #	
Site Name/Project ID	
Date	
Client Contact (same/change)	
Reason for Amendment (SOW change, JSA addition, Chemical, etc.)	
Alternate or Additional Safeguard Procedures	
Required changes in PPE	
Additional Comments:	

Project Manager Notified	☐
RSHM Notified	☐
Client PM Notified (if necessary)	☐

Site HSE Officer (sign above)	Date

The Project Manager is ultimately responsible for the accuracy of the information on this amendment and ensuring any changes to the original HASP is discussed with all affected site personnel prior to commencing work

This original form must be placed in the project file and a copy needs to be attached to the Site Health and Safety Plan (HASP).

Site Health and Safety Plan Amendment Form

This document is to be completed for ANY changes that occur within the Site Health and Safety Plan (HASP). This document is to be sent to the Regional Safety & Health Manager (RSHM) for review, verification and sign off of the HASP.

Amendment #	
Site Name/Project ID	
Date	
Client Contact (same/change)	
Reason for Amendment (SOW change, JSA addition, Chemical, etc.)	
Alternate or Additional Safeguard Procedures	
Required changes in PPE	
Additional Comments:	

Project Manager Notified	☐
RSHM Notified	☐
Client PM Notified (if necessary)	☐

Site HSE Officer (sign above)	Date

The Project Manager is ultimately responsible for the accuracy of the information on this amendment and ensuring any changes to the original HASP is discussed with all affected site personnel prior to commencing work

This original form must be placed in the project file and a copy needs to be attached to the Site Health and Safety Plan (HASP).

Form initiated by: _____ Date initiated: _____

Initiator's role/responsibility: _____ Project number: _____

Affected location(s): _____

Client's management of change documentation attached, if required or applicable: ☐ Yes ☐ N/A

Type of change:

- ☐ Field operations/SOPs
- ☐ Equipment
- ☐ Safety
- ☐ Project management/resources

Duration of change:

- ☐ Permanent
- ☐ Temporary (specify how long change will be in place): _____
- ☐ Emergency

Describe the change:

Describe the procedure/task(s) required to complete the change:

Who needs to know about the change and how will you communicate this to them?

Is additional training for GHD people required as a result of this change? ☐ Yes ☐ No

If yes, please describe training needs and those who require it:

Coordination with Business School Learning Centre underway: ☐ Yes ☐ No

Identify any associated risks/hazards/impacts as a result of this change:

This completed form is a quality record

Does the change need to be approved by a client? ☐ Yes ☐ No

If Yes, state client's name: _____

Client role/responsibility: _____

Date authorized by client: _____
(mm/dd/yyyy)

Change approved by project manager: _____
(please print)

_____ _____
(signature) (approval date – mm/dd/yyyy)

Summary:

Item	Completion date	Confirmed by
1. Task(s) to execute change have been completed		
2. Those who need to know have been notified		
3. Additional training has been completed		
4. Risk(s) have been mitigated		
5. Change has been approved by all required parties		

Notes:

Scope: GHD may use the Management of Change Form (QSF-006) to identify and record project additions, revisions, changes, or updates regarding field operations, field SOPs, equipment, safety, resources, or project management.

Detail: The level of detail to a documented project change is ultimately determined by the project manager and/or any client expectations.

File location: Correspondence folder of the project file.

Form initiated by: _____ Date initiated: _____

Initiator's role/responsibility: _____ Project number: _____

Affected location(s): _____

Client's management of change documentation attached, if required or applicable: ☐ Yes ☐ N/A

Type of change:

- ☐ Field operations/SOPs
- ☐ Equipment
- ☐ Safety
- ☐ Project management/resources

Duration of change:

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If yes, please describe training needs and those who require it:

Coordination with Business School Learning Centre underway: ☐ Yes ☐ No

Identify any associated risks/hazards/impacts as a result of this change:

This completed form is a quality record

Does the change need to be approved by a client? ☐ Yes ☐ No

If Yes, state client's name: _____

Client role/responsibility: _____

Date authorized by client: _____
(mm/dd/yyyy)

Change approved by project manager: _____
(please print)

_____ _____
(signature) (approval date – mm/dd/yyyy)

Summary:

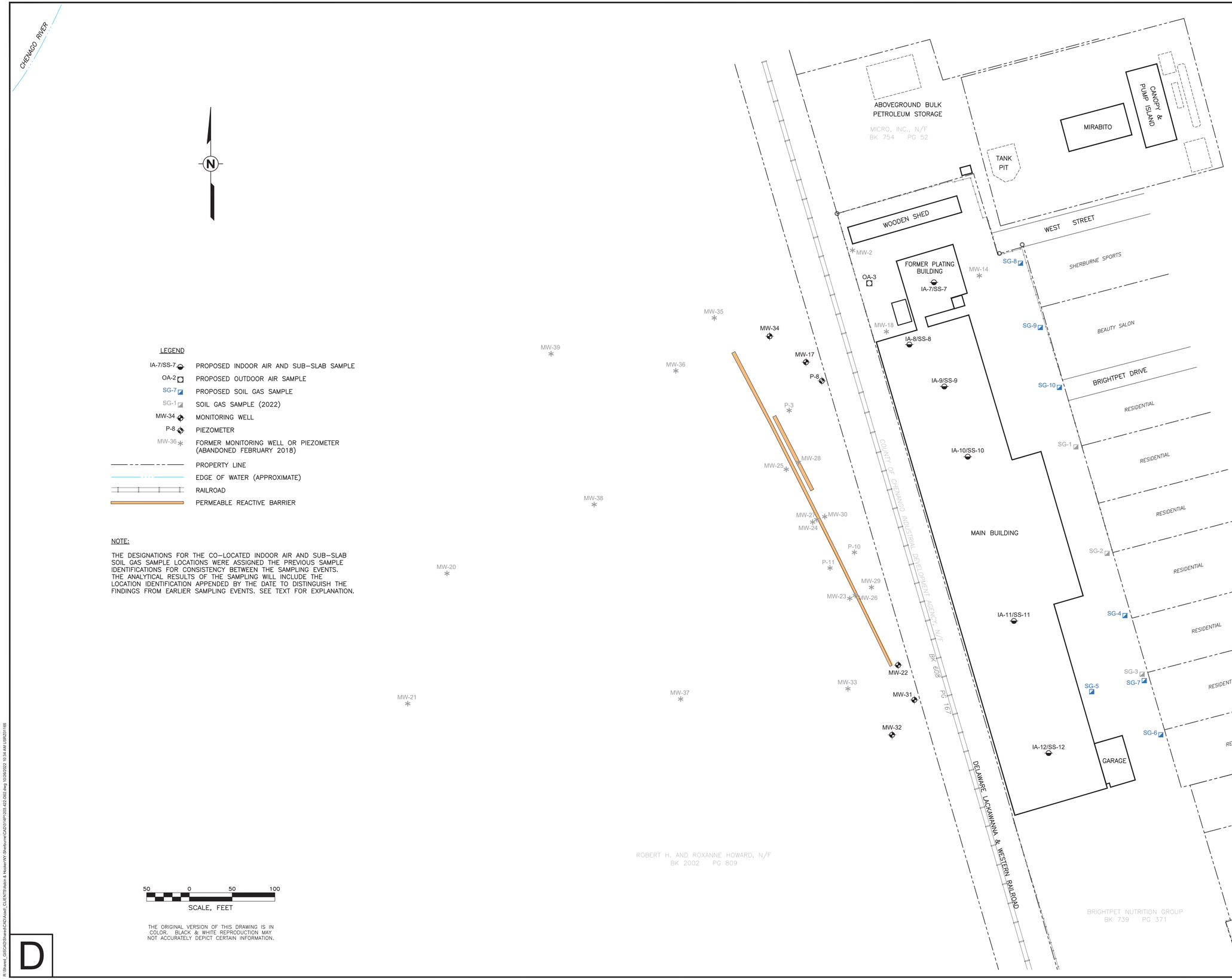
Item	Completion date	Confirmed by
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REV	DESCRIPTION		
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:

SEAL

DATE

DRAWN BY

CHECKED

APPROVED

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PROPOSED FOLLOW–UP INDOOR AIR, SUB–SLAB, AND SOIL GAS SAMPLING LOCATIONS

FORMER GENERAL INSTRUMENT CORP. SITE
SHERBURNE, NEW YORK

PREPARED FOR
ASKIN & HOOKER, LLC
SPARTA, NEW JERSEY

WSP USA Inc.
100 SUMMER STREET, 13th FLOOR
BOSTON, MA 02110
TEL: +1 617.426.7330

SHEET 2

Drawing Number
314P1203.422–D02

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Job Safety Analysis (JSA)

Insert Name : Environmental-Soil Sampling

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:38	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Air monitoring equipment, PPE Additional PPE: Tyvek if Level C initiated; gloves dependent on the task and chemical contamination present or suspected present				
Task-specific Training:	GHD Field Method Training on Soil Sampling Procedures				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☑ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☑)Industrial Grade Safety Boot	☐ Other*	☑ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Discuss STAR and SWA	• Site personnel not aware of STAR and SWA	• Project team (GHD) discusses importance of and documentation procedures for SWA during pre job safety meeting • Use SWA to stop any work that is unsafe	Site Personnel
2	Inspect and calibrate sampling and monitoring equipment	• Lost time from improperly functioning equipment • Incorrect sampling procedures/ collection due to malfunctioning equipment	• Ensure all equipment is functioning properly • Complete Quality Control documents	Sampling Technician
3	Prepare to collect soil samples	• Lifting hazards • Back injury • Manual material handling • Pinch points • Cuts • Punctures • Sample misidentification	• Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one handed carrying if possible; maintain awareness of footing • No bending or twisting while under load • Refer to the HASP for additional lifting information • Avoid placing hands/fingers in pinch point locations • Use proper tools when opening container packaging • Do not use fixed open blade knives when opening boxes or containers • Ensure the sample id label matches sample location with site plan/GHD site supervisor/subcontractor	Sampling Technician
4	Opening the sample sleeve (if applicable)	• Cuts due to sharp edges of sample sleeve • Contaminant exposure	• Use sleeve cutter for opening the sample sleeves • Keep hands clear of the sleeve when cutting • Wear nitrile gloves • Maintain awareness of sharp edges of sample sleeve	Sampling Technician
5	Sample collection	• Contaminant exposure • Cuts from container breakage • Sample misidentification	• Wear nitrile gloves and replace between soil samples • Inspect glass bottles for breaks/cracks • Do not attempt to use any suspect containers • Close glass sample containers carefully to avoid breakage • Check sample labels for accuracy prior to placing in cooler	Sampling Technician
6	Headspace screening of samples	• Contaminant exposure • Incorrect headspace readings	• Wear nitrile gloves • Ensure proper calibration of equipment	Sampling Technician
7	Sample selection	• Bottle breakage • Contaminant exposure • Pinch points • Lost time due to incorrect sample selection	• Wear nitrile gloves when handling sample containers • Confirm selected samples are correct based on work plan selection criteria, PID readings, and soil boring logs • Avoid placing hands/fingers in pinch point locations (e.g., between cooler and lid)	Sampling Technician

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
8	Packing samples in cooler(s)	• Bottle breakage • Contaminant exposure • Cuts • Pinch points • Lifting hazards • Back injury • Manual material handling • Lost time due to incorrect sample packaging or hold time exceedances	• Wear nitrile gloves when handling sample containers • Pack glass containers in bubble wrap • Check COC against sample labels and SSOW for accuracy before shipping • Avoid placing hands/fingers in pinch point locations (e.g., between cooler and lid) • Use proper lifting techniques as discussed in step 3 • If possible use a dolly or cart if cooler is heavy or has to be moved over a long distance • Ensure equipment and supplies are loaded correctly and do not shift during transport	Sampling Technician
9	Investigation derived waste (IDW) management	• Contaminant exposure • Lifting hazards • Back injury • Manual material handling • Pinch points • Slips/trips/fall hazards • Mislabeled waste	• Wear nitrile gloves when handling IDW • Use proper lifting techniques as discussed in step 3 • Avoid placing hands/fingers in pinch point locations • Maintain awareness of walking surfaces • Label IDW with generator, a contact number, identification of contents, and site location • Specify IDW as either hazardous or non hazardous material	Sampling Technician

1. Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.
2. A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".
3. Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

Site Personnel Participating in JSA Review:
I have participated in the review and discussion of the Job Safety Analysis (JSA) listed on this document and understand the duties I am responsible to fulfill. As part of my work, I know I have the responsibility and obligation to STOP work with a Stop Work Authority (SWA) if conditions change and/or potential hazards have been identified.

Name/Company	Sign	Date



SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Environmental-Decontamination of Sampling Equipment and Personnel (PPE Level D)

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:38	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Alconox/Liquinox, brushes				
Task-specific Training:	Decontamination/Site Control; Quality Control/Sampling Plan				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☑ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☐ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☑ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☑ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☑ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☑)Industrial Grade Safety Boot	☐ Other*	☑ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Decontamination of sampling equipment (including pumps, bailers, tubing, etc.)	• Contaminant exposure • Pinch points • Slip/trip/hit/fall hazards • Lifting hazards • Back injury • Manual material handling	• Set up decon station to capture any spills to avoid cross contamination and manage wastes • Wear appropriate PPE • Scrub equipment clean then rinse and verify it is clean and free of contamination • Avoid putting hands in or near pinch points • Maintain good housekeeping and be aware of surroundings • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical means, such as a dolly, cart, or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Refer to the HASP for additional lifting techniques	Sampling Personnel
2	Decontamination of personnel	• Contaminant exposure • Slip/trip/hit/fall hazards	• Refer to the HASP for specific procedures but in general start with most contaminated article and remove until inner gloves are the last item left • Dispose of used PPE in accordance with site requirements • Wash hands and face before eating, drinking, or using tobacco products • Take care when removing PPE (boots, gloves, etc.); sit down to remove/change boots as necessary	Sampling personnel
3	Management of waste derived from decontamination activities	• Contaminant exposure • Lifting hazards • Back injury • Manual material handling	• Containerize decon waste (e.g., water, used PPE) as required • Properly dispose of decon fluids (e.g., sediments) • Refer to step 1 and the HASP for additional lifting information	Sampling personnel

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2. A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

3. Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

Site Personnel Participating in JSA Review:
I have participated in the review and discussion of the Job Safety Analysis (JSA) listed on this document and understand the duties I am responsible to fulfill. As part of my work, I know I have the responsibility and obligation to STOP work with a Stop Work Authority (SWA) if conditions change and/or potential hazards have been identified.

Name/Company	Sign	Date

SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : O_M-Derived Waste Drum Moving and Handling

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:39	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Empty drums, spill kit, dolly, ratchet set, or box end wrench for loosening and tightening drum band, bung cap tool Additional PPE: Leather work gloves must be worn				
Task-specific Training:	40 Hour HAZWOPER or 8 Hour Refresher, HAZComm, PPE, Hand and Power Tools				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☑ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☑)Industrial Grade Safety Boot	☐ Other*	☐ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Walk the path to and from the drum storage area	• Slip/trip/fall hazards	• Review HASP and client requirements and implement • Use the STAR process to identify and correct any obvious hazards • Remove trip hazards in the area around the drums before moving hazards	Project personnel on site
2	Set up staging area	• Slip/trip/fall hazards • Traffic hazards • Spills	• Remove trip hazards in the area around the drums before moving hazards • Select and demarcate area if necessary to prevent un-authorized personnel and vehicle entry • Ensure emergency spill materials are readily available	Project personnel on site
3	Inspect all equipment and hand tools before use	• Hand injuries • Back Injuries • Lacerations	• Inspect dolly to ensure that it is operating properly (wheels turning freely, proper air pressure in wheels, no cracks in welds, sharp edges or burrs) • Select and inspect ratchet and socket or box end wrench • Do not use adjustable wrench or screw driver to loosen or tighten band • Ensure bung caps on drums are in place and secure if provided	Project personnel on site
4	Remove drum lid	• Contaminant exposure • Pinch points • Hand injury	• Select and inspect ratchet and socket or box end wrench • Do not use adjustable wrench or screw driver to loosen or tighten band • Wear appropriate gloves as identified in PPE section	Project personnel on site
5	Fill with derived waste material (i.e., soil cuttings, waste absorbent material, PPE Tyvek suits, etc.)	• Contaminant exposure • Pinch points • Hand injury • Lifting hazards	• Reduce risk of contaminant exposure by wearing proper PPE when handling waste materials (i.e., safety glasses, leather gloves, Tyvek suit, respirator, and appropriate gloves as identified in PPE section) • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • If an object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Fill drums ONLY to 75% capacity with soil and 85% capacity with water. DO NOT fill drums to full capacity.	Project personnel on site
6	Properly seal the drum prior to moving	• Contaminant exposure • Pinch points • Hand injury	• Select and inspect ratchet and socket or box end wrench • Do not use adjustable wrench or screw driver to loosen or tighten band • Wear appropriate gloves as identified in PPE section • Ensure band is placed and secured properly to prevent lid from opening	CRA Project personnel on site

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
7	Attach drums to dolly and move filled containers to designated staging area.	• Pinch points • Hand injury • Slip/trip/fall hazards • Lifting hazards • Manual material handling • Back injury	• Ensure that drums are sealed properly before maneuvering • Reduce travel distance when there is a need to carry/lift materials • Ensure that drum is properly fastened to dolly prior to moving • Make sure grip is adequate; wear leather/cotton gloves • Use moving/lifting device (drum dolly) to move 55 gallon drums; if an object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one handed carrying if possible; maintain awareness of footing • Should the drums be excessively heavy, personnel may need to consider alternative lifting/moving device • Place drum in drum storage/staging area in careful, controlled manner • Keep hands and feet out of pinch points and crush points	Project personnel on site
8	Managing waste drums (55 gallon drums)	• Mislabeling waste	• Label waste appropriately (generator, contact number, identification of contents, and site location); specify type of contents; arrange for disposal	Project personnel on site

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Name/Company	Sign	Date

SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Motor Vehicle - Driving

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:39	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Vehicle, valid driver's license, 360-degree topper; seatbelt				
Task-specific Training:	Defensive Driving				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☐ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☐ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☐ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☐ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☐)Industrial Grade Safety Boot	☐ Other*	☐ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Discuss STAR and SWA	Site personnel not aware of STAR and SWA	• Project team (GHD) discusses importance of and documentation procedures for SWA during pre-job safety meeting • Discuss route, concerns, and alternate routes with passenger and drivers of other vehicles • Use SWA to stop any work that is unsafe • Ensure proper vehicle selected for travel (use a truck if going to construction site or area with rough conditions that would damage a small vehicle?)	Driver and passenger
2	Check weather	• Unexpected storm • Fog; rain; snow; lightning/thunder • Heat/cold stress	• Check local weather forecast • Discuss weather issues and precautions to take while driving and on site during the pre-job safety meeting • If weather conditions (e.g., fog, rain, snow, etc.) impair the ability/vision of the driver, exit at nearest safe location and assess the situation • While on site, at first sign of lightning/thunder utilize SWA and assess weather conditions • In extreme temperatures, ensure all personnel have proper clothing, hydration, and heat/cold protection (e.g., canopy, fan, glove warmers)	Driver or Passenger

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
3	Complete GHD Daily Operator Vehicle Checklist	• Damaged vehicle lights, tires, windows, mirrors, horn • Inadequate vehicle documents and/or safety items	• Check for fluid leaks under vehicle • Test operation of headlights, front/rear turn signals, backup lights, brake lights, and emergency flashers • Visually check the pressure/wear of tires • Ensure the vehicle has a properly inflated spare tire and associated tools to install • Assure windshield and window glass is clean and free from obstructions • Assure all fluids are topped off (e.g., windshield wiper fluid) and scheduled routine maintenance has occurred (e.g., oil changes). • Test the windshield wipers and horn • Verify vehicle registration, insurance card, and inspection sticker is present and valid • If the vehicle contains a first aid kit, fire extinguisher, and road hazard kit, verify that all items with expiration dates are current and that fire extinguisher has had documented monthly check • Do not use vehicle if any safety device is found not functioning	Driver or Passenger
4	Check and adjust seat, steering wheel, headrest, and mirrors	• Back/body strain • Blind spot • Impaired vision	• Adjust seat, headrest, and steering wheel height so body is fully supported/comfortable and pedals are within easy reach • Ensure mirrors are properly adjusted	Driver or Passenger
5	Fasten seat belt(s) and ensure passengers' seat belts are fastened	• Serious injury, ejection, or death from collision and/or traffic citation	Verify driver and passenger(s) seat belts are in good condition and properly latched	Driver or Passenger

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
6	Ensure vehicle doors are locked	• Serious injury, ejection, or death from collision • Unwanted intrusion • Lost equipment	Manually lock all doors to vehicle prior to starting the vehicle	Driver
7	Start engine and check gauges and warning lights	• Vehicle breakdown	Verify sufficient fuel and other hazard lamps (e.g., battery, oil, and temperature) are not lit	Driver
8	Driving – Use defensive driving techniques and stay alert	• Arriving late • Collision • Blind spots of other vehicles • Injury or death to occupants or other parties	• Acknowledge and comply with all traffic regulations, laws, and ordinances • Do not use two-way communicating devices or perform other distracting activities while vehicle is in motion • Constantly scan intersections, move eyes, check mirrors, and assess traffic lights (fresh vs. stale) • Recognize other vehicle's blind spots and minimize time spent within these zones • Maintain safety cushion around vehicle (front, sides, and rear) and 4-second following distance (add an extra second for each hazardous condition, triple following distance in poor weather conditions) • Signal well in advance before changing lanes or turning • Utilize all driving defensive techniques	Driver
9	Arrive at site	• Pedestrian injury • Collision	• Maintain awareness of pedestrian/vehicular traffic when entering site and traveling to work zone	Driver

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
10	Park vehicle – assign a spotter if necessary (when in doubt use a spotter)	• Pedestrian injury • Collision • Property damage • Equipment theft	• Maintain awareness of pedestrian/vehicular traffic • Park vehicle in pull-through parking space or facing the exit • Parking in a parking space that is not a designated parking space will require the placement of the 360-degree topper on the hood of the vehicle • Use a spotter when backing up a vehicle • If no spotter available when backing up a vehicle, complete a 360-degree walk around vehicle. Ensure there are no hidden obstacles (e.g. pot holes, rocks, stumps, broken tree branches hidden by vegetation/foliage, etc.) that could be struck – look up and down. Stop, park and exit vehicle to check rear clearance as necessary when backing up to ensure travel pathway remains clear • Use caution and mirrors/spotter when backing vehicle • Set parking brake • Never leave field equipment in a vehicle unprotected • Never miss use and and always care for all field equipment • Never leave expensive equipment in your vehicle overnight • Always take expensive equipment with you into your hotel room/ house • Never miss use and always care for all field equipment	Driver
11	Demobilization – conduct a vehicle walk around inspection paying particular attention to path(s) of travel	• Collision • Injury or death to occupants or other parties	• Perform perimeter vehicle check • Maintain awareness of pedestrian/vehicular traffic when exiting site • Utilize defensive driving techniques • Complete post-departure checklist and report vehicle problems to company vehicle maintenance manager or rental car agency	Driver or Passenger

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
12	Report maintenance or mechanical problems upon returning vehicle	• Conditions worsen leading to mechanical failure resulting in collision and injury	• Report vehicle problems immediately to company representative or rental car agency • Schedule and/or perform repairs as soon as possible	Driver

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3. Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

Site Personnel Participating in JSA Review:
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Name/Company	Sign	Date



SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Environmental-Drum Sampling for Non Hazardous Material

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:39	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:					
Task-specific Training:	Hand Tools; Air Monitoring; RCRA/DOT Awareness Training				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☑ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☑)Industrial Grade Safety Boot	☐ Other*	☐ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Discuss STAR and SWA	• Site personnel not aware of stop work authority	• Project team (GHD) discuss importance of and document procedures for SWA during pre job safety meeting • Use SWA to stop any work that does not comply with the GHD or Client policies	
2	Tailgate Safety Meeting/Safe Performance Self Assessment (SPSA)	• Not identifying all hazards • Property damage • Injury	• Discuss work to be performed and associated hazards • Open communication among team members; have all team members sign safety meeting form • Discuss any new or unknown hazards; Include discussion on SWA, hospital route, evacuation procedures, emergency contact(s), etc. • Identify personnel responsible for respective JSA critical actions for job steps	
3	Opening drums	• Cuts • Hand injury • Pinch point	• Wear leather/cotton gloves and use proper tool (e.g., box end wrench or socket wrench) • Avoid placing hands/fingers in pinch point locations	
4	Sample collection	• Contaminant exposure • Cuts from container breakage • Sample misidentification	• Wear nitrile gloves while collecting soil sample • Inspect container for breaks/cracks • Do not attempt to use any suspect containers • Close containers carefully to avoid breakage • Check sample labels for accuracy prior to placing in cooler	
5	Sample packing	Bottle breakage Contaminant exposure Cuts Pinch points Lifting hazards • Back injury • Manual material handling • Lost time due to incorrect sample packaging or hold time exceedances	• Wear nitrile gloves when handling sample containers • Pack glass containers in bubble wrap • Check COC against sample labels and SSOW for accuracy before shipping • Avoid placing hands/fingers in pinch point locations (e.g., between cooler and lid) • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back • If the object is in excess of 50 pounds (23 kg) then assistance (mechanical such as a cart, dolly or a buddy lift) will be required • Make sure grip is adequate; use gloves to enhance grip when necessary • Reduce distance needed to travel when handling materials • Ensure equipment and supplies are loaded correctly and do not shift during transport	
6	Closing drums	• Cuts • Hand injury • Pinch point	• Wear leather/cotton gloves and use proper tool (e.g., box end wrench or socket wrench) • Avoid placing hands/fingers in pinch point locations	

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3. Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

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Name/Company	Sign	Date



SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Remediation-Derived Waste Drum Moving and Handling

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:40	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Empty drums, spill kit, dolly, ratchet set, or box end wrench for loosening and tightening drum band, bung cap tool				
Task-specific Training:	40 Hour HAZWOPER or 8 Hour Refresher, HAZComm, PPE, Hand and Power Tools				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☐ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☑)Industrial Grade Safety Boot	☐ Other*	☑ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Walk the path to and from the drum storage area	• Slip/trip/fall hazards	• Review HASP and client requirements and implement • Use the STAR process to identify and correct any obvious hazards • Remove trip hazards in the area around the drums before moving hazards	
2	Set up staging area	• Slip/trip/fall hazards • Traffic hazards • Spills	• Remove trip hazards in the area around the drums before moving hazards • Select and demarcate area if necessary to prevent un-authorized personnel and vehicle entry • Ensure emergency spill materials are readily available	
3	Inspect all equipment and hand tools before use	• Hand injuries • Back Injuries • Lacerations	• Inspect dolly to ensure that it is operating properly (wheels turning freely, proper air pressure in wheels, no cracks in welds, sharp edges or burrs) • Select and inspect ratchet and socket or box end wrench • Do not use adjustable wrench or screw driver to loosen or tighten band • Ensure bung caps on drums are in place and secure if provided	
4	Remove drum lid	• Contaminant exposure • Pinch points • Hand injury	• Select and inspect ratchet and socket or box end wrench • Do not use adjustable wrench or screw driver to loosen or tighten band • Wear appropriate gloves as identified in PPE section	
5	Fill drum to appropriate level with derived waste material (i.e., soil cuttings, waste absorbent material, PPE Tyvek suits, etc.)	• Contaminant exposure • Pinch points • Hand injury • Lifting hazards	• Reduce risk of contaminant exposure by wearing proper PPE when handling waste materials (i.e., safety glasses, leather gloves, Tyvek suit, respirator, and appropriate gloves as identified in PPE section) • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • If an object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Fill drums ONLY to 75% capacity with soil and 85% capacity with water. DO NOT fill drums to full capacity.	
6	Properly seal the drum prior to moving	• Contaminant exposure • Pinch points • Hand injury	• Select and inspect ratchet and socket or box end wrench • Do not use adjustable wrench or screw driver to loosen or tighten band • Wear appropriate gloves as identified in PPE section • Ensure band is placed and secured properly to prevent lid from opening	

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
7	Attach drums to dolly and move filled containers to designated staging area.	• Pinch points • Hand injury • Slip/trip/fall hazards • Lifting hazards • Manual material handling • Back injury	• Ensure that drums are sealed properly before maneuvering • Reduce travel distance when there is a need to carry/lift materials • Ensure that drum is properly fastened to dolly prior to moving • Make sure grip is adequate; wear leather gloves • Use moving/lifting device (drum dolly/forklift) to move 55 gallon drums; if an object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or buddy lift) is required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one handed carrying if possible; maintain awareness of footing • Place drum in drum storage/staging area in careful, controlled manner • If available, place drums on pallet for easier loading and unloading • Keep hands and feet out of pinch points and crush points	
8	Managing waste drums (55 gallon drums)	• Mislabeling waste	• Label waste appropriately (generator, contact number, identification of contents, and site location); specify type of contents; arrange for disposal	

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Name/Company	Sign	Date

SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

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Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Mobilization-Demobilization

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:40	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	#360 degree topper				
Task-specific Training:	#				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☐ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☐ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☐ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☑)Industrial Grade Safety Boot	☐ Other*	☐ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Discuss STAR and SWA	• Site personnel not aware of STAR and SWA	• Project team (GHD) discusses importance of and documentation procedures for SWA during pre job safety meeting • Use SWA to stop any work that is unsafe	
2	Check weather	• Unexpected storm • Fog, rain, snow; lightening/thunder • Heat/cold stress	• Check local weather forecast • If adverse weather conditions are likely, prepare a contingency plan for lodging, etc. with project manager • Discuss weather issues and precautions to take while driving and on site during the pre job safety meeting • If weather conditions (e.g., fog, rain, snow, etc.) impair the ability/vision of the driver, exit at nearest safe location and assess the situation • While on site, at first sign of lightening/thunder utilize SWA and assess weather conditions • In extreme temperatures, ensure all personnel have proper clothing, hydration, and heat/cold protection (e.g., canopy, fan, glove warmers)	
3	Load equipment into vehicle	• Lifting hazards • Manual material handling • Back injury • Cuts • Pinch points • Hand/foot injury • Forgotten or damaged equipment	• Reduce travel distance when there is a need to carry/lift materials • Make sure grip is adequate; wear leather/cotton gloves • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Maintain neutral back posture - Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and make sure to shift with the feet rather than twisting at the back • Maintain neutral wrist posture when lifting, carrying, pushing or pulling. The wrist is the strongest and most stable when it is straight. • Avoid one handed carrying if possible; maintain awareness of footing • Avoid placing hands/fingers in pinch point locations • Wear safety toed boots • Verify requested equipment against warehouse form • Load equipment in an organized manner to prevent shifting during transport or use cargo netting	

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
4	Complete GHD Daily Operator Vehicle Checklist	• Damaged vehicle lights, tires, windows, mirrors, horn • Inadequate vehicle documents and/or safety items	• Check for fluid leaks under vehicle • Test operation of headlights, front/rear turn signals, backup lights, brake lights, and emergency flashers • Visually check the pressure/wear of tires • Ensure the vehicle has a spare tire • Assure windshield and window glass is clean and free from obstructions • Test the windshield wipers and horn • Verify vehicle registration, insurance card, and inspection sticker is present and valid • Ensure the vehicle contains a first aid kit, fire extinguisher, and road hazard kit • Check immediate vehicle perimeter and initial path of travel for obstructions	
5	Check and adjust seat, steering wheel, headrest, and mirrors	• Back/body strain • Blind spot • Impaired vision	• Adjust seat, headrest, and steering wheel height so body is fully supported/comfortable and pedals are within easy reach • Ensure mirrors are properly adjusted	
6	Fasten seat belt(s) and ensure passenger(s) seat belts are fastened	• Serious injury, ejection, or death from collision and/or traffic citation	• Verify driver and passenger(s) seat belts are in good condition and properly latched	
7	Ensure vehicle doors are locked	• Serious injury, ejection, or death from collision • Unwanted intrusion • Lost equipment	• Manually lock all doors to vehicle	
8	Start engine and check gauges and warning lights	• Vehicle breakdown	• Verify sufficient fuel and other hazard lamps (e.g., battery, oil, and temperature) are not lit	
9	Mobilize to site	• Arriving late • Collision • Injury or death to occupants or other parties	• Do not use cell phones or perform other distracting activities while vehicle is in motion • Constantly scan intersections, move eyes, check mirrors, and assess traffic lights (fresh vs. stale) • Maintain safety cushion around vehicle (front, sides, and rear) and 4 second following distance • Utilize all driving defensive techniques	
10	Arrive at site	• Pedestrian injury • Collision	• Maintain awareness of pedestrian/vehicular traffic when entering site and traveling to work zone	

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
11	Park vehicle	• Pedestrian injury • Collision • Property damage	• Maintain awareness of pedestrian/vehicular traffic • Park vehicle in pull through parking space or facing the exit • Parking in a parking space that is not a designated parking space will require the placement of the 360 degree topper on the hood of the vehicle • Use caution and mirrors/spotter when backing vehicle • Set parking brake	
12	Demobilization	• Collision • Injury or death to occupants or other parties	• Check immediate vehicle perimeter and initial path of travel for obstructions • Maintain awareness of pedestrian/vehicular traffic when exiting site • Utilize defensive driving techniques	

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Name/Company	Sign	Date



SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Environmental- Monitoring Well Sampling

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:41	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:					
Task-specific Training:					

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☑ Chemical Protective (ie.Nitrile)	☐ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☐ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☐ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☐ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☐)Industrial Grade Safety Boot	☐ Other*	☐ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Coordinate site access	• Delays or added work	• Notify Station Manager of schedule • Notify other required personnel if applicable (city, regulators, private property owners, etc.)	
2	Mobilize with proper equipment/ supplies for sampling	• Delay or improper/unsafe performance of work due to improper equipment on site • Cross contamination of wells	• Review work plan to determine equipment/supply needs • Make sure all sampling/gauging equipment is decontaminated • Bring ice for sample storage • Review THE HASP and gather necessary PPE	
3	Notify other personnel on site	• Unknown traffic or other work hazards • Lack of communication between all interested parties	• Meet with station attendant or other site personnel and explain planned activities	
4	Determine sampling order	• Cross contamination of samples and wells due to incomplete decontamination of sampling equipment	• Review prior analytical results and set sampling order from lowest to highest concentration wells	
5	Perform STAR and tailgate safety meeting upon arrival at site	• Consider worst case scenario (including weather conditions)	• Review HASP with co workers • Highlight aspects identified by HASP and, if necessary, add to HASP • Get signature of all co workers on HASP	
6	Set up exclusion zone(s)	• Injury or exposure to public or other on site personnel • Slip/trip/fall hazards	• Implement exclusion zone setup instructions of THE HASP (barricades, caution tape, cones, etc.) • Set up work area free of trip hazards	
7	Gauge water levels and product thickness (where applicable) in wells	• Back strain • Inhalation or dermal exposure to chemical hazards	• Don any additional PPE and initiate air quality monitoring in accordance with the HASP • Maintain safe distance from well head • Bend at knees, not waist	

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
8	Purge well(s) and collect purge water	• Cross contamination • Lifting hazards • Back injury • Manual material handling • Inhalation or dermal exposure to chemicals • Slip/trip/fall hazards • Spilling contaminated water	• Decontaminate purging equipment between each sampling location • Reduce travel distance when there is a need to carry/lift materials • Make sure grip is adequate; wear leather/cotton gloves • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one handed carrying if possible; maintain awareness of footing • Use PPE and monitoring in accordance with the HASP • Keep work area clear of tripping or slipping hazards • Store purge water in appropriate containers	
9	Collect samples in accordance with sampling plan	• Cross contamination • Lifting hazards • Back injury • anual material handling • Inhalation or dermal exposure to chemical hazards • Slip/trip/fall hazards • Improper labeling or storage • Injury due to acid burn (unsealed or leaking sample bottle) • Injury from broken sample bottle (cuts or acid burn)	• Use PPE in accordance with the HASP • Use PPE whenever handling or labeling samples • Decontaminate sampling equipment between each well (unless disposable) • Refer to step 9 and the HASP for additional lifting methods • Label samples in accordance with sampling plan • Keep samples stored in proper containers, at correct temperature, and away from work area • Wear nitrile gloves when handling bottles • Handle bottles carefully	
10	Dispose or store purge water onsite	• Lifting hazards • Back injury • Manual material handling • Exposure to chemicals • If disposing through on site treatment system, damage or injury from improper use of equipment • Improper storage or disposal	• Use proper equipment to transport water (pumps, drum dollies, etc.) • Refer to step 9 and the HASP for additional lifting methods • Where PPE in accordance with the HASP • Review any necessary instructions for use of on site treatment systems • Label storage containers properly and locate in isolated area away from traffic and other site functions • Coordinate off site disposal (where applicable)	
11	Clean site/demobilize	• Traffic • Nuisance or safety hazard left on site • Back strain	• Use buddy system as necessary to remove traffic control • Leave site clean of refuse and debris • Notify station personnel of departure, and note any purge water left on site • Exercise caution when lifting coolers out of the trunk of a car; use the buddy system if justified	

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
12	Package and deliver samples to lab	• Bottle breakage • Improper temperature • Exceeding hold times • Improper completion of Chain of Custody (COC)	• Pack samples in ice, use bubble wrap/bags for sample bottles • Use standard COC forms and labels • Submit samples to lab as soon as possible (no more than 3 days, but check sampling plan for any special requirements such as rush turnaround or special hold time restrictions)	

1. Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.
2. A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".
3. Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

Site Personnel Participating in JSA Review:
I have participated in the review and discussion of the Job Safety Analysis (JSA) listed on this document and understand the duties I am responsible to fulfill. As part of my work, I know I have the responsibility and obligation to STOP work with a Stop Work Authority (SWA) if conditions change and/or potential hazards have been identified.

Name/Company	Sign	Date



SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Environmental-Site Recon and Walkthrough

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:41	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Basic PPE, hand/power tools based on site condition, site inspection checklist or notebook, JSA forms, pens, flashlight. Additional PPE: Insect repellant. Coveralls may be necessary based on type of brush/plants/insects in work area(s) being inspected. Leather gloves if overgrown vegetation or rundown buildings.				
Task-specific Training:	SMART Safety training (STAR), JSA development, Poison Plant Identification				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☑ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☑ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☑)Industrial Grade Safety Boot	☐ Other*	☑ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☑ Other*
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Discuss STAR and SWA	• Site personnel not aware of STAR and SWA	• Project team discusses importance of and documentation procedures for SWA during pre-job safety meeting • Use SWA to stop any work that is unsafe	All persons on project team
2	Check weather	• Unexpected storm, fog; rain; snow; lightening, thunder • Heat/cold stress, including frostbite and sunburn	• Check local weather forecast • Discuss weather issues and precautions to take while driving and on site during the pre job safety meeting • If weather conditions (e.g., fog, rain, snow) impair the ability/vision of the driver, exit at nearest safe location and assess the situation • While on site, at first sign of lightning/thunder utilize SWA and assess weather conditions • In extreme temperatures, ensure all personnel have proper clothing, which includes either a helmet liner or hat/mask that will cover exposed skin on one's face and ears, hydration, and heat/cold protection (e.g., canopy, fan, glove warmers) • Implement the "Buddy System." The site supervisor shall also keep close tabs on all project personnel working in extreme temperatures.	Assessor
3	Sign in	• Site Manager and Operator not aware of GHD staff presence in facility or on grounds	• Sign in at front desk • Ask to speak to Site Manager or alternate designate	
4	Don necessary GHD and client required PPE	• Contact with recyclable material or equipment	• Wear all required PPE (hard hat, vest, boots, and glasses) at all times while in the facility	
5	Unload equipment from vehicle	• Lifting hazards • Back injury • Manual material handling • Cuts • Pinch points • Hand/foot injury • Forgotten equipment • Damaged equipment	• Reduce travel distance when there is a need to carry/lift materials • Make sure grip is adequate; wear leather/cotton gloves • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one handed carrying if possible; maintain awareness of footing • Wear leather/cotton gloves and avoid placing hands/fingers in pinch point locations • Wear steel toed boots • Verify requested equipment against warehouse form • Load equipment in an organized manner to prevent shifting during transport or use cargo netting	Assessor

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
6	Complete site inspection and walkover of the property and work areas – Note any hazards that will impact site personnel and/or their operations	• Slip/trip/fall hazards • Insects/reptiles • Pedestrian injury • Poison plants	• Check in with site personnel and sign appropriate visitor or safety log (may require watching safety video [i.e., plant]) • Check with site contact to determine safely accessible areas and areas where PPE are required • Wear PPE as directed by site personnel or dependent upon your evaluation of conditions • If building(s) looks dilapidated or in poor condition, do not enter • Watch for vehicles or other mobile equipment moving around • Make sure areas are well lit and you are accompanied by a site representative (if applicable) • Watch where you step on pavement (potholes, dips, or obstructions) and in vegetated/wooded areas (dips, holes, branches, vines, etc.) • Do not take photographs while walking • Do not talk on cell phone while walking • If in vegetated or wooded areas, watch for beehives, wear insect repellent (if area and season dictate) as needed, be mindful of gopher holes/tunnels, small animal dens, snakes, stray dogs/cats, transient/homeless individuals, poison ivy/oak/sumac, etc.	Assessor
7	Sign out	• Site Manager and Operator not aware that GHD staff have left facility	• Sign out at front desk • Ask to speak to Site Manager or alternate designate	
8	Demobilization	• Collision • Injury or death to vehicle occupants or other parties	• Perform perimeter vehicle check • Maintain awareness of pedestrian/vehicular traffic when exiting the site • Utilize defensive driving techniques • Complete post departure checklist and report vehicle problems to company vehicle maintenance manager or rental car agency	Assessor

1. Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.
2. A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".
3. Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

Site Personnel Participating in JSA Review:
I have participated in the review and discussion of the Job Safety Analysis (JSA) listed on this document and understand the duties I am responsible to fulfill. As part of my work, I know I have the responsibility and obligation to STOP work with a Stop Work Authority (SWA) if conditions change and/or potential hazards have been identified.

Name/Company	Sign	Date



SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Environmental-Oversight of Monitoring Well Installation and/or Soil Boring

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:42	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Air monitoring equipment; safety cones/fencing/barricades (not needed in vacant, fenced areas)				
Task-specific Training:					

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☐ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☑ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☑)Industrial Grade Safety Boot	☐ Other*	☐ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek
☐ Rubber Boots (industrial grade)		☑ Required	☐ Hazard Category 4	☐ R95		☐ Other*

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Markout underground utilities	• Property damage • Explosion • Electrocution • Injury • Death	• Call public underground utility agency (One Call) at least 5 or more days prior to work activities • Review State Law pertaining to underground pipe line safety and have private utility mark out performed • Expose lines if warranted (i.e., hand dig, test pit, or daylight)	Project Manager and Site Supervisor
2	Conduct site walk,identify unsafe conditions and determine sample point locations	• Traffic hazard • Slip/trip/fall hazards • Biological hazard • Overhead/underground hazards • Property damage	• Maintain awareness of on site traffic and walking surfaces • When selecting soil boring locations, be aware of biological hazards (e.g., ants, poison ivy, wasps) and overhead/underground hazards (e.g., overhead utilities, concrete scarring, station canopy) • Use a walking stick, probe, or other such device to check for soil integrity/softness	Site Personnel
3	Equipment inspection	• Pinch points • Property damage • Lost time due to damaged equipment/parts	• Discuss pinch points on equipment (e.g., drill rig, air knife, pressure washer, etc.) • Familiarize all personnel with location/operation of fire extinguisher(s) and kill switch on drill rig • Visually inspect equipment/parts for damage and document inspections	Site Personnel
4	Set up work zone for drilling	• Traffic hazard • Slip/trip/fall hazards • Property damage • Overhead hazards • Environmental impact • Unstable ground conditions • Property damage	• Maintain awareness of on site traffic, work zones, walking surfaces, overhead hazards (e.g., canopy and low hanging overhead lines) • Utilize barricades/cones/caution tape to define work zone and direct traffic • Wear leather/cotton when setting up barricades • Be aware of any potential sensitive receptors and verify all personnel are aware of the location of spill kit • Inspect soil for loose, soft or unstable conditions under rig jacks or outriggers • Place mats or plywood in areas where drill rig will make ruts or depressions (i.e., under tracks or outriggers)	Site Personnel

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
5	Set up staging area	• Traffic hazard • Slip/trip/fall hazards • Lifting hazards • Back injury • Manual material handling • Pinch points • Heat/cold stress	• Maintain awareness of on site traffic and walking surfaces • Utilize barricades/cones/caution tape to define work zone and direct traffic • Reduce distance needed to travel when carrying materials and or equipment • Wear leather/cotton gloves when setting up barricades • Size up the load, If the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required. • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one handed carrying if possible; maintain awareness of footing • Avoid placing hands/fingers in pinch point locations • In extreme temperatures, ensure all personnel have proper clothing, hydration, and heat/cold protection (e.g., canopy, fan, glove warmers)	Site Personnel
6	Contractor oversight/ management of hole clearance/drilling activities	• Traffic hazard • Slip/trip/fall hazards • Lifting hazards • Back injury • Manual material handling • Damage to underground utilities • Contaminant exposure • Heat/cold stress • Injury to personnel and public • Cross contamination • Equipment failure	• Maintain awareness of on site traffic and practice good housekeeping • Perform a prestart meeting, inform subcontractor of safe lifting practices • Refer to step 5 and the HASP for additional lifting information • Ensure subcontractors don proper PPE (e.g., face shield, leather/cotton gloves, hearing protection). No loose clothing. • Complete and sign off utility clearance. If non native material (e.g., pea gravel, sand, fill material) or underground utilities are observed, utilize SWA and assess situation. • Monitor breathing zone and refer to HASP for action levels • Monitor all personnel for signs and symptoms of heat/cold stress and refer to HASP for recommendations • Be aware of unsafe hoisting and material handling practices • Be aware of proper augering and auger handling techniques. Visually monitor performance and functioning of drill rig for signs of failure. Monitor safe drill movement/positional setup. • Decontaminate sampling equipment after collecting a sample and decontaminate drilling equipment after each borehole • Watch where you step, look for debris which may be covered by brush or rubble	Site Personnel

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
7	Construct well	• Lifting hazards • Back injury • Manual material handling • Cross contamination • Non approved construction • Slip, trip, and fall hazards • Eye injury • Cuts	• Use proper lifting techniques as discussed in Step 5 and HASP • Prior to going into the borehole, inspect casing and other materials to ensure they are free of jagged/sharp edges • Confirm construction with project manager • Ensure presence or other authorization by any required inspectors for well installation/grouting • Keep pathways and work area clean of debris and possible tripping hazards • Use PPE and monitoring in accordance with the JSA • Use safe cutting tools (no fixed open blade knives)	
8	Site/boring security, clean site, demobilize	• Traffic hazard • Slip/trip/fall hazards • Lifting hazards • Back safety • Manual material handling	• Use buddy system as necessary to remove traffic control • Do not work with your back to traffic • Wear leather/cotton gloves when moving barricades • Maintain awareness of on site traffic and walking surfaces • Maintain proper lifting techniques as described in Step 5 and HASP. • Ensure good house keeping methods are practiced. Work area is kept clean of debris. • Leave site clean of refuse and debris • Clearly mark/barricade any borings that need later topping off or curing • Notify property personnel of departure • Secure boring location if open overnight	

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Site Personnel Participating in JSA Review:
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Name/Company	Sign	Date

SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

Job Safety Analysis (JSA)

Insert Name : Environmental-Vapor Well Sampling

Field staff must review job specific work plan and coordinate with project manager to verify that all up front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g., site managers, inspectors, clients, subcontractors, etc.). Additionally, a tailgate safety meeting must be performed and documented at the beginning of each workday. **Stop, Think, Act, Review (STAR)** must be used prior to any activity. All personnel must possess the appropriate training prior to initiating scheduled tasks. Also consider weather conditions. GHD personnel have the authority and responsibility to use **Stop Work Authority (SWA).** Review this JHA initially and in the field prior to initiating the job, using the P66 RM "Go Card" to assist in identifying specific site hazards. Document by "dirtying" this JHA.

Date Issued/Revised:	02/14/2023 14:49:42	**Client:**	Askin & Hooker, LLC		
Project Number:	12595756	**Created By:**	cra\iemcnamara	SIM OPS? YES/NO	SSE on site? YES/NO
Project Address:	1 Kenyon Press Drive Sherburne				
Key Equipment:	Additional PPE: Minimum Level D PPE; type of gloves dependent on job specific requirements. Additional PPE may be required in the HASP. Also refer to the HASP for required traffic control, air monitoring, and emergency procedures.				
Task-specific Training:	Site specific Health and Safety Plan (HASP); Tailgate safety meetings; 40 Hour HAZWOPER); Hazard Communications training for hazardous substances brought onto the job site. Supervisor shall have First Aid, CPR, and Supervisor Training.				

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Type 1 (Top Impact)	☐ Chemical Protective (ie.Nitrile)	☑ ANSI/CSA Safety Glasses	☐ Harness	☐ Full Face Mask	☑ Class II (standard)	☐ Coveralls
☐ Type 2 (Side Impact)	☑ Level 1 - Light Duty	☑ Goggles/Spoggles	☐ Shock Absorbing Lanyard	☐ Half Face Mask	☐ Class III (Night or Highway Traffic)	☐ Fire Retardent Clothing (FRC)
☑ Class E (standard)	☐ Level 2 - Light Duty with Protection	☐ Face Shields	☐ Lifeline		☐ Anti-Static	☐ High Viz Clothing
☐ Class G	☐ Level 3 - Medium Duty	☐ Other*		**Cartridges**	☐ FRC	☐ Long Pants
	☐ Level 4 - Heavy Duty			☐ N95	☐ PFD	☐ Long Sleeve Shirts
Foot Protection	☐ High Viz	**Hearing Protection**	**Arc Flash/Shock Protection**	☐ P100		☐ Paper Tyvek (disposible)
☐)Industrial Grade Safety Boot	☐ Other*	☑ NOT Required for this task	☐ Hazard Category 2	☐ P95		☐ Polyethyene Tyvek

Hard Hat	Gloves (ANSI/EN 388)	Eye Protection	Fall Protection	APR	Vest	PPE Clothing
☐ Rubber Boots (industrial grade)		☐ Required	☐ Hazard Category 4	☐ R95		☐ Other*
☐ Hip Waders				☐ Organic Vapour		
	* see key equipment			☐ Speciality*		

Project Development Team		Modified by	Reviewed by	Date
Name	Signature			
Ian Mcnamara				

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
1	Coordinate site access	• Work delays	• Notify station manager (or designee) • Notify other required personnel if applicable (city, regulators, private property owners, etc.	
2	Mobilize with proper equipment/ supplies	• Work delays • Improper work performances • Cross contamination • Improper sample storage	• Review work plan to determine equipment and supply needs • Review HASP and gather necessary PPE • Ensure equipment is decontaminated before and after each sample	
3	Notify other personnel on site	• Lack of communication • Unknown traffic hazards • Unknown work hazards	• Meet with the station attendant or other site personnel to discuss work activities • Confirm locations will be clear of unaccounted traffic (deliveries) • Locate emergency shutoff switch	
4	Determine sampling order	• Cross contamination	• Review prior analytical results and set sampling order from lowest to highest concentration wells	
5	Perform STAR and safety meeting upon arrival at site	• Miscommunication • Insufficient information for all personnel to work safely	• Discuss work steps and OE tenets, SWA, identify SSE employees and the proper course of action along with evacuation routes	
6	Set up any necessary traffic control	• Struck by a vehicle • Vehicle accident as a result of improper traffic control placement	• Use buddy system for placing traffic control • Never work with you back to traffic • Wear brightly colored traffic vest at all times • Follow traffic control plan section of the HASP (may include specific requirements based on encroachment permits) • Check the effectiveness of the placement after setup	
7	Set up exclusion zone(s)	• Injury or exposure to public or other on site personnel • Slip, trip, or fall from same level	• Implement exclusion zone setup instructions of the HASP • Use orange fence (not just cones) to secure work area • Set up clear walking paths between workstations • Wear boots with adequate tread • Watch where you step, look for debris which may be covered by brush or ruble	
8	Open well vaults	• Insects/spider bites	• Don proper PPE in accordance with the HASP (gloves) • Check vault before putting hands in	
9	Connect canisters and sampling manifolds	• Improper use of tools • Leakage of canisters • Cross contamination	• Determine correct tools to use for job • Handle canisters carefully and double check that all caps are placed tightly on canisters • Ensure that correct manifold is used with canister	

Job steps[1]	Task activity	Potential hazard(s)[2]	Corrective measure(s)[3]	Person responsible (Print first and last names)
10	Clean site/demobilize	• Traffic hazards • Lifting hazards • Manual material handling • Back injury	• Use buddy system as necessary to remove traffic control • Do not work with your back to traffic • Wear traffic vest • Leave site clean of refuse and debris • Notify property personnel of departure • Note any purge water left on site • Make sure grip is adequate; wear leather/cotton gloves • Size up the load; if the object is too large or odd shaped OR is in excess of 50 pounds (23 kg) then assistance (mechanical or a buddy lift) will be required • Lift with the legs (bend at the knees and use the leg muscles) to protect the lower back and keep lower back in a neutral position • Avoid one handed carrying if possible; maintain awareness of footing	
11	Package and deliver samples to lab	• Leakage of canisters • Lifting hazards • Manual material handling • Back injury Improper storage	• Handle and pack canisters carefully • Refer to step 10 and the HASP for additional lifting information/methods • Never store samples in a cold area; keep at room temperature	

1. Each Job or Task consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the potential (associated) hazards.

2. A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress/ergonomics/lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught".

3. Aligning with the Job Steps, Task Activity Description, and Potential Hazard columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable, and quantified terms. Avoid subjective general statements such as "be careful" or "use as appropriate".

Site Personnel Participating in JSA Review:
I have participated in the review and discussion of the Job Safety Analysis (JSA) listed on this document and understand the duties I am responsible to fulfill. As part of my work, I know I have the responsibility and obligation to STOP work with a Stop Work Authority (SWA) if conditions change and/or potential hazards have been identified.

Name/Company	Sign	Date



SSE(s) on job: _____ **Assigned mentor:** _____

Presenter Signature: _____ Date/Time: _____

My signature below indicates that all conditions and requirements listed above have been verified, met, and reviewed with all affected personnel prior to start of work.
Supervisor Signature: _____ Date/Time: _____

Location of Mustering Point: _____ Wind direction (current): _____

GHD Emergency contact (Name and verified phone number): _____

Supervisor Signature documenting Daily Debrief has been completed: _____

SAFETY DATA SHEET

Version 5.5
Revision Date 03/31/2016
Print Date 11/14/2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Alconox® detergent

Product Number : 242985
Brand : Aldrich
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich Canada Co.
2149 Winston Park Drive
OAKVILLE ON L6H 6J8
CANADA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 9058299500
Fax : +1 9058299292
Emergency Phone # (For both supplier and manufacturer) : +1-703-527-3887 (CHEMTREC)
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

WHMIS Classification

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion
D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant Severe eye irritant

GHS Classification

Acute toxicity, Oral (Category 4)
Skin corrosion/irritation (Category 2)
Serious eye damage/eye irritation (Category 1)
Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H401	Toxic to aquatic life.

Precautionary statement(s)

P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of water.

P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	2
Flammability:	0
Physical hazards:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
Tetrasodium pyrophosphate			
7722-88-5	231-767-1	-	>= 10 - <= 30 %
Sodium dodecylbenzenesulfonate			
25155-30-0	246-680-4	-	>= 10 - <= 30 %
Sodium carbonate			
497-19-8	207-838-8	011-005-00-2	>= 7 - <= 13 %
Pentasodium triphosphate			
7758-29-4	231-838-7	-	>= 10 - <= 30 %

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Explosion data - sensitivity to mechanical impact
No data available

Explosion data - sensitivity to static discharge
No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Tetrasodium pyrophosphate	7722-88-5	TWA	5.000000 mg/m3	Canada. British Columbia OEL
		TWAEV	5.000000 mg/m3	Canada. Ontario OELs
		TWA	5.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWAEV	5.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	5.000000 mg/m3	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
		TWA	5 mg/m3	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm

Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls
Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	granular, powder
Colour	white

Safety data

pH	9.5 at 10 g/l
Melting point/freezing point	No data available
Boiling point	No data available
Flash point	No data available
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	No data available
Density	No data available
Water solubility	soluble
Partition coefficient: n-octanol/water	No data available
Relative vapour density	No data available
Odour	odourless
Odour Threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
No data available

Materials to avoid
No data available

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Oxides of phosphorus, Sodium oxides
Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
No data available

Inhalation LC50
No data available

Dermal LD50
No data available

Other information on acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Eyes: No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

WHMIS Classification

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion

D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant Severe eye irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 3

Further information

Copyright 2016 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Records of Training

Date: _____ Project Name:_____Project Number: _____

Project Location: _____

Project Description _____

The Project Manager is ultimately responsible for the accuracy of the information on this Record of Training and ensuring GHD Employees and Subcontractors are familiar with the site and have the required training to do the task

Employee's Name:	Confined Space Entry	Excavation Safety	Fall Protection	GHS (HazCom/WHMIS)	Lock Out Tag Out (LOTO)	Motor Vehicle Safety	Aerial Lift	Other -	Other -	Other -	Other -
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APPENDIX I –COMMUNITY AIR MONITORING PLAN

APPENDIX I

COMMUNITY AIR MONITORING PLAN

I.1 - INTRODUCTION

The remedial program for the General Instrument Corporation Site located at 1 BrightPet Drive (formerly known as Kenyon Press Drive) in Sherburne, Chenango County, New York (hereinafter referred to as the "Site"). The Site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program, Site No. 709010, which is administered by New York State Department of Environmental Conservation (NYSDEC or Department). General Instrument Corporation (GIC; a corporate predecessor of Vishay GSI, Inc. [VGSI]) entered into an Order on Consent on September 5, 1989 with the NYSDEC to remediate the Site. VGSI assumed responsibility for environmental issues at the Site through their historical acquisition of GIC.

A Site Management Plan (SMP) has been prepared to guide the current Site owner and future owners as well as the remedial parties to implement and maintain the required engineering and institutional controls associated with the NYSDEC-approved remedial action. This Community Air Monitoring Plan (CAMP) describes the measures that will be undertaken during periods of future soil excavation, movement, handling if evidence of contamination is apparent.

I.2 - OBJECTIVES

The objective of this CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that might arise as a result of future soil excavation that may potentially disturb contaminated soil.

I.3 - METHODS

The CAMP will include monitoring for volatile organic compounds (VOCs) and particulate matter (e.g. airborne "dust"). Readings will be recorded and will be available for State (DEC and DOH) personnel to review, as requested. Site condition will be noted and recorded in a daily log. Temperature, weather, precipitation, wind direction, and surface moisture conditions will be noted.

A. VOC MONITORING

A MiniRAE photoionization detector (PID) will be used to measure volatile organic compounds (VOCs) in air. VOCs will be monitored at the downwind perimeter of the site, based on the prevailing wind direction as determined at the beginning of each workday. The site perimeter is defined as the existing BCA site boundary.

Upwind concentrations of VOCs will be measured at the beginning of every workday to establish background conditions. VOC concentrations will be measured continuously at the property boundary directly downwind of the work area. Downwind data will be checked as needed to provide a measure of assurance that contaminants are not being spread off site through the air. The PID will continuously record and store VOC measurements.

- If the ambient air concentration for total organic vapors at the downwind property boundary exceeds 5 parts per million (ppm) above background for a 15-minute average, work activity will be halted and monitoring will continue until levels decline to below 5 ppm over background. At this point, work will resume and monitoring will continue.
- If total organic vapor levels at the downwind property boundary persist at levels above 5 ppm over background but less than 25 ppm, work activities will be halted, the source of the vapors will be identified, and corrective actions will be taken to abate emissions. Work will resume after organic vapor levels fall to below 5 ppm over background at the downwind property boundary.
- If organic vapor levels exceed 25 ppm at the downwind property boundary activities will be shut down. An appropriate course of action to abate emissions in order to resume work will be discussed with NYSDEC personnel.

B. PARTICULATE MONITORING

Particulate (e.g. “dust”) emissions will be measured continuously at the upwind and downwind property boundaries. Real time monitoring equipment (e.g. MiniRAM or equivalent), with audible alarms and capable of measuring particulate matter less than 10 micrometers in size, will be used.

- If the downwind particulate level is 100 micrograms per cubic meter (ug/m^3) greater than background (upwind) for a 15-minute period, then dust suppression techniques will be employed. Work will continue with dust suppression provided that downwind particulate

levels do not exceed 150 ug/m^3 above upwind levels and provided that no visible dust is migrating from the work area.

- If, after dust suppression techniques, downwind particulate levels are greater than 150 ug/m^3 above upwind levels, work will be stopped and a re-evaluation of activities will be initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing downwind particulate concentrations to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

I.4 - Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

• If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 part-per-million, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

• If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 micrograms per cubic meter, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 micrograms per cubic meter or less at the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

I.5: Special Requirements for Indoor Work with Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.

APPENDIX J – QUALITY ASSURANCE PROJECT PLAN

Quality Assurance Project Plan

Vishay GSI, Inc. – Former GIC Site
1 BrightPet Drive
Sherburne, New York 13460

Vishay GSI, Inc.

