BCO Hill Site

DELAWARE COUNTY

SIDNEY, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 413003

Prepared for:

Amphenol Aero-space
40 – 60 Delaware Avenue
Sidney, NY 13838

Prepared by:

Barton & Loguidice DPC
443 Electronics Parkway
Liverpool, NY 13088
and
JTM Associates, LLC
PO Box 359
Bridgeport, NY 13030

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date
1	May 2021	Monitoring program revisions and conformance with new NYSDEC SMP template (December 2020 version)	

MARCH 2021

CERTIFICATION STATEMENT

I Scott D. Nostrand certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Scott D. N

_____ P.E.

June 9, 2021 DATE

TABLE OF CONTENTS

BCO Hill Site

DELAWARE COUNTY

SIDNEY, NEW YORK

SITE MANAGEMENT PLAN

Table of Contents

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

List of Tables

List of Figures

List of Exhibits

List of Appendices

List of Acronyms

CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
COC	Certificate of Completion
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
EWP	Excavation Work Plan
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
OM&M	Operation, Maintenance and Monitoring
P.E. or PE	Professional Engineer
PFAS	Per- and Polyfluoroalkyl Substances
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
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
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCL	Target Compound List

ES EXECUTIVE SUMMARY

This Site Management Plan (SMP) is a revision of the previously approved SMP dated May 2014. The purpose of the revisions are to:

1. Update the document format to the NYSDEC SMP template dated December 2020
2. Modify the groundwater monitoring network and sampling frequency.

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: Site No. 413003 BCO Hill Site, Sidney, NY

Institutional Controls:	1. The property may be used for industrial use. The property may not be used for a higher level of use, such as unrestricted use without additional remediation and amendment of the Deed Restriction, as approved by the NYSDEC; 2. All ECs must be operated and maintained as specified in this SMP; 3. All ECs must be inspected at a frequency and in a manner defined in the SMP 4. The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use; 5. Groundwater and other environmental or public health monitoring must be performed as defined in this 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 this SMP 7. All future activities that will disturb remaining contaminated material must be conducted in accordance with the Excavation Work Plan included in the 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 restrictions identified by the Deed Restriction; 9. The potential for vapor intrusion must be evaluated for any buildings developed within the property boundary of the site depicted on Figure 2, and any potential impacts that are identified must be monitored or mitigated; 10. Vegetable gardens and farming on the property are prohibited; 11. The site owner or remedial party will submit to NYSDEC a periodic review report that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

Site Identification: Site No. 413003 BCO Hill Site, Sidney, NY

Engineering Controls:	1. Cover system
	2. Maintenance of existing monitoring wells.

Inspections:	Frequency
1. Cover inspection	Quarterly
Monitoring:	
1. Groundwater Monitoring Wells and Seeps	Every fifth quarter
2. Soil Vapor Intrusion Evaluation for New Buildings	As needed
Maintenance:	
1. Cover maintenance	As needed
Reporting:	
1. Groundwater Monitoring Report and Sampling Data	Every fifth quarter
2. Periodic Review Report	Annually

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

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the BCO Hill Site located in Sidney, New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program, Site No. 413009, which is administered by New York State Department of Environmental Conservation (NYSDEC or Department).

Amphenol Corporation entered into an Order on Consent on October 14, 1986 with the NYSDEC to remediate the site. A figure showing the site location and boundaries of this site is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Deed Restriction provided in Appendix A.

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

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

It is important to note that:

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

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the Order on Consent 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 Barton and Loguidice DPC (B&L), on behalf of Amphenol Corporation, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the SMP or request revisions from the remedial party. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the Environmental Easement for the site, the NYSDEC project manager will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

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

1. 60-day advance notice of any proposed changes in site use that are required under the terms of the 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. 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 damage or defect to an EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

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

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

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

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

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

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

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

Table 1: Notifications*

Name	**Contact Information**	**Required Notification****
NYSDEC Project Manager	Joshua G. Haugh, PG Division of Environmental Remediation NYSDEC Region 4 1130 North Westcott Rd, Schenectady, NY (518) 357-2045 joshua.haugh@dec.ny.gov	All Notifications
NYSDEC Regional Hazardous Waste Remediation Engineer	Regional Hazardous Waste Remediation Engineer Division of Environmental Remediation NYSDEC Region 4 1130 North Westcott Rd, Schenectady, NY (518) 357-2045	
NYSDEC Site Control	Chief, Site Control Division of Environmental Remediation NYS Department of Environmental Conservation 625 Broadway, Albany NY 12233	Notifications 1 and 8
NYSDOH Project Manager	Renata Ockerby NYSDOH-BEEI Corning Tower, Room 1787 Albany, NY 12237 (518) 402-7860	Notifications 4, 6, and 7

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

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

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in the Village of Sidney, County of Delaware, New York and is identified as Parcel 138.00-1-7 on the Delaware County Name Tax Map (Figure 1). The site is an approximately 1-acre fenced in area (referred to as the Waste Area) that is situated within a 37 acre parcel owned by Amphenol Corporation. The boundaries of the site are more fully described in the metes and bounds provided with the Deed Restriction in Appendix A. The owner of the site parcel at the time of issuance of this SMP is/are:

Amphenol Aero-space
40 – 60 Delaware Avenue
Sidney, NY 13838

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: a closed landfill. The site is bounded by Delaware Avenue to the north, Interstate 88 to the south, privately held lots to the east, and New York State Route 8 to the west (see Figure 1 – Site Location Map). Figure 2 illustrates the location of the Site within the property as a whole.

2.2.2 Geology

Several geologic sections from the RI report are included as Exhibit 1. The Site is located on the eastern edge of the Susquehanna River Valley in Sidney, New York. The regional geology is characterized by glacial till deposits overlying Devonian sedimentary bedrock composed of inter-bedded shales, siltstones and sandstones. At the site, the unconsolidated glacial deposits range between 39 and 100 feet thick.

Glacial till deposits beneath and near to the waste pit contain several distinct sub-units each varying in color, composition, density and water content. In general, from the land surface to the top of the bedrock, a silty-till unit is underlain by a layered sand which is in turn underlain by a gravely till. All unconsolidated units have low hydraulic conductivities that range between 1.5×10^{-5} and 4.7×10^{-7} cm/s.

The bedrock immediately beneath the till units is a dense, gray siltstone underlain by a more fissile but dense red shale with some gray siltstone inter-beds. Like the unconsolidated water bearing units, groundwater in the bedrock flows to the northwest.

2.2.3 Hydrogeology

As the site is located along a hillside, depth to groundwater varies. Groundwater is present in both the overburden and the bedrock. Groundwater elevations in the bedrock are 10 to 50 feet lower than the overburden as shown in Exhibit 1. This results in a substantial downward vertical flow potential from the overburden to the bedrock strata. Groundwater contour maps based on measurements taken in March 2020 are shown in Figures 3 (overburden) and 4 (bedrock). Groundwater flows to the northwest in both the overburden and bedrock zones. There is a seasonal fluctuation of groundwater elevations, with higher elevations in the spring and lower elevations in late summer. The greatest fluctuation between the seasonal low quarterly monitoring events to the seasonal high periods occurs at overburden Well 32. This well is located near the up-gradient side of the closed disposal area and may experience a greater degree of groundwater mounding during periods of groundwater recharge. Since groundwater elevation fluctuations are similar from well to well, historically, the general horizontal groundwater flow direction and hydraulic gradient varies little from season to season within the range of observed groundwater elevation fluctuations.

The magnitude of the seasonal changes in bedrock wells is generally less than 5 feet compared to the overburden wells which commonly experience seasonal variations of approximately 5 to 10 feet.

Groundwater monitoring well construction logs are provided in Appendix C. There are no known private or public supply wells adjacent to the site.

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.

2.3.1 Summary of Site Investigations

Bendix Connector Operations (BCO) disposed of waste oil and spent solvents at a waste disposal pit on the Site from about 1951 to 1964. The waste materials were delivered to the site in drums by Bendix employees and deposited in the pit. Occasionally, materials that accumulated in the pit were burned.

In 1979, Amphenol investigated the pit and reported it as a problem to NYSDEC. NYSDEC then included the site on the New York State registry of inactive hazardous waste sites (site # 413003). A brief chronology of major site activities follows:

- 1981 – 1982: A Phase I investigation was completed that included the installation of several soil borings and groundwater monitoring wells. This investigation established the presence of oil in the subsurface that contained volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs).
- October 1982: Amphenol submitted a Source Removal Plan (SRP) that was subsequently approved by NYSDEC. The plan called for the removal of contaminated soils from the waste disposal pit and was implemented in November and December 1982. At its completion, the excavation measured 45 feet by 90 feet by 16 feet deep. Post excavation sampling results indicated that total PCB concentration of the excavation bottom and walls was less than 25 parts per million.
- 1982 – 1983: A Phase II site assessment was completed. A total of 18 additional groundwater monitoring wells were installed and sampled.

- September 1983 – January 1984: A second SRP was submitted and approved by NYSDEC. When completed, the program resulted in the removal of an additional 1,650 cubic yards of soil from the west side of the previous completed excavation. At this time, a one foot compacted clay cap was installed over the entire foot print of the previous waste pit. A thirty-mil polyethylene liner was placed on top of the clay liner. Drainage improvements were also made around the perimeter of the site.
- 1985 – 1990: Several new groundwater monitoring wells. Monitoring of the groundwater and select seeps continued
- July and August 1990: An Interim Remedial Measure (IRM) was completed that intercepted a spring that expressed itself on the west side of the site as discharge to the drainage ditch on the east side of Route 8. The purpose of this effort was to eliminate the potential for direct contact exposure of VOCs. The discharge from the spring (reportedly 0.8 GPM) was directed to a subsurface drain field (approximately 1,250 sq. ft.) constructed along the east side of Route 8. At this time, an excavation approximately 150 ft by 3 ft by 2ft. deep was also completed to remove PCB containing sediments. Following these two actions, quarterly groundwater and seep monitoring began.
- In June of 2005, NYSDEC requested that Amphenol evaluate if the soil vapor intrusion exposure pathway was complete. In response to the Departments request, Amphenol completed a program that included the collection of groundwater samples beyond that required for the routine monitoring and the collection of soil vapor samples along the east property boundary that is shared with residential parcels with dwellings. Following the soil vapor (SV) intrusion investigation in March 2006, the NYSDEC and NYSDOH requested a work plan for sampling SV locations to further delineate the extent of contamination. The sampling was done in October 2007 and based on the October results, the Departments requested eight additional SV samples which

were collected in February 2008. Following review of the results, the NYSDOH has stated that further SV sampling is unwarranted.

- Between 2010 and 2012, Amphenol Corporation voluntarily completed an evaluation of the feasibility of using in-situ chemical oxidation (ISCO) technology to reduce the concentration of site-related compounds in the shallow groundwater. It was concluded that the site is not suitable for the application of ISCO technology because of the extremely low hydraulic conductivity of the unconsolidated units prohibit the delivery of ISCO reactants.
- In November 2012, Amphenol, with the approval of NYSDEC, completed a monitoring well abandonment program at the Hill Site, decommissioning wells 19, 22, 30, B-01, B-12, and B-13. The wells selected for abandonment included old wells that installed during the original site investigations and were not part of the on-going routine groundwater monitoring program or inspection revealed them to have a compromised annular seal.

The investigation work performed in the 1980s was summarized in a Remedial Investigation/Feasibility Study completed by ERM, Inc. in August 1987. Soils at the site were characterized for Poly-chlorinated Biphenyls (PCBs) and volatile organic compounds (VOCs) by collecting samples from test pits and borings in and around the former waste oil pit. Concentrations of total PCBs ranged from 440 parts per million (ppm) near the center of the pit to <4 ppm outside and south of the disposal area. The VOCs detected in soil were largely chlorinated species but also included aromatic compounds. The chlorinated compounds were predominately trichloroethylene and its degradation species and were observed at concentrations up to nearly 200,000 parts per billion (ppb). Ethyl benzene and toluene were the dominant aromatic compounds with concentration up to 16,000 and 130,000 ppb, respectively.

Groundwater chemistry was evaluated in the shallow and deep portions of the glacial deposits and the bedrock unit. Analyses were also performed on the seeps associated with the site that occur on the west side of Route 8. Shallow groundwater located in the glacial deposits was observed to contain PCBs and VOCs. Concentrations

of total VOCs up to 59,000 ppb were observed in the shallow groundwater. During the RI data collection period, total VOCs decreased by an order of magnitude within 250 feet down-gradient of the waste pit. It was also concluded that the topographically influenced steep hydraulic gradient in the shallow groundwater zone limits cross-gradient horizontal migration of contaminants.

Prior to the interim remedial measures which removed the waste pit, PCBs were detected at concentrations up to 3,700 ppb. However, the PCBs were believed to be associated with free oil that had been observed on the water table surface in shallow monitoring wells and which were removed during interim remedial measures.

In the deeper portion of the glacial deposits, concentrations of total VOCs up to 237,000 ppb were observed direct adjacent to the disposal pit. Concentrations decreased radial outward for the waste pit. Like in the shallow groundwater zone, the steep hydraulic gradient limits lateral migration of contaminants in the deeper glacial groundwater zone.

2.3.2 Summary of Remedial Activities

The following is a summary of the Remedial Actions performed at the site. Excavation of soil and waste material occurred on three different occasions.

October 1982: Amphenol submitted a Source Removal Plan (SRP) that was subsequently approved by NYSDEC. The plan called for the removal of contaminated soils from the waste disposal pit and was implemented in November and December 1982. At its completion, the excavation measured 45 feet by 90 feet by 16 feet deep. Post excavation sampling results indicated that total PCB concentration of the excavation bottom and walls was less than 25 parts per million.

September 1983 – January 1984: A second SRP was submitted and approved by NYSDEC. When completed, the program resulted in the removal of an addition 1,650 cubic yards of soil removed from the west side of the previous completed excavation.

July and August 1990: An Interim Remedial Measure (IRM) was completed that intercepted a spring that expressed itself on the west side of the site as discharge to the drainage ditch on the east side of Route 8. The purpose of this effort was to eliminate the

potential for direct contact exposure of VOCs. The discharge form the spring (reportedly 0.8 GPM) was directed to a subsurface drain field (approximately 1,250 sq. ft.) constructed along the east side of Route 8. At this time, an excavation approximately 150 ft by 3 ft by 2ft. deep was also completed to remove PCB containing sediments. Following these two actions, quarterly groundwater and seep monitoring began.

Remedial activities were completed at the site in August 1990.

2.4 Remedial Action Objectives

Remedial Action Objectives (RAOs) were not explicitly defined in the Record of Decision for the Site. However, remedial programs are generally considered to be complete when monitoring demonstrates the following RAOs have been achieved:

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.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

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

During source removal work performed in 1982 (phase I) and 1983 (phase II), the remedial objective was to excavate and dispose soil that visually was observed to be oil stained. Post excavation sampling was performed and analyzed for PCBs. Residual concentrations from this excavation are presented in Exhibit 2. For the purposes of this SMP, it is assumed that all the area of the former waste area and inscribed by the security fence contain remaining PCB and VOC contaminated soil.

2.5.2 Groundwater

Table 2 and Figure 5 summarize the results of the most recent samples of groundwater that exceed the SCGs after completion of the remedial action.

Table 2 - Groundwater/Seep Sampling Results, March 2020 (µg/L)

Parameter	Seep 1	Seep 2	Seep 3	Seep 4	Well 18	Well 22 / 4 I	Well 24	Well 31	Well 32	83-1	83-2	83-3	83-4	84-10	84-12
Chloroethane	<1	<1	<1	<1	7.7	<500	<20	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1	409	<20	<1	<1	<1	0.80	0.61	<1	<1	<1
1,1 Dichloroethane / ethene	3.7	<1	16.9	6.4	31.1	11,630	1,043	0.47	<1	43.3	100.4	<1	50.3	6.1	5.7
Total 1,2 Dichloroethene	8.0	1.1	28.9	30.6	32.8	76,100	5,810	<1	<1	61.9	183	<1	117.8	4.8	23
Trichloroethene	23	4.8	125.0	<1	10.1	236,000	5,290	0.53	<1	180	599	<1	28.8	3.7	1.5
1,1,1 Trichloroethane	4.9	1.2	27.4	4.2	16.9	164,000	1,690	<1	<1	40.2	160	<1	2.7	2.3	8
Methylene Chloride	<1	<1	<1	<1	<1	99,400	<20	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1	42,200	<20	<1	<1	<1	<1	<1	<1	<1	<1
Total Xylenes	<1	<1	<1	<1	<1	8,300	<20	<1	<1	<1	<1	<1	<1	<1	<1

2.5.3 Soil Vapor

Soil Vapor Sampling was performed in 2009. The results of this investigation are shown on Figure 6. TCE was not detected in about a third of the soil vapor sampling locations, was present at up to 10 µg/m^3 in about a second third of the locations, and present between 22 and 4,500 µg/m^3 in the remaining third. No more recent sampling has been performed but due to the continued presence of VOCs in the groundwater, soil vapor contamination is expected to still be present at the site, near the former disposal area.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

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

This plan provides:

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

3.2 Institutional Controls

A series of ICs is required by the Deed Restriction to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to industrial uses only.

Adherence to these ICs on the site is required by the Deed Restriction and will be implemented under this SMP. ICs identified in the Deed Restriction may not be discontinued without an amendment to or extinguishment of the Deed Restriction. The IC boundaries are described by the metes and bounds description provided in the Deed Restriction. These ICs are:

1. The property may be used for industrial use. The property may not be used for a higher level of use, such as unrestricted use without additional remediation and amendment of the Deed Restriction, as approved by the NYSDEC;

2. All ECs must be operated and maintained as specified in this SMP;

3. All ECs must be inspected at a frequency and in a manner defined in the SMP

4. The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;

5. Groundwater and other environmental or public health monitoring must be performed as defined in this 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 this SMP

7. All future activities that will disturb remaining contaminated material must be conducted in accordance with the Excavation Work Plan included in the 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 restrictions identified by the Deed Restriction;

9. The potential for vapor intrusion must be evaluated for any buildings developed within the property boundary of the site depicted on Figure 2, and any potential impacts that are identified must be monitored or mitigated;

10. Vegetable gardens and farming on the property are prohibited;

11. The site owner or remedial party will submit to NYSDEC a periodic review report that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

3.3 Engineering Controls

3.3.1 Soil Cover

Exposure to remaining contamination at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 12 inches of clay soil above the waste pit, which is covered by a 30 mil high density polyethylene liner. The liner is covered by a minimum of one foot of top soil and a vegetative cover. This cover system has been in-place for nearly 30 years and survived precipitation events that resulted in historic flooding of the Susquehanna River in the Village of Sidney in 2006 and 2011 without any observable failure, settlement or erosion. The Deed Restriction prohibits any and all activity with the fenced area surrounding the former waste pit.

The location of the cover system is shown on Figures 3 through 6. The Excavation Work Plan (EWP) provided in Appendix D outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the site and provided in Appendix E. Any disturbance of the site's cover system must be overseen by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State.

3.3.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives 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).

Groundwater monitoring activities to assess decreases in groundwater contamination will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. 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.

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.

3.3.2.1 – Soil Cover

The soil cover is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

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

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

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

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

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

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed on a regular schedule 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 G – Site Management Forms. The form will compile sufficient information to assess the following:

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

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

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

Reporting requirements are outlined in Section 7.0 of this plan.

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

4.3 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from groundwater monitoring wells and groundwater seeps on a routine basis. Sampling locations, required analytical parameters and schedule are provided in Table 3 – Groundwater and Seep Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

Table 3 – Groundwater and Seep Sampling Requirements and Schedule

Sampling Location	Analytical Parameters		Schedule
	VOCs (EPA Method 624)	Elevation	
83-1	X	X	every fifth quarter
83-2	X	X	every fifth quarter
83-3	X	X	every fifth quarter
83-4	X	X	every fifth quarter
84-10	X	X	every fifth quarter
84-12	X	X	every fifth quarter
84-13		X	every fifth quarter
14		X	every fifth quarter
15	X	X	every fifth quarter
16	X	X	every fifth quarter
17		X	every fifth quarter
18	X	X	every fifth quarter
20		X	every fifth quarter
22/4I	X	X	every fifth quarter
24	X	X	every fifth quarter
26	X	X	every fifth quarter
27	X	X	every fifth quarter
28	X	X	every fifth quarter
29	X	X	every fifth quarter
31	X	X	every fifth quarter
32	X	X	every fifth quarter
Seep-1	X		every fifth quarter
Seep-2	X		every fifth quarter
Seep-3	X		every fifth quarter
Seep-4	X		every fifth quarter

Detailed sample collection and analytical procedures and protocols are provided in Appendix H – Sampling and Analysis Plan and Appendix F – Quality Assurance Project Plan.

Table 4 summarizes the wells identification number, as well as the purpose, location, depths, diameter and screened intervals of the wells. The remedial party will measure depth to the water table for each monitoring well in the network before sampling.

Table 4 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Well Diameter (inches)	Latitude	Long-itude	Elevation (above mean sea level)		
					Casing	Screen Top	Screen Bottom
83-1	downgradient	2	-75.40499	42.298048	1118.38	1034.38	1015.38
83-2	downgradient	2	-75.404918	42.298566	1105.24	1055.24	1025.24
83-3	downgradient	2	-75.407516	42.298187	1038.31	985.71	955.71
83-4	downgradient	2	-75.406722	42.298876	1038.13	1018.13	973.13
84-10	downgradient	2	-75.405796	42.298835	1080.97	1068.51	1058.51
84-12	downgradient	2	-75.406803	42.297926	1073.44	1064.26	1049.26
84-13	upgradient	2	-75.404926	42.297244	1125.88	1013.33	1003.33
14	sidegradient	2	-75.404905	42.298797	1100.33	1070.33	1060.33
15	upgradient	2	-75.404936	42.297487	1123.72	1061.72	1051.72
16	upgradient	2	-75.404901	42.297479	1124.32	1089.32	1079.32
17	sidegradient	2	-75.404621	42.298221	1108.97	1097.97	1077.97
18	downgradient	2	-75.404944	42.298395	1101.91	1096.91	1076.91
20	sidegradient	2	-75.404761	42.298161	1110.25	1090.25	1080.25
4I	on-site	2	-75.404886	42.297815	1119.69	1059.69	1049.69
24	downgradient	2	-75.405079	42.301217	1101.31	1079.02	1069.02
26	on-site	2	-75.404926	42.297244	1115.78	1100.78	1090.78
27	upgradient	2	-75.404557	42.29765	1123.53	1101.53	1091.53
28	upgradient	2	-75.404913	42.297236	1124.05	1029.05	1019.05
29	upgradient	2	-75.404904	42.297261	1124.26	1094.26	1084.26
31	sidegradient	2	-75.404453	42.298337	1109.4	1089.4	1079.4
32	sidegradient	2	-75.405384	42.297428	1119.88	1107.88	1097.88

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

If biofouling or silt accumulation occurs in the on-site and/or 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 Periodic Review Report. 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.

4.41 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix G - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity) 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 Sampling and Analysis Plan provided as Appendix H 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.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

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

The Site is not in a flood plain or in a sensitive area that would currently indicate the potential for significant impact from increased storms/weather events or sea level rising. Therefore, a vulnerability assessment is not required at this time. If the status of the Site's vulnerability changes, or if an assessment is required as part of this SMP, an appropriate assessment will be conducted at that time.

6.2 Green Remediation Evaluation

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

The Green Remediation Evaluation will include the following items:

- Waste Generation from quarterly sampling efforts;

- Fossil fuel usage associated with travel to and from the Site for sampling and monitoring activities; and
- Water usage for decontamination of sampling equipment.

Methods proposed to reduce energy consumption, resource usage, waste generation, water usage, etc. should be included in the PRR.

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. 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.

Consideration shall be given to:

- Reduced sampling frequencies;
- Reduced site visits and system checks;

- Installation of remote sensing/operations and telemetry;
- Coordination/consolidation of activities to maximize foreman/labor time; and
- Use of mass transit for site visits, where available.

6.3 Remedial System Optimization

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

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

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix G. 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 Table 5 and summarized in the Periodic Review Report.

Table 5: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Groundwater Monitoring Reports (including Quarterly Inspection Reports)	Every Fifth Quarter
Periodic Review Report	Annually, or as otherwise determined by the NYSDEC

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

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

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

- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- List of samples collected;
- 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 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.

If unscheduled maintenance is required, the following information will be provided in the PRR:

- 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 Periodic Review Report (PRR) will be submitted annually to the NYSDEC project manager or at another frequency as may be required by the NYSDEC project manager. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A – Deed Restriction. 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 Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections, and severe condition inspections, if applicable.
- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.
- 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;
  - 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™ 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 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 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 and Engineering Controls

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

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

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

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

- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and*
- *The information presented in this report is accurate and complete.*

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

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

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

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control or failure to conduct site management activities, a Corrective Measures Work Plan will be

submitted to the NYSDEC project manager for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC project manager.

7.4 Remedial Site 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 I. 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

ERM, 1984, "Preliminary Hydrogeologic Evaluation of On-Site and Off-Site Ground Water Contamination at the Hill Site"

ERM, 1984, "Hydrogeologic Investigation of Ground Water Contamination Associated with the Hill Site for Bendix Corporation, Sidney, New York"

ERM, 1987, "Remedial Investigations and Feasibility Studies at the Hill Site: Amphenol Corporation – Bendix Connector Operations, Sidney, New York"

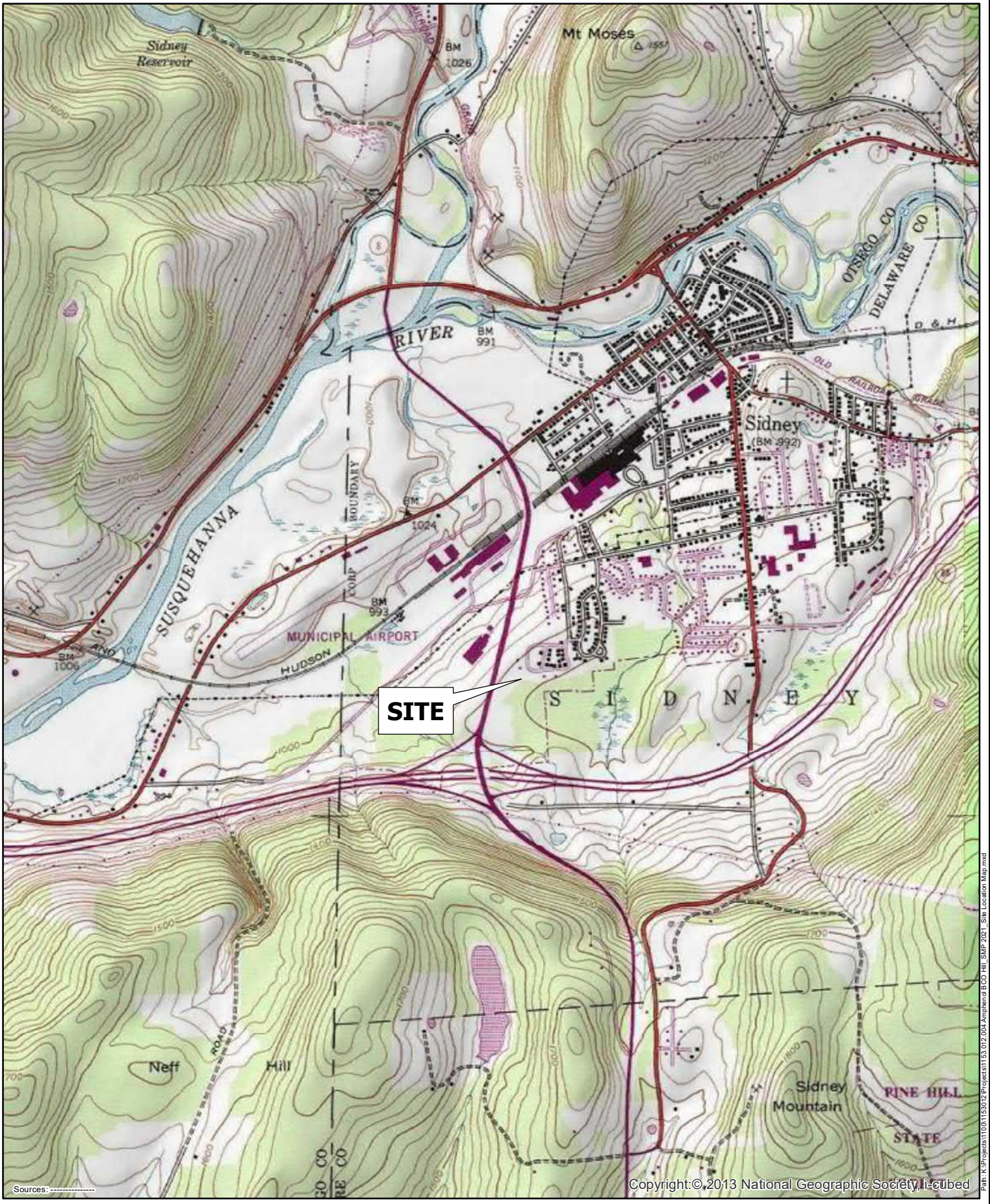
NYSDEC, 1993 "Amphenol BCO-Hill Site, Village of Sidney, Delaware County, Site Number 413003 Record of Decision"

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



Path: K:\Projects\1100\1153\012\Projects\1153.012.004 Amphenol BCO Hill_SMP 2021_Site Location Map.mxd

Barton & Loguidice

N W E S

0 1,500 3,000 6,000 Feet

Amphenol Aerospace BCO Hill
Site Management Plan 2021

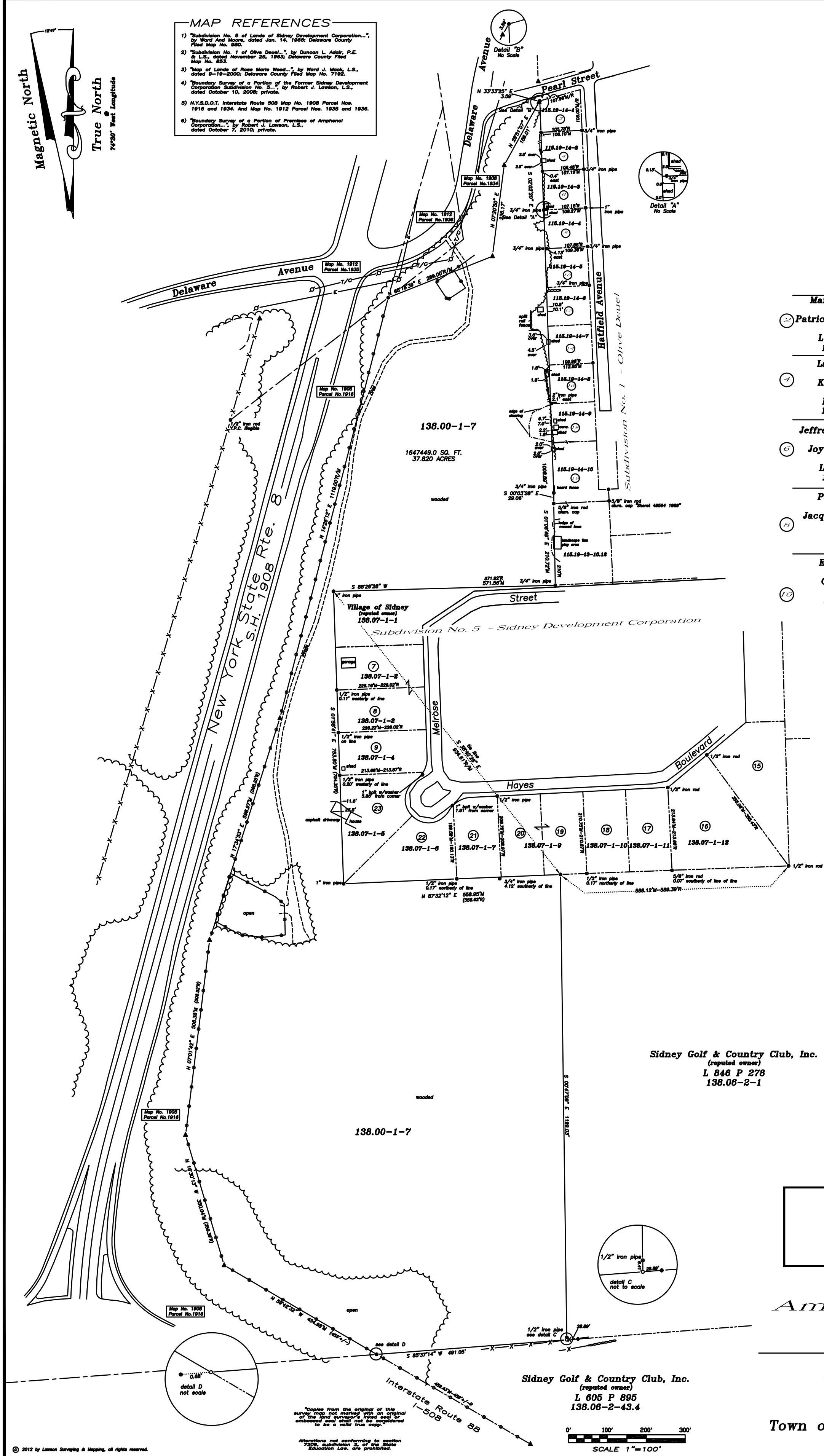
Site Location Map

Delaware County 3/2/2021 New York

Figure 1

-

Project No. 1153.012



LEGEND

- 5/8" Iron Rod Set Capped "Lawson 050086"
- Evidence Found, Labeled
- Concrete Monument 7" Triangular
- 1/2" Iron Rod
- 5/8" Iron Rod Set Capped "D Perry Sidney NY"
- Boundary Line
- County Tax Parcel Line
- Board Fence
- Wire Fence
- 138.00-1-7 — County Tax Map Parcel I.D. Number
- (2) — Lot Number (per Map Reference No. 2)
- (15) — Lot Number (per Map Reference No. 1)
- Utility Pole
- E/T/C — Utility Line, Electric/Telephone/Cable T.V.

NOTES

1) Subject to any statement of fact an up to date and accurate abstract of title may disclose.
2) Subject to any utility easements of record.
3) In the event that there is a discrepancy between the contents of the signed and sealed hardcopy drawing and the corresponding digital drawing file, the hardcopy with an original stamp and signature shall be the controlling document. Be sure to compare the two documents before using the digital file.
4) Horizontal Datum is rigidly adjusted to the New York State Plane Coordinate System, East Zone. GPS derived.
5) This survey does not constitute a subdivision.
6) Subject to the rights of the public over Pearl Street.
7) Site may contain protected wetlands. Contact appropriate governmental agencies prior to any site work.

Subdivision No. 1 - Olive Deuel Adjoiner List

(2) Mark Loewenstein and Patricia E. Loewenstein (reputed owners) L 1021 P 162 115.19-14-1

(4) Lawrence Mertz and Karen E. Mertz (reputed owners) L 740 P 438 115.19-14-2

(6) Jeffrey M. Magnussen and Joy M. Magnussen (reputed owners) L 1190 P 102 115.19-14-3

(8) Paul R. Bargher and Jacqueline A. Bargher (reputed owners) L 463 P 235 115.19-14-4

(10) Edwin J. Rivera and Carmen Rivera (reputed owners) L 1190 P 104 115.19-14-5

(12) George W. Chickering, Jr. and Debra A. Totten (reputed owners) L 740 P 1160 115.19-14-6

(14) Rohan S. Jayasena (reputed owner) L 1018 P 163 115.19-14-7

(16) Jacqueline S. Backus (reputed owner) L 834 P 128 115.19-14-8

(15) Timothy Grow and Patricia Grow (reputed owners) L 1212 P 340 115.19-14-9

(19) Jesse A. Johnson, Jr. and Edeltrud M. Johnson (reputed owners) L 509 P 420 115.19-14-10

John D. Adams and Shannon S. Adams (reputed owners) L 922 P 221 115.19-13-10.12

Subdivision No. 5 Sidney Development Corporation Adjoiner List

(7) (8) David E. Van Valkenburg (reputed owner) L 756 P 978 138.07-1-2

(9) Mary Jane Gelder (reputed owner) L 812 P 271 138.07-1-4

(23) Paul D. Kohler and Jean D. Kohler (reputed owners) L 594 P 692 138.07-1-5

(22) Jesse A. Johnson, Jr. and Edeltrud M. Johnson (reputed owners) L 571 P 887 138.07-1-6

(21) Jane Cole (reputed owner) L 1109 P 296 138.07-1-7

(20) (19) Joseph Mirabito and Rosemary Mirabito (reputed owners) L 664 P 77 138.07-1-9

Area = 37.820 acres

Figure 2
Site Layout Figure

Boundary Survey of a Portion of
Amphenol Corporation
L 676 P 798
Req.: JTM Associates, LLC

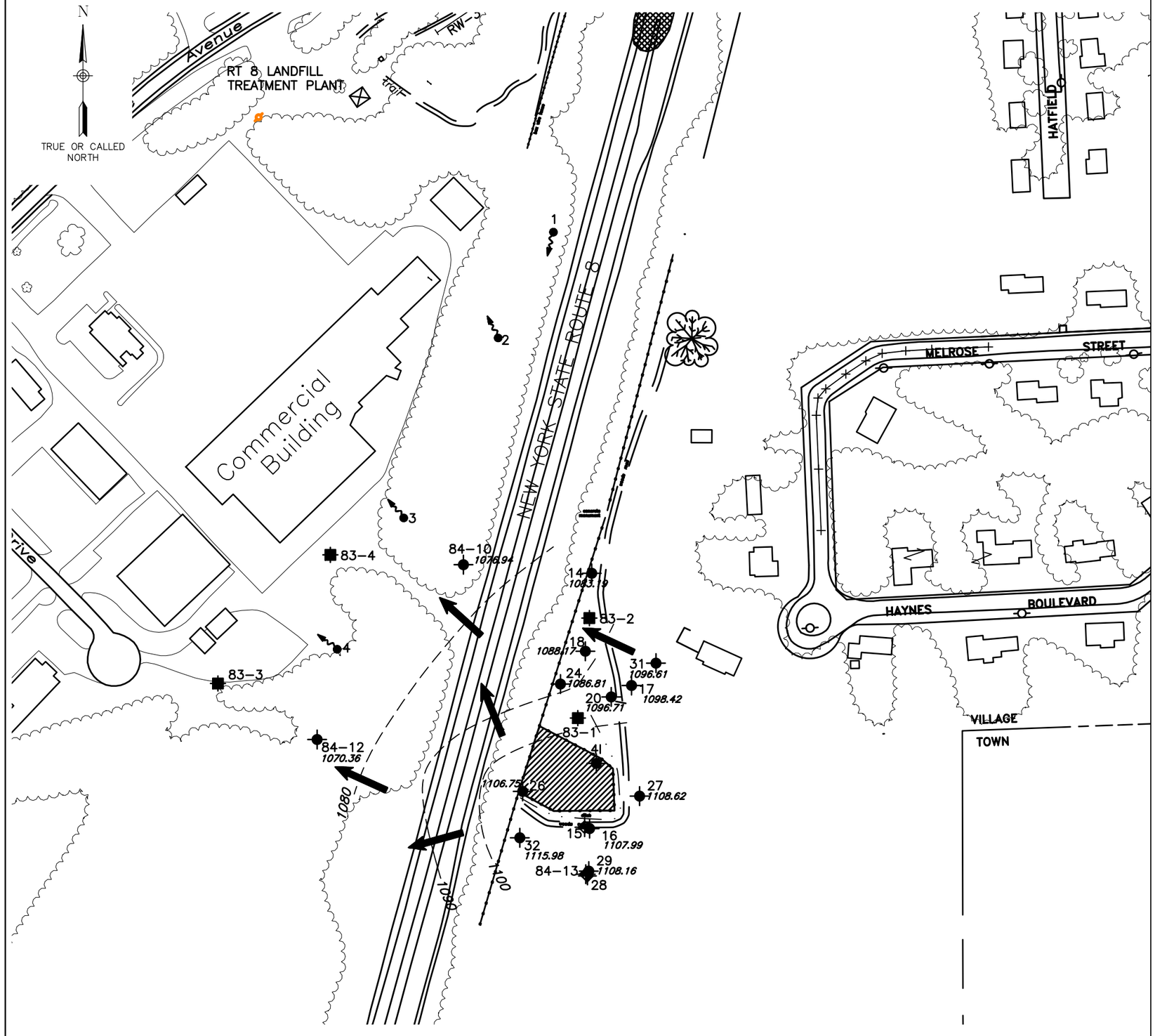
being part of
Lots 70 and 71
of the
Wallace Patent
Town of Sidney, County of Delaware
State of New York

Robert J. Lawson, L.S.
N.Y.S. License No.: 050086
DATE: October 17, 2010
W.O. No.: 5124
SCALE: 1 inch = 100 feet
DRAWN BY: L.R.W.
CHECKED BY: R.J.L.
FIELD CHECKED BY: J.E.W.
DWG FILE: 5124.DWG
MAP No.: M 30-272
SHEET No.: 1 of 1

LAWSON SURVEYING & MAPPING
Boundary ~ Topographic ~ Control ~ Deformation ~ Construction ~ G.I.S. ~ Subdivision ~ G.P.S.
16 - 18 Reynolds Avenue ◆ Oneonta, New York 13820
Phone: (607) 432-0800
Facsimile: (607) 432-0813
www.lawsonsurvey.com

REVISIONS

No.	Date	Description



LEGEND

- PROPERTY LINE
- FENCE LINE
- RAILROAD
- SEEP LOCATION
- BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- INTERMEDIATE OVERBURDEN MONITORING WELL LOCATION
- DEEP OVERBURDEN MONITORING WELL LOCATION
- 1090 — GROUNDWATER ELEVATION CONTOUR
- 1108.62 — GROUNDWATER ELEVATION (FEET)
- DIRECTION OF GROUNDWATER FLOW
- SITE COVER

BASEMAP ENTITLED "SIDNEY SURVEY AMPHENOL NOV192008", DATED APRIL 19, 2008, BY LAWSON SURVEYING & MAPPING.

JTM ASSOCIATES

AMPHENOL AEROSPACE BCO HILL
SITE MANAGEMENT PLAN 2021

GROUNDWATER FLOW MAP
INTERMEDIATE OVERBURDEN - MARCH 2, 2020

DELAWARE COUNTY, NEW YORK
VILLAGE OF SIDNEY

B&L
Barton & Loguidice, D.P.C.
443 Electronics Parkway
Liverpool, NY
13088

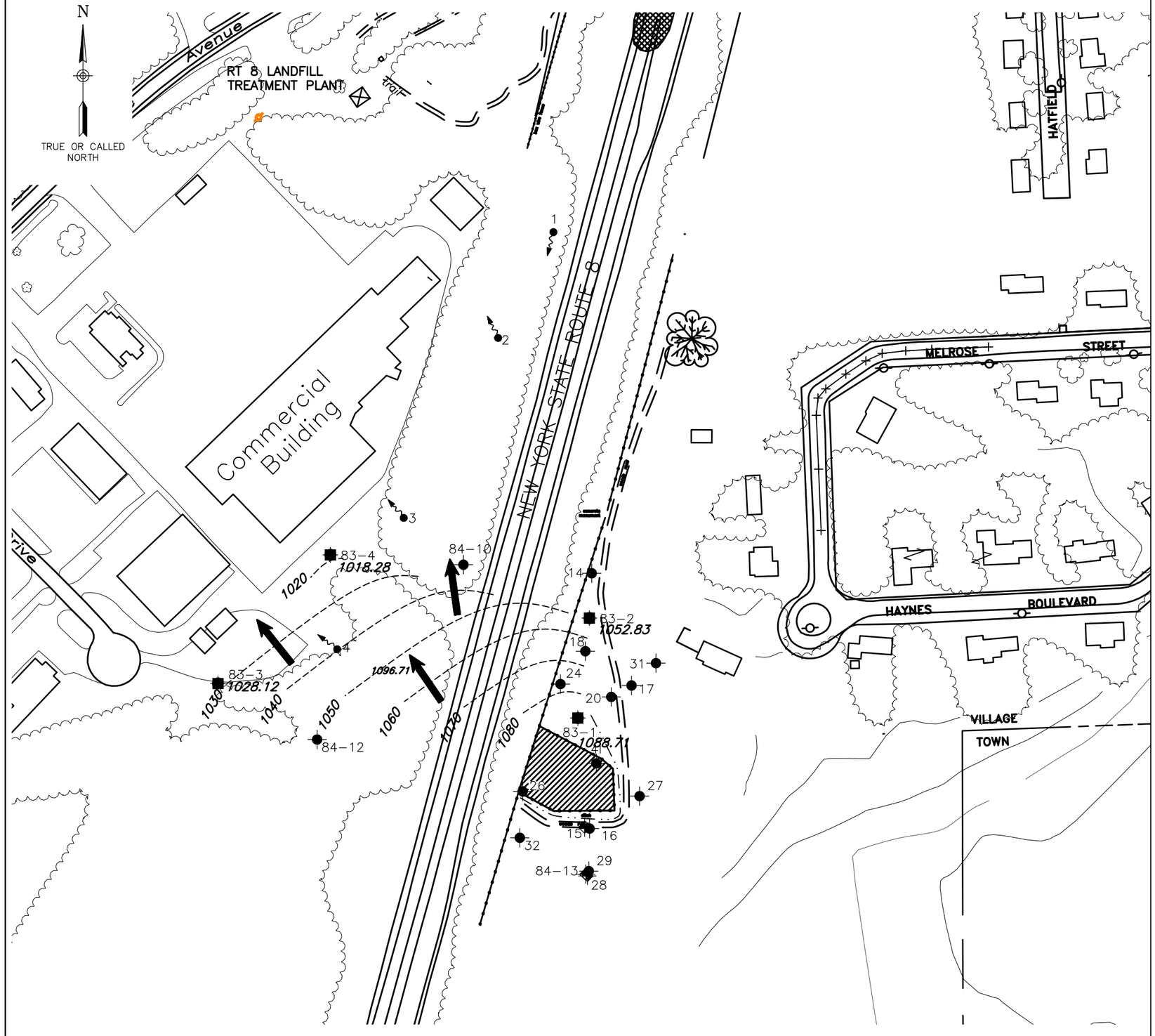
Date
MAY 2021

Scale
AS SHOWN

Figure Number
3

Project Number
1153.012.004

Plotted: May 07, 2021 - 8:28AM SYR By: bgh
I:\Shared\1100\1153012\BCO Hill\SMP 2021\1153.012.004 Amphenol BCO Hill_SMP 2021_Groundwater Flow Map Intermediate Overburden.dwg



LEGEND

- PROPERTY LINE
- FENCE LINE
- RAILROAD
- SEEP LOCATION
- BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- INTERMEDIATE OVERBURDEN MONITORING WELL LOCATION
- DEEP OVERBURDEN MONITORING WELL LOCATION
- 1090 GROUNDWATER ELEVATION CONTOUR
- 1108.62 GROUNDWATER ELEVATION (FEET)
- DIRECTION OF GROUNDWATER FLOW

BASEMAP ENTITLED "SIDNEY SURVEY AMPHENOL NOV192008", DATED APRIL 19, 2008, BY LAWSON SURVEYING & MAPPING.