October 10, 2024

→ **The Power of Commitment**

Printed date	10/10/2024
Last saved date	10/10/2024
File name	Former GIC Site-Sherburne Draft QAPP
Author	Christopher Arcuri
Project manager	Ian McNamara
Client name	Vishay GSI, Inc.
Project name	Former GIC - Sherburne
Document title	Quality Assurance Project Plan | Askin & Hooker, LLC – Former GIC Site
Revision version	Rev [00]
Project number	12595756

Quality Assurance Project Plan
Signature Page

Site Name:	Former GIC Site – Sherburne
Location Address:	1 BrightPet Drive, Sherburne, New York 13460
Ref. No.	12595756
GHD Office:	Syracuse
Anticipated Start Date:	TBD
Anticipated Project Duration:	TBD

Prepared By: _____ Date: _____
Christopher Arcuri

Project Manager: _____ Date: _____
Ian McNamara

Quality Assurance Officer: _____ Date: _____
Christopher Arcuri

This signature page must be completed and be available on Site for review. This page does not, however, replace the QSF 016 requirements.

Acronyms and Abbreviations

COC	Contaminant of Concern
CoC	Chain of Custody
DQOs	Data Quality Objectives
EDDs	Electronic Data Deliverables
EPA	United States Environmental Protection Agency
GC/MS	Gas Chromatography/Mass Spectrometry
GHD	GHD Services Inc.
GIS	Geographical Information System
HAZWOPER	Hazardous Waste Operations and Emergency Response
ICP	Inductively Coupled Plasma Spectrometer
LCS	Laboratory Control Sample
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
LIMS	Laboratory Information Management System
MDL	Method Detection Limit
MS	Matrix Spike
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NELAP	National Environmental Laboratory Accreditation Program
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity
%R	Percent Recovery
PM	Project Manager
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SA	Spike Added
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
SR	Sample Result or Background
SSR	Spiked Sample Result
SW-846	"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd Edition with Updates I through V, 2014
VOC	Volatile Organic Compounds

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1. Introduction

This Quality Assurance Project Plan (QAPP) describes the policy, organization (analytical laboratory), functional activities, and quality assurance (QA) and quality control (QC) protocols to be utilized during implementation of Soil, Soil Vapor, Indoor Air, and Groundwater Sampling at the Former GIC Site in Sherburne, New York. The QAPP is a planning document that provides a "blueprint" for obtaining the type and quantity of data needed to support environmental decision making and is intended to accompany the Standard Operating Procedures and any specific Sampling and Analysis Plan (SAP) or work plan prepared for monitoring events at the Site. The QAPP integrates all technical and quality aspects of a project and documents all QA, QC, and technical activities and procedures associated with planning, implementing, and assessing environmental data collection operations.

There are four basic groups of elements that must be included in a QAPP. These four groups and associated elements follow:

– Group A – Project Management. The elements in this group include all aspects of project management, project objectives, and project history.
– Group B – Data Generation and Acquisition. The elements in this group include descriptions of the design and implementation of all measurement systems that will be used during the project.
– Group C – Assessment/Oversight. The elements in this group encompass the procedures used to ensure proper implementation of the QAPP.
– Group D – Data Validation and Usability. The elements in this group cover the QA activities that occur after the data collection phase of the project is completed.

The elements associated with the project management, data generation and acquisition, assessment/oversight, and data validation and usability are presented in this QAPP.

2. Project Organization

2.1 Management Responsibilities

The responsibilities of management, QA personnel, field personnel, and laboratory personnel are provided in the following subsections. Additionally, any special training/certification requirements for the project are identified and an organization chart that identifies the lines of communication among the participants in the investigation activities is presented herein.

Vishay GSI, Inc.

As the responsible party, Vishay GSI, Inc. (VGSI) is implementing the on-going remedial investigation activities at the Site. VGSI has overall responsibility for procuring consultants and contractors to perform the work, budgeting and securing the necessary funds, and assuring that all requirements are met. The VGSI Project Coordinator is Luis Munoz.

VGSI - Project Coordinator

– Technical representation for VGSI.
– Advising on corrective actions.
– Ensuring VGSI resources are available on an as required basis.
– Reviewing reports.
– Communication/Coordination with NYSDEC.

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Ian McNamara - Project Manager – GHD

GHD has been selected as technical consultant for the Site activities. GHD has technical responsibility for the data collection activities. GHD's Project Manager is ultimately responsible for ensuring that the project objectives are achieved. GHD's Project Manager has selected a project team consisting of GHD's technical personnel (engineering, geology/hydrogeology, chemistry, and data management), QA personnel, and the analytical laboratory. GHD's Project Manager for the investigation activities and their specific responsibilities are summarized by the following.

– Technical representation on behalf of VGSI.
– Advising on corrective actions.
– Overview of field activities.
– Ensuring all GHD resources are available on an as required basis.
– Preparing and reviewing reports.
– Coordinating GHD's technical group.

TBD - Lab Project Manager (PM) – Lab TBD

The analytical laboratory for this project will be an analytical laboratory capable of performing the environmental analyses and is a full service chemical analytical laboratory accredited under National Environmental Laboratory Accreditation Program (NELAP) and certified in New York.

The Laboratory Project Manager is responsible for ensuring the project objectives are achieved by the laboratories. The Laboratory Project Manager and their specific responsibilities are summarized by the following:

– Ensures all resources of the laboratory are available on an as required basis.
– Review of final analytical reports.
– Approve final reports prior to submission to GHD.
– Lab Contact/Project Manager.

2.2 Quality Assurance Responsibilities

Project team members with QA responsibilities include GHD's QA Officer, GHD's Field QA Officer, and the laboratory QA Officer. These individuals and their specific responsibilities are summarized by the following.

Christopher Arcuri – Quality Assurance Officer – GHD

– Review laboratory quality assurance/quality control (QA/QC).
– Coordinate and review data validation and assessment.
– Advise on laboratory corrective action procedures.
– Prepare and review QA reports.
– QA/QC representation of project activities.

GHD Designee – Field QA Officer – GHD

– Overview and review field QA/QC.
– Management of field activities and field QA/QC.
– Field data assessment.
– Internal field technical system audits.
– Technical representation of field activities.
– Preparation of Standard Operating Procedures (SOPs) for field activities.
– Implement and document field corrective actions, if necessary.

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TBD - Laboratory Quality Assurance Officer – Lab TBD

– Coordinate and overview of laboratory systems audits.
– Overview of QA/QC documentation.
– Conduct detailed data review.
– Implement and document laboratory corrective actions, if required.
– Technical representation of laboratory QA procedures.
– Oversee preparation of laboratory SOPs.

2.3 Field Responsibilities

GHD and any applicable subcontractor will conduct all field sampling and obtain field measurements related to sampling during the investigation. The specific procedures for field sample collection and field measurements will adhere to all designated SOPs for fieldwork and as described in any applicable work plan. GHD's and the applicable subcontractor's field team leader will be responsible for documenting any field related nonconformances and implementing and documenting subsequent corrective actions. The field team leader or any field team member can identify and report nonconformances.

2.4 Laboratory Responsibilities

2.4.1 Approved Laboratories

For the purposes of this QAPP, Pace Analytical Services is expected to perform the analyses for the investigation. Specific information concerning the sampling and analysis requirements for the investigation are provided in Section 2.7 of this QAPP.

The shipping address and contact information for Pace Analytical Services will be provided by the laboratory prior to samples being collected. The specific responsibilities of laboratory personnel involved in the project are summarized by the following:

Melissa Deyo - Laboratory Contact/PM – Pace Analytical Services

– Coordinate laboratory analyses
– Supervise in house chain of custody
– Sub-contract sample analyses as needed
– Schedule sample analyses
– Oversee data review
– Oversee preparation of analytical reports

Designated Laboratory Person - Sample Custodian – Pace Analytical Services

– Receive and inspect incoming sample containers
– Record the condition of incoming sample containers
– Sign appropriate documents
– Verify correctness of chain of custody documentation
– Notify project manager of any nonconformances identified during sample receipt and inspection
– Assign a unique identification number to each sample and enter the client identification number and sample identification numbers into the sample receiving log
– Initiate transfer of the samples to appropriate laboratory sections
– Control and monitor access/storage of samples and extracts

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2.5 Project Organization

The organization and lines of communication among the project participants identified in the preceding subsections are presented on Figure 1.

2.6 Problem Definition/Background Information

This QAPP focuses on specific QA/QC activities designed to achieve the objectives of the SAP or work plan at the site.

The QAPP is a dynamic document, and it will be updated with specific addenda, if necessary, to reflect new phases of work as they are implemented. Any necessary modifications will be made by GHD's QA Officer and will be reviewed by GHD's Project Manager. This QAPP will be reviewed on an annual basis by GHD's QA Officer to ensure it accurately reflects any work being conducted at the Site. It is anticipated that this QAPP will be utilized throughout the investigative process.

2.7 Project/Task Description

An overview of the sampling and analysis program is provided in Tables 1a and 1b. Target analytes and targeted reporting limits are presented in Table 2.

2.7.1 Project Schedule

Sampling will be performed as needed and in accordance with schedules established ahead of each mobilization. It is anticipated that additional soil vapor intrusion investigations will occur between November 2024 and March 2025 and that a groundwater monitoring event will occur during June 2025.

2.8 Quality Objectives and Criteria for Measurement Data

The quality objectives and measurement performance criteria for data obtained for the investigation are presented in the following subsections.

2.8.1 Data Quality Objectives

Data quality objectives (DQOs) are qualitative and quantitative statements derived from the outputs of each step of the DQO process. The DQO process is a series of planning steps based on the scientific method that is designed to ensure that the type, quantity, and quality of environmental data used in decision making are appropriate for the intended application. A systematic planning process was used to develop this QAPP to assure consistency with previously conducted and approved field investigation and analytical methods for the purpose of maintaining comparable datasets. This process is designed to ensure that environmental data are of the appropriate type and quality for the intended use, and lead to logical conclusions and defensible decisions or estimates. DQOs are developed through a seven-step process that is both sequential and iterative, depending upon the complexity of the problem. The steps involve both qualitative and quantitative criteria. The overarching outcomes of the DQO process are described below.

The seven steps in the DQO process are summarized in the following:

1	Problem	The problem statement is that Site contamination in groundwater and soil vapor is present and that assessment of performance of the historical remedial actions and potential for supplemental remedial actions is needed.

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2	Goal	The goal is to obtain current analytical data to determine conditions at the Site to inform future decisions.
3	Inputs	Inputs include the acquisition of required new data related to the proposed activities as presented in investigation-specific work plans.
4	Boundaries	The boundaries include groundwater, soil, and soil vapor within and downgradient of the Site and its buildings.
5	Analytical Approach	The analytical approach is to generate an analytical summary for contaminant concentrations for the Former GIC Site in accordance with NYSDEC approved analytical methodology and associated quantification.
6	Acceptance Criteria	The laboratory acceptance criteria are presented in this QAPP for investigation activities, including Quality Assurance/Quality Control (QA/QC) procedures and data quality protocols.
7	Plan	The plan for collection activities is presented in the SAP or investigation-specific work plan.

2.8.2 Measurement Performance Criteria

The measurement performance criteria for precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) are provided in the following subsections.

2.8.2.1 Field Precision Criteria

Precision of the field sample collection procedures will be assessed by the analysis of field duplicate samples. Field duplicate samples will be collected at a frequency of 1 per 20 or fewer samples or at a minimum frequency of 1 per sampling event. The samples will be labeled such that the field duplicate sample is "blind" to the laboratory. A relative percent difference (RPD) of 50 percent for groundwater and soil vapor/indoor air samples, and 100 percent for soil samples will be used as the acceptance limit for analytes detected in both the investigative and field duplicate samples at concentrations greater than or equal to five times their quantitation limits.

Field precision for field measurements will be assessed through replicate measurement of the same sample, as applicable to the parameter being measured. The precision acceptance criteria for field measurements will be an RPD of 10 percent or less.

2.8.2.2 Laboratory Precision Criteria

Laboratory precision will be assessed through the calculation of RPDs for laboratory duplicate sample analyses. These will be matrix spike/matrix spike duplicate (MS/MSD) and/or laboratory control samples/laboratory control sample duplicates (LCS/LCSD). The equation to be used to determine precision is presented in Section 5.3.1 of this QAPP. Laboratory precision acceptance criteria will be generated by the laboratory and included in the laboratory reports.

2.8.2.3 Field Accuracy Criteria

The criteria for accuracy of the field sample collection procedures will be to ensure that samples are not affected by sources external to the sample, such as inadequate equipment decontamination procedures or sample contamination by ambient conditions or sample cross contamination. Field sampling accuracy will be assessed using the data from equipment blank samples, and field blank samples.

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Equipment blank samples will be collected at a minimum frequency of 1 per 20 or fewer samples or 1 equipment blank per day, whichever is most frequent. Equipment blank samples will be collected by routing laboratory grade deionized (DI) water over decontaminated sampling equipment (disassembled bladder pump and positive pressure pump body) for the same parameters being analyzed for the investigation collection activities. Equipment blank samples are collected, preserved, and shipped in an identical manner as field samples. The purpose of equipment blanks is the assess the adequacy of the decontamination process, assess contamination from the total sampling event, sample preparation and measurement process where decontaminated sample equipment is used to collect samples as opposed to one-time use equipment. An equipment blank captures the ambient environmental conditions that a field blank is intended to capture but will not distinguish detections related to equipment conditions versus ambient conditions.

A field blank sample will be collected at a minimum frequency of one per event. Field blanks are prepared by laboratory grade DI water into sample bottles for the same parameters being analyzed for the investigation collection activities and are preserved and shipped in an identical manner as field samples. The purpose of the field blank sample is to assess ambient contamination from field conditions during sampling.

Trip blanks will only be collected and analyzed if VOC parameters are sampled and tested. Trip blank samples will be prepared in the laboratory using laboratory grade DI water, shipped to the sampling site and transported back to the laboratory without having been exposed to sampling procedures. Trip blanks will be kept unopened in the field with the sample bottles. One trip blank will be transported to the laboratory with each cooler of aqueous VOC samples. The purpose of the trip blank is to assess contamination introduced during shipping and field handling procedures.

The samples will be labeled such that the equipment, field, and trip blank samples are "blind" to the laboratory.

Equipment, field, and trip blank samples should not contain target analytes. The blank sample data will be evaluated using the procedures specified in Section 5.3.2 of this QAPP. Accuracy also will be ensured by adhering to all sample handling procedures, sample preservation requirements, and holding time periods.

Accuracy of field measurements will be assessed by analyzing calibration check samples, as applicable to the parameter being measured.

2.8.2.4 Laboratory Accuracy Criteria

Laboratory accuracy will be assessed by determining percent recoveries from Laboratory Control Sample (LCS) analyses. An LCS will be analyzed at a frequency of 1 per laboratory batch of 20 or fewer samples of the same matrix. Accuracy relative to the sample matrix will be assessed by determining percent recoveries from the analysis of matrix spike (MS) samples. The equation to be used to determine accuracy for this project is presented in Section 5.3.2 of this QAPP. Laboratory accuracy acceptance criteria will be generated by the laboratory and included in the laboratory reports.

The accuracy of all organic analyses also will be monitored through the analysis of surrogate compounds. Surrogate compounds are added to each sample, standard, blank, and QC sample prior to sample preparation and analysis. Surrogate compounds are not expected to be found occurring naturally in the samples but behave analytically similar to the compounds of interest. Consequently, surrogate compound percent recovery data will provide information on the effect that the sample matrix exhibits on the accuracy of the analyses. Surrogate compound percent recovery acceptance criteria will be generated by the laboratory and included in the laboratory reports.

2.8.2.5 Field Representativeness Criteria

Representativeness is dependent upon the proper design of the sampling program. The representativeness criteria for field sampling will be to ensure that the correct locations are sampled and that the proper sampling procedures are followed. The sampling program was designed to provide data representative of conditions at the Site. During development of the sampling program, consideration was given to existing analytical data and physical setting.

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2.8.2.6 Laboratory Representativeness Criteria

The representativeness criteria for laboratory data will be to ensure that the proper analytical procedures are used for sample preparation, sample analysis, and that sample holding times are met. Additionally, the accuracy and precision of the laboratory data affect representativeness. The laboratory representativeness criteria will include achieving the accuracy and precision criteria for the sample analyses.

2.8.2.7 Field Comparability Criteria

The criteria for field comparability will be to ensure and document that the proper sampling procedures are followed.

2.8.2.8 Laboratory Comparability Criteria

The criteria for laboratory data comparability will be to ensure that the analytical methods used for the investigation are comparable to the methods used for previous sampling events, as applicable.

The methods identified in Section 3.3.2 of this QAPP are the same or comparable to the methods used to generate previous data.

2.8.2.9 Field Completeness Criteria

The criterion for field completeness will be 90 percent or more of the field measured data to ensure that the data are usable. The procedure for determining field data usability is provided in Section 3.9.2 of this QAPP. The equation for calculating completeness is presented in Section 5.3.4 of this QAPP.

2.8.2.10 Laboratory Completeness Criteria

The criteria for laboratory completeness will be 90 percent or more of the laboratory data are determined to be usable for the intended purpose. The procedure for determining laboratory data usability is provided in Section 3.9.2 of this QAPP. The equation for calculating completeness is presented in Section 5.3.4 of this QAPP.

2.8.2.11 Field Sensitivity Criteria

Sensitivity is the measure of the concentration at which an analytical method can positively identify and report analytical results. The sensitivity of a given method is commonly referred to as the detection limit. The sensitivity criteria for field measurement will be in accordance with manufacturer specification.

2.8.2.12 Laboratory Sensitivity Criteria

The sensitivity criteria for the laboratory analyses are the targeted reporting limits provided in Table 2 of this QAPP. Targeted quantitation limits have been set to meet the NYSDEC clean-up levels, when available, for the specified analytes as presented in Table 2.

It should be noted that high concentration of target and non-target analytes and matrix interferences may prevent the targeted quantitation limits from being achieved for all samples. The methods selected for analyzing the samples are EPA methods routinely used to support environmental investigations and data gathering activities.

2.9 Special Training/Certification Requirements

Field sampling team members are required to have successfully completed relevant field training protocols and to follow the Health and Safety Plan. They are also required to have received the 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) safety training and annual 8-hour refresher courses required by 29 Code of Federal Regulations (CFR) Parts 1910 and 1926.

Employee training documentation is maintained by the consultant conducting the sampling event.

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Laboratory personnel training records are maintained by the laboratory. The laboratory is required to be accredited by the NELAP to demonstrate compliance with EPA's requirement that the laboratory have a documented quality system that complies with American National Standards Institute/American Society for Quality Control (ANSI/ASQC) E4 94 ("Specifications and Guidelines for Quality System for Environmental Data Collection and Environmental Technology Programs", January 1995), and EPA QA/R 2 ("EPA Requirements for Quality Management Plans", March 2001). The laboratory is accredited by NELAP for the analyses identified in this QAPP.

2.10 Documentation and Records

The documents, records, and reports generated during the investigation activities are identified in the following subsections. The GHD Project Manager will ensure the most current version of the QAPP is available prior to each sampling event.

2.10.1 Field and Laboratory Records

Documents and records generated during the project include sample collection records, QC sample records, laboratory records, and data handling records. A brief description of these documents and records are provided below. Detailed information on these records is provided in subsequent sections of this QAPP.

Sample collection records that will be used during the program's sampling activities include field logbooks and/or project standard field forms, stratigraphic logs, chain of custody records, field narratives, and shipping papers.

QC sample records that will be used during the project to document the generation of QC samples include field logbooks and/or project standard field forms recording field blank samples, and field duplicate samples. The laboratory will maintain quality records for deionized water sent for trip blanks or sent for field blank samples and sample integrity information. Records of sample preservation will be maintained in field logbooks and/or on project standard field forms and by the laboratories.

Field measurements will be recorded in field logbooks and/or on project standard field forms. Calibration data, where applicable, will also be recorded in these logbooks and/or on project standard field forms.

Laboratory records that will be maintained for the project include sample receipt documentation, laboratory narratives, field and laboratory chain of custody documentation, sample container cleanliness certifications, reagent and standard reference material certifications, sample preparation records, sample analysis records (i.e., run logs), instrument/raw data, QC data, calibration data, corrective action reports, and final reports.

Data handling records that will be maintained include verification of computer programs used to manipulate or reduce raw data into final results and data validation reports. The laboratory will maintain documentation of data verification and reduction procedures as necessary for the analyses used during the investigation. GHD will maintain checklists, notes, and reports generated during the external data validation process.

2.10.2 Data Reporting Format

Laboratory reports for the sampling and monitoring activities will include the following data deliverables:

1. Case narrative for each analyzed batch of samples.
2. Cross referencing of laboratory sample to project sample identification numbers.
3. Description of data qualifiers to be used.
4. Methods of sample preparation and analyses for samples.
5. Sample results.
6. Raw data for sample results and laboratory QC samples.
7. Results of (dated) initial and continuing calibration checks and Gas Chromatography/Mass Spectrometry (GC/MS) tuning results.

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8. MS/MSD recoveries, LCS, method blank results, surrogate recoveries, calibration check compounds and system performance check compound results (organics).
9. MS recoveries and matrix duplicate RPDs, LCS, serial dilutions, method blank results, and reagent blank results (inorganics).
10. Labeled and dated chromatograms/spectra of sample results and laboratory QC checks.

The data package submitted will be an EPA "Contract Laboratory Program like (CLP like)" data package consisting of all the information presented in a CLP data package but not necessarily on CLP forms.

Method detection limit (MDL) studies and method performance and validation studies will be maintained by the laboratory.

See Section 3.9.4 for formatting information of Electronic Data Deliverables (EDD) from the laboratory.

2.10.3 Data Archiving and Retrieval

All records will be maintained consistent with the laboratory's and GHD's record retention policies.

3. Data Generation and Acquisition

The design and implementation of the measurement systems that will be used during the investigation activities, including sampling procedures, analytical procedures, and data handling and documentation, are detailed in the following subsections.

3.1 Sampling Process Design

The rationale for the sampling program is described in the SAP or work plan.

3.1.1 Sampling Methods

Sample collection methods are provided in the investigation-specific SAP or work plan that will be prepared and approved prior to work commencing and will follow GHD’s SOPs.

3.1.2 Field Equipment and Sample Container Cleaning Procedures

Equipment cleaning/decontamination procedures are provided in GHD’s SOPs. Sample containers will be provided by the laboratories. All containers will be pre cleaned in accordance with the EPA guidance document entitled "Specifications and Guidance for Contaminant Free Sample Containers", EPA 540/R 93/051. Certificates of analysis for each lot of containers will be maintained by the laboratory or be available from the vendor upon request.

3.1.3 Field Equipment Maintenance, Testing, and Inspection Requirements

Field equipment will be inspected and tested prior to use in the field. Maintenance logs for all field equipment are recorded in the field logbooks or kept in field equipment files located with the consultant conducting the sampling event and are to be completed daily as per GHD’s SOPs. Prior to use in the field, the equipment is checked again, and the performance information is recorded in the field logbook and/or on a standard field equipment form. All equipment returned from the field is inspected and tested. Any required maintenance is performed and documented prior to the equipment being returned to service.

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Critical spare parts for field equipment and replacement field equipment are available and can be delivered to the field when the need is identified. Alternately, field equipment vendors can provide replacement equipment if needed. The replacement equipment can be shipped for overnight delivery as necessary.

3.1.4 Inspection and Acceptance Requirements for Supplies and Sample Containers

The field supplies for the investigation consist of Liquinox or another non-phosphate containing equivalent for equipment cleaning, commercial grade DI water for sample collection equipment rinsing, laboratory grade DI water for final sample collection, equipment rinsing and for collecting equipment rinsate blank samples, and sample containers to collect the samples.

Liquinox or an equivalent non-phosphate containing equivalent and commercial grade DI water will be purchased as needed from a variety of vendors.

Deionized water and sample containers will be provided by the laboratory. The laboratory will maintain documentation of the purity/cleanliness for these materials. The laboratory QA Officer is ultimately responsible for ensuring these materials are acceptable for the project. The acceptability of these materials for use will be evaluated by reviewing lot analysis certificates (deionized water and containers). Water and containers that do not meet the laboratory's acceptability requirements will not be shipped to the field.

3.2 Sample Handling and Custody Requirements

The procedures for sample handling, labeling, shipping, and chain of custody documentation are provided in the subsections that follow.

3.2.1 Sample Handling

The procedures used to collect the samples are provided in the GHD Field Training Manual. Tables 3a and 3b identify the requirements for the number of containers, container volume, container type, preservation, holding time periods, and shipping for the analyses. The sample identification procedure is as follows:

Example: GW 11119287 040122 DJT XXX

Where:

GW	=	Designates sample matrix (GW – Groundwater, SO - Soil)
11119287	=	GHD project number (same project number as used in logbooks and on sample forms)
040122	=	Date of collection (mmddyy)
DJT	=	Sampler initials
XXX	=	Unique sample number

Unique sequential sample numbers will be assigned to samples. Sample identifications, sample locations, and sample depths will be recorded in the field logbook or field forms.

Samples will be placed in shipping coolers containing bagged, cubed ice immediately following collection. The samples will be grouped in the shipping cooler by the order in which the samples are collected, and then shipped to the laboratory via laboratory courier, hand delivery by GHD, or by an overnight courier service, generally on the day they are collected. The only exceptions to this procedure will be for samples collected after the courier service has picked up the shipment for the day and when samples are collected on a Sunday or holiday. In these instances, the samples will be shipped on the next business day.

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3.2.2 Sample Custody

Chain of custody is the sequence of possession of an item. An item (such as a sample or final evidence file) is considered to be in custody if the item is in actual possession of a person, the item is in the view of the person after being in their actual possession, or the item was in a person's physical possession but was placed in a secure area by that person. Field, laboratory, and final evidence files custody procedures are described in the subsections that follow.

3.2.2.1 Field Custody Procedures

Logbooks and/or project standard field forms will be used to record field data collection activities. Entries will be described in as much detail as possible to ensure that a particular situation could be reconstructed solely from these entries. Field logbooks are bound field survey books or notebooks with consecutively numbered pages. Logbooks will be assigned by project and will be stored with the consultant conducting the sampling event when not in use. Each logbook will be identified by a project specific document number. The project number required in the logbooks and on the field forms will correspond to the project number in the sample identification procedure in Section 3.2.1.

The title page of each logbook will contain the following information:

– Project name
– Project number
– Project start date
– End date

Entries into the logbook will contain a variety of information. At the beginning of each day's logbook entry, the date, start time, weather, names of all sampling team members present, and the signature of the person making the entry will be entered. The names of individuals visiting the Site or field sampling team and the purpose of their visit will also be recorded in the field logbook.

All field measurements obtained, and sample collection information will be recorded in a logbook and/or on a project standard field form. Project standard field forms are specifically prepared for each project sampling location. These forms are used to record all field measurements/information obtained and samples collected for each location. All entries will be made in ink, signed, and dated with no erasures. When an incorrect entry is made, the incorrect information will be crossed out with a single strike mark and the strike mark will be initialed and dated by the person who makes the strike mark. The correct information will be entered adjacent to the original entry.

Whenever a sample is collected, an identification and a detailed description (if necessary) of the location will be recorded in the logbook and/or on a project standard field form. Photographs taken at a location, if any, will be noted in the logbook. All equipment used to obtain field measurements will be recorded in the field logbook and/or on a project standard field form. In addition, the calibration data for all field measurement equipment will be recorded in the field logbook or on standard field forms.

Samples will be collected according to the sampling procedures documented in the work plan. The equipment used to collect samples, time of sample collection, sample description, volume and number of containers, and preservatives added (if applicable) will be recorded in the field logbook and/or on a project standard field form. A deviation from the work plan, QAPP, or other project appropriate planning document sampling procedures will be documented in the field logbook and/or on a project standard field form. Each sample will be uniquely identified using the sample identification system provided in Section 3.2.1.

Figure 2 illustrates an example chain of custody form. The sample packaging and shipping procedures summarized below will ensure that the samples arrive at the laboratory with the chain of custody intact:

1. The field sampler is personally responsible for the care and custody of the samples until they are transferred to another person or the laboratory. As few people as possible will handle the samples.

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2. All sample containers will be identified by using sample labels that include the sampler's initials, sample name, date and time of collection, and analyses to be performed. Sample labels will be completed for each sample using waterproof ink and will be placed on the sample container.
3. Samples will be accompanied by a properly completed chain of custody form. The sample identification numbers and required analyses will be listed on the chain of custody form. When transferring the possession of samples, the individuals relinquishing and receiving the samples will sign and record the date and time on the form. The chain of custody form documents sample custody transfers from the sampler to another person, to the laboratory, or to/from a secure storage area.
4. Samples will be properly packaged for shipment and dispatched to the laboratory for analysis with a separate signed chain of custody form enclosed in and secured to the inside top of each shipping cooler. Shipping coolers will be secured with custody seals for shipment to the laboratory. The custody seal is then covered with clear plastic tape to prevent accidental damage to the custody seal.
5. If samples are split with a government agency or other entity, it is the responsibility of that entity to prepare its own chain of custody form for the samples. Information regarding the identity of the entity and the sample(s) that are being split will be recorded in the field logbook.
6. All sample shipments will be accompanied by the chain of custody form identifying its contents. The chain of custody form is a one-part form. The form is completed by the sampling team and receives a copy and takes a photocopy of the completed form, while the lab retains the original copy. The sample CoC is to be maintained throughout the collection, shipment and analysis process.

If the samples are sent by common carrier, a bill of lading (i.e., FedEx air bill) will be used and copies will be retained as permanent documentation. Commercial carriers are not required to sign the chain of custody form provided the form is sealed inside the sample cooler with the custody tape intact.

3.2.2.2 Laboratory Custody Procedures

Laboratory sample custody begins when the samples are received at the laboratory. The laboratory sample custodian will assign a unique laboratory sample identification number to each incoming sample. The field sample identification numbers, laboratory sample identification numbers, date and time of sample collection, date and time of sample receipt, and requested analyses will be entered into the sample receiving log. The laboratory's sample log in, custody, and document control procedures will be consistent with its standard operating procedure.

Following log in, all samples will be stored within an access-controlled location and will be maintained properly preserved (as defined in Tables 3a and 3b) until completion of all laboratory analyses. Unused sample aliquots and sample extracts will be maintained properly preserved for a minimum of 30 days following receipt of the final report by GHD. The laboratory will be responsible for the disposal of unused sample aliquots, sample containers, and sample extracts in accordance with all applicable local, state, and federal regulations.

The laboratory will be responsible for maintaining analytical logbooks and laboratory data.

3.2.2.3 Final Evidence Files Custody Procedures

The final evidence file for the project will be maintained by GHD and will consist of the following:

1. Project plans
2. Project logbooks
3. Field data records
4. Sample identification documents
5. Chain of custody records
6. Correspondence
7. References, literature
8. Final data packages

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9. Miscellaneous photos, maps, drawings, etc.
10. Reports

The final evidence file materials will be the responsibility of the evidentiary file custodian with respect to maintenance and document removal.

3.3 Analytical Method Requirements

The field and laboratory analytical methods that will be used during the investigation are detailed in the following subsections.

3.3.1 Field Analytical Methods

Field measurements obtained during monitoring well purging include temperature, dissolved oxygen, pH, specific conductivity, oxidation-reduction potential, and turbidity, at a minimum. This data will be used to determine when groundwater monitoring well stabilization has occurred and representative groundwater samples can be collected, as applicable to the Work Plan. Other field measurements could include photoionization detector readings, as necessary. Field portable meters will be used to analyze the samples.

3.3.2 Laboratory Analytical Methods

The analytical methods that will be used are presented in Tables 4a and 4b. The frequency and types of QC samples to be collected are included in Tables 1a and 1b.

The turnaround time required for the analyses required for each batch of samples will be noted on the chain of custody documents submitted with the samples and will be communicated to the laboratory prior to the sampling event, as necessary.

3.4 Quality Control Requirements

The field and laboratory QC requirements for the investigation are discussed in the following subsections. Specific QC checks and acceptance criteria are provided in the referenced analytical methods.

3.4.1 Field Sampling Quality Control

Field QC requirements include analyzing reference standards for instrument calibration and for routine calibration checks. Field QC samples for this project include equipment and trip blank samples to determine the existence and magnitude of sample contamination resulting from sample containers, ambient conditions, or sampling procedures and field duplicate samples to assess the overall precision of the sampling and analysis event. The frequency of collection of these field QC samples is summarized in Tables 1a and 1b of this QAPP. The evaluation of field QC data is provided in Section 3.9.2 of this QAPP.

3.4.2 Analytical Quality Control

The laboratory QC requirements for the analyses include analyzing method blanks, instrument performance checks, initial calibration standards, calibration verification standards, internal standards, surrogate compound spikes, and LCS. The acceptance criteria for LCS and surrogate compounds will be generated by the laboratory and included in the laboratory reports. The analysis frequency and acceptance criteria for the remaining QC checks will be consistent with the referenced methods in Tables 4a and 4b.

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3.5 Instrument/Equipment Testing, Inspection, and Maintenance Requirements

The procedures used to verify that instruments and equipment are functional and properly maintained are described in the following subsections.

3.5.1 Field Instrument Maintenance

The field equipment for this project includes water level, pH, temperature, conductivity, DO, turbidity, and ORP meters. Specific preventive maintenance procedures to be followed for field equipment are those recommended by the manufacturer. Field instruments will be checked and calibrated daily before use, as applicable.

3.5.2 Laboratory Instrument Maintenance

As part of its QA/QC program, the laboratory conducts routine preventive maintenance to minimize the occurrence of instrument failure and other system malfunctions. Designated laboratory employees will regularly perform routine scheduled maintenance and repair of (or coordinate with the instrument manufacturer for the repair of) all instruments. All maintenance that is performed will be documented in the laboratory's maintenance logbooks. All laboratory instruments are maintained in accordance with manufacturer's specifications. Table 5 provides examples of the frequency at which components of key analytical instruments or equipment will be serviced.

3.6 Calibration Procedures and Frequency

The procedures for maintaining the accuracy for all the instruments and measuring equipment that will be used for conducting field sampling and laboratory analyses are described in the following subsections. These instruments and equipment will be calibrated prior to each use or according to a periodic schedule.

3.6.1 Field Instruments/Equipment

Instruments and equipment used to gather, generate, or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the manufacturer's specifications.

Equipment to be used during field sampling will be examined to confirm that it is in operating condition. This includes checking the manufacturer's operating manual for each instrument to ensure that all maintenance requirements are being observed. Individual calibration records for each field instrument that will be used for the project will be reviewed to ensure that any prior equipment problems have not been overlooked and all necessary repairs to equipment have been completed.

3.6.2 Laboratory Instruments

Calibration of laboratory equipment will be based on approved written procedures. Records of calibration, repairs, or replacement will be filed and maintained by the designated laboratory personnel performing these QC activities. These records generally will be filed at the location where the work is performed and will be subject to a QA audit. The laboratory will have trained staff and in house spare parts available for instrument repair or will maintain service contracts with vendors. Specific calibration procedures and frequencies are detailed in the referenced method.

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3.7 Inspection/Acceptance Criteria for Supplies and Consumables

The procedures that will be used to ensure that supplies and consumables used in the field and laboratory will be available as needed and free of contaminants are detailed in the following subsections.

3.7.1 Field Supplies and Consumables

Supplies and consumables for field sampling will be obtained from various vendors and include sample containers, detergent and water for equipment decontamination, and field blank water. The vendors and inspection and acceptance criteria for these field supplies were presented in Section 3.1.4 of this QAPP.

Additional field supplies and consumables may include pump tubing and personal protective equipment. Pump tubing will be constructed of pre cleaned high density polyethylene (or equivalent acceptable tubing). These materials will not introduce contaminants into the samples or interfere with the analyses. All field supplies will be consumed or replaced with sufficient frequency to prevent deterioration or degradation that may interfere with the analyses.

3.7.2 Laboratory Supplies and Consumables

The laboratory's vendors for general labware and reagents may include VWR Scientific Products and Fisher Scientific. Vendors for chromatography supplies and organic standards may include Ultra Scientific, Supelco, AccuStandard, Restek, ChemService, Cambridge Isotopes, and Aldrich Chemical. The lot numbers of reagents and standards will be recorded and dates of receipt, first use, and expiration will be documented by the laboratory. Certificates of analysis will be maintained on file to document reagent/standard purity.

The referenced methods provide details on identifying contaminants in reagents and standards, determining deterioration of reagents and standards, and the corrective actions required if contaminants or deterioration are identified. The laboratory QA Officer is ultimately responsible for the ensuring the acceptability of supplies and consumables.

3.8 Data Acquisition Requirements (Non-Direct Measurements)

Data generated during the investigation are verified and validated. These data then will be submitted in the required reports to the client and the applicable regulatory agency. Data from other sources are not required for this investigation. Data generated will be verified and validated. These data will be submitted concurrently to GHD and the NYSDEC.

3.9 Data Management

The procedures for managing data from generation to final use and storage are detailed in subsections that follow.

3.9.1 Data Recording

Laboratory data are recorded in a variety of formats. Data from instruments are recorded on magnetic media, strip charts, or bench sheets. The referenced methods provide the data recording requirement for each preparation and analysis method.

3.9.2 Data Validation

Validation of the analytical data will be performed by GHD's QA Officer or his designee in accordance with the following:

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1. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (EPA 542 R 20 006, November 2020).
2. EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (EPA 540 R 20 005, November 2020).

The data assessment will include a review of all technical holding times, instrument performance check sample results, initial and continuing calibration results, and all batch and matrix QC including equipment blanks, field duplicates, MS/MSD, laboratory duplicates, surrogate recoveries, method blanks, LCS results, continuing and initial calibration checks, and the identification and quantitation of specific analytes of interest. Assessment of analytical and in house data will include checks on data consistency by looking for comparability of duplicate analyses, adherence to accuracy and precision control criteria detailed in this QAPP and anomalously high or low parameter values. The results of these data validations will be reported to the project manager, noting any discrepancies and their effect upon acceptability of the data.

The evaluation and action criteria specified in these documents (referred to hereafter as the National Functional Guidelines) will be used for validating the data. Data validation reports will summarize the samples reviewed, parameters reviewed, any nonconformance with the established criteria, and validation actions (including data qualifiers). Qualifiers assigned to the data will be consistent with the data qualifiers specified in the National Functional Guidelines.

3.9.3 Data Transformation/Data Reduction

Laboratory data reduction consists of producing the final results from raw data. The procedures, calculations, and specific equations used by the laboratory for data reduction are detailed in the referenced methods.

3.9.4 Data Transmittal/Transfer

The laboratories will provide data in electronic format as electronic data deliverables (EDDs) that are compatible with EarthSoft's EQuIS database product, which is GHD's database for chemistry and geographical data. EDDs are generated directly from the laboratory information management system (LIMS), thereby eliminating the possibility of manual transcription errors. Laboratory EDDs are imported into the EQuIS database, and the data are maintained in the database for manipulation and presentation.

GHD's QA Officer is responsible for verifying the correctness of the analytical database after the laboratory data for each event have been imported. This is accomplished by comparing the data from the database to the hard copy analytical reports for a minimum of 10 percent of the sample results. If discrepancies between the database and analytical reports are detected, a complete verification of the database will be performed or a new EDD will be submitted, imported, and verified as described previously.

3.9.5 Data Analysis

Groundwater data will be analyzed to determine flow direction, contours, and concentration gradients. It is anticipated that commercially available Geographical Information System (GIS) and contouring software will be used to facilitate the evaluation/visualization of the data. The actual software used and input parameters/assumptions will be identified in project reports, as necessary. There is no extreme or unique computer hardware required to use these software programs. Refer to Section 2.8 for laboratory data assessment.

3.9.6 Data Assessment

Assessment of laboratory data will be performed using the procedures detailed in the analytical methods. These assessments included determining the mean, standard deviation, relative standard deviation, percent difference, RPD, and percent recovery for certain QC elements.

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Assessment of QC data for data validation purposes will include determining the percent recovery, RPD, and percent completeness. The statistical equations to determine these parameters are provided in Section 5.3 of this QAPP.

3.9.7 Data Tracking

The laboratory's LIMS will provide the means for tracking data in the laboratory. The Laboratory Director is ultimately responsible for data tracking in the laboratory.

Tracking of analytical data in GHD's database includes recording the laboratory generating the data, the date when the EDD was received and imported, the date when qualifiers were applied to the results, the level of data review performed, and the data review guidance used to evaluate the data. GHD's Project Manager is ultimately responsible for tracking data from entry to reporting.

3.9.8 Data Storage and Retrieval

Laboratory data will be stored in hard copy and/or electronic format for a minimum period of 5 years. Electronic instrument data will be maintained for this same time period. All laboratory records for this project will be maintained consistent with the storage requirements stated in Section 2.10.3 of this QAPP.

GHD's Project Manager is responsible for project data storage and retrieval. Final evidence files, which will include a copy of all laboratory data, will be maintained by GHD in secure on Site or off-Site storage.

3.9.9 Data Security

Laboratory data security is the responsibility of the Laboratory Director. Archived data cannot be accessed without authorization, and the name and purpose of personnel accessing archived data are recorded. The laboratory's LIMS is password protected and access rights are restricted by job function. GHD's data security procedures include limiting project database access to database managers and analysts, in addition to general building security procedures.

4. Assessment/Oversight

The following subsections describe the procedures used to ensure proper implementation of this QAPP and the activities for assessing the effectiveness of the implementation of the project and associated QA/QC activities.

4.1 Assessments and Response Actions

Assessments consisting of internal and external audits may be performed during the project. Internal technical system audits of both field and laboratory procedures will be conducted to verify that sampling and analysis are being performed in accordance with the procedures established in the SAP, work plan, and this QAPP.

An internal field technical system audit of field activities will be conducted by the Field QA Officer or designee at the beginning of the field sampling activities to identify deficiencies in the field sampling and documentation procedures. The field technical system audit will include examining field sampling records and chain of custody documentation. In addition, sample collection, handling, and packaging in compliance with the established procedures will be reviewed during the field audit. Any deficiencies identified will be documented and corrective actions will be taken to rectify the deficiencies.

Corrective action resulting from internal field technical system audits will be implemented immediately if data may be adversely affected from the use of unapproved methods or the improper use of approved methods. The Field QA Officer will identify deficiencies, if any, and recommend corrective action. Implementation of corrective actions will be performed by the Field QA Officer and field team. Corrective action will be documented in the field logbook and/or the project file.

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Follow up audits will be performed as necessary to verify that deficiencies have been corrected and that the QA/QC procedures described in this QAPP, and the SAP or work plan are maintained throughout the project.

An internal laboratory technical system audit will be conducted by the laboratory's QA Officer or designee. The laboratory technical system audit typically is conducted on a biannual basis and includes examining laboratory documentation regarding sample receiving, sample log in, storage and tracking, chain of custody procedures, sample preparation and analysis, instrument operating records, data handling and management, data tracking and control, and data reduction and verification. The laboratory's QA Officer will evaluate the results of the audit and provide a report to section managers and the Laboratory Director that includes any deficiencies and/or noteworthy observations.

Corrective action resulting from deficiencies identified during the internal laboratory technical system audit will be implemented immediately. The Laboratory Director or section leaders, in consultation with the laboratory supervisor and staff, will approve the required corrective action to be implemented by the laboratory staff. The laboratory QA/QC Officer will ensure implementation and documentation of the corrective action. All problems requiring corrective action and the corrective action taken will be reported to the laboratory Project Manager. Follow up audits will be performed as necessary to verify that deficiencies have been corrected.

External laboratory audits, if conducted, may include, but not be limited to, reviewing laboratory analytical procedures, laboratory on Site audits, and/or submitting performance evaluation (PE) samples to the laboratory for analysis.

4.2 Reports to Management

Quality assurance information will be summarized following completion of the investigation activities. This information will consist of the results of external PEs, results of periodic data quality validation and assessment, data use limitations, and any significant QA problems identified, and corrective actions taken.

GHD's QA Officer will be responsible within the organizational structure for compiling this information. GHD's Project Manager will be provided with this information, to be included, as appropriate, in required reports to the NYSDEC.

5. Data Verification/Validation and Usability

The QA activities that will be performed to ensure that the data are scientifically defensible, properly documented, of known quality, and meet the project objectives are described in the following sections.

5.1 Data Review, Verification, and Validation Requirements

All field and laboratory data will be reviewed, verified, and validated. These terms are defined as follows:

– Data review is the in-house examination to ensure that the data have been recorded, transmitted, and processed correctly.
– Data verification is the process for evaluating the completeness, correctness, and conformance/compliance of a specific data set against the method, procedural, or contractual specifications.
– Data validation is an analyte and sample specific process that extends the evaluation of data beyond method, procedure, or contractual compliance (i.e., data verification) to determine the quality of a specific data set relative to the end use.

The procedures and criteria used to verify and validate field and laboratory data are presented in Section 5.2. Field data and logbooks will be reviewed to ensure that the requirements of the sampling program, including the number of samples and locations, sampling, and sample handling procedures, were fulfilled.

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Laboratory data review consists of raw data being reduced to results and checked by the responsible analyst. A second review of the data reduction procedure is conducted by another analyst or senior chemist. After the data are verified (see Section 5.2), a draft report is reviewed by the laboratory Project Manager. Final reports are generated, signed, and transmitted after approval of the draft by the Project Manager.

5.2 Verification and Validation Methods

Field data will be verified by reviewing field documentation and chain of custody records. Data from direct reading field instruments will be verified by reviewing calibration and operating records and the QC data specified in Section 2.8 of this QAPP.

Verification of sample collection procedures consists of reviewing sample collection documentation for compliance with the requirements of the SAP and this QAPP. If alternate sampling procedures were used, the acceptability of the procedure will be evaluated to determine the effect on the usability of the data. Data usability will not be affected if the procedure used is determined to be an acceptable alternative that fulfills the measurement performance criteria in Section 2.8 of this QAPP.

The laboratory will internally verify its data by reviewing and documenting sample receipt, sample preparation, sample analysis (including internal QC checks), and data reduction and reporting. Any deviations from the acceptance criteria, corrective actions taken, and data determined to be of limited usability (i.e., laboratory qualified data) will be noted in the laboratory reports.

Verification of laboratory data conducted by GHD will consist of reviewing the final reports to ensure that the methods used to analyze the samples were consistent with the requirements of this QAPP. Sample handling records will also be reviewed to ensure that sample integrity remained intact from collection to laboratory receipt and that samples were properly preserved. Chain of custody documentation and sample condition upon laboratory receipt will be reviewed. Laboratory results, holding time periods, and QC data will be reviewed to determine compliance with the measurement performance criteria in Section 2.8 of this QAPP and the analytical methods.

Data validation will be conducted by GHD consistent with the procedure identified in Section 3.9.2 of this QAPP. The results of the data validation procedure will identify data that do not meet the measurement performance criteria in Section 2.8 of this QAPP. Data validation will determine whether the data are acceptable, of limited usability (qualified as estimated), or rejected. Data qualified as estimated will be reviewed and a discussion of the usability of estimated data will be included in the data validation report. The results of data verification/validation will be summarized in a data validation memorandum provided to GHD's Project Manager for use in interpreting the results and for use in project reports.

Data determined to be unusable may require corrective action to be taken. Potential types of corrective action may include resampling by the field team or reanalysis of samples by the laboratory. The corrective actions taken are dependent upon the ability to mobilize the field team and whether or not the data are critical for project DQOs to be achieved. GHD's Project Manager will be responsible for approving the implementation of any corrective action deemed to be necessary during data verification/validation.

5.3 Usability/Reconciliation with Data Quality Objectives

The overall usability of the data for the investigation will be assessed by evaluating the PARCCS of the data set to the measurement performance criteria in Section 2.8 of this QAPP using basic statistical quantities, as applicable. The procedures and statistical formulas to be used for these evaluations are presented in the following subsections.

5.3.1 Precision

Precision of field sampling procedures will be evaluated by assessing the RPD data from field duplicate samples. Analytical precision will be evaluated by assessing the RPD data from either duplicate spiked sample analyses or duplicate LCS analyses. The RPD between two measurements is calculated using the following simplified formula:

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Where:

$$RPD = \frac{|R1-R2|}{(R1+R2)/2} \times 100\%$$

R_1 = Value of first result

R_2 = Value of second result

RPD data will provide the means to evaluate the overall variability attributable to the sampling procedure, sample matrix, and laboratory procedures. It should be noted that the RPD of two measurements can be very high when the concentrations approach the quantitation limit of an analysis.

5.3.2 Accuracy/Bias

The data from method blank samples, surrogate compound spikes, LCS, and MS will be used to determine accuracy and potential bias of the sample data.

The data from method blank samples provide an indication of laboratory contamination that may result in bias of sample data. Sample data associated with method blank contamination will have been identified during the data validation process. Sample data associated with method blank contamination are evaluated during the data validation procedure to determine if analytes detected in samples associated with contaminated method blanks are "real" or are impacted by laboratory contamination. The procedure for this evaluation involves comparing the concentration of the analyte in the sample to the concentration in the method blank sample taking into account adjustments for sample preparation and dilution factors. In general, the sample data are qualified as non-detect "U" if both the sample and blank concentrations are less than the reporting limit or less than 2x the reporting limit for common laboratory organic contaminants (acetone, 2-butanone and methylene chloride). The "U" qualifier indicates that the result is a laboratory artifact based on the method blank contamination.

The data from equipment, field, and trip blank samples provide an indication of field conditions that may result in bias of sample data. Sample data associated with contaminated equipment blank samples will have been identified during the data validation process. The evaluation procedure and qualification of sample data associated with equipment contamination are performed in a similar manner as the evaluation procedure for method blank sample contamination.

MS sample data provide information regarding the accuracy/bias of the analytical methods relative to the sample matrix. MS samples are field samples that have been fortified with target analytes prior to sample preparation and analysis. The percent recovery data provide an indication of the effect that the sample matrix may have on the preparation and analysis procedure. Sample data exhibiting matrix effects will have been identified during the data verification/validation process.

Surrogate spike recoveries provide information regarding the accuracy/bias of organic analyses on an individual sample basis. Surrogate compounds are not expected to be found in the samples and are added to every sample prior to sample preparation. The percent recovery data provide an indication of the effect that the sample matrix may have on the preparation and analysis procedure. Sample data exhibiting matrix effects will have been identified during the data validation process.

Analytical accuracy/bias will be determined by evaluating the percent recovery data of LCS. LCS are artificial samples prepared in the laboratory using a blank matrix fortified with analytes from a standard reference material that is independent of the calibration standards. LCS are prepared and analyzed in the same manner as the field samples. The percent recovery data from LCS analyses will provide an indication of the accuracy and bias of the analytical method for each analyte or analyte group.

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Percent recovery is calculated using the following formula:

$$\%R = \frac{SSR - SR}{SA} X\ 100$$

Where:

SSR = Spiked Sample Result

SR = Sample Result or

Background SA = Spike Added

The percent recovery for surrogate compounds and LCS are determined by dividing the measured value by the true value and multiplying by 100.

Accuracy/bias will be determined by comparing the percent recovery data to the measurement performance criteria in Section 2.8 of this QAPP.

5.3.3 Sample Representativeness

Representativeness of the samples will be assessed by reviewing sample holding times, the results of field audits, if conducted, and the data from field duplicate samples. Sample representativeness will be considered acceptable if holding time periods are met, the results of field audits indicate that the approved sampling methods or alternate acceptable sampling methods were used to collect the samples, and the field duplicate RPD data are acceptable.

5.3.4 Completeness

Completeness will be assessed by comparing the number of valid (usable) sample results to the total possible number of results within a specific sample matrix and/or analysis. Percent completeness will be calculated using the following formula:

$$\%\ Completeness = \frac{Number\ of\ Valid\ (usable)\ measurements}{Number\ of\ Measurements\ Planned} X\ 100$$

Completeness will be considered acceptable if 90 percent of the data are determined to be valid. However, valid sample data will not be rendered unusable if this completeness goal is not met. Formal corrective actions and additional sampling/analysis may be required when data quality results in a percentage less than the completeness goal. This will be addressed on a per event basis, in conjunction with the client and GHD.

5.3.5 Comparability

The comparability of data sets will be evaluated by reviewing the sampling and analysis methods used to generate the data for each data set. Comparability will be determined to be acceptable if the sampling and analysis methods specified in this QAPP and any approved QAPP revisions or amendments are used for generating the data.

Comparability of data from split samples (samples that are collected at the same time from the same location and split equally between two parties using sample containers from the same source or vendor), if collected, will be evaluated by determining the RPD of detected analytes in both samples following data validation. Analytes that are detected in only one of the two samples will be assessed by reviewing the data validation reports for both data sets and determining the cause of the discrepancy, if possible. Comparability of split sample data will be considered acceptable if the RPD for detected analytes with concentrations greater than or equal to five times their respective quantitation limits does not exceed RPD acceptance criteria for field duplicate samples.

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5.3.6 Sensitivity and Quantitation Limits

Laboratory reports will include method reporting limits. These limits will be reviewed for the samples to ensure that the sensitivity of the analyses was sufficient to achieve the program requirements. All relevant QC data will be reviewed to assess compliance with the measurement performance criteria specified in Section 2.8 of this QAPP.

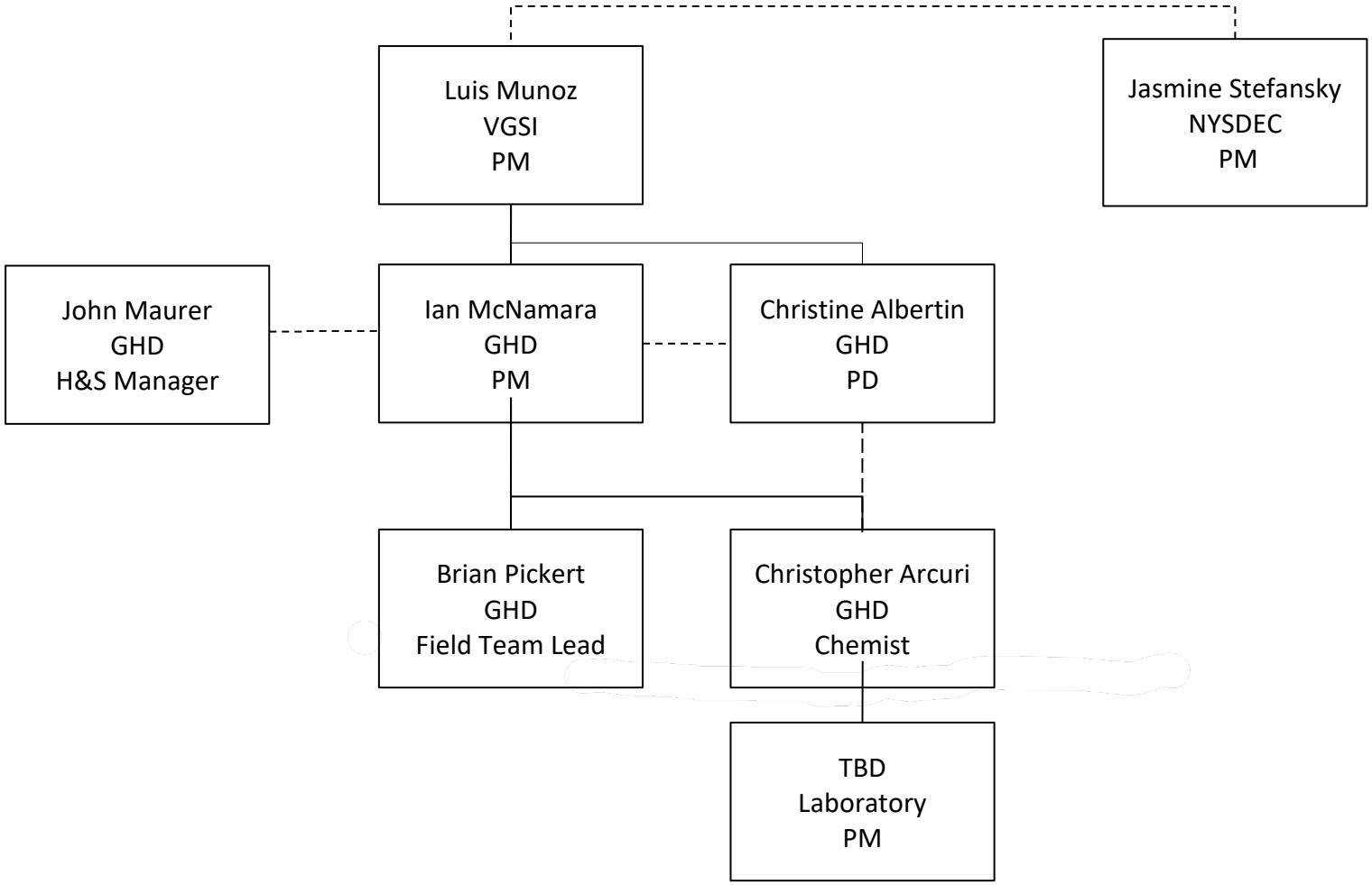
It should be noted that quantitation limits may be elevated as a result of high concentrations of target compounds, non-target compounds, and matrix interferences (collectively known as sample matrix effects). In these cases, the sensitivity of the analyses will be evaluated on an individual sample basis relative to the applicable evaluation criteria.

5.3.7 Data Limitations and Actions

Data use limitations will be identified in data validation reports. Data that do not meet the measurement performance criteria specified in this QAPP will be identified and the impact on the project quality objectives will be assessed and discussed in these reports and project reports. Field information will be reviewed to ensure that all sampling procedures were conducted in accordance with the requirements of this QAPP. Data from samples collected using procedures inconsistent with the requirements of this QAPP will be evaluated using the procedures in Section 5.1 of this QAPP. Specific actions for laboratory data that do not meet the measurement performance criteria depend on the use of the data and may require that additional samples are collected, or the use of the data be restricted.

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Figure 1 *Project QA Organization*



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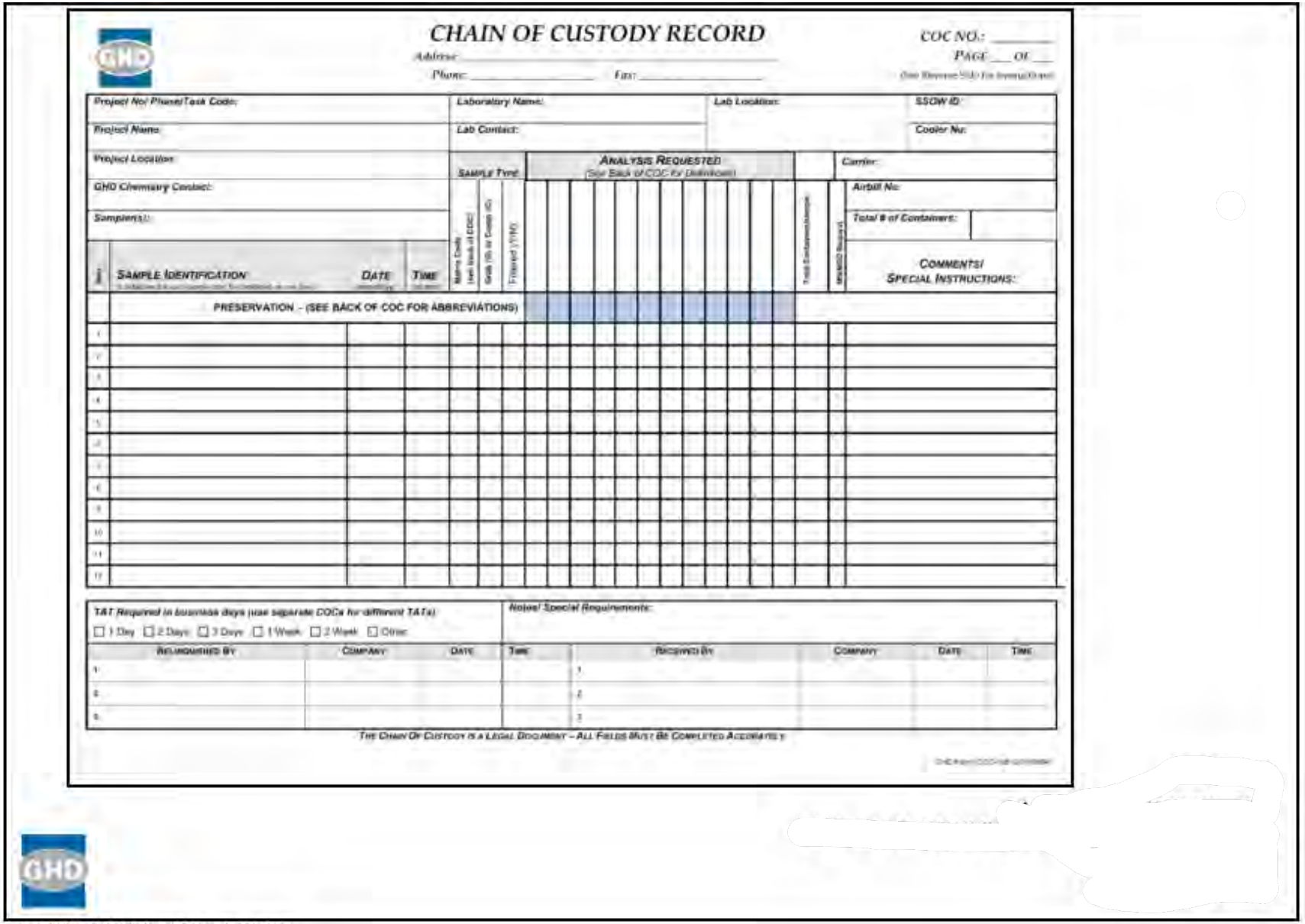


Figure 2 Typical Chain of Custody Form

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Table 1 Summary of Sampling and Analysis Program for Soil, Soil Vapor, Indoor Air, and Groundwater Sampling Events

Sampling Order	Parameters[1]	Methods	Notes	No. of Samples Per Event	Field Blank 1 Per Event	Equipment Blanks [2] 1 per 20 Per Event	Field Duplicates[2] 1 per 20 Per Event	MS/MSD[3] 1 per 20 Per Event
Groundwater Samples								
1	TCL VOCs	8260	All wells	6	1	1	1	1
Soil Vapor/Indoor Air Samples								
1	TCL VOCs	TO-15	All locations	21	1	-	2	-
Soil Samples								
1	As Needed	As Needed	As Needed	As Needed	As Needed	As Needed	As Needed	As Needed

Notes:

1 Refer to Table 2 for specific analytes and quantitation limits.
2 No equipment blank collection is necessary if dedicated sampling equipment is used.
3 Triple the normal sample volume is collected for groundwater samples.

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Table 2 Analyte Quantitation Limits

Analysis Group	Analyte	Reporting Limit (RL)	Units
Volatiles - Groundwater	Dichlorodifluoromethane	5	µg/L
	Chloromethane	5	µg/L
	Vinyl Chloride	2	µg/L
	Bromomethane	5	µg/L
	Chloroethane	5	µg/L
	Trichlorofluoromethane	5	µg/L
	1,1-Dichloroethene	5	µg/L
	1,1,2-Trichloro-1,2,2-trifluoroethane	5	µg/L
	Acetone	50	µg/L
	Methylene Chloride	5	µg/L
	trans-1,2-Dichloroethene	5	µg/L
	1,1,2,2-Tetrachloroethane	5	µg/L
	1,2-Dichlorobenzene	3	µg/L
	1,1-Dichloroethane	5	µg/L
	cis-1,2-Dichloroethene	5	µg/L
	2-Butanone	50	µg/L
	Chloroform	7	µg/L
	1,1,1-Trichloroethane	5	µg/L
	Carbon Tetrachloride	5	µg/L
	Benzene	1	µg/L
	1,2-Dichloroethane	0.6	µg/L
	Trichloroethene	5	µg/L
	1,2-Dichloropropane	1	µg/L
	Bromodichloromethane	50	µg/L
	cis-1,3-Dichloropropene	0.4	µg/L
	1,3-Dichlorobenzene	3	µg/L
	1,2-Dibromo-3-chloropropane	0.04	µg/L
	Toluene	5	µg/L
	trans-1,3-Dichloropropene	0.4	µg/L
	1,1,2-Trichloroethane	1	µg/L
	Tetrachloroethene	5	µg/L
	2-Hexanone	50	µg/L
	Dibromochloromethane	50	µg/L
	1,2-Dibromoethane	0.0006	µg/L
	Chlorobenzene	5	µg/L
	Ethylbenzene	5	µg/L
	Xylenes (total)	5	µg/L
	Styrene	930	µg/L
	Bromoform	50	µg/L
	Isopropylbenzene	5	µg/L
	1,4-Dichlorobenzene	3	µg/L
	1,2,4-Trichlorobenzene	5	µg/L
Volatiles – Soil Vapor/Indoor Air	Trichloroethene	0.2	µg/m^3
	cis-1,2-Dichloroethene	0.2	µg/m^3
	1,1-Dichloroethene	0.2	µg/m^3
	Carbon Tetrachloride	0.2	µg/m^3

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[redacted]	Tetrachloroethene	3	µg/m^3
	1,1,1-Trichloroethane	3	µg/m^3
	Methylene Chloride	3	µg/m^3
	Vinyl Chloride	0.2	µg/m^3

Note:

This is a comprehensive list of analytes that may be tested at the Site.

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Table 3 Container, Preservation, and Shipping Requirements for Routine Samples

Sample Order	Analysis	Sample Containers [(1)(6)]	Preservation	Maximum Holding Times	Shipping Means
1	Volatiles - Groundwater	Three 40 mL with teflon-lined septum Cool to 0 to 6°C	HCl to pH < 2	14 days from collection to analysis	Courier or Federal Express
2	Volatiles – Soil Vapor/Indoor Air	SUMMA Canister	N/A	30 days from collection to analysis	Courier or Federal Express

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Table 4 Summary of Analytical Methods for Samples

Sampling Order	Parameters	Analysis Method	Laboratory	Location	Contact Information
1	Volatile Organic Compounds	SW-846 8260	TBD	TBD	TBD
2	Volatile Organic Compounds	EPA TO-15	TBD	TBD	TBD

Notes:

This is a comprehensive list of analytes that may be tested at the Site.

[1] SW-846 – "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd Edition with updates I through IVB

[2] EPA - U.S. Environmental Protection Agency. Analytical Methodology (February 1999).

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Table 5 Routine Preventive Maintenance Procedures and Schedules

Instrumentation	Preventative Maintenance	Consumables
Gas Chromatograph/Mass Syringes Spectrometer (GC/MS) Septa	1. Replace pump oil as needed. 2. Change septa weekly or as often as needed. 3. Change gas line dryers as needed. 4. Replace electron multiplier as often as needed. 5. Replace glass jet separator as needed. 6. Replace GC injector glass liner weekly or as liners often as needed. 7. Replace GC column as needed. 8. Check daily to ensure that gas supply is sufficient for the day's activity, and the delivery pressures are set as described in the SOP. 9. Check daily to ensure the pressure on the primary regulator is sufficient. 10. Clean source as needed.	1. Septa 2. Injector liners 3. Helium gas 4. Glass jet separator 5. GC column 6. Glassware
Purge and Trap Sample Concentrator	1. Replace trap as needed. 2. Decontaminate the system after running high concentration samples or as required components/ by blank analysis. 3. Leak check system daily and as often as needed. 4. Check daily to ensure the gas supply is sufficient for fittings the day's activity, and the delivery pressures are set as described in the SOP. 5. Check daily to ensure the pressure on the primary regulator is sufficient.	1. Spare traps 2. Spare sparger vessels 3. Various electronic circuits 4. Plumbing supplies - tubing
Inductively Coupled chambers Plasma Spectrometer (ICP)	1. Clean torch assembly and mixing chamber 2. Clean nebulizer 3. Check daily to ensure the gas supply is sufficient for the day's activity pressures are set as described in the SOP.	1. Spare torch 2. Spare nebulizer 3. Spare pump tubing
Mercury Analyzer	1. Clean tubing and quartz cell weekly or as often as needed. 2. Clean aspirator after each batch samples or as necessary. 3. Check daily to ensure the gas supply is sufficient for the day's activity, and the deliver pressures are set as described in the SOP.	1. Quartz cells 2. Aspirator
Autoanalyzer/ Spectrophotometer	1. Inspect pump tubes after each 8-hour run; replace if discolored or distorted. 2. Check daily to ensure the delivery pressures are set as described in the SOP.	1. Pump tubing 2. Colorimeter lamps
Refrigerators	1. Monitor temperature twice daily.	
Ovens	1. Monitor temperature twice daily.	

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APPENDIX K – FIELD STANDARD OPERATING PROCEDURES

GHD Field Training Manual

Section 7.0
Water Sampling Standard Operating Procedures
A. Groundwater
B. Residential
C. Surface Water

(T104)

July 2015

Please Adhere to the Following Quality System Training Requirements:

- Employees who are required to conduct a specific field activity must be properly certified to do the work.
- This involves reviewing the SOP and completing the online training course and exam.
- Employees must also conduct this field work under supervised conditions on at least three occasions, and must be certified by a qualified mentor. Only then can an employee conduct a specific field activity on their own. This is documented on a Field Method Training Record (QSF-021).
- Complete the QSF-021 and forward it to trainingrecords-northamerica@ghd.com.
- Please note that three topics are discussed in this SOP. A separate QSF-021 is required for each topic:
  - Groundwater Sampling
  - Residential Water Sampling
  - Surface Water Sampling

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(Groundwater, Residential, and Surface Water)
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SP-05 Groundwater Sampling Equipment and Supply Checklist
SP-06 Well Development, Purging, and Sampling Form
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SP-17 Equipment and Supply Checklist - Surface Water Sampling, Sediment Sampling, and Flow Measurement

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QSF-014 Field Equipment Requisition Form
QSF-019 Property Access/Utility Clearance Data Sheet
QSF-021 Field Method Training Record
QSF-030 Safety and Health Schedule (Canada)
QSF-031 Safety and Health Schedule (U.S.)

7. Water Sampling (Groundwater, Residential, and Surface Water) Standard Operating Procedures

7.1 Introduction

Groundwater, residential, and surface water sampling are conducted in order to characterize the groundwater and surface water quality at a site. Standard Operating Procedures (SOPs) are presented herein for the collection of groundwater and surface water samples from:

- Monitoring wells
- Residential wells
- Surface water bodies

This guideline is not intended to provide the basis for designing a groundwater or surface water monitoring program, but instead assumes that a groundwater and/or surface water monitoring program has already been designed. It is also assumed that a site-specific Work Plan has been established and that a GHD representative is preparing to mobilize to the site.

Groundwater and surface water sampling procedures vary from project to project due to:

- Different chemicals of concern.
- Different guidance provided by local, provincial/state, and/or federal regulatory agencies with jurisdiction at the site.
- The specific objectives of the project.

It is essential that all groundwater, residential, and surface water sampling activities conform to local, state/provincial, and federal regulations. Therefore, it is essential that the GHD representative carefully reviews the Work Plan requirements. The primary goal of groundwater, residential, and surface water sampling is the collection of samples representative of the hydrostratigraphic unit and/or surface water body. It is necessary to use appropriate sampling techniques to collect representative samples that provide reliable and reproducible results in accordance with the Work Plan and all relevant regulations.

The remainder of this section is organized as follows:

- Section 7.2 Background
- Section 7.3 Planning and Preparation
- Section 7.4 Safety and Health
- Section 7.5 Quality Assurance/Quality Control
- Section 7.6 Equipment Decontamination
- Section 7.7 Field Procedures for Groundwater Sampling

- Section 7.8 Field Procedures for Residential Sampling
- Section 7.9 Field Procedures for Surface Water Sampling
- Section 7.10 Follow-Up Activities
- Section 7.11 References

7.2 Background

The objective of a groundwater and residential monitoring program is to obtain samples that are representative of existing groundwater conditions, or samples that retain the physical and chemical properties of groundwater in the hydrostratigraphic unit. Surface water sampling is performed to collect samples that are representative of physical and chemical properties of surface water bodies. Improper sampling and transport practices will cause compounds of interest to be removed or added to a sample prior to analysis. The importance of proper and consistent field sampling methods cannot be over emphasized. It is equally important that proper documentation occurs throughout the sampling program.

The most important aspect of groundwater sampling is the collection of groundwater samples that are free of suspended silt, sediment, or other fine-grained material. Fine-grained material has a variety of chemical compounds sorbed to the particles or has the ability to sorb chemicals from the aqueous phase. This causes a bias in the subsequent analytical results. Reproducible and reliable analytical data are invaluable to a groundwater monitoring program. GHD frequently criticizes the sampling activities completed by others due to the collection and analyses of turbid samples. This SOP discusses sampling protocols that typically achieve sediment-free samples.

When sampling for monitored natural attenuation (MNA) parameters, more stringent protocols are followed to ensure sediment-free samples that are representative of the total mobile load (i.e., dissolved and naturally suspended particles). Low-flow purging (LFP) techniques are strongly recommended, if not mandated, when collecting groundwater samples for MNA parameters. The LFP techniques detailed in Section 7.7.5.3 are in accordance with United States Environmental Protection Agency (USEPA) LFP procedures (Puls and Barcelona, 1996).

Groundwater sampling is required for various reasons, including:

- Investigating potable or industrial water supplies
- Tracking contaminant plumes
- Investigating a site with suspected groundwater contamination

Groundwater is usually sampled from in-place wells, installed either temporarily or permanently. Municipal, industrial, or residential wells may also be sampled during an investigation. When completing residential well sampling it is important that representative samples are collected. Poor or incorrect sampling techniques will result in erroneous results. Incorrect results disclosed to the public will create a false impression, making it difficult to change the perception when correct results are reported.

Groundwater and residential sample collection are performed from non-impacted to most impacted locations. This eliminates the potential for cross-contamination. A review of all historical analytical data is performed to ensure the exact sampling sequence.

Surface water sampling locations are selected based on many factors including:

- The study objectives
- The location of point source discharges
- The location of no-point source discharges and tributaries
- The presence of structures (e.g., bridges, dams)
- Accessibility

Surface water sampling should be performed from downstream to upstream locations. This ensures that surface water sampling activities do not cause suspended sediments to bias samples collected downstream.

7.3 Planning and Preparation

Prior to groundwater, residential, and surface water sampling:

1. Review the Work Plan, project documents, and Site-Specific Health and Safety Plan (HASP) with the Project Manager/Coordinator.
2. Review the Quality Assurance Project Plan (QAPP) with the Project Coordinator and Project Chemist to determine Quality Assurance/Quality Control (QA/QC) and decontamination requirements.
3. Complete a Field Equipment Requisition Form (QSF-014). Assemble all sampling equipment and supplies required per the Groundwater Sampling Equipment and Supply Checklist (Form SP-05). The Project Planning, Completion, and Follow-Up Checklist (Form SP-02) should be used for guidance throughout the project.
4. Assemble the site plan, well logs, and previous sampling/purging data required for the sampling event. Determine the exact number and locations of wells to be sampled.
5. Obtain all forms to record purging and sampling activities (Forms SP-06, SP-08, and SP-09).
6. Confirm with the Project Manager/Coordinator that a Property Access/Utility Clearance Data Sheet (QSF-019) has been completed. For residential sampling, ensure that homeowners have been notified of the intended sampling event. Confirm the presence of any dogs on site, modify the site-specific Job Safety Analysis, if there is a dog.
7. Arrange access to the site. Obtain all well and site keys. Consider site access conditions (e.g., snow).
8. For surface water sampling consider if hazards exist due to deep/fast moving water, difficult access, and if additional GHD personnel are required for safety and health reasons.

9. For residential sampling contact homeowners to make arrangements for a site visit, arrange for site dog to be removed from all areas where a GHD employee will be working. The client of another party may be responsible for making arrangements.

10. Complete a Vendor Evaluation Form (QSF-012) and file in the Project file for any Vendors that do not have full approval status or are not listed on the Approved Vendor List (QSL-004). Completion of a Safety and Health Schedule (QSF-030 for Canadian work; QSF-031 for U.S. work) is necessary for all Vendors who complete field services. Prior to mobilization on site, the Vendor must submit the form to the Regional Safety and Health Manager for review and approval (if not already posted on QSL-004).

11. Contact the GHD Chemistry group to arrange:

    - SSOW (Simplified Scope of Work)
    - Laboratory
    - Sample containers delivery
    - Preservatives if required
    - Filtration information if required
    - Coolers
    - Shipping details
    - Sample starting date
    - Expected duration of sampling program

12. If several sampling events are planned, evaluate with the client the benefit of purchasing and installing dedicated sampling equipment. Dedicated purging and sampling equipment reduces potential cross-contamination and reduces decontamination requirements. At a minimum, sample tubing is dedicated to each well and is left secured in the well for future use. For LFP it is recommended that each well is dedicated with a bladder pump and tubing to eliminate well disturbance.

13. Evaluate sample notification needs with the Project Coordinator. Have the regulatory groups, client, landowner, GHD personnel, and laboratory been notified of the sampling activities?

14. Evaluate containment and disposal requirements for purge waters.

15. Plan sampling activities to ensure that wells that historically go dry or have poor recharge fit into the sampling program. This will reduce the time required for sample collection.

16. Plan the sequence of sampling activities to reduce the potential for cross-contamination. For groundwater sampling, start with clean wells and progress to impacted wells. For surface water sampling, start downstream and progress upstream.

7.4 Safety and Health

GHD is committed to conducting field activities in accordance with sound safety and health practices. GHD adheres to high safety standards to protect the safety and health of all employees,

subcontractors, customers, and communities in which they work. The safety and health of our employees takes precedence over cost and schedule implications.

Field personnel are required to implement the Safety Means Responsibility Awareness Teamwork (SMART) program as follows:

- Assure the HASP is specific to the job and approved by a Regional Safety & Health Manager.
- Confirm that all HASP elements have been implemented for the job.
- A Job Safety Analysis (JSA) for each task has been reviewed, modified for the specific site conditions, and communicated to all appropriate site personnel. The JSAs are a component of the HASP.
- Incorporate Stop Work Authority; Stop, Think, Act, Review (STAR) process; Safe Task Evaluation Process (STEP); Observations process; Near Loss and Incident Management process in the day-to-day operations of the job.
- Review and implement applicable sections of the GHD Safety & Health Policy Manual.
- Confirm that all site personnel have the required training and medical surveillance as defined in the HASP.
- Be prepared for emergency situations, locating safety showers, fire protection equipment, evacuation route, rally point, and first aid equipment before you begin working, and make sure that the equipment is in good working order.
- Maintain all required Personal Protective Equipment (PPE), safety equipment, and instrumentation necessary to perform the work effectively, efficiently, and safely.
- Be prepared to call the GHD Incident Hotline at 1-866-529-4886 for all involving injury/illness, property damage, vehicle incident, and/or significant Near Loss.

It is the responsibility of the Project Manager to:

- Ensure that all GHD field personnel have received the appropriate health and safety and field training and are qualified to complete the work.
- Provide subcontractors with a Job Hazard Analysis to enable them to develop their own HASP.
- Ensure that all subcontractors meet GHD's (and the Client's) safety requirements.

7.5 Quality Assurance/Quality Control

A well-designed QA/QC program will:

- Ensure that data of sufficient quality are obtained, for proper site management decisions or remediation design.
- Allow for monitoring of staff and contractor performance.
- Verify the quality of the data for the regulatory agency.

It is important to note that a QA/QC program should be developed on a site-specific basis. QA/QC requirements are discussed in Section 3.9.

7.6 Equipment Decontamination

Equipment decontamination procedures for a groundwater, residential, or surface water monitoring program will be described in detail in the site-specific Work Plan or in the QAPP.

Equipment is decontaminated between sampling locations and prior to leaving the site. Upon completion of the sampling program, all equipment is decontaminated at the site and then returned clean to the appropriate field equipment manager.

For most groundwater, residential, and surface water sampling programs, sampling equipment (e.g., pumps, bailers, water level indicators) is typically cleaned as follows:

1. Wash with clean potable water and laboratory detergent, using a brush as necessary to remove particulates.
2. Rinse with tap water.
3. Rinse with deionized water.
4. Air dry for as long as possible.

If required, the following steps may be added when sampling for Volatile Organic Compounds (VOCs) and metals:

1. Rinse with 10 percent nitric acid (only if samples are to be analyzed for metals).
2. Rinse with deionized water.
3. Rinse with appropriate solvent (pesticide grade isopropanol, methanol, acetone, hexane, if required).
4. Rinse again with deionized water.
5. Air dry for as long as possible.
6. Wrap samplers in aluminum foil to prevent contamination.

> Caution: Check the QAPP to confirm the cleaning protocol. Use of incorrect cleaning protocol could invalidate chemical data.

7.6.1 Purge Water and Decontamination Fluid Disposal

Project-specific disposal methods for purged groundwater and decontamination fluids are determined by the Project Manager during the sampling program's planning and preparation stage (see Section 7.3), but may include:

1. Off-site treatment at private treatment/disposal facility or publicly owned treatment facilities (sanitary sewer).
2. On-site treatment at a client-operated facility.
3. Direct discharge to the surrounding ground surface, allowing infiltration to the underlying subsurface.
4. Direct discharge to an impervious pavement surface allowing for evaporation.

Options 3 and 4 are permitted only after careful review of these practices and the anticipated site conditions. Under no circumstances shall GHD personnel aggravate an existing condition or spread contamination into clean areas.

Decontamination fluids (specifically cleaning solvents/acids) are segregated and collected separately from wash water and purge water. Often small volumes of solvents used during the course of a groundwater, residential, or surface water sampling program will evaporate if left in an open pail. If evaporation is not possible, off-site disposal need to be arranged.

7.7 Field Procedures for Groundwater Sampling

The typical series of events that takes place for a groundwater sampling program is:

1. Well identification and inspection
2. Air monitoring
3. Water level monitoring
4. Well depth sounding
5. Well volume calculation
6. Purging and sampling equipment installation
7. Well purging and stabilization monitoring
8. Sample collection, sample preparation, completion of chain-of-custody, (COC) sample packaging
9. Final water level monitoring (if required), purging, sampling equipment removal, secure the well
10. Equipment decontamination
11. Field note completion and review
12. Sample shipment and COC distribution
13. Purged groundwater and decontamination fluid disposal
14. Sample record documentation, equipment return
15. Completion and distribution of appropriate forms

It is recommended that new plastic sheeting be placed on the ground around the well to prevent contamination of purging and sampling equipment and accessories (e.g., pumps, hoses, rope.).

7.7.1 Well Identification and Inspection

At sites with numerous wells or wells nests, misidentification of wells has occurred. The GHD representative must be alert to the possibility of potential cap switching, mislabeled wells, or unlabeled well locations.

Determine proper well location and identification by comparing the well log details to the measured well depths (i.e., total well depth, casing diameter, casing stick-up, or stick-down distances), field tie-ins, and site plan.

Once well identification has been established, complete a thorough well inspection:

1. Determine if the well cap and lock are secure, and check for vandalism.
2. If no lock is present, dedicate a new lock to the well location.
3. Examine the integrity of the surface seal.
4. Check for cracks, evidence of frost heave, or subsidence in the vicinity of the well.
5. Examine the integrity of the protective casing. Ensure that the casing can be closed and locked.
6. If required, re-label the well to assist in future identification.
7. If the well is installed with dedicated sampling equipment, check for cracks or leaks in tubing, and worn or frayed rope.
8. Record all the well inspection details in the field book to document well conditions and suitability for groundwater sampling activities.
9. Forward the well inspection results to the Project Coordinator, especially if repairs are required.

7.7.2 Air Monitoring

Prior to removing a well cap, measure the breathing space above the well with a photoionization detector (PID) to establish background of undifferentiated organic vapor levels. Repeat this process once the well cap has been removed. If either of the PID levels exceed the air quality criteria established in the HASP, air-purifying respiratory (APR) protection or a supplied air system is required. Also take a PID reading inside the riser pipe. This PID reading is a good indication of elevated chemical or non-aqueous phase liquids (NAPL) presence. Report all elevated PID levels to the Project Coordinator immediately to determine if additional health and safety and personnel protective equipment is required. The HASP will provide the required action levels and PPE.

7.7.3 Water Level Monitoring/Well Depth Sounding

Prior to commencing well purging and groundwater sampling, the water level is measured for hydraulic monitoring and to determine the well volume. Typically, a complete round of water level measurements is taken at a site to establish groundwater conditions prior to initiating well purging or groundwater sampling activities.

A watertight cap provides an airtight seal on the casing and the water level positioned in the casing area. The cap creates a vacuum or pressurized condition in the casing section which can support or depress the water column in the well casing. This can produce an artificially high or low water level in the well casing. This effect can cause a few inches or feet of error in the static water level. Once the cap is removed, allow the pressure to stabilize for about a half hour. Measure the water level

frequently to ensure that stabilization of the water level has occurred. Once the water level has stabilized (i.e., is static) the correct water level may be measured.

A number of instruments are available to measure groundwater levels. GHD typically uses:

- Battery-operated water level indicators (i.e., audible and/or visual identification of water level)
- Battery-operated oil/water interface probes (i.e., audible and/or visual identification of water levels and presence of NAPL)
- Electronic transducers (numerous manufacturers) and recording devices for long-term hydraulic monitoring
- Stevens™ recorders (both float and electronic instrumentation) for long-term hydraulic monitoring

Section 8.0 describes in detail the equipment and monitoring techniques for water level measurements.

Well depth sounding is often required to confirm well identification, evaluate the accumulation of sediment in the well bottom, or assist in determining the standing well volume. Sounding is performed using a water level indicator or a measuring tape with a weighted end. The water level indicator or weighted tape is lowered to the bottom of the well and a comparison is made of the installed well depth versus the measured well depth. The presence of excessive sediment or drill cuttings may warrant redevelopment of the well prior to well purging and groundwater sampling activities.

The total well depth is compared to the original installed total well depth. If the well screen is more than 50 percent blocked by accumulated sediment, the well is redeveloped prior to the next groundwater sampling event. Report all wells requiring redevelopment to the Project Coordinator. Well depth sounding is performed on an annual or biannual basis if the well is equipped with a dedicated pump.

For LFP, well depth measurement is performed to ensure proper pump intake placement. The used of a wide-based probe, such as a weighted tape, is necessary to minimize penetration and disturbance of accumulated sediment. The measuring device is lowered slowly through the water column to the well bottom to minimize mixing of the stagnant well casing water and disturbance of sediment.

> Note: Don't forget that decontamination procedures apply to the water level monitoring equipment as well as the groundwater sampling equipment. If well sounding is performed, the entire measuring device must be thoroughly decontaminated prior to re-use. Measuring the well depth with certain water level indicators may damage the probe seal. Therefore, a tape with a weighted end should be used to measure well depth.

7.7.4 Well Volume Calculation

Prior to commencing well purging, the volume of water in the well must be known to determine the volume of groundwater to be removed. A well volume is defined as the volume of water contained in

the well screen and casing (and in the case of an open bedrock hole, the volume of water in the open corehole and possibly in the well casing). To determine the standing water volume in a well:

1. Calculate the distance from the bottom of the well to the static water level.
2. Measure the inside diameter of the well or casing. Obtain the volume of standing water in the well using the following formula:

   V = $\pi r^2 h$ (7.48 U.S. gallons/cubic feet) (1 liter/1,000 cubic centimeters)

   Where:

   V = volume of water in gallons or liters

   π = 3.142

   r = radius of well casing (feet or meters)

   h = depth of water column in the well (feet or meters)

Typical 1 - Foot Casing Volumes	
Diameter (inches)	Gallons (U.S.) of Water Per Foot of Casing
1.5	0.09
2	0.16
3	0.37
4	0.65
6	1.47

Typical 1 Meter Casing Volumes		
Diameter		Litres per Meter of Casing
(inches)	6 (cm)	
1.5	3	1.14
2	5	2.02
3	8	4.56
4	10	8.11
6	15	18.24

7.7.5 Well Purging and Stabilization Monitoring

7.7.5.1 Typical Method

Prior to initiating groundwater sample collection, the wells is purged of the standing stagnant groundwater volume. This volume is not representative of the groundwater in the hydrostratigraphic unit. Purging is performed until the water in the well is representative of the actual conditions in the hydrostratigraphic unit. Stabilization is usually achieved by the removal of three to five times the volume of standing water in the well (USEPA convention). Purging is considered complete once purged groundwater is free of sediment and field parameters including specific conductance, temperature, and turbidity are stable. Stabilization is achieved when field measurements for specific conductance and temperature are within a range of plus or minus 10 percent of the average for the

last three readings. Field measurement for pH should be within a range of plus or minus 0.1 pH unit of the average for the last three readings, and groundwater turbidity values should be less than 5 nephelometric turbidity units (NTU) (guidance value only). Once the number of well volumes required to achieve stabilization is established, the volume required to reach stabilization for future sampling events is reduced or eliminated. Extended purging of a well will generally result in achieving sediment-free groundwater conditions.

During purging, if stabilization has not occurred after removal of five well volumes, purging is continued until ten well volumes have been removed. If stabilization still has not been achieved, stabilization may be dropped as a pre-condition to groundwater sampling. The Project Coordinator should be notified that stabilization has not occurred after the removal of ten well volumes.

At high yielding wells, removing three to five well volumes is usually sufficient prior to initiating groundwater sampling. For low yield wells (i.e., wells that pump dry after one well volume) it is necessary to purge the well dry on three successive days, unless the well recovers to full static conditions in a shorter time. If the recharge is relatively high, groundwater sampling will be initiated once the well has fully recovered to static groundwater conditions, or to a level that is sufficient to collect the necessary groundwater sample volume.

Note: Purging of dry wells should be scheduled to begin on Monday or Tuesday, to reduce weekend requirements.

Turbidity of purged groundwater is evaluated by a visual examination for sediment/silt presence or by using a nephelometer which physically measures groundwater turbidity in NTUs. Generally, a turbidity value of 50 NTU or less is acceptable, although some regulatory agencies have established lower criteria (i.e., less than 5 NTU). If 50 NTU is not achieved, filtration of samples may be required. LFP can generally result in turbidity values less than 5 NTU.

Note: Agitation of the water column within the well will increase turbidity. Therefore, bailers and inertia pumps (Waterra™) are of limited use for collecting sediment-free samples. The tubing of peristaltic pumps must be secured to prevent movement of the tubing within the water column which would disturb sediment. The best method to reduce sediment disturbance is low-volume non-agitation pumping (i.e., bladder pump).

Well purging is accomplished using dedicated equipment or by using either peristaltic, bladder, or other approved purging methods. Purging and sampling equipment are dependent on the total well depth. Bailing can be used for well purging but this method stirs up sediment and increases the purging effort required before stabilization is achieved. Equipment available for well purging is discussed in Section 7.7.7. Monitoring equipment used during well purging includes a water level indicator, pH meter, thermometer, conductivity meter, and turbidity meter.

7.7.5.2 Purging Entire Water Column

The purging equipment is lowered into the top of the standing water column. Well purging is completed from as close to the top of the water column as possible, not from the well bottom, unless poor well recovery occurs. Purging from the top of the water column moves water from the formation through the well screen of the well and into the well casing. This allows for the entire

static volume to be removed. Purging at depth in the water column does not remove water above the pump intake and results in the collection of unrepresentative samples.

If required, the pump intake can be adjusted. If the recovery rate is greater than the pumping rate, the pump should remain suspended until the required purged volume has been removed. If the recovery rate is less than the pumping rate, the pump should be lowered to ensure the removal of the required well volume.

7.7.5.3 Low-Flow Purging (LFP) Technique

LFP purging results in minimal drawdown during well purging, so less purging is required before formation water is removed. The volume required for purging using LFP is significantly reduced. LFP results in less agitation and mobilization of sediments compared to traditional sampling techniques.

A pre-cleaned stainless steel bladder pump equipped with a Teflon™ bladder is strongly recommended for LFP. The discharge line should be polyethylene or Teflon™ lined tubing with an inside diameter of 1/4 or 3/8 inch (6 or 10 mm). Check the Work Plan or QAPP to ascertain the proper bladder and discharge tubing. Smaller discharge tubing ensures that the tubing remains filled with water and reduces air bubbles at low purging rates. The airline to the pump is generally 1/4-inch (6 mm) inside diameter polyethylene tubing. The pump is secured to nylon rope and positioned in the well so that the pump intake is set at the mid-point of the well screen, or a minimum of 2 feet (0.6 m) above the bottom of the well or accumulated sediment level. It is important that the rope, airline, and discharge tubing are measured prior to installation in the well. The bladder pump and tubing are lowered very slowly through the water column to minimize mixing of the stagnant well casing water and to minimize the agitation of sediment into suspension, which would increase the purging time. It is recommended, and in some instances regulated, that pump installation occurs at least 24 hours prior to initiating LFP. It is recommended that a bladder pump be dedicated to the well for regular monitoring events.

During LFP, the pumping rate should be between 100 and 500 milliliters per minute (mL/min). It is recommended that initial pumping be conducted at a lower rate to limit drawdown in the well. During purging, groundwater levels are measured to maintain a maximum 0.4 foot (0.1 m) of drawdown. The pumping rate can be gradually increased during LFP. Pumping rate increases will be dependent on the drawdown and the stabilization of field parameters discussed below. Pumping rate adjustments should occur in the first 15 minutes of purging. After this time the pumping rate should remain constant and flow rate adjustments should be avoided. During purging, the pumping rate and groundwater level should be measured at least every 10 minutes. It is recommended that water level measurements occur at 5-minute intervals.

During LFP, stabilization of the purged groundwater is required to ensure the collection of representative groundwater samples from the formation and not from the stagnant water in the well casing. Field parameters including pH, temperature, specific conductance, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity should monitored during LFP. The measurement of these field parameters is used to evaluate if stabilization of the purged groundwater has occurred prior to the collection of groundwater samples. The field measurements should be measured and recorded at 5-minute intervals. Groundwater stabilization is considered

achieved when three consecutive readings for each of the field parameters, taken at 5-minute intervals, are within the following limits:

pH	±0.1 pH units of the average value of the three readings
Temperature	±3 percent of the average value of the three readings
Conductivity	±0.005 milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity <1 mS/cm and ±0.01 mS/cm of the average value of the three readings for conductivity >1 mS/cm
ORP	±10 millivolts (mV) of the average value of the three readings
DO	±10 percent of the average value of the three readings
Turbidity	±10 percent of the average value of the three readings, or a final value of less than 5 NTU

During LFP, field parameters are measured using a flow-through cell apparatus. At the start of LFP the purge water is visually inspected for clarity prior to connecting to the flow-through cell. If the purge water is turbid, LFP continues until the purge water is visually less turbid prior to connecting to the flow-through cell. Field parameters may be obtained using individual meters or a multiple meter unit; however, the use of a flow-through cell is highly recommended. All meters must be calibrated daily in accordance with the manufacturer's and GHD's calibration instructions, and a calibration record maintained in a standard GHD field book.

During LFP the meter readings are monitored for evidence of meter malfunction. The following are common indicators of meter malfunctions:

- DO above solubility (e.g., oxygen solubility is approximately 11 milligrams per liter (mg/L) at 10°C) may indicate a DO meter malfunction.
- Negative ORP and DO less than 1 to 2 mg/L may indicate either an ORP or a DO meter malfunction (i.e., should have positive ORP and DO less than 1 to 2 mg/L under oxidizing conditions).
- Positive ORP and DO less than 1 mg/L may indicate either an ORP or a DO meter malfunction (i.e., should have a negative ORP and DO less than 1 mg/L under reducing conditions).

Meter calibration fluids should be available for meter recalibration in the field. Spare meters should also be available for meter replacement if necessary.

Note: DO levels exceeding the solubility of oxygen in water are erroneous and are indicative of meter malfunction or poor sampling techniques causing turbulence and aeration. DO concentrations cannot exceed:

9 mg/L at 20°C 10 mg/L at 15°C 11 mg/L at 10°C 14 mg/L at 1°C

Stabilization will be considered complete when the field parameters have stabilized as indicated in the above table. Purging will continue if stabilization does not occur, until a maximum of 20 screen volumes has been removed. LFP causes groundwater to be drawn from a significant distance above or below the pump intake. Therefore, the screen volume is based on a 5-foot (1.5 m) screen length. After the removal of 20 screen volumes, purging will continue if the purged water remains

visually turbid and appears to be clearing. Also purging will continue if the field parameters vary only slightly outside of the stabilization criteria and appear to be approaching stabilization.

If the recharge to the well is insufficient to conduct LFP, the well should be pumped dry and allowed to recharge sufficiently for the collection of the groundwater sample volume. Wells purged dry are required to meet the stabilization criteria detailed above.

7.7.5.4 Sampling Techniques

Upon completion of purging, with groundwater stabilization and clarity meeting the applicable protocol described above, groundwater sample collection can proceed. Generally the field parameters of pH, temperature, and specific conductance are monitored first, then any other required field measurements.

Samples are collected directly from the purging pump, when possible, or an alternate device (i.e., pump or bailer) may be installed or used. If new sampling equipment is installed, the first few bails or discharge volumes should be discarded to allow acclimation of the sampling equipment with the groundwater.

Samples are typically collected from the pump or bailer with the discharged groundwater collected directly in the appropriate sample containers. The interior of the bottle or cap must not be touched or handled in anyway. New gloves (i.e., disposable nitrile gloves or equivalent) should be worn for the collection of each sample. Caps from sample bottles must not be placed on the ground or in pockets to eliminate the possibility of cross-contamination.

Descriptions of the various equipment and sampling methods for the collection of groundwater samples are contained in Section 7.7.7.

The following describes the main activities involved in the collection of groundwater samples.

7.7.5.5 Order of Sample Collection

Groundwater samples are collected and containerized in the order following volatilization sensitivity:

1. VOCs
2. Semi-volatile organic compounds (SVOCs)
3. Total organic carbon
4. Total organic halides
5. Extractable organics
6. Total metals
7. Dissolved metals
8. Phenols
9. Cyanide
10. Sulfate and chloride

11. Nitrate and ammonia
12. Microbiological parameters
13. Radionuclides

QA/QC requirements for groundwater sampling are described in detail in Section 3.9.

7.7.6 Sample Acquisition and Transfer

If groundwater sample collection is performed using a pump, the flow rate must not exceed 100 mL/min during the collection of groundwater samples for VOCs. The low flow rate will reduce the possibility of degassing samples. During the collection of groundwater into the sample container or filtration device, minimize agitation and aeration of the sample. Groundwater samples are transferred directly into the sample container for submittal to the laboratory. Groundwater samples should not be collected in larger containers and subsequently transferred to smaller sample containers; however, on occasion this will be required for filtration or sample composting. During VOC sample collection, samples must not be collected, handled, or containerized near or in the vicinity of a running motor or exhaust which may contaminate the samples.

Groundwater samples for VOCs are collected in laboratory supplied 40 mL glass vials. The vials are filled to the top until a meniscus is formed, then topped with a Teflon™-lined cap. To prevent the loss of volatiles, it is important that no air bubbles or headspace are present in the sample container. Inverting and tapping the vial will check for the presence of air bubbles. If air bubbles are present, the sample should be topped off again and resealed. This process may only be performed a maximum of twice, at which time the sample must be discarded and the sample retaken. If preservatives were present in the bottle from the laboratory, a new sample vial must be used.

> Note: Gas bubbles that appear in VOC containers after sample collection may be a result of degassing or reaction with preservative. If this occurs, note this occurrence on the chain-of-custody. Re-sampling is not required in most cases.

During sample collection ensure groundwater samples are preserved according to laboratory requirements. If required and supplied by the laboratory, preserve the samples in accordance with the QAPP. Some laboratories pre-preserve bottles so that once the groundwater sample is added the preservation is completed. In either case, it is advisable to check sample preservation using litmus paper. Using litmus paper ensures that groundwater sample preservation has been completed to the proper pH as required by the QAPP. If preservation of a sample does not meet the requirements of the QAPP, it may be necessary to add additional preservative, or note on the chain-of-custody that incomplete sample preservation has occurred.

Once sample collection is complete, samples are placed in a cooler on ice to maintain a sample temperature no more than 4°C.

7.7.6.1 Sample Labels/Sample Identification

Label all groundwater samples with the following, written in indelible ink:

1. A unique sample number (see Section 3.9 for guidance)
2. Date and time
3. Parameters to be analyzed
4. Job number
5. Sampler's initial

Secure the label to the bottle. It is recommended that bottle labels be covered with wide clear tape to protect the label during sample packing and shipment. Pack glassware in appropriate packing material to deter breakage during sample packing and shipment. Sample labels can be prepared in advance in GHD offices that have label-generating programs.

An example of a groundwater sample log entry is provided on Figure 3.8.

Section 3.9 details sample labeling requirements for environmental sampling programs. Section 3.9 also details COC requirements and sample shipment requirements.

7.7.7 Purging/Sampling Equipment

GHD maintains a wide variety of purging and sampling equipment for well purging and groundwater sample collection. The groundwater sampler should be familiar with purging and sampling equipment and understand equipment limitations and proper use. Some equipment is very useful for well purging (i.e., high flow rates) but is not permissible for LFP or for sampling sensitive parameters (e.g., VOCs cannot be collected with a submersible (turbine) or suction pump). If the groundwater sampler understands the various equipment operation and limitations, the proper selection of purging and sampling equipment is made, which will minimize the purging and sampling duration and maximize productivity.

> Caution: Gas powered equipment requires special attention to ensure that staff hauling these units do not cause equipment or sample contamination. Frequent changes of disposable glove as well strict separation of sampling crew tasks (i.e., those handling pumps and hoses do not contact generator or are involved in any refueling activities) are required.

The following subsections describe the equipment available for groundwater sampling, the equipment use, approximate flow rates, and advantages and disadvantages of the equipment.

7.7.7.1 Peristaltic Pumps

A peristaltic pump is acceptable for purging wells and for most groundwater sample analytes. The groundwater sampler must ensure that a peristaltic pump is acceptable to regulatory agencies with local jurisdiction for VOC and SVOC sample collection. The QAPP will provide sampling requirements.

A peristaltic pump is capable of lifting water from a maximum depth of 25 feet (7.6 m) below ground surface or the pump, whichever is greater. A peristaltic pump is a self-priming, low volume, suction pump which consists of a rotor with ball bearing rollers. Flexible silicon tubing is inserted around or in the pump rotor and squeezed in place by the heads as they revolve in a circular pattern. The section of silicon tubing must not exceed 3 feet (0.9 m) in length. Additional rigid polyethylene or Teflon™ tubing is attached to the flexible tubing and placed in the well. Another piece of rigid tubing is attached to the discharge end of the flexible silicon tubing to facilitate sample collection. The entire length of rigid and flexible silicon tubing is dedicated to the well for future use. The tubing is typically tied and suspended in the well. The flexible or rigid tubing is not reused in other wells because cross-contamination will occur.

Note: Often a length of tubing is accidentally dropped into a well and can be difficult to retrieve. Retrieval can be accomplished by sending another piece of tubing down the well overlapping the lost section of tubing. Once in place, rotate the tubing, essentially wrapping or corkscrewing the lost tubing and new tubing together. After a number of turns are completed pull the tubing, hopefully with the lost section wound around the new piece. Repeat the procedure until successful.

Liquid is pulled into the tubing by the peristaltic pump through the creation of a vacuum as the rotor head turns. An advantage of using a peristaltic pump is that no pump parts come in direct contact with the sample. A peristaltic pump is capable of providing low flow sampling rates (i.e., typically less than 500 mL/min) with less agitation than other suction pumps. However, it is important that the tubing is secured during pumping to prevent the tubing from moving and causing agitation. A peristaltic pump also allows for regulation of the flow rate by increasing or decreasing the rotor head speed.

Peristaltic pumps are small and easily mobilized to remote sample locations. They require minimal setup, and do not require decontamination between sample locations. The disadvantages of a peristaltic pump are its limited lift and flow capabilities and the limited ability to collect VOC and SVOC samples. If VOC or SVOC sampling, check the QAPP to see if sampling with a peristaltic pump is allowed. Also check with regulatory agencies with local jurisdiction to see if the use of a peristaltic pump for collection of VOC and SVOC samples is acceptable. If using a peristaltic pump for purging, and the collection of VOCs and SVOC samples with the peristaltic pump is not acceptable, it is common to collect the initial VOC and SVOC analytes with a stainless steel bottom loading bailer. The peristaltic pump can then be used to collect the remaining sample analytes.

Peristaltic pumps are becoming more popular for LFP. However, it should be noted that a peristaltic pump may cause degassing, pH modification, and possible VOC loss.

7.7.7.2 Suction Pumps

A number of suction pumps (e.g., centrifugal) exist that can be used for purging applications only. A suction pump draws water through a suction line by creating a vacuum in the suction line or hose. Once drawn into the pump, the groundwater comes into direct contact with the pump rotor/pumping chamber area and it is therefore undesirable for groundwater sampling due to high groundwater agitation. Decontamination of suction pumps is extremely difficult. As with peristaltic pumps, most suction pumps have a limited lift capability of about 25 feet (7.6 m). Larger suction pumps, like

2-inch (5 cm) trash pumps, can achieve high flow rates under low hydraulic head. Flow rates of 15 to 20 U.S. gallons per minute (USgpm) (57 to 76 liters per minute [L/min]) can be achieved. This high flow rate minimizes purging time. New or dedicated suction line should be used at each well if a suction pump is used for purging.

Large suction pumps are also useful for well development, in conjunction with agitation and surging.

Large suction pumps are not suited for LFP due to degassing, pH modifications, VOC loss, and lack of flow adjustment.

Caution: The groundwater sampler must prevent the siphoning of purged water from a bulk container back into the well. For example, the following scenario is possible: Joe Sampler has completed purging well 'xyz' and has turned off the 2-inch trash pump. The trash pump discharge line is inserted into a wastewater tank and is submerged below the tank water level. As Joe prepares his glassware and sample pump, the wastewater tank contents are siphoned back into the well. This can result in cross contamination with water from other sites/wells which have been purged either:

- into the tank
- through the pump
- through the discharge line

All discharge lines/groundwater purge pumps must be provided with a check valve to prevent this situation.

Drilling rig pumps including Moyno, progressive cavity, bean, and mud pumps can be used for well purging and well development.

Suction pumps are a useful tool for high rate purging and well development. They require no additional equipment other than a suction line and discharge line for each well. They are mobile and easily transported around and between sites. Suction pumps are limited to use in wells with less than 25 feet (7.6 m) of lift, are difficult to decontaminate, and are unsuitable for sample collection. Large suction pumps are not suitable for LFP.

7.7.7.3 Submersible Pumps

A submersible pump generally provides high discharge rates for purging at depths beyond the capabilities of a suction pump. Based on its size, a submersible pump can pump water from substantial depths at very high pumping rates and can provide higher groundwater extraction rates than other methods. At high pumping rates, a submersible pump can cause agitation and aeration. This results in some submersible pumps not being suitable for the collection of groundwater samples for VOC and SVOC analysis.

Adjustable rate submersible pumps, constructed of stainless steel or Teflon™, are suitable and approved for LFP provided low flow rates are maintained.

The submersible pump, including the electrical cable and lowering cable, must be decontaminated between wells in accordance with the Work Plan or QAPP.

A submersible pump installed in bedrock or in a deep well should be attached to rigid piping (i.e., 3/4-inch (1.9 cm) steel) to allow for pulling or pushing of the pump. The pump may need to be pushed or pulled to the appropriate installation depth, past tight spots in the well, and when affixing the electrical cable and lowering the cable/safety line. Even when rigid piping is used, a safety line must be attached to the pump in case the piping becomes unthreaded or the pump connection is lost.

Submersible pumps can provide high flow rates that are useful for deep well or large diameter well purging activities. They tend to be labor intensive because of decontamination problems, power supply, and discharge piping size. Some submersible pumps are not suitable for some sample analytes. Small submersible pumps (i.e., 2-inch (5 cm) Grundfos™) have the proper construction and have adjustable flow rates, making them suitable for LFP.

7.7.7.4 Air Lift Pumps

An air lift pump operates using compressed air or nitrogen. The compressed air or nitrogen comes into direct contact with the groundwater and forces groundwater from the pump chamber through a series of check balls into the discharge line. An air lift pump operates on alternate pump discharge and pump recharge cycles. The pump and recharge cycles are controlled using a control box at ground surface. Air lifting is possible from deep depths with moderate to low flow rates (2 to 3 USgpm [7.6 to 11.5 L/min]) depending on the pump installation depth, static head, discharge tubing diameter, and air supply pressure.

Since the air or nitrogen comes in direct contact with the groundwater, an air lift pump should not be used for the collection of groundwater samples for VOC and SVOC analysis.

An air lift pump is a good tool for deep well purging and development. If an air lift pump is used for purging, an alternate sampling method will be required (e.g., bailers or bladder pump) for the collection of VOC and SVOC groundwater samples.

7.7.7.5 Bladder Pumps

Bladder pumps, as with air lift pumps, are driven by compressed air or nitrogen but the air or nitrogen does not come in contact with the groundwater. The contact between the air or nitrogen and the groundwater is eliminated by the presence of a Teflon™, polyethylene, or natural rubber bladder. The pump operation, as with the air lift pump, is cyclic and is controlled using a control box at ground surface. The control box controls the pump filling and discharge time. Because the air or nitrogen does not come in direct contact with the groundwater, and there is limited groundwater agitation and degassing, a bladder pump is the best sampling equipment for the collection of groundwater samples for VOC and SVOC analysis.

Bladder pump operation is very quiescent, causing little formation and well disturbance. By using a bladder pump, collecting a sediment-free groundwater sample is easily achieved. An adjustable rate bladder pump should be used for LFP. Bladder pumps generally are only able to achieve a maximum pumping rate of 1.5 USgpm (5.7 L/min). It is important to note that flow rates should be reduced in deep well applications.

Well purging and sampling can be performed using a bladder pump. Once sampling is completed, the pump should be disassembled and decontaminated in accordance with the Work Plan or QAPP prior to use in other wells. The sample tubing is generally 1/4- or 3/8-inch (6 or 10 mm) diameter polyethylene or Teflon™ lined polyethylene tubing. The air line is generally 1/4-inch (6 mm) polyethylene tubing. The sample and air line tubing are typically suspended in the well for future use (dedicated). At some sites a complete sampling system (bladder pump, discharge tubing, and air line) is dedicated to each well.

Bladder pumps provide excellent sample quality and are useful in deeper sampling applications. There are no analyte restrictions. Bladder pumps are strongly recommended for LFP applications.

Bladder pumps require additional equipment including control box, compressed air or nitrogen, and tubing. The setup of a bladder pump is quite labor intensive unless a dedicated system is in place. Decontamination of a bladder pump requires pump disassembly and re-assembly. Finally, bladder pumps are not capable of high flow rates, thus purging times tend to be increased slightly.

7.7.7.6 Inertia Pumps

An Inertia pump or Waterra™ pump is a manually operated or mechanically driven pump which uses only a foot valve on the sample/purge tubing. "Jerking" the sample/purge tubing with the attached foot valve removes groundwater from the well. The rapid lifting and lowering action of the tubing imparts an inertia to the water column within the sample/purge tubing. This causes the water column to rise to ground surface and discharge from the end of the sample/purge tubing. The foot valve holds the water column in the tubing during the lifting process and allows groundwater to enter the sample/purge tubing during the lowering, or down stroke.

GHD owns both manual and mechanical gas-powered inertia systems. Flow rates with inertia pumps are variable and are dependent on cycle speed, tubing size, foot valve size, well depth, and depth to groundwater. The inertia pump is a useful method for purging and for collection of most groundwater sample analytes. Acceptability of VOC and SVOC sampling with inertia pumps is gaining approval in selected areas. Prior to using an inertia pump as a sampling device, check the sampling requirements in the QAPP, or obtain approval from the Project Coordinator.

Inertia pumps are useful for the extraction of dense non-aqueous phase liquids (DNAPL). The only equipment that is exposed to the gross contamination is the foot valve and a small section of the sample/purge tubing. On most projects, the foot valve and sample/purge tubing are dedicated to the well.

Inertia pumps tend to cause extensive disturbance to the water column. The vigorous lifting and lowering of the inertia pump tends to make it difficult to collect sediment-free groundwater samples. Therefore, inertia pumps are not suitable for LFP.

7.7.7.7 Bailers

A bailer is a manual sampling device consisting generally of a hollow tube (e.g., Teflon™, PVC, or stainless steel) with a lower check ball that permits water entry and prevents water loss. The bailer is lowered slowly into the well. This allows water to enter the bailer through the bottom, and the weight of the water inside the bailer closes the check ball when the bailer is retrieved from the well.

A rope or cable is affixed to the bailer to allow the lowering and retrieval of the bailer from the well. Bailing tends to be disruptive to the water column and formation. Obtaining sediment-free groundwater samples using a bailer tends to be difficult, if not impossible. VOCs and SVOCs, as well as other analytes can be collected using a bailer, but it is important that these analytes be as sediment-free as possible. The compatibility of the bailer material and groundwater analytes should be reviewed and approved prior to using a bailer for the collection of groundwater samples. Generally, Teflon™ bailers are acceptable for the collection of most analytes.

Power winches with overhead tripods are available to assist in purging and sampling deep or large volume wells.

Flow rates attained using a bailer is a function of the bailer size and retrieval frequency. Retrieval frequency is dependent on well depth, water depth, and well recharge rate. Bailing is not practical for deep wells or for the removal of large well volumes.

A bailer is a useful tool for well development as the surging action from the bailer insertion and removal from the well promotes sediment suspension and subsequent removal. However, obtaining completely sediment-free samples, or samples below 50 NTU, is difficult if not impossible using a bailer.

A bailer provides representative samples once the well has been adequately developed and purged. A bailer is not suitable for LFP. Rope used for bailing must be kept off the ground and free of other contaminating material that could be introduced to the well. Rope can either be dedicated to the well for future use or discarded.

7.7.7.8 Passive Diffusion Bags

When sampling with diffusion bags the well must be fully developed using an alternate method.

A diffusion bag is a polyethylene bag that contains deionized water. The bag is attached to an appropriate length of rope or cable in order to be submerged to the appropriate depth (indicated in the Work Plan, QAPP, or as instructed by the Project Coordinator). Cable or rope used to suspend diffusion bags can be dedicated to the well for future use or discarded.

Once submerged to the appropriate depth, the diffusion bag is left in the well for an extended period of time, usually 14 days, to allow the bag to equilibrate with the water in the well. The use of diffusion bags eliminates well purging prior to sampling. Placement of multiple diffusion bags in a well allows for vertical groundwater profiling.

Diffusion bags are a low cost method for the collection of groundwater samples. Advantages include:

- No purge water to dispose of.
- No equipment decontamination between wells.
- Simple logistics and operation.
- Reduction in personnel and exposure times.
- Samples collected are representative of formation water adjacent to well.

- Allow for vertical profiling of water column.
- Appropriate for long-term monitoring programs.

The disadvantage of diffusion bags is the length of equilibrium time, generally 14 days. Currently, there are membranes available for diffusion bags suitable for the collection of groundwater samples for select SVOC, and metals analyses. However, there are no membranes currently available for polychlorinated biphenyls (PCBs).

Note: Handle diffusion bags only when wearing clean nitrile or surgical gloves.

7.7.8 Filtering of Groundwater Samples

Filtering is an important process to remove suspended particulate that affect sample results. Filtration of groundwater samples is generally limited to metals analysis.

Filtering can be completed in the field using in-line filters or a vacuum filter kit. Filtering of samples can also be completed by the laboratory, in which case the samples must not be preserved and must be at the laboratory in at least 24 hours of sample collection.

7.8 Field Procedures for Residential Sampling

7.8.1 General

When sampling potable water supply wells it is important to ensure that the samples collected are representative of the aquifer being sampled. Poor or incorrect sampling techniques will result in erroneous sample results that can be disclosed to the public. Incorrect sample results may make any changes in the public perception hard to accomplish when correct results are reported.

7.8.2 Field Procedures

The requirements of a residential well sampling program should be reviewed with the Project Coordinator prior to initiating sampling activities. While similar field procedures used in groundwater sampling (including documentation, sample identification, date, time, etc.) are required in residential well sampling, additional procedures are also required.

Prior to collection of groundwater samples from a residential well, the well must be purged to ensure that samples collected are representative of the formation. Purging removes standing water from the well casing, pipes, and pressure or holding tank. Purging of a residential well requires the removal of one well volume. If access to the well is not available to determine the well volume, purging for a period of 15 to 30 minutes is generally sufficient. Field measurements for pH, conductivity, and temperature are recorded during purging activities until the readings indicate that stabilization has occurred.

Sampling of residential wells is generally performed using the existing pumping system. However, GHD purging and sampling equipment can be used. It is important that only designated **clean** purging and sampling equipment be used for residential well sampling. The use of the existing pumping system is preferred, as this is more representative of the water quality provided to the

residence. Using the existing pumping system also minimizes the possibility of damaging the well and existing pumping system when installing additional purging and sampling equipment.

If GHD equipment is used for residential well sampling, it must be cleaned prior to and between use with a bleach and deionized water solution wash followed by a thorough deionized water rinse.

> Note: In addition to the special technical procedures noted, GHD personnel must be aware of this unique situation of conducting sampling at private residences. Special care must be taken to be polite and courteous at all times. Offer only necessary information and maintain a clean work area that is returned to pre-sampling conditions. Personnel should have proper identification available, and only remain in areas long enough to complete the required tasks.

Taps selected for residential well sampling should be located as close to the well as possible. Locate the taps before any treatment systems and, if possible, the pressure tank. It is important to note, if possible, all water treatment devices in operation at the residence including:

- Water softeners
- Filtration units
- Ultraviolet light
- Reverse osmosis
- Distillers
- Chlorinators

Leaking taps that allow water to flow from the stem of the valve handle and around the tap should not be used as sampling locations. Aerators, strainers, and hose attachments should be removed prior to sampling. Maintain a steady flow of water during sampling activities to avoid pressure fluctuations that may cause sheets of microbial growth lodged in the pipes to break loose. Open the cold water tap for a period of 15 to 30 minutes to allow for the complete purging of the pumping system. Maintain a smooth-flaring water stream at a low to moderate pressure without splashing. Do not change the flow rate. Changes in the flow could dislodge particles in the pipes or faucet.

When sampling for microbiological parameters, the end of the faucet must be flame sterilized. During residential well sample, never place caps from sample containers on the ground or in a pocket. Instead, hold the sample container in one hand and the sample container cap in the other. Be very careful not to touch the inside of the sample container cap. Wear new disposable gloves at each sampling location and following contact with a potential contaminant source. The inside of the sample bottle must not be touched with bare hands or allowed to contact the surface of the faucet.

7.8.3 Field Notes for Residential Sampling

Full documentation of each residential well is required and includes:

1. Well depth
2. Casing construction and diameter

3. Well installation date if known
4. Pumping system configuration
5. Piping system construction (e.g., copper, lead-joint, ABS)
6. Presence of treatment devices

Obtain the name and exact mailing address for all residence or well owners, as well as home and work telephone numbers. This information is required to inform the residence or well owner of the results of the sampling activities.

Document residential well sampling activities in a standard GHD field book. Figure 3.8 provides typical residential well sampling field note requirements. Note that additional documentation of well details, treatment devices, piping system, and special circumstances are required in the field book in addition to the sample log entry.

7.9 Field Procedures for Surface Water Sampling

7.9.1 General

Surface water sampling is performed to obtain samples for surface water bodies that are representative of existing surface water conditions.

Surface water sampling locations for surface water quality and groundwater interaction studies are selected based on the following:

1. Study objectives
2. Location of point surface discharges
3. Non-point source discharges and tributaries
4. Presence of structures (e.g., bridge, dam)
5. Accessibility

During surface water sampling it is important to obtain samples that are not impacted by the re-suspension of sediment produced because of improper or poor surface water sampling techniques.

7.9.2 Surface Water Sample Location Selection

Prior to conducting surface water sampling activities, the first requirement is the consideration and development of surface water sampling locations. It is important that all surface water sampling locations be selected in accordance with the Work Plan and described to and discussed with the Project Coordinator.

Bridges and piers are good locations for surface water sampling locations since they provide easy access and permit water sampling across the entire width of the surface water body. The JSA for sampling from bridges must include a traffic management plan to assure the employee has considered using a spotter, signage, cones, and flags to warn car traffic of the work adjacent to the

roadway. Wading for surface water samples increases the chances of disturbance of sediments from the floor of the surface water body.

When wading for surface water samples in lakes, ponds, streams, and slow moving rivers be aware of potential safety and health risks. A life vest and safety line must be worn at all times where footing is unstable or when sampling in fast moving or more than 3 feet (0.9 m) deep. A two-person team is required for most surface water sampling activities, a Project Manager must approve a one person sampling team. If the site conditions require the use of the life vest and safety line, the two people involved in the sampling must be competent swimmers.

Surface water samples must be collected with no suspended sediments. Surface water samples are collected commencing with the furthest downstream location to avoid sediment interference with upstream locations.

7.9.2.1 Rivers, Streams, and Creeks

Surface water samples are generally collected in areas of surface water bodies that are representative of the surface water body conditions. Representative surface water samples will usually be collected in sections of surface water bodies that have a uniform cross section and flow rate. Mixing is influenced by turbulence and water velocity, therefore the selection of surface water sampling locations immediately downstream of a riffle area (i.e., fast flow zone) will ensure good vertical mixing. These locations are also likely areas for deposition of sediment since this occurs in areas of decreased flow velocity.

Surface water sampling locations should not be established in areas near point source discharges including tributaries, industrial effluents, and municipal effluents. Surface water sampling of these source discharge points can be performed to assess the impact of these source areas on overall surface water quality.

Sample tributaries as close to the mouth as possible. It is important to select surface water sample locations considering the impact downstream, including tributary flow and sediment.

In all instances, properly document all surface water sampling locations in a standard GHD field book. Documentation may include photographs and tie-ins to known structures.

7.9.2.2 Lakes, Ponds, and Impoundments

The surface water in lakes, ponds, and impoundments has a greater tendency to be stratified than water in rivers and streams. Lack of mixing in these surface water bodies may require additional surface water sample collection. Extreme turbidity variances may occur where highly turbid surface water courses enter a lake or pond. Therefore, each layer of the stratified surface water column may need to be considered separately. Stratification is generally a result of water temperature differences, with cooler heavier water being trapped below warmer water.

Surface water sample locations for lakes, ponds, and impoundments should adequately represent the conditions of the surface water body. All intakes and outflows that may provide biased surface water representation should be identified and documented. Surface water sample locations with adjacent structures (e.g., banks, piers) may also provide biased samples, as the potential for boundary flow and eddies exists.

The number of surface water sample locations on lakes, ponds, or impoundments will vary depending on the purpose of the investigation, as well as the size and shape of the surface water body. In ponds and small impoundments a single surface water sample should be collected at the deepest point. In naturally formed ponds, the deepest point is usually near the center of the surface water body. In impoundments the point is usually near the dam.

In lakes and larger impoundments, several sub-samples should be taken to form a single composite sample. These vertical surface water sampling locations are collected along a pre-determined grid.

In irregular shaped lakes with several bays and covers that are protected from the wind, additional surface water samples are required to properly represent surface water quality at various locations in the lake. Additional surface water samples should be taken at discharges, tributaries, and other factors or sources that are suspected of affecting the surface water quality.

In all instances, properly document all surface water sampling locations in a standard GHD field book. Documentation may include photographs and tie-ins to known structures.