JTM ASSOCIATES

AMPHENOL AEROSPACE BCO HILL
SITE MANAGEMENT PLAN 2021

GROUNDWATER FLOW MAP
BEDROCK - MARCH 2, 2020

DELAWARE COUNTY, NEW YORK

VILLAGE OF SIDNEY

B&L
Barton & Loguidice, D.P.C.
443 Electronics Parkway
Liverpool, NY
13088

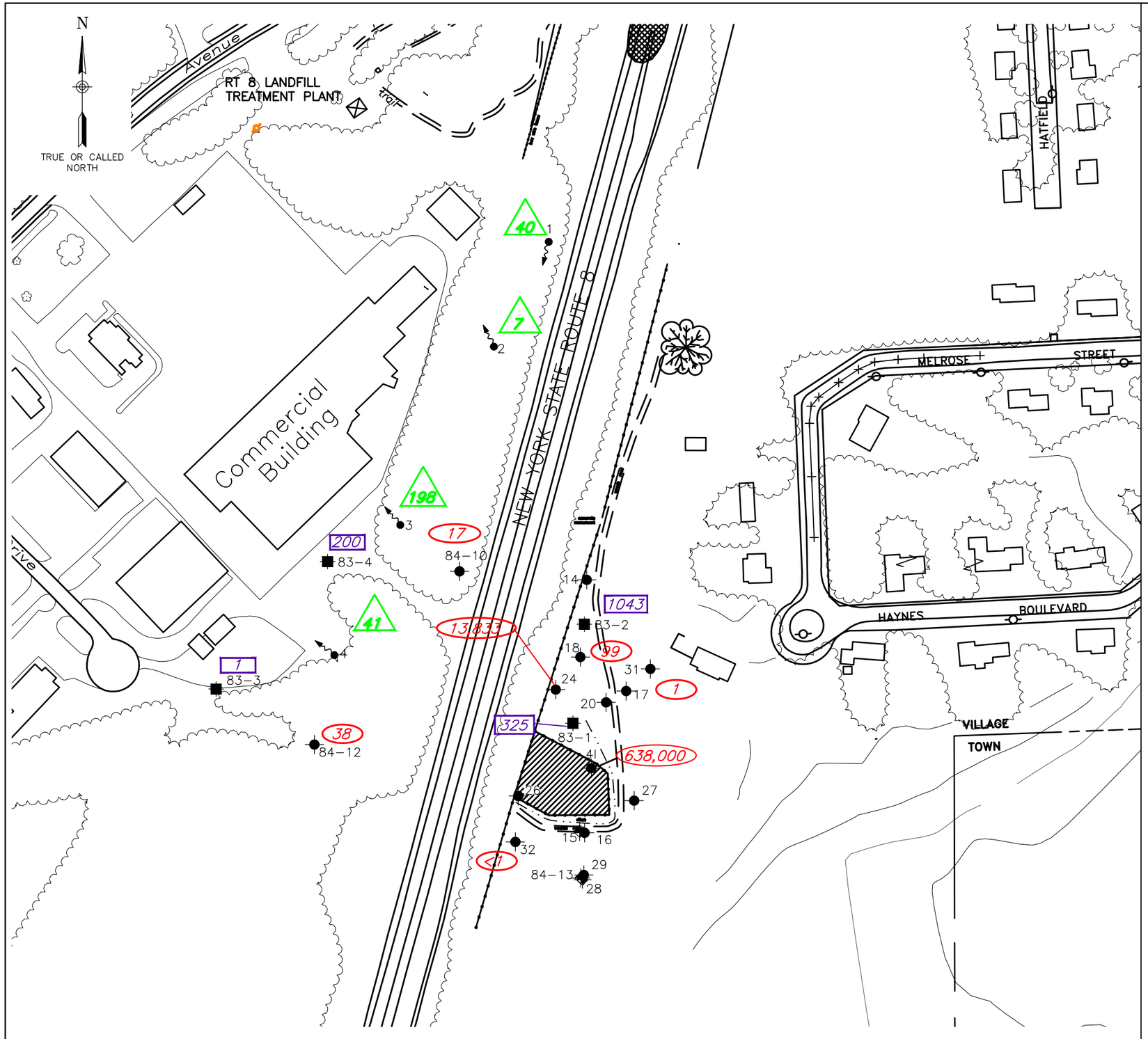
Date
MAY 2021

Scale
AS SHOWN

Figure Number
4

Project Number
1153.012.004

Plotted: May 07, 2021 – 3:32PM SYR By: bgh
I:\Shared\1100\1153012\BCO Hill\SMP 2021\1153.012.004 Amphenol BCO Hill_SMP 2021_Groundwater Flow Map Bedrock.dwg



LEGEND

- FENCE LINE
- 40 — SEEP LOCATION
- 200 — BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- 38 — INTERMEDIATE OVERBURDEN MONITORING WELL LOCATION
- DEEP OVERBURDEN MONITORING WELL LOCATION
- SITE COVER

CONCENTRATION OF TOTAL VOCS AT WELLS IS IN PPB.

BASEMAP ENTITLED "SIDNEY SURVEY AMPHENOL NOV192008", DATED APRIL 19, 2008, BY LAWSON SURVEYING & MAPPING.

JTM ASSOCIATES

AMPHENOL AEROSPACE BCO HILL
SITE MANAGEMENT PLAN 2021

VOC DISTRIBUTION MAP BY FORMATION MARCH 3-4, 2020

DELAWARE COUNTY, NEW YORK

VILLAGE OF SIDNEY

B&L
443 Electronics Parkway
Liverpool, NY
13088
Barton & Loguidice, D.P.C.

Date
MAY 2021

Scale
AS SHOWN

Figure Number
5

Project Number
1153.012.004

Plotted: May 07, 2021 – 8:31AM SYR By: bgh
I:\Shared\1100\1153012\BCO Hill\SMP 2021\1153.012.004 Amphenol BCO Hill_SMP 2021_Total VOC Distribution Map by Formation.dwg

N

TRUE OR CALLED NORTH

Avenue

RT 8 LANDFILL TREATMENT PLANT

trail

Commercial Building

rive

NEW YORK STATE ROUTE 8

HATFIELD

MELROSE STREET

HAYNES BOULEVARD

VILLAGE

TOWN

SVP–20 ND
SVP–21 ND
SVP–9 4.5
SVP–22 ND
SVP–8 2.6
SVP–19 ND
SVP–23 ND
SVP–7 54
SVP–24 ND
SVP–6 22
SVP–25 1.0
SVP–15 10
SVP–5 67
SVP–26 ND
SVP–18 150
SVP–14
SVP–4 180
SVP–27 ND
SVP–13 45
SVP–3 5.7
SVP–28 0.55
SVP–17 95
SVP–2 7.8
SVP–10 4.8
SVP–1
SVP–11 10
SVP–12 5.5
SVP–16 ND

200’ 0 200’

1”=200’

LEGEND

- FENCE LINE
- RAILROAD
- SITE COVER
- SVP–2 SOIL VAPOR PROBE
- 7.8 TCE IN SOIL VAPOR (UG/M^3)

SVP TCE SAMPLES COLLECTED MAY 2009.

BASEMAP ENTITLED "SIDNEY SURVEY AMPHENOL NOV192008", DATED APRIL 19, 2008, BY LAWSON SURVEYING & MAPPING.

JTM ASSOCIATES

AMPHENOL AEROSPACE BCO HILL
SITE MANAGEMENT PLAN 2021

SUMMARY OF TCE IN SOIL VAPOR

DELAWARE COUNTY, NEW YORK

VILLAGE OF SIDNEY

443 Electronics Parkway
Liverpool, NY
13088

Barton & Loguidice, D.P.C.

Date
MAY 2021

Scale
AS SHOWN

Figure Number
6

Project Number
1153.012.004

Plotted: May 07, 2021 – 3:29PM By: bgh
I:\Shared\1100\1153012\BCO Hill\SMP 2021\1153.012.004 Amphenol BCO Hill_SMP 2021_Summary of TCE in Soil Vapor.dwg

EXHIBIT 1

GEOLOGIC SECTIONS FROM THE RI REPORT

Figure 2-1
Off-Site Wells, Borings, Surface Seeps, Air Sampling Locations, & Lines of Geologic Cross Sections

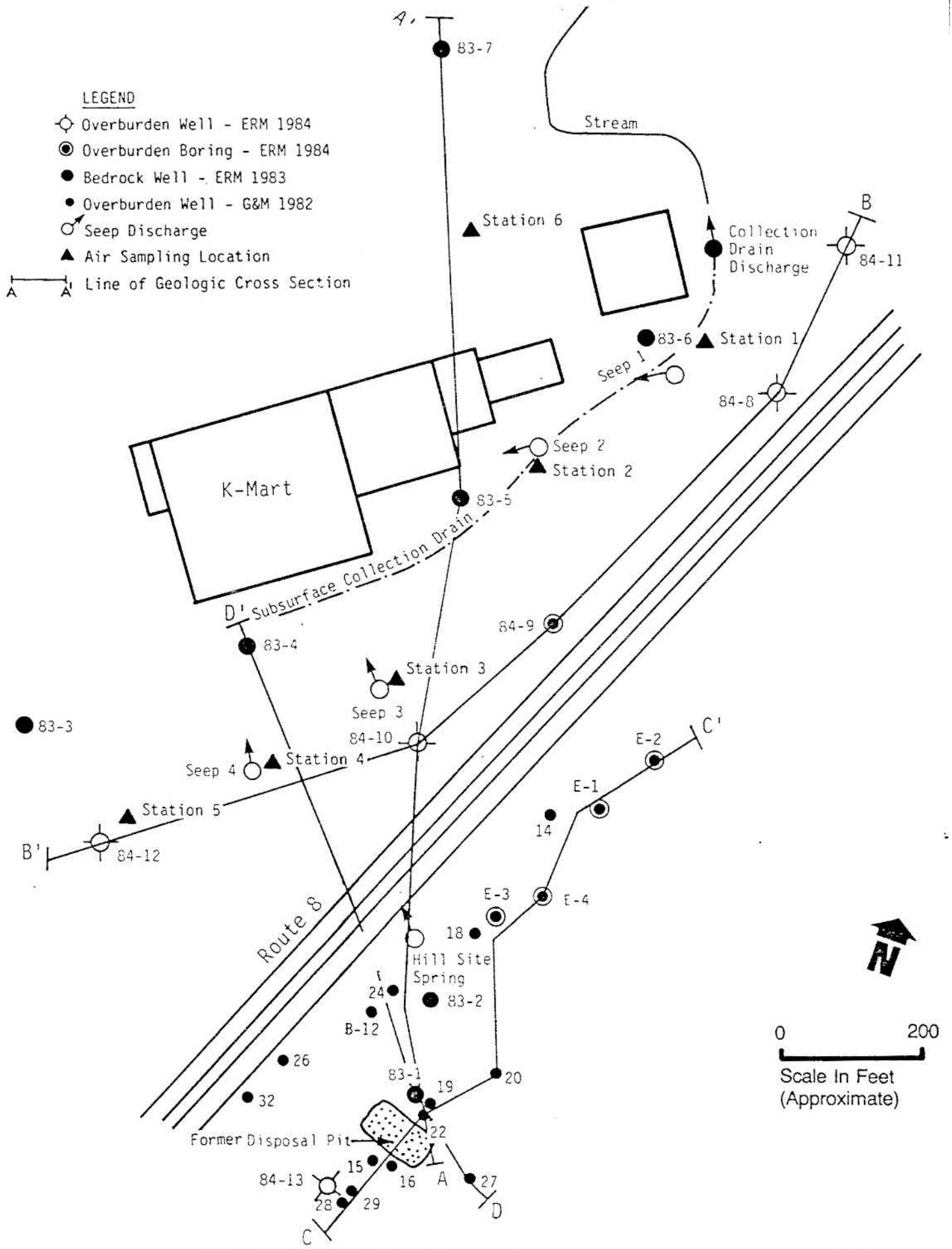


Figure 3-1
Hydrogeologic Cross Section A-A'

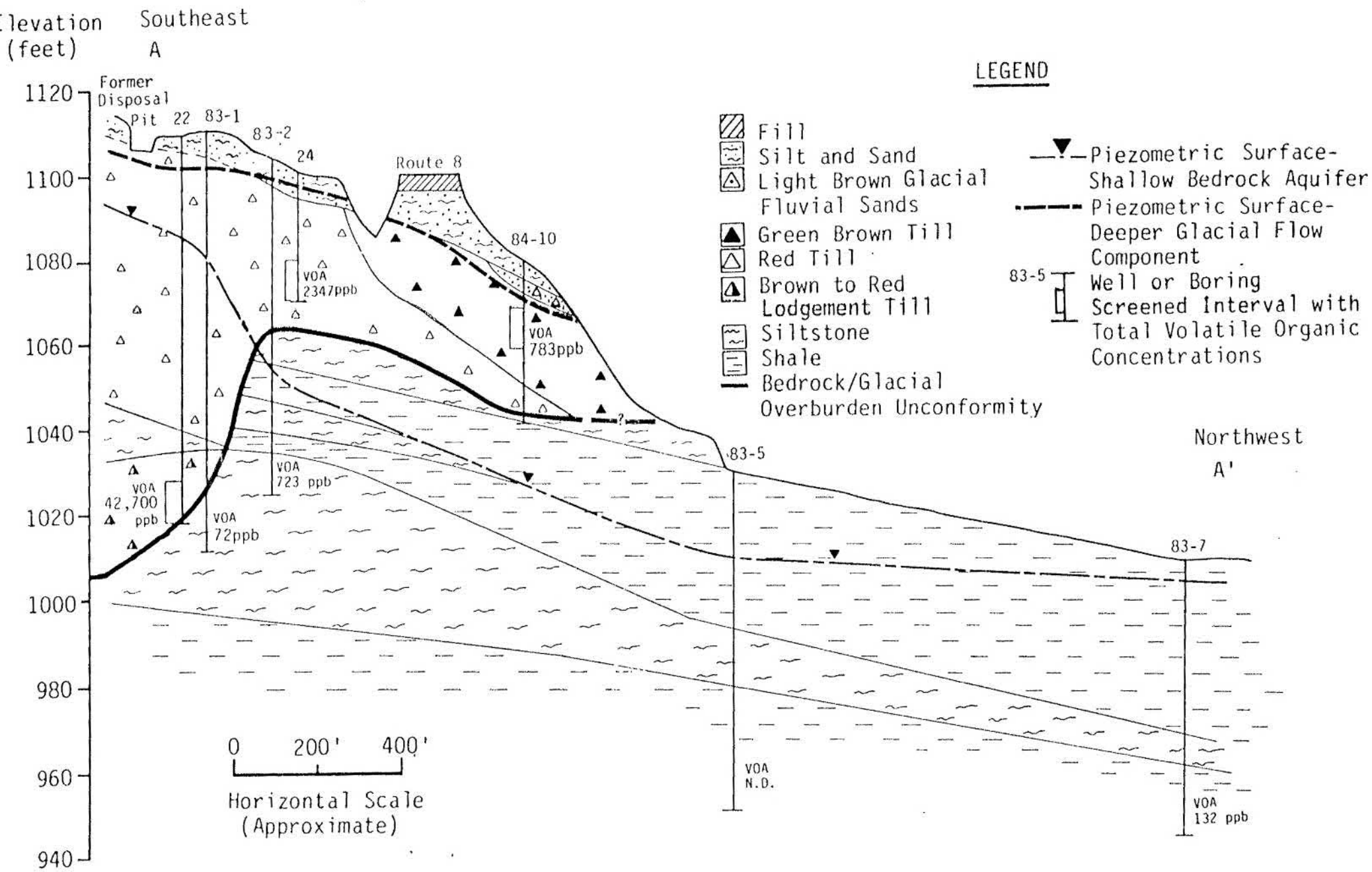


Figure 3-2
Fence Diagram
Shallow Stratigraphy
At Hill Site

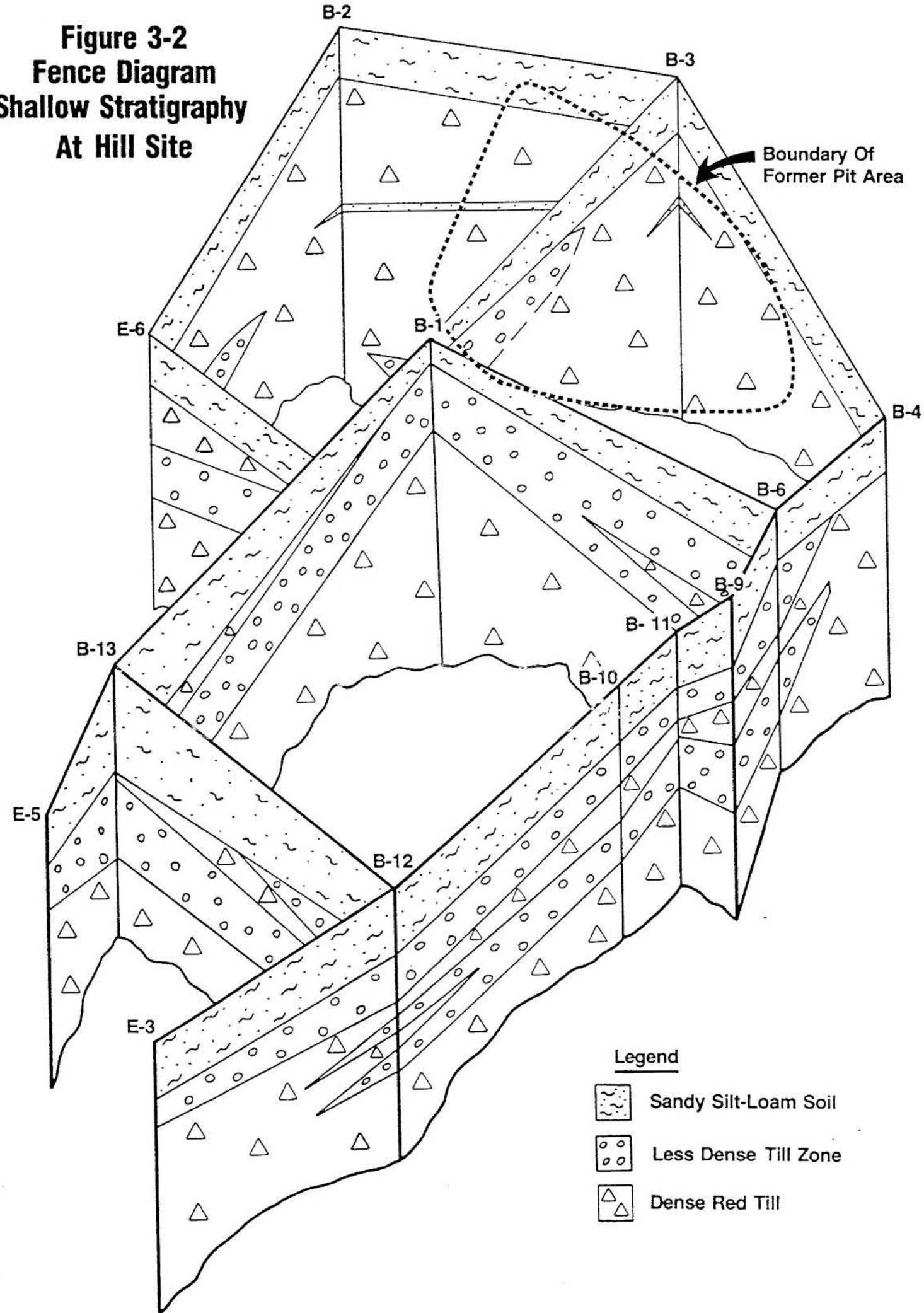


Figure 3-3
Hydrogeologic Cross Section B-B'

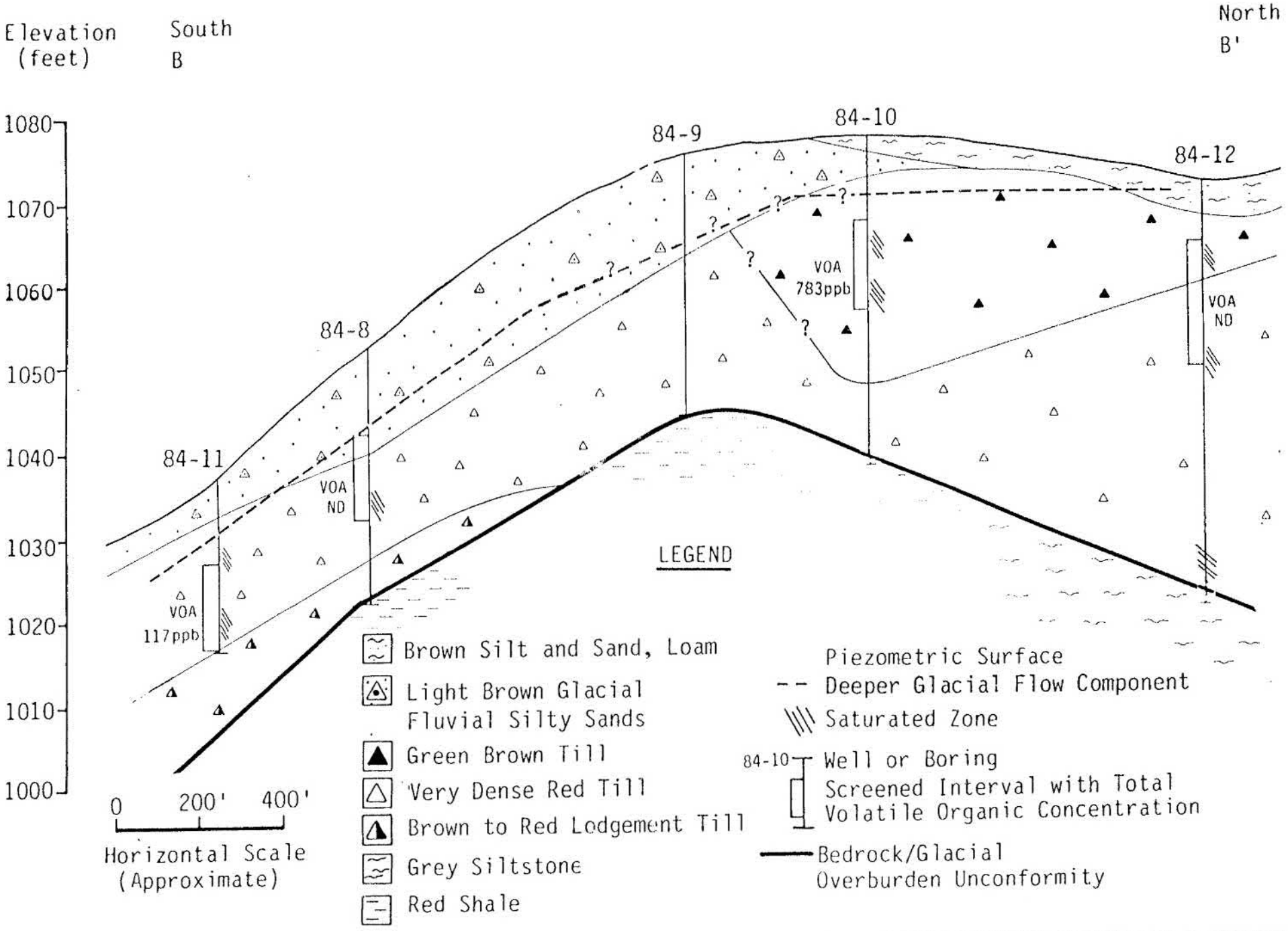


Figure 3-4
Hydrogeologic Cross Section C-C'