7.9.3 Sampling Equipment and Techniques

When collecting surface water samples, direct dipping of the sample container into the stream or water is acceptable unless the sample container contains preservatives. If preserved, a pre-cleaned unpreserved sample container should be used to collect the surface water sample. The surface water sample is then transferred to the appropriate preserved sample container. When collecting surface water samples, submerse the inverted bottle to the desired sample depth and tilt the opening of the sample container upstream to fill. During surface water sample collection, wading or movement may cause sediment deposits to be re-suspended and can result in biased samples. Wading is acceptable if the stream has a noticeable current and the samples are collected directly in the sample container when faced upstream. If the stream is too deep to wade in or if addition samples must be collected at various depths, additional sampling equipment will be required. Surface water samples should be collected about 6 inches (15 cm) below the surface, with the sample bottles being completely submerged. Taking the surface water sample at this depth eliminates the collection of floating debris in the sample container.

Surface water sample collection where the flow depth is less than 1 inch (<2.5 cm) requires the use of special equipment to eliminate sediment disturbance. Surface water sampling may be conducted with a container then transferred to the appropriate sample container, or collection may be performed using a peristaltic pump. A small excavation in the stream bed to create a sump for sample collection can also be considered but should be prepared in advance to allow all the sediment to settle prior to surface water sampling activities.

Teflon™ bailers can be used for surface water sampling if it is not necessary to collect surface water samples at specific depths. A bottom loading bailer with a check ball is sufficient. When the bailer is lowered through the water, the water is continually displaced through the bailer until the desired depth is reached. The bailer is retrieved and the check ball prohibits the release of the collected surface water sample. Bailers are not suitable in surface water bodies with strong currents, or where depth-specific sampling is required.

For discrete and specified depth surface water sampling, and the parameters to be monitored do not require a Teflon™ coated sampling device, a standard Kemmerer or Van Dorn sampler can be used. The Kemmerer sampler is a brass cylinder with rubber stoppers that leave the sampler ends open while the sampler is being lowered. The sampler is lowered in a vertical position to allow water to pass through. The Van Dorn sampler is plastic and is lowered in a horizontal position. For both samplers, a messenger is sent down a rope when the sampler has reached the required depth. The messenger causes the stopper on the sampler to close. The sampler is then retrieved and the surface water sample can be collected through a valve. DO sample bottles can be filled by allowing overflow using a rubber tube attached to the valve. During depth-specific surface water sampling, take care not to disturb bottom sediments.

Glass beakers or stainless steel cups may also be used to collect surface water samples if parameter interference does not occur. The beaker or cup must be rinsed at least three times with the surface water sample prior to sample collection.

All equipment must be thoroughly decontaminated as outlined in Section 7.6.

7.9.4 Field Notes for Surface Water Sampling

Use a standard GHD field book to record daily surface sampling activities, describe surface water sampling locations, sampling techniques, and, if applicable, provide a description of photographs taken. Visual observations are important and provide valuable information when interpreting surface water quality results. Observations include:

1. Weather conditions
2. Stream flow directions
3. Stream physical conditions (width, depth, etc.)
4. Tributaries
5. Effluent discharges
6. Impoundments
7. Bridges
8. Railway trestles
9. Oil sheens
10. Odors
11. Buried debris
12. Vegetation
13. Algae
14. Fish and other aquatic life
15. Surrounding industrial areas

The following factors should be considered for surface water sampling:

1. Predominant Surrounding Land Use: Observe the prevalent land use type in the vicinity and note any other land uses in the area which, although not dominant, may potentially affect surface water quality.
2. Local Watershed Erosion: Note the existing or potential erosion of soil in the local watershed and its movement into the stream. Erosion can be rated through visual observation of watershed stream characteristics including increases or decreases in turbidity.
3. Local Watershed Non-Point Source Pollution: This refers to problems or potential problems other than erosion and sedimentation. Nonpoint source pollution can be diffuse agricultural and urban runoff. Other factors may include feed lots, wetlands, septic systems, dams, impoundments, and mine seepage.
4. Estimated Stream Width: The estimated distance from shore at a transect representative of the stream width in the area.
5. Estimated Stream Depth: Riffle (rocky area), run (steady flow area), and pool (still area). Estimate the vertical distance from the water surface to the bottom of the surface water body at a representative depth at three locations.
6. High Water Mark: Estimate the vertical distance from the bank of the surface water body to the peak overflow level, as indicated by debris hanging in bank or flood plain vegetation, and deposition of silt. In instances where bank flow is rare, high water marks may not be evident.
7. Velocity: Record or measure the stream velocity in a representative run area.
8. Dam Present: Indicate the presence or absence of a dam upstream or downstream of the surface water sampling location. If a dam is present, include specific information detailing the alteration of the surface water flow.
9. Channelized: Indicate if the area surrounding the surface water sampling location is channelized.
10. Canopy Cover: Note the general proportion of open to shaded areas which best describes the amount of cover at the surface water sampling location.

7.10 Follow-Up Activities

The following should be performed once groundwater, residential, and surface water sampling is completed:

1. Double check the Work Plan and QAPP to ensure all samples and QA/QC samples have been collected and confirm with the Project Coordinator.
2. Decontaminate all equipment at the site then return clean to the appropriate office equipment manager.
3. Dispose of purge water and cleaning fluid as specified in the Work Plan.
4. Notify the contract laboratory when the samples should arrive. Enclose a completed chain-of-custody in each cooler.

5. Complete and file the appropriate forms and data sheets. Also file the field notes. For groundwater, residential, and surface water sampling these forms include:
    - Project Planning, Completion, and Follow-Up Checklist (Form SP-02)
    - Well Development, Purging, and Sampling Form (Form SP-06)
    - Sample Collection Data Sheet - Groundwater Sampling Program (Form SP-08)
    - Monitoring Well Record for Low-Flow Purging (if performed) (Form SP-09)
6. Return site and well keys.

7.11 References

For additional information pertaining to groundwater sampling activities the user of this manual may reference the following:

ASTM D5474 Guide for Selection of Data Elements for Groundwater Investigations

ASTM D4696 Guide for Pore-Liquid Sampling from the Vadose Zone

ASTM D5979 Guide for Conceptualization and Characterization of Groundwater Systems

ASTM D5903 Guide for Planning and Preparing for a Groundwater Sampling Event

ASTM D4448 Standard Guide for Sampling Groundwater Wells

ASTM D6001 Standard Guide for Direct-Push Water Sampling for Geoenvironmental Investigations.

For additional information pertaining to surface water sampling, the user of this manual may reference the following:

ASTM D5358 Practice for Sampling with a Dipper or Pond Sampler

ASTM D4489 Practices for Sampling of Waterborne Oils

ASTM D3325 Practice for the Preservation of Waterborne Oil Samples

ASTM D4841 Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents

ASTM D4411 Guide for Sampling Fluvial Sediment in Motion

ASTM D4823 Guide for Core-Sampling Submerged, Unconsolidated Sediments

ASTM D3213 Practice for Handling, Storing, and Preparing Soft Undisturbed Marine Soil

ASTM D3976 Practice for Preparation of Sediment Samples for Chemical Analysis

ASTM E1391 Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing

ASTM D4581 Guide for Measurement of Morphologic Characteristics of Surface Water Bodies

ASTM D5906 Guide for Measuring Horizontal Positioning During Measurements of Surface Water Depths

ASTM D5073 Practice for Depth Measurement of Surface Water

Project Planning Completion and Follow-Up Checklist
(Form SP-02)

Date: _____ Reference No. _____
(mm/dd/yyyy)

Prior Planning and Coordination

- ☐ Confirm well numbers, location and accessibility
- ☐ Review of project documents, Health and Safety Plan (HASP), sampling Quality Assurance/Quality Control (QA/QC) and site-specific sampling requirements
- ☐ Historical well data; depth, pH, performance and disposition of purge water
- ☐ Site access notification and coordination
- ☐ Coordination with laboratory through GHD chemistry group
- ☐ Procurement, inventory and inspection of all equipment and supplies
- ☐ Prior equipment preparation, calibration or maintenance
- ☐ All utilities located and approved

Filed Procedure

- ☐ Instruments calibrated daily
- ☐ Sampling equipment decontaminated in accordance with the QAPP
- ☐ Field measurements and sampling details logged in appropriate field books or an appropriate field form
- ☐ Well volume calculated and specified volumes removed
- ☐ Specified samples, and QA/QC samples taken per Quality Assurance Project Plan (QAPP)
- ☐ Samples properly labeled, preserved and packed
- ☐ Sampling locations secured or completed according to work plan
- ☐ Sample date times, locations and sample numbers have all been recorded in applicable log(s)
- ☐ Samples have been properly stored if not shipped/delivered to lab same day
- ☐ Samples were shipped with complete and accurate chain of custody record

Follow-Up Activities

- ☐ Questionable measurements field verified
- ☐ Confirm all samples collected
- ☐ All equipment has been maintained and returned
- ☐ Sampling information reduced and required sample keys and field data distributed
- ☐ Chain of custody records filed
- ☐ Expendable stock supplies replaced
- ☐ GHD and client-controlled items returned (i.e., keys)
- ☐ Arrange disposal of investigation generated wastes with client
- ☐ Confirm all samples collected

Completed By: _____ Date: _____
(please print) (mm/dd/yyyy)

Groundwater Sampling Equipment and Supply Checklist
(Form SP-05)

Date: _____ (mm/dd/yyyy)

Reference No. _____

Equipment

- ☐ Required sampling equipment (as per work plan or QAPP)

Instruments

Water level indicator

Thermometer *

- ☐ pH meter *
- ☐ Conductivity probe *
- ☐ Turbidity meter
- ☐ HNu/OVA/Microtip
- ☐ Air monitoring equipment

Supplies

- ☐ Gasoline can/gas
- ☐ Polypropylene rope
- ☐ Aluminum foil
- ☐ Paper towels
- ☐ pH buffer solution(s)
- ☐ Conductivity standard solution(s)
- ☐ Decontamination fluids (as per work plan and QAPP)
- ☐ Sample jars (extra)
- ☐ Sample jar labels (GHD) materials
- ☐ Cooler(s)/ice packs/packing materials
- ☐ Trash bags
- ☐ Sample preservatives
- ☐ Plastic spray bottles
- ☐ Plastic basin or pan
- ☐ Sample filter (on line or external filter)
- ☐ Polyethylene sheeting
- ☐ First aid kit
- ☐ Personal protective equipment (as per HASP)

Documentation

- ☐ Chain of custody forms
- ☐ Well logs
- ☐ Notebook/Field book
- ☐ Photolog
- ☐ Site pass/badge
- ☐ Federal Express manifests
- ☐ Previous well logs/previous historical well data
- ☐ Site map
- ☐ Blank well data forms

Miscellaneous

- ☐ Well cap keys
- ☐ Bolt cutters
- ☐ Camera/film
- ☐ Knife
- ☐ Spare batteries for instruments
- ☐ Lock deicer (winter)
- ☐ Reinforced packing tape
- ☐ Pen/pencil/indelible marking pen
- ☐ Tool box
- ☐ Spare locks/keys
- ☐ On site transportation (all-terrain vehicle/snowmobiles)

Completed By: _____ (please print)

Date: _____ (mm/dd/yyyy)

PROJECT #: _____ PROJECT NAME: _____ DATE: _____

WELL ID: _____ FIELD PERSONNEL: _____

WELL DIAMETER _____ in
WELL DEPTH _____ m/ft
STATIC DEPTH TO WATER _____ m/ft
WATER COLUMN HEIGHT _____ m/ft
CASING VOLUME _____ L/gal
MEASURING REFERENCE POINT _____

Well Diameter (in)	Casing Volume (L/m)	Casing Volume (US gallon/foot)
1.5	1.14	0.09
2	2.03	0.16
4	8.11	0.65
6	18.24	1.47

PURGING AND SAMPLING EQUIPMENT

DEDICATED PURGING EQUIPMENT? YES NO DEDICATED SAMPLING EQUIPMENT? YES NO

PURGING DEVICE	[ ]	A - INERTIAL PUMP (WATERRA®)	B - BAILER	C - PERISTALTIC PUMP	D - SUBMERSIBLE PUMP	X - _____
SAMPLING DEVICE	[ ]	E - BLADDER PUMP	F - PURGE PUMP	G - DIPPER BOTTLE	H - GAS LIFT PUMP	OTHER (SPECIFY)
PURGING MATERIAL	[ ]	A - POLYETHYLENE	B - TEFLON	C - PVC	D - POLYPROPYLENE	X - _____
SAMPLING MATERIAL	[ ]	E - STAINLESS STEEL				OTHER (SPECIFY)
TUBING PURGING	[ ]	A - POLYETHYLENE	B - TEFLON	C - TYGON	D - POLYPROPYLENE	X - _____
TUBING SAMPLING	[ ]	E - SILICONE	F - ROPE	G - COMBINATION TEFLON/POLYPROPYLENE		OTHER (SPECIFY)
FILTERING DEVICES	[ ]	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	PORE SIZE : _____	

DEVELOPMENT/PURGING FIELD MEASUREMENTS ARE RECORDED ON PAGE 2.

SAMPLING INFORMATION

SAMPLE DATE/TIME: _____
WEATHER CONDITIONS AT TIME OF SAMPLING: _____
SAMPLE ID: _____
SAMPLE WAS FILTERED FOR (ANALYSIS): _____
SAMPLE APPEARANCE: _____

PROJECT #: _____ PROJECT NAME: _____ DATE: _____

WELL ID: _____ FIELD PERSONNEL: _____

FIELD MEASUREMENTS

DATE	TIME	VOLUME	TEMPERATURE	CONDUCTIVITY	pH	TURBIDITY	COLOUR	ODOUR	COMMENTS
	Units:	*(L) (US gal)*	*(°C) (°F)*	*(mS/cm) (µS/cm)*	-	*(NTU)*	-	-	-
	Stabilization:	-	±10%	±10%	±0.1 units	<5	-	-	-

Project Name: _____
Sampling Crew Members: _____
Date of Sample Collection: _____

Project No.: _____
Supervisor: _____

[Note: For 2" dia. well, 1 ft. = 0.14 gal (imp) or 0.16 gal (us)]

Sample I.D. Number	Well Number	Measuring Point Elev. (ft. AMSL)	Bottom Depth (ft. btoc)	Water Depth (ft. btoc)	Water Elevation (ft. AMSL)	Well Volume (gallons)	Bailer Volume No. Bails	Volume Purged (gallons)	Field pH	Field Temp.	Field Cond.	Time	Sample Description & Analysis

Additional Comments: _____

Copies to: _____

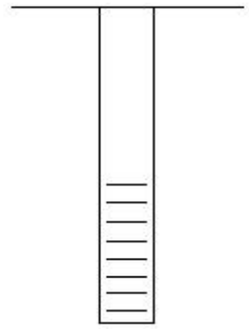
GHD

Project Data:

Project Name: _____ **Date:** _____
Ref. No.: _____ **Personnel:** _____

Monitoring Well Data:

Well No.: _____
Vapour PID (ppm): _____ **Saturated Screen Length (m/ft):** _____
Measurement Point: _____ **Depth to Pump Intake (m/ft)[1]:** _____
Constructed Well Depth (m/ft): _____ **Well Diameter, D (cm/in):** _____
Measured Well Depth (m/ft): _____ **Well Screen Volume, V_s (L)[2]:** _____
Depth of Sediment (m/ft): _____ **Initial Depth to Water (m/ft):** _____



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				**±3 %**	**±0.005 or 0.01[6]**	**±10 %**	**±10 %**	**±0.1 Units**	**±10 mV**		

Sample ID: _____ **Sample Time:** _____

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Equipment and Supply Checklist
Surface Water Sampling, Sediment Sampling, and Flow Measurement
(Form SP-17)

Date: _____ (mm/dd/yyyy) Reference no. _____

Instruments

- ☐ Measuring tape
- ☐ Steel tape (100 ft)
- ☐ Air monitoring equipment
- ☐ Velocity meter
- ☐ Flow meter
- ☐ Depth recorder/data logger
- ☐ Calculator
- ☐ Laptop computer with communication cable
- ☐ Stop watch
- ☐ Camera

Equipment

- ☐ Sampling telescopic pole
- ☐ Sampling scoop/bucket
- ☐ Boat/motor (if required)
- ☐ Bailers
- ☐ Kemmerer/Van Dorn sampler
- ☐ Peterson/Ponar dredge
- ☐ Core sampler/split spoon sampler
- ☐ Stainless steel mix bowl
- ☐ Hand tools
- ☐ Other _____

Supplies

- ☐ Foil
- ☐ Paper towels
- ☐ Decontamination fluids (as required by work plan)
- ☐ Deionized water
- ☐ Labels
- ☐ Sample knives
- ☐ Trash bags
- ☐ Sample glassware
- ☐ T-Bars/Stakes
- ☐ Duct tape
- ☐ Markers
- ☐ Film
- ☐ Paint
- ☐ Thumbtacks

Documentation

- ☐ Topographic maps
- ☐ Notebook/Field book
- ☐ Photolog
- ☐ Site pass/badge
- ☐ Site map
- ☐ Work plan

Personal Protective Equipment

- ☐ Waders/Overboots
- ☐ Tyveks (if required)
- ☐ Life vest
- ☐ Safety line
- ☐ Protective gloves
- ☐ Hardhat
- ☐ Safety glasses
- ☐ First aid kit
- ☐ Check health and safety plan

Completed By: _____ (please print) Date: _____ (mm/dd/yyyy)

Equipment Requisition Form

(QSF-014)

Equipment user: _____
User's office: _____
Office providing equipment: _____

Order date: _____
Pickup date: _____
Job date: _____
Expected date of return: _____

Project number: _____
Phase/Task: _____
Project name: _____
Project manager: _____

Description (include size)	BST code	Equipment control number	Quantity				Chargeout rate	Per	Amount	Are you trained in the use of this equipment? Yes (please initial)
			Number ordered	Number returned	Period used (# only)	Total				

Underground Utilities Checklist

(QSF-019)

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Project number:	**Project name:**
Date:	**Project location:**
Public utility locator:	**Public utility locator phone number:**
Date of public utility locator request:	**Public locator call reference number:**
Private utility locator (If applicable):	**Private utility locator phone number:**

Utilities (indicate that location/utility presence was checked)

Borehole/ Excavation location	Date (mm/dd/yyyy)	Telephone	Water	Storm sewer	Sanitary sewer	Process sewer	Gas	Electrical	Cable	Overhead utilities	Other (i.e., Fiber Optics	Comments/Warnings
Utility owner												

Instructions: This checklist is to be completed by GHD personnel prior to initiation of field activities as a safety measure, to ensure that all underground utility lines, other underground structures, and above-ground power lines are clearly marked in the area selected for boring or excavation.

Notes: _____

Client: _____ **Client representative:** _____ **Phone number:** _____

Client or property owner acknowledgement of utility clearance: _____ **(Client, property owner, or authorized agent signature)**

Subcontractor acknowledgement of utility clearance: _____ **(Subcontractor or subcontractor representative signature)**

GHD field representative name: _____ **Signature:** _____

GHD project manager's review/confirmation of locate completion: _____

In the event that client or property owner acknowledgement cannot be obtained, it is strongly encouraged that all boreholes be hydro vacuumed and the costs passed on to the client.
Attach any clearance documentation from utility owner/operator to this document.

Underground Utilities Checklist for GHD Personnel

Pre-Drilling/Excavation Checklist and Utility Clearance Log

Drilling or excavation work may not proceed if any of the questions answered below are answered "No." Implement stop work authority and contact the GHD project manager to discuss and resolve any concerns or issues. Document the reason for a "No" answer in the comments section below.

Yes	No	N/A	Pre-Mobilization
☐	☐	☐	1. Has a utility locator request been completed within the last 30 days (verify time limit with state or provincial law)? If no, stop work and comment below.
☐	☐	☐	2. Is a scaled site plan, map or drawing showing the proposed borehole locations attached to this form?
☐	☐	☐	3. Does each borehole and excavation location allow for clear entry and exit, adequate workspace, and a clear path for raising the mast (or boom) and operating the drill rig and all support equipment? Ensure that the minimum OSHA/state/provincial utility clearance requirements between the mast or boom and the power line(s) are met. For instance, OSHA requires a minimum approach distance of 10 feet for systems below 50 kV and an increase of 4" for every 10 kV over 50 kV. Confirm if additional permits are required if the boom or mast will be working 5 meters (15 feet) or less from the electrical lines.
☐	☐	☐	4. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on client's building plans? Check here ☐ if plans not provided by client (therefore not applicable to this job.
☐	☐	☐	5. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface or above-ground utilities shown on public right-of-way street improvement or other public property plan or site map?
☐	☐	☐	6. Has the site representative, familiar with the site, indicated no knowledge of any subsurface or above-ground utilities within 3 metres (10 feet) of the proposed borehole and excavation locations? (Review locations with site representative)
☐	☐	☐	7. Are all of the proposed borehole and excavation locations at least 1.0 meters (3 feet) from any subsurface utilities identified during a geophysical survey? Check here ☐ if no geophysical survey has been completed (therefore not applicable to this job).
☐	☐	☐	8. Have all utility locating service providers, notified by the public line locator, marked out their facilities in the vicinity of the borehole and excavation locations or otherwise notified us that they do not have any facilities near the proposed locations? (Attached confirmation and utility locate sheets from public locator)
☐	☐	☐	9. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line connecting two similar looking manhole covers?
☐	☐	☐	10. Are all proposed borehole and excavation locations at least 1.5 meters (5 feet) from a visual line perpendicular to the street from the water, gas, and electrical meters?
☐	☐	☐	11. Are all proposed boring and excavation locations clear of pavement joints, curbs, crash posts, or other engineered structures?
☐	☐	☐	12. Does the ground surface/pavement lack signs of previous excavation (e.g., no pavement subsidence, no differences in pavement texture or relief, no pavement patching)?
			Pre-Drilling and Excavation
☐	☐	☐	13. Has it been verified that the proposed drilling or excavation work will not affect any work currently in progress?
☐	☐	☐	14. Has the drill rig or heavy equipment been inspected prior to use and documented? (See Drill Rig Inspection Checklist or Mobile Equipment Safety Inspection Checklist)
			15. Have barricades been erected to prevent unauthorized access, where applicable?
☐	☐	☐	16. Have all known live electrical or product lines within 3 meters (10 feet) of the dig path been visually verified? If no, comment below.
			17. For boreholes that have not been cleared or are within 3 meters of a utility:
☐	☐	☐	a. Before drilling have you cleared a hole to 2.4 meters (8 feet) below grade using an air-knife, or equivalent, before drilling and is the diameter of this hole greater than the final outside diameter of the boring? If not required comment below.
☐	☐	☐	b. Does the soil you encountered in the hand-dug hole appear to be native material (i.e., free of clean gravel, clean sand, aggregate base [gravelly sand ~ 10% fines] or other non-native looking material)? If not required comment below.

Have the above concerns been discussed with the GHD project manager?	☐ Yes	☐ No	☐ Not Applicable
Has the start of subsurface work been communicated to the GHD project manager?	☐ Yes	☐ No	☐ Not Applicable
Have the above concerns been discussed with the client?	☐ Yes	☐ No	☐ Not Applicable
Has the scope of work been approved by the client?	☐ Yes	☐ No	☐ Not Applicable

Comments: _____

_____

_____

_____

_____

GHD field representative name: _____ **Date:** _____

GHD Field Training Manual

Section 15.0
Soil Gas Sampling Standard Operating Procedures

(T113)

January 2017

Please adhere to the following Quality System training requirements:

- Employees who are required to conduct a specific field activity must be properly certified to do the work.
- This involves reviewing the SOP and completing the online training course and exam.
- Employees must also conduct this field work under supervised conditions on at least three occasions, and must be certified by a qualified mentor. Only then can an employee conduct a specific field activity on their own. This is documented on a Field Method Training Record (QSF-021).
- Complete the QSF-021 and forward it to trainingrecords-northamerica@ghd.com.

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15. Soil Gas Sampling Standard Operating Procedures

15.1 Introduction

The procedures described in this section pertain to the installation of temporary and permanent soil gas and sub-slab probes to assess the vapor intrusion pathway. Soil gas and sub-slab probes are both used to collect soil gas samples; however, soil gas probes are installed at a greater depth, often outside a building, and sub-slab probes are installed to collect soil gas samples from immediately below a slab on grade or a basement floor slab. Permanent probes are recommended when more than one sampling event is required or when assessing seasonal variations in soil gas concentrations. Temporary probes are suitable for conducting a screening level assessment of vapor intrusion where the results could assist in locating future, permanent soil gas probes. Temporary probes are also suitable for conducting a preliminary evaluation of the magnitude and extent of volatile organic compound (VOC) impacts to the subsurface (e.g., such as in the case of a soil gas survey).

15.2 Prior Planning and Preparation

When designing and constructing soil gas and sub-slab probes the following questions should be considered:

1. What is the purpose of the soil gas probes?
2. What are the potential health and safety hazards?
3. What type(s) of soil gas probe construction materials are to be used?
4. What kinds of analyses are required (e.g., VOCs, petroleum hydrocarbon fractions)?
5. What are the geologic/hydrogeologic conditions at the site?
6. What are the seasonally high water table levels?
7. Is the water table shallow, (i.e., less than 1 metre below ground surface)?
8. Do perched conditions exist at the site?
9. What is the anticipated total depth of the probes?
10. Are nested soil gas probes required for vertical delineations?
11. Does a vapor barrier already exist under the slab, if so, sub-slab sampling might puncture the barrier, so the hole must be carefully resealed after monitoring is complete?
12. If a basement exists, could the primary entry point(s) for vapor intrusion be through the sidewalls rather than from below the floor slab? If so, sub-slab samples might need to be augmented with samples through the basement walls.
13. Although sample collection and analysis are analogous to those in other types of soil gas sampling, is an analytical method with lower detection limits required?

Note: If field staff are not aware of and able to answer all of the above noted questions before undertaking work in the field, the work plan must be reviewed in detail with the Project Coordinator/Manager. The project team may also consider involving GHD's vapor intrusion and human health risk assessment team during the initial planning to streamline the data evaluation.

15.3 Safety and Health

GHD is committed to conducting field activities with sound safety and health practices. GHD adheres to high safety standards to protect the safety and health of all employees, subcontractors, customers, and communities in which they work. The safety and health of our employees takes precedence over cost and schedule considerations.

Field personnel are required to implement the Safety Means Awareness Responsibility Teamwork (SMART) program as follows:

- Assure the Health and Safety Plan (HASP) is specific to the job and approved by a Regional Safety & Health Manager.
- Confirm that all HASP elements have been implemented for the job.
- A Job Safety Analysis (JSA) for each task has been reviewed, modified for the specific site conditions and communicated to all appropriate site personnel. The JSAs are a component of the HASP.
- Incorporate Stop Work Authority; Stop, Think, Act, Review (STAR) process; Safe Task Evaluation Process (STEP) Observations process; Near Loss and Incident Management process in the day-to-day operations of the job.
- Review and implement applicable sections of the GHD Safety & Health Policy Manual.
- Confirm that all site personnel have the required training and medical surveillance, as defined in the HASP.
- Be prepared for emergency situations, locating safety showers, fire protection equipment, evacuation route, rally point, and first aid equipment before you begin working, and make sure that the equipment is in good working order.
- Maintain all required Personal Protective Equipment (PPE), safety equipment, and instrumentation necessary to perform the work effectively, efficiently and safely.
- Be prepared to call the GHD Incident Hotline at 1-866-529-4886 for all incidents involving injury/illness, property damage, and vehicle incident and/or significant Near Loss.

It is the responsibility of the Project Manager to:

- Ensure that all GHD field personnel have received the appropriate health and safety and field training and are qualified to complete the work.
- Provide subcontractors with a Job Hazard Analysis to enable them to develop their own HASP.
- Ensure that all subcontractors meet GHD's (and the Client's) safety requirements.

15.4 Quality Assurance/Quality Control

Quality assurance and quality control procedures should be implemented in every step of the assessment process to ensure the collection of data of acceptable quality. A well-designed Quality Assurance/Quality Control (QA/QC) program will:

- Ensure that data of sufficient quality are obtained in order to facilitate an efficient site investigation.
- Allow for monitoring of staff and subcontractor performance.
- Verify the quality of the data.

The QA/QC program is developed on a site-specific basis.

15.5 Design Considerations

Diameter

Soil Gas Probes

The probe casing diameter should be kept to a minimum to reduce the volume of soil gas that must be purged from the probe during sampling. A maximum casing diameter of 3/4-inch (19 mm) to 1-inch (25 mm) will be used for solid piping casing material (e.g., polyvinyl chloride [PVC]), although casing diameters this large are not recommended for deep soil gas probes (e.g., greater than 15 feet [4.6 m]) since large purge volumes (e.g., milliliters) will result. Casing diameters of 1/4 inch (6.4 mm) to 3/8-inch (9.5 mm) are typical when flexible tubing is used for the casing material (e.g., Teflon® or nylon).

Sub-Slab Probes

A typical sub-slab probe is constructed from small-diameter (e.g., 01/8- or 1/4-inch outside diameter) stainless steel or another inert material and stainless steel compression fittings. The probes are cut at a length to either float in the slab, if appropriate for your site conditions, or to extend to the base of the slab.

Screened Interval and Sand Pack Material

Soil Gas Probes

The length and depth of the perforated (screened) section should consider the desired monitoring interval as well as the geologic conditions encountered. A typical screened section would consist of a 6-inch (0.15 m) to 1-foot (0.3 m) perforated section. The use of prefabricated stainless steel screen implants is common. Alternatively, the screened interval can be created from casing material by hand-cutting slots, or hand-drilling holes, into the casing at a regular pattern. For hand-cut or hand-drilled screened intervals, the preferred sand pack material for soil gas probes is pea gravel. For prefabricated screens, the preferred sand pack material is inert 10/20 silica sand (#1 morie sand) or glass beads.

Sub-Slab Probes

A screen is not always used with sub-slab probes. When a screen is utilized, it is often pre-fabricated with a length of approximately 6 inches, due to the limited depth intervals sampled. When a screen is not utilized, the bottom of the probe is left open to facilitate sample collection. The perforated or open section should be consistent with the desired monitoring interval and sub-slab conditions encountered.

Monitoring Parts

For both soil gas and sub-slab probes, airtight stainless steel or brass compression fittings (e.g., Swagelok®) with valves should be installed at ground surface to allow for an airtight connection to sampling equipment. The valve is required to isolate the soil gas sampling assembly from the soil gas probe while sampling assembly airtightness tests are conducted prior to probe purging and sampling.

Casing Materials

Soil Gas Probes

The materials selected for soil gas probe casing construction must be compatible with the volatile chemicals anticipated to be present in soil gas. Experience has shown that PVC casing is suitable when VOCs are present. However, as described above, PVC is typically not available in small enough diameters to provide practical soil gas probe purge volumes. To minimize purge volumes, small diameter (e.g., 1/4-inch [6.4 mm] to 3/8-inch [9.5 mm]) flexible tubing (e.g., Teflon® or nylon) is more commonly applied as the soil gas probe casing. Where solid casing is used (i.e., PVC), threaded piping will be used to avoid any possible contamination from solvent cement.

Sub-Slab Probes

The materials selected for sub-slab casing construction must be compatible with the volatile chemicals anticipated to be present in soil gas. Often, 1/4-inch OD stainless steel tubing is utilized to collect sub-slab soil gas. The length of the stainless steel (or brass) tubing is cut to a desired length prior to installation.

15.6 Soil Gas and Sub-Slab Probe Installation

The information contained in this section has been compiled from existing manuals, various reference documents, and a broad range of colleagues with considerable practical and educational backgrounds. This SOP outlines the generic procedures necessary to install a soil gas/sub-slab probe. Site conditions, contaminants and geology may require modification of this procedure. Review applicable government procedures and informational documentation prior to installation.

This SOP is not intended to prohibit those conducting evaluations from using means other than those specified herein to measure soil gas concentrations; however, departures from this guidance will often need to include information for a more detailed review.

15.6.1 Installation Procedures - Soil Gas Probes

The soil gas probe is to be installed using Geoprobe® dual tube sampling system to advance a borehole to the target depth. The dual-tube sampling system consists of first advancing a 2 1/2-inch (6.4 cm) diameter inner sampling probe followed by advancing a 3 1/2-inch (8.9 cm) diameter outer casing. The outer casing should cut away disturbed soil immediately surrounding the borehole left by the inner probe. The outer casing should create a zone of reduced soil disturbance due to the inner probe having already been advanced. It is anticipated that using the dual tube system will result in a minimum amount of soil disturbance around the borehole annulus. The soil lithology should be logged during drilling activities and recorded on a field boring log along with any applicable observations. Permanent soil vapor probes can be installed with a conventional drill rig equipped with a hollow-stem auger, although increased formation disturbances would likely result. Rotosonic and mud or air rotary drilling methods are not recommended since they can influence soil vapor sample results and/or alter the physical properties of the subsurface adjacent to the borehole annulus.

The probes should be constructed with a 6-inch (15 cm) to 12-inch (30 cm) long screened interval. The screened interval can be hand-fabricated or prefabricated. The probe casing should be constructed using flexible tubing or solid casing. Flexible tubing (e.g., Teflon® or nylon) of small diameter (e.g., 1/4-inch [6.4 mm] to 3/8-inch [9.5 mm]) is most commonly used in combination with prefabricated screened intervals. Solid casing (e.g., PVC) of small diameter (e.g., 3/4-inch [19 mm] to 1-inch [25 mm]) is most commonly used with hand-fabricated screened intervals. After positioning the screened interval and casing into the borehole, the screen should be surrounded by the appropriate sand pack material (i.e., pea gravel for hand-fabricated screens and 10/20 silica sand for prefabricated screens). When placing the sand pack into the borehole, 1 inch (2.5 cm) of sand pack material should be placed under the bottom of the probe screen to provide a firm footing. The sand pack should extend to 6 inches (15 cm) above the screened interval. A bentonite pellet seal should then be installed to 1-foot (0.3 m) above the sand pack and should be hand-hydrated. For temporary probes (i.e., that will be sampled for less than a year), the remaining annulus should be backfilled with pre-hydrated bentonite cement. For permanent probes (i.e., that will be sampled for more than a year), the remaining annulus should be backfilled with neat-cement grout[1] (Cal EPA, 2015). The soil gas probe casing should extend to ground surface and should be fitted with airtight stainless steel or brass compression fittings (e.g., Swagelok®) with valves to allow for an airtight connection to soil gas sampling equipment. A flush-mount protective cover should be installed above the soil probe and cemented into place. Schematics of typical soil gas probe installation details are presented on Figures 15.1 and 15.2, respectively, where hand-fabricated and prefabricated screened intervals are applied.

15.6.2 Installation Procedures - Sub-Slab Soil Gas Probes

Sub-slab soil gas probes allow for collection of soil gas samples from directly beneath the slab of a building. Sub-slab soil gas probes are not recommended when groundwater is present directly below the slab, since the sub-slab port could allow groundwater to enter the building. Sub-slab soil

[1] Neat-Cement Grout means a mixture in the proportion of 94 pounds of Portland cement and not more than 6 gallons (22.7 liters) of water. Bentonite up to 5 percent by weight of cement (4.7 pounds of bentonite per 94 pounds of Portland cement) may be used to reduce shrinkage.

gas probes can be installed using several different methods: (1) utilizing a small diameter hole, (2) a larger diameter hole w/ flushmount casing, and (3) a Vapor Pin™. Summaries of the steps involved are presented below:

Small Diameter Sub-Slab Soil Gas Probe:

A schematic of a typical small diameter sub-slab soil gas probe installation detail is presented on Figure 15.3.

1. Prior to drilling holes in a foundation or slab, contact local utility companies to identify and mark utilities coming into the building from the outside (e.g., gas, water, sewer, refrigerant, and electrical lines). Consult with a local electrician and plumber to identify the location of utilities inside the building.
2. Prior to fabrication of the sub-slab vapor probes, use the rotary drill and the two inch diameter drill bit to create a shallow (e.g., 1/4 to 1/2 inch in depth) outer hole that partially penetrates the slab. This outer hole will allow the protective cap to be flush with the concrete surface (Figure 15.4).
3. Use a small portable vacuum cleaner to remove cuttings from the hole.
4. Use the rotary hammer drill and a one-inch drill bit to create a smaller diameter "inner" hole through the remainder of the slab to some depth (e.g., seven to eight centimeters or three inches) into the sub-slab material. Figure 15.5 illustrates the appearance of "inner" and "outer" holes. Drilling into the sub-slab material will create an open cavity, which will prevent the obstruction of any probes during sampling.
5. Use a small portable vacuum cleaner to remove cuttings from the hole.
6. Determine the thickness of the slab and record the measurement.
7. Assemble the vapor point using the basic design of a sub-slab vapor probe illustrated on Figure 15.3.
8. Place the assembled vapor point (Figure 15.6) into the hole and ensure the screen extends beyond the concrete and that the top of the probe is flush with the slab. Also apply the tamper resistant cap so as to not interfere with day-to-day use of the buildings. Cut tubing if necessary (Figure 15.7).
9. Confirm the fit of the rubber shaft plug to the sides of the boring. It should be snug with no gaps present. If additional thickness (diameter) is necessary, non-VOC plumbers putty can be added around the rubber.
10. Mix a quick-drying Portland cement to ensure a tight seal.
11. Inject the Portland cement with a 50 cc syringe or push into the annular space between the probe and outside of the "outer" hole (Figure 15.8).
12. Complete installed vapor point (Figure 15.9) with a plug (Figure 15.10) or tamper-resistant cap (Figure 15.11).
13. Allow cement to cure for at least 24 hours prior to sampling.

Sub-slab probes constructed in the aforementioned manner may be abandoned by removing any tubing and all surface protective covers. The boring annulus can then be backfilled with uncontaminated native material or grout. Inspect/clean the work area, and return site conditions to their original state.

If the tubing cannot be removed, the tubing should be cemented in place. All surface protective covers must be removed and returned to as close as possible to original site conditions.

Larger Diameter Hole w/ Flushmount Casing:

A schematic of a typical large diameter sub-slab soil gas probe installation detail is presented on Figure 15.12.

1. Prior to drilling holes into the building floor, the location of utilities coming into the building (e.g., gas, electrical, water, and sewer lines, etc.) must be identified. Avoid installing sub-slab soil gas probes near where utilities penetrate the slab as these may be entry points for downward ambient air migration through the slab during soil gas sampling.
2. A concrete corer is used to drill a hole through the concrete floor slab. The diameter of the hole should be sufficient to allow the installation of a protective casing within the hole. A sufficient space for placement of cement is required between the outer edge of the flush-mount casing and the hole in the concrete. Smaller diameter flush-mount protective casings are not recommended as they make accessing the probe within the casing difficult.
3. Once the hole in the concrete is cored and the center core removed, the flush-mount protective casing shroud should be cut to a suitable length. Ideally, the length of the shroud should allow the flush-mount casing to be flush with the surrounding floor while resting on the bedding material beneath the slab.
4. The probe assembly, including a valve at the top of the probe, should be placed so that the tip of the probe is within the bedding material beneath the concrete slab. Care should be taken to not force the probe into the bedding so that the open end of the probe doesn't plug. Note: the probe assembly should be vacuum-tested on both sides of the valve prior to installation. A piece of ¼ inch Teflon tubing should be attached at the top of the valve prior to installation. This tubing will allow easier access for the use of compression fittings to attach purging and sampling equipment to the probe.
5. The probe should be cemented into the flush-mount casing with hydraulic cement. The hydraulic cement should form a continuous seal from the bedding material to just below the top hex nut of the probe assembly.

Vapor Pin™

This SOP describes the procedure for installing a sub-slab soil probe using a Vapor Pin™. Borings should be done through the use of a rotary hammer drill. The specific drill utilized must be capable of utilizing the drill and coring bits identified by the SOP (see below) and be of sufficient size to penetrate the expected thickness of the concrete present.

General List of Materials

This installation SOP utilizes the following products, which are available from Cox-Colvin & Associates, Inc. Equipment:

1. Silicone sleeve.
2. Hammer drill.
3. 5/8 inch diameter hammer bit (Hilti™ TEYX 5/8" x 22" #00206514 or equivalent).
4. 1½ inch diameter hammer bit (Hilti™ TEYX 1½" x 23" #00293032 or equivalent) for flush mount applications.
5. 3/4 inch diameter bottle brush.
6. Wet/dry vacuum with HEPA filter (optional).
7. Vapor Pin™ installation/extraction tool.
8. Dead blow hammer.
9. Vapor Pin™ flush mount cover, as necessary.
10. Vapor Pin™ protective cap.
11. Equipment needed for abandonment.
12. Vapor Pin™ installation/extraction tool.
13. Dead blow hammer.
14. Volatile organic compound-free hole patching material (hydraulic cement) and putty knife or trowel.

Flushmount Vapor Pin™ Installation Protocol

1. Prior to drilling holes in a foundation or slab, contact local utility companies to identify and mark utilities coming into the building from the outside (e.g., gas, water, sewer, refrigerant, and electrical lines). Consult with a local electrician and plumber to identify the location of utilities inside the building.
2. Set up wet/dry vacuum to collect drill cuttings.
3. Drill a 1½ inch diameter hole at least 1¾ inches into the slab.
4. Remove the drill bit, brush the hole with the bottle brush, and remove the loose cuttings with the vacuum.
5. Drill a 5/8 inch diameter hole through the slab and at least six inches into the underlying soil to form a void.
6. Remove the drill bit, brush the hole with the bottle brush, and remove the loose cuttings with the vacuum.
7. Assemble the Vapor Pin™ assembly (Figure 15.13) by threading the Vapor Pin™ into the extraction/installation tool and placing the silicone sleeve over the barbed end.

8. Place the lower end of the Vapor Pin™ assembly into the drilled hole. Place the small hole located in the handle of the extraction/installation tool over the Vapor Pin™ to protect the barb fitting and cap, and tap the Vapor Pin™ into place using a dead blow hammer (Figure 15.14). Make sure the extraction/installation tool is aligned parallel to the Vapor Pin™ to avoid damaging the barb fitting.
9. Unscrew the threaded coupling from the installation/extraction handle and use the hole in the end of the tool to assist with the installation (Figure 15.15). During installation, the silicone sleeve will form a slight bulge between the slab and the Vapor Pin™ shoulder.
10. Place the protective cap on the Vapor Pin™ (Figure 15.16).
11. Cover the Vapor Pin™ with a flushmount cover.
12. Allow 20 minutes or more (consult applicable guidance for your situation) for the sub-slab soil gas conditions to equilibrate prior to sampling.
13. Remove protective cap and connect sample tubing to the barb fitting of the Vapor Pin™.

Temporary Soil Gas Probes

First, a core drill should be used to remove any surface cover, as needed. The temporary soil gas probes should consist of a decontaminated hollow sampling rod driven to the target depth below ground surface. The sampling rod should consist of a decontaminated 1-inch (2.5 cm) hollow stainless steel outer rod that is retracted to expose a 1-foot (0.3 m) long stainless steel screen. The rod should be advanced by a slide hammer to the target depth, and the outer rod retracted to expose the screen at the bottom of the rod. A surface seal comprised of hydrated bentonite cement should be placed around the base of the driven rod. The sampling rod should be completed at ground surface with airtight stainless steel or brass compression fittings (e.g., Swagelok®) with valves to allow for an airtight connection to soil gas sampling equipment. A schematic of a typical temporary soil gas probe installation detail is presented on Figure 15.17.

15.6.3 Installation Documentation

Details of each soil gas probe installation should be recorded on GHD's standard Stratigraphic Log Overburden (Form SP-14), or recorded within a standard GHD field book. The Well Instrumentation Log (Form SP-15) is provided for recording the overburden well instrumentation details, and can be used for soil gas probe installations. This figure must note:

- Borehole depth
- Probe perforation intervals
- Filter pack intervals
- Plug intervals
- Grout interval
- Surface cap detail
- Soil gas probe material
- Soil gas probe instrumentation (i.e., riser and screen length)

- Soil gas probe diameter
- Filter pack material
- Backfill material detail
- Stickup/flush-mount detail
- Date installed

The soil stratigraphy encountered at soil gas probes refusal must be recorded in accordance with GHD's standard borehole advancement methods (see Section 5.0).

Each soil gas probe should be accurately located on a site sketch. An accurate field tie to the center of the gas probe from three adjacent permanent features should be completed. The field ties should be located in a different direction from the installation.

Each soil gas probe must be permanently marked to identify the soil gas probe number designation.

15.6.4 Follow-Up Activities

Once the soil gas probe(s) have been completed, the following activities need to be performed:

1. Conduct initial monitoring round of gas probes.
2. Submit all logs to the appropriate GHD hydrogeology department, who will be responsible for the generation of the final well log.
3. Survey accurate horizontal and vertical control of the soil gas borings and any pertinent structures needed to create a suitable site map.
4. Prepare an accurate soil gas probe/boring location map. Tabulate soil gas probe construction details.
5. Write-up all field activities including, but not necessarily limited to; drilling method(s), construction material, site geology.
6. Distribute all/any field book(s) to the appropriate GHD office.

15.7 Soil Gas and Sub-Slab Sampling Protocol

The following sampling protocols are for collecting a vapor sample through either a soil gas probe and/or sub-slab probe for the analysis of volatile organic compounds (VOCs) by the United States Environmental Protection Agency Method TO-15 (USEPA, 1999).

This SOP does not cover, nor is it intended to provide, a justification or rationale for where a sampling point is installed. It is assumed by using this SOP that site conditions have been fully evaluated and that the sampling location and depth meet the objectives outlined in the work plan or scope of work. Considerations must be given to the types of chemicals of concern, lithology encountered, and the depth of the vapor source. Samples collected deeper than any potential source of vapors may not fully characterize the potential risk and sampling points should never be installed or collected within the zone of saturation. The bottom of the probe should be approximately 0.5 m (1.6 ft) to 1 m (3.2 ft) above the highest water table.

Where possible, external probes should be installed at a minimum depth of 1 m (3.2 ft) to reduce the likelihood of ambient air being drawn through surficial soils (referred to as "short-circuiting"). External shallow probes less than 1 m (3.2 ft) deep may be warranted where there is a shallow water table. Good practice is to place a plastic sheet/tarp around a shallow probe to minimize atmospheric air intrusion (CCME, 2016). Recommended minimum dimensions of the plastic sheet/tarp are 1.5 m (5 ft) by 1.5 m (5 ft). The plastic/tarp should be weighted down at the edges with sand or sand bags (CCME, 2016).

Most soil gas/sub-slab probes are installed at relatively shallow depths (less than ten feet below ground surface) so minimum purge volumes and low-volume samples must be performed to minimize potential breakthrough from the surface or between sampling intervals. Tracer/leak gas is necessary to ensure breakthrough does not occur and that a leak does not occur at any fitting above grade. Sampling should not occur during a significant rain event. A significant rain event is defined as 0.5 inches or greater of rainfall during a 24-hour period by Cal EPA (2015), or 1 centimeter or greater of rainfall during a 24-hour period by MOE (2013). A period of 1 day for coarse-grained soil conditions and several days for fine-grained soil conditions after a significant rain event should occur prior to collecting soil vapor samples. This time interval is required for drainage to occur and soil conditions to return to ambient moisture conditions.

Note: The sampling interval after a significant event should be verified based on the applicable jurisdictional regulatory vapor intrusion guidance.

Samples from wells with multiple points installed must not be collected simultaneously and approximately 30 minutes must elapse between each sampled interval. Sample times should be documented on the field log. Sample flow rates are not to exceed 200 milliliters per minute (mL/min) to minimize the potential for vacuum extraction of contaminants from the soil phase. A flow rate greater than 200 mL/min may be used when purging times are excessive, such as for deep wells with larger-diameter tubing. However, a vacuum of 100 inches of water (7.4 inches of mercury [Hg]) or less must be maintained during sampling whenever a higher flow rate is used. Volumes of various tubing sizes are provided in Table 1 in order to aid in calculating purge volumes.

Table 1 Volumes for Select Tubing Sizes

Tubing Size (inches ID)	Volume/ft (liters)
3/16	0.005
¼	0.010
½	0.039

Care must be used during all aspects of sample collection to ensure that sampling error is minimized and high quality data are obtained. Care must also be taken to avoid excessive purging prior to sample collection and prevent pressure build-up in the enclosure during introduction of the tracer gas. Inspection of the installed sample probe, specifically noting the integrity of the surface seal and the porosity of the soil in which the probe is installed, will help to determine the tracer gas setup. The sampling team must avoid actions (e.g., fueling vehicles, using permanent marking pens, and wearing freshly dry-cleaned clothing or personal fragrances) which could potentially

cause sample interference in the field. All data collected should be recorded on the Sub-Slab/Soil Gas Sampling Field Data Sheet (SP-30).

15.7.1 Soil Gas Collection General List of Materials

The equipment required for soil gas sample collection is as follows:

Flow Meters and Detectors

1. Flow regulator with vacuum gauge. Flow regulators provided by a qualified laboratory are pre-calibrated to a specified flow rate (e.g., 100 mL/min).
2. Photoionization detector (with appropriate lamp).
3. Helium detector (if helium is utilized as a tracer gas).
4. Methane meter for petroleum sites that is capable of also measuring percent of methane (CH4), carbon dioxide (CO2), and oxygen (O2).
5. Low flow air pump (e.g., 100 mL/min) (as appropriate)

Tooling and Supplies

1. Sampling canister, Tedlar bag, or syringe (one per location).
2. Regulated flow meter assembly set to a maximum of 200 mL/min (one per location, as appropriate).
3. 1/4 inch tubing (Teflon®, polyethylene, or similar) and assorted fittings.
4. Plastic housing for using tracer gas.
5. 50 ml syringe (for purging).
6. Camera.
7. Adjustable crescent wrenches, small to medium size, and/or open end combo wrenches 9/16 to 1/2 inch.
8. Scissors/snips to cut tubing.
9. Ballpoint pens.
10. Nitrile gloves.
11. Compound to be used as tracer gas - lab grade helium or isopropyl alcohol (IPA).
12. Tarp or plastic sheeting

15.7.2 Soil Gas Tracer Compounds

A leak in the sampling assembly may allow ambient air into the system and dilute the soil gas results (Benton and Shafer, 2007). Therefore, tracer gases must be utilized during the collection of soil gas samples to verify that the sample collected is from the installed sampling point. The presence of a tracer compound, whether liquid or gaseous, can confirm a leak in the sampling train assembly and whether the usability of the sample will need to undergo further evaluation.

Careful thought and consideration must be used when choosing a leak check compound as a tracer, since each compound can have specific benefits and drawbacks.

Helium used as a tracer gas beneath a shroud allows for the screening of the sampling train in the field. In conjunction with the use of a field meter capable of detecting helium, leaks within the sampling train could be detected prior to sampling. A retightening of all fittings prior to collecting the sample for analysis should be done. If a leak has been detected and is unable to be resolved, the sampling point may need to be decommissioned and a new one installed. Only lab-grade helium (UHP-Ultra High Purity) should be used as a tracer, since helium available at general merchandise stores may contain secondary contaminants, such as benzene.

Understanding the relationship between a leak and the concentration detected of the tracer gas used to check for leaks, the potential for absorption of the tracer gas (i.e., helium) onto sample train tubing, and the potential for interference by the tracer gas compound with VOCs is important in answering the data usability. An ambient air leak of up to five percent may be acceptable if quantitative tracer testing is performed. A soil gas vapor well should be decommissioned if the leak cannot be corrected. Any replacement vapor wells should be installed at least five feet from the location where the original vapor well was located

Note: The ambient air leak of up to five percent leak should be verified based on the applicable jurisdictional regulatory vapor intrusion guidance.

15.7.3 Soil Gas and Sub-Slab Probe Leak Testing

The use of leak testing is recommended as a quality control check to ensure ambient air has not leaked into the soil gas probe or sampling assembly, which may affect (i.e., dilute) the analytical results. Contaminants in ambient air can also enter the sampling system and be detected in a sample from a non-contaminated sampling probe resulting in a "false positive" result. The leak testing should be conducted as described in the following two steps:

- Step 1 - Vacuum Test: used to ensure that the tubing and fittings/valves that make up the sampling assembly are air-tight
- Step 2 - Tracer Test: used to ensure that ambient air during soil gas sample collection is not drawn down the soil gas probe annulus through an incomplete seal between the formation and the soil gas probe casing.

The vacuum test and tracer test are detailed below.

Step 1 - Vacuum (shut-in) Test

- The sampling assembly must be connected to the soil gas probe valve at the surface casing. Once connected, the sampling assembly will consist of the soil gas probe, the vacuum gauge supplied by the laboratory, personal sampling pump, and Summa™ canister, all connected in series (i.e., in the order of soil gas probe, vacuum gauge, pump, and canister), using tee-connectors or tee-valves.
- The personal sampling pump will be used to conduct the vacuum test. The vacuum test should consist of opening the valve to the personal sampling pump while leaving closed the valves to

the Summa™ canister and the soil gas probe. The pump should then be operated to ensure that it draws no air from the sampling assembly (i.e., creates a negative pressure, or vacuum within the sampling assembly), thus establishing that all assembly connections are air-tight. The sampling pump low-flow detect switch will likely activate within 10 to 15 seconds, turning the pump off. A negative pressure, or vacuum, should be established within the sampling assembly, and should be sustained for at least 1 minute.

- If the pump is capable of drawing flow, or if the vacuum is not sustained for at least 1 minute, all fittings and tubing will be checked for tightness (or replaced) and the vacuum test will be repeated.
- The reading from the vacuum gauge pressure should be recorded in field logbook to demonstrate that the pump is able to create a vacuum within the sampling assembly (it will also be noted whether the low-flow detect switch on the pump was activated), and that the vacuum is sustained for at least 1 minute.

Step 2 - Tracer Test

A tracer compound is released at ground surface immediately around the soil gas probe surface casing and is used to test for ambient air leakage down the annulus of the soil gas probe and into the soil gas sample. Two options are described below for the tracer test where either isopropanol (Option A) or helium (Option B) is used as the tracer compound.

Option A - Isopropanol

- For Option A, isopropanol is used as the tracer compound. It is included as an analyte in U.S. EPA's TO-15 method, it is readily available (i.e., as isopropyl rubbing alcohol), and it is safe to use.
- Approximately 1 teaspoon (approximately 4 mL) of isopropanol (rubbing alcohol) should be mixed in 1 gallon of de-ionized water to create an approximate 1/1,000 solution.
- Paper towels soaked in a dilute solution of isopropanol should then be wrapped around the soil gas probe surface casing and ground surface immediately surrounding the surface casing. Soil gas probe surface casing then should be covered over, using clear plastic sheeting that will be sealed to the ground surface. As the ground surface finish permits, sealing the plastic sheeting to ground surface should be accomplished by using tape or by weighting the edges of the plastic sheeting with dry bentonite.
- Immediately before conducting the soil gas probe purging, remove the paper towels from the solution, wringing out the towels so they are very damp, but not dripping. Place them around the vapor probe and seal them in place using the plastic sheeting.
- The isopropanol solution should be kept fresh, with new solution being made every hour. The solution should be mixed at a central location away from the sampling activities. The isopropanol should be kept tightly capped and kept away from all sampling equipment. The solution should be kept away from the sampling assembly until immediately before sample collection begins. Sampling personnel must wear latex gloves while handling the solution and soaked paper towels, and will remove the gloves while working with the sampling assembly.

- Soil gas samples with laboratory analytical results for isopropanol that are greater than 10 percent of the starting concentration of isopropanol in the vapors emitted from dilute isopropanol solution should not be considered reliable and representative of soil gas concentrations within the formation (ITRC, 2007). The starting concentration should be calculated based on the concentration of isopropanol in the dilute solution, the vapor pressure of isopropanol, and Henry's law.
- A disadvantage in using isopropanol as the tracer compound is that it will not be known whether a significant leak occurred until after the cost of analyzing the sample has been spent. Elevated levels of isopropanol can also interfere with laboratory analytical method detection limits.

Option B - Helium

- The presence of helium within the sampling assembly should be monitored during purging and soil gas sample collection using a helium meter installed in-line with the sampling assembly. The meter should be positioned along the sampling line just before the personal sampling pump.
- Helium is readily available at a variety of retail businesses, is safe to use, and does not interfere with laboratory analytical method detection limits.
- A containment unit is constructed to cover the soil gas probe surface casing. The containment unit should consist of an overturned plastic pail set into a ring of dry bentonite to create a seal between the ground surface and the rim of the pail. The pail can be set directly on top of the sampling assembly tubing connected to the soil gas probe, which when pressed into the dry bentonite, should create a sufficient seal around the tubing. The pail will have two holes: one to allow for the introduction of helium; and the other to allow for air trapped inside the pail to escape while introducing the helium. The second hole will also allow insertion of the helium meter to measure the helium content within the pail.
- Prior to soil gas probe purging, helium will be introduced into the containment unit to obtain a minimum 50 percent helium content level. The helium content within the containment unit should be confirmed using the helium meter and recorded in the field logbook. Helium should continue to be introduced to the containment unit during soil gas probe purging and sampling and care should be taken not to increase the pressure within the containment unit beyond that of atmospheric pressure.
- During soil gas probe purging and sampling, the helium meter should be connected in-line with the sampling assembly. In the event that the helium meter measures a helium content with the sampling assembly of greater than 10 percent of the source concentration (i.e., 10 percent of the helium content measured within the containment unit), the soil gas probe will be judged to permit significant leakage such that the collected soil gas sample will not be considered reliable and representative of soil gas concentrations within the formation (ITRC, 2007).
- An advantage of using helium as the tracer compound is that a significant leak can be detected in the field and the cost of analyzing the Summa™ canister can be avoided.

Note: The 10 percent of the source concentration should be verified based on the applicable jurisdictional regulatory vapor intrusion guidance.

15.7.4 Sample Collection Procedure - Canister

1. Soil gas samples for assessing the vapor intrusion pathway must be collected using an acceptable canister, including certified clean Summa™ canisters. Only canisters certified clean at the 100 percent level can be used for soil gas sampling activities (i.e., pre-cleaned at the laboratory in accordance with U.S. EPA's TO-15 method and documentation of the cleaning activities will be provided by the laboratory). Summa™ canisters typically come in 1-, 1.7-, and 6-liter capacities, depending upon laboratory availability.

2. The canisters must be fitted with a laboratory-calibrated critical orifice flow regulation device sized to restrict the maximum soil gas sample collection flow rate to approximately 100 milliliters per minute (mL/min), which corresponds to the lower end of the maximum soil gas sampling flow rate recommended by Cal EPA (2015) of 100 to 200 mL/min. The 100 mL/min maximum flow rate is equivalent to sample collection times of 10, 17, or 60 minutes, respectively, for 1, 1.7, or 6 liter canister capacities. A maximum flow rate of 100 mL/min is recommended to limit VOC stripping from soil, prevent the short-circuiting of ambient air from ground surface down the soil gas probe annulus that would dilute the soil gas sample. A maximum flow rate of 100 mL/min increases confidence that the soil gas sample is drawn from immediately surrounding the screened interval.

3. A vacuum gauge should be supplied by the laboratory and used during sample collection to measure the initial canister vacuum, canister vacuum during sample collection, and residual canister vacuum at the end of sample collection. The vacuum gauge will be returned to the laboratory and used by the laboratory to measure the residual canister vacuum upon receipt of the canisters by the laboratory.

4. The canister should be connected to the soil gas probe valve at the surface casing using the sampling assembly (see Figure 15.18). The sampling assembly is connected using short lengths (e.g., 1-foot [0.3 m]) 1/4-inch (6.4 mm) or 3/8-inch (9.5 mm) diameter tubing (the tubing material will be Teflon® or nylon) and airtight stainless steel or brass tee-connectors and tee-valves (e.g., Swagelok® type). The canister should be connected to the soil gas probe along with a vacuum gauge and a personal sampling pump, all in series, using tee-connectors or tee-valves (in the order of soil gas probe, vacuum gauge, pump, and canister). A tee-valve should be used to connect the pump, which will allow the pump to be isolated from the sampling assembly during sample collection. Fresh tubing must be used for each sample.

5. Prior to collecting a soil gas sample, the stagnant air in the sampling assembly tubes and soil gas probe casing/sand pack must be removed. The soil gas probes should be purged prior to sampling using the personal sampling pump at a flow rate of less than 200 mL/min. A flow rate greater than 200 mL/min may be used when purging times are excessive, such as for deep wells with larger-diameter tubing. However, a vacuum of 100 inches of water (7.4 inches of Hg) or less must be maintained during sampling whenever a higher flow rate is used. This ensures that the collected soil gas sample is representative of actual soil gas concentrations within the formation. Measurements of the lengths and inner diameters of the above-ground sampling assembly and below-ground gas probe casing, screen, and sand pack should be used to calculate the "purge volume" (the purge volume will consider the pore volume of the sand pack assuming a 30 percent sand pack porosity). Prior to sample

collection, two to three purge volumes should be drawn from the probe/sample assembly, unless otherwise required by the applicable regulatory guidance. The purge data (calculated purge volume, purging rate, and duration of purging) should be recorded in the field logbook.

6. Prior to purging, a vacuum, or tightness, test should be conducted on the sampling assembly as the first of two leak-testing steps, as described further in Section 15.7.3. Briefly, this first leak-testing step (the vacuum test) should consist of opening the valve to the personal sampling pump leaving the valves to the Summa™ canister and the soil gas probe closed. The pump should then be operated to ensure that it draws no air from the sampling assembly (i.e., creates a negative pressure, or vacuum within the sampling assembly), thus establishing that all assembly connections are airtight. Further details of the vacuum test are described in Section 15.7.3.

7. Prior to purging, and following the vacuum test, the set-up for the second of the two leak-testing steps should be conducted. The second leak-testing step is the tracer compound step. A tracer compound is released at ground surface immediately around the soil gas probe surface casing. The tracer test is used to test for ambient air leakage down the annulus of the soil gas probe and into the soil gas sample. The tracer compound is either monitored using a meter connected in-line to the sampling assembly (e.g., helium), or is included as an analyte in the laboratory analysis of the soil gas samples (e.g., isopropanol). The setup requirements of the tracer compound leak-testing step are described in Section 15.7.3.

8. Following the vacuum test, and the setup for the tracer compound leak-testing step, the soil gas probe purging should commence by opening the valve to the soil gas probe and activating the personal sampling pump (and leaving closed the valve to the Summa™ canister). At the start and the end of the purging period, the total concentration of volatile organic vapors of the personnel sampling pump exhaust gas should be monitored using a portable photoionization detector (PID) meter. The PID meter should be connected in series after the personal sampling pump. Since typical PID instrument flow rates vary from approximately 300 to 500 mL/min (depending on the manufacturer and model), drawing a sample into the PID meter through the personal sampling pump will likely increase the purging flow rate temporarily, until a reading from the PID meter is obtained. PID readings should be recorded and entered in the field logbook and chain of custody form. The PID readings should provide the laboratory with an indication of whether a sample could require dilution before analysis.

9. Following purging, the valve to the personal sampling pump should be closed, and the valves to the soil gas probe and Summa™ canister opened to draw the soil gas sample into the canister. This should be completed concurrent with continued application of the leak-testing tracer compound. The vacuum gauge reading must be recorded during sample collection. Should the vacuum gauge reading remain elevated above 10 inches Hg for more than 30 minutes, this will be taken to indicate that the initial vacuum in the canister has not sufficiently dissipated, and that the soil screened by the soil gas probe does not produce sufficient soil gas to permit sample collection due to low permeability soil. If low permeability conditions are encountered, the probe can be sampled using the techniques outlined in Appendix D (Soil Gas Sampling in Low Permeability Soil) of Cal EPA (2015).

10. To ensure some residual vacuum in each canister following sample collection, the canister vacuum should be recorded at approximately 80 percent through the expected sample collection duration. With a 100 mL/min maximum flow rate, the expected sample collection duration would be 10, 17, or 60 minutes, respectively, for canister capacities of 1, 1.7, or 6 liters. A maximum residual vacuum of 10-inches Hg is allowed. A canister residual vacuum above this value will require continued sampling until vacuum reading is below this threshold, unless the vacuum remains above 10-inches Hg for more than 30 minutes, as described above. A minimum 0.5 to 1-inch Hg residual vacuum will be required for the sample to be considered valid, or the sampling will be repeated using a fresh Summa™ canister. Once the vacuum is measured, the safety cap must be securely tightened on the inlet of the Summa™ canister prior to shipment to the laboratory under chain-of-custody procedures.

Note: The 0.5 to 1-inch Hg residual vacuum should be verified based on the applicable jurisdictional regulatory vapor intrusion guidance.

11. The vacuum gauge provided by laboratory must be returned with the canister samples to check residual vacuum in the laboratory prior to sample analysis and recorded on the analytical data report. This check will ensure sample integrity prior to laboratory analysis, and that the canister has not become compromised during shipment to the laboratory.

12. If the critical orifice flow regulation devices (provided by the laboratory) and sampling assembly fittings/valves are to be re-used during sampling, they must be cleaned in accordance with laboratory requirements by purging with zero air (provided by laboratory) for minimum 45 seconds at minimum 75 psi (153 inches of Hg).

13. The canisters should be labeled noting the unique sample designation number, date, time, and sampler's initials. A bound field logbook should be maintained to record all soil gas sampling data.

14. The canisters should be listed on the chain-of-custody in order of suspected highest to lowest impact, as evidenced by the recorded PID readings. Indicate on the chain-of-custody for the laboratory to analyze the canisters in order from the lowest to highest PID reading.

The soil gas samples should be analyzed for the project-specified VOCs by the project laboratory using U.S. EPA's TO-15 gas chromatograph/mass spectrometer (GC/MS) methodology, with the mass spectrometer (MS) run in full scan mode. QA/QC measures implemented during the soil gas sampling event will include the two-step leak testing procedure (see Section 15.7.3), maintaining a minimum residual vacuum in the Summa™ canisters following sample collection, collection of one duplicate per sampling event or from at least 10 percent of the samples obtained, and collection of an ambient air sample (if needed). As an additional QA/QC measure, the laboratory should conduct a duplicate analysis of the sample collected in one of the canisters.

15.7.5 Sample Collection Procedure – Tedlar Bag

1. The low flow pump should be connected to the soil gas probe valve at the surface casing and the bag should be connected to the pump. The sampling assembly is connected using short lengths (e.g., 1-foot [0.3 m]) 1/4-inch (6.4 mm) or 3/8-inch (9.5 mm) diameter tubing (the

tubing material will be Teflon® or nylon) and airtight stainless steel or brass tee-connectors and tee-valves (e.g., Swagelok® type). Fresh tubing must be used for each sample.

2. Prior to collecting a soil gas sample, the stagnant air in the sampling assembly tubes and soil gas probe casing/sand pack must be removed. The soil gas probes should be purged prior to sampling using the personal sampling pump at a flow rate of less than 200 mL/min. A flow rate greater than 200 mL/min may be used when purging times are excessive, such as for deep wells with larger-diameter tubing. However, a vacuum of 100 inches of water (7.4 inches of Hg) or less must be maintained during sampling whenever a higher flow rate is used. This ensures that the collected soil gas sample is representative of actual soil gas concentrations within the formation. Measurements of the lengths and inner diameters of the above-ground sampling assembly and below-ground gas probe casing, screen, and sand pack should be used to calculate the "purge volume" (the purge volume will consider the pore volume of the sand pack assuming a 30 percent sand pack porosity). Prior to sample collection, two to three purge volumes should be drawn from the probe/sample assembly, unless otherwise required by the applicable regulatory guidance. The purge data (calculated purge volume, purging rate, and duration of purging) should be recorded in the field logbook.

3. Prior to purging, a vacuum, or tightness, test should be conducted on the sampling assembly as the first of two leak-testing steps, as described further in Section 15.7.3. Briefly, this first leak-testing step (the vacuum test) should consist of opening the valve to the personal sampling pump leaving the valves to the bag and the soil gas probe closed. The pump should then be operated to ensure that it draws no air from the sampling assembly (i.e., creates a negative pressure, or vacuum within the sampling assembly), thus establishing that all assembly connections are airtight. Further details of the vacuum test are described in Section 15.7.3.

4. Prior to purging, and following the vacuum test, the set-up for the second of the two leak-testing steps should be conducted. The second leak-testing step is the tracer compound step. A tracer compound is released at ground surface immediately around the soil gas probe surface casing. The tracer test is used to test for ambient air leakage down the annulus of the soil gas probe and into the soil gas sample. The tracer compound is either monitored using a meter connected in-line to the sampling assembly (e.g., helium), or is included as an analyte in the laboratory analysis of the soil gas samples (e.g., isopropanol). The setup requirements of the tracer compound leak-testing step are described in Section 15.7.3.

5. Following the vacuum test, and the setup for the tracer compound leak-testing step, the soil gas probe purging should commence by opening the valve to the soil gas probe and activating the personal sampling pump (and disconnecting the bag). At the start and the end of the purging period, the total concentration of volatile organic vapors of the personnel sampling pump exhaust gas should be monitored using a portable photoionization detector (PID) meter. The PID meter should be connected in series after the personal sampling pump. Since typical PID instrument flow rates vary from approximately 300 to 500 mL/min (depending on the manufacturer and model), drawing a sample into the PID meter through the personal sampling pump will likely increase the purging flow rate temporarily, until a reading from the PID meter is obtained. PID readings should be recorded and entered in the

field logbook and chain of custody form. The PID readings should provide the laboratory with an indication of whether a sample could require dilution before analysis.

6. Following purging, the bag should be reconnected to the personal sampling pump and the valves to the soil gas probe opened to draw the soil gas sample into the bag. This should be completed concurrent with continued application of the leak-testing tracer compound. Should the bag not inflate for more than 30 minutes, this will be taken to indicate that the soil screened by the soil gas probe does not produce sufficient soil gas to permit sample collection due to low permeability soil. If low permeability conditions are encountered, the probe can be sampled using the techniques outlined in Appendix D (Soil Gas Sampling in Low Permeability Soil) of Cal EPA (2015).
7. If the pump and sampling assembly fittings/valves are to be re-used during sampling, they must be cleaned in accordance with laboratory requirements by purging with zero air (provided by laboratory) for minimum 45 seconds at minimum 75 psi (153 inches of Hg).
8. The bags should be labeled noting the unique sample designation number, date, time, and sampler's initials. A bound field logbook should be maintained to record all soil gas sampling data.
9. The bags should be listed on the chain-of-custody in order of suspected highest to lowest impact, as evidenced by the recorded PID readings. Indicate on the chain-of-custody for the laboratory to analyze the canisters in order from the lowest to highest PID reading.

The soil gas samples should be analyzed for the project-specified VOCs by the project laboratory using U.S. EPA's TO-15 gas chromatograph/mass spectrometer (GC/MS) methodology, with the mass spectrometer (MS) run in full scan mode. QA/QC measures implemented during the soil gas sampling event will include the two-step leak testing procedure (see Section 15.7.3), collection of one duplicate per sampling event or from at least 10 percent of the samples obtained, and collection of an ambient air sample (if needed). As an additional QA/QC measure, the laboratory should conduct a duplicate analysis of the sample collected in one of the bags.

15.7.6 Sample Collection Procedure – Syringe

1. The syringe should be connected to the soil gas probe valve at the surface casing. The sampling assembly is connected using short lengths (e.g., 1-foot [0.3 m]) 1/4-inch (6.4-mm) or 3/8-inch (9.5-mm) diameter tubing (the tubing material will be Teflon® or nylon) and airtight stainless steel or brass tee-connectors and tee-valves (e.g., Swagelok® type). Fresh tubing must be used for each sample.
2. Prior to collecting a soil gas sample, the stagnant air in the sampling assembly tubes and soil gas probe casing/sand pack must be removed. The soil gas probes should be purged prior to sampling using the personal sampling pump at a flow rate of less than 200 mL/min. A flow rate greater than 200 mL/min may be used when purging times are excessive, such as for deep wells with larger-diameter tubing. However, a vacuum of 100 inches of water (7.4 inches of Hg) or less must be maintained during sampling whenever a higher flow rate is used. This ensures that the collected soil gas sample is representative of actual soil gas concentrations within the formation. Measurements of the lengths and inner diameters of the above-ground sampling assembly and below-ground gas probe casing, screen, and sand

pack should be used to calculate the "purge volume" (the purge volume will consider the pore volume of the sand pack assuming a 30 percent sand pack porosity). Prior to sample collection, two to three purge volumes should be drawn from the probe/sample assembly, unless otherwise required by the applicable regulatory guidance. The purge data (calculated purge volume, purging rate, and duration of purging) should be recorded in the field logbook.

3. Prior to purging, a vacuum, or tightness, test should be conducted on the sampling assembly as the first of two leak-testing steps, as described further in Section 15.7.3. Briefly, this first leak-testing step (the vacuum test) should consist of opening the valve to the personal sampling pump leaving the valves to the syringe and the soil gas probe closed. The pump should then be operated to ensure that it draws no air from the sampling assembly (i.e., creates a negative pressure, or vacuum within the sampling assembly), thus establishing that all assembly connections are airtight. Further details of the vacuum test are described in Section 15.7.3.

4. Prior to purging, and following the vacuum test, the set-up for the second of the two leak-testing steps should be conducted. The second leak-testing step is the tracer compound step. A tracer compound is released at ground surface immediately around the soil gas probe surface casing. The tracer test is used to test for ambient air leakage down the annulus of the soil gas probe and into the soil gas sample. The tracer compound is either monitored using a meter connected in-line to the sampling assembly (e.g., helium), or is included as an analyte in the laboratory analysis of the soil gas samples (e.g., isopropanol). The setup requirements of the tracer compound leak-testing step are described in Section 15.7.3.

5. Following the vacuum test, and the setup for the tracer compound leak-testing step, the soil gas probe purging should commence by opening the valve to the soil gas probe and activating the personal sampling pump (and disconnecting the bag). At the start and the end of the purging period, the total concentration of volatile organic vapors of the personnel sampling pump exhaust gas should be monitored using a portable photoionization detector (PID) meter. The PID meter should be connected in series after the personal sampling pump. Since typical PID instrument flow rates vary from approximately 300 to 500 mL/min (depending on the manufacturer and model), drawing a sample into the PID meter through the personal sampling pump will likely increase the purging flow rate temporarily, until a reading from the PID meter is obtained. PID readings should be recorded and entered in the field logbook and chain of custody form. The PID readings should provide the laboratory with an indication of whether a sample could require dilution before analysis.

6. Following purging, the valve to the syringe should be opened and soil gas should be draw into the syringe at a rate of approximately 60 mL/min. This should be completed concurrent with continued application of the leak-testing tracer compound.

7. If the sampling assembly fittings/valves are to be re-used during sampling, they must be cleaned in accordance with laboratory requirements by purging with zero air (provided by laboratory) for minimum 45 seconds at minimum 75 psi (153 inches of Hg).

8. The syringes should be labeled noting the unique sample designation number, date, time, and sampler's initials. A bound field logbook should be maintained to record all soil gas sampling data.

9. The syringes should be listed on the chain-of-custody in order of suspected highest to lowest impact, as evidenced by the recorded PID readings. Indicate on the chain-of-custody for the laboratory to analyze the canisters in order from the lowest to highest PID reading.

The soil gas samples should be analyzed for the project-specified VOCs by the project laboratory using U.S. EPA's TO-15 gas chromatograph/mass spectrometer (GC/MS) methodology, with the mass spectrometer (MS) run in full scan mode. QA/QC measures implemented during the soil gas sampling event will include the two-step leak testing procedure (see Section 15.7.3), collection of one duplicate per sampling event or from at least 10 percent of the samples obtained, and collection of an ambient air sample (if needed). As an additional QA/QC measure, the laboratory should conduct a duplicate analysis of the sample collected in one of the syringes.

15.7.7 Follow-Up Activities

The following activities should be performed at the completion of the field work.

1. Review and compare newly obtained data with historic data and flag unusual or extreme readings for review.
2. Soil gas concentrations are reported in units of µg/m^3 or ppbv. Unlike concentration units for groundwater, these units are not directly interchangeable. The molecular weight of the compound in question is a factor in the conversion from units of mass per unit volume to parts per billion by volume.
3. Ensure site access keys are returned.
4. The equipment should be cleaned and returned to the Equipment Coordinator. All equipment should be cleaned at the site.
5. Monitoring forms and field notes should be sent to the file. The field book should be stored at the appropriate GHD office.

15.8 References

ASTM D7663-11, 2011. Standard Practice for Soil Gas Sampling in the Vadoze Zone for Vapor Intrusion Evaluations, May.

Benton, D. and Shafer, N., 2007. Evaluating Leaks in a Soil Gas Sample Train, Paper #45 Extended Abstract, Air Toxics, Ltd.

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MDEQ, 2013. Guidance Document for the Vapor Intrusion Pathway, Remediation & Redevelopment Division. May

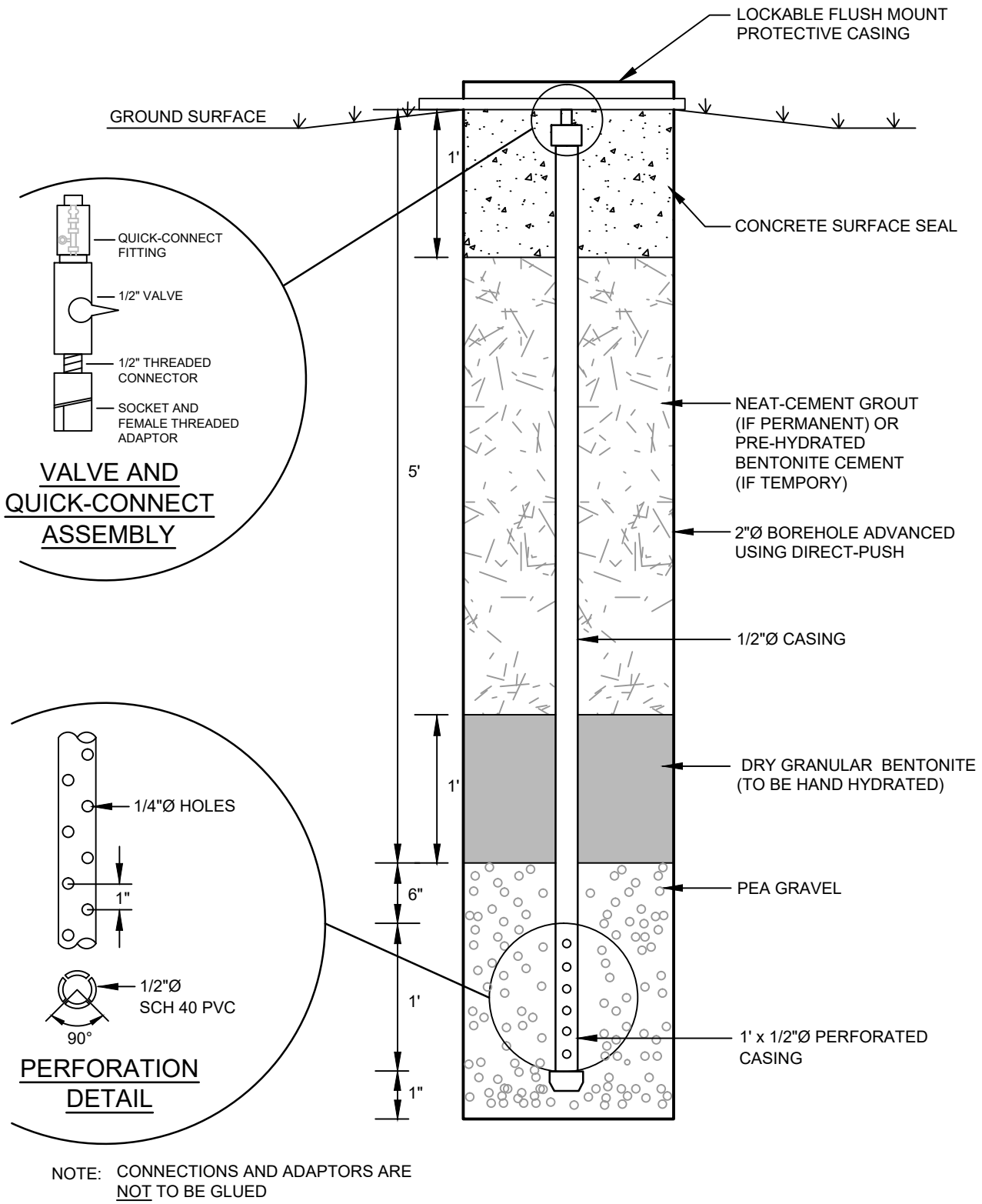
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USEPA, 1988. The Determination of Volatile Organic Compounds in Ambient Air Using Summa™ Passivated Canister Sampling and Gas Chromatographic Analysis, May 1988.

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USEPA, 2006. Assessment of Vapor Intrusion in Homes Near the Raymark Superfund Site Using Basement and Sub-Slab Air Samples. EPA/600/R-05/147, March.

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NOTE: CONNECTIONS AND ADAPTORS ARE NOT TO BE GLUED

NOT TO SCALE
GENERALIZED CONSTRUCTION DIAGRAM

figure 15.1

TYPICAL SOIL GAS PROBE COMPLETION DETAIL

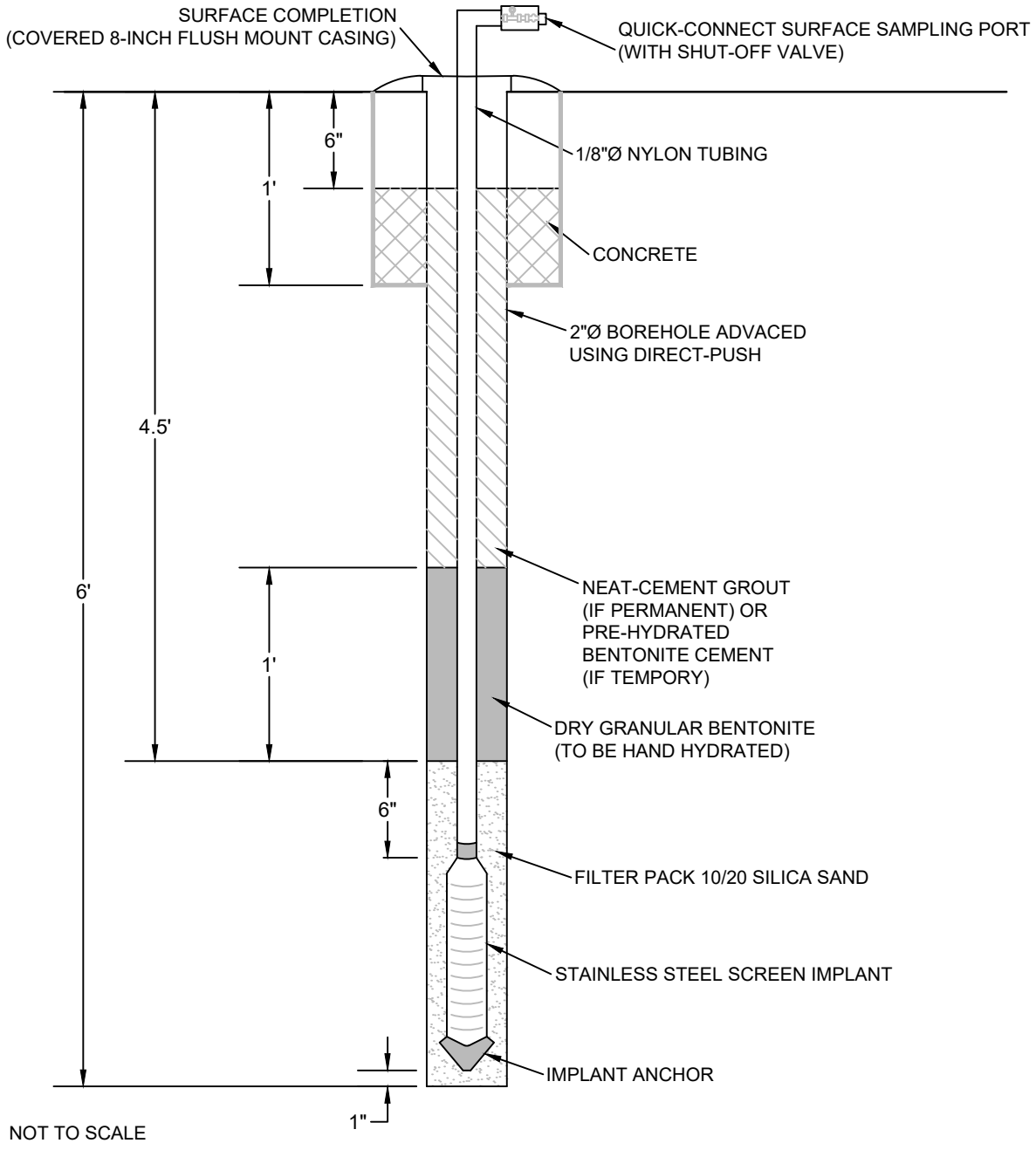


figure 15.2

TYPICAL SOIL GAS PROBE COMPLETION DETAIL WITH PREFABRICATED SCREEN IMPLANT

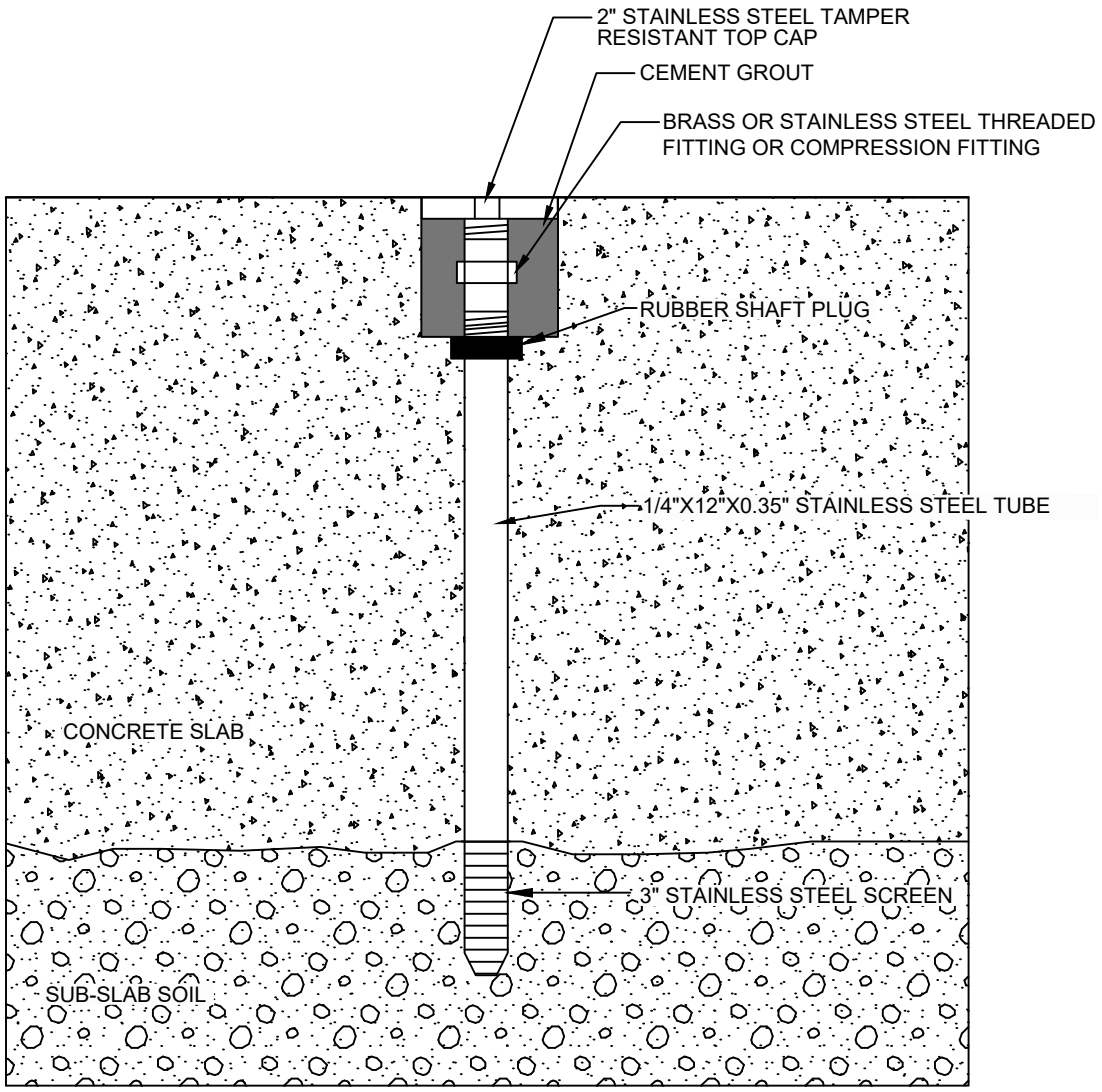


figure 15.3

TYPICAL SMALL DIAMETER SUB-SLAB SOIL GAS PROBE COMPLETION DETAIL



figure 15.4
ROTARY HAMMER DRILLING HOLE



figure 15.5

FINISHED HOLE FROM ROTARY HAMMER



figure 15.6
ASSEMBLED SUB-SLAB PROBE



figure 15.7

PREPARING ASSEMBLED SUB-SLAB PROBE



figure 15.8

PROBE AND OUTSIDE OF THE "OUTER" HOLE

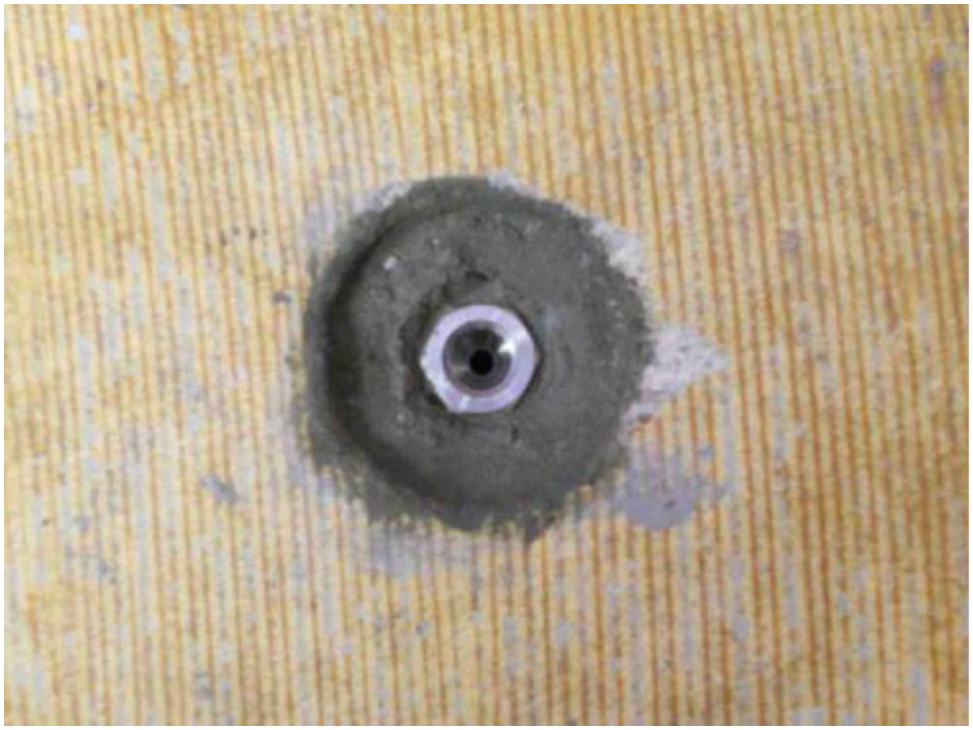


figure 15.9

COMPLETED INSTALLATION OF SUB-SLAB PROBE

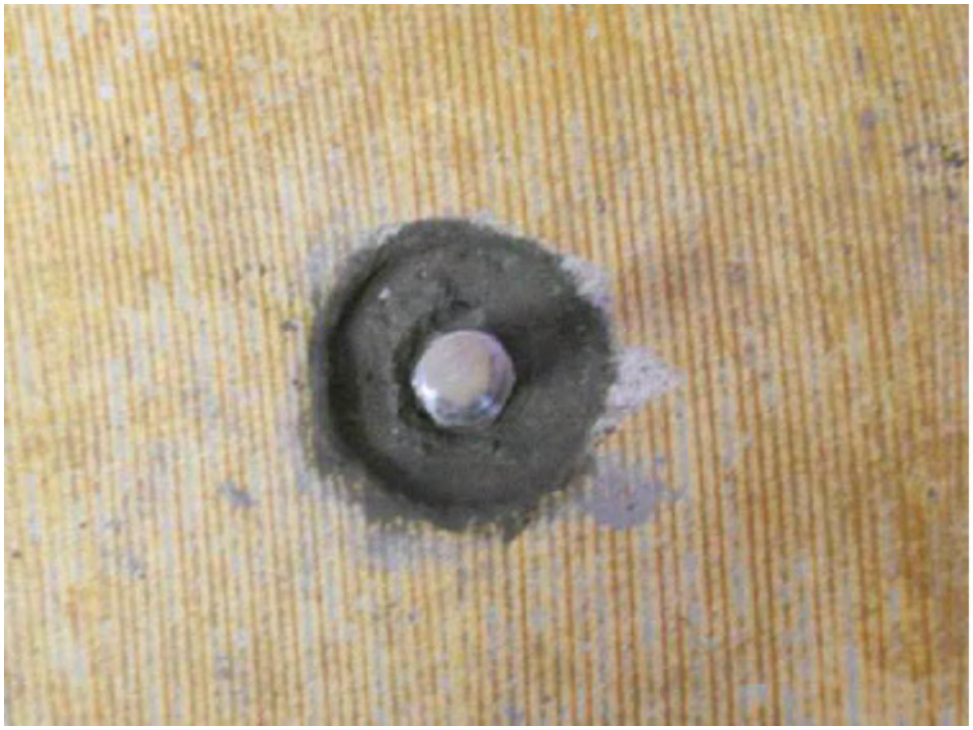


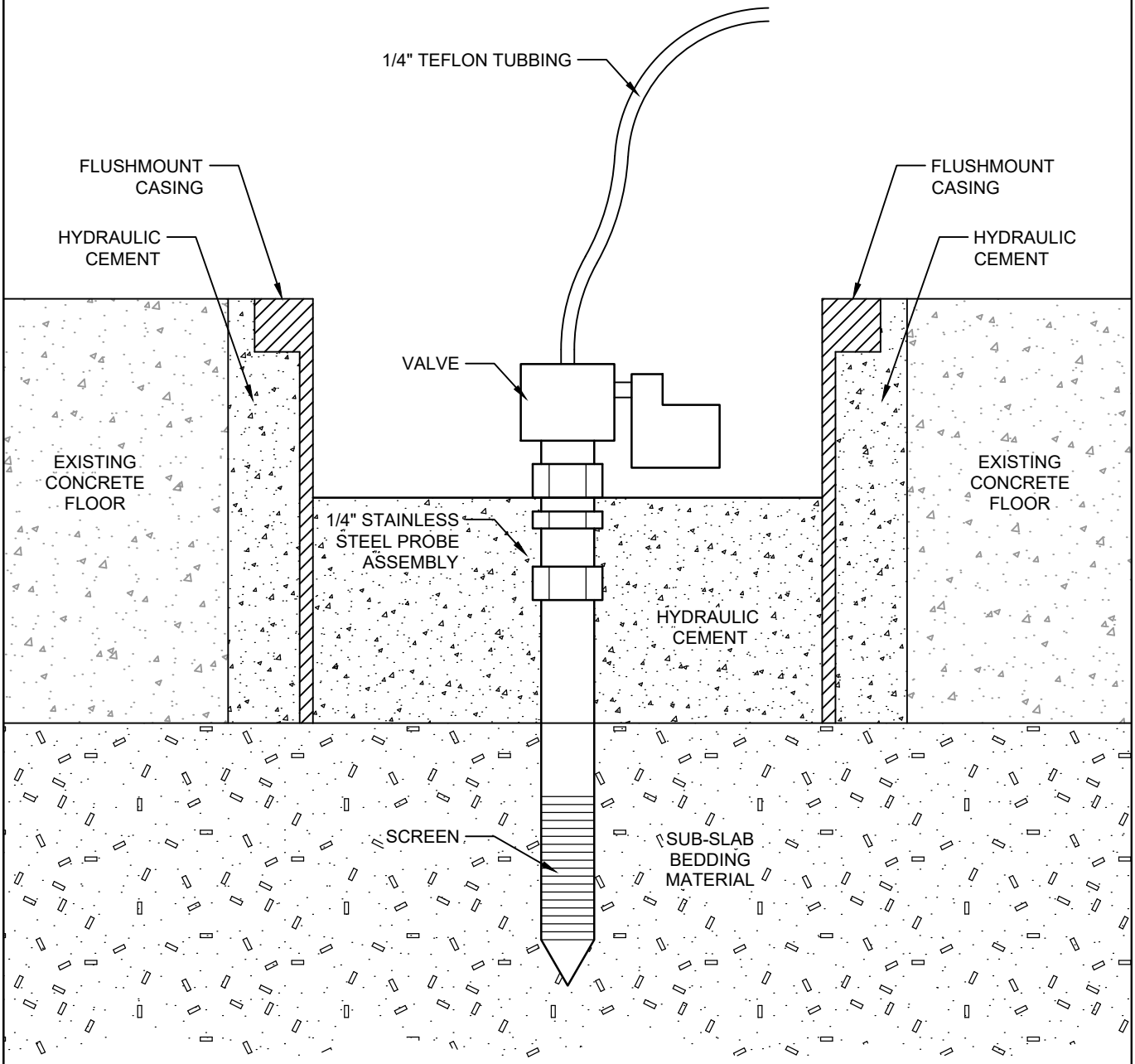
figure 15.10

COMPLETED INSTALLATION OF SUB-SLAB PROBE PLUG



figure 15.11

COMPLETED INSTALLATION OF SUB-SLAB PROBE
WITH A TAMPER-RESISTANT CAP



NOT TO SCALE

figure 15.12

TYPICAL LARGE DIAMETER SUB-SLAB SOIL GAS PROBE COMPLETION DETAIL

JANUARY 2017



figure 15.13

VAPOR PIN™ ASSEMBLY WITH
SILICONE SLEEVE OVER THE BARBED END



figure 15.14
INSTALLING THE VAPOR PIN™



figure 15.15
FLUSH-MOUNT INSTALLATION



figure 15.16

INSTALLED VAPOR PIN™ WITH THE PROTECTIVE CAP

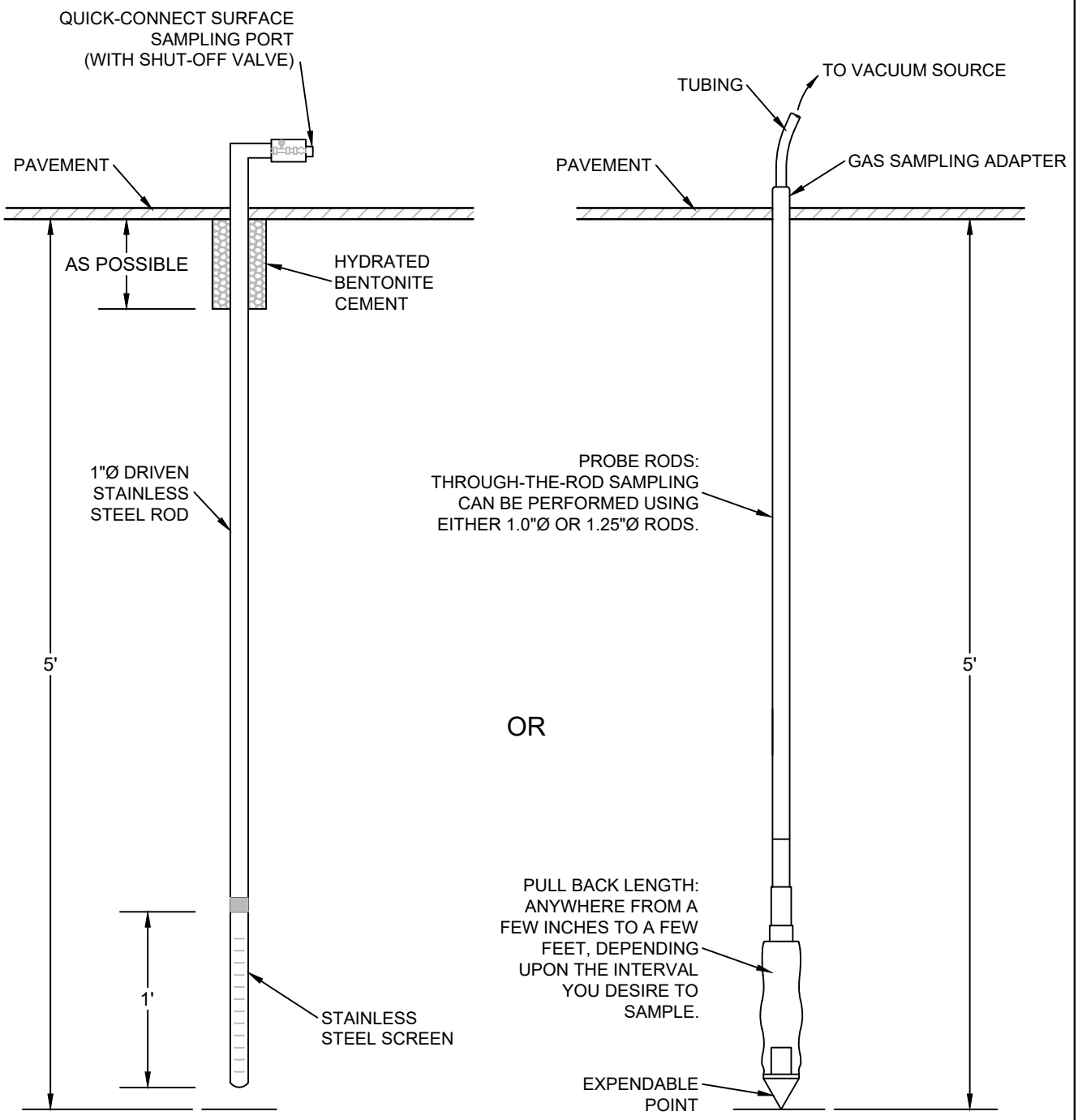
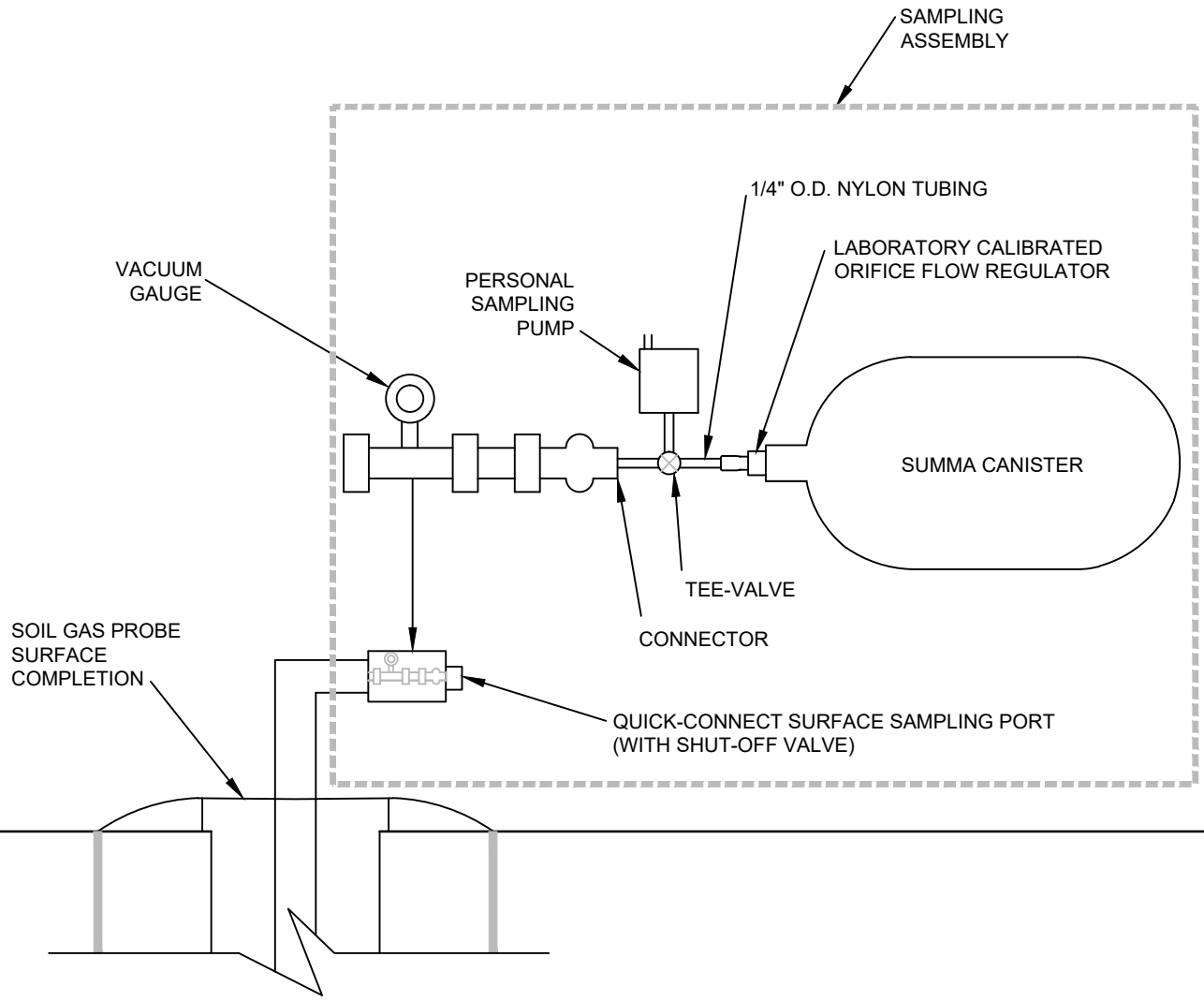


figure 15.17

TYPICAL TEMPORARY SOIL GAS PROBE COMPLETION DETAIL



NOT TO SCALE

figure 15.18

TYPICAL SOIL GAS SAMPLING ASSEMBLY SCHEMATIC

Stratigraphy Log (Overburden)
(Form SP-14)

Project name: _____
Project number: _____
Client: _____
Location: _____

Drilling contractor: _____
Driller: _____
Surface elevation: _____
Weather (A.M.): _____
(P.M.): _____

Hole designation: _____
Date/Time started: _____
Date/Time completed: _____
Drilling method: _____
GHD supervisor: _____

Stratigraphic Intervals (Depths in ft/m BGS)			Sample Description	Sample Details											
			Order of descriptors: Soil type symbol(s) - primary component(s), (nature of deposit), secondary components, relative density/consistency, grain size/plasticity, gradation/structure, colour, moisture content,			Penetration Record Split Spoon Blows (Record N-Values & Recoveries)									
From	At	To	Note: Plasticity determination requires the addition of moisture if the sample is too dry to roll (indicate if moisture was added or not).	Sample Number	Sampling Method	6"	6"	6"	6"	N	R	Sample Interval	PID/FID (ppm)	Chemical Analysis	Grain Size/ Other Analysis

Notes and Comments

Depth of borehole caving _____ Depth of first groundwater encounter _____ Topsoil thickness _____
Water level in open borehole on completion _____ After _____ Hours _____
Notes: _____

Soil Classification System (U.S.C.S.)
(ASTM D2488 Visual-Manual Procedure)

Major Divisions			Group Symbol	Typical Description
Highly Organic Soils (see note below)			PT	Peat and other highly organic soils
Coarse-Grained Soils (more than half by weight larger than no. 200 sieve size)	Gravels more than half of coarse fraction larger than no. 4 sieve size	"Clean" Gravels	GW	Well graded gravel, gravel-sand mixtures, ≤ 5% fines
			GP	Poorly graded gravels and gravel-sand mixtures, ≤ 5% fines
		"Dirty" Gravels	GM	Silty gravels, gravel-sand-silt mixtures, ≥ 15% fines
			GC	Clayey gravels, gravel-sand-clay mixtures, ≥ 15% fines
	Sands more than half of coarse fraction smaller than no. 4 sieve size	"Clean" Sands	SW	Well graded sands, gravelly sands, ≤ 5% fines
			SP	Poorly graded sands, or gravelly sands, ≤ 5% fines
		"Dirty" Sands	SM	Silty sands, sand-silt mixtures, ≥ 15% fines
			SC	Clayey sands, sand-clay mixtures, ≥ 15% fines
Fine-Grained Soils (more than half by weight passes no. 200 sieve size)	Silts below "A" line on plasticity chart; negligible organic content		ML	Inorganic silts and very fine sand, rock flour, silty sands of slight plasticity
			MH	Inorganic silts, micaceous or diatomaceous, fine sandy or silty soils
	Clays above "A" line on plasticity chart; negligible organic content		CL	Inorganic clays of low to medium plasticity, gravelly, sandy, or silty clays, lean clays
			CH	Inorganic clays of high plasticity, fat clays
	Organic silts & organic clays below "A" line on plasticity chart		OL	Organic silts and organic silty clays of low plasticity
			OH	Organic clays of high plasticity

Note:

Use dual symbols for coarse-grained soils if soil is estimated to contain 5% to 15% fines (equals "with").

Non-Cohesive (Granular) Soil

Relative Density	Blows Per Foot (N-Value)
Very Loose	Less than 5
Loose	5 to 9
Compact	10 to 29
Dense	30 to 50
Very Dense	Greater than 50

Cohesive (Clayey) Soil

Consistency	Blows Per Foot (N-Value)
Very Soft	0 to 2
Soft	3 to 4
Firm	5 to 8
Stiff	9 to 15
Very Stiff	16 to 30
Hard	Greater than 30

Grain Size Classification
(based on standard sieve sizes)

Cobbles	Greater than 3 inches (76 mm)
Gravel	3 in. to No. 4 (4.76 mm)
Coarse Gravel	3 in. to 3/4 in.
Fine Gravel	3/4 in. to No. 4 (4.76 mm)
Sand	No. 4 (4.76 mm) to No. 200 (0.074 mm)
Coarse Sand	No. 4 (4.76 mm) to No. 10 (2.0 mm)
Medium Sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine Sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt	No. 200 (0.074 mm) to 0.002 mm
Clay	Less than 0.002 mm

Component Percentage Descriptors
(estimate to nearest 5%)

Coarse Grained Soils

Noun(s) (e.g., sand, gravel)	Major Component
Adjective (e.g., silty, clayey)	Greater than 15%
With (e.g., with silt, with clay)	5% to 15%
Trace (e.g., trace silt, trace clay)	Less than 5%

Fine Grained Soils

Noun(s) (e.g., silt, clay)	Major Component
Adjective (e.g., sandy, gravelly)	Greater than 30%
With (e.g., with sand)	15% to 30%
Few (e.g., few sand)	5% to 15%
Trace (e.g., trace sand)	Less than 5%

Soil Structure Terms

Stratified	Blocky
Laminated	Lenses/Seams
Fissured	Homogeneous

Moisture

Dry
Moist
Wet

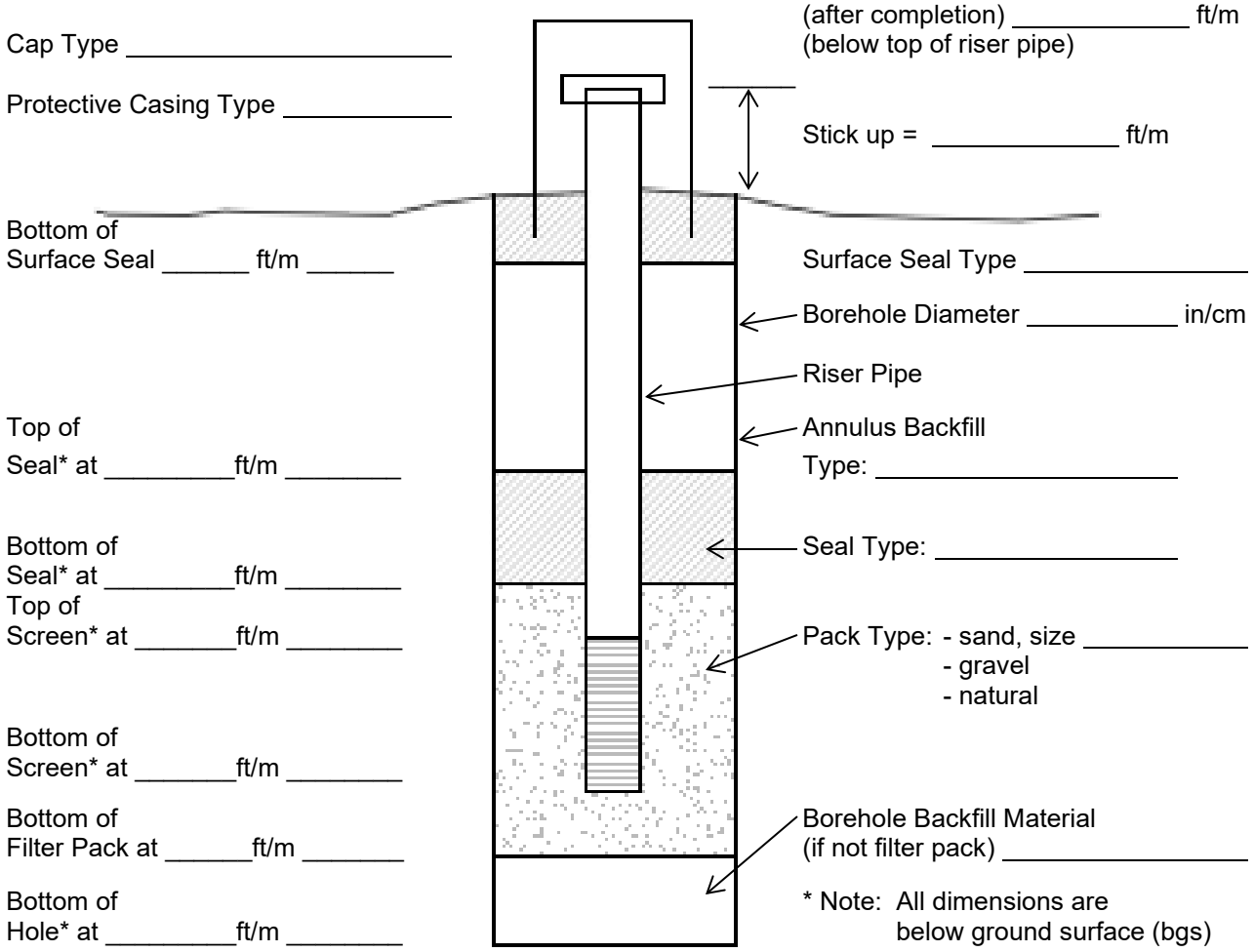
Well Instrumentation Log
(Form SP-15)

Project Name: _____ Well Designation: _____

Project Number: _____ Date Completed: _____

Client: _____ Drilling Method: _____

Location: _____ GHD Supervisor: _____



Screen Type: ☐ continuous slot ☐ wire wrapped ☐ louvre ☐ other: _____

Screen Material: ☐ stainless steel ☐ pvc ☐ other: _____

Screen Length: _____ ft/m Screen Diameter: _____ in/cm Screen Slot Size: _____

Riser Pipe Material: _____ Riser Pipe Diameter: _____ in/cm

Surface Casing (Y/N) _____ Material _____ Depth _____ ft/m

Diameter _____ in/cm Sealant _____

Development: Method: _____ Duration: _____

Description of Purged Water: _____

A) General Information

Project Number: _____

Site Name/Address: _____

Sample Identification Number: _____

Sample Canister Location: _____

Sample Date: _____ Sampler: _____

SS/SG Well Number: _____

(Decon rate and time are for non-dedicated pumps, i.e., into tedlar bags)

Decon Rate: _____ Decon Time: _____

Canister Pressure: _____

Shut In Vacuum: _____ Purge Method: _____

Bottom Depth: _____ Screened Interval: _____

Tubing Type: _____ Tubing Length: _____

Note: For ¼ inch dimeter tubing:
3/16" = 0.005 Liter
1/4" = 0.01 Liter
1/2" = 0.039 Liter

	Units	1	2	3	Total/ Average
Time:					
Volume Purged (volume/total volume):					
PID Reading					

Notes:

_____

_____

_____

Shipping Date: _____

Canister Type: 400 mL – 1.0 L Summa Canister/6 L Summa Canister/Other (specify):

_____

Canister Serial No.: _____

Flow Controller Serial No.: _____

Were "Instructions to Occupants Building" followed (for sub-slab soil gas)?
☐ Yes ☐ No

B) Sampling Information

	Start		Stop	
	Ambient	Interior	Ambient	Interior
Temperature				
Barometric Pressure				

	Start	Stop
Canister Pressure Gauge Reading:		
Sampling Time:		
PID Reading:		
Basement Depth (ft below grade):		
Window Marked:	☐ Yes/☐ No	

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?
☐ Yes ☐ No

Describe the general weather conditions:

Provide Drawing of Sample Location(s) in Building (sub-slab)

C) Comments

GHD Field Training Manual

Section 19.0
Indoor Air Sampling Field Method Guideline

Please adhere to the following Quality System training requirements:

- Employees who are required to conduct a specific technical field or on-site service, task, or method must have a record of adequate experience to do the work.
- This involves reviewing the Field Method Guideline (FMG) and completing the online training course and exam regardless of previous experience.
- Employees must demonstrate their learned practical skills to a technical field supervisor (minimum 2 years' experience) to confirm their gained practical technical experience. The mentoring exercise must occur on a minimum of three separate occasions and/or locations before being able to work independently. Supervised field/on-site practical experience is documented on **Q1550 Record of Technical Field Competency**.

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SP-28 Indoor Air Sampling Field Data Sheet

SP-29 Indoor Air Sampling Instructions to Building Occupants

Quality System Forms Index

Q1550 Record of Technical Field Competency

Appendices

Appendix A Radiello® Indoor Air Sampling Protocols & Sampler Information

19.0 Indoor Air Sampling Field Method Guideline

19.1 Introduction

The procedures described herein pertain to the sampling of indoor air to evaluate the potential presence of volatile organic compounds (VOCs) in indoor air. VOCs can be present in a building's breathable air space from background sources such as glues, adhesives, construction/building materials, degreasers, cleaning products, aerosols, or organic vapor migration from beneath the structure (i.e., vapor intrusion) as a result of subsurface soil, groundwater, LNAPL impacts. The protocol presented herein consists of conducting a physical survey of the building in conjunction with interviewing building occupants, followed by collecting indoor air samples using Summa™ canisters and/or other applicable methods (i.e., passive samplers).

It is recommended that indoor air sampling be performed in conjunction with sub-slab soil gas sampling (where applicable) to compare indoor air concentrations to the primary source of vapor intrusion (i.e., migration of soil gas into the structure).

GHD is committed to conducting field activities in accordance with sound safety and health practices. GHD adheres to high safety standards to protect the safety and health of all employees, subcontractors, customers, and communities in which they work. The safety and health of our employees takes precedence over cost and schedule considerations. GHD's safety and health policy and procedures are discussed in more detail in Section 2.0 of this manual.

19.1.1 Prior Planning and Preparation

When designing and constructing the indoor air sampling program the following questions should be considered:

1. What is the purpose of the indoor air sampling?
2. What are the potential health and safety hazards?
3. What kinds of analyses are required (e.g., VOCs, petroleum hydrocarbon fractions)?
4. What type of building will be sampled (e.g., residential, commercial)?
5. What is the length of time over which the indoor air samples must be collected (e.g., 8 hours, 24 hours)?
6. Are there any potential background sources of the contaminants of concern?
7. Is the building occupied or vacant?
8. Has the HVAC system been in operation for 24 to 48 hours prior to the sampling event?
9. Where will the samples be collected from within the building?
10. Will the selected analytical method provide detection limits below the applicable screening levels?

Note: If field staff are not aware of and able to answer all of the above noted questions before undertaking work in the field, the work plan must be reviewed in detail with the Project Manager. The project team may also consider involving GHD's vapor intrusion and human health risk assessment team during the initial planning to streamline the data evaluation.

19.2 Indoor Air Sampling Procedures

19.2.1 QA/QC Activities

Quality assurance and quality control procedures should be implemented in every step of the assessment process to ensure the collection of data of acceptable quality. A well designed Quality Assurance/Quality Control (QA/QC) program will:

– Ensure that data of sufficient quality are obtained in order to facilitate an efficient site investigation.

– Allow for monitoring of staff and subcontractor performance.
– Verify the quality of the data.

The QA/QC program is developed on a sites-specific basis. The level of the QA/QC effort may include:

– A field duplicate.
– A trip blank (typically not required when using Summa canisters – however confirm with local regulatory guidance).
– Outdoor (upwind background).
– Laboratory certification (individual clean can or batch certification).

Consult appropriate regulatory agency guidance documents and the site-specific work plan for minimum required QA/QC. Applicable and current state and federal guidance for QA/QC indoor air sampling requirements take precedence over the protocols outlined herein. In general, the QA/QC protocols presented herein should be adhered to when state or federal guidance does not exist, or does not specify QA/QC procedures, types, or frequencies. Field blank and field duplicate samples are analyzed to assess the quality of the data resulting from the field sampling program.

One field duplicate sample will be obtained for each day of sampling or from at least 10 percent of the samples obtained. The duplicate sample will be collected into two Summa™ canisters that are co-located. Duplicate samples will be analyzed to check for sampling and analytical reproducibility. At least one extra Summa Canister should be considered in case of a faulty canister, gauge, or flow controller. The extra canister(s), if not needed, could be used as an additional duplicate sample.

An outdoor air sample, including considering a duplicate depending on how many outdoor samples are planned, should be performed for QA/QC purposes to evaluate the potential presence and magnitude of constituent of concern concentrations present in background air in comparison to indoor air sampling results.

The level of QA/QC effort provided by the project laboratory for the samples analyses should correspond to the level of QA/QC effort specified in "Compendium of Methods for the Determination of toxic Organic compounds in Ambient Air, Second Edition, Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/ Mass Spectrometry (GC.MS)" (U.S. EPA, 1999).

19.2.2 Prior Planning and Preparation

Considerations for preparation and planning of field activities are discussed in detail in Sections 2.0 & 3.0 of this manual. The following would also need to be considered prior to indoor air sampling:

1. Requisition equipment and assemble all equipment and supplies required.
2. Confirm the number of samples, their locations, and analyses with Project Manager prior to completing a Simplified Scope of Work (SSOW).
3. For the laboratory analysis, contact the GHD chemistry group to coordinate:
    - QA/QC requirements.
    - SSOW (Simplified Scope of Work).
    - Laboratory selection (accreditation required).
    - Sample container delivery (be aware of hold times).
    - Required sampling protocol, in addition to the protocol presented here.
    - Sample shipping details.
    - Duration of sampling (for time-weighted flow controllers).
4. Follow the GHD Purchasing Guidelines for the procurement of goods/services, if required. See Section 2.4.

5. Discuss with property owner/manager the expectations for the sampling event. Ensure the property owner/manager notifies the tenant/employees of proposed sampling.
6. Weather conditions at the time of sampling. Changing weather conditions (e.g., barometric pressure, temperature, etc.) during the day indoor air samples were collected should be recorded in the field logbook.
7. Where applicable and feasible, pressure differentials between indoor air and sub-slab soil gas should be measured and recorded to assess advection into / out of the structure.