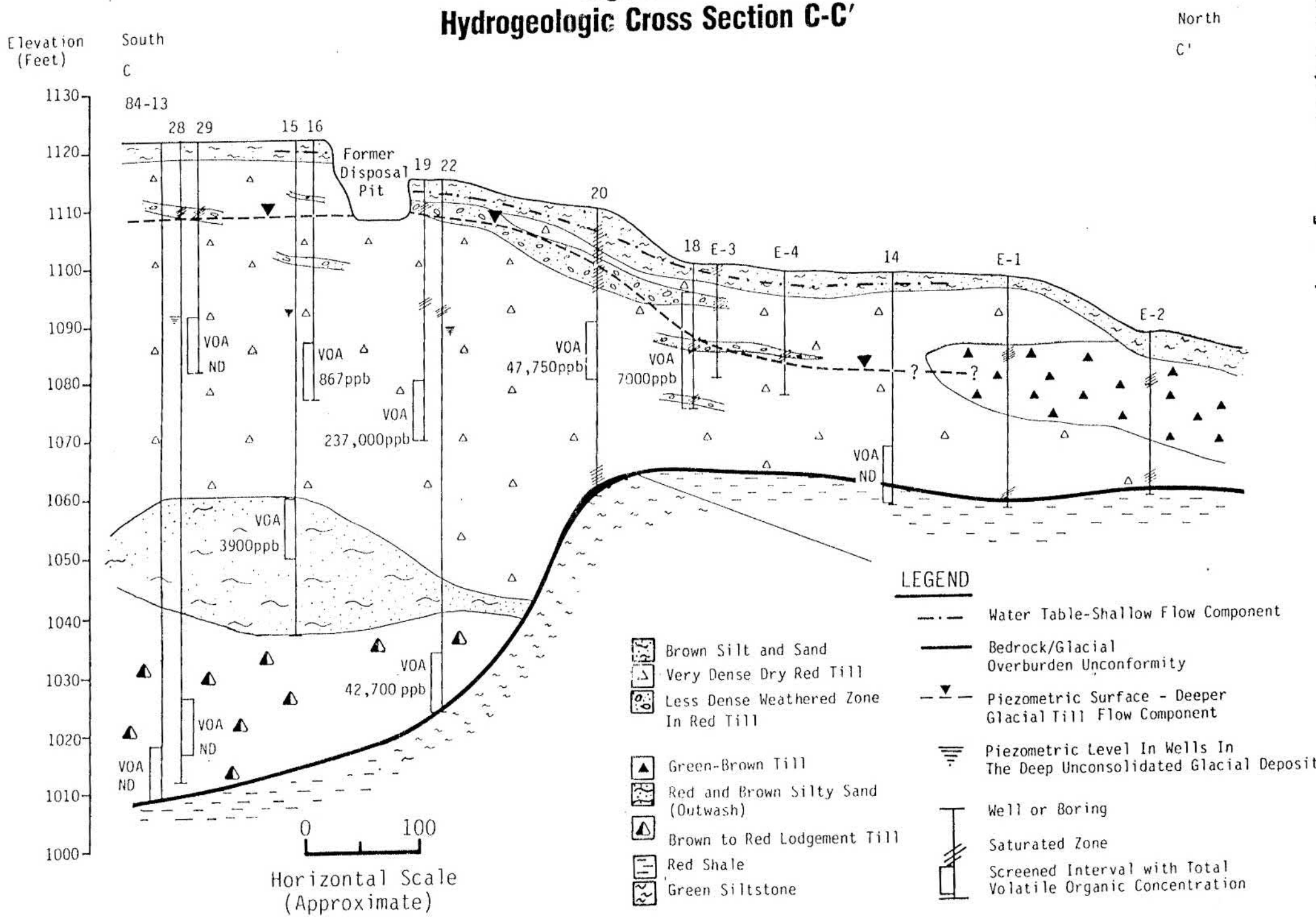


Figure 3-5
Bedrock Topography And Thickness of Glacial Till

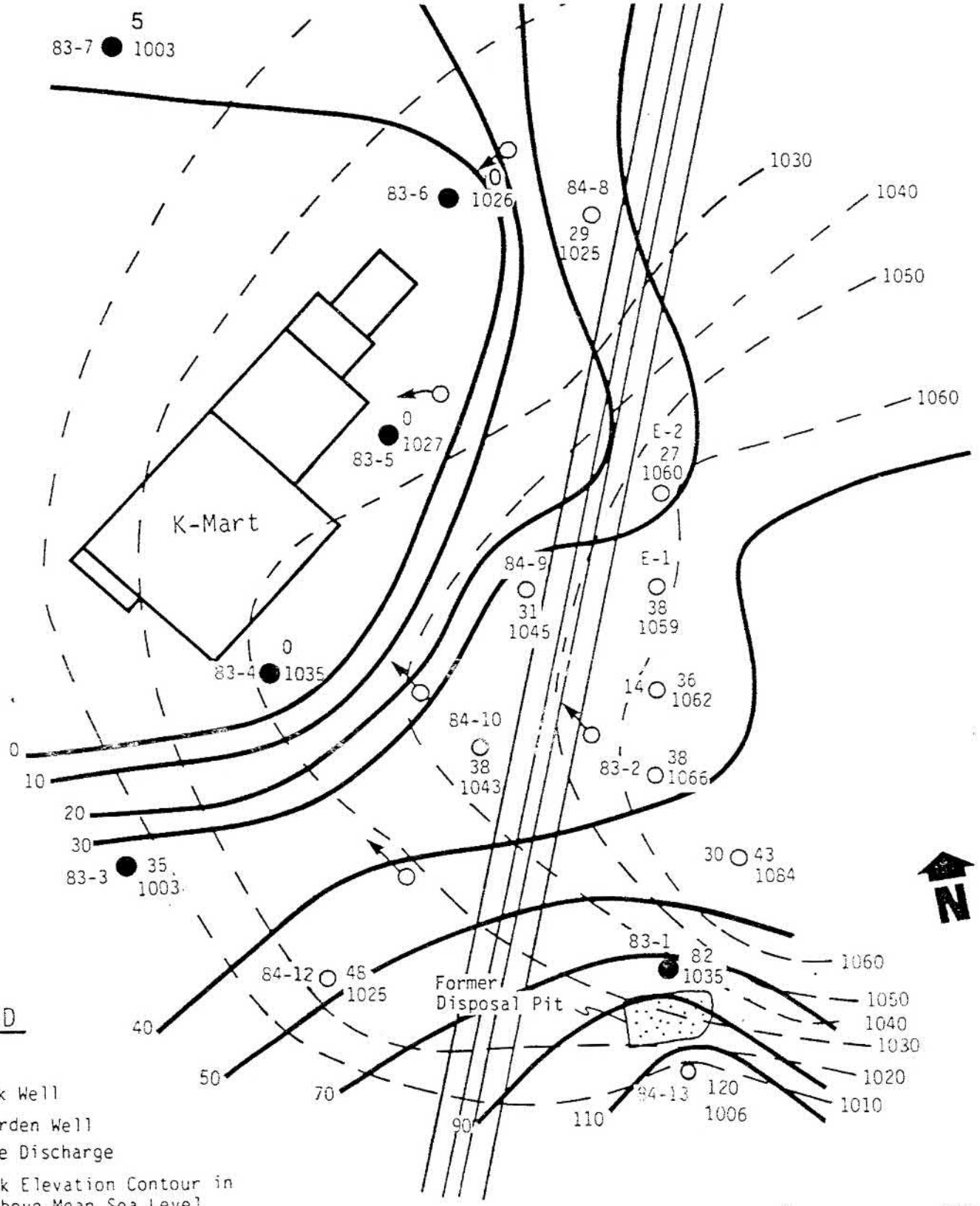


EXHIBIT 2
PCB SAMPLING RESULTS FOLLOWING EXCAVATION

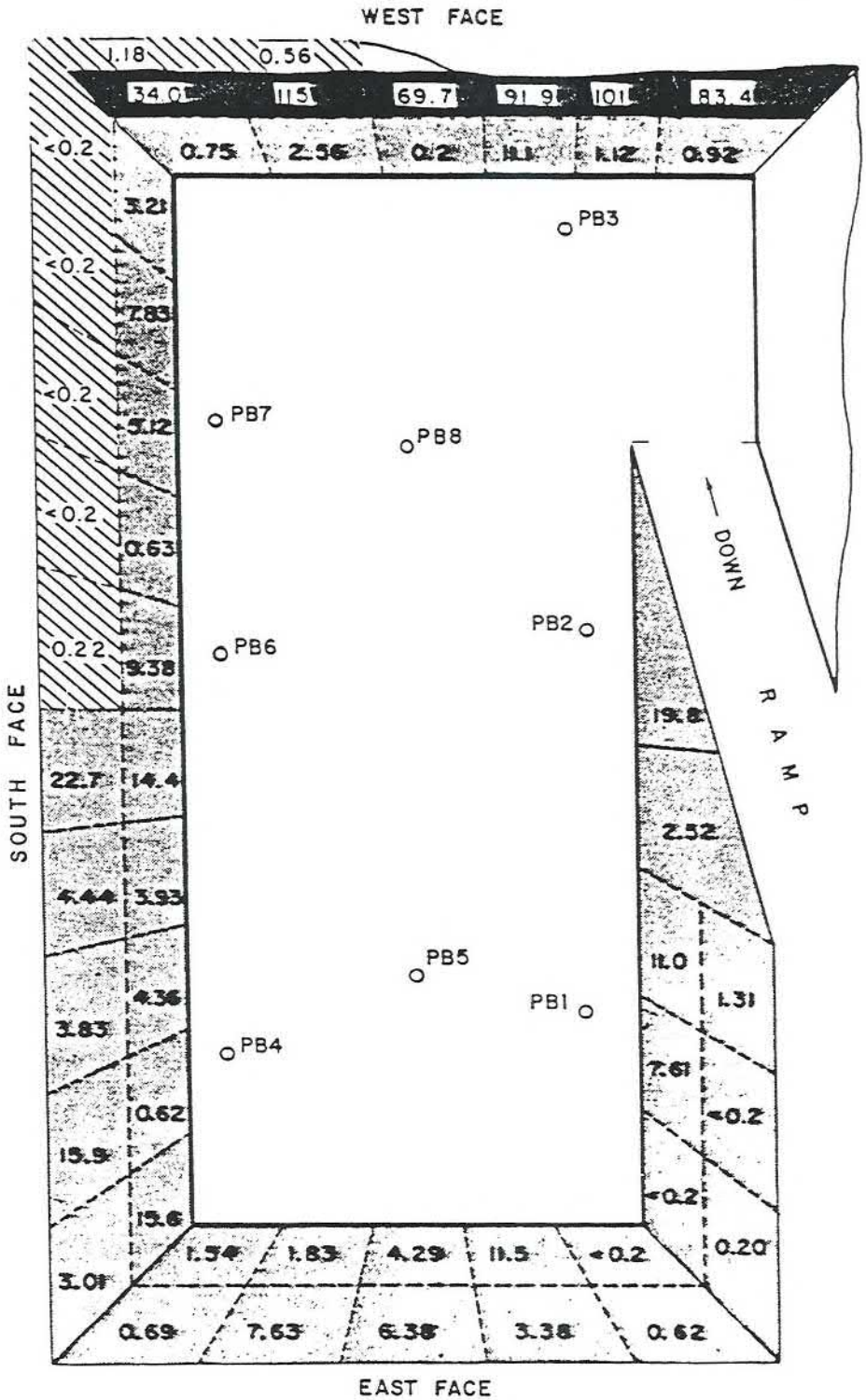


Figure 4-1

BROWN SILT

GRAY SILT

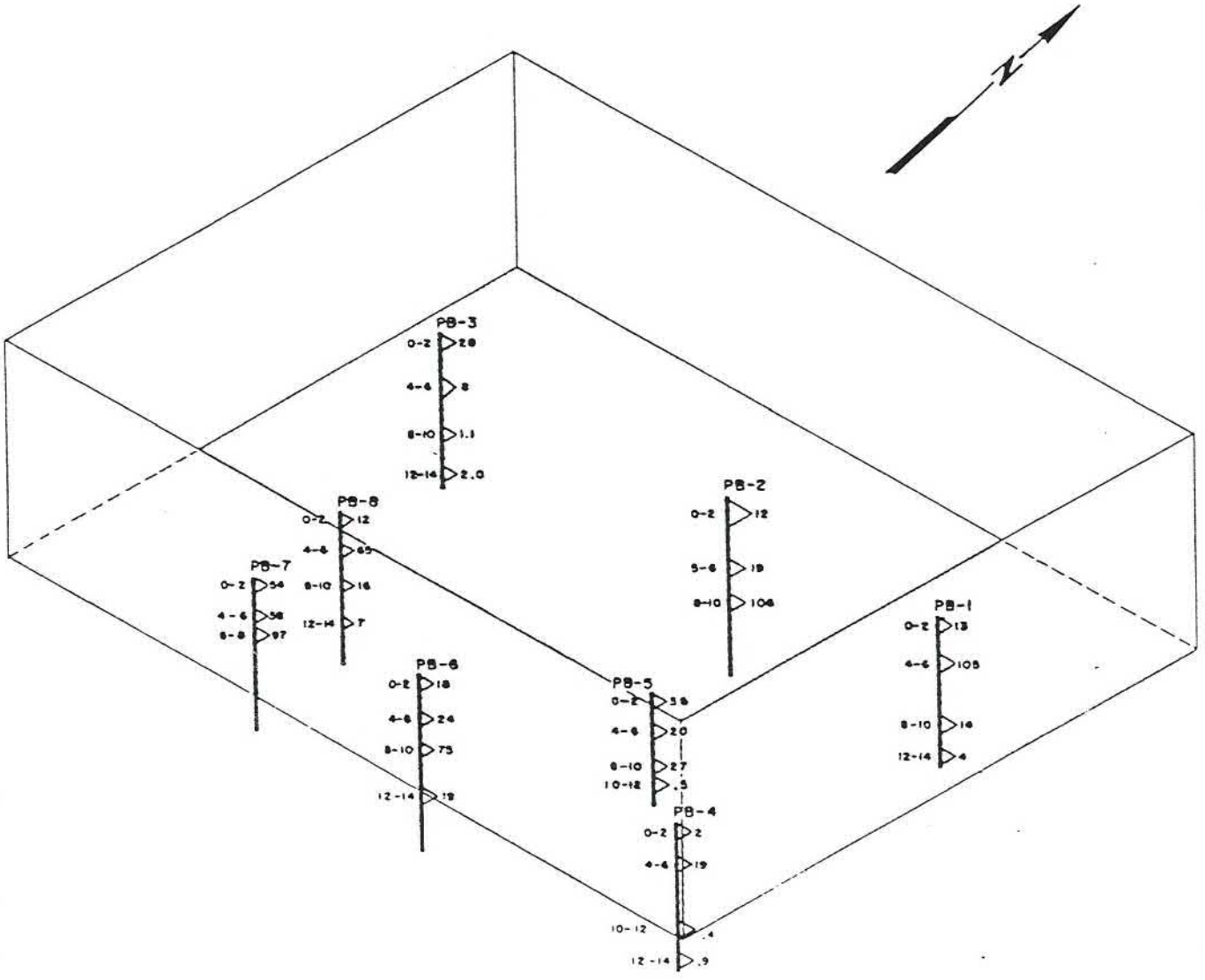
REDDISH-BROWN SILTY CLAY, FINE-COARSE GRAVEL, COBBLES

1.31 NUMBER REFERS TO PCB CONCENTRATION (ppm) IN THE SOIL SAMPLE

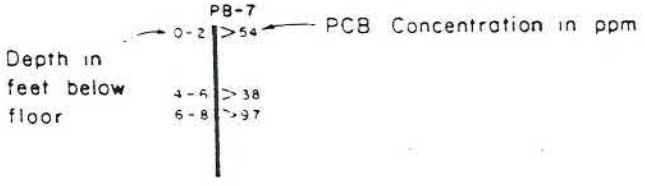
RESULTS OF PCB ANALYSIS OF SOIL SAMPLES FROM THE WALLS OF THE EXCAVATION AND LOCATIONS OF BORINGS

THE BENDIX CORPORATION
SIDNEY, NEW YORK

Geraghty & Miller, Inc	COMPILED BY: A. BARBER	SCALE: NONE	FIGURE
	DRAWN BY: B. CICIO	DATE: FEB. 83	
	PROJECT MGR: E. KOCH		



EXPLANATION



Note:
Boring 2 is only 10 feet, and Boring 7 is only 8 feet deep as boulders were encountered during drilling

Figure 4-2

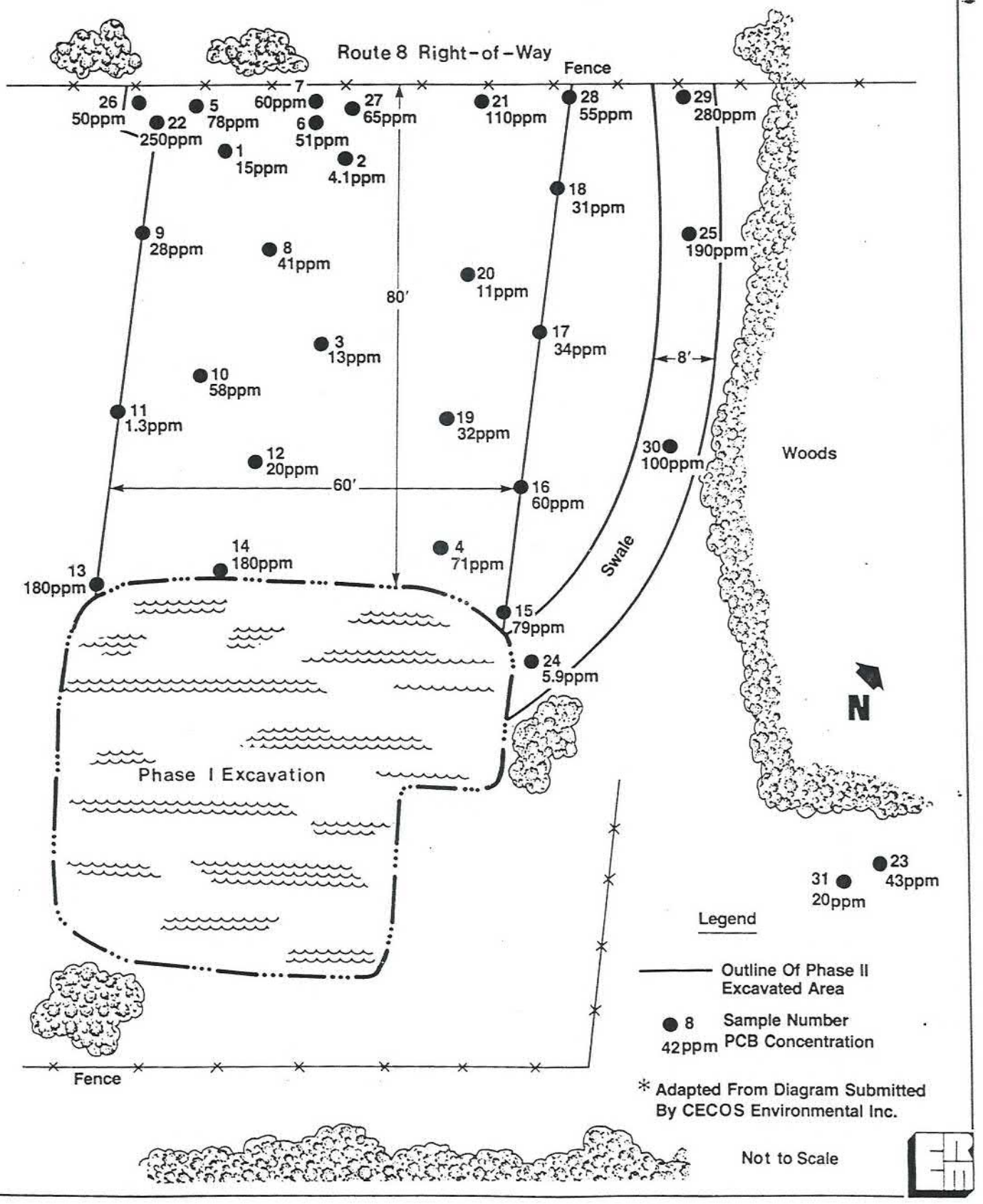
SUBJECT

RESULTS OF PCB ANALYSIS OF CORE SAMPLES TAKEN BELOW THE FLOOR OF THE EXCAVATION

PREPARED FOR THE BENDIX CORPORATION
Sidney New York

Geraghty & Miller Inc	COMPILED BY	SCALE None	FIGURE NO.
	PREPARED BY W Cicio	DATE Jan 83	
	PROJECT MGR E Koch		

Figure 4-3
Phase II Excavation And Residual PCB s*



APPENDIX A

DEED RESTRICTION

DECLARATION of COVENANTS and RESTRICTIONS

THIS COVENANT is made the 16th day of APRIL 2014, by Amphenol Corporation, a corporation organized and existing under the laws of the State of Delaware and having an office for the transaction of business at 40-60 Delaware Avenue, Sidney, NY 13838.

WHEREAS, Amphenol – BCO Hill Site is the subject of an Order on Consent executed by Amphenol Corporation as part of the New York State Department of Environmental Conservation's (the "Department's) State Superfund Program, namely that parcel of real property located on Route 8 in the Village of Sidney, County of Delaware, State of New York, which is part of lands conveyed by Allied-Signal, Bendix Connector Operations to Amphenol Corporation by deed dated May 29, 1987 and recorded in the Delaware County Clerk's Office in Instrument No. (Book) 676 of Deeds at Page 798 on June 1, 1987, and being more particularly described in Appendix "A," attached to this declaration and made a part hereof, and hereinafter referred to as "the Property"; and

WHEREAS, the Department approved a remedy to eliminate or mitigate all significant threats to the environment presented by the contamination disposed at the Property and such remedy requires that the Property be subject to restrictive covenants.

NOW, THEREFORE, Amphenol Corporation, for itself and its successors and/or assigns, covenants that:

First, the Property subject to this Declaration of Covenants and Restrictions is as shown on a map attached to this declaration as Appendix "B" and made a part hereof.

Second, unless prior written approval by the Department or, if the Department shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency," is first obtained, where contamination remains at the Property subject to the provisions of the Site Management Plan ("SMP"), there shall be no use or occupancy of the Property that results in unacceptable human exposure to contaminated soils.

Third, the owner of the Property shall prohibit the Property from ever being used for purposes other than for Industrial use without the express written waiver of such prohibition by the Department or Relevant Agency.

Fourth, the owner of the Property shall prohibit the use of the groundwater underlying the Property without treatment to render it safe for drinking water or for industrial purposes, as appropriate, and the user must first notify and obtain written approval to do so from the Department or Relevant Agency.

ECW

Fifth, the owner of the Property shall provide a periodic certification, prepared and submitted by a qualified environmental professional acceptable to the Department or Relevant Agency, which will certify that the institutional controls put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired.

Sixth, the owner of the Property shall continue in full force and effect any institutional controls required for the Remedy and maintain such controls, unless the owner first obtains permission to discontinue such controls from the Department or Relevant Agency, in compliance with the approved SMP, which is incorporated and made enforceable hereto, subject to modifications as approved by the Department or Relevant Agency.

Seventh, this Declaration is and shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the Property, and shall provide that the owner and its successors and assigns consent to enforcement by the Department or Relevant Agency of the prohibitions and restrictions that the Order on Consent requires to be recorded, and hereby covenant not to contest the authority of the Department or Relevant Agency to seek enforcement.

Eighth, any deed of conveyance of the Property, or any portion thereof, shall recite, unless the Department or Relevant Agency has consented to the termination of such covenants and restrictions, that said conveyance is subject to this Declaration of Covenants and Restrictions.

IN WITNESS WHEREOF, the undersigned has executed this instrument the day written below.