19.2.3 General Field Procedures

The following indoor air collection procedure outlines the procedure used by GHD in assessing the vapor intrusion pathway. The typical series of events that will take place are:

1. Sample location identification/inspection
2. Indoor and outdoor air monitoring
3. Field notes completion, review, checking
4. Prepare samples for laboratory shipment

Sample Location Identification/Inspection

Once at the site and prior to indoor air sampling, confirm that the sample location (i.e., indoor air location) has been correctly identified and located.

If it is necessary to relocate any proposed sample locations, the Project Manager must be notified, and an alternate location will be selected and approved in the same manner. Most regulatory agencies require indoor air sample locations to be located within a central area of the room of the structure.

19.2.4 Indoor Air Sampling Protocol

The following sections describe the protocol for indoor air sampling. The first step of the procedure is the physical building survey as described in Section 19.2.4.1. The sampling procedure is described in Section 19.2.4.2.

19.2.4.1 Physical Building Survey

A physical survey will be conducted of the buildings to be sampled. The physical survey will be conducted in conjunction with interviewing the occupants and/or current owner of the buildings. It is highly recommended that the survey and interviews be done a minimum of 48 hours prior to sampling. The purpose of the physical survey is to obtain data that will allow a qualitative assessment of factors that potentially could influence indoor air quality. In addition, chemicals or products, which have the potential to affect the results of the indoor sampling, should be removed from the building to the extent feasible.

The physical survey includes collecting data on aspects of the building configuration/use(s) such as the following:

– Building layout
– Foundation construction (e.g., slab on grade) and condition
– Attached garages
– Utility entrances into the building
– Ventilation system design and operation
– Presence of foundation sump
– Presence of unusually cracked or damaged walls or floors in below grade portions of the building
– Building materials (e.g., recent carpeting/linoleum, new furniture, and/or painting)
– Location of laundry facilities, etc.

The physical survey should also include collecting data related to occupant lifestyle choices and/or work environment that could potentially influence indoor air quality such as the following:

– Storage or use of cleaning products, aerosol consumer products
– Presence of recently dry-cleaned clothes or household items
– Storage or use of solvents, paints, and/or petroleum hydrocarbon products
– Smoking, etc.

The physical survey should be documented by completing the SP27 – Building Physical Survey Questionnaire. It is recommended that a field drawing of the building be generated during the initial survey. Photographs or video should be collected to support the field drawing. For sampling at commercial and industrial properties, inquire property owner/manager if a Right to Know program exists for employees. Request copies of safety data sheets (SDS), any other chemicals are included in the program, and specifics (e.g., frequency, analytes, etc.) of the OSHA-compliant sampling program, if any.

Review product ingredients, SDS, and/or other chemical inventories for the presence of compounds of concern related to the vapor intrusion investigation are present within the building or areas to be sampled. Document these products on the SP-27 – Building Physical Survey Questionnaire.

19.2.4.2 Indoor Air Sample Collection Procedure

Air samples will be collected from the buildings in the primary living and/or working areas of the building at locations considered representative of the breathing space. For buildings that are slab on grade construction, a minimum of 1 indoor air sample will generally be collected per floor of the building (e.g., a slab on grade house with two levels would have 2 samples collected – 1 from each floor). For buildings with a basement, a minimum of 1 indoor air sample will be collected from each level of the building including the basement. An outdoor air sample should be collected contemporaneously with the indoor air sampling activities from an upwind location.

Confirm with local regulatory guidance to establish if additional indoor air samples are required per level of building (e.g., New Jersey has recommended number of indoor air samples per square foot of building footprint).

Summa™ Canister Method:

The indoor and outdoor air samples will be collected using a Summa™ canister (6litre capacity) equipped with a critical orifice flow regulation device sized to allow the collection of an air sample over the selected time period (e.g., 24hours). The critical orifice flow regulation device must be supplied and calibrated by the laboratory selected to conduct the sample analysis and as appropriate, must be used on the canister identified by the laboratory.

To the extent possible, the indoor air samples should be collected with windows and building entry/exit doors closed. A closed (no circulation) condition should represent appropriately conservative (worst case) conditions. If possible, windows and building entry/exit doors should be kept closed for a period of at least 24 hours prior to sample collection. Likewise, ingress and egress activities should be minimized. Heating, ventilation, and air conditioning (HVAC) systems should be operated normally for the season and time of day. During colder months, heating systems should be operating for at least 24 hours prior to the scheduled sampling event to maintain normal indoor temperatures before and during sampling. During summer months, air conditioners typically would operate under closed windows/building entry/exit doors conditions, and the operation of an air conditioner can be allowed during sample collection. Care should be taken to deploy the Summa™ canisters away from the direct influence of any blowing or forced air vents (e.g., those emanating from a window style air conditioning unit or central air conditioning vents).

Other conditions that are representative of open or “typical” ventilation may be appropriate as specified on a project-specific basis. e.g., typical operating conditions at a factory that could include open doors/windows/vents.

The indoor air sampling procedure is described as follows:

– Indoor air samples should be collected from an occupied area and as close as practical to the center of the area, but away from high traffic areas to minimize the potential for disturbances during sample collection. Typically,

sample canisters should be located between 1 to 1.5 metres or 3 to 4 feet above floor level for adults and at lower sampling heights if the predominant receptors are children, such as in a daycare center or school.

- For each outdoor air sample, an upwind location should be selected. The outdoor air sample should be collected a minimum of 1 m or 3 feet above grade and secured to minimize the potential for disturbance of the canister from weather effects.
- Air sample canisters should be labeled with a unique sample identification number. Both the sample number and the sample location information should be recorded in the project's field logbook. A bound field logbook and/or **Form SP-28 – Indoor Air Sampling Field Data Sheet** should be maintained to record all indoor air sampling data.
- A vacuum gauge must be supplied by the laboratory and used during sample collection to measure the initial canister vacuum, canister vacuum during sample collection, and residual canister vacuum at the end of sample collection. These pressures must be recorded in the field logbook. The vacuum gauge must be returned to the laboratory and used by the laboratory to measure the residual canister vacuum upon receipt of the canisters by the laboratory.
- The critical orifice flow controller must be installed, as supplied by the laboratory, on the canister and the canister must be opened fully at the beginning of sample collection period and start time. The start and finish times must be recorded in the bound field logbook.
- At the start and the end of the sampling period, a portable photoionization detector (PID) should be used to screen for VOC vapors in the sample area. Ideally, a low level, parts per billion (ppb), PID meter should be used during the building survey; and prior to, and during, the indoor air sampling events. Results of the PID monitoring are to be recorded in the bound field logbook and **Form SP-28**.
- Equipment serial numbers (including Summa™ canisters, flow controllers, PIDs), sampler name, calibration records, and any comments must also be recorded within the field logbook or on the field form (**Form SP-28**).
- Barometric pressure, outdoor ambient temperature, and interior temperature readings should be recorded at the start and completion of sampling. Data may be collected directly from field instrumentation or obtained via online sources (e.g., local NOAA weather station database, weatherunderground.com, etc.).
- Following equipment setup, any building occupant(s) should be given the list of instructions to follow while the Summa™ canister sample is being collected in the building. The instructions are listed in **Form SP-29 - Indoor Air Sampling Instructions to Building Occupants**.
- The canister valve must be closed fully at the end of the sample period (e.g., after 24 hours) and the sample completion time recorded on the field data sheet. If there is evidence of canister disturbance during the sample collection, this should be recorded.
- The Summa™ canister vacuum must be measured immediately after canister retrieval at the end of the sample period and recorded on the field data sheet. Any sample where the canister reached atmospheric pressure (i.e., no vacuum), the sample should be considered for rejection and the canister returned for cleaning. The minimum residual vacuum required to be considered a valid sample may be dictated by regulatory guidance (generally at least 5 inches Hg vacuum). Once the vacuum is measured, the safety cap will be securely tightened on the inlet of the Summa™ canister prior to shipment to the laboratory under standard chain of custody procedures. The requirement that a residual vacuum be retained in the canister following sample collection is to ensure that a driving force (pressure) and steady flow rate was maintained until the end of the sampling event.
- The indoor and outdoor air samples collected via Summa Canister Method should be analyzed for the project-specified VOCs by the project laboratory using U.S. EPA's TO-14, TO-15 SIM, or TO-15 gas chromatograph/mass spectrometer (GC/MS) methodology, with the mass spectrometer (MS) run in full scan mode. As an additional QA/QC measure, the laboratory should perform a duplicate analysis of the sample collected in one of the canisters.

Passive Sampler Method:

There are several passive sampling devices (e.g., Radiello®) that can be used to sample indoor air. The following procedure is based on the Radiello® diffusive samplers.

Confirm specific regulatory protocols (e.g., deployment duration) regarding the use and applicability of passive sampling media.

The samplers should be deployed at a height of approximately 1.5 metres or 5 feet above grade. In addition, one outdoor air sample will be placed outside of the building. The outdoor air sample should be deployed at a height consistent with the indoor sample and for the same duration as the indoor sample. The location of the outdoor air sample should be upwind of the prevailing wind direction and should be protected from rain that will limit the absorption of the passive sampler.

The Field Method Guideline (FMG) for sampling using the Radiello® diffusive samplers is presented in **Appendix A** (page A6).

The samples should be transported under standard chain of custody procedures to a certified laboratory for analysis. The Radiello® samplers should be analyzed by the project laboratory using EPA's Method TO17 (EPA, 1999b). All sample data should be validated.

QA/QC measures implemented during the program for the Radiello® samplers, and as specified in EPA Method TO-17 (EPA, 1999b), include collecting a field duplicate and a trip blank (i.e., a passive sampler). No additional QA/QC measures will be taken for the outdoor air sample.

Direct Measurement Method:

Several options are currently available for the direct measurement of sub-slab and indoor air samples. These include portable gas chromatographs (e.g., FROG 5000) and portable gas chromatograph / mass spectrometers (e.g., HAPSITE®). Details of their operation are beyond the scope of the document. Consult the manufacturer's documentation on operation.

Direct measure equipment should be operated to collect indoor air samples from a height of approximately 1.5 metres or 5 feet above grade. One or more duplicate sample is recommended.

19.2.5 Field Instrumentation Calibration

Sampling or monitoring equipment used in the indoor and outdoor air sampling program to gather, generate, or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the manufacturer's specification and requirements. A field calibration of the PID will be completed prior to sampling activities.

Any laboratory supplied vacuum gauge(s) used to measure canister vacuum should be calibrated by the laboratory. The vacuum gauge should be returned to the laboratory, in order to allow the laboratory to obtain vacuum measurements prior to sample analysis (i.e., checking to ensure canister integrity was maintained during shipment).

The following activities will be performed at the completion of the field work:

1. The equipment should be cleaned and returned to the Equipment Manager. All equipment should be cleaned at the site.
2. Monitoring forms and field notes should be sent to the file. The field book should be stored at the appropriate GHD office.
3. Review and compare newly obtained data with historic data and note any unusual or extreme readings.

19.2.6 Data Review and Validation

Following receipt of analytical data, forward data to a GHD chemist for creation of tables, data validation review and reporting, and prepare electronic data deliverable (EDD) as needed. Compare analytical data to applicable indoor air quality standards and/or consult with GHD's vapor intrusion and risk assessment experts for advice. If no prescriptive numerical standards are available for your jurisdiction, consider comparing the data to applicable U.S. EPA indoor air standards (e.g., Residential [10^4] risk values). Note – indoor air concentration data are reported in units of micrograms per cubic metre ($\mu g/m^3$) and/or parts per billion by volume (ppbv). Unlike concentration units for groundwater and soil,

these units are not directly interchangeable. The molecular weight of the chemical compound is a factor in the conversion from units of mass per unit volume to parts per billion by volume. Ensure the laboratory reports the data in the units required by your guidance (New Jersey, for instance, requires that all data tables and EDD files report data in *only* $\mu g/m^3$).

Several states have Rapid Action Levels (RLs), which are less conservative than indoor air screening criteria. Typically, exceedance(s) of the RALs require immediate notifications to stakeholders (e.g., health department, state regulatory agency, property owner, and tenants). Consult your client following data review and prior to making any notifications. Exceedances of RALs can require immediate (e.g., within 2 weeks) mitigation remedies (e.g., SSDS installation, HVAC modification). Consideration should be given to performing an immediate confirmation sampling event.

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Appendix A

Radiello® Indoor Air Sampling Protocols & Sampler Information

visit our website: *www.radiello.com*

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radiello®



Centro di Ricerche Ambientali - Padova

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xylenol (see dimethylphenol)

how does the diffusive sampler work?

The diffusive sampler is a closed box, usually cylindrical. Of its two opposite sides, one is “transparent” to gaseous molecules which cross it, and are adsorbed onto the second side. The former side is named diffusive surface, the latter is the adsorbing surface (marked with ***S*** and ***A*** in the figure).

Driven by the concentration gradient ***dC/dl***, the gaseous molecules cross ***S*** and diffuse towards ***A*** along the path ***l***, parallel to the axis of the cylindrical box. The molecules, which can be trapped by the adsorbing material, are eventually adsorbed onto ***A*** according to the equation:

$$\frac{dm}{dt} = D\,S\,\frac{dC}{dl} \qquad [1]$$

where ***dm*** is the adsorbed mass during time ***dt*** and ***D*** is the diffusion coefficient.

Let ***C*** be the concentration at the diffusive surface and C_0 the concentration at the adsorbing surface, the integral of [1] becomes

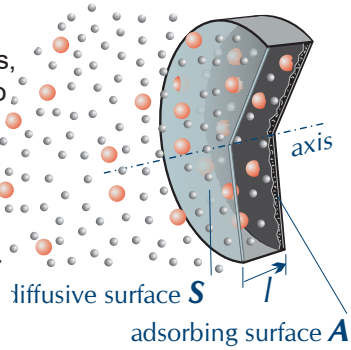
$$\frac{m}{t} = D\frac{S}{l}(C-C_0) \qquad [2]$$

If the concentration at the adsorbing surface is negligible, the equation can be approximated to

$$\frac{m}{t\,C} = D\frac{S}{l} = Q \quad \text{and then} \quad C = \frac{m}{t\,Q} \qquad [3]$$

Q is the ***sampling rate*** and has the dimensions of a gaseous flow (if ***m*** is expressed in µg, ***t*** in minutes and ***C*** in $\mu g \cdot l^{-1}$, ***Q*** is expressed in $l \cdot min^{-1}$).

Therefore, if ***Q*** is constant and measured, to calculate the ambient air concentration you need only to quantify the mass of analyte trapped by the adsorbing material and to keep note of the time of exposure of the diffusive sampler.



In the diffusive sampler, the adsorbing and the diffusive surfaces are two opposing plane of a closed box. Driven by the concentration gradient, the gaseus molecules (coloured in the figure) pass through the diffusive surface and are trapped from the adsorbing surface.

To improve the analytical sensitivity the collected mass ***m*** should be increased by enlarging ***Q***. As ***D*** is a constant term, one can only try to improve the ***S/l*** ratio, namely the ***geometrical constant*** of the sampler. Unfortunately, in the common axial simmetry sampler, if ***S*** is enlarged, the adsorbing surface ***A*** must be enlarged too, in order to keep the two parallel surfaces at a fixed distance. Since the analytes can be recovered from the axial sampler only by solvent extraction, any increase of ***A*** lead to a proportional increase of the extraction solvent volume, thus the improvement of ***Q*** is canceled out by the effect of dilution.

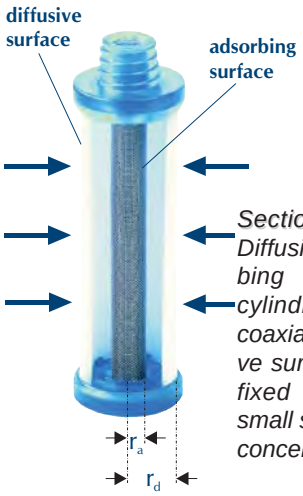
The value of distance ***l*** could also be reduced, but under the critical value of about 8 mm the diffusion law is no longer valid in the case of low air velocity values, since adsorption rate becomes higher than supplying rate of analyte molecules at the diffusive surface.

Cannot we improve ***Q*** then?

The answer is to improve the sampler geometry to a ***radial*** design.

From this idea the ***radiello*** sampler has been developed, its cylindrical outer surface acting as diffusive membrane: the gaseus molecules move axially parallel towards an adsorbent bed which is cylindrical too and coaxial to the diffusive surface.

When compared to the axial sampler, ***radiello*** shows a much higher diffusive surface without increase of the adsorbing material amount. Even if the adsorbing surface is quite smaller then the diffusive one, each point of the diffusive layer faces the diffusion barrier at the same distance.



*Section of **radiello**. Diffusive and adsorbing surfaces are cylindrical and coaxial: a large diffusive surface faces, at a fixed distance, the small surface of a little concentric cartridge.*

radiello is patented by FONDAZIONE SALVATORE MAUGERI-IRCCS
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As $S=2\pi rh$ (where h is the height of the cylinder) and the diffusive path is as long as the radius r, we can then express equation [1] as follows

$$\frac{dm}{dt} = D\ 2\pi\ h\ r\ \frac{dC}{dr} \qquad [4]$$

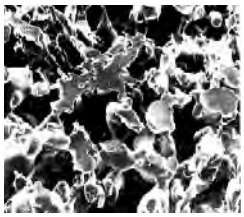
The integral of equation [4] from r_d (radius of the diffusive cylindrical surface) to r_a (radius of the adsorbing surface) becomes

$$\frac{m}{t\ C} = D\ \frac{2\pi\ h}{ln\ \frac{r_d}{r_a}} = Q \qquad [5]$$

the ratio

$$\frac{2\pi\ h}{ln\ \frac{r_d}{r_a}}$$

is the geometrical constant of **radiello**. The calculated uptake rate [5] is therefore proportional to the height of the diffusive cylinder and inversely proportional to the logarithm of the ratio of diffusive *vs* adsorbing cylinder radii.



The microporous sintered polyethylene diffusive barrier of **radiello** *photographed at the electron microscope; the path length is much longer than the membrane thickness due to the tortuosity of the pores.*

While r_a can be easily measured, r_d can only be calculated by exposure experiments. Actually the diffusive membrane has been designed with a thick tubular microporous layer. The actual diffusive path length is therefore much longer than the distance among the diffusive and adsorbing surfaces due to the tortuosity of the path through the pores. A diffusive cylinder of external diameter 8 mm, thickness 1.7 mm and average porosity of 25 µm, coupled to an adsorbing cartridge with radius 2.9 mm creates a diffusive path of 18 mm instead of the straight line path estimation of (8-2.9) = 5.1 mm.

The sampling rate Q is function of diffusive coefficient D, which is a thermodynamic property of each chemical substance. D varies with temperature (T) and pressure (p); therefore also the sampling rate is a function of those variables according to

$$Q = f\ (T,\ p)$$

Q values that will be quoted in the following have been measured at 25 °C and 1013 hPa. As a consequence, they should be corrected so as to reflect the actual sampling conditions.

The correction of Q for atmospheric pressure is usually negligible since its dependence is linear and very seldom we face variations of more than 30 hPa about the average value of 1013 hPa. In the worst case, if corrections for pressure are ignored you make an error of ±3%, usually it is within ±1.5%.

On the other hand, Q depends exponentially on temperature variations, therefore more relevant errors can be introduced if average temperature is significantly different from 25 °C. Moreover, when chemiadsorbing cartridge are used kinetic effects (variations of reaction velocities between analyte and chemiadsorbing substrate) can be evident, apart from thermodynamic ones (variation of D).

It is therefore very important to know the average temperature in order to ensure accuracy of experimental data. See how you can perform on-field temperature measurements on page B3.

Even if some cartridges adsorb large quantities of water when exposed for a long time in wet atmosphere, generally this does not affect sampling by **radiello**. Some consequences, neverthless, can sometimes be felt on the analysis. As an example, a very wet graphitised charcoal cartridge could generate ice plugs during cryogenic focusing of thermally desorbed compounds or blow out a FID flame.

It is therefore important to protect radiello from bad weather. See page B1 how this can be easily done.



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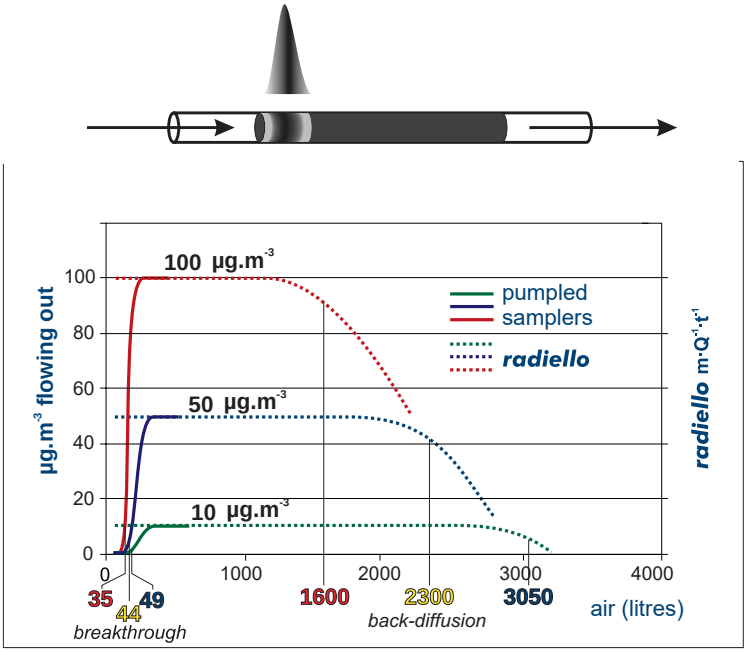
why is *radiello* so *special?*

The diffusive sampling does not involve the use of heavy and encumbering pumping systems, does not have energy power supply problems, does not require supervision, is noiseless, is not flammable and does not represent an explosion hazard, can be performed by everybody everywhere and with very low costs.

Moreover, it is not subject to the breakthrough problem, which can be serious when active pumping is performed.

In pumped sampling the adsorbed compound behaves as a chromatographic peak (top): air flow displaces it along the adsorbent bed and its concentration is distributed as a gaussian function. Eventually, the compound comes out from the opposite end. When its concentration in the outlet air is 10% of the concentration in the sampled air we say that the ***breakthrough*** *has been reached or, with a misleading expression, that the tube has been saturated. Any further pumping leads to a loss of analyte and a consequent underestimation of the environmental concentration. The extent of this phenomenon depends weakly on the concentration of target compound but rather on the value of air flow, the overall sampling volume and the chemical compound involved.*

In the graph the case of benzene is displayed, sampled at 25 °C onto an activated charcoal adsorbent bed of the same volume of a code 130 ***radiello*** *cartridge. The breakthrough is reached after 35, 44 or 49 liters of sampled air depending on benzene concentration in air (10, 50 or 100 µg·m^{-3} respectively).*



An apparently similar phenomenon is shown by ***radiello*** *also. In this case, however, we cannot speak of breakthrough, since no actual air flow is involved, but rather of* ***backdiffusion****. This consists of a decrease of the value of $m \cdot Q^{-1} \cdot t^{1}$ (which is equal to the measured concentration, see eqn. [3] on page A1). This term is constant and equal to the actual concentration until the adsorbed mass of analyte is far from the maximum amount allowed by the adsorbing medium capacity. The extent of backdiffusion depends on concentration and exposure time but a decrease of 10% in the $m \cdot Q^{-1} \cdot t^{1}$ term is observed along with equivalent sampling volumes of magnitude bigger than those seen before: 1600, 2300 and 3050 liters at the concentration of 10, 50 and 100 µg·m^{-3}.*

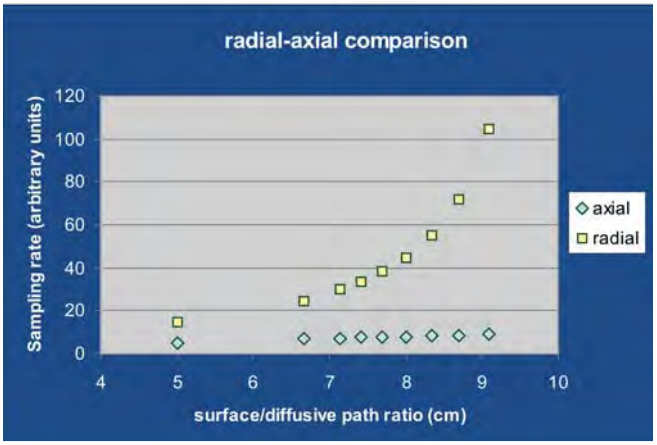
Why diffusive sampling has not been so extensively adopted up to now?

This is due to the fact that the traditional axial symmetry sampler has generally poor sensitivity and reproducibility because of the limits set by its geometry. On one side, uptake rate values are generally low, on the other, they often vary depending on environmental conditions.

These limitations have been overcome by ***radiello***.

By virtue of radial simmetry, uptake rate is:

- ✓ **high**, since it does not vary linearly but exponentially with the ratio diffusive surface *vs* diffusive path length (see eqn. [5]). With the same dimensions, radiello's uptake rate is at least three times higher than that of any axial diffusive sampler;



For a traditional axial simmetry sampler the uptake rate increases linearly with tha ratio of diffusive surface vs diffusive path length, while for the radial simmetry sampler, the corresponding increase is exponential. This means that, let the diffusive surface vs diffusive path length ratio be 8:1, for the axial sampler the uptake rate value is 8 (regardless of dimensions) while for the radial one it is 45.

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- ✓ **constant**, due to the great adsorbing capacity of the adsorbing cartridge;
- ✓ **reproducible**, by virtue of the stiffness of the diffusive membrane and the cartridge and of the close tolerances characterizing all the components of ***radiello***;
- ✓ **invariable with air speed**, due to the tortuosity of the diffusive path inside the microporous diffusive cylindrical surface;
- ✓ **precisely measured**, because it is not calculated but experimentally measured in a controlled atmosphere chamber in a wide range of concentration, temperature, relative humidity, air speed conditions and with or without interferents....





Moreover, ***radiello***

- is able to work properly also with bad weather conditions due to the water-repellent diffusive body
- has blank values lower than three times the instrumental noise due to the complex conditioning procedures of the bulk adsorbing (or chemiadsorbing) materials and to the repeated quality controls along the whole production
- has low detection limits and high adsorbing capacities that allow exposure time duration from 15 minutes to 30 days and concentration measurements from 1 ppb to over 1000 ppm
- offers high precision and accuracy over a wide range of exposure values

- allows thermal desorption and HRGC-MS analysis without interferents
- is suited to the sampling of a vast range of gaseous pollutants
- is though and chemically inert, being made of polycarbonate, microporous polyethylene and stainless steel
- is indefinitely reusable in all of its components apart from the adsorbing cartridge; the latter can be recovered if thermal desorption is employed
- it comes from the efforts of one of the main European scientific research institutions that produces it directly by high technology equipment and continuously submits it to severe tests and performs research and development in its laboratory in Padova



All the images in the manual concern the Environmental Research Center of Padova of the Fondazione Salvatore Maugeri-IRCCS

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the components of *radiello*

The essential parts of ***radiello*** are the adsorbing cartridge, the diffusive body, the supporting plate and the adhesive label with the bar code indication. Apart from the adsorbing cartridge, if not differently stated, all of the other components can be repeatedly used for several sampling experiments.

The adsorbing cartridge

Depending on the polluting compound to be sampled, many different adsorbing or chemiadsorbing cartridges have been developed. Their dimensions are neverthless the same for all: 60 mm length and 4.8 or 5.8 mm diameter.

They are contained in glass or plastic tubes wrapped up in a transparent polyethylene thermowelded bag.

The code number, printed onto the bag along with the lot number and expiry date indicates the kind of cartridge.

Apart from the thermal desorption cartridges, all of the other kinds are for single use only.

Available in 20 pieces per package only.

The cartridge has to be introduced into the diffusive body.



The diffusive body

Four kinds of diffusive bodies are available, with like outer dimensions: 60 mm height and 16 mm diameter.

The **white** diffusive body, **code 120**, of general use, is made of microporous polyethylene 1.7 mm thick and average porosity 25 ± 5 µm. Diffusive path length is 18 mm.

The **blue** diffusive body, **code 120-1**, has the same properties of the white one but is opaque to light: it is suited to the sampling of light-sensitive compounds.

The **yellow** diffusive body, **code 120-2**, should be used whenever the sampling rate must be reduced; it is made of microporous polyethylene 5 mm thick and average porosity 10 ± 2 µm. Diffusive path length is 150 mm.

The **permeative** diffusive body, **code 120-3**, is a 50 µm thick silicone membrane strengthened by a stainless steel net and a microporous polyethylene cylinder. It is employed for anaesthetic gases and vapours sampling.

Available in 20 pieces per package only.

The diffusive body has to be screwed onto the supporting plate.

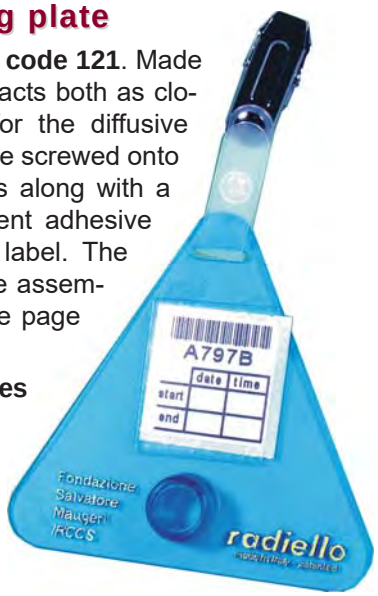


code 120 **120-1** **120-2** **120-3**

The supporting plate

It is identified by the **code 121**. Made of polycarbonate, it acts both as closure and support for the diffusive body, which has to be screwed onto the thread. It comes along with a clip and a transparent adhesive pocket to hold the label. The three parts are to be assembled before use (see page A6).

Available in 20 pieces per package only.



code 121

The label

code 190



Self-adhesive, with printed barcode number. Since each barcode number has been printed in only one copy, it allows an unmistakable identification of the sampling tube on field and in the laboratory for the subsequent analysis.

Each package of 20 adsorbing cartridges contains also 21 labels.

If the labels are ordered separately, they are shipped in 198 pieces per package only.

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how to use *radiello*

before sampling

assembling the supporting plate

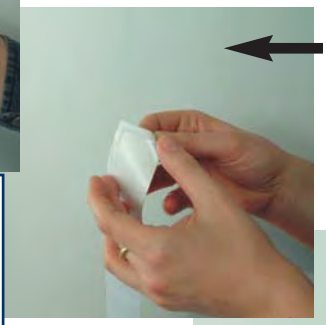
Before using ***radiello***, you have to assemble the supporting plate with the clip, necessary to suspend it, and the adhesive label pocket.

1 insert the clip strip in the slot, with the peg facing upwards





2 ply the strip and insert the peg into the hole



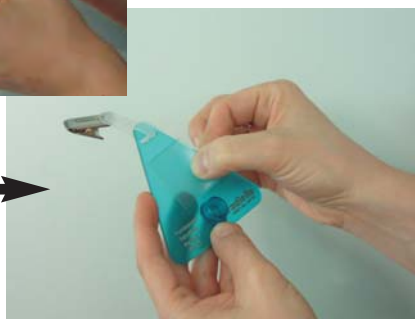
3 peel off the transparent pocket

user tip

assemble the supporting plate in your laboratory before the sampling campaign: on the field they are uselessly time-consuming.

4 and stick it onto the plate in a central position;

if you prefer, the pocket can be applied to the rear of the plate, but BE CAREFUL, always with the label insertion slot on the side (otherwise, if it starts raining the label can get wet)



on-field

to start the sampling

1 open the plastic bag, draw the cartridge out from the tube and put it in the diffusive body. ***Keep the glass or the plastic tube and stopper in the original plastic bag.***



The lower part of the diffusive body holds a seat for the central positioning of the cartridge. **A correctly centered cartridge should not stick out even by half a millimeter. If it is not so, the cartridge is not correctly positioned and is out of axis.**

As a consequence, when the diffusive body is screwed onto the supporting plate the cartridge is bent, the geometry of the sampler is disturbed and the results obtained become unreliable.

To place the cartridge centrally you need only to tap on the diffusive body.



2 keeping the diffusive body in a vertical position, screw it onto the supporting plate

BE CAREFUL: do not hold the diffusive body horizontally when you screw it onto the plate, otherwise the cartridge could come out from its seat and stick out.

user tip

Do not touch the cartridge with your fingers if possible, particularly if it is impregnated with reactive



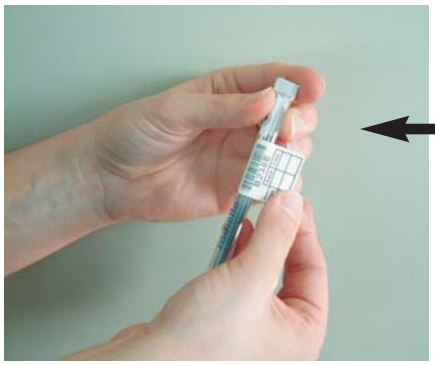
3 Insert a label in the pocket without peeling it off. Keep note of the date and time and expose ***radiello***. Sampling has started.

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user tip

even if you can write date and time of the sampling start and end on the adhesive label, we suggest you to keep note of these parameters also separately: after a week exposure with bad weather conditions, your writings could become illegible!

DO NOT USE MARKING PENS to write on the label: they contain solvents that are sampled by ***radiello***!



4

after the sampling

Keep note of the date and time of the end of exposure.

Place the cartridge into the tube, peel off the label and stick it onto the tube **such that the barcode is parallel to the axis of the tube.**

If you have performed the sampling of different polluting compounds at the same time, ***BE CAREFUL NOT TO MIX UP THE TUBES***: place the exposed cartridge in its original tube, identified by the code printed on the plastic bag.

IMPORTANT

Always stick the label such that the barcode is parallel to the axis of the tube: any other position will compromise the barcode automated reading by the optic reading device.

radiello maintenance

When exposed outdoors or in a workplace environment, the diffusive body may get dirty from airborne dust. Fine particles (PM_{10}) are especially harmful to yellow diffusive bodies since they can obstruct the pores. When the diffusive bodies are dirty you can wash them as follows.

Immerse the diffusive bodies in a beaker with a soapy solution (e.g. dish detergent) and sonicate them for 20 minutes. As the diffusive bodies float, you may make them sink by putting a smaller beaker on them, with water inside enough to dip it a few centimeters.

Rinse the diffusive bodies with plenty of water and then deionized water; let them finally dry in the air.

IMPORTANT: NEVER USE SOLVENTS TO CLEAN THE DIFFUSIVE BODIES!!!

After four or five washings, diffusive bodies need replacing: repeatedly adsorbed dust may have penetrated the pores such deeply to be undisturbed by washing.

The following table shows the advised washing schedule:

PM_{10} concentration ($\mu g \cdot m^{-3}$)	<30	40	>50
Washing after days of exposure	45	30	15

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radiello-ready-to-use

The ready-to-use version may be advantageous when you prefer not to assemble all of the components on field. It can be purchased as it is or in separate parts to be assembled by the customer.

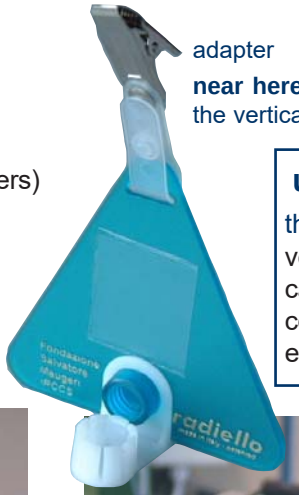
In the ***as-it-is version*** the adsorbing cartridge is already contained in a diffusive body closed with a polycarbonate screw-thread cap. The whole is closed in a polypropylene airtight container. Just before use draw the diffusive body out of the container and fit it to the special snapping vertical adapter fixed to the supporting plate. After the end of exposure, the diffusive body with its content is placed again in the polypropylene airtight container to be shipped to the laboratory for analysis. The ***ready-to-use as-it-is radiello*** (polycarbonate cap, glass or plastic tube, special vertical adapter, barcode label and polypropylene container comprised for each type) is available for the sampling of the following compounds:



code	sampling of	contains
123-1	BTEX and VOCs	white diffusive body and cartridge code 130
123-2	BTEX and VOCs	yellow diffusive body and cartridge code 145
123-3	NO_2, SO_2 and HF	blue diffusive body and cartridge code 166
123-3	Aldehydes	blue diffusive body and cartridge code 165
123-5	ozone	blue diffusive body and cartridge code 172
123-6	hydrogen sulfide	white diffusive body and cartridge code 170
123-7	ammonia	blue diffusive body and cartridge code 168
123-8	HCl	white diffusive body and cartridge code 169

on top:
to the right, ***radiello-ready-to-use***
to the left, the diffusive body with the polycarbonate cap and the adsorbing cartridge inside
in the center: the special snapping adapter
near here: the supporting plate with the vertical snapping adapter

IMPORTANT: in the ***ready-to-use*** version ***the supporting plate is not provided.***



If you prefer ***to assemble it by yourselves***, you should order:

- ✓ diffusive bodies (of the required type, see following chapters)
- ✓ adsorbing cartridges (of the required type, see following chapters)
- ✓ polycarbonate caps, **code 124-1**
- ✓ special snapping adapters, **code 122-1**
- ✓ polypropylene containers, **code 124-2**
- ✓ supporting plates, **code 121**

user tip

the ***ready-to-use*** version of ***radiello*** is very useful in the workplace sampling campaigns but is not advised if very low concentrations in outdoor or domestic environments are to be measured





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accessories for *radiello*

vertical adapter

code 122

Available in 20 pieces per package only

The diffusive body can be fitted to the supporting plate either in a vertical or horizontal position, the vertical one being more comfortable when ***radiello*** is used for personal sampling.

To assemble ***radiello*** in vertical position you have to screw it to the **vertical adapter code 122**, fitted to the supporting plate.



code 122



1 place the vertical adapter over the mounting point on the plate



2 press the adapter onto the plate with your thumbs till the ridge fits the edge of the plate.



The adapter can be removed from the plate by lifting the ridge

IMPORTANT

when mounting the diffusive body be careful to keep it vertical with the thread upside (see page A6).

shelter

code 196



For outdoor exposures a mountable polypropylene shelter is available which can be hanged to lamp posts.

Available in 10 pieces per package only

It has been designed to be mounted easily and without any tool on field, so that it is not cumbersome when you transport it from your laboratory. Once assembled, it ensures the best compromise between protection against bad weather and ventilation.

It can house up to four ***radiello*** and is able to fit a wide range of pole diameters.

Its colour is quite similar to that of the majority of lampposts: being less visible, it is less subject to acts of vandalism.

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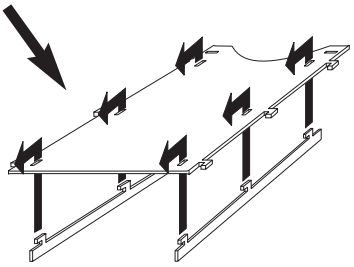


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how to assemble the shelter

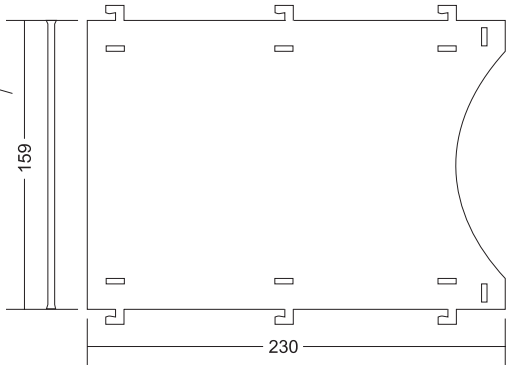
All of the components are snap-on assembled.

First of all, insert on this panel (the roof) the two supports that will be used to suspend the samplers.

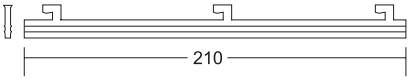


The shelter is composed of:

One of the three equivalent panels will act as the roof of the shelter (quotes are in mm)

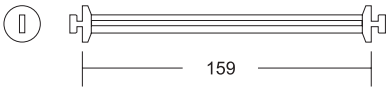


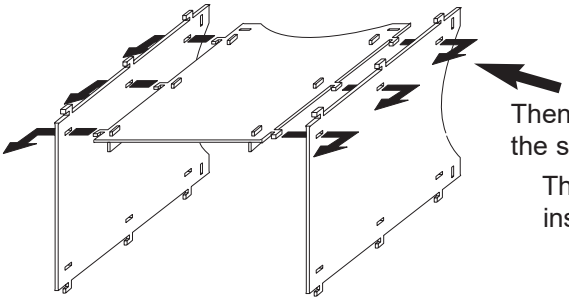
the two supports where to suspend ***radiello***



two spacers

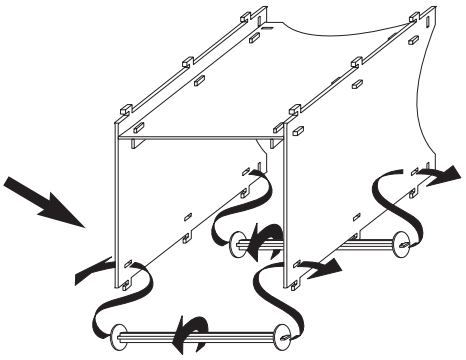
two strips

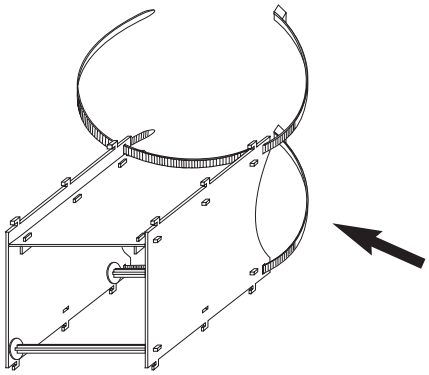




Then fix the two walls on the sides of the roof panel.

The whole becomes rigid by insertion of the two spacers. Fit them to the slots on bottom of the side panels and turn them by 90° (performing this rotation you may feel some resistance, but go on until you hear a clicking sound).





Finally, insert two plastic strips in the rear vertical slots of the side panels. The **strips** are also available as spare parts, in 100 pieces per package, identified by the **code 198**.

Suspend the shelter to the pole by closure of the strips, but ***DO NOT DRAW SO MUCH THAT THE SHELTER IS DEFORMED***. If the pole has diameter larger than 20 cm, the shelter leans on the curved edges on the rear of the sidewalls. If the pole has a smaller diameter, it leans against the curved edge of the roof panel and the rear spacer. If the diameter of the pole is very small the shelter bows down, the wind may make it go round, or the shelter may even slip down to ground. It is then advisable to choose another pole.

user tip

If the pole diameter is larger than the strip length, you can put two or more strips together to extend the fastening system.

If the sampling site is very windy, do not introduce more than two ***radiello*** samplers in each shelter, otherwise rain could dampen the outermost samplers.

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On-field temperature measurements

codes 126 e 127

Since the uptake rate values of ***radiello*** depend on temperature, the concentration values obtained will be more accurate if precise temperature measurements are performed during the sampling.

To get reliable temperature data you may ask the local weather station, if there is one, and if the measurements are performed nearby your sampling sites. Bear in mind that you should take into the account the urban heat island: did you know that there can be a difference of even 4-5 °C between the center and the suburbs of a big town?

With *radiello* you can create your own temperature measurement station.



thermometer code 126
Available in 3 pieces per package only

A **thermometer** with precision ± 0,5 °C between -20 and 80 °C and equipped with a data logger capable of recording 2048 data points has been fixed to a vertical adapter (**code 126**). It is tiny enough (< 1 cm^3) to go perfectly unobserved.

It has no battery to replace, needs no maintenance and works properly even with bad weather conditions.

Its memory allows you to record one temperature value every 15 minutes for 22 days, or every 30 minutes for 43 days, or every 60 minutes for 85 days, or... it lasts ten years or a million readings!

The thermometer is fitted to the supporting plate of ***radiello***: use the sampler normally and measure temperature and pollution at the same time.

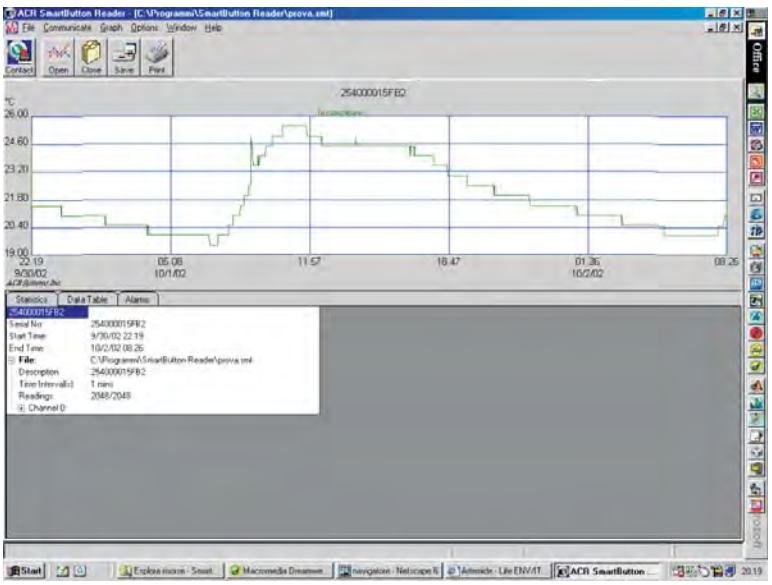
A very simple **reader** (**code 127**), connected to your PC by a serial port, allows you to program the temperature sensor for the measurements on field, to download the aquired data and to perform data statistical and graphic processing by a very user-friendly software.



reader code 127
single unit, serial port adapter included

user tip

When performing urban monitoring install a thermometer every ten sampling sites. If this may help you, contact us to discuss sampling strategies.





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calibration solution for H_2S

code 171

Code 171 relieves you from the task of preparing the sodium sulfide standard solution for the calibration curve used for the determination of H_2S by the cartridge code 170 (see page H1).

Since sodium sulfide is deliquescent, its weight is not a primary standard and sodium sulfide solution need titration once prepared. Moreover, titration must be repeated often due to the instability of diluted solution (one hour time is sufficient to decrease sulfide content by 10%).

Code 171 is a methylene blue concentrated solution that, once diluted 1:50, provides the same absorbance value at 665 nm of a sodium sulfide solution of with concentration 1.145 $\mu g \cdot ml^{-1}$ sulfide ions.

This concentration value has been chosen to obtain the highest absorbance value within the linearity range of the spectrophotometer.

To obtain a complete calibration curve, just dilute the mother solution as shown in the table.

Solution	ml of	ml of water	equivalent to $\mu g \cdot ml^{-1}$ of $S^=$
A	2 of code 171	98	1.145
B	25 of A	25	0.572
C	10 of A	40	0.229
D	5 of A	45	0.115

Code 171 allows you to prepare as many as 50 calibration curves.

Kept closed at room temperature, code 171 solution is stable for at least one year.



filtration kit

code 174

Code 174 filtration kit is composed by 20 single use plastic syringes and 20 single use micropore hydrophilic polypropylene filters with diameter 13 mm and 0.45 µm porosity.

Both filter and syringe are suited to filtration of aqueous solutions with pH in the range of 0 to 12 with commonplace eluents for ion chromatography and reverse phase HPLC.

calibration solutions for aldehydes

code 302

Calibration curves for aldehydes are obtained with standard solutions of the corresponding 2,4-dinitrophenylhydrazones (see page C1). Although their synthesis is straightforward, their purification is tricky and time-consuming. Code 302 offers a certified and convenient choice: a solution of nine 2,4-dinitrophenylhydrazones in a solvent compatible with HPLC eluents and with concentrations suitable for the preparation of calibration curves in the range usually spanned by ***radiello*** samples.

Code 302 is delivered as 10 ml of acetonitrile solutions of the nine 2,4-dinitrophenylhydrazones formed by the aldehydes listed in the table, contained in a pierceable-septum crimped cap vial. The listed concentration values are indicative, actual ones are certified for each lot.

Kept tightly capped in a dark place at 4 °C, the solution is stable for at least four months.

2,4-DNPH of	$\mu g \cdot ml^{-1}$ as aldehyde
formaldehyde	50
acetaldehyde	50
acrolein	10
propanal	50
butanal	50
isopentanal	50
pentanal	50
hexanal	50
benzaldehyde	50



calibration solutions for BTEX (CS_2 desorption)

code 405

Code 405 calibration kit has been conceived for the analysis of BTEX sampled in urban environments by the cartridge code 130 and chemically desorbed by carbon disulfide (see page D1).

The kit may be used both for routine calibration and for scheduled quality control of the calibration procedure described on page D4.

It is composed of 12 code 130 cartridges, three of which are blanks and nine, divided into three groups of three, preloaded with BTEX to simulate 7 days exposures (10,080 minutes) to the concentrations listed in the table. The values shown are indicative, actual ones are certified for each lot.

The mass of each analyte deposited onto the cartridge spans the whole range of concentrations usually found in urban environments, extreme values included.

BTEX loading is performed by injection of precisely known amounts of vaporized standard solutions in CS_2 of the five compounds under nitrogen flow.

Kept at 4 °C, the cartridges are stable for at least four months.

code 405	simulated concentrations in µg·m^{-3} (7 days exposure equivalent)		
	Group 1	Group 2	Group 3
benzene	1	10	50
toluene	2	20	100
ethylbenzene	1	10	50
m-xylene	1	10	50
p-xylene	1	10	50
o-xylene	1	10	50

calibration solutions for VOCs in workplace environments

code 406

The code 406 kit has been conceived for scheduled quality control of the calibration procedure for the analysis of volatile organic compounds (VOCs) sampled by code 130 cartridges in workplace environments (see page D4).

It is composed of 12 code 130 cartridges, three of which are blanks and nine, divided into three groups of three, preloaded with VOCs to simulate 8 hours exposures (480 minutes) to the concentrations listed in the table. The values shown are indicative, actual ones are certified for each lot.

The composition of the mixture is simple but it includes compounds with different polarity. The loaded mass is calculated in order to represent exposures to 0.5, 1 and 2 times the TLV value for the mixture.

VOCs loading is performed by injection of precisely known amounts of calibrated mixtures of the eight compounds under nitrogen flow.

Kept at 4 °C, the cartridges are stable for at least four months.

code 406	simulated concentrations in mg·m^{-3} (8 hours exposure equivalent)		
	Group 1	Group 2	Group 3
benzene	0.1	0.2	0.4
toluene	19	38	76
ethylbenzene	12	24	48
m-xylene	12	24	48
p-xylene	12	24	48
o-xylene	12	24	48
butanol	15	30	60
2-etoxyiethyl acetate	2.5	5	10

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calibration solutions for BTEX (thermal desorption)

code 407	simulated concentrations in µg·m^{-3} (7 days exposure equivalent)		
	Group 1	Group 2	Group 3
benzene	1	5	25
toluene	2	10	50
ethylbenzene	1	5	25
m-xylene	1	5	25
p-xylene	1	5	25
o-xylene	1	5	25

code 407

Code 407 calibration kit has been conceived for the analysis of BTEX sampled in urban environments by the cartridge code 145 and thermally desorbed (see page E1).

The kit may be used both for routine calibration and for scheduled quality control of the calibration procedure described on page E5.

It is composed of 12 code 145 cartridges, three of which are blanks and nine, divided into three groups of three, preloaded with BTEX to simulate 7 days exposures (10,080 minutes) to the concentrations listed in the table. The values shown are indicative, actual ones are certified for each lot.

BTEX loading is performed by injection of precisely known amounts of vaporized standard solutions in methanol of the five compounds under nitrogen flow. During the analysis the chromatographic peak of methanol will be visible.

Kept at 4 °C, the cartridges are stable for at least four months.

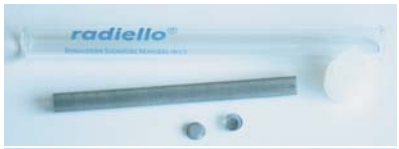
the spare parts of *radiello*

Empty cartridge

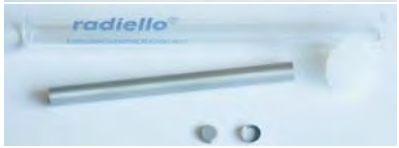
Can be loaded by the customer with the desired adsorbent.
It is delivered with the two end caps and the glass tube.
Available in 20 pieces per package only.



code 175
stainless steel net,
100 mesh,
5.9 mm diameter



code 176
stainless steel net,
100 mesh,
4.9 mm diameter



code 177
stainless steel net,
3x8 µm,
4.9 mm diameter

Barcode adhesive label



Code 190
Available in 198 pieces per package only.

Clip

Code 195
Available in 20 pieces per package only.



Tube

Available in 20 pieces per package only.



code 199-1
glass tube,
working volume
2.8 ml



code 199-2
polypropylene tube,
working volume
12 ml

Strip

Code 198
Useful for repositioning of ***radiello*** shelter.
Lenght 75 cm.
Available in 100 pieces per package only.



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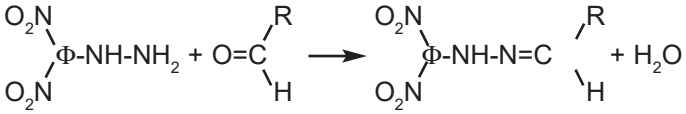
Aldehydes

Radiello components to be used:

blue diffusive body code 120-1
supporting plate code 121
vertical adapter code 122 (optional)
chemiadsorbing cartridge code 165
filtration kit code 174 (only for analysis)

Principle

Code 165 is a stainless steel net cartridge filled with 2,4-dinitrophenylhydrazine (2,4-DNPH) coated Florisil®. Aldehydes react with 2,4-DNPH to give the corresponding 2,4-dinitrophenylhydrazones



2,4-DNPH aldehyde 2,4-dinitrophenylhydrazone

The 2,4-dinitrophenylhydrazones are then extracted with acetronitrile and analyzed by reverse phase HPLC and UV detection.

Sampling rates

Sampling rates values at 298 K (25 °C) and 1013 hPa are listed below:

	sampling rate $ml \cdot min^{-1}$	linearity range $\mu g \cdot m^{-3} \cdot min$	limit of quantitation[1] $\mu g \cdot m^{-3}$	uncertainty at 2σ %
acetaldehyde	84	1,000÷12,000,000	0.1	15.9
acrolein	33	3,000÷3,000,000	0.3	16.5
benzaldehyde	92	1,000÷8,000,000	0.1	17.2
butanal	11	9,000÷10,000,000	0.9	23.5
hexanal	18	5,000÷15,000,000	0.6	20.2
formaldehyde	99	1,000÷4,000,000	0.1	13.8
glutaric aldehyde	90	1,000÷3,000,000	0.1	14.5
isopentanal	61	1,500÷12,000,000	0.2	17.0
pentanal	27	4,000÷12,000,000	0.4	22.9
propanal	39	3,000÷8,000,000	0.3	17.1

[1]after 7 days exposure

Effect of temperature, humidity and wind speed

Sampling rate varies from the value at 298 K on the effect of temperature (in Kelvin) as expressed by the following equation

$$Q_K = Q_{298} \left(\frac{K}{298}\right)^{0.35}$$

where Q_K is the sampling rate at the temperature K and Q_{298} is the reference value at 298 K. This produces a variation of ± 1% for 10 °C variation (upwards or downwards) from 25 °C.

Sampling rate is invariant with humidity in the range 15-90% and with wind speed between 0.1 and 10 $m \cdot s^{-1}$.

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Calculations

The average concentration ***C*** over the whole sampling time (in $\mu g \cdot m^{-3}$) is calculated according to the expression:

$$C\ [\mu g \cdot m^{-3}] = \frac{m\ [\mu g]}{Q\ [ml \cdot min^{-1}] \cdot t\ [min]}\ 1{,}000{,}000$$

where:
m = mass of aldehyde in µg
t = exposure time in minutes

Exposure

The optimum exposure duration varies with the expected concentration. Taking formaldehyde as an example, concentration values of 5-30 $\mu g \cdot m^{-3}$ are usually found in outdoor urban measurements while 20-200 $\mu g \cdot m^{-3}$ are expected in workplace environments. In workplace environments concentrations may be as high as 2,000-3,000 $\mu g \cdot m^{-3}$ for short time intervals: it can therefore be interesting to evaluate the peak value (usually referred to by *STEL*). The corresponding advised exposure time is shown in the table below:

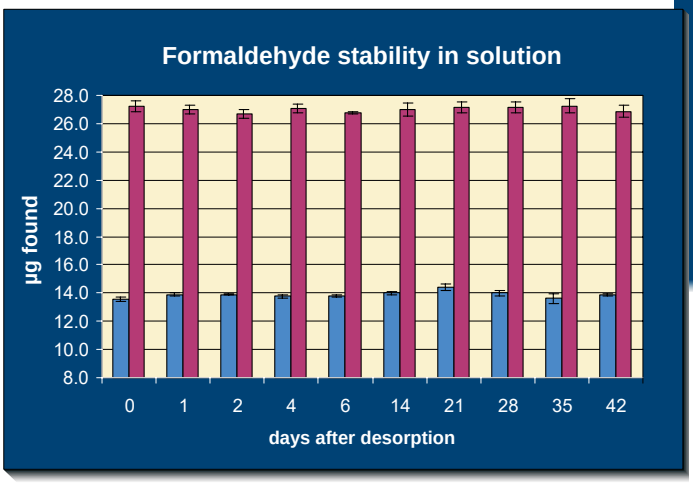
Advised exposure times

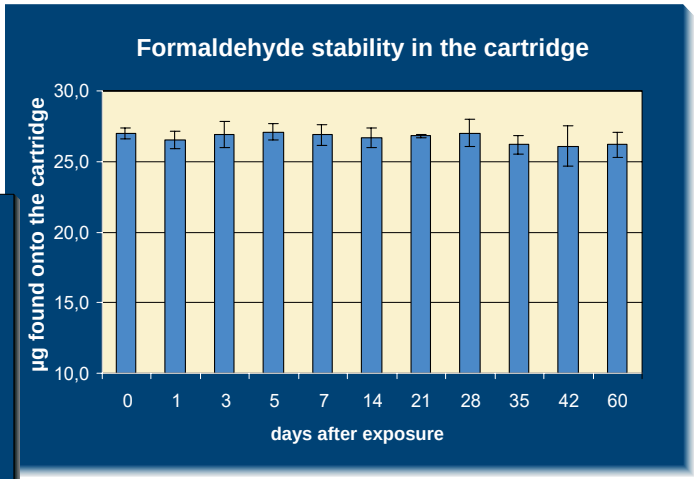
	outdoor environment	indoor environment	workplace environment average conc.	workplace environment peak conc.
minimum	8 h	8 h	2 h	15 minutes
maximum	7 days	7 days	8 h	1 h

Do not expose all of the cartridges belonging to the same lot: keep at least two cartridges as blanks.

Storage

The cartridges need to be kept in a dark place at 4 °C. Closed in their bags, they are stable at least six months from the production date. Each cartridge has a blank value of formaldehyde less than 0.1 µg, corresponding to a concentration in air less than 0.1 $\mu g \cdot m^{-3}$ over one week of exposure or 2 $\mu g \cdot m^{-3}$ over 8 hours. The blank value may increase with time. The expiry date (printed onto the plastic bag) indicates when the expected content of formaldehyde (for a correctly stored cartridge) will probably exceed 0.2 µg.





Formaldehyde stability in the cartridge after the sampling (on top) and in solution (left). The stability tests were performed upon cartridges exposed for one week in a standard atmosphere chamber at 25 °C and with 50% relative humidity and at two different concentration levels. Each bar in the plot represents the average and error from the analysis of six samples.

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After exposure keep the cartridges well capped at 4 °C, they are stable for 60 days. After solvent desorption (see Analysis) and extraction of the cartridge from the tube, the resulting solution, well capped and stored at 4 °C, is stable for at least 42 days (see on page C2).

Analysis

USER TIP

For a reliable and rapid filtration employ the filtration kit **code 174**.

To obtain an accurate calibration curve we offer you the calibration solution **code 302**.

Desorption

Materials

- HPLC grade acetonitrile
- class A volumetric pipette, capacity 2 ml
- micropore filter membranes, porosity 0.45 µm, solvent resistant

Procedure

Introduce 2 ml acetonitrile directly in the cartridge tube, recap and stir from time to time for 30 minutes. Discard the cartridge. Filter the resulting solution and keep it well capped until analysis time. If analysis has to be delayed, store the solution at 4 °C.

IMPORTANT: verify the presence and the abundance of the 2,4-DNPH chromatographic peak: otherwise, the cartridge could be saturated.

Instrumental analysis

The method suggested below is only indicative; the analyst can choose an alternative method, on the basis of its personal experience.