Amphenol Corporation

By: Edward C. Wetmore

Edward C. Wetmore

V.P., Secretary, General Counsel

Date:

STATE OF CONNECTICUT)

) s.s.: Wallingford

COUNTY OF NEW HAVEN)

On the 16th day of APRIL, in the year 2014, before me, the undersigned, personally appeared Edward C. Wetmore, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public State of Connecticut
My commission expires April 30, 2017

June 3, 2013

DESCRIPTION

Hill Site

The Boundary of A Portion of Amphenol Corporation

All that tract or parcel of land being situate in the Town of Sidney, County of Delaware and State of New York; being part of Lots 70 and 71 of the Wallace Patent; being bounded and described as follows:

Beginning at a point on the southerly bounds of Pearl Street, said point being the northeast corner of Lot 2 in Subdivision No. 1 Olive Deuel shown on a map entitled "Subdivision No. 1 Olive Deuel.." prepared by Duncan L. Adair, P.E. and L.S., dated November 25, 1963 and filed at the Delaware County Clerk's Office as Map No. 853; running thence along the westerly bounds of said Subdivision No. 1 Olive Deuel the following three (3) courses and distances:

1) South 02°02'20" East	1008.89 feet;
2) South 00°03'28" East	29.06 feet;
3) South 01°06'49" East	210.72 feet;

to a point on the northerly bounds of Subdivision No. 5 Sidney Development Corporation shown on a map entitled "Subdivision No 5 Sidney Development Corporation .." prepared by Ward and Moore dated January 14, 1966 and filed at the Delaware County Clerk's Office as Map No. 980; running thence along the northerly, westerly and southerly bounds of said Subdivision No. 5 Sidney Development Corporation the following three (3) courses and distances:

1) South 88°26'28" West	571.56 feet;
2) South 01°58'41" East	753.80 feet;
3) North 87°32'12" East	558.95 feet;

to a northeast corner of lands of the Sidney Golf & Country Club, Inc. (L 846, P 278); running thence South 00°47'08" East along the westerly bounds of lands of said Sidney Golf & Country Club, Inc. (L 846, P 278) a distance of 1199.03 feet to a point on the northerly bounds of lands of Sidney Golf & Country Club, Inc. (L 605, P 895); running thence South 85°37'14" West along the northerly bounds of lands of Sidney Golf & Country Club, Inc. (L 605, P 895) a distance of 491.05 feet to a point on the northerly bounds of Interstate Route 88 I-508; running thence northwesterly and northeasterly along the northerly bounds of Interstate Route 88 I-508 and northeasterly along the easterly bounds of New York State Route 8 (S.H. 1908) the following five (5) courses and distances:

1) North 59°42'32" West	454.98 feet;
2) North 16°30'13" West	350.04 feet;
3) North 07°01'42" East	506.36 feet;
4) North 17°34'53" East	598.97 feet;
5) North 14°26'12" East	1119.00 feet;

to a point at the southeast corner of the intersection of New York State Route 8 (S.H. 1908) and Delaware Avenue; running thence northeasterly along the southerly bounds of Delaware Avenue and Pearl Street the following four (4) courses and distances:

1) North 68°18'39" East	289.00 feet;
2) North 07°20'50" East	236.17 feet;
3) North 28°51'07" East	186.01 feet;
4) North 33°33'25" East	3.59 feet;

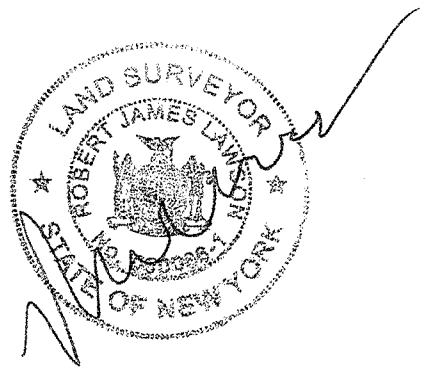
to the point of beginning. Containing 37.820 acres of land. Bearings refer to True North.

Being a portion of the same premises described in Liber 676 at Page 798 of deeds filed at the Delaware County Clerk's Office.

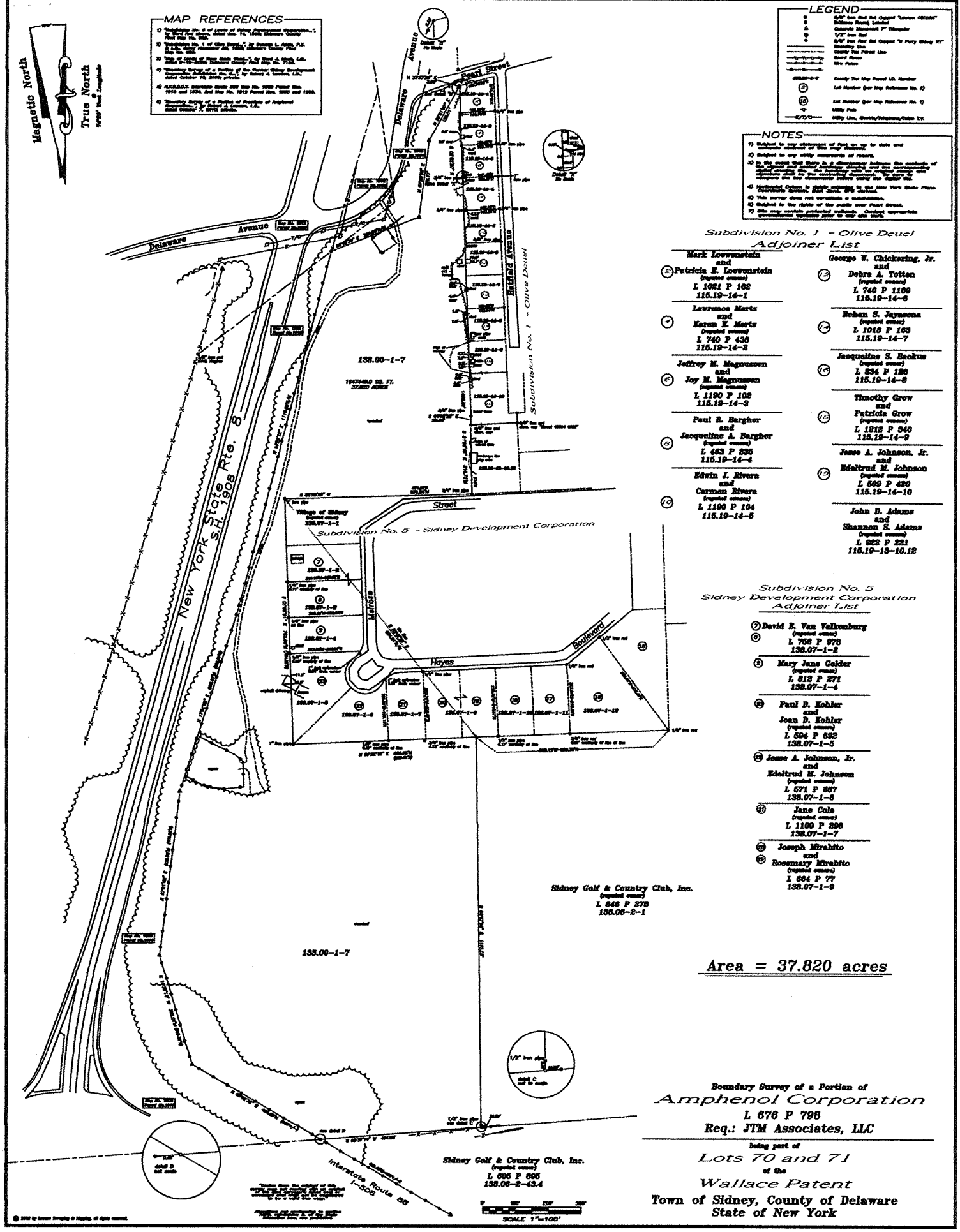
Subject to easements of record.

Subject to the rights of the public over Pearl Street, Interstate Route 88 I-508 and Delaware Avenue.

For details of monumentation and other evidence reference is hereby made to a map entitled: "Boundary survey of a Portion of Amphenol Corporation ...", dated October 17, 2012, prepared by Lawson Surveying and Mapping, Oneonta, N.Y.



\\Server\lsm\LSM Server\Project Folders\51__\512_\5124\5124 Amphenol.d1.frm



Subdivision No. 1 - Olive Deuel
Adjoiner List

- (2) Mark Loewenstein and Patricia E. Loewenstein (reputed owners) — L 1021 P 162 — 115.19-14-1
- (4) Lawrence Mertz and Karen E. Mertz (reputed owners) — L 740 P 438 — 115.19-14-2
- (6) Jeffrey M. Magnussen and Joy M. Magnussen (reputed owners) — L 1190 P 102 — 115.19-14-3
- (8) Paul R. Bargher and Jacqueline A. Bargher (reputed owners) — L 463 P 235 — 115.19-14-4
- (10) Edwin J. Rivera and Carmen Rivera (reputed owners) — L 1190 P 104 — 115.19-14-5
- (12) George W. Chickering, Jr. and Debra A. Totten (reputed owners) — L 740 P 1160 — 115.19-14-6
- (14) Ruben S. Jayasena (reputed owner) — L 1018 P 163 — 115.19-14-7
- (16) Jacqueline S. Backus (reputed owner) — L 834 P 126 — 115.19-14-8
- (18) Timothy Grow and Patricia Grow (reputed owners) — L 1212 P 340 — 115.19-14-9
- (19) Jesse A. Johnson, Jr. and Edeltrud M. Johnson (reputed owners) — L 509 P 420 — 115.19-14-10
- John D. Adams and Shannon S. Adams (reputed owners) — L 922 P 221 — 115.19-13-10.12

Subdivision No. 5
Sidney Development Corporation
Adjoiner List

- (7) (9) David E. Van Valkenburg (reputed owner) — L 756 P 978 — 138.07-1-2
- (9) Mary Jane Gelder (reputed owner) — L 812 P 271 — 138.07-1-4
- (23) Paul D. Kohler and Joan D. Kohler (reputed owners) — L 594 P 692 — 138.07-1-5
- (22) Jesse A. Johnson, Jr. and Edeltrud M. Johnson (reputed owners) — L 571 P 867 — 138.07-1-6
- (21) Jane Cole (reputed owner) — L 1109 P 296 — 138.07-1-7
- (20) (19) Joseph Mirabito and Rosemary Mirabito (reputed owners) — L 864 P 77 — 138.07-1-9

Area = 37.820 acres

Boundary Survey of a Portion of
Amphenol Corporation
L 676 P 798
Req.: JTM Associates, LLC
being part of
Lots 70 and 71
of the
Wallace Patent
Town of Sidney, County of Delaware
State of New York

LAWSON SURVEYING & MAPPING

REVISIONS

No.	Date	Description

1 of 1

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
Joseph M. Bianchi Amphenol Aero-Space	(607) 563-5940 jbian@amphenol-aao.com
James T. Mickam JTM Associates, LLC	(315) 641-1216 jmickam@jtmllc.com
NYSDEC Region 4 – Division of Environmental Remediation	(518) 357-2045
NYSDOH Bureau of Environmental Exposure Investigation	(518) 402-7860 BEEI@health.ny.gov

APPENDIX C

MONITORING WELL BORING AND CONSTRUCTION LOGS

Amphenol Corporation
BCO Hill Site
Groundwater Monitoring Well Summary

Well ID	Approx. Depth	Approx. Screen / Open-hole Depth	Casing Elev. (msl)
B-1	19	Decommissioned	1117.74
B-12	22	Decommissioned	1102.99
B-13	17	Decommissioned	1111.6
14	41	30-40	1100.33
15	70	60-70	1123.72
16	46	35-45	1124.32
17	32	11-31	1108.97
18	26	5-25	1101.91
19	39	Decommissioned	1116.44
20	36	20-30	1110.25
22	84	Decommissioned	1116.54
24	32	20-30	1101.31
26	26	15-25	1115.78
27	33	22-32	1123.53
28	104	95-105	1124.05
29	41	30-40	1124.26
30	46	Decommissioned	1109.26
31	30	20-30	1109.4
32	24	12-22	1119.88
83-1	100	80-100	1118.38
83-2	78	48-78	1105.24
83-3	83	50-80	1038.31
83-4	67	20-65	1038.13
84-10	22	12-22	1080.97
84-12	24	9-24	1073.44
84-13	123	101-117	1125.88

As reported in RI / FS; ERM, Aug 1985

LITHOLOGIC LOG OF
B-1

Depth (ft)	Description
0 - 2.0 (3-9-20-53)*	SILT, slightly sandy, clayey, brown, with black rock fragments near base, no odor.
2.0 - 4.0 (63-65-31-34)	CLAY, red to brown, with embedded siltstone rock fragments; at 3.5-4.0 feet, sample is wet, slight oil sheen and odor present.
4.0 - 6.0 (19-21-34-25)	SAND, gravelly, clayey, red to brown, with fractured siltstone cobbles, wet, oily odor, rainbow sheen present.
6.0 - 8.0 (9-11-12-12)	CLAY, very gravelly, silty, dense, wet at top, dry at base, no odor.
8.0 - 10.0 (6-15-13-18)	SILT, clayey, brown, dry, with rounded medium gravel throughout, at 9.0-9.1 feet there is a lens of black, dry, silty, organic-looking lens, no odor.
10.0 - 12.0 (12-22-21-14)	SILT, clayey, with subrounded, fine to coarse siltstone gravel, dry, tight, red to red-brown, no odor.
12.0 - 14.0 (18-21-25-24)	SILT, same as above.
14.0 - 16.0 (20-23-35-23)	SILT, clayey, red-brown to brown, dense to friable, with embedded fine to coarse gravel, dry.

LITHOLOGIC LOG OF
B-2

Depth(ft)	Description
0 - 2.0 (4-4-6-7)*	SILT LOAM (0-0.5 ft), gravelly, trace of sand, dark brown, with rootlets. SILT (0.5-2.0 ft), clayey, yellow-brown, dry, no odor.
2.0 - 4.0 (18-29)	SAND (2-2.7 ft), very fine-grained, silty, light brown, wet, no odor.
4.0 - 6.0 (17-16-24-39)	SAND, very fine-grained, very silty, occasionally clayey, with multisized green to gray, rounded embedded gravel, tan to red-brown, dry, no odor.
6.0 - 8.0 (24-15-24)	SILT, clayey, with occasional fine-grained sand, red-brown to brown, tight where clayey, wet from 6-6.5 ft., dry from 6.5-8.0 ft., low plasticity, no odor.
8.0 - 10.0 (18-14-14-21)	SILT, same as above but with more fine-grained sand, brown, some rounded gravel embedded throughout, dry, no odor.
10.0 - 12.0 (17-18-19-23)	SILT, clayey to sandy, same as above.
12.0 - 14.0 (25-20-33-63)	SILT (12-13 ft), clayey, same as above with embedded gravel. SAND (13.0-13.3 ft), fine-grained, silty, brown, moist, no gravel, well sorted, no odor. CLAY (13.3-14.0 ft), brown to red-brown, stiff, dry, with embedded, rounded gravel, no odor.

Depth (ft)	Description
14.0 - 16.0 (31-57-77-32)	SILT, clayey, red-brown, with occasional weathered, rounded, embedded gravel, dry, no odor.
16.0 - 18.0 (23-41-55-53)	SILT, same as above, with occasional sand, dry, no odor.
18.0 - 19.25 (20-51-100/.25)	SILT, slightly sandy to clayey at base, brown, dense, dry, with cobble at base, no odor.
19.25 - 20.0	No sample taken, too dense.
20.0 - 21.0 (77-101)	SILT, clayey, sandy, brown, with embedded weathered, fractured cobbles and gravel, dry, no odor.
21.0 - 24.0	No sample taken; too dense.
24.0 - 25.5 (37-60-89)	CLAY, silty, brown, very dense, very dry, with fractured, embedded cobbles, no odor.

Additional Notes:

Glacial till present from 2.7-25.5 ft.
Water encountered at 2 ft.; moist at 13 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-3

Depth (ft)	Description
0 - 2.0 (1-1-1-2)*	SILTY CLAY LOAM, brown to yellow brown, soft, moist, rootlets at top, no odor.
2.0 - 4.0 (6-9-18-28)	SAND (2-3 ft), fine-grained, very silty, yellow-brown, wet, no odor.
4.0 - 6.0 (25-27-34-32)	CLAY, silty, red, stiff, dry, with embedded multisized rounded gravel and weathered cobbles, no odor.
6.0 - 8.0 (29-29-29-35)	SILT, clayey, brown and red-brown, dry, with embedded, weathered gravel, and a one-inch lens of medium-grained sand at 7.9 ft., no odor.
8.0 - 10.0 (23-23-25-37)	SILT (8-9 ft), clayey, trace of sand, with embedded gravel throughout, dry, no odor.
	SAND (9.0-9.5 ft), very fine to fine-grained, clayey, silty, yellow-brown, moist, no gravel, no odor.
	SILT (9.5-10.0 ft), clayey with embedded gravel, red-brown, dry, no odor.
10.0 - 10.6 (49-100/.125)	SILT, same as above, dry, no odor.
10.6 - 13.0	No sample taken; the fill is too dense to drive the split spoon.

Depth (ft)	Description
13.0 - 15.0 (22-28-50-65)	SILT, clayey, with embedded gravel and numerous weathered cobbles at 14-15 ft., wet split spoon, dry sample, no odor.
15.0 - 16.25 (40-90-100/.25)	SILT, same as above, wet split spoon, dry sample, no odor.
16.25 - 20.0	No sample taken; the fill is too dense to drive the split spoon.
20.0 - 22.0 (27-33-31-35)	SAND (20-21 ft), very fine-grained, very silty, trace clay, occasional cobble, brown, moist to wet, possible oil, rainbow sheen.
	SILT (21-22 ft), clayey, red-brown, moist, with embedded gravel.
22.0 - 24.0 (42-61-53-57)	SILT (22-23 ft), clayey, slightly sandy, brown, moist, loose.
	CLAY (23-24 ft), silty, hard, dense, brown, slightly moist to dry.

Additional Notes:

Glacial till present from 3-24 ft.
Water encountered at 3.0 ft.
Monitor well installed; screen set from 10-20 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-4

Depth (ft)	Description
0 - 2.0 (1-2-1-2)*	SILTY CLAY LOAM, brown, soft, moist, low plasticity, no odor.
2.0 - 4.0 (2-3-4-9)	SILT, slightly clayey, light brown, moist, pliable, soft, low plasticity, no odor.
4.0 - 6.0 (21-22-18-14)	SILT, clayey, red-brown, dry, hard, with weathered, embedded gravel, no odor.
6.0 - 8.0 (13-11-16-14)	SILT, same as above.
8.0 - 10.0 (14-10-12-12)	SILT, clayey, occasionally sandy, brown to red-brown, with fine to coarse, rounded, embedded gravel, occasional cobbles, wet at top, no odor.
10.0 - 12.0 (5-10-8-15)	SILT, clayey, with sand lenses, and embedded gravel, red-brown, moist, pliable, no odor.
12.0 - 14.0 (22-36-29-35)	SILT, very clayey to slightly clayey, with weathered shale and siltstone cobbles and embedded gravel, red-brown matrix, no odor.
14.0 - 16.0 (18-37-41-41)	SILT, same as above, but with more cobbles, no odor.

Depth (ft)	Description
16.0 - 18.0 (36-54-4-78)	CLAY, sandy, silty, brown, dry, loose, with abundant weathered cobbles and trace of gravel, no odor.
18.0 - 20.0 (40-34-50-79)	SILT, very clayey, occasionally sandy, fewer cobbles than above, brown, sticky, soft, moist, no odor.
20.0 - 20.5 (100/0.5)	SILT, same as above, dense, no odor.

Additional Notes:

Glacial till present from 4-20.5 ft.
Water encountered at 2 ft.
*The numbers in parentheses are blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-5

Depth (ft)	Description
0 - 2.0 (3-3-3-4)*	CLAY LOAM, light brown, soft, moist, rootlets at top, no oily odor.
2.0 - 4.0 (6-8-17-26)	SILT, slightly clayey, trace of sand, tan to brown at base, wet to moist at base, no gravel, no oily odor.
4.0 - 6.0 (18-25-20-19)	SILT (4.0-5.0 ft), sandy, yellow-brown to gray, moist, no odor. CLAY (5.0-6.0 ft), silty, red-brown, dry with weathered siltstone cobbles, no odor.
6.0 - 8.0 (19-21-19-15)	SAND, clayey, red-brown, with embedded gravel and weathered cobbles, no odor.
8.0 - 10.0 (13-8-10-10)	CLAY, very sandy, silty, red-brown, friable to plastic, with multisized embedded gravel and cobbles, dry to moist, no odor.
10.0 - 12.0 (8-13-18-20)	CLAY, same as above, no odor.
12.0 - 14.0 (12-25-23-24)	CLAY, same as above, less sand, no odor.
14.0 - 15.1 (31-75-70/.1)	CLAY (14-14.25 ft), red-brown, some embedded gravel, dry, no odor. GRAVEL (14.25-15.1 ft), fractured, some clay, wet, no odor.

Depth (ft)	Description
16.0 - 18.0 (47-35-72-90)	CLAY, silty red-brown, with embedded gravel, no odor.
18.0 - 19.0 (58-100)	CLAY, very stiff, brown, low plasticity, with trace of gravel and cobble at base, no odor.
19.0 - 24.0	No sample taken.
24.0 - 25.5 (35-48-75)	CLAY, brown, very dense, dry, with some embedded fine, rounded, black gravel, no odor.

Additional Notes:

Glacial till from 5.0-25.5 ft.
Water encountered at 2 ft., 14.25-15.1 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-6

Depth (ft)	Description
0 - 2.0 (3-2-4-4)*	SILT LOAM, slightly clayey, trace fine-grained sand, wood fragments, rootlets at top, black to yellow-brown, loose, moist, no odor.
2.0 - 4.0 (5-6-8-17)	SAND (2-3.75 ft), fine-grained, very silty, brown to gray, wet to moist, oily odor. CLAY (3.75-4.0 ft), silty, red, with fine to medium, embedded, rounded gravel.
4.0 - 6.0 (12-15-20-26)	CLAY, sandy, silty, red-brown, with embedded gravel, moist, oily odor, oily sheen on water and split spoon.
6.0 - 8.0 (23-20-15-15)	SILT (6-7.5 ft), sandy, clayey, abundant gravel and cobbles, wet to moist, oily odor. SAND (7.5-7.75 ft), fine to medium-grained, black to gray, saturated with oil, strong oily smell, rainbow sheen in water and in spoon. CLAY (7.75-8.0 ft), silty, red-brown, tight, with embedded gravel.
8.0 - 10.0 (15-17-13-40)	CLAY, sandy, silty, brown, with embedded gravel, tight, stiff, dry, slight oily odor at top of sample, no odor at 9-10.0 ft.
10.0 - 12.0 (12-12-8-8)	SAND, fine-grained, clayey, silty, red to brown, with embedded gravel, rainbow oil sheen and oily odor present.

Depth (ft)	Description
12.0 - 14.0 (10-8-12-15)	SAND, slightly clayey to very clayey, gravelly, one weathered cobble, loose to very sticky, wet, saturated with oil, oil odor, rainbow sheen on split spoon.
14.0 - 16.0 (9-13-16-17)	SILT, clayey, red-brown, stiff, dry, with embedded gravel, no oil odor.
16.0 - 18.0 (9-20-23-16)	SILT, sandy, slightly clayey, red-brown, with embedded gravel, dry, no oil odor.
18.0 - 19.1 (27-56-50/.1)	SILT, clayey, slightly sandy, with embedded gravel, red to red-brown, dry, no oil odor.

Additional Notes:

Glacial till from 3.75-19.1 ft.
Water encountered at 2 ft., 6-7.75 ft., 12-14 ft.
Monitor well installed; screen set from 4-14 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-7

Depth (ft)	Description
0 - 2.0 (1-1-2-3)*	SANDY SILT LOAM, brown, moist, rootlets at top, no odor.
2.0 - 4.0 (4-4-5-7)	SAND, very silty, trace of clay, brown at top to gray-black from 3.5 to 4.0 ft., wet base, strong oily odor.
4.0 - 6.0 (9-38-23-21)	SAND (4-5 ft), fine to medium-grained, gray, wet, strong hydraulic oil odor.
	SILT (5-6 ft), sandy, gray to brown, with weathered cobbles, slightly moist, slight oil odor.
6.0 - 8.0 (24-19-16-17)	GRAVEL (6-7 ft), sandy, clayey, gray to light brown, saturated with oil, rainbow sheen, oily odor.
	CLAY (7-8 ft), very sandy, silty, red-brown, with embedded, rounded gravel, friable slight oily odor, dry, oil sheen on split spoon.
8.0 - 10.0 (9-12-14-26)	GRAVEL, clayey, silty, sandy, gray to red-brown, dry to moist, oil sheen on outside of split spoon.
	CLAY, silty to sandy, abundant gravel at 10 feet, sticky, tight, slightly moist, red-brown, no odor.
10.0 - 12.0 (28-15-12-19)	CLAY, silty to sandy, abundant gravel at 10 ft., sticky, tight, slightly moist, red-brown, no odor.