Materials

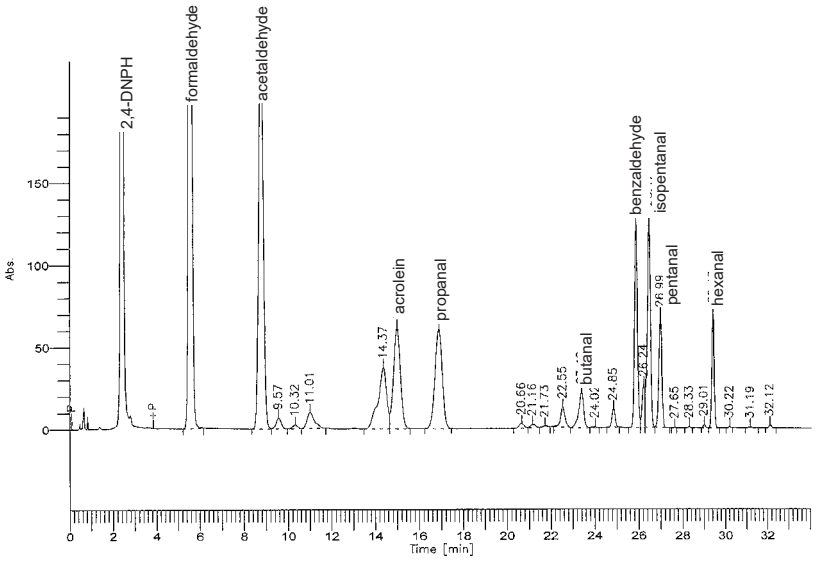
- reverse phase C_{18} HPLC column, length 150 mm, 4.6 mm diameter, 5 µm packing particle size
- HPLC apparatus capable of elution gradient and UV detection

Procedure

Set the detector at the wavelength of 365 nm. Inject between 10 and 50 µl of solution and elute as follow:

- flow: 1.9 ml·min^{-1}
- Isocratic elution with acetonitrile/water 38:62 v/v for 10 minutes, up to acetonitrile/water 75:25 v/v in 10 minutes, reverse gradient to acetonitrile/water 38:62 v/v in 5 minutes.

On the right: the chromatogram of a real sample analyzed under the described conditions.



HPLC chromatogram of aldehydes sampled by ***radiello***

IMPORTANT

Acrolein gives place to three chromatographic peaks, two of them are unresolved. Calculate the concentration basing onto this most abundant peak and ignore the others.

Isopentanal appears as two unresolved peaks: its concentration should be obtained by integration of both peaks as a sum.



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USER TIP

If you perform several analyses, a barcode reader will greatly improve productivity in your laboratory and will also minimize the possibility of errors in the copying of sample labels.

Please contact us to help you in the implementation of the reader.

We have also developed software solutions for the analytical data processing and automated production of analysis reports.

Interferences

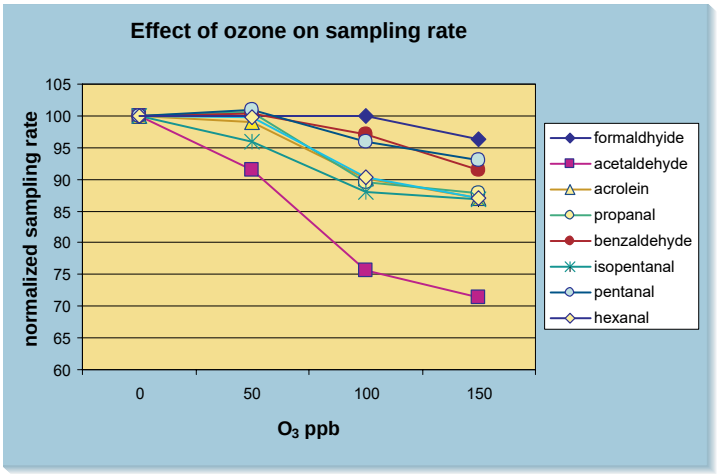
Other carbonyl compounds

All carbonyl compounds, ketones included, react with 2,4-DNPH but do not interfere in the analysis if proper chromatographic parameters are selected.
In the described chromatographic conditions acetone-2,4-DNPH peak is well resolved from acrolein-2,4-DNPH. Neverthless, if acetone concentration is higher than 50,000 $\mu g \cdot m^{-3}$, acrolein-2,4-DNPH peak intensity is depressed by 25%.

Ozone

Examples of ozonolysis of dinitrophenylhydrazones on active supporting materials as silica gel are found in the literature.

On code 165 cartridge, packed with coated Florisil®, ozonolysis is much less important than on any other commercial aldehyde sampling device, either diffusive or pumped, and becomes appreciable only if ozone concentration, averaged over the whole exposure time interval, is higher than 100 ppb. Since this is not usually the case, generally no correction is needed to take into account ozone concentration. If there is firm evidence that ozone concentration is equal or higher than 100 ppb over the whole exposure time, make use of the corrected sampling rate values shown in the table below, where $[O_3]$ is ozone concentration in ppb.



Sampling rate as a function of ozone concentration normalized to 100 for $[O_3]$ equal to zero. Apart from acetaldehyde, ozone effect becomes relevant only at concentration levels higher than 100 ppb as an average over the whole exposure time interval.

	corrected sampling rate $ml \cdot min^{-1}$
acetaldehyde	84-0.018$[O_3]$*
acrolein	33-0.027$[O_3]$
benzaldehyde	92-0.05$[O_3]$
hexanal	18-0.02$[O_3]$
formaldehyde	99-0.02$[O_3]$
isopentanal	61-0.06$[O_3]$
pentanal	27-0.01$[O_3]$
propanal	39-0.03$[O_3]$

*apply for ozone concentration higher than 50 ppb

The listed values are referred to the temperature of 298 K (25 °C), for deviations larger than ± 10 °C substitute the base value (e.g. 99 $ml \cdot min^{-1}$ for formaldehyde) with the corrected value calculated according to equation on page C1.
No experimental data is available for butanal and glutaric aldehyde.

Sampling rate for ozone concentration $[O_3]$ in ppb (apply only if $[O_3]$ >100 ppb)



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Volatile organic compounds (VOCs)

chemically desorbed with CS_2

Radiello components to be used:

White diffusive body code 120
Supporting plate code 121
Vertical adapter code 122 (optional)
Adsorbing cartridge code 130

Or: *radiello-ready-to-use* code 123-1

Principle

Code 130 cartridge is a stainless steel net cylinder, with 100 mesh grid opening and 5.8 mm diameter, packed with 530 ± 30 mg of activated charcoal with particle size 35-50 mesh. Volatile organic compounds are trapped by adsorption and recovered by carbon disulfide displacement, analysis is performed by FID gas chromatography.

Sampling rates

The table on page D2 lists sampling rate values at 298 K (25 °C) and 1013 hPa, experimentally measured in a standard atmosphere chamber. For other compounds, whose diffusion coefficient[1] is known, sampling rate can be calculated according to equation [5] on page A2, taking into account that white diffusive body and code 130 cartridge give the geometric constant of radiello the value of 14.145 ± 0.110 cm. Several experiments performed in the standard atmosphere chamber demonstrate that the calculated sampling rates seldom deviate by more than ± 10% from the experimentally measured values.

Effect of temperaure, humidity and wind speed

Sampling rates varies from the value at 298 K on the effect of temperature (in Kelvin) as expressed by the following equation

$$Q_K = Q_{298} \left(\frac{K}{298}\right)^{1.5}$$

where Q_K is the sampling rate at the temperature **K** and Q_{298} is the reference value at 298 K. This produces a variation of ± 5% for 10 °C variation (upwards or downwards) from 25 °C.

Sampling rate is invariant with humidity in the range 15-90% and with wind speed between 0.1 and 10 $m \cdot s^{-1}$.

[1]Lugg G.A.: Diffusion Coefficients of Some Organic and Other Vapours in Air. *Anal. Chem*. **40-7**:1072-1077 (1968).

Calculations

The listed sampling rate values already take into account for the desorption efficiency with carbon disulfide. **The average concentration over the exposure time interval is therefore calculated from the mass of analyte found onto the cartridge and exposure time <u>without introducing any corrective factor</u>**, apart from corrections due to average temperature different from 25 °C.

Average concentration over the whole exposure time is calculated according to the following expression

$$C\ [\mu g \cdot m^{-3}] = \frac{m\ [\mu g]}{Q_K\ [ml \cdot min^{-1}] \cdot t\ [min]}\ 1{,}000{,}000$$

where:
m = mass of analyte in µg
t = exposure time in minutes



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Sampling rate values at 25°C (298 K)

	sampling rate $ml \cdot min^{-1}$	linearity range $\mu g \cdot m^{-3} \cdot min$	uncertainty at 2σ %	notes
acetone	77	10,000-600·10⁶	7.0	**a**
acetonitrile	73	10,000-6·10⁶	8.2	**b**
acrylonitrile	75	1,000-50·10⁶	2.2	
benzyl alcohol	37	1,000-800·10⁶	6.5	
amyl acetate	52	1,000-800·10⁶	3.4	
benzene	80	500-500·10⁶	1.8	
bromochloromethane	70	50,000-1,000·10⁶	1.4	
butanol	74	1,000-500·10⁶	5.0	
sec-butanol	64	1,000-300·10⁶	5.2	
tert-butanol	62	1,000-300·10⁶	5.5	
butyl acetate	60	1,000-1,000·10⁶	3.0	
2-butoxyethanol	56	1,000-100·10⁶	5.7	
2-butoxyethyl acetate	41	1,000-100·10⁶	5.5	
carbon tetrachloride	67	100,000-60·10⁶	9.0	
cyclohexane	54	500-500·10⁶	4.5	
cyclohexanone	68	5,000-120·10⁶	4.2	
cyclohexanol	54	5,000-120·10⁶	4.5	
chlorobenzene	68	1,000-1,000·10⁶	3.6	
chloroform	75	100,000-60·10⁶	9.7	**a**
n-decane	43	500-1,000·10⁶	1.1	
diaceton alcohol	43	500-1,000·10⁶	4.5	
1,4-dichlorobenzene	51	1,000-1,000·10⁶	7.7	
1,2-dichloroethane	77	1,000-500·10⁶	8.2	
1,2-dichloropropane	66	500-250·10⁶	4.5	
dichloromethane	90	500-60·10⁶	8.7	
N,N-dimetylformamide	82	1,000-200·10⁶	14.5	**c**
1,4-dioxane	68	1,000-600·10⁶	5.5	
n-dodecane	8	1,000-1,000·10⁶	4.7	
n-heptane	58	5,000-1,500·10⁶	3.0	
n-hexane	66	1,000-1,000·10⁶	2.5	
1-hexanol	52	5,000-120·10⁶	5.5	
ethanol	102	10,000-500·10⁶	7.5	**a-b**
diethyl ether	78	5,000-500·10⁶	12.0	**a**
ethyl acetate	78	1,000-1,000·10⁶	1.5	
ethylbenzene	68	1,000-1,000·10⁶	2.4	
2-ethyl-1-hexanol	43	5,000-500·10⁶	10.1	
2-ethoxyethanol	55	500-50·10⁶	6.7	**b**
2-ethoxyethyl acetate	54	10,000-100·10⁶	2.5	
ethyl-*tert*-butyl ether (ETBE)	61	500-200·10⁶	3.0	
isobutanol	77	1,000-300·10⁶	2.5	
isobutyl acetate	63	1,000-1,000·10⁶	5.2	
isooctane	55	500-1,000·10⁶	3.2	
isopropanol	52	10,000-400·10⁶	12.0	**b**
isopropyl acetate	66	1,000-1,000·10⁶	9.9	
isopropylbenzene	58	1,000-1,000·10⁶	2.7	
limonene	43	1,000-1,000·10⁶	10.0	
methanol	125	10,000-250·10⁶	9.2	**a-b**
methyl acetate	80	1,000-1,000·10⁶	12.0	
methyl-*ter*-butyl ether (MTBE)	65	500-200·10⁶	2.5	

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	sampling rate $ml \cdot min^{-1}$	linearity range $\mu g \cdot m^{-3} \cdot min$	uncertainty at 2σ %	notes
methylcyclohexane	66	$1{,}000\text{-}1{,}000 \cdot 10^6$	6.5	
methylcyclopentane	70	$1{,}000\text{-}1{,}000 \cdot 10^6$	2.5	
methylethylketone	79	$1{,}000\text{-}500 \cdot 10^6$	1.6	
methylisobutylketone	67	$1{,}000\text{-}250 \cdot 10^6$	8.7	
methyl metacrylate	68	$1{,}000\text{-}500 \cdot 10^6$	2.5	
2-methylpentane	70	$1{,}000\text{-}1{,}000 \cdot 10^6$	2.5	
3-methylpentane	70	$1{,}000\text{-}1{,}000 \cdot 10^6$	2.5	
2-methoxyethanol	35	$5{,}000\text{-}100 \cdot 10^6$	11.0	**b**
2-methoxyethyl acetate	56	$2{,}000\text{-}100 \cdot 10^6$	3.0	
1-methoxy-2-propanol	55	$1{,}000\text{-}350 \cdot 10^6$	6.0	
1-methoxy-2-propyl acetate	60	$2{,}000\text{-}350 \cdot 10^6$	6.2	
naphtalene	25	$1{,}000\text{-}1{,}000 \cdot 10^6$	7.0	
n-nonane	48	$1{,}000\text{-}1{,}000 \cdot 10^6$	5.4	
n-octane	53	$500\text{-}1{,}000 \cdot 10^6$	3.2	
pentane	74	$1{,}000\text{-}1{,}000 \cdot 10^6$	1.9	
α-pinene	53	$1{,}000\text{-}1{,}000 \cdot 10^6$	7.0	
propyl acetate	65	$500\text{-}1{,}000 \cdot 10^6$	7.5	
propylbenzene	57	$1{,}000\text{-}1{,}000 \cdot 10^6$	2.9	
styrene	61	$1{,}000\text{-}500 \cdot 10^6$	3.0	
tetrachloroethylene	59	$10{,}000\text{-}500 \cdot 10^6$	2.5	
tetrahydrofuran	74	$2{,}000\text{-}250 \cdot 10^6$	11.0	**b**
toluene	74	$500\text{-}1{,}000 \cdot 10^6$	1.5	
1,1,1-trichloroethane	62	$5{,}000\text{-}1{,}000 \cdot 10^6$	5.5	
trichloroethylene	69	$5{,}000\text{-}1{,}000 \cdot 10^6$	2.4	
1,2,4-trimethylbenzene	50	$500\text{-}1{,}000 \cdot 10^6$	6.6	
n-undecane	24	$1{,}000\text{-}1{,}000 \cdot 10^6$	10.0	
m-xylene	70	$500\text{-}1{,}000 \cdot 10^6$	2.5	
o-xylene	65	$500\text{-}1{,}000 \cdot 10^6$	2.5	
p-xylene	70	$500\text{-}1{,}000 \cdot 10^6$	2.5	

Notes:

a = weakly adsorbed compound. If its concentration is higher than the TLV for the workplace environments it may be partially displaced by other compounds that are more strongly trapped if their concentration is also high. If this is the case, it is advisable to reduce sampling time under 8 hours.

b = prolonged exposure of charcoal cartridges at relative average humidity higher than 80% causes adsorption of up to 100 mg of water. Water does not interfere with adsorption mechanisms but is displaced by carbon disulfide and gives raise to a separate layer. Some very water soluble polar compounds will distribute between the two solvents, thus provoking an underestimation of the actual air concentration since only the carbon disulfide is injected in the gas chromatograph. When the concentration of polar compounds has to be determined, the calibration curve should be prepared by spiking 50 µl of water in each tube containing the cartridge and the 2 ml of carbon disulfide standard solution (see Analysis).

c = better reproducibility obtained by use of methanol as extraction solvent instead of carbon disulfide.

Limit of quantitation

The limit of quantitation depends on the instrumentation and on the analytical conditions. The minimum revealable environmental concentration can be estimated on the basis of the equation on page D1, where ***m*** is the minimum revealable mass, experimentally measured for each compound. Under the analytical conditions described on page D4, the limit of quantitation for 7 days exposure usually ranges from 0.05 to 1 $\mu g \cdot m^{-3}$, depending on the compound.



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Exposure

Code 130 cartridge has a very large loading capacity: about 80 mg, corresponding to an overall VOCs concentration of 3,000-3,500 mg·m^{-3} sampled for 8 hours or 70,000-80,000 µg·m^{-3} sampled for 14 days. Neverthless, if the quantified overall adsorbed mass should be near 80 mg, sampling rate could have deviated from linearity. If this is the case, it is advisable to repeat the sampling experiment reducing exposure time.

Workplace environment

In workplace environments complex mixtures of airborne solvent vapours are often found at concentrations of 2,000-3,000 mg·m^{-3}. The outstanding adsorbing capacity of code 130 cartridges allows you to sample them for the whole working shift of 8 hours. On the other hand, the very high values of sampling rates for a variety of compounds allow you to perform accurate concentration measurements even after very short exposures. For example, 15 minutes are enough to measure 0.1 mg·m^{-3} of benzene.

radiello can therefore be employed to evaluate both *TWA* and *STEL* concentrations.

Other indoor sampling experiments and outdoor campaigns

High sampling rates of ***radiello*** ensure very low limits of detection also for short exposure time intervals. For example, you may measure benzene concentrations as low as 2 µg·m^{-3} with an error not exceeding 4% after 8 hours of exposure. If ***radiello*** is exposed for 7 days, limit of quantitation becomes 0.1 µg·m^{-3}.

Generally speaking, we suggest exposure time duration ranging from 8 hours to 30 days, the ideal value being 7 days.

Storage

The activated charcoal cartridges have undergone a complex conditioning process that ensures an outstanding chromatographic blank level, never exceeding three times the instrumental noise of a FID detector at the lowest attenuation.

Kept in a cool place and away from volatile organic compounds, the cartridges mantain unchanging blank level and adsorbing capacity for at least two years. Expiry day and lot number are printed onto the plastic bag wrapping each cartridge: its integrity stands as warranty seal.

After exposure the cartridges, well capped and kept in a cool and solvent-free place, mantain their content unalterated for at least six months.

Analysis

Extraction

Introduce 2 ml of CS_2 and 100 µl of internal standard solution (see next page) directly in the ***radiello*** glass tube without drawing out the cartridge. **Always use class A volumetric pipettes or dispensers.** Stir from time to time for 30 minutes. If analysis is not performed soon after, draw out the cartridge and discard it.

IMPORTANT

always use high purity grade CS_2, for example Fluka code 84713 or Aldrich code 34,227-0

BE CAREFUL

even refrigerated, CS_2 permeates the tube plastic cap: its volume decreases by 4-5% a day. If the internal standard has been added, it is only matter of unpleasant odour...

Calibration

Outdoor environment sampling

If benzene, toluene, ethylbenzene and xylenes (BTEX) have to be analyzed, prepare three or four standard solutions in CS_2 having decreasing concentrations of the analytes in the following ranges (in mg·l^{-1}):

benzene	0.04-17.6	ethylbenzene	0.04-17.7
toluene	0.09-34.8	m-xylene	0.04-17.2
o-xylene	0.04-17.6	p-xylene	0.04-17.2

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It is advisable to proceed via consecutive dilutions, starting for example from a stock solution containing 1 ml of each compound in 100 ml. Always use class A volumetric glassware. Introduce 2 ml of each standard solution, along with 100 µl of internal standard, onto a blank code 130 cartridge in its glass tube.

Analysis of unknown samples

Identify the sample that has been exposed for the longest time or at the highest expected concentration. Introduce 2 ml of CS_2 but do not add the internal standard, stir and let the sample stand for 30 minutes. Without discarding the cartridge, inject the CS_2 solution in the gas chromatograph with FID detector (see below), identify the compounds appearing in the chromatogram and make an estimation of the order of magnitude of their concentrations.

Prepare a CS_2 solution of the identified compounds with doubled concentration with respect to the sample. Dilute this solution in order to obtain standard solutions of concentration respectively about 0.1, 0.5 and 1 times the concentration estimated in the sample. Introduce 2 ml of each standard solution onto a blank code 130 cartridge in its glass tube, along with the chosen internal standard solution.

The chosen **internal standard** should have a retention time that does not interfere with other compounds in the chromatogram. Compatibly with this requirements, we suggest to employ a solution of **2-fluorotoluene** (e.g. Aldrich F 1,532-3) in CS_2 with concentration of 100 $\mu l \cdot l^{-1}$ for outdoor samples and 2 $ml \cdot l^{-1}$ for workplace samples.

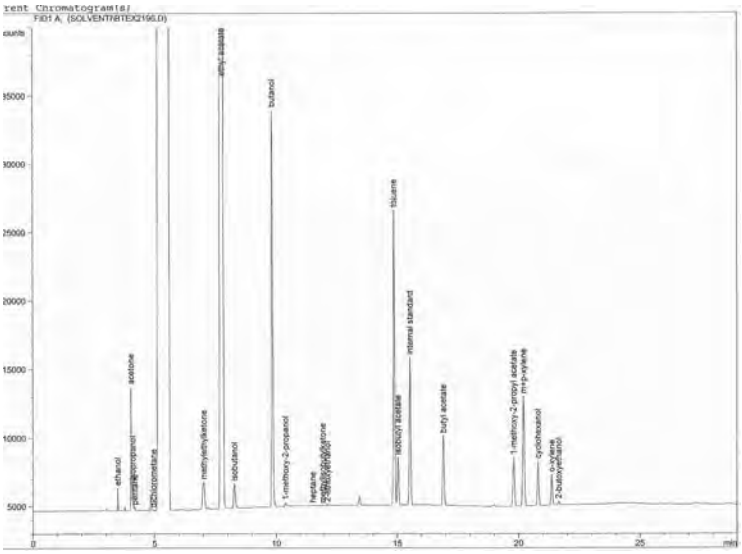
Add 2 ml of CS_2 and the internal standard to all of the samples, stir, let the samples stand for 30 minutes and discard the cartridges prior to the analysis.

Instrumental analysis (advised)

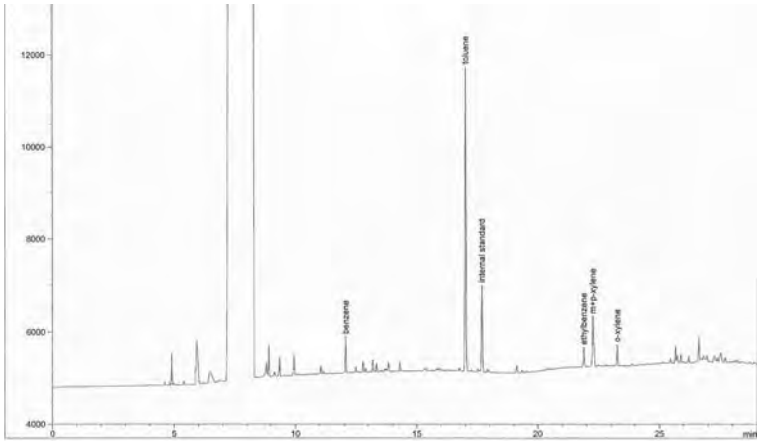
Capillary gas chromatography with FID detection

outdoor environment samples: 100% dimethylpolysiloxane column 0.2 mm·50 m, film thickness 0.5 µm; split injection of 2 µl; split ratio 25:1; nitrogen carrier gas at constant pressure of 20 psi; injector temperature 240 °C; oven initial temperature 35 °C for 5 minutes, 5 °C/min up to 90 °C, maintain for 3 minutes, 10 °C/min up to 220 °C, final isotherm for 5 minutes.

workplace samples: 100% dimethylpolysiloxane column 0.2 mm·50 m, film 0.5 µm; split injection of 3 µl, split ratio 100:1; carrier N_2 at constant pressure of 20 psi; injector temperature 240 °C; oven initial temperature 50 °C for 5 minutes, 5 °C/min up to 80 °C, 15 °C/min up to 135 °C, 20 °C/min up to 220 °C, final isotherm 10 minutes. Total time: 29 minutes. The retention times for several compounds analyzed under the described conditions are listed in the table on next page.



On top: *FID chromatogram of a real workplace sample*



on the left: *chromatogram of a real urban outdoor sample*

USER TIP

For a very accurate calibration we offer the **preloaded cartridges code 405** (outdoor environment) and **code 406** (workplace environment).

USER TIP

If you perform several analyses, a barcode reader will greatly improve productivity in your laboratory and will also minimize the possibility of errors in the copying of sample labels.

Please contact us to help you in the implementation of the reader.

We have also developed software solutions for the analytical data processing and automated production of analysis reports.

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	retention time (minutes)
methanol	4.834
ethanol	5.340
acetone	5.712
isopropanol	5.835
pentane	6.121
methyl acetate	6.346
dichloromethane	6.405
2-methylpentane	7.559
methylethylketone	7.719
3-methylpentane	7.941
ethyl acetate	8.331
n-hexane	8.402
isobutanol	8.763
methylcyclopentane	9.350
1,1,1-trichloroethane	9.636
butanol	9.956
isopropyl acetate	9.978
benzene	10.203
1-methoxy-2-propanol	10.424
cyclohexane	10.580
1,2-dichloropropane	11.285
trichloroethylene	11.625
isooctane	11.667
2-ethoxyethanol	11.831
propyl acetate	11.868
n-eptane	12.068
1-ethoxy-2-propanol	12.775
methylcyclohexane	12.912
methylisobutylketone	13.258
isobutyl acetate	14.005
toluene	14.055
butyl acetate	15.279
n-octane	15.435
tetrachloroethylene	15.601
diaceton alcohol	15.915
1-methoxy-2-propyl acetate	16.609
ethylbenzene	16.997
m+p-xylene	17.241
cyclohexanone	17.436
cyclohexanol	17.436
styrene	17.716
o-xylene	17.832
2-buthoxyethanol	17.880
n-nonane	18.186
α-pinene	19.129
n-decane	20.334
n-undecane	22.142

What make the code 130 cartridge incomparable?

the container



The container is made of stainless steel cloth AISI 316 with 100 mesh grid opening. It is electric welded with no supply of foreign materials. It has tolerance of ± 0.05 mm diameter and of ± 0.1 mm length.

the contents

The cartridge is packed with vegetal activated charcoal with a very large adsorbing surface. Its exceptionally low blank is obtained by conditioning it in a nitrogen stream fluidised bed at 450 °C for 16 hours. The fluidised bed technique does not only guarantee the thorough purification of adsorbing material but also performs an accurate selection of its granulometry, by ventilation separations of the fraction under 50 mesh and over 35 mesh.

the production

The cartridge is filled up with charcoal by a very complex automated apparatus that was designed and realised in our laboratory. It avoids any contamination of the adsorbing material during the delicate process of cartridge production and ensures a very accurate dosing of the material itself, providing a variability of less than 2% of the weight of the activated charcoal among the cartridges.





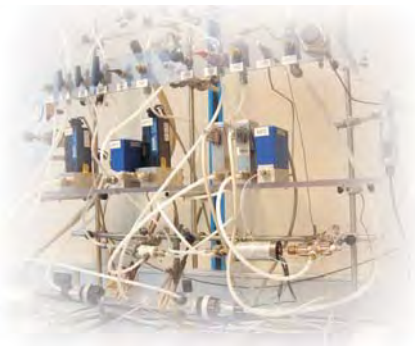
the quality control

Each cartridge batch undergoes statistical quality control of the blank level. If amounts higher than 20 ng of each of the BTEX compounds are found, the entire lot is discarded.

the sampling rate measurements

The sampling rate is measured in a standard atmosphere chamber unique in Italy (and one of the few found all over Europe) that allows the dynamic generation of high flows of controlled concentration gas mixtures from 1 $\mu g \cdot m^{-3}$ to 1,000 $mg \cdot m^{-3}$ (dynamic range from 1 to 10^6) of each investigated compound alone or mixed with others. The chamber allows temperature control from -20 to 60 °C, relative humidity control from 5% to 100% and air speed variation from 0.1 to 10 $m \cdot s^{-1}$.

All of the gas flows are measured as mass flows and have therefore the properties of primary standards. All of the operating parameters (gas flows, temperature, relative humidity, ...) are recorded and the records are available along with the certification documents.



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Volatile organic compounds (VOCs)

thermally desorbed

Radiello components to be used:

Yellow diffusive body code 120-2
Supporting plate code 121
Vertical adapter code 122 (optional)
Adsorbing cartridge code 145

Principle

Code 145 is a stainless steel net cylinder, with 3x8 µm mesh grid opening and 4.8 mm diameter, packed with 350 ± 10 mg of graphitised charcoal (Carbograph 4), particle size is 35-50 mesh.

Volatile organic compounds are trapped by adsorption and recovered by thermal desorption, analysis is performed by capillary gas chromatography and FID or MS detection.

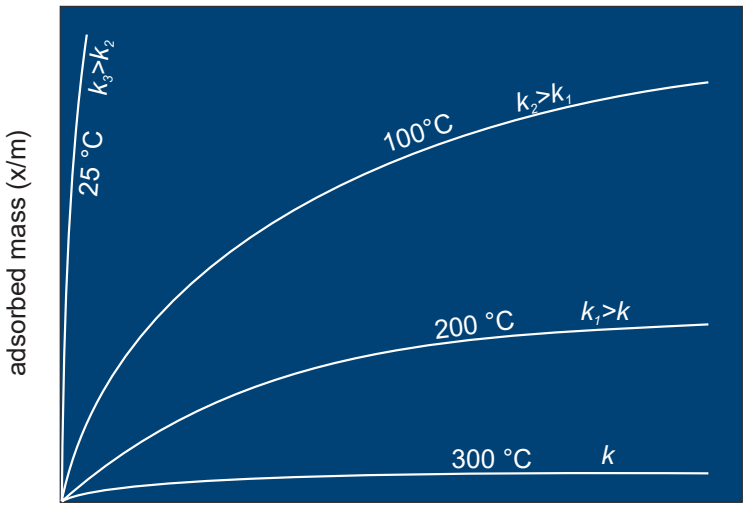
General considerations

Thermal desorption is an easy-to-use technique, but it implies some precautions and is of less general use than chemical desorption.

The recovery of adsorbed compounds is based onto the different shape of adsorption isotherms at different temperatures. Since quantitative desorption of trapped molecules should ideally be accomplished at moderate temperatures, only weak adsorbing media are employed, with active adsorbing surface between 10 and 50 times smaller than that of activated charcoal.

Use of thermal desorption requires therefore an accurate preliminary investigation about the adsorbed compound - adsorbing medium pair. Stronger adsorbents are suitable for very volatile compounds, but will yield only partial desorption of heavier compounds.

Anyway, *backdiffusion* (see page A3) is always lying in wait: due to the adsorbing medium weakness heavier compounds will eventually displace the more volatile ones. Once you have made an accurate choice of the adsorbing material, therefore, you should bear in mind that a real atmosphere is composed by a variety of compounds apart from those you are analyzing at unpredictable concentrations. As a consequence, sampling times can not be as long as those allowed by activated charcoal, otherwise lighter compounds will be lost. With the purpose of allowing reasonable sampling times (up to two weeks) the sampling rate has been dramatically reduced by changing the diffusive body from the white type (code 120) to the yellow one (code 120-2). Smaller average pore size and



When in contact with a solid adsorbing medium, a gaseous compound will be adsorbed following the Freundlich isotherm*, that is to say the adsorbed mass will be* x/m=kC$^{1/n}$*, where* x *is the mass of gaseous compound adsorbed by the mass m of the solid adsorbent and C is the concentration of the gaseous compound at the equilibrium in the gas phase. K and n depend on temperature and on the adsorbate - adsorbing medium pair. K increases with decreasing temperature and n is the closer to 1 the stronger the adsorbent.*

At low temperatures, x/m *depends almost linearly on the concentration in air (see the curve at 25 °C): this allows diffusive sampling. At high temperatures, the adsorbent mass is very low whatever the concentration in the gas phase: this allows the recovery of adsorbed compounds by heating (see the curve at 300 °C).*

To ensure the best possible recovery yields, k and n have to be small. This, however, will compromise sampling efficiency. In other words, compounds strongly adsorbed at room temperature will be only partially recovered by thermal desorption. On the other hand, compounds that are easily desorbed by heating will be sampled at room temperature with low efficiency.

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thicker diffusive membrane make the diffusive path longer and, as a consequence, sampling rates are reduced to less than one third compared to those obtained with white diffusive bodies.



Some compounds, moreover, are thermally unstable. Thermal degradation of such compounds will cause an underestimation of their concentration or the appearance of ghost peaks.

Thermal desorption is neverthless an outstanding analytical technique because it is easy to perform, it does not require the use of toxic solvents as carbon disulfide, it ensures very low limits of detection, is suited to mass spectrometric detection and allows the recovery of the adsorbing cartridges. Basing on our experience, we have chosen Carbograph 4 as the best compromise between sampling efficiency and recovery yields for a wide range of organic compounds.

Sampling rates

Sampling rate values at 298 K (25 °C) and 1013 hPa are listed in table on page ***E3***. All of the values shown have been experimentally measured. Exposure tests have been performed up to the levels shown (in $\mu g \cdot m^{-3} \cdot min$) and sampling rates are guaranteed to be linear up to the limit values and for overall concentration of volatile organic compounds in air not exceeding 2,000 $\mu g \cdot m^{-3}$.

Effect of temperature, humidity and wind speed

Sampling rates varies from the value at 298 K on the effect of temperature (in Kelvin) as expressed by the following equation

$$Q_K = Q_{298} \left(\frac{K}{298}\right)^{1.5}$$

where Q_K is the sampling rate at the temperature **K** and Q_{298} is the reference value at 298 K. This produces a variation of ± 5% for 10 °C variation (upwards or downwards) from 25 °C.

Sampling rate is invariant with humidity in the range 15-90% and with wind speed between 0.1 and 10 $m \cdot s^{-1}$.
Do not expose directly ***radiello*** to rain: even if small amounts of water are adsorbed by Carbograph 4, they can neverthless interfere with analysis.

Calculations

The listed sampling rate values take already into account the recovery yields of adsorbed compounds. **The average concentration over the sampling period is therefore calculated from sampled mass of analyte and exposure time <u>without introducing any other corrective factor</u>,** apart from temperature variations of Q.

Average concentration ***C*** in $\mu g \cdot m^{-3}$ over the whole exposure time is calculated according to the following expression:

$$C\ [\mu g \cdot m^{-3}] = \frac{m\ [\mu g]}{Q_K\ [ml \cdot min^{-1}] \cdot t\ [min]}\ 1{,}000{,}000$$

where:
m = mass of analyte in µg
t = exposure time in minutes

Exposure

Workplace environment

The use of ligth adsorbing media is not recommended in the workplace environment.



Other indoor sampling experiments and outdoor campaigns

Thermal desorption is exceptionally suited for long exposure times at low concentrations, as in outdoor campaigns and some indoor environments (e.g. homes, schools, etc...), particularly if the subsequent analysis is performed by HRGC-MS.

The recommended exposure times range from 8 hours to the upper limits shown in the table below. It is advisable to reduce sampling time if the estimated overall VOCs concentration is higher than 2,000 $\mu g \cdot m^{-3}$.

Sampling rate values at 25°C (298 K)

	sampling rate $ml \cdot min^{-1}$	exposure time upper limit	linear up to $\mu g \cdot m^{-3} \cdot min$	uncertainty (2σ) %	limit of detection[1] $\mu g \cdot m^{-3}$
benzene	27.8	7	410,000	8.3	0.05
benzene	26.8	14	410,000[2]	7.5	0.05
butyl acetate	24.5	14	580,000	12.4	0.05
2-butoxyethanol	19.4	14	550,000	9.7	0.1
cyclohexane	27.6	7	470,000	14.7	0.1
n-decane	22.3	14	450,000	22.4	0.1
1,4-dichlorobenzene	22.0	14	650,000	9.5	0.1
dimethyl disulfide	23.7	7	500,000	9.1	0.04
n-heptane	25.3	14	420,000	7.6	0.05
n-hexane	25.5	7	420,000	10.9	0.05
ethylbenzene	25.7	14	550,000	9.1	0.01
2-ethyl-1-hexanol	14.3	14	550,000	17.4	0.07
2-ethoxyethanol	26.0	14	570,000	7.7	0.05
2-ethoxyethyl acetate	20.9	14	600,000	8.0	0.05
isopropyl acetate	25.8	7	540,000	9.6	0.1
limonene	12.8	14	550,000	24.8	0.2
2-methoxyethanol	4.0	7	1,000,000	--	1.0
2-metoxyethyl acetate	21.0	7	1,000,000	--	0.1
1-methoxy-2-propanol	26.6	7	600,000	11.6	0.2
n-nonane	21.0	14	440,000	11.8	0.07
n-octane	24.1	14	440,000	13.4	0.07
α-pinene	6.4	14	550,000	29.5	0.2
styrene	27.1	14	550,000	24.0	0.01
tetrachloroethylene	25.4	7	1,000,000	8.9	0.02
toluene	30.0	14	550,000	8.3	0.01
1,1,1-trichloroethane	20.0	7	300,000	13.0	0.1
trichloroethylene	27.1	7	800,000	9.5	0.02
1,2,4-trimethylbenzene	21.9	14	550,000	9.6	0.05
n-undecane	12.0	14	520,000	32.7	0.05
m-xylene	26.6	14	550,000	11.3	0.01
o-xylene	24.6	14	550,000	9.1	0.01
p-xylene	26.6	14	550,000	11.3	0.01

[1]after 7 days exposure and with MS detection; analytical conditions as described in the Analysis paragraph
[2]for overall VOCs concentrations not exceeding 500 $\mu g \cdot m^{-3}$

Storage

The cartridges have undergone a complex conditioning procedure that ensures an outstanding chromatographic blank level. If kept in a cool place without VOCs contamination, blank level and adsorbing capacity stay unaltered for at least eighteen months.

After exposure the cartridges, well capped and kept in a cool and solvent-free place, are stable for at least three months.

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Analysis

The analytical methods hereafter described have been set up with the Perkin-Elmer Turbomatrix thermal desorber and Agilent 5973 MSD mass spectrometer detector. They may be implemented on other instruments by introducing minor adjustements as suggested by the analyst's experience and characteristics of employed instrumentation.

In the following we propose two methods, one for **BTEX** analysis and another for **VOCs**. The former is suited to outdoor sampling in urban monitoring, where investigation is usually focussed onto benzene, toluene, ethylbenzene and xylene isomers. The latter is conceived for indoor monitoring, allowing quantification of all the compounds listed on page E3 and also extended qualitative analysis. The two methods differ by a few details, such as the higher desorption temperature for VOCs and the higher cryofocusing temperature for BTEX. The latter caution is introduced to avoid freezing of excess humidity gathered during the sampling in the cryofocusing trap.

Desorption

The thermal desorber is equipped with 1/4" s.s. sample tubes, they have to be hollow and free: discard the stainless steel gauze disk which is fitted to the groove and discard also the springs if present.

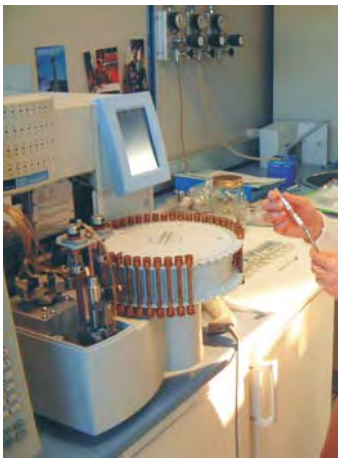
Code 145 cartridge has been dimensioned to fit the diameter of Turbomatrix thermal desorption tubes. Its length is such that, when the cartridge is introduced into the tube and is stopped by the groove, it is positioned exactly centrally with respect to the tube length.

Inner diameter of Perkin-Elmer tubes is not always exactly the same; it may be the case therefore that a cartridge code 145 does not slide easily into the tube. Some pushing tool may be helpful then, such as a 500 µl syringe piston, a glass bar or an iron wire 2-3 mm thick.

In some cases the tube inner diameter is sligthly larger than the cartridge outer diameter: the cartridge can therefore be pushed out from the tube during desorption due to the desorption gas pressure. If this is the case, make use of the springs provided along with the tubes.

Once capped, the Turbomatrix steel tube has to be positioned in the carousel with the grooves on the bottom.

The described conditions have been optimized for seven days exposures to typical concentrations of urban atmospheres and indoor environments. Shorter exposure times or considerably higher concentrations would require different settings of split flows, with the purpose of ensuring good analytical sensitivity or linearity of response.



Usually, the cartridge enters into the Turbomatrix tube by simple pouring. If it does not occur, use a pushing tool to press the cartridge till the nick on the tube.

BTEX

Temperatures and timing

- ✓ Desorption: 320 °C for 10 minutes
- ✓ Cryofocusing trap (Tenax TA): during primary desorption mantain 2 °C, secondary desorption at 99 °C/sec up to 290 °C, 1 minute at 290 °C
- ✓ Six port valve: 150 °C
- ✓ Transfer line: 200 °C

Flows

- ✓ Carrier gas: helium, 24 psi
- ✓ Desorption flow: 100 ml·min^{-1}
- ✓ Inlet split: 90 ml·min^{-1}
- ✓ Outlet split: 30 ml·min^{-1}

VOCs

Temperatures and timing

- ✓ Desorption: at 370 °C for 15 minutes
- ✓ Cryofocusing trap (Tenax TA): during primary desorption mantain at -20 °C, secondary desorption at 99 °C/sec up to 290 °C, 1 minute at 290 °C
- ✓ Six port valve: 150 °C
- ✓ Transfer line: 200 °C

Flows

- ✓ Carrier gas: helium, 24 psi
- ✓ Desorption flow: 100 ml·min^{-1}
- ✓ Inlet split: 90 ml·min^{-1}
- ✓ Outlet split: 30 ml·min^{-1}



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Instrumental analysis

Analytical parameters for BTEX and VOCs are the same, apart from the duration of chromatographic run and final temperature.

We recommended the following conditions:

Column

100% dimethylpolysiloxane, length 50 m, i.d. 0.2 mm, film thickness 0.5 µm; the column is directly fitted to the six-port valve of Turbomatrix apparatus.

Temperatures

- ✓ GC oven: 40 °C for 3 minutes, 8 °C/min up to 80 °C, mantain for 1 minute, 20 °C/min up to 250 °C for BTEX and up to 280 °C for VOCs, final isotherm 1.5 minutes for BTEX and 3 minutes for VOC
- ✓ GC-MS interface: 270 °C

USER TIP

If you perform several analyses, a barcode reader will greatly improve productivity in your laboratory and will also minimize the possibility of errors in the copying of sample labels.

Please contact us to help you in the implementation of the reader.

We have also developed software solutions for the analytical data processing and automated production of analysis reports.

Flows

- ✓ Carrier gas: helium, 0.8 ml·min^{-1}

USER TIP

For a very accurate BTEX calibration we offer the **preloaded cartridges code 407.**

On page E6 we display two total ion current chromatograms from an outdoor urban site and an indoor sampling respectively.

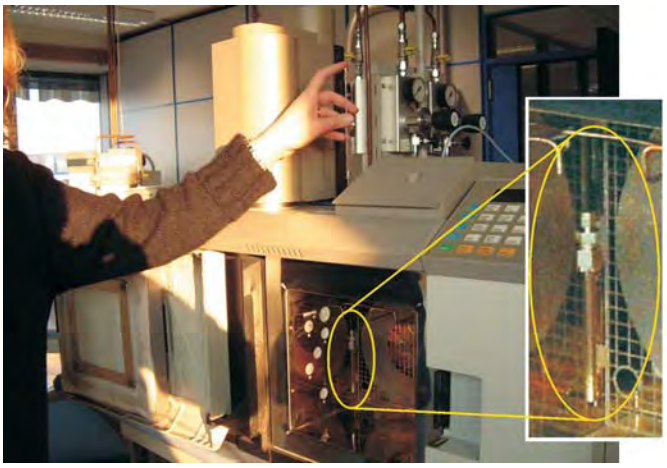
In the first case, the benzene peak corresponds to an average concentration of 2.2 µg·m^{-3}; in the second the concentration of 1,4-dichlorobenzene was 14 µg·m^{-3}. Despite the low concentration values, the signal-to-noise ratio is very high in both cases. As a consequence, very reliable mass spectral identification is possible.

Calibration

Calibration curves are obtained by gas-phase injection of methanol solutions of the target compounds onto blank cartridges. Injections are performed through a GC injector, where a short piece (10 cm) of wide-bore (0.53 i.d.) deactivated uncoated column is installed. The other end bears a Swagelock reducing connection (1/16"-1/4"). The 1/4" Swagelock nut has to be equipped with a PTFE *ferrule* instead of the original steel one (use PTFE ferrules that come along with the Turbomatrix caps).

Introduce a blank cartridge in a Turbomatrix tube and fit the tube to the Swagelock nut. Mantain the injector at 200 °C but do not heat the oven. Inject slowly 1 µl of each calibration solution under nitrogen flow (50 ml/min) and let the system purge for 2 minutes. Analyze the cartridge as you would do with a sample.

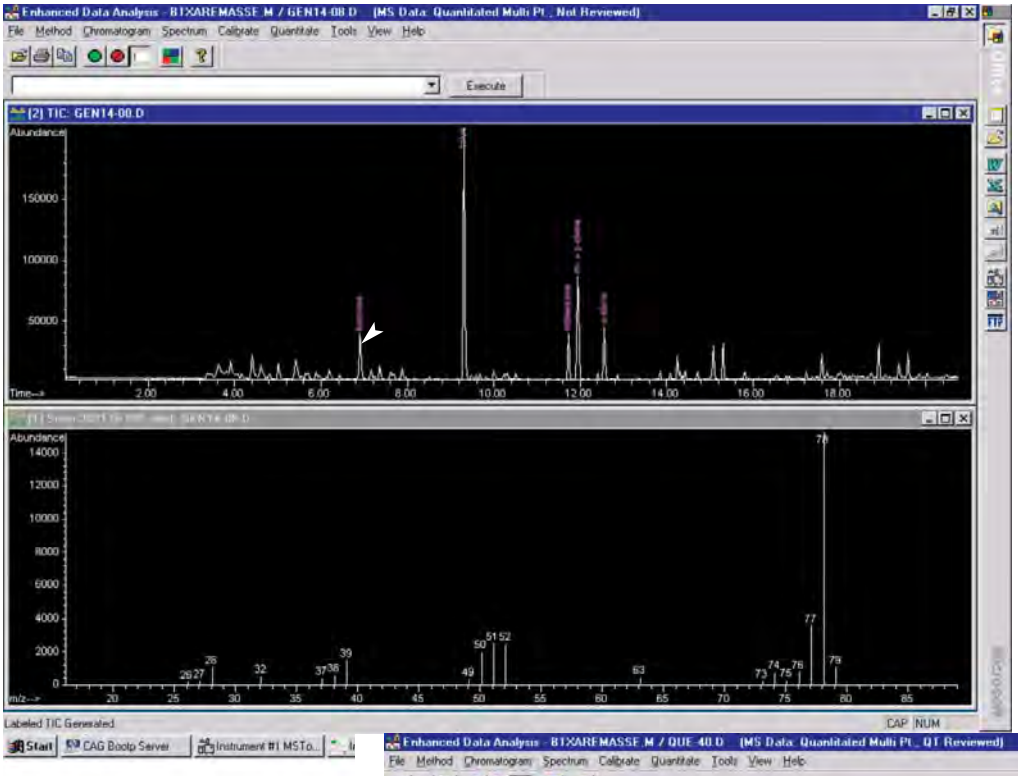
We suggest you to prepare a complete set of calibration solutions by subsequent dilutions such as they contain, for example, 8, 4, 2, 1, 0.04, 0.02 and 0.01 µg·µl^{-1} of each compound.



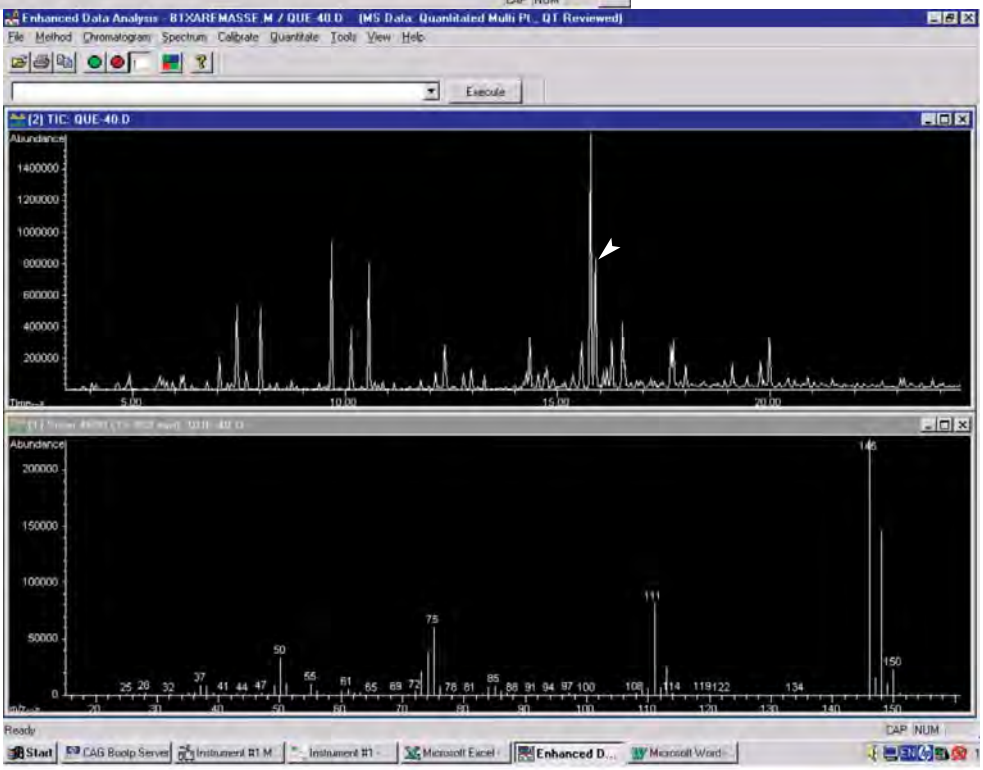
To prepare the calibration standards fit a 1/16"-1/4" Swagelock reducing connection to the GC injector by a short piece (10 cm) of wide-bore deactivated uncoated column.



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TIC chromatograms of an outdoor urban sampling (left) and of indoor air (bottom). Mass spectra of benzene and of 1,4-dichlorobenzene are shown on the bottom of each picture, at concentrations of 2.2 and 14 µg·m^{-3} respectively. Despite the low concentration values, the signal-to-noise ratio is very high in both cases.
As a consequence, very reliable mass spectral identification is possible by comparison with mass spectral data libreries with no need of further processing.



Cartridge recovery

In principle, the thermal desorption analysis leaves a conditioned cartridge that can be used as it is for another sampling. Actually this is not the case since the desorption yield, even if very high, is never quantitative, particularly for compounds with more than six carbon atoms. We recommende therefore to re-condition the cartridges after analysis, keeping them at 350 °C for eight hours under nitrogen flow.

Graphitized charcoal is a fragile material that exhibits a tendency to turn to dust under mechanical stress during the use on field and in the laboratory. Even if the stainless steel net mesh grid opening is a few micrometers, dust is lost anyway and the cartridge will eventually become empty. As soon as the mass of graphitized charcoal is reduced by 20% the cartridge has to be discarded. Basing onto our experience, this will occur after at least twenty sampling-and-analysis cycles.

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Nitrogen and sulfur dioxides (NO_2 and SO_2)

Radiello components to be used:

Blue diffusive body code 120-1
Supporting plate code 121
Vertical adapter code 122 (optional)
Chemiadsorbing cartridge code 166

Principle

The cartridge code 166 is made of mycroporous polyethylene coated with triethanolamine (TEA). Nitrogen (NO_2) and sulfur (SO_2) dioxide is chemiadsorbed onto TEA as nitrite and sulphite or sulphate ions respectively. Nitrite is quantified by visible spectrophotometry while sulphite and sulphate are analysed by ion chromatography (NO_2 and SO_2 can be analysed together by ion chromatography).

Sampling is selective for gaseous molecules: any airborne nitrite, sulphite or suplhate will not cross the diffusive membrane.

Sampling rates

NO_2

The sampling rate value $\mathbf{Q_{298}}$ at 298 K (25°C) and 1013 hPa is **0.141 ± 0.007 ng·ppb^{-1}·min^{-1}**.

SO_2

The sampling rate value $\mathbf{Q_{298}}$ at 298 K (25°C) and 1013 hPa is **0.466 ± 0.022 ng·ppb^{-1}·min^{-1}.**

Effect of temperature, humidity and wind speed

Sampling rate of NO_2 varies from the value at 298 K on the effect of temperature (in Kelvin) following the equation:

$$Q_K = Q_{298} \cdot \left(\frac{K}{298}\right)^{7.0}$$

where $\mathbf{Q_K}$ is the sampling rate at the temperature **K** ranging from 263 to 313 K (from -10 to 40 °C) and $\mathbf{Q_{298}}$ is the reference value at 298 K.
Sampling rate for SO_2 does not vary with temperature between 263 and 313 K (from -10 to 40 °C).
Sampling rate is invariant with humidity in the range 15 - 90% and with wind speed between 0.1 and 10 m·s^{-1} for both gases.

Calculations

NO_2

The concentration $\mathbf{C_{NO_2}}$ is calculated according to the equation:

$$C_{NO2} = \frac{m_{NO_2}}{Q_K \cdot t}$$

where $\mathbf{m_{NO_2}}$ is nitrite mass in **ng** found on the cartridge, **t** is exposure time in **minutes** and $\mathbf{Q_K}$ is the sampling rate value at the temperature **K** in Kelvin.

SO_2

Convert the sulphite found onto the cartridge into sulphate by multiplying its mass by 1.2, then sum the obtained value to the sulphate found in the cartridge. The concentration in ppb is calculated according to the equation:

$$C_{SO2} = \frac{m_{SO_4}}{0.466 \cdot t}$$

where $\mathbf{m_{SO_4}}$ is the overall sulphate mass in ng found in the cartridge (sulphate itself and sulphite converted into sulphate) and **t** is exposure time in minutes.

USER TIP
It is advisable to measure the sampling temperature by the thermometer **code 126**.

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Exposure

Exposure up to 15 days is feasible but if relative humidity is higher than 70% for the entire sampling duration it is not advisable to sample for more than 7 days. Due to the fact that TEA is very hygroscopic in fact, even if water does not actually interfere with sampling or analysis, the excess water adsorbed by the cartridge could cause some loss of adsorbing medium by percolation.

Limit of quantitation and uncertainty

Sampling rate of NO_2 and SO_2 is linear ranging from 10,000 to 5,000,000 ppb·min. Limit of quantitation after 7 days exposure is 1 ppb for both gases. The uncertainty at 2σ is 11.9% for NO_2 and 9.2% for SO_2.

Storage

The cartridges are stable for at least 12 months before and 4 months after the sampling, if kept in the dark at 4 °C. Expiry date is printed on the plastic bag.

Do not expose all of the cartridges belonging to the same lot, keep at least two of them as blanks.

Analysis

Add **5 ml** of water in the plastic tube with the cartridge and stir vigorously by a vortexer for 1 minute. Do the same with two-three unexposed cartridges.

Colorimetric determination of nitrite ion

Nitrogen dioxide is quantitatively converted to nitrite ion. Prepare the following reactives:

- ✓ *sulphanilamide*: dissolve 10 g of sulphanilamide in 100 ml concentrated HCl and dilute to 1,000 ml with water
- ✓ *NEDA*: dissolve 250 mg of N-(1-naphthyl)ethylendiamine dihydrochloride in 250 ml of water (discard the solution when it turns brown).

Transfer 0.5 ml (or a different volume, see the table below) of the cartridge extraction solution to a plastic or glass 10 ml tube along with 5 ml of *sulphanilamide* reactive. Cap tigthly, stir and wait for 5 minutes. Add 1 ml of *NEDA* reactive, stir and wait for 10 minutes. Do the same with unexposed cartridges.

Measure the absorbance of samples at 537 nm using water to zero the spectrophotometer, then subtract the blank value from unexposed cartridges. Prepare the calibration standards in the same way from sodium nitrite solutions of concentration ranging from 0.1 to 20 $mg \cdot l^{-1}$ expressed as NO_2^-.

When nitrite ion concentration is higher than 20 $\mu g \cdot ml^{-1}$ (corresponding to 7 days of exposure to 70 ppb) the absorbance value is no longer comprised in the calibration curve. To analyse the samples, draw smaller amounts of the extraction solution as shown in the table. In order to mantain the overall volume unaltered, add the listed volume of water.

average expected concentration for 7 days exposure in ppb	sample volume ml	water volume to be added ml
up to 70	0.5	0
from 70 to 150	0.25	0.25
higher than 150	0.1	0.4

Determination of the sulphite and sulphate ions

Though SO_2 is converted into sulphite and sulphate ions with variable ratios, the sum of the two ion equivalents is linear with exposure to SO_2. To obtain calibration curves, prepare solutions containing both ions at concentrations ranging from 5 to 50 $mg \cdot l^{-1}$. Perform the ion chromatography analysis of the standard solutions and the extraction solutions from ***radiello*** cartridges in the same way according to your usual laboratory practice.

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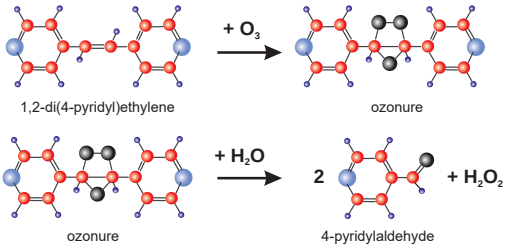
Ozone (O_3)

Radiello components to be used:

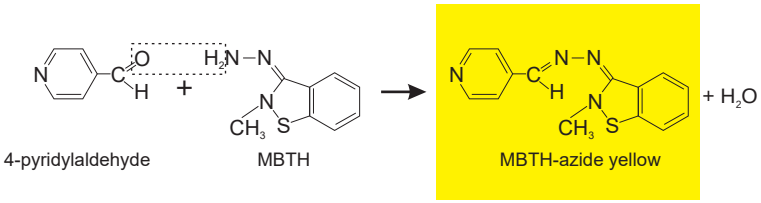
Blue diffusive body code 120-1
Supporting plate code 121
Vertical adapter code 122 (optional)
Chemiadsorbing cartridge code 172

Principle

The adsorbing cartridge is formed by a micropore polyethylene tube filled with silica gel coated with 4,4'-dipyridylethylene and closed, at one end, by a PTFE cap. Upon exposure, acid-catalysed ozonolysis of 4,4'-dipyridylethylene leads to 4-pyridylaldehyde.



Silica gel ensures the presence of water, necessary to complete ozonolysis reactions.
In the laboratory, 4-pyridylaldheyde is condensed with 3-methyl-2-benzothiazolinone hydrazone (MTBH) to yield the corresponding azide, yellow coloured.
The absorbance of the solution is measured at 430 nm. Production of 4-pyridylaldehyde is a specific reaction of ozone; neither nitrogen oxides nor organic compounds, if present, do interfere.



Sampling rate

The sampling rate value Q_{298} at 298 K (25°C) and 1013 hPa is **24.6 ml·min^{-1}**.
Sampling is linear in the exposure range from 10,000 to 4,000,000 µg·m^{-3}·min^{-1}.

Effect of temperature, humidity and wind speed

Sampling rate varies from the value at 298 K on the effect of temperature (in Kelvin) as expressed by the following equation:

$$Q_K = Q_{298} \left(\frac{K}{298} \right)^{1.5}$$

where Q_K is the sampling rate at the temperature K and Q_{298} is the reference value at 298 K.
Sampling rate is not influenced by humidity or wind speed.

Calculations

The average concentration over the whole exposure time is calculated according to the equation

$$C\ [\mu g \cdot m^{-3}] = \frac{m\ [\mu g]}{24.6\ t\ [min]}\ 1{,}000{,}000$$

where ***m*** is ozone mass in µg sampled by ***radiello*** and **t** is exposure time in minutes.

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G2



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Exposure

Introduce the cartridge in the diffusive body and make sure **that the PTFE cap is positioned at the same end of the screw.**

In outdoor environments, where typical ozone concentrations range from 2 to 400 $\mu g \cdot m^{-3}$, we suggest exposure time from 24 hours to 14 days. The ideal range is from 3 to 7 days.

In workplace environments it is advisable to sample over the entire 8 hours shift.

Limit of detection and uncertainty

The limit of detection is 2 $\mu g \cdot m^{-3}$ for 7 days exposures. The cartridge is saturated after 14 days exposure at 400 $\mu g \cdot m^{-3}$. The uncertainty at 2σ is 14.5% over the whole sampling rate linearity range.

Storage

The cartridges need only protection from direct sunlight: keep them in a drawer or a cupboard at room temperature. In these conditions, the blank level does not exceed 0.015 absorbance units for up to six months.

Expiry date is printed onto the plastic bag wrapping each cartridge.

Generally, an increase of blank level does not imply that the cartridge must be discarded. The only consequence is a corresponding increase of the analytical limit of quantification.

After exposure the samples have to be stored in the dark as before, along with three unused cartridges to be analysed as blanks. Analyse them within a week.

Analysis

Reactives and materials

- ✓ 3-methyl-2-benzothiazolinone hydrazone hydrocloride (MBTH): dissolve 5 g per litre in water and add 5 ml of concentrated sulphuric acid; this solution is to be freshly prepared.
- ✓ 4-pyridylaldehyde
- ✓ micropore filter membrane 0.45 µm

USER TIP

For a simple and accurate filtration make use of the **filtration kit code 174**.

Procedure

Draw the cartridge out from the plastic tube, discard the PTFE cap and pour the silica gel into the tube. Add 5 ml of MBTH solution, recap the tube and stir vigorously. **Let the tube stand for at least one hour to react**, stirring from time to time. Filter through the micropore filter (if you make use of the code 174, act as follows: fit the filter to the syringe, transfer the solution from the tube to the syringe and filter it into a second tube or directly into the spectrophotometer measure cell).

IMPORTANT

If the absorbance value is higher than the calibration curve upper limit dilute the sample with the MBTH solution: **never use water to dilute!** Water alters the pH of the solution with unpredictable variations in the linearity of absorbance values vs concentration.

Measure absorbance at 430 nm using water to zero the spectrophotometer. The yellow colour is stable for several days if the solution is kept well capped in its tube.

Treat in the same manner three unused cartridges of the same lot and subtract the average blank value from the absorbance values of the samples.