Depth (ft)	Description
12.0 - 14.0 (17-11-17-12)	GRAVEL, sandy at top to clayey at base, yellow-brown to red-brown, moist, no odor.
14.0 - 16.0	SILT, clayey, slightly sandy, red-brown, with embedded gravel.
16.0 - 18.0	SILT, same as above.
18.0 - 20.0	SILT, clayey, red-brown, dry, dense, with cobbles and gravel, no odor.
20.0 - 22.0	SILT, Same as above.

Additional Notes:

Glacial till from 5-22 ft.
Water encountered at 3.5-7.0 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-8

Depth (ft)	Description
0 - 2.0 (101-2-4)*	SILT (0-1.5 ft), and fine-grained sand, brown, wet, stiff, no odor. SAND (1.5-2.0 ft), fine-grained, silty, brown, moist.
2.0 - 4.0 (7-9-22-33)	SAND, fine-grained, silty, brown, wet.
4.0 - 6.0 (8-12-15-20)	SAND (4.0-5.5 ft), silty, same as above, wet.
6.0 - 8.0 (17-22-35-45)	SAND, silty, slightly clayey, brown, with embedded rounded gravel and cobbles, moist to wet, oil odor and oil present at 7.5 ft.
8.0 - 10.0 (27-25-15-27)	SAND, fine to coarse-grained at 9 ft., very clayey in spots, with embedded gravel and weathered cobbles, red-brown to brown matrix with moist yellow clayey streaks around gravel; a coarse-grained black to dark brown moist, oily, sand lens; very strong oily odor a 9.0-9.25 ft.
10.0 - 12.0 (11-7-14-20)	SAND (10-11 ft), gravelly, red-brown, wet, oily odor. CLAY (11-12 ft), gravelly, occasional cobbles, red-brown, dry, no odor.
12.0 - 14.0 (18-20-29-24)	CLAY, very silty, sandy, abundant gravel, brown, pliable, dry to slightly moist, no odor.

Depth (ft)	Description
14.0 - 16.0 (20-7-7-19)	GRAVEL, with fractured siltstone cobbles in stiff red-brown clay, dry to slightly moist, no odor.
16.0 - 18.0 (22-28-56-42)	CLAY, silty, very gravelly, occasional siltstone cobbles, stiff, dry, no odor.
18.0 - 18.9 (36-100/.4)	CLAY, silty, gravelly, red-brown, tight, dry, no odor.

Additional Notes:

Glacial till from 5.5-18.9 ft.
Water encountered at 2-12 ft.
*The numbers in parentheses are the blow counts for a 2-foot interval.

LITHOLOGIC LOG OF
B-9

Depth (ft)	Description
0 - 2.0 (1-1-2-3)*	SILT LOAM, slightly clayey, light brown, with rootlets at top, moist, no odor.
2.0 - 4.0 (3-4-5-4)	SAND, very fine-grained, very silty, light brown to red-brown at base, well sorted, moist to wet, no odor.
4.0 - 6.0 (4-67-22-9)	SAND (4.0-5.0 ft), very fine-grained, very silty, black to dark gray, with occasional cobbles, wet, saturated with oil, strong odor.
6.0 - 8.0 (13-10-14-16)	SILT, sandy, very gravelly in spots, gray to brown, wet to moist, strong odor.
8.0 - 10.0 (21-17-19-8)	SILT, sandy, clayey, red-brown, with embedded rounded gravel, no odor.
10.0 - 12.0 (14-7-9-10)	CLAY, silty, slightly sandy, red-brown, plastic, slightly stiff, with embedded rounded gravel, dry, no odor.
12.0 - 14.0 (12-18-14-12)	GRAVEL and well-fractured cobbles, occasionally clayey, silty or sandy, stiff, moist to wet, strong oily odor in gravel; wet from 13.5-13.8 ft.
14.0 - 15.25 (13-21-100/.25)	GRAVEL and fractured cobbles in silty clay matrix, dense, moist to wet, outside of entire sample and spoon covered with fresh-looking, yellow hydraulic oil, hydraulic oil odor (different than odor in other boreholes), slight rainbow sheen.

Depth (ft)	Description
15.25 - 17.0	No sample taken; hard drilling through cobble.
17.0 - 17.25 (100/.25)	COBBLE, siltstone, fractured, dry, dense.
17.25 - 20.0	No sample taken; hard drilling through cobble.
20.0 - 22.0 (26-37-34-40)	CLAY, silty, red-brown, dense, plastic, occasionally sticky; with fine to medium well-rounded embedded gravel, no odor.
22.0 - 24.0 (27-34-25-64)	SILT, slightly sandy; occasionally clayey, no gravel, tan to red-brown, very dry, dense, no odor.

Additional Notes:

Glacial till present from 5-24 ft.
Water encountered at 3-5 ft, 13.5-14 ft.
Monitor well installed; screen set from 3.5-13.5 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-10

Depth (ft)	Description
0- 2.0 (1-1-1-2)*	SILT, tan, pliable, soft, consistent, moist, no odor.
2.0- 4.0 (3-3-6-19)	SILT (2.0-3.8 ft), and very fine-grained sand, gray to brown, wet, rainbow sheen, strong oily odor.
	SILT, (3.8-4.0 ft), sandy, gravelly, cobbly, red-brown, moist.
4.0- 6.0 (15-23-25-30)	SAND, silty, with abundant rounded embedded gravel, cobbles at 5.0 ft, gray to brown, wet to moist, strong odor.
6.0- 8.0 (43-25-16-21)	COBBLES (6.0-7.0 ft), well fractured, gray, wet, oily odor.
	CLAY (7.0-8.0 ft), silty, sandy, red-brown with embedded fine to medium rounded gravel throughout, moist
8.0-10.0 (16-17-7-12)	SILT, very sandy, trace of clay and gravel, friable, loose, wet at top, dry at base, slight odor.
10.0-12.0 (13-15-10-11)	COBBLES, silty, sandy, trace of clay, red-brown, weathered, moist, oily odor.
12.0-14.0 (7-10-9-12)	SILT, clayey, red-brown, occasional fine black gravel, slightly moist at top to dry at base, rainbow sheen at top.

Depth (ft)	Description
14.0-16.0 (11-13-27-35)	CLAY, silty, red-brown, with embedded gravel and cobbles throughout, stiff, low plasticity, dry, no odor.
16.0-17.5 (34-40-83)	CLAY, very silty, red-brown, same as above, dry, no odor.

Additional Notes:

Glacial till present from 3.8-17.5 ft.
Water encountered at 2-8 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-11

Depth (ft)	Description
0 - 2.0 (1-1-1-1)*	SILT LOAM, tan, soft, moist, rootlets at top, no odor.
2.0 - 4.0 (3-6-12-17)	SILT, AND FINE-GRAINED SAND (2.0-3.0 ft), gray, wet, saturated with oil, strong odor.
	SAND (3.0-4.0 ft), silty, with some embedded gravel, gray to red-brown, wet, odor present.
4.0 - 6.0 (16-28-24-21)	SAND, very silty, with many weathered cobbles and rounded gravel, red-brown to gray, dry, strong odor.
6.0 - 8.0 (24-20-19-29)	SILT (6.0-7.5 ft), sandy, red-brown, with embedded, rounded gravel, moist, slight odor.
	SAND (7.5-7.75 ft), medium-grained, black to gray, loose, moist, strong odor.
	COBBLE (7.75-8.0 ft), gray, weathered sandstone, dry.
8.0 - 10.0 (16-45-16-8)	GRAVEL AND COBBLES, with sandy silt, red-brown to gray, water bearing, very wet, very strong odor, rainbow sheen on spoon and throughout sample.
10.0 - 12.0 (5-7-12-13)	SILT, clayey, red-brown, soft, pliable, moist, with occasional fine well-rounded gravel throughout sample, no cobbles, no odor.

LITHOLOGIC LOG OF
B-12

Depth (ft)	Description
0 - 1.0 (1-1)*	SILT LOAM, dark brown, with rootlets, moist, no odor.
1.0 - 3.0 (1-1-1-1)	SILT, tan, soft, moist, no odor.
3.0 - 5.0 (4-8-10-19)	SILT (2.0-4.75 ft), and fine-grained sand, tan, soft, wet, no odor.
	SAND (4.75-5.0 ft), silty, red-brown, with some embedded gravel, one cobble; dry to slightly moist, no odor.
5.0 - 7.0 (28-16-19-26)	GRAVEL and fractured cobbles (5.0-6.5 ft), gray, with sandy, silty clay, red-brown, moist, no odor.
	GRAVEL (6.5-7.0 ft), wet, saturated with oil, rainbow sheen, oily odor.
7.0 - 9.0 (38-49-48-46)	GRAVEL (7.0-8.0 ft), some silty sand, dark gray, wet, strong oily odor, rainbow sheen on water.
	SILT (8.0-9.0 ft), clayey, slightly sandy, with numerous weathered siltstone cobbles and rounded black, medium gravel, slightly moist, slight odor.
9.0 - 11.0 (15-16-19-36)	SAND (9.0-10.0 ft), silty, red-brown, with embedded well-rounded medium gravel and weathered cobbles, moist, odor present.

Depth (ft)	Description
	SILT (10.0-11.0 ft), clayey, occasionally sandy, with embedded gravel and cobbles, stiff, dry to slightly moist, slight odor.
11.0 - 13.0 (55-30-50-19)	CLAY (11.0-12.5 ft), gravelly, moist, oily odor.
	GRAVEL (12.5-12.75 ft), sandy, dark gray to dark brown, saturated with heavy dark oil, strong odor.
	SILT (12.75-13.9), sandy, red-brown, with a gray, weathered cobble, dry, slight odor.
13.0 - 15.0 (10-20-16-60)	CLAY, silty, red-brown, stiff, slightly plastic, with fine to large, rounded embedded gravel, dry, no odor.
15.0 - 16.3 (78-75-100/.3)	GRAVEL, and black fractured cobbles, some stiff, red-brown clay, very wet, no odor.
16.3 - 18.0	No sample taken; material is too tight for driving split spoon.
18.0 - 20.0 (20-15-17-19)	SILT, clayey, occasionally sandy, red-brown, dry, with occasional gravel and cobbles, no odor.

Additional Notes:

Glacial till from 4.75-20.0 ft.
Water encountered at 3 ft.; 6.5-9.0 ft.; 12-12.75 ft.; 15.0-16.5 ft. This hole has the greatest amount of water encountered while drilling borings 1-14.
Monitor well installed; screen set from 5-20 ft.
*The numbers in parentheses are the blow counts over a one or two foot interval.

LITHOLOGIC LOG OF
B-13

Depth (ft)	Description
0 - 2.0 (2-2-2-4)*	SILT LOAM, slightly sandy, tan, consistent, soft, moist, no odor.
2.0 - 4.0 (6-6-6-8)	SILT, slightly sandy, tan, soft, moist to dry, no odor.
4.0 - 6.0 (7-9-9-13)	SILT, dark brown, consistent, soft, moist at top to dry at base, no odor.
6.0 - 8.0 (35-42-51-60)	SILT (6.0-7.75 ft), trace of very fine-grained sand, brown, soft, slightly moist, no odor.
	SILT (7.75-8.0 ft), red-brown, and embedded fine rounded gravel, slightly moist to dry, no odor.
8.0 - 10.0 (40-57-43-41)	SAND, silty, occasionally clayey, red-brown, with numerous gravel and weathered cobbles, wet at top, dry at base, no odor.
10.0 - 12.0 (89-34-40-42)	SAND (10.0-11.0 ft), slightly silty, clayey, red-brown, with embedded gravel, wet, oil sheen, strong odor.
	SAND (11.0-11.25 ft), coarse-grained, gray to black, dark heavy oil, strong odor.
	SAND (11.25-12.0 ft), silty, slightly clayey, brown, with weathered cobbles, moist, strong odor.

Depth (ft)	Description
12.0 - 14.0 (50-64-43-27)	SAND, silty, clayey, red-brown, with abundant rounded gravel throughout, wet to moist, oily, rainbow sheen on split spoon, strong odor.
14.0 - 16.0 (19-27-24-23)	SILT, very clayey to slightly sandy, red-brown, with minor amounts black, rounded, medium gravel, no cobbles, wet at top, dry at base, oily rainbow sheen on split spoon, odor.
16.0 - 18.0 (21-27-24-23)	SILT, clayey to sandy, red-brown, more gravel and weathered cobbles than above, dry, no odor.
18.0 - 20.0 (31-23-23-30)	CLAY, silty, occasionally sandy, red-brown, sticky, plastic; with embedded gravel and cobbles at 18.0-19.0 ft; cobbles absent at 19.0-20.0 ft; dry to slightly moist, no odor.

Additional Notes:

Glacial till from 7.75-20.0 ft.
Water encountered at 4 ft; 8-15 ft.
Monitor well installed; screen set from 5-15 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

LITHOLOGIC LOG OF
B-14

Depth (ft)	Description
0-2.0 (1)*	No sample taken; very loose, very wet, black and brown, silt.
2.0-4.0 (22-15-16-21)	SAND (2-25 ft), black, wet, soft, mushy, contaminated, strong smell.
	SAND (2.5-4.0 ft), silty with embedded gravel, dark brown, wet, very strong odor.
4.0-6.0 (19-14-27-24)	SAND, gravelly, silty, similar to above but very wet, saturated with chemicals, strong odor similar to airplane glue, rainbow sheen.
6.0-8.0 (20-12-9-11)	GLACIAL TILL, same as above, but saturated in oily rainbow sheen, dark brown to gray-black, extremely wet, extremely strong odor.

Additional Notes:

Glacial till present from 2.5-8.0 ft.
No water encountered, only oily ooze.
Monitor well installed; screen set from 0-4 ft.
This well is the most contaminated of the B series wells and borings.
The drillers intercepted a barrel at 6 feet which may have been punctured; gas bubbles were present in the ooze in the borehole; drilling terminated at 8 feet.
*The numbers in parentheses are the blow counts over a 2-foot interval.

Geologic Logs

Description	Depth (feet below land surface)	Thickness (feet)
Well 14		
Silt, yellowish brown, trace of clay, with medium-sized gravel, also has a small layer of trapped water from 2.3 to 2.5 feet	0 - 4	4
Silt, reddish brown, slightly clayey with medium-size gravel	4 - 16	12
Silt, reddish brown, slightly clayey, less gravel in sample, slightly moist	16 - 25.5	9.5
Silt, reddish brown, with gravel and cobbles	25.5 - 36.5	11
Shale, brownish red, weathered	36.5 - 39	2.5
Shale, brownish red, slightly weathered	39 - 40 T.D. (Total Depth)	1
Well 15		
Silt, yellowish brown, with gravel and a trace of fine sand	0 - 3	3
Silt, reddish brown with medium to fine gravel, also contains a trace of fine sand	3 - 34	31
Silt, reddish brown and greenish gray, fine to medium gravel, trace of fine sand, sample is moist	34 - 45.5	11.5
Silt, reddish brown contains fine to coarse gravel, trace of fine sand, sample is moist	45.5 - 58	12.5
Silt, reddish brown, clayey, sample is moist	58 - 75	17
Silt, reddish brown, sandy, slightly clayey, sample is wet	75 - 85 T.D.	10
Well 16		
See sample description for Well 15	0 - 45 T.D.	45

Description	Depth (feet below land surface)	Thickness (feet)
Well 17		
Silt, light brown, slightly sandy	0 - 5	5
Silt, light brown with gravel and cobbles	5 - 8	3
Silt, light brown and reddish brown with fine to medium sand, fine to coarse gravel and cobbles, sample is slightly moist	8 - 18	10
Silt, light brown and reddish brown with fine to medium sand, fine to coarse gravel and cobbles, sample is wet	18 - 26.5	8.5
Silt, reddish brown with fine to medium sand, trace of gravel, sample is wet	26.5 - 31 T.D.	3.5
Well 18		
Silt, light brown, slightly sandy	0 - 3	3
Silt, reddish brown, sandy, fine to coarse gravel	3 - 10	7
Silt, reddish brown, sandy, fine to coarse gravel, sample is wet at 15 feet	10 - 20	10
Silt, reddish brown, sandy, fine to coarse gravel, sample is wet	20 - 25 T.D.	5
Well 19		
See sample description for Well 22	0 - 35 T.D.	35
Well 20		
Silt, light brown, sandy	0 - 7.5	7.5
Silt, reddish brown, fine gravel, slightly moist	7.5 - 20	12.5
Silt, reddish brown and brown, sandy with fine to coarse gravel, sample is wet at 20 feet	20 - 44	24
Silt, reddish brown and dark brown, sandy, sample is wet	44 - 48	4
Siltstone, greenish brown, sandy, weathered	48 - 50 T.D.	2

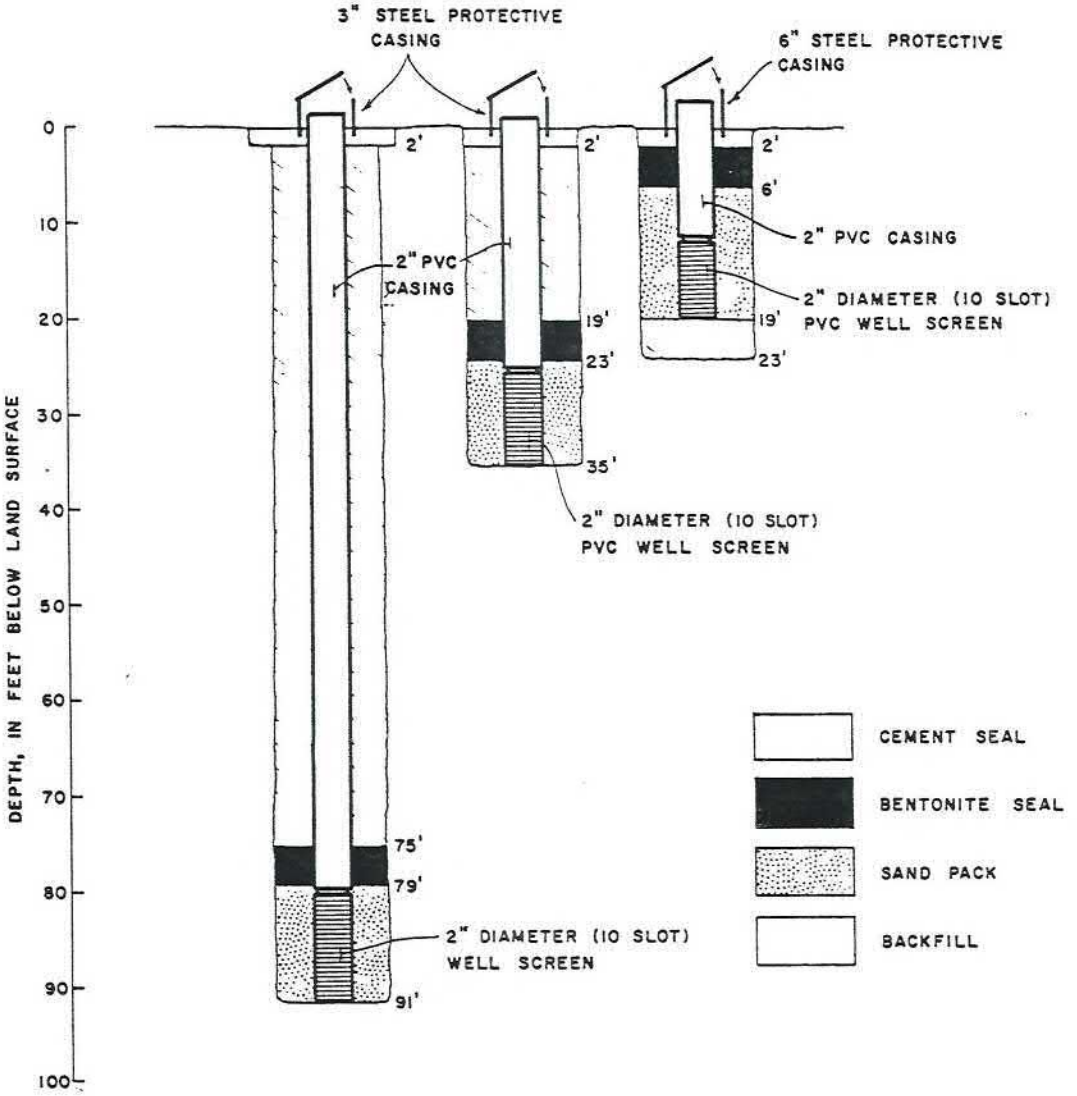
Description	Depth (feet below land surface)	Thickness (feet)
Well B-21		
Silt, yellowish brown, with gravel and a trace of fine sand	0 - 3	3
Silt, reddish brown with medium to fine gravel, also contains a trace of fine sand	3 - 34	31
Silt, reddish brown and greenish gray, fine to medium gravel, trace of fine sand, sample is moist	34 - 45.5	11.5
Silt, reddish brown, contains fine to coarse gravel, a trace of fine sand, sample is moist	45.5 - 58	12.5
Silt, reddish brown, clayey, sample is moist	58 - 75	17
Silt, reddish brown, sandy, slightly clayey, sample is wet	75 - 85	10
Silt, reddish brown, sandy, slightly clayey, sample is wet	85 - 96.5	11.5
Siltstone, greenish gray, slightly sandy, slightly sandy, slightly weathered	96.5 T.D.	
Well 22		
Silt, light brown, sandy	0 - 3	3
Silt, reddish brown, clayey and sandy with fine to coarse gravel, cobbles and boulders, sample is wet at 14 feet	3 - 20	17
Silt, reddish brown, clayey and sandy with fine to coarse gravel, cobbles and boulders, sample is wet	20 - 65	45
Silt, reddish brown and brown, sandy	65 - 69	4
Silt, reddish brown and greenish brown, clayey with fine to coarse gravel and boulders	69 - 91	22
Siltstone, greenish brown, sandy, slightly weathered	91 T.D.	
Well 23		
Silt, reddish brown, sandy, fine to coarse gravel, samples wet at 2 feet	0 - 7 T.D.	7

Description	Depth (feet below land surface)	Thickness (feet)
Well 24		
Silt, light brown, sandy	0 - 5	5
Silt, reddish brown, sandy with fine to coarse gravel, sample is wet at 20 feet	5 - 20	15
Silt, reddish brown, slightly sandy with fine to coarse gravel, sample is wet	20 - 25	5
Silt, reddish brown, slightly sandy and clayey with fine to medium gravel, sample is wet	25 - 30 T.D.	5
Well 25		
Silt, light brown, slightly clayey	0 - 3	3
Silt, reddish brown and greenish gray, sandy and clayey with fine to coarse gravel and cobbles, sample is moist	3 - 20	17
Silt, reddish brown and greenish gray, sandy and clayey with fine to coarse gravel and cobbles, sample is wet	20 - 65	45
Silt, reddish brown and greenish gray, sandy and clayey with fine to coarse gravel and cobbles, sample is wet	65 - 78	13
Silt, light brown and reddish brown, sandy, trace of gravel, sample is wet	78 - 88	10
Silt, reddish brown, slightly sandy and clayey, contains fine to coarse gravel	88 - 90.5	2.5
Siltstone, greenish gray, slightly weathered	90.5 T.D.	
Well 26		
Silt, light brown, slightly clayey	0 - 3.5	3.5
Silt, reddish brown, clayey and sandy, trace of gravel	3.5 - 10	6.5
Silt, reddish brown, clayey and sandy, fine to medium gravel, sample is wet at 15 feet	10 - 20	10
Silt, reddish brown, clayey and sandy; fine to medium gravel, sample is wet	20 - 25 T.D.	5

Description	Depth (feet below land surface)	Thickness (feet)
Well 27		
Silt, light brown, trace of medium gravel	0 - 2.5	2.5
Silt, reddish brown, sandy and clayey, also contains fine to medium gravel, perched water at 10 feet	2.5 - 11.5	9
Silt, reddish brown, sandy and clayey, contains fine to coarse gravel	11.5 - 35.8 T.D.	24.3
Well 28		
Silt, light brown, trace of gravel	0 - 3	3
Silt, reddish brown, clayey, slightly sandy, contains fne to coarse gravel (till)	3 - 15	12
Silt, reddish brown, clayey, slightly sandy, contains fine to coarse gravel, samples are wet at 23 feet	15 - 67.5	52.5
Silt, reddish brown, sandy, samples are wet	67.5 - 84	16.5
Silt, reddish brown and greenish brown, clayey and sandy with fine to coarse gravel (till)	84 -110 T.D.	26
Well 29		
See sample description for Well 28	0 - 40 T.D.	40
Well 30		
Silt, light brown, slightly sandy	0 - 2.5	2.5
Silt, reddish brown, clayey and sandy with fine to coarse gravel (till)	2.5 - 15	12.5
Silt, reddish brown and greenish brown, clayey and sandy, with fine to coarse gravel and cobbles, samples are moist	15 - 28	13
Silt, reddish brown and greenish brown, clayey and sandy with fine to coarse gravel and cobbles, samples are wet at 28 feet	28 - 43	15
Siltstone, greenish brown, sandy, highly weathered	43 - 45 T.D.	2

Description	Depth (feet below land surface)	Thickness (feet)
Well 31		
See sample description for Well 30	0 - 30 T.D.	30
Well 32		
Silt, light brown, trace of medium gravel, sample is moist	0 - 3	3
Silt, reddish brown, clayey and sandy with fine to medium gravel and cobbles, samples are wet at 5 feet (perched water)	3 - 10	7
Silt, reddish brown, clayey and sandy with fine to medium gravel and cobbles, sample is moist	10 - 25 T.D.	15

WELL 22 WELL 19 B-3



SUBJECT

CONSTRUCTION DETAILS OF A TYPICAL WELL CLUSTER AT THE HILL SITE

PREPARED FOR THE BENDIX CORPORATION
SIDNEY, NEW YORK

Geraghty & Miller, Inc.

COMPILED BY CHRISTOPHER CREED
PREPARED BY WILLIAM M. CICIO
PROJECT MGR ELLIS KOCH

SCALE SHOWN
DATE 3-83

FIGURE B-1

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: 1 W.O. Number: 301-01

Well Number: 83-1 Total Depth: 103' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

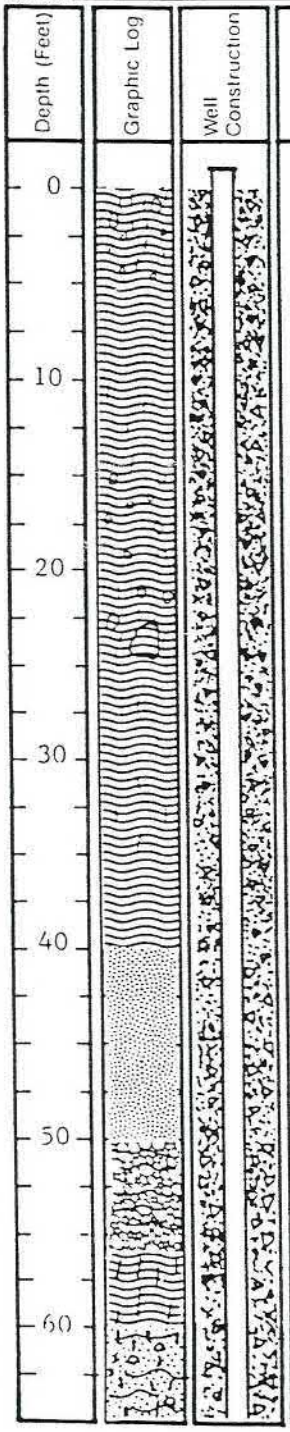
Casing: Dia.: 6" Length: 84' Type: Steel

Drilling Company: AW Kincaid Drilling Method: Air Hammer

Driller: Jack Busman Log By: Marilyn Hewitt Date Drilled: 12/9/83

Sketch Map

Notes



Description/Soil Classification (Color, Texture, Structures)	
0-5'	Brown silt, fine grain, some medium gravel trace of clay. very poorly sorted.
5-10'	Same, no clay
10-15'	Same, trace clay. moderately sorted.
15-20'	Same. fine gravel no clay.
20-25'	Same. medium gravel. occasional boulder. trace clay, poorly sorted.
25-35'	Same. less clay.
35-40'	Same, no clay.
40-50'	Brown silty coarse sand - fine gravel trace clay, moderately well sorted.
50-57'	Brown silty fine-medium gravel poorly sorted.
57-60'	Brown silt trace clay.
60-70'	Brown coarse sand-fine gravel, silty and clayey.

Environmental Resources Management

Drilling Log

Project _____ Owner _____

Location _____ W.O. Number _____

Well Number 83-1 (cont'd) Total Depth _____ Diameter _____

Surface Elevation _____ Water Level: Initial _____ 24-hrs. _____

Screen: Dia. _____ Length _____ Slot Size _____

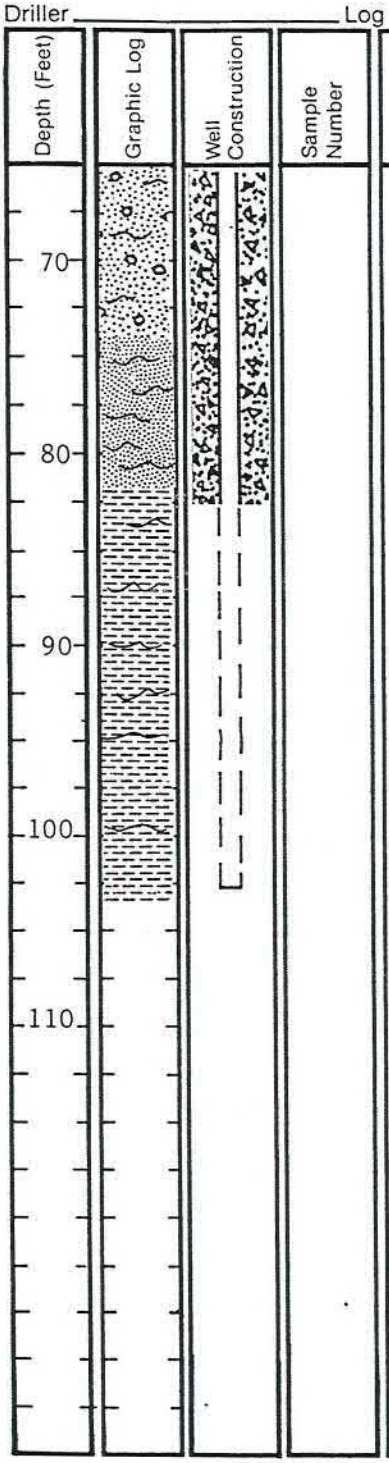
Casing: Dia. _____ Length _____ Type _____

Drilling Company _____ Drilling Method _____

Driller _____ Log By _____ Date Drilled _____

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

70-75' Same, coarse sand, less silty.

75-82' Brown sand, coarse, silty.

82'-103' Gray shale, silty texture, fissile, soft-firm.

Note: No odors detected.

Depth (ft)	Description
12.0 - 14.0 (7-8-10-10)	SILT, same as above but with fine to medium well-rounded gravel, moist, no odor.
14.0 - 16.0 (10-14-16-14)	CLAY, silty, red-brown, stiff, moist, with embedded gravel and cobbles, no odor.
16.0 - 18.0 (21-22-21-35)	CLAY, very silty, red-brown, stiff, dry, with occasional cobbles, no odor.

Additional Notes:

Glacial till from 3.0-18.0 ft.
Water encountered at 2 ft, 7.5-11.0 ft.
*The numbers in parentheses are the blow counts over a 2-foot interval.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301-01

Well Number: 83-2 Total Depth: 80' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

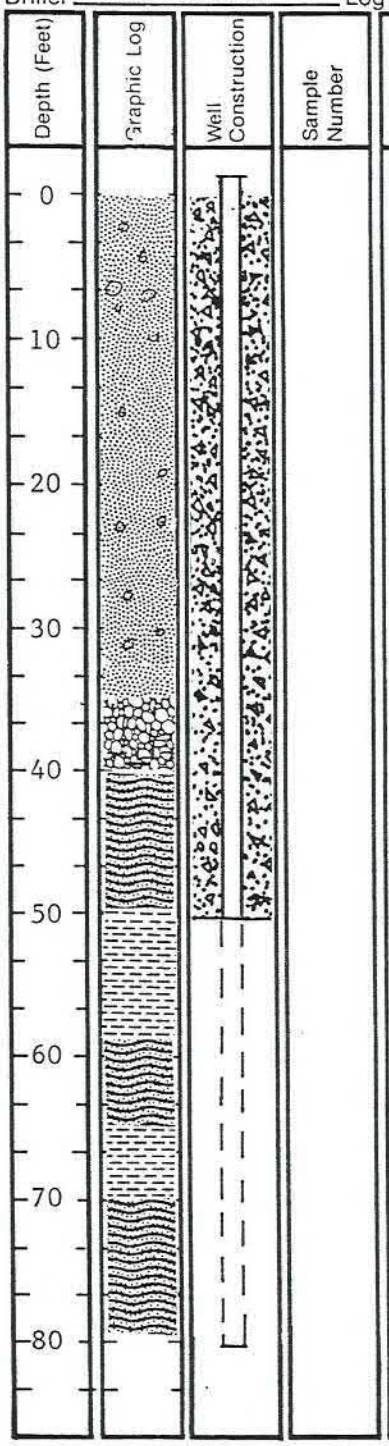
Casing: Dia.: 6" Length: 50' Type: Steel

Drilling Company: AW Kincaid Drilling Method: Air Rotary

Driller: Jack Busman Log By: Marilyn Hewitt Date Drilled: 12/08/83

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

0-5' Brown sand, coarse, subangular; gravel fine, subround.

5-10 Same, coarser gravel.

10-32 Same, subangular-subround, poorly sorted.

32-35' Brown sand, coarse, well sorted.

35-37' Brown gravel, fine-medium subrounded, moderately sorted, trace of clay.

38-40' Same, shale fragments.

40-45' Gray siltstone, weathered, soft.

45-50' Same, less weathered, hard.

50-58' Red shale fissile, hard.

58-65' Gray siltstone, firm-hard, fractured.

65-70' Red shale, fissile, firm.

70-80' Gray siltstone, firm-hard, fractured.

Note: Slight odor from the 70-80' interval.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301-01

Well Number: 83-3 Total Depth: 80' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

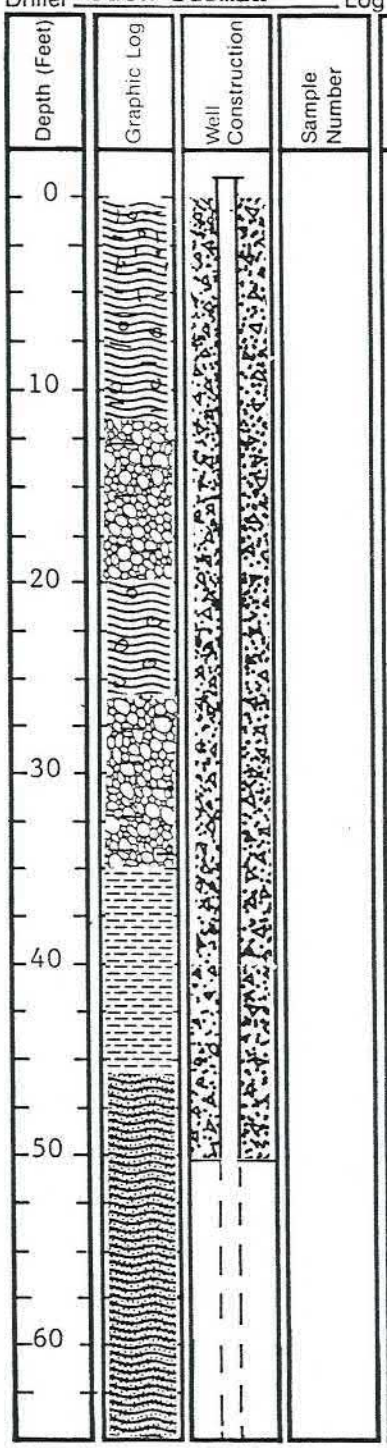
Casing: Dia.: 6" Length: 50' Type: Steel

Drilling Company: A.W. Kincaid Drilling Method: Air Hammer

Driller: Jack Busman Log By: Marilyn Hewitt Date Drilled: 11/28/83

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

0-5' Red silt, trace of clay with shale fragements, pebbles.

5-12' Medium brown silt, clayey, trace shale fragments, and subround, fine gravel, dry.

12-20' Medium brown gravel, fine, subangular-subround, trace shale fragments.

20-26' Medium brown silt, medium subrounded gravel, highly weathered pebbles, moist.

26-35' Brown gravel, medium-coarse, shale boulders and fragments, wet.

35-46' Red shale thinly bedded, fissile soft.

46-51' Gray siltstone, fissile, very soft.

51-65' Same, sandy.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301-01

Well Number: 83-3 Total Depth: 80' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

Casing: Dia.: 6" Length: 50' Type: Steel

Drilling Company: A.W. Kincaid Drilling Method: Air Hammer

Driller: Jack Busman Log By: Marilyn Hewitt Date Drilled: 11/28/84

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
70				65-80' Red shale, weathered, fissile, very soft.
80				Note: No odors detected.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301-01

Well Number: 83 4 Total Depth: 65' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

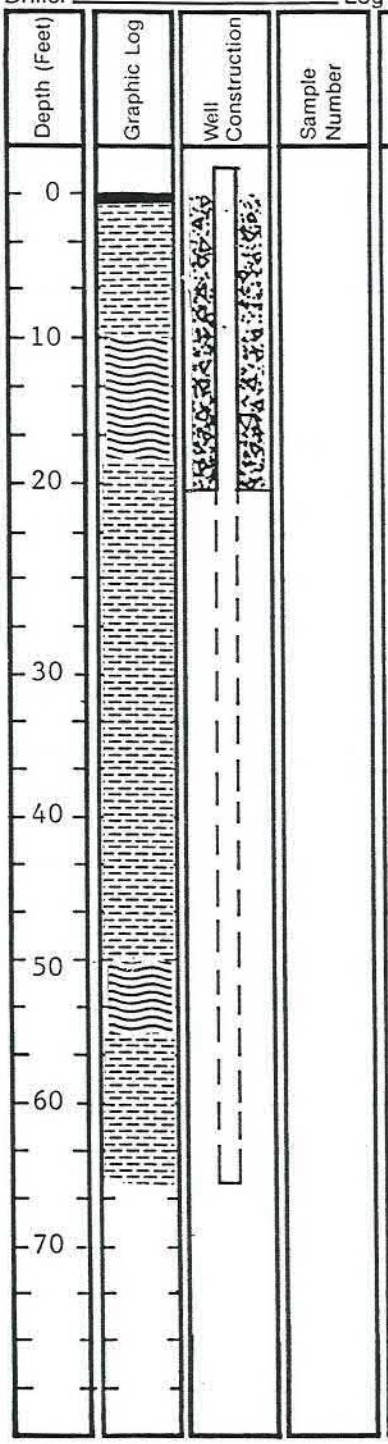
Casing: Dia.: 6" Length: 21' Type: Steel

Drilling Company: A.W. Kincaid Drilling Method: Air Hammer

Driller: Jack Busman Log By: Gary Barton Date Drilled: 12/2/83

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

0-0.3' Red soil, silty.

0-10' Red shale, dark, weathered, fissile, massive, soft.

10-17' Gray siltstone, slight fissile, soft-firm.

17-50' Red shale, slightly weathered, fissile, brittle.

50-55' Gray siltstone, slightly weathered, soft.

55-65' Red shale, brittle.

Note: No odors detected.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301-01

Well Number: 83-5 Total Depth: 80' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

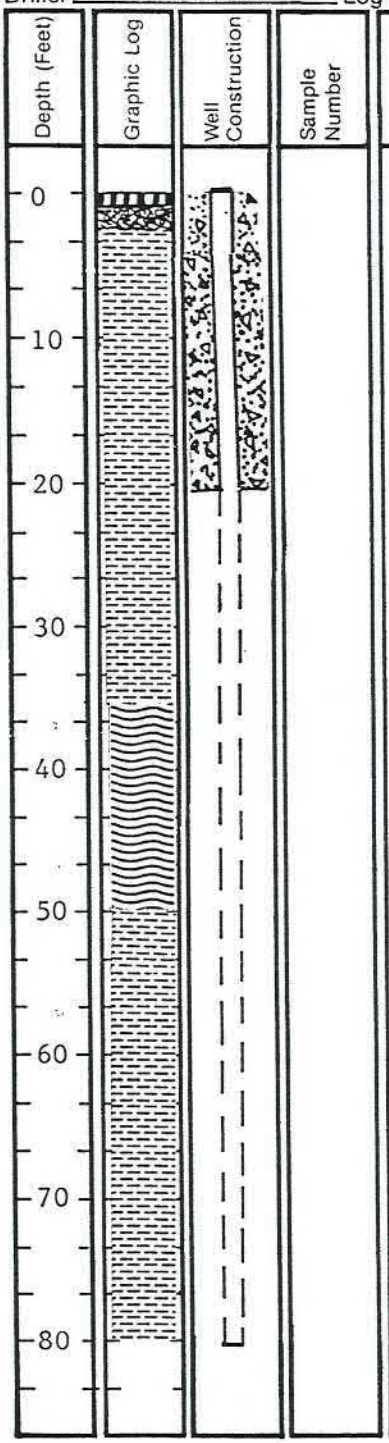
Casing: Dia.: 6" Length: 20' Type: Steel

Drilling Company: A.W. Kincaid Drilling Method: Air Hammer

Driller: Jack Busman Log By: Gary Barton Date Drilled: 12/15/83

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

0-3" Black top.

3"-2' Red fill, gravel, sand.

2-5' Red shale, weathered, soft-firm.

5-35' Same, fissile, hard.

35-50' Gray siltstone, platey, hard.

50-60' Red shale, slightly weathered, soft-firm.

60-80' Same, hard.

Note: No odors detected.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301-01

Well Number: 83-6 Total Depth: 116' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

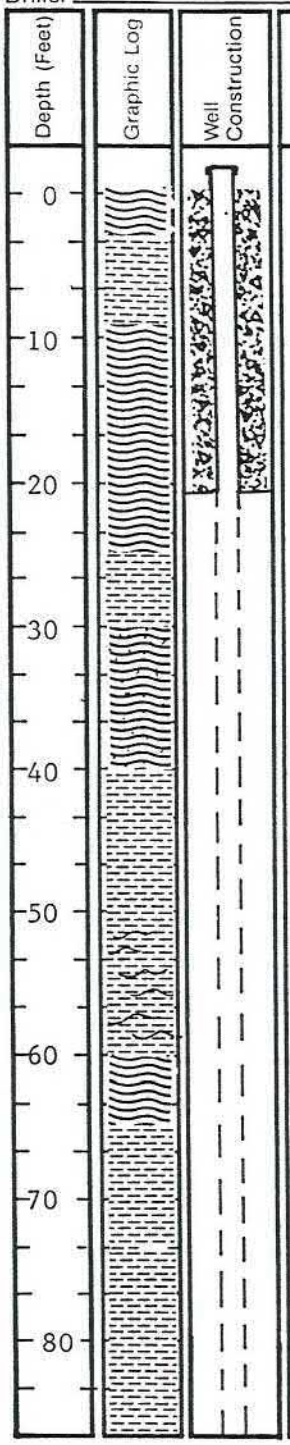
Casing: Dia.: 6" Length: 20' Type: Steel

Drilling Company: A.W. Kincaid Drilling Method: Air Hammer

Driller: Jack Busman Log By: Gary Barton Date Drilled: 12/13-14/83

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

0-3' Gray siltstone, weathered, fissile, soft.

3-8' Red shale, slightly fissile, soft.

8-22' Gray siltstone, fine texture, hard.

22-25' Same, interbedded with red shale.

25-30' Red shale, fissile, gray oil-shale, firm.

30-40' Gray siltstone, slightly sandy, soft.

40-50' Red shale, thin bedded, hard.

50-60' Same, interbedded with gray siltstone, soft.

60-65' Gray siltstone, soft.

65-70' Red shale, slightly weathered, firm.

70-98' Same, soft-firm.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301-01

Well Number: 83-6 Total Depth: 116' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

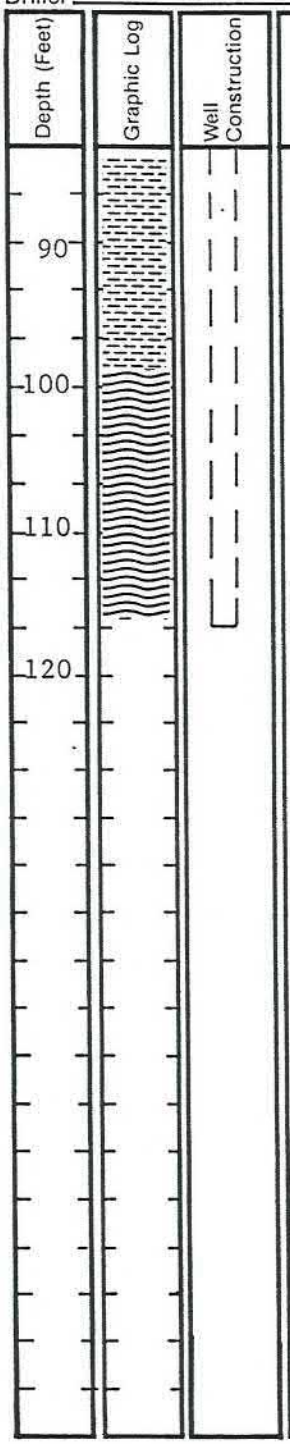
Casing: Dia.: 6" Length: 20' Type: Steel

Drilling Company: A.W. Kincaid Drilling Method: Air Hammer

Driller: Jack Busman Log By: Gary Barton Date Drilled: 12/13-14/83

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

98-116' Gray siltstone, very little bedding, hard.

Note: No odors detected.