Calibration

Dissolve 100 µl (112.2 mg at 20° C) of 4-pyridylaldehyde in 1 litre of water and dilute this solution (e.g. 1:2, 1:5, 1:10) to obtain calibration solutions. Transfer 0.5 ml of each calibration solution in a plastic tube together with 4.5 ml of MTBH solution. Stir and let stand for one hour, then read the absorbance at 430 nm (filtration is not needed). Plot the calibration curve for ozone mass *vs* measured absorbance, taking into account that:

1 µg of 4-pyridylaldehyde = 0.224 µg of ozone.

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Hydrogen sulfide (H_2S)

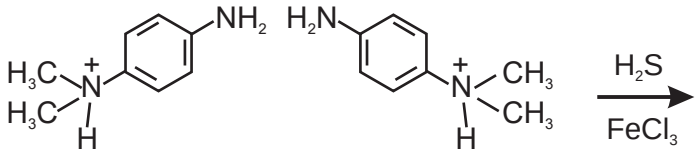
Radiello components to be used

White diffusive body code 120
Supporting plate code 121
Vertical adapter code 122 (optional)
Chemiadsorbing cartridge code 170

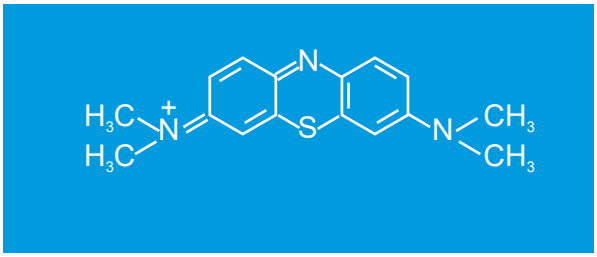
Principle

The cartridge code 170 is made of microporous polyethylene and impregnated with zinc acetate. Hydrogen sulphide is chemiadsorbed by zinc acetate and transformed into stable zinc sulfide.

The sulfide is recovered by extraction with water. In contact with an oxidizing agent as ferric chloride in a strongly acid solution it reacts with the N,N-dimethyl-p-phenylendiammonium ion to yield methylene blue.



N,N-dimethyl-p-phenylendiammonium



Methylene blue

Methylene blue is quantified by visible spectrometry.

Sampling rate

Sampling rate $\mathbf{Q_{298}}$ at 298 K (25°C) and 1013 hPa is **0.096 ± 0.005 ng·ppb^{-1}·min^{-1}**.

Effect of temperature, humidity and wind speed

Sampling rate varies from the value at 298 K on the effect of temperature (in Kelvin) as expressed by the following equation:

$$Q_K = 0.096 \left(\frac{K}{298}\right)^{3.8}$$

where $\mathbf{Q_K}$ is the sampling rate at the temperature K ranging from 268 to 313 K (from -5 to 40 °C).

Sampling rate is invariant with humidity in the range 10 - 90% and with wind speed between 0.1 and 10 m·s^{-1}.

Calculations

Once Q_K at the sampling temperature has been calculated, the concentration **C** is obtained according to the equation:

$$C = \frac{m}{Q_K \cdot t} 1{,}000$$

where **m** is the mass of sulphide ion in µg found onto the cartridge and **t** is exposure time in minutes.

Exposure

Exposure duration may vary from 1 hour to 15 days. Sampling is linear from 2,000 to 50,000,000 ppb·min of H_2S.

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Limit of detection and uncertainty

The limit of detection is 30 ppb for 1 hour exposure or 1 ppb for 24 hour exposure. The uncertainty at 2σ is 8.7% over the whole exposure range.

Storage

The cartridges are stable at least for 12 months before and 6 months after exposure. Do not expose all of the cartridges of the same lot: keep at least two of them as blanks.

Analysis

Reactives

- ✓ *sulphuric acid*: slowly add 25 ml of concentrated sulphuric acid to 10 ml water and let the solution cool;
- ✓ *amine*: dissolve 6.75 g of N,N-dimethyl-p-phenylendiammonium oxalate in the *sulphuric acid* solution. Dilute this solution to 1 litre with sulphuric acid - water 1:1 v/v. Kept in a dark bottle and well capped, this solution is stable for at least four weeks. **CAUTION**: this solution is very poisonous.
- ✓ *ferric chloride*: dissolve 100 g of ferric chloride hexahydrate ($FeCl_3 \cdot 6H_2O$) in 40 ml of water.
- ✓ *ferric chloride-amine*: mix 10 ml of *ferric chloride* solution with 50 ml of *amine* solution. This solution has to be freshly prepared;
- ✓ *sulphuric acid for dilution*: slowly dissolve 40 ml of concentrated sulphuric acid in 900 ml of water, let the solution cool and make up to 1,000 ml.

Procedure

Add 10 ml of water to the plastic tube containing the cartridge, recap and stir vigorously, preferably by a VORTEX stirrer.

Add 0.5 ml of *ferric chloride - amine* solution, recap **immediately** and stir. The tube must be capped immediately in order to avoid that the developed hydrogen sulfide can escape from the tube before reacting.

Wait for 30 minutes and measure absorbance at 665 nm using water to zero the spectrophotometer. The colour is stable for several weeks.

Do the same with two or three unexposed cartridges of the same lot and obtain the average blank value, then subtract it to the samples.

IMPORTANT

Absorbance is linear up to 1,200 absorbance units, corresponding to an exposure value of about 80,000 ppb·min. If higher absorbance values are obtained, dilute the samples with the sulphuric acid for dilution.

Be careful to apply the same dilution ratio to the samples and the blanks.

NEVER USE WATER TO DILUTE.

Calibration

Calibration curves may be prepared by sodium sulfide standard solutions, which have to be titrated just before use. As diluted sodium sulfide solutions are very unstable (the sulfide content can diminish as much as the 10% in an hour) it is strongly recommended to make use of the calibration solution code 171, following the instructions included.

USER TIP

Code 171 calibration solution relieves you from the task of preparation and titration of the sodium sulfide solutions.

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Ammonia (NH_3)

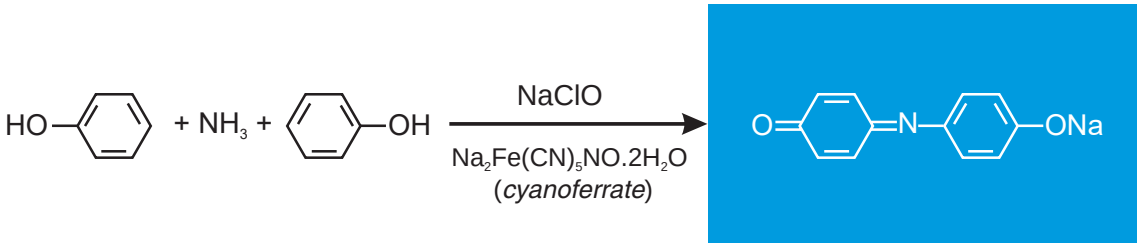
Radiello components to be used

Blue diffusive body code 120-1
Supporting plate code 121
Vertical adapter code 122 (optional)
Chemiadsorbing cartridge code 168

Principle

The cartridge code 168 is made of microporous polyethylene and impregnated with phosphoric acid. Ammonia is adsorbed as ammonium ion. Airborne ammonium salts dispersed as particulate matter do not cross the diffusive membrane of radiello.

Ammonium ion is quantified by visible spectrometry as indophenol: at basic buffered pH ammonium ion reacts with phenol and sodium hypochlorite, with pentacyanonitrosylferrate catalysis (in the following *cyanoferrate*), to form indophenol. The reaction product is intensely coloured in blue, and its absorbance measured at 635 nm.



indophenol

Sampling rate

Sampling rate $\mathbf{Q_{298}}$ at 298 K (25°C) and 1013 hPa is **235 ml·min^{-1}**.

Effect of temperature, humidity and wind speed

The effect of temperature on sampling rate is negligible (<0.1%/°C) in the range from 275 - 312 K (2 - 39 °C). Sampling rate is invariant with humidity in the range 10 - 90% and with wind speed between 0.1 and 10 m·s^{-1}.

Calculations

The concentration **C** in µg·m^{-3} is obtained according to the equation:

$$\mathbf{C} = 0.944 \frac{\mathbf{m}}{\mathbf{235 \cdot t}} 1{,}000{,}000$$

where **m** is the mass of ammonium ion in **µg** found onto the cartridge and **t** is exposure time in **minutes**.

0.944 is the numerical factor necessary to convert ammonium ion into ammonia (see Analysis)

Exposure

Introduce the cartridge in the diffusive body and make sure **that the PTFE cap is positioned at the same end of the screw.**

Ammonia is sampled linearly in the range from 2,000 - 20,000,000 µg·m^{-3}·min. Exposure time is allowed to range from 1 hour to 14 days.

IMPORTANT

Do not touch the microporous portion of the cartridge with your fingers: sweat contains ammonium ions.

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Limit of detection and uncertainty

The limit of detection is 1 µg·m^{-3} for 24 hour exposure. The uncertainty at 2σ is 6.5% over the whole allowed exposure range.

Storage

The cartridges are stable at least for 12 months before and after exposure if kept at room temperature in an ammonia-free environment. Do not expose all of the cartridges of the same lot: keep at least two of them as blanks.

Analysis

Materials

- ✓ plastic or glass tube, volume 12 ml, with cap
- ✓ micropipet with variable volume from 0.1 to 1.0 ml
- ✓ 5 ml glass pipet

Reactives

- ✓ *buffer* solution (pH 10.6): dissolve 1.1 g of NaOH and 3.04 g of $NaHCO_3$ in one litre of water
- ✓ *phenol*: dissolve 10 g of phenol in 100 ml of ethanol
- ✓ *cyanoferrate*: dissolve 0.5 g of sodium pentacyanonitrosylferrate dihydrate ($Na_2Fe(CN)_5NO{\cdot}2H_2O$) in 100 ml of water and add a few drops of 10% NaOH. Keep this solution in a dark bottle and prepare it freshly.
- ✓ *oxidising* solution: sodium hypochlorite with 1% of active chlorine in 0.2 M NaOH. Keep cool in a dark bottle.

Ammonium ion quantification

Open ***radiello*** tube and cautiously discard the cartridge PTFE cap (it may have been contaminated with handling). Help yourself with a pair of pliers.

Add 10 ml of deionised water to the cartridge in its tube (make sure that no trace of ammonium ion is found in the water you use). Recap the tube and stir vigorously by a VORTEX stirrer for at least 15 seconds.

Transfer 1 ml of the solution into another tube along with 0.4 ml of *phenol*, 0.4 ml of *cyanoferrate*, 5 ml of *buffer* solution and 1 ml of *oxidising* solution.

Wait for 1 hour and then measure the absorbance of the solution at 635 nm using water to zero the spectrophotometer.

Do the same with two unexposed cartridges and subtract their absorbance value to the samples. Generally, the blank value does not exceed 0.040 absorbance units.

For exposure value higher than 500,000 µg·m^{-3}·min the absorbance value is no longer linear: **diluite a known fraction of the coloured solution with the *buffer*.**

Calibration curves are conveniently prepared with ammonium chloride solutions in the range from 0.5 to 10 mg·l^{-1} as ammonium ion.

IMPORTANT

If sample is too concentrated (absorbance no longer linear) DO NOT DILUTE WITH WATER: the pH value is critical in the determination of the colour intensity.

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Edition 01/2006

Hydrochloric acid (HCl)

Radiello components to be used

White diffusive body code 120
Supporting plate code 121
Vertical adapter code 122 (optional)
Chemiadsorbing cartridge code 169

Principle

Code 169 cartridge is made of stainless steel net loaded with silica gel (0.1 to 0.4 mm particle size). Gaseous hydrochloric acid is adsorbed by silica gel and subsequently extracted with water to be quantified by ion chromatography as chloride ion.

Sampling is selective for the gaseous molecules: any airborne chloride salt will not cross the diffusive membrane of ***radiello***N

Sampling rate

Sampling rate ($\mathbf{Q_{298}}$) at 25 °C (298 K) and 1013 hPa is **103 cm^3·min^{-1}**.

Effect of temperature, humidity and wind speed

Sampling rate varies from the value at 298 K (25 °C) on the effect of temperature (in Kelvin) as expressed by the following equation:

$$Q_K = Q_{298} \left(\frac{K}{298}\right)^{1.5}$$

where Q_K is the sampling rate at temperature **K** and $\mathbf{Q_{298}}$ is the sampling rate value at the reference temperature of 298 K. This yields a ± 5% variation of Q for a 10 °C variation (upwards or downwards) from 25 °C.

Sampling rate is invariant with humidity in the range 15 - 90% for short exposure time (see Exposure) and with wind speed between 0.1 and 10 m·s^{-1}.

Calculations

Let ***m*** be the mass of chloride ion in µg found onto the cartridge and ***t*** the exposure time in minutes, the environmental concentration ***C*** of hydrochloric acid in µg·m^{-3} is obtained according to the equation:

$$C = \frac{1.028\ m}{Q_K \cdot t} 1{,}000{,}000$$

where Q_K is the sampling rate at temperature K (in Kelvin) and 1.028 is the ratio between molecular masses of HCl and Cl^-(see Analysis).

Exposure

Hydrochloric acid is sampled linearly in the range from 20,000 - 20,000,000 µg·m^{-3}·min.

Workplace environment

In workplace environment we recommend exposure time from 15 minutes to 8 hours: the *ceiling* values can be measured.



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Outdoor environment

We recommend exposure time from 2 hours to 2 days. Exposure time as long as 7 days is allowed if average relative humidity does not exceed 50%, taking into account the water absorbing properties of silica gel.

We also recommend to protect ***radiello*** from rain by the mountable shelter code 196.

Limit of detection and uncertainty

The limit of detection is 10 $\mu g \cdot m^{-3}$ for 24 hour exposure. The uncertainty at 2σ is 3.5% over the whole allowed exposure range.

Interferents

Gaseous chlorine is adsorbed by silica gel and is revealed as 0.02 ng of chloride ion for 1 $\mu g \cdot m^{-3} \cdot min$ of chlorine.

Storage

Kept in a clean environment free from gaseous hydrochloric acid, the cartridges code 169 are stable for at least 24 months before and after sampling.

If more than six months have passed since you received the cartridges, before environmental sampling campaigns, it is advisable to analyse some cartridges to check for contamination from the background. Discard the cartridges if they contain more than 5 µg of chloride ion.

Analysis

Add 2 ml of deionised water to the cartridge in its tube (make sure that no trace of chloride ion is found in the water you use). Recap the tube and stir vigorously by a VORTEX stirrer for 1-2 minutes. Analyse the solution by ion chromatography. Subtract the blank value obtained from two unexposed cartridges.

Prepare the calibration solutions with sodium or potassium chloride concentrations ranging from 0.5 to 25 mg/litre as Cl^-.

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Edition 01/2006

Hydrofluoric acid (HF)

Radiello components to be used:

Blue diffusive body code 120-1
Supporting plate code 121
Vertical adapter code 122 (optional)
Chemiadsorbing cartridge code 166

Principle

The cartridge code 166 is made of microporous polyethylene coated with triethanolamine (TEA). Gaseous hydrofluoric acid is adsorbed by TEA and subsequently extracted with water to be quantified by ion chromatography or by ion selective electrode as fluoride ion.

Sampling is selective for the gaseous molecules: any airborne fluoride salt will not cross the diffusive membrane of ***radiello***N

Sampling rate

Sampling rate at 25 °C and 1013 hPa is **187 $cm^3 \cdot min^{-1}$**.

Effect of temperature, humidity and wind speed

Sampling rate is invariant with humidity in the range 10 - 90% for short exposure time (see Exposure) and with wind speed between 0.1 and 10 $m \cdot s^{-1}$.

The effect of temperature is under investigation.

Calculations

Let ***m*** be the mass of fluoride ion in µg found onto the cartridge and ***t*** the exposure time in minutes, the environmental concentration ***C*** of HF in $\mu g \cdot m^{-3}$ is obtained according to the equation:

$$C = \frac{1.053\ m}{187\ t}\ 1{,}000{,}000$$

where 1.053 is the ratio between molecular masses of HF and F^-(see Analysis).

Exposure

Hydrofluoric acid is sampled linearly in the range from 10,000 to 50,000,000 $\mu g \cdot m^{-3} \cdot min$.

Workplace environment

In workplace environments we recommend exposure time from 15 minutes to 8 hours: the *ceiling* values can be measured.

Outdoor environment

We recommend exposure time from 2 hours to 14 days.

Protect ***radiello*** from rain by the mountable shelter code 196.

Limit of detection and uncertainty

The limit of detection is 7 $\mu g \cdot m^{-3}$ for 24 hour exposure. The uncertainty at 2σ is 4.5% over the whole exposure range.

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Storage

Kept in a dark place at 4 °C, the cartridges stay unaltered for at least 12 months before exposure and 4 months after sampling. Expiry date is printed on the plastic bag wrapping each cartridge.

If more than six months have passed since you received the cartridges, before environmental sampling campaigns, it is advisable to analyse some cartridges to measure any contamination from the background. Discard the cartridges if they contain more than 2 µg of fluoride ion.

Keep at least two unexposed cartridges for each lot and analyse them as blanks.

Analysis

Ion chromatography

Add 5 ml of the eluent solution to the ***radiello*** tube. Stir vigorously by a VORTEX stirrer for 1-2 minutes. Let the tube stand for 10 minutes, then stir manually and inject the solution in the ion chromatographic apparatus without further treatment.

Analyse 1-2 unexposed cartridges and subtract the average blank value to the samples.

Ion Selective Electrode

Prepare an ionic strength buffer as follows. Dissolve 57 ml of acetic acid in 500 ml water and add 50 g of sodium chloride and 0.3 g of sodium citrate. When complete solubilisation has been achieved, adjust the pH value to 5-5.5 (ideal value is 5.3) by adding drops of 10 M sodium hydroxide. Make up to 1 litre with water.

Add 5 ml water to ***radiello*** tube and stir vigorously by a vortexer for 1-2 minutes, then let stand for 10 minutes. Introduce a magnetic stirring bar in a 20 ml beaker, add 10 ml of ionic strength buffer and 1 ml of the extraction solution of the cartridge. Start the magnetic stirrer and make the potentiometric measurement by an ion selective electrode for fluorides. In the described analytical conditions, the electrode response should be linear in the range from 1 to 1,000 $mg \cdot l^{-1}$ of F^- with slope close to 59 ± 0.5 (if potential is expressed in mV).

IMPORTANT

Always use water with fluoride content lower than 0.5 $mg \cdot l^{-1}$.

Analyse 1-2 unexposed cartridges and subtract the average blank value to the samples.

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Edition 01/2006

Anaesthetic gases and vapours
N_2O, isoflurane, ethrane, halothane and sevorane

Radiello components to be used

Sampling kit code 125, containing 20 single packages each composed of:
1 permeative body (see code 120-3)
1 supporting plate (see code 121)
1 vertical adapter (see code 122)
1 adsorbing cartridge (see code 132)

the listed components are contained in a closed aluminum envelope, which is wrapped by a thermowelded paper-polyethylene bag.

The whole is sterilized by γ-rays.

The single components are also available **non-sterilized** in 20 pieces per package.



Principle

Code 132 cartridge is made of stainless steel net loaded with a mixture of molecular sieve and activated charcoal 35-50 mesh.

Nitrous oxide and halogenated anaesthetic gases permeate the silicone membrane and are sampled by the molecular sieve and by activated charcoal respectively.

The sampled compounds are displaced by a water-methanol mixture and are quantified by capillary gas chromatography and a headspace sampler.

N_2O, isoflurane, ethrane and halothane are detected by the Electron Capture Detector (ECD) with very good sensitivity; sevorane can not be quantified by ECD detection and has to be analyzed by mass spectrometry.

Sampling rates

Sampling rate values at 25 °C (298 K) and 1013 hPa are listed in the table on the right.

	sampling rate ($ml \cdot min^{-1}$)
N_2O	1.01
isoflurane	2.25
ethrane	3.39
halothane	4.93
sevorane	0.92

Effect of temperature, humidity and wind speed

Sampling rate varies from the values at 298 K on the effect of temperature (in Kelvin) as expressed by the following equation:

$$Q_K = Q_{298} \left(\frac{K}{298}\right)^{1.5}$$

where Q_K is the sampling rate at temperature **K** and Q_{298} is the sampling rate value at reference temperature of 298 K. This yields a ± 5% variation of Q for a 10 °C variation (upwards or downwards) from 25 °C.

Sampling rate is invariant with humidity in the range 10 - 90% for exposure time not exceeding 8 hours and with wind speed between 0.1 and 10 $m \cdot s^{-1}$.

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Calculations

Concentration in air is obtained by the following equation:

$$C = \frac{m}{Q_K \cdot t} 1{,}000$$

where:
C = concentration in $mg \cdot m^{-3}$
m = mass of analyte found on the cartridge in µg
Q_K = sampling rate in $ml \cdot min^{-1}$
t = exposure time in minutes

Exposure

Sampling rate is constant for exposure time up to 8 hours at relative humidity up to 80% with N_2O concentration up to 500 ppm and overall halogenated anaesthetic compounds concentration up to 100 ppm.

Exposure time longer than 8 hours in presence of relative humidity higher than 80% leads to the loss of the nitrous oxide already sampled by the effect of competing water vapour adsorption on the molecular sieve sites.

Limit of detection and uncertainty

The cartridges are conditioned to ensure a chromatographic blank level lower than three times the instrumental noise at the minimum attenuation.

If a well conditioned ECD is employed, 4 hours of exposure ensure the following analytical sensitivities: 0.5 ppm of N_2O, 0.002 ppm of forane, 0.01 ppm of ethrane and 0.002 ppm of halothane. **Sevorane is not detected by ECD.** The Flame Ionisation Detector (FID) can be employed instead with acceptable sensitivity, but if nitrous oxide and the other halogenated compounds have to be quantified at the same time, a mass spectrometry detector must be used. Acquiring by the SIM (Single Ion Monitoring) technique detection limits close to the ECD performances can be achieved for N_2O, forane, ethrane and halothane. For sevorane, 1 hour exposure allows to detect 0.1 ppm.

The uncertainty at 2σ is: 5.5% for N_2O, 4.7 - 5.6% for forane, ethrane and halothane with ECD detection, 6.2% for N_2O and 5.5 - 6.2% for forane, ethrane, halothane and sevorane with MS detection.

Storage

The sampling kit code 125 is sterilized by γ-rays. Use of the sampler makes it no longer sterile. With the exception of the adsorbing cartridge, the sampler is indefinitely re-usable. After the first sampling, if you can arrange for sterilization by yourselves you only need to re-order code 132 cartridges to perform other sampling campaigns. Adsorbing cartridges need not to be sterile.

IMPORTANT

DO NOT STERILIZE THE SAMPLER BY AUTOCLAVING. Autoclaving treatment **permanently** damages the silicone permeative membrane.

If kept in a dry place free from chemical contamination, the cartridges are stable for at least 12 months.

After the sampling, the cartridges are stable for 30 days if stored with the same precautions.

Analysis

Materials needed for the analysis

✓ 20 ml headspace glass vials with open-top aluminum crimp caps and rubber/PTFE septa
✓ water/methanol mixture 60/40 v/v
✓ usual laboratory glassware

Materials needed for the calibration curve

- ✓ pure N_2O in a gas cylinder
- ✓ halogenated anaesthetic compounds
- ✓ gastight syringe (volume 500 µl) and other syringes (volume 100 and 10 µl)
- ✓ 1 litre glass bottle with threaded neck, equipped with open-top screw cap and rubber/PTFE septum *(the volume of the bottle must be precisely measured and the bottle must be rinsed with dry nitrogen before use*)
- ✓ magnetic stirrer with large magnetic stirring bar (about 30-40 mm long)
- ✓ usual laboratory glassware

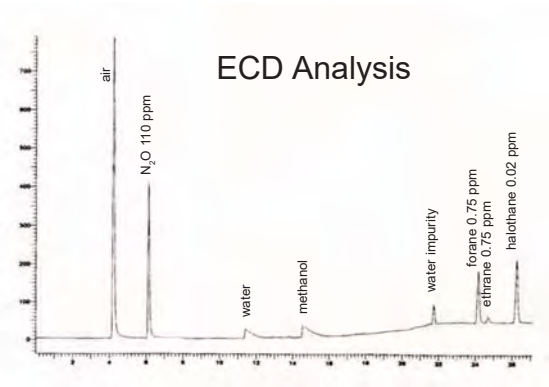
Extraction

Introduce 10 ml of water/methanol mixture in a headspace vial by a volumetric pipette. Add the ***radiello*** cartridge and cap immediately. Stir and let equilibrate, place the vial in the headspace bath and let equilibrate for one hour at 45 °C.

Instrumental analysis

ECD detection (sevorane is not detected)

- ✓ vial pressurization gas: N_2 at 1.2 atm
- ✓ loop volume: 1 ml
- ✓ gas chromatographic column: polystyrene-divinylbenzene PLOT, 30 m long, 0.32 mm inner diameter, 20 µm film thickness (allows quantification of nitrous oxide and other anaesthetic gases in one chromatographic run)
- ✓ carrier gas: N_2 at 1.0 atm
- ✓ split ratio: 10/1
- ✓ make-up gas: Ar-CH_4 (CH_4 10% v/v) at 30 ml·min^{-1}
- ✓ GC oven: 40° C for 2 min, 10° C·min^{-1} up to 150° C, 6° C·min^{-1} up to 200° C, final isotherm for 5 minutes
- ✓ injector temperature: 150° C
- ✓ detector temperature: 300° C



In the described analytical conditions chromatogram similar to the one in the figure are obtained. In the example shown, exposure time was 4 hours at the concentration values indicated and with relative humidity of 70%.

MS detection

The instrumental conditions are as described above, with the exception of the carrier gas (helium has to be used instead) and the make-up gas, which is not employed. Acquire by SIM (Single Ion Monitoring) focussing the detector on the following signals (the base peak is underlined):

N_2O: 44; **forane** and **ethrane**: 51, 67, 117; h**alothane**: 117, 198, 179; **sevorane**: 33, 131, 181

If high concentrations of CO_2 interfere (it gives a strong signal at m/z 44), N_2O can be quantified basing on the signal at m/z 30. On page L4 a typical GC-MS chromatogram (as total ion current) is displayed. It can be observed that, as an effect of the vacuum applied on the detector end of the column, retention times are shorter with respect to those obtained with ECD detection.

Calibration

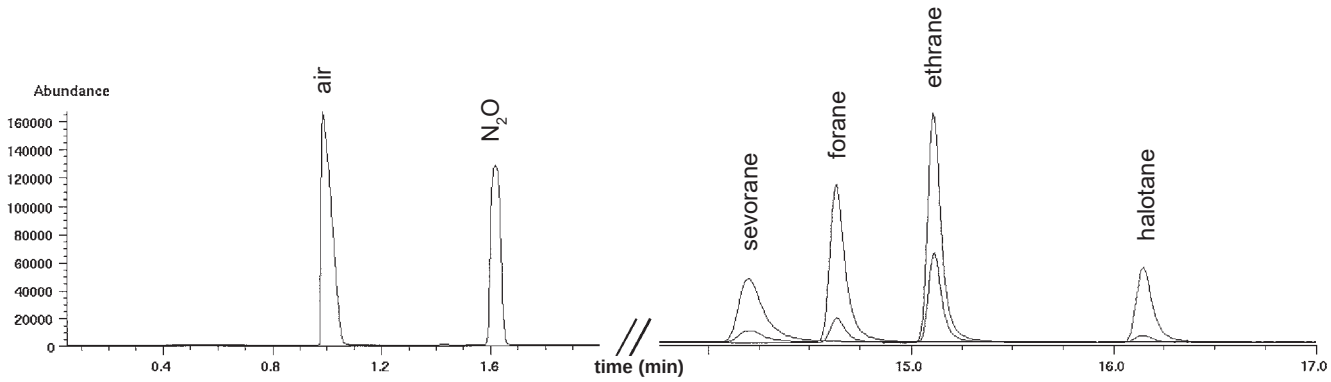
Calibration curves for N_2O and halogenated anaesthetics can be prepared simultaneously.

Draw pure N_2O in a gas sampling bulb. Transfer 20 ml of pure N_2O in the 1 litre bottle through the septum by a gastight syringe. Switch on the magnetic stirrer and let the mixture equilibrate for 30 minutes.



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TIC



Standard solutions of the halogenated compounds must be prepared in water/methanol 60/40 v/v in order to contain from 0.05 to 3.0 mg/l of each compound; five calibration levels are recommended.
For each level pipet 10 ml of calibration solution in an empty vial, add a blank code 132 cartridge and cap immediately.
Add also a precisely measured volume of diluted N_2O drawn from the bottle by a gastight syringe (usually added volume ranges from 50 to 1,000 µl), stir and let equilibrate at 45 °C for 1 hour.

The values above generally comprise the usual conditions of operating theatres. The analyst may choose different values if needed, but equivalent exposure values should not exceed 400,000 $mg \cdot m^{-3} \cdot min$ for nitrous oxide and 50,000 $mg \cdot m^{-3} \cdot min$ for each of the halogenated compounds.

Pay attention: the ECD response may not be linear. If this should be the case, use a **second order calibration curve**.

Useful data

name	chemical formula	molecular weight	1 $mg \cdot m^{-3}$ at 25°C = ppm
nitrous oxide	N_2O	44	0.556
forane	CHF_2-O-CHCl-CF_3	184.5	0.133
ethrane	CHF_2-O-CF_2-CHClF	184.5	0.133
halothane	CF_3-CHBrCl	197.4	0.124
sevorane	CH_2F-O-CH$(CF_3)_2$	200	0.123

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phenol, methylphenol and dimethylphenol

(thermally desorbed)

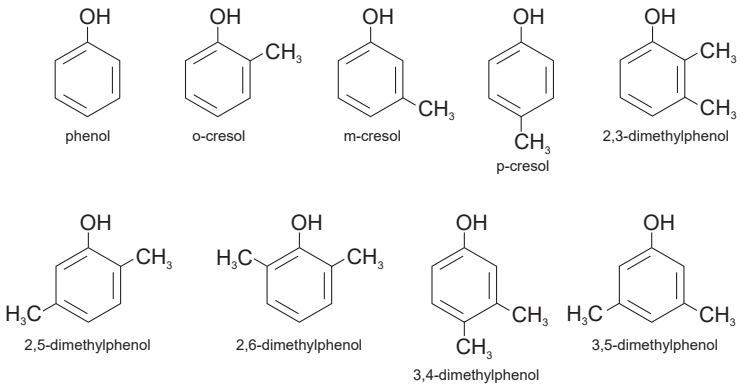
Radiello components to be used

White diffusive body code 120
Supporting plate code 121
Vertical adapter code 122 (optional)
Adsorbing cartridge code 147

Principle

Code 147 cartridge is a stainless steel net cylinder with 100 mesh grid opening and 4.8 mm diameter, packed with 250 ± 10 mg of Tenax-TA, particle size 20-35 mesh. Phenols are trapped by adsorption and recovered by thermal desorption, analysis is performed by capillary gas chromatography and MS detection.

The method has been optimized for the following compounds:



Sampling rates

Sampling rate values (in ml·min^{-1}) at 298 K (25 °C) and 1013 hPa are listed in the table on the right. All of the values shown have been experimentally measured.

Effect of temperature, humidity and wind speed

Sampling rate varies from the value at 298 K on the effect of temperature (in Kelvin) as expressed by the following equation:

$$Q_K = Q_{298} \left(\frac{K}{298} \right)^{1.5}$$

where Q_K is the sampling rate at the temperature **K** and Q_{298} is the reference value at 298 K. Sampling rate is invariant with humidity in the range 15 - 90% and with wind speed between 0.1 and 10 m·s^{-1}.

	sampling rate ml·min^{-1}	limit of detection[1] µg·m^{-3}	uncertainty at 2σ %
phenol	38	0.3	24.1
o-chresol	45	0.4	17.5
m-chresol	48	0.4	8.0
p-chresol	48	0.4	8.0
2,3-dimethylphenol	53	0.4	26.0
2,5-dimethylphenol	51	0.3	25.2
2,6-dimethylphenol	46	0.4	7.6
3,4-dimethylphenol	60	0.4	22.1
3,5-dimethylphenol	61	0.4	22.2

[1]after 24 hours exposure and with MS detection; analytical conditions as described in the Analysis paragraph.

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Calculations

The listed sampling rate values take already into account the recovery yields of adsorbed compounds. **The average concentration over the sampling period is therefore calculated from sampled mass of analyte and exposure time without introducing any other corrective factor,** apart from temperature variations of Q.

Average concentration ***C*** in $\mu g \cdot m^{-3}$ over the whole exposure time is calculated according to the following expression:

$$C\ [\mu g \cdot m^{-3}] = \frac{m\ [\mu g]}{Q_K\ [ml \cdot min^{-1}] \cdot t\ [min]}\ 1{,}000{,}000$$

where:
m = mass of analyte in µg
t = exposure time in minutes

Exposure

Workplace environment

Exposure time can range from 2 to 8 hours.

Other indoor sampling experiments and outdoor campaigns

The recommended exposure times range from 8 hours to 7 days.

Storage

If cartridges are kept in a cool place without phenol and related compounds contamination, blank level and adsorbing capacity stay unaltered for at least 24 months.

After exposure the cartridges, well capped and kept in a cool and solvent-free place, mantain their content unaltered for at least three months.

Analysis

The analytical method hereafter described have been set up by the Perkin-Elmer Turbomatrix thermal desorber and Agilent 5973 MSD mass spectrometer detector. They may be implemented on other instruments by introducing minor adjustements as suggested by the analyst's experience and characteristics of employed instrumentation.

Desorption

The thermal desorber is equipped with 1/4" s.s. sample tubes, they have to be hollow and free: discard the stainless steel gauze disk which is fitted to the groove and discard also the springs if present.

Code 147 cartridge has been dimensioned to fit the diameter of Turbomatrix thermal desorption tubes. Its length is such that, when the cartridge is introduced into the tube and is stopped by the groove, it is positioned exactly centrally with respect to the tube length.

Inner diameter of Perkin-Elmer tubes is not always exactly the same; it may be the case therefore that a cartridge code 147 does not slide easily into the tube. Some pushing tool may be helpful then, such as a 500 µl syringe piston, a glass bar or an iron wire 2-3 mm thick. In some cases the tube inner diameter is sligthly larger than the cartridge outer diameter: the cartridge can therefore be pushed out from the tube during desorption due to the desorption gas pressure. If this is the case, just press sligthly one end of the cartridge to make it oval.

Once capped, the Turbomatrix steel tube has to be positioned in the carousel with the grooves on the bottom.

Temperatures and timing

- ✓ Desorption: 280°C for 10 minutes
- ✓ Cryofocusing trap (Tenax TA): during primary desorption mantain at 2 °C, secondary desorption at 99 °C/sec up to 290 °C, mantain at 290 °C for 1 minute
- ✓ Six port valve: 150 °C
- ✓ Transfer line: 200 °C

Flows

- ✓ Carrier gas: helium, 24 psi
- ✓ Desorption flow: 100 ml·min^{-1}
- ✓ Inlet split: 80 ml·min^{-1} (flow from tube to cryofocusing trap: 20 ml·min^{-1})
- ✓ Outlet split: 25 ml·min^{-1}

Instrumental analysis

Column

100% dimethylpolysiloxane, length 50 m, internal diameter 0.2 mm, film thickness 0.5 µm; the column is directly fitted to the six-port valve of Turbomatrix apparatus

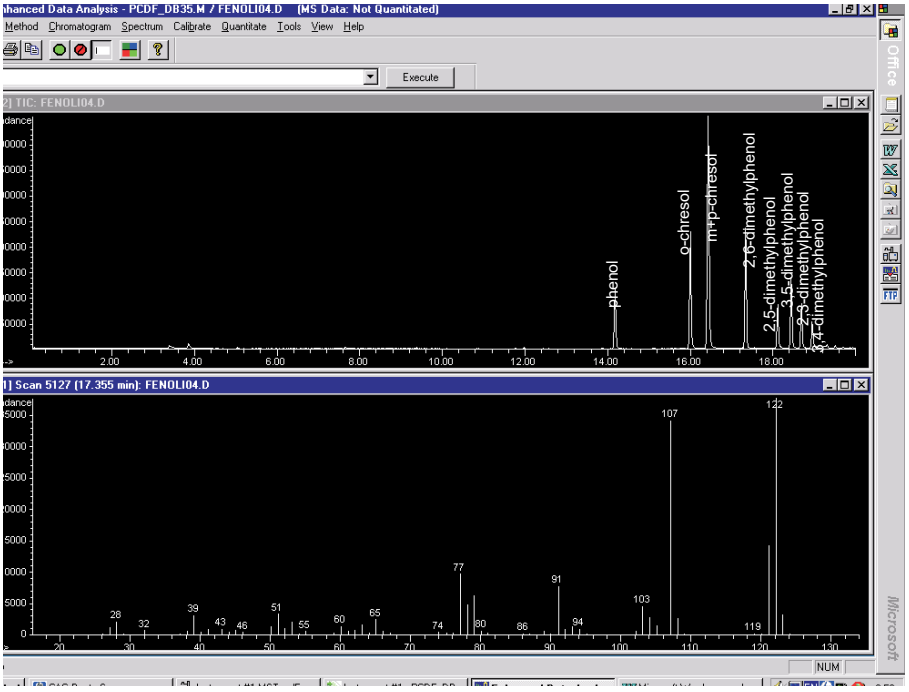
Temperatures

- ✓ GC oven: 50 °C for 2 minutes, 8 °C/min up to 160 °C, 12 °C/min up to 260 °C, final isotherm 2 minutes
- ✓ GC-MS interface: 260 °C

Flows

- ✓ helium carrier gas: 0.8 ml·min^{-1}

In the figure on the right a typical chromatogram (as total ion current) is shown.



Calibration

Calibration curves are obtained by gas-phase injections of methanol solutions of the analyzed compounds onto blank cartridges. Injections are performed through a GC injector, where a short piece of wide-bore (0.53 mm i.d.) deactivated uncoated column is installed. The other end bears a Swagelock reducing connection (1/16" to 1/4"). The 1/4" Swagelock nut has to be equipped with a PTFE *ferrule* instead of the original steel one (use PTFE ferrules that come along with the Turbomatrix caps).

Introduce a blank code 147 cartridge in a Turbomatrix tube and fit the tube to the Swagelock nut. Keep the injector at 200 °C but do not heat the oven. Slowly inject 1 µl of each calibration solution under nitrogen flow (50 ml·min^{-1}) and let the system purge for 2 minutes. Analyze the cartridge as you would do with a sample.

We suggest you to prepare a complete set of calibration solutions by subsequent dilutions such as they contain, for example, 4, 2, 1, 0.05 and 0.010 µg·µl^{-1} of each compound.

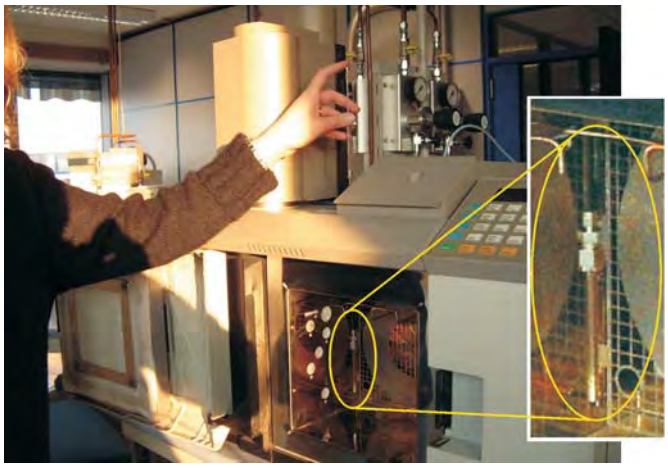
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Cartridge recovery

Recovery yield of phenol and related compounds is higher than 98%. Nevertheless, traces of analyzed compounds remain on the cartridge, but a thorough regeneration can be performed as follows.

Wash the cartridge with methanol (5 ml in a glass tube are enough) stirring from time to time. Let it dry in the air and finally condition it at 300 °C for two hours under nitrogen or helium flow.

Thermal stability of Tenax-TA is good enough to allow a great number of sampling, analysis and conditioning cycles, provided that conditioning temperature does not exceed 300 °C and nitrogen or helium employed do not contain more than 10 ppm of oxygen.



Calibration standards are easy to prepare by applying to the gas chromatograph injector a Swagelock reducing connection (1/16 to 1/4"); injections are performed through a GC injector, where a short piece of wide-bore (0.53 mm i.d.) deactivated uncoated column is installed.

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Index by code

Code	Description	Pag.
120	white diffusive body	A5, A8
120-1	blue diffusive body	A5, A8
120-2	yellow diffusive body	A5
120-3	permeative diffusive body, silicone membrane	A5
121	supporting plate	A5, A8
122	vertical adapter	B1
122-1	vertical snapping adapter	A8
123-	radiello-ready-to-use	A8
124-1	polycarbonate caps	A8
124-1	polypropylene containers for radiello-ready-to-use	A8
125	anaesthetic gases and vapors sampler	L1
126	thermometer and data logger	B3
127	temperature reader with serial port adapter and software	B3
130	activated charcoal adsorbing cartridge	D1
132	anaesthetic gases and vapours adsorbing cartridge	L1
145	graphitised charcoal adsorbing cartridge	E1
147	Tenax adsorbing cartridge	M1
165	chemiadsorbing cartridge for aldehydes	C1
166	chemiadsorbing cartridge for NO_2 and SO_2	F1
168	chemiadsorbing cartridge for NH_3	I1
169	adsorbing cartridge for HCl	J1
170	chemiadsorbing cartridge for H_2S	H1
171	calibration solution for H_2S	B4, H2
172	chemiadsorbing cartridge for ozono	G1
175	stainless steel net (100 mesh, 5.9 mm diameter) empty cartridge	B6
176	stainless steel net (100 mesh, 4.9 mm diameter) empty cartridge	B6
177	stainless steel net (3x8 µm, 4.9 mm diameter) empty cartridge	B6
190	self-adhesive barcode label	A5, B6
195	clip	B6
196	protective shelter	B1
198	plastic strip	B2, B6
199-1	empty glass tube and cap	B6
199-2	empty plastic tube and cap	B6
302	calibration solution for aldehydes	B4, C3
405	calibration kit for BTEX, CS_2 desorbed	B5
406	calibration kit for COV, workplace environment	B5
407	calibration kit for BTEX, thermally desorbed	B5

APPENDIX L - SITE MANAGEMENT FORMS

Inspections should be done at a minimum of once a year.
More frequent inspections may be required in accordance with approved work plans in specific areas undergoing construction, and following any construction-related work that may expose site soils.
Inspections must be completed if an incident or accident occurs that may require corrective measures (i.e. emergency actions that require soil removal).

Inspection Data Annually ☐ Construction ☐ Post-Construction ☐

Location:

Inspection Date:

Inspected By:

		Y or N	Comments or Problem Identified/Action Taken
1.	**Condition of pavement:** Are there areas of pavement where sub-soil is exposed?		
2.	**Conditions of concrete slab:** Is the concrete slab of the manufacturing facility intact? Are there cracks or gaps through which underlying soil is exposed?		
3.	**Sediment/Erosion Control:** Are erosion/storm water control devices in place in accordance with Stormwater Pollution Prevention Plan?		
4.	**Excavation/Backfill:** Has Excavation been completed in accordance with the site Excavation Work Plan?		
5.	**Stockpiled Materials:** Are temporary soil stockpiles or construction materials protected from erosion?		
6.	**Dust Control:** Have dust control measures been implemented as needed during the conduct of construction work?		
7.	**CAMP:** Has Community Air Monitoring been conducted in accordance with the CAMP?		

If current inspection is construction or post-construction, describe the nature of the construction project:
Has a Work Plan been prepared and approved by NYSDEC? Y__ N_

Attach photographs as appropriate

If the current inspection is due to an incident or accident, describe the nature of the incident/accident and the corrective measures being taken.
Note: A Corrective Measure Report will need to be submitted to the NYSDEC.

Attach photographs as appropriate

Monitoring Well Record for Low-Flow Purging

Project Data:

Project Name: _____ Date: _____

Ref. No.: _____ Personnel: _____

_____

Monitoring Well Data:

Well No.: _____

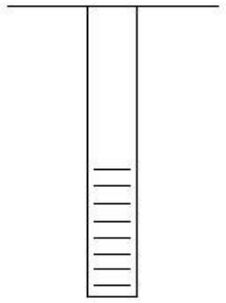
Vapor PID (ppm): _____ Height of Water Column, L (ft): _____

Measurement Point: Top of Riser Depth to Pump Intake (ft)[1]: _____

Constructed Well Depth (ft): _____ Well Diameter, D (in): _____

Measured Well Depth (ft): _____ Well Volume, V (L)[2]: _____

Depth of Sediment (ft): _____ Initial Depth to Water (ft): _____



Time		Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Total Volume Purged, Vp (L)	No. of Well Volumes Purged[4]
				Precision Required:	**±3 %**	**±0.005 or 0.01[5]**	**±10 %**	**±10 %**	**±0.1 Units**	**±10 mV**		

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom

(2) The well volume will be based on the height of the water column (L). For Imperial units, $V=\pi*((D/2)^2)*L*28.3168$, where V is given in L and r and L in inches.

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 5 well volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Volumes Purged= Vp/V.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm

N/A Not available or not applicable to this application

Indoor Air Sampling Field Data Sheet
(Form SP-28)

A) General Information

Sample Identification Number: _____

Site Address: _____

Sample Canister Location: _____

Sample Date: _____ Sampler: _____

Sample Time: Start: _____ Stop: _____

Shipping Date: _____

Canister Type: 400 mL – 1.0 L Summa Canister/6 L Summa Canister/Other (specify):

_____

Canister Serial No.: _____

Flow Controller Serial No.: _____

Were "Instructions to Occupants Building" followed?
❑ Yes ❑ No

B) Sampling Information

	Start		Stop	
	Ambient	Interior	Ambient	Interior
Temperature	_____	_____	_____	_____

Barometric Pressure _____ _____

	Start	Stop
Canister Pressure Gauge Reading:	_____	_____
Time:	_____	_____
PID Reading:	_____	_____
Basement Depth (ft below grade):	_____	
Window Marked:	Yes/No	

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?
❑ Yes ❑ No

Describe the general weather conditions:_____

_____

_____

Provide Drawing of Sample Location(s) in Building

C) Comments

APPENDIX M – GREEN REMEDIATION METRICS

Summary of Green Remediation Metrics for Site Management

Site Name: _____ Site Code: _____
Address: _____ City: _____
State: _____ Zip Code: _____ County: _____

Initial Report Period (Start Date of period covered by the Initial Report submittal)
Start Date: _____

Current Reporting Period
Reporting Period From: _____ To: _____

Contact Information
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____

I. Energy Usage: Quantify the amount of energy used directly on-site and the portion of that derived from renewable energy sources.

	Current Reporting Period	**Total to Date**
Fuel Type 1 (e.g. natural gas (cf))		
Fuel Type 2 (e.g. fuel oil, propane (gals))		
Electricity (kWh)		
Of that Electric usage, provide quantity:		
Derived from renewable sources (e.g. solar, wind)		
Other energy sources (e.g. geothermal, solar thermal (Btu))		

Provide a description of all energy usage reduction programs for the site in the space provided on Page 3.

II. Solid Waste Generation: Quantify the management of solid waste generated on-site.

	Current Reporting Period (tons)	**Total to Date (tons)**
Total waste generated on-site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off-site to landfills		
Transported off-site to other disposal facilities		
Transported off-site for recycling/reuse		
Reused on-site		

Provide a description of any implemented waste reduction programs for the site in the space provided on Page 3.

III. Transportation/Shipping: Quantify the distances travelled for delivery of supplies and lab-supplied bottles, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	**Total to Date (miles)**
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service (bottle and sample delivery)		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the site in the space provided on Page 3. Include specifically any local vendor/services utilized that are within 50 miles of the site.

IV. Water Usage: Quantify the volume of water used on-site from various sources.

	Current Reporting Period (gallons)	**Total to Date (gallons)**
Total quantity of water used on-site (not including treated water)		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
On-site groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the site in the space provided on Page 3.

V. Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	**Total to Date (acres)**
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the site in the space provided on Page 3.

Description of green remediation programs reported above (Attach additional sheets if needed)
Energy Usage:
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Recommendations/Other:

CONTRACTOR CERTIFICATION
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of _____ (**Contractor Name**), which is responsible for the work documented on this form. According to my knowledge and belief, all of the information provided in this form is accurate and the site management program complies with the DER-10, DER-31, and CP-49 policies. _____ **Date** **Contractor**

APPENDIX N - REMEDIAL SYSTEM OPTIMIZATION TABLE OF CONTENTS

REMEDIAL SYSTEM OPTIMIZATION FOR GENERAL INSTRUMENT CORPORATION SITE

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1.0 INTRODUCTION
1.1 SITE OVERVIEW
1.2 PROJECT OBJECTIVES AND SCOPE OF WORK
1.3 REPORT OVERVIEW
2.0 REMEDIAL ACTION DESCRIPTION
2.1 SITE LOCATION AND HISTORY
2.2 REGULATORY HISTORY AND REQUIREMENTS
2.3 CLEAN-UP GOALS AND SITE CLOSURE CRITERIA
2.4 PREVIOUS REMEDIAL ACTIONS
2.5 DESCRIPTION OF EXISTING REMEDY
2.5.1 System Goals and Objectives
2.5.2 System Description
2.5.3 Operation and Maintenance Program
3.0 FINDINGS AND OBSERVATIONS
3.1 SUBSURFACE PERFORMANCE
3.2 TREATMENT SYSTEM PERFORMANCE
3.3 REGULATORY COMPLIANCE
3.4 MAJOR COST COMPONENTS OR PROCESSES
3.5 SAFETY RECORD
4.0 RECOMMENDATIONS
4.1 RECOMMENDATIONS TO ACHIEVE OR ACCELERATE SITE CLOSURE
4.1.1 Source Reduction/Treatment
4.1.2 Sampling
4.1.3 Conceptual Site Model (Risk Assessment)
4.2 RECOMMENDATIONS TO IMPROVE PERFORMANCE
4.2.1 Maintenance Improvements
4.2.2 Monitoring Improvements

4.2.3 Process Modifications
4.3 RECOMMENDATIONS TO REDUCE COSTS
4.3.1 Supply Management
4.3.2 Process Improvements or Changes
4.3.3 Optimize Monitoring Program
4.3.4 Maintenance and Repairs
4.4 RECOMMENDATIONS FOR IMPLEMENTATION

APPENDIX O - REQUEST TO IMPORT/REUSE FILL MATERIAL FORM

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e) and 6NYCRR Part 360.13. Use of this form is not a substitute for reading the applicable regulations and Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that passes a size 100 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

_____ _____

Signature Date

_____

Print Name

_____

Firm

Revised April 2023

APPENDIX P - NYSDEC PART 375 SCOS

Table 4

Recommended Number of Soil Samples for Soil Imported To or Exported From a Site

Contaminant	VOCs[a]	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	Each composite sample for analysis is created from 3-5 discrete samples from representative locations in the fill.
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
➢ 1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER.[b]		

[a] VOC samples cannot be composited. Discrete samples must be taken to maximize the representativeness of the results.

[b] For example, a 3,000 cubic yard soil pile to be sampled and analyzed for VOCs would require 11 discrete representative samples. The same pile to be sampled for SVOCs would require 4 composite samples with each composite sample consisting of 3-5 discrete samples.

(b) Restricted use soil cleanup objectives.

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Metals							
Arsenic	7440-38-2	16[f]	16[f]	16[f]	16[f]	13[f]	16[f]
Barium	7440-39-3	350[f]	400	400	10,000 [d]	433	820
Beryllium	7440-41-7	14	72	590	2,700	10	47
Cadmium	7440-43-9	2.5[f]	4.3	9.3	60	4	7.5
Chromium, hexavalent [h]	18540-29-9	22	110	400	800	1[e]	19
Chromium, trivalent [h]	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50-8	270	270	270	10,000 [d]	50	1,720
Total Cyanide [h]		27	27	27	10,000 [d]	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63[f]	450
Manganese	7439-96-5	2,000[f]	2,000[f]	10,000 [d]	10,000 [d]	1600[f]	2,000[f]
Total Mercury		0.81[j]	0.81[j]	2.8[j]	5.7[j]	0.18[f]	0.73
Nickel	7440-02-0	140	310	310	10,000 [d]	30	130
Selenium	7782-49-2	36	180	1,500	6,800	3.9[f]	4[f]
Silver	7440-22-4	36	180	1,500	6,800	2	8.3
Zinc	7440-66-6	2200	10,000 [d]	10,000 [d]	10,000 [d]	109[f]	2,480
PCBs/Pesticides							
2,4,5-TP Acid (Silvex)	93-72-1	58	100[a]	500[b]	1,000[c]	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 [e]	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 [e]	136
4,4'- DDD	72-54-8	2.6	13	92	180	0.0033 [e]	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04[g]	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71-9	0.91	4.2	24	47	1.3	2.9

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
delta-BHC	319-86-8	100[a]	100[a]	500[b]	1,000[c]	0.04[g]	0.25
Dibenzofuran	132-64-9	14	59	350	1,000[c]	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan II	33213-65-9	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan sulfate	1031-07-8	4.8[i]	24[i]	200[i]	920[i]	NS	1,000[c]
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
Semivolatiles							
Acenaphthene	83-32-9	100[a]	100[a]	500[b]	1,000[c]	20	98
Acenapthylene	208-96-8	100[a]	100[a]	500[b]	1,000[c]	NS	107
Anthracene	120-12-7	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benz(a)anthracene	56-55-3	1[f]	1[f]	5.6	11	NS	1[f]
Benzo(a)pyrene	50-32-8	1[f]	1[f]	1[f]	1.1	2.6	22
Benzo(b)fluoranthene	205-99-2	1[f]	1[f]	5.6	11	NS	1.7
Benzo(g,h,i)perylene	191-24-2	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benzo(k)fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1[f]	3.9	56	110	NS	1[f]
Dibenz(a,h)anthracene	53-70-3	0.33[e]	0.33[e]	0.56	1.1	NS	1,000[c]
Fluoranthene	206-44-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Fluorene	86-73-7	100[a]	100[a]	500[b]	1,000[c]	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5[f]	0.5[f]	5.6	11	NS	8.2
m-Cresol	108-39-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
Naphthalene	91-20-3	100[a]	100[a]	500[b]	1,000[c]	NS	12

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
o-Cresol	95-48-7	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
p-Cresol	106-44-5	34	100[a]	500[b]	1,000[c]	NS	0.33[e]
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8[e]	0.8[e]
Phenanthrene	85-01-8	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Phenol	108-95-2	100[a]	100[a]	500[b]	1,000[c]	30	0.33[e]
Pyrene	129-00-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Volatiles							
1,1,1-Trichloroethane	71-55-6	100[a]	100[a]	500[b]	1,000[c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33
1,2-Dichlorobenzene	95-50-1	100[a]	100[a]	500[b]	1,000[c]	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02[f]
cis-1,2-Dichloroethene	156-59-2	59	100[a]	500[b]	1,000[c]	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100[a]	100[a]	500[b]	1,000[c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1[e]	0.1[e]
Acetone	67-64-1	100[a]	100[b]	500[b]	1,000[c]	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100[a]	100[a]	500[b]	1,000[c]	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100[a]	100[a]	500[b]	1,000[c]	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33[e]	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100[a]	100[a]	500[b]	1,000[c]	100[a]	0.12

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Methyl tert-butyl ether	1634-04-4	62	100[a]	500[b]	1,000[c]	NS	0.93
Methylene chloride	75-09-2	51	100[a]	500[b]	1,000[c]	12	0.05
n-Propylbenzene	103-65-1	100[a]	100[a]	500[b]	1,000[c]	NS	3.9
sec-Butylbenzene	135-98-8	100[a]	100[a]	500[b]	1,000[c]	NS	11
tert-Butylbenzene	98-06-6	100[a]	100[a]	500[b]	1,000[c]	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100[a]	100[a]	500[b]	1,000[c]	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5- Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20-7	100[a]	100[a]	500[b]	1,000[c]	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm).
NS=Not specified. See Technical Support Document (TSD).

Footnotes

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

[f] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

[g] This SCO is derived from data on mixed isomers of BHC.

[h] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[i] This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

Table 1

Supplemental Soil Cleanup Objectives
(ppm)

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
METALS							
Aluminum	7429-90-5					10,000 [a,b]	
Antimony	7440–36-0					12[c]	
Boron	7440-42-8					0.5	
Calcium	7440-70-2					10,000 [a,b]	
Cobalt	7440-48-4	30				20	
Iron	7439-89-6	2,000					
Lithium	7439-93-2					2	
Molybdenum	7439-98-7					2	
Technetium	7440-26-8					0.2	
Thallium	7440-28-0					5 [c]	
Tin	7440-31-5					50	
Uranium	7440-61-1					5	
Vanadium	7440-62-2	100 [a]				39[b]	
PESTICIDES							
Biphenyl	92-52-4					60	
Chlordecone (Kepone)	143-50-0					0.06	
Dibenzofuran	132-64-9						6.2
2,4-D (2,4-Dichloro-phenoxyacetic acid)	94-75-7	100 [a]					0.5
Furan	110-00-9					600	
Gamma Chlordane	5103-74-2	0.54					14
Heptachlor Epoxide	1024-57-3	0.077					0.02
Methoxychlor	72-43-5	100 [a]				1.2	900

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
Parathion	56-38-2	100 [a]					1.2
2,4,5-T	93-76-5	100 [a]					1.9
2,3,7,8-TCDD	1746-01-6					0.000001	
2,3,7,8-TCDF	51207-31-9					0.000001	
SEMIVOLATILE ORGANIC COMPOUNDS							
Aniline	62-53-3	48	100[a]	500[a]	1000[a]		0.33[b]
Bis(2-ethylhexyl) phthalate	117-81-7	50				239	435
Benzoic Acid	65-85-0	100[a]					2.7
Butylbenzyl-phthalate	85-68-7	100 [a]					122
4-Chloroaniline	106-47-8	100 [a]					0.22
Chloroethane	75-00-3						1.9
2-Chlorophenol	95-57-8	100 [a]				0.8	
3-Chloroaniline	108-42-9					20	
3-Chlorophenol	108-43-0					7	
Di-n-butyl-phthalate	84-74-2	100 [a]				0.014	8.1
2,4-Dichlorophenol	120-83-2	100 [a]				20	0.40
3,4-Dichlorophenol	95-77-2					20	
Diethylphthalate	84-66-2	100 [a]				100	7.1
Di-*n*-hexyl-phthalate	84-75-3					0.91	
2,4-Dinitrophenol	51-28-5	100 [a]				20	0.2
Dimethylphthlate	131-11-3	100 [a]				200	27
Di-n-octylphthlate	117-84-0	100 [a]					120
1,2,3,6,7,8-HCDF	57117-44-9					0.00021	
Hexachloro-benzene	118-74-1	0.41					1.4
2,6-Dinitrotoluene	606-20-2	1.03					1.0
Isophorone	78-59-1	100 [a]					4.4

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
4-methyl-2-pentanone	108-10-1						1.0
2-methyl-naphthalene	91-57-6	0.41					36.4
2-Nitroaniline	88-74-4						0.4
3-Nitroaniline	99-09-2						0.5
Nitrobenzene	98-95-3	3.7	15	69	140	40	0.17[b]
2-Nitrophenol	88-75-5					7	0.3
4-Nitrophenol	100-02-7					7	0.1
Pentachloroaniline	527-20-8					100	
2,3,5,6-Tetrachloroaniline	3481-20-7					20	
2,3,4,5-Tetrachlorophenol	4901-51-3					20	
2,4,5-Trichloroaniline	636-30-6					20	
2,4,5-Trichlorophenol	95-95-4	100 [a]				4	0.1
2,4,6-Trichlorophenol	88-06-2					10	
VOLATILE ORGANIC COMPOUNDS							
2-Butanone	78-93-3	100 [a]					0.3
Carbon Disulfide	75-15-0	100 [a]					2.7
Chloroacetamide	79-07-2					2	
Dibromochloro-methane	124-48-1					10	
2,4-Dichloro aniline	554-00-7					100	
3,4-Dichloroaniline	95-76-1					20	
1,2-Dichloropropane	78-87-5					700	
1,3-Dichloropropane	142-28-9						0.3
2,6-Dinitrotoluene	606-20-2	1.03					0.17[b]
Ethylacetate	141-78-6					48	

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
4-methyl-2-pentanone	108-10-1						1.0
113 Freon (1,1,2- TFE)	76-13-1	100 [a]					6
isopropylbenzene	98-82-8	100 [a]					2.3
p-isopropyltoluene	99-87-6						10
Hexachlorocyclo-pentadiene	77-47-4					10	
Methanol	67-56-1					6.5	
N-nitrosodiphenyl-amine	86-30-6					20	
Pentachloro-benzene	608-93-5					20	
Pentachloronitro-benzene	82-68-8					10	
Styrene	100-42-5					300	
1,2,3,4-Tetrachlorobenzene	634-66-2					10	
1,1,2,2-Tetrachloroethane	79-34-5	35					0.6
1,1,2,2-Tetrachloroethylene	127-18-4					2	
1,2,3-Trichlorobenzene	87-61-6					20	
1,2,4-Trichlorobenzene	120-82-1					20	3.4
1,2,3-Trichloropropane	96-18-4	80					0.34

[a] SCOs for organic contaminants (volatile organic compounds, semivolatile organic compounds, and pesticides) are capped at 100 ppm for residential use, 500 ppm for commercial use, 1000 ppm for industrial use. SCOs for metals are capped at 10,000 ppm.

[b] Based on rural background study

[c] SCO limited by contract required quantitation limit.