Environmental Resources Management

Drilling Log

Project: Bendix Corp. Owner:

Location: Sidney, NY W.O. Number: 301--01

Well Number: 83-7 Total Depth: 65' Diameter: 6"

Surface Elevation: Water Level: Initial: 24-hrs.:

Screen: Dia.: Length: Slot Size:

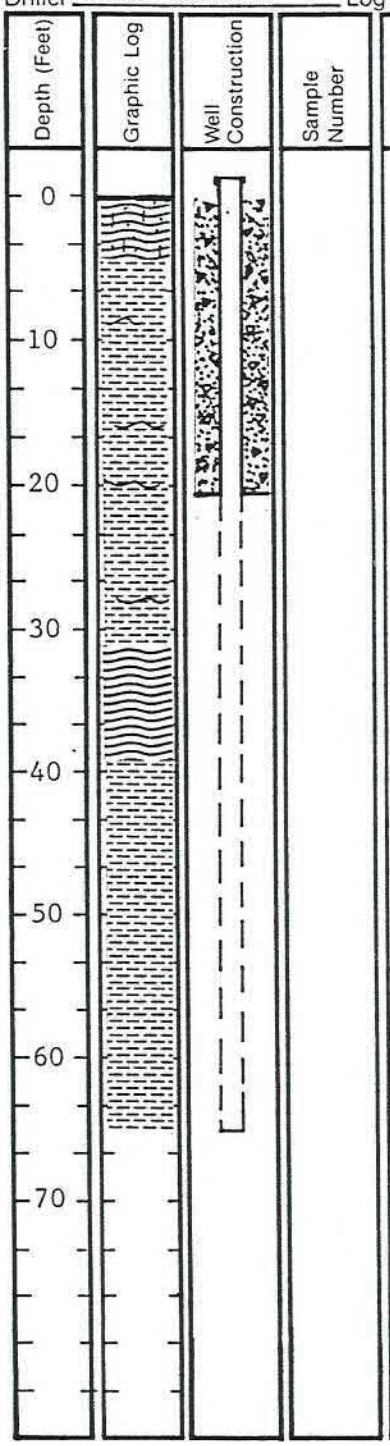
Casing: Dia.: 6" Length: 21' Type: Steel

Drilling Company: A.W. Kincaid Drilling Method: Steel

Driller: Jack Busman Log By: Gary Barton Date Drilled: 12/2/83

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

0-0.5' Yellow-brown soil, silty, clayey.

0.5-4' Brown silt, clayey, trace sand.

4-17' Red shale, weathered, silty, soft.

17-25' Same, hard.

25-31' Same, soft.

31-35' Gray siltstone, soft-firm.

35-38' Same, weathered, fractured.

38-52' Red shale, weathered, fissile, soft.

52-65' Same, less weathered, hard.

Note: No odors detected.

Environmental Resources Management

Drilling Log

Project: Bendix-Sidney Owner:

Location: West Side of Route 8 W.O. Number: 301-05

Well Number: 84-8 Total Depth: 30.0' Diameter: 2"

Surface Elevation: 1054.07 Water Level: Initial: 24-hrs.:

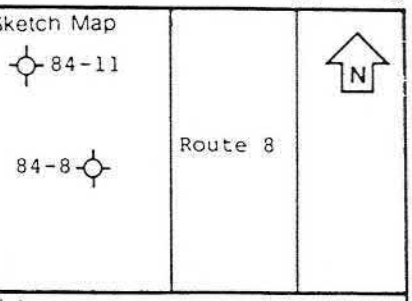
Screen: Dia. 2" Length: 10' Slot Size: .10"

Casing: Dia. 2" Length: 11.5' Type: PVC - Sched 40

Drilling Company: Parratt Wolff, Inc. Drilling Method: Hollow Stem Auger

Driller: Mike Ellingworth Log By: Bob Keating Date Drilled: 3/28/84 & 4/6/84

Sketch Map



Notes: Well backfilled 10' and casing set at 20'.

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Finished with a 2' riser and a locking cap.
0			damp	0-2' Brown silty, sand, some gravel and clay, no odor.
			damp	2-4' Brown silty sand, some rounded gravel, no odor.
5			dry	4-6' Red brown sandy silt, some gravel, no odor.
			dry	6-8' Very dense. Light brown silt, some coarse sand and gravel, no odor.
10			dry	8-10' Green grey gravelly silt, trace sand, very dense, no odor.
			dry	10-12' Green grey silty gravel, very dense, no odor.
			damp	12-14' Red brown fine to medium gravelly silt, no odor.
15			damp	14-16' Red brown silty gravel, no odor.
			damp	16-18' (1') Green gravel, trace of silt, no odor. (1') Red brown gravelly silt, no odor.
20			satur	20-21.5' (.5') Red med. rnd. gravelly clay, trace silt and sand, strong odor.
			damp	(1') Red clay, trace silt and ang. gravel (grey shale), slight odor.
			damp	

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location West Side of Route 8 W.O. Number 301-05

Well Number 84-8 Total Depth 30.0' Diameter 2"

Surface Elevation 1054.07 Water Level, Initial 24-hrs

Screen Dia. 2" Length 10' Slot Size .10"

Casing Dia. 2" Length 11.5' Type PVC - Sched 40

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/6/84 3-28-84/

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
25			damp	25-25.5' Dark brown clay and ang. med. to coarse grained gravel with a trace of silt, no odor.
				29' Auger refusal - bedrock.
30				30' Spoon refusal, no recovery, bedrock.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location West Site of Route 8 W.O. Number 301-05

Well Number 84-9 Total Depth 31' Diameter

Surface Elevation 1075.81 Water Level: Initial 24-hrs.

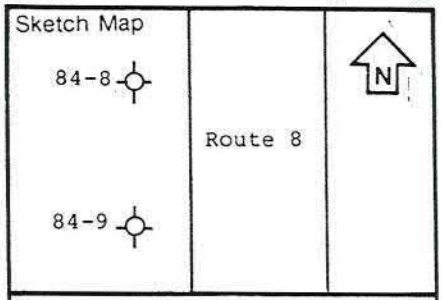
Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/9/84

Sketch Map



Notes

Dry hole - well not installed.

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0			dry	0-2' Brown soil and gravel from road fill.
			dry	2-4' (1') Brown soil and gravel from road fill.
			dry	(1') Light brown silt, trace of fn. gravel.
5				4-6' Light brown sandy silt, some coarse subang. gravel and trace clay.
			dry	
				6-8' Brown fn. to coarse gravelly medium sand, trace of silt.
			dry	
			dry	8-8.7' (3') Same as above.
				(4") Cobble no recovery.
10				10-12' (6") Med. brown sandy fn. to coarse subrnd. gravel.
				v. dense (3") Light brown cobble.
			dry	(14") Light brown silty fn. to coarse subrnd. to rnd. gravel.
				12-14' Red silty fn. to coarse ang. to subrnd. gravel,
			dry	v. dense.
15				14-16' Red silty fn. to coarse subrnd. to rnd. gravel,
			dry	some erratics.
				16-18' Red silty fn. to coarse subrnd. to rnd. gravel
			dry	(red shale fragments).
				18-20' Red coarse ang. gravelly silt, trace clay, l. dense.
20			dry	
			dry	20-22' Same as above.
				22-24' Red silt and agn. to rnd. fn. to coarse gravel.
			dry	
25				24-25.2' Red silty med. to coarse ang. to subang. gravel,
			dry	trace clay.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location West Side of Route 8 W.O. Number 301-05

Well Number 84-9 Total Depth 31' Diameter

Surface Elevation 1075.81 Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/9/84

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
25			dry	25.5' Red clayey fn. grained ang. to subrnd. gravel.
				drilling is hard
30			dry	30-30.5' Red silty med. to coarse ang. to subang. gravel, trace shale fragments. 31' Bedrock - no recovery with spoon.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location West Side of Route 8 W.O. Number 301-05

Well Number 84-10 Total Depth 39' Diameter

Surface Elevation 1080.965 Water Level: Initial 24-hrs.

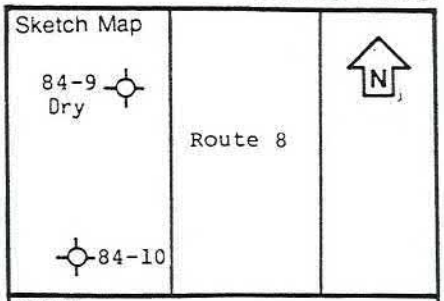
Screen: Dia. 2" Length 10' Slot Size .10"

Casing: Dia. 2" Length 12.5' Type PVC - Sched 40

Drilling Company Parratt Wolff, Inc Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4-9-84/ 4-10-84

Sketch Map



Notes

Hole was resealed below 21'.

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				Finished with a 6" I.D. steel riser and locking cap.
				0-2' Light brown clayey silt, trace sand.
			damp	
			damp	2-4' (1') Brown sandy silt, trace med. ang. gravel.
			v. dense	(1') Greenish brown sandy silt-stratified with light brown sandy layers.
5			damp	4-6' (1') Green sandy silt, trace subrnd. med. to coarse gravel.
			damp	denser (1') Brown silty sand and med. to coarse subrnd. to rnd. gravel.
				6-8' (1') Same as above.
			damp	(1') Green brown silty med. to coarse, subrnd. to rnd. gravel.
10				10-11.5' Greenish brown fn. sand and fn. to coarse subang. to subrnd. gravel, trace silt.
			damp	
				water table
			satur	
15				15-16.5' Green brown sandy silt and fn. to med. subang. to subrnd. gravel.
			damp	16-18' (1') Green brown fn. gravelly clay, some silt.
				(1') Green brown silt and fn. to med. subrnd. to subang. gravel, trace clay.
20			satur	
				20-21.5' (1') Green brown silty med. to coarse subrnd. gravel.
			damp	v. dense (6") Green brown silty coarse ang. gravel.
25			dry	25-25.5' Green brown sandy silt, trace gravel.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location West Side of Route 8 W.O. Number 301-05

Well Number 84-10 Total Depth 39' Diameter 2"

Surface Elevation 1080.965 Water Level: Initial 24-hrs.

Screen: Dia. 2" Length 10' Slot Size .10"

Casing: Dia. 2" Length 12.5' Type PVC - Sched 40

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4-9-84/ 4-10/84

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
30			dry	30-30.5' (4") Green fn. to coarse ang. to subrnd. silt.
			dry	(2") Red fn. to coarse gravelly silt.
35			dry	35-35.3' V. dense red and green silty fn. to coarse ang. gravel, trace sand.
				Auger refusal - bedrock.
39				39' No recovery - cuttings show red weathered shale.
				N.B. No odors were detected in any of the samples.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location West Side of Route 8 W.O. Number 301-05

Well Number 84-11 Total Depth 20.5' Diameter 2"

Surface Elevation 1039.70 Water Level: Initial 24-hrs.

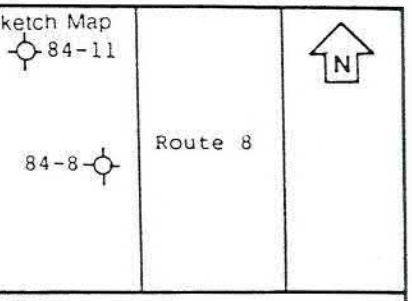
Screen Dia 2" Length 10' Slot Size .10"

Casing Dia 2" Length 11' Type PVC - Sched 40

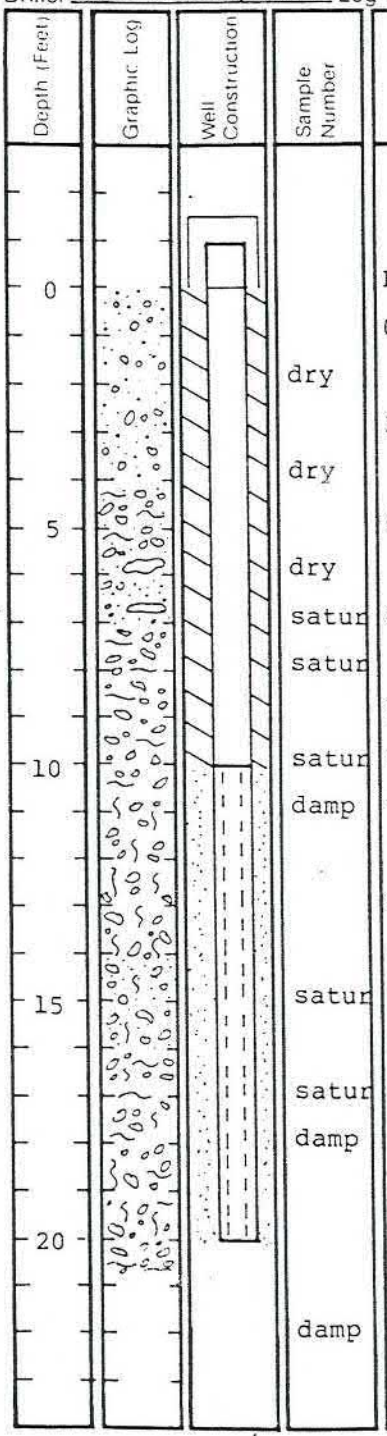
Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/10/84

Sketch Map



Notes



Sample Number	Description/Soil Classification (Color, Texture, Structures)
	Finished with 1.5 ft. riser and locking cap.
	0-2' Red soil and rnd. gravel, road fill.
dry	
	2-4' Brown soil and rnd. gravel.
dry	
	4-5.4' Very dense red fn. grained subang. to subrnd.
dry	gravelly silt with trace sand and large cobble, no odor.
satur	6-8' (1') Red shale cobble, some red gravelly sand.
satur	(1') Red fn. to coarse silty gravel, no odor.
	8' No recovery.
satur	9-10.5' (1') Red fn. to coarse ang. to rnd. silty gravel.
damp	v. dense (.5') Red fn. to coarse ang. clayey gravel. strong odor
	saturated zone
satur	
	15-16.5' (1') Red sandy fn. to med. subang. to subrnd. gravel, trace clay.
satur	
damp	(.5') Red silty dense fn. to med. gravel, trace clay. strong odor
	hardpan layers
	Red clayey fn. to med. ang. to subrnd.
	20-20.6' (.5') gravel, some silt.
damp	v. dense (3") Light brown fn. to med. ang. gravelly silt. strong odor

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hill Site-West Side Route 8 W.O. Number 301-05

Well Number 84-12 Total Depth 50' Diameter 2"

Surface Elevation 1073.44 Water Level: Initial 24-hrs.

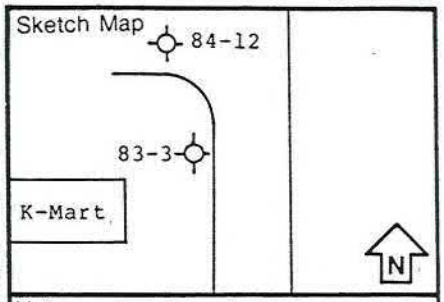
Screen: Dia. 2" Length 15' Slot Size .10"

Casing: Dia. 2" Length 9' Type PVC-Schedule40

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/11-4/12/84

Sketch Map



Notes Hole was backfilled to 22'.

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Finished with a 3' riser and locking top.
0			damp	0-2' Brown soil, trace of fine gravel.
			damp	2-4' Brown clayey soil, trace gravel.
5			damp	4-6' Brown fine to coarse, subrounded to rounded gravel and sand.
			damp	6-8' (1') Brown fine to coarse, subrounded to rounded sandy gravel.
			dry	denser (1') Green brown silty, fine to coarse, subangular to subrounded gravel, trace sand.
10			satur.	8-10' (1.5') Brown, sandy, medium to coarse, subangular to subrounded gravel, saturated.
			damp	(6") Brown, silty, fine to coarse, subrounded to rounded gravel, trace clay, sandstone cobble.
			damp	10-11.5' Brown sandy, fine to medium, subrounded to rounded gravel, trace clay and silt.
15			damp	15-15.5' Red clayey medium to coarse, subrounded to rounded gravel.
20			damp	20-20.5' Red silty coarse sand to fine gravel.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location West side of Route 8 W.O. Number 301-05

Well Number 84-12 Total Depth 50' Diameter 2"

Surface Elevation 1073.44 Water Level: Initial 24-hrs.

Screen: Dia. 2" Length 15' Slot Size .10"

Casing: Dia. 2" Length 9' Type PVC-Schedule40

Drilling Company Parratt Wolff, Inc Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4-11/4-12/84

Sketch Map

Notes
Hole was backfilled with cuttings and bentonite.

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
25			damp	25-25.5' Red fine to medium, subrounded, gravelly silt large cobble. dense
30			dry	30-30.8' Red sandy silt, little clay, trace fine gravel v. dense
			dry	33' Red silty gravel with large sandstone cobble fragment.
35			dry	35-35.5' Red silty fine to coarse, subangular to rounded v. dense gravel.
40			dry	40-40.6' Red silty fine to coarse gravel with sandstone cobble.
			satur.	
45			damp	45-45.5' Red and brown fine to coarse, subrounded v.dense gravel with large sandstone cobble. Bedrock
50			dry	50 - no recovery, grey shale fragments in spoon

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hillsite W.O. Number 3010501

Well Number 84-13 Total Depth 123.0' Diameter 2"

Surface Elevation Water Level: Initial 24-hrs.

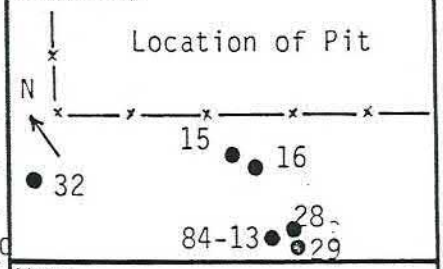
Screen: Dia. 2" Length 10.0' Slot Size .01"

Casing: Dia. 2" Length 115.0' Type PVC Schedule 40

Drilling Company Porratt Wolff, Inc Drilling Method Mud Rotary

Driller Mike Ellingworth Log By Bob Keating Date Drilled 1/30-1/31/85

Sketch Map



Notes
Total depth of boring was 123.0'. Hole 3 5/8" I.D.

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				Finished with 2' PVC riset and 6" I.D. steel riser with locking top.
5			5-6.5	Red SILT and f/m/c subrounded to subangular GRAVEL, little f. sand, trace clay, firm to dense, dry, (17-24-21).
10			10-11.5'	Same as above, dense to v. dense, dry (15-26-42).
15			15-15.8'	Same as above, v-dense, dry (46-50/.3).
20			20-20.7'	Same as above, red shale cobble, v. dense, dry, (46-50/.2)
25			25-25.7'	Red SILT and f/m/c subrounded GRAVEL, little clay, COBBLE, v. dense, dry (43-50/.2)

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hillsite W.O. Number 3010501

Well Number 84-13 Total Depth 123.0' Diameter 2"

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. 2" Length 10.0' Slot Size .01"

Casing: Dia. 2" Length 115.0' Type PVC Schedule 40

Drilling Company Porratt Wolff, Inc Drilling Method Mud Rotary

Driller Mike Ellingworth Log By Bob Keating Date Drilled 1-30/1-31-85

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Boulder
30			30-30.3'	Same as above, v. dense, dry (971.5).
				Boulder
35			35-35.5	(.3') Same as above. (.2') Brown f. SAND, little silt, little clay, little f/m rounded gravel, COBBLE, incomplete penetration, soft, saturated (671.5)
				- easier drilling
				- harder drilling
40			40-40.4	Red brown SILT and f/m/c subangular to subrounded GRAVEL, COBBLE, incomplete penetration, very dense, dry (100/.4).
45			45-45.7'	Red brown SILT and f/m/c subangular to subrounded GRAVEL, trace clay, v. dense, dry (60-50/.2).
50			50-50.5'	Same as above, v. dense, dry (80/.5).

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hillsite W.O. Number 3010501

Well Number 84-13 Total Depth 123.0' Diameter 2"

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. 2" Length 10.0' Slot Size .01"

Casing: Dia. 2" Length 115.0' Type PVC Schedule 40

Drilling Company Porratt Wolff, Inc Drilling Method Mud Rotary

Driller Mike Ellingworth Log By Bob Keating Date Drilled 1-30/1-31-85

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
55				
60				60-60.5' Red brown SILT and f/m/c subangular to subrounded GRAVEL, little clay, trace f. sand, v. dense, dry (831.5)
65				- drilling easier - begin f. sand lens.
70				70-70.7' Light brown to brown f. SAND, little silt, trace clay, v. dense, moist, (62-50/.2)
75				
80				80-80.8' Same as above, v. dense, moist

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hillsite W.O. Number 3010501

Well Number 84-13 Total Depth 123.0' Diameter 2"

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. 2" Length 10.0' Slot Size .01"

Casing: Dia. 2" Length 115.0' Type PVC Schedule 40

Drilling Company Poratt Wolff, Inc. Drilling Method Mud Rotary

Driller Mike Ellingworth Log By Bob Keating Date Drilled 1-30/1-31-85

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
			84'	- Boulder end f. SAND lens.
85				Begin basal till
			89-90'	No recovery, boulder
90				
95				
				boulder
100			100-100.5'	Brown f. SAND, little silt, trace clay, v. dense, damp to saturated, (140/.5)
				bentonite slurry
105				boulder

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hillsite W.O. Number 3010501

Well Number 84-13 Total Depth 123.0' Diameter 2"

Surface Elevation Water Level: Initial 24-hrs.

Screen: Dia. 2" Length 10.0' Slot Size .01"

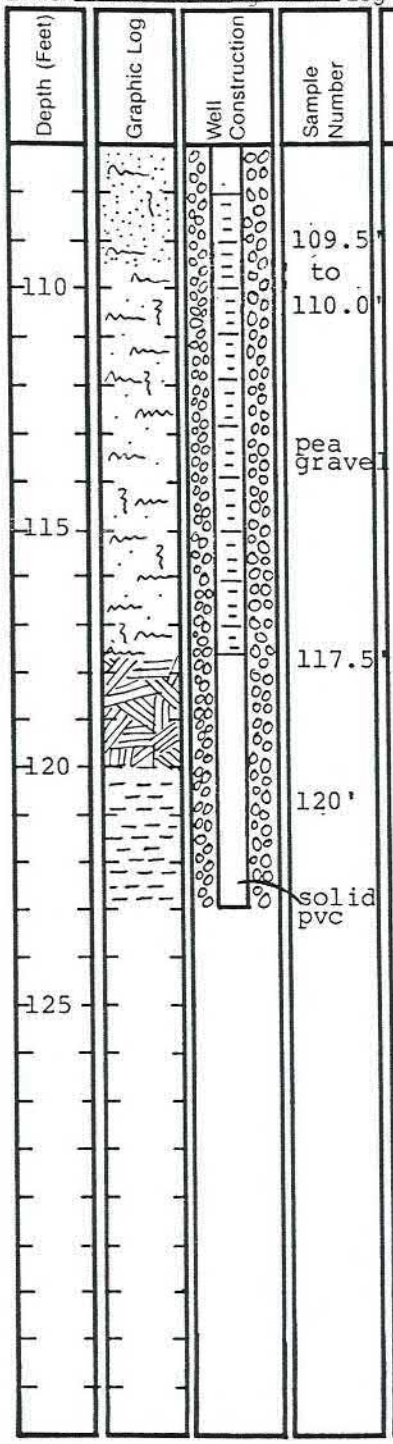
Casing: Dia. 2" Length 115.0' Type PVC Schedule 40

Drilling Company Poratt Wolff, Inc. Drilling Method Mud Rotary

Driller Mike Ellingworth Log By Bob Keating Date Drilled 1-30/1-31-85

Sketch Map

Notes



Description/Soil Classification
(Color, Texture, Structures)

Red and tan mottled, varied SILT, little clay, trace f. sand, trace m/gravel, v. dense, dry (60-50/.2)

weathered bedrock

Red weathered shale (150/.1)

- 123' Total Depth

N.B. No odors were detected in any samples, Blow counts shown in parenthesis is number of blows of 140 lb. hammer on a .5' interval.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hill Site W.O. Number 301-05

Well Number E-1 Total Depth 40' Diameter

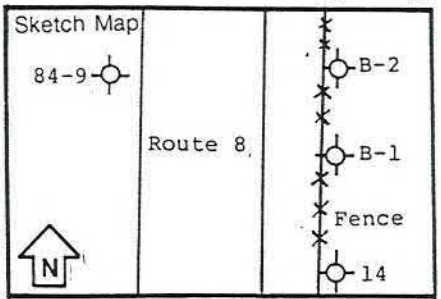
Surface Elevation 1096.89 Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/11/84



Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
			damp	0-2' Light brown sandy silt, no odor.
2				2-4' Red sandy silt, trace fn. to med. rnd. gravel,
4			dry	no odor.
				4-6' Red sandy silt, some subang. to subrnd. gravel,
6			dry	no odor.
				6-8' Very dense, red silty subang. to subrnd. fn. to coarse gravel with trace sand, large yellow sandstone cobble, no odor.
8			dry	
				8-10' Red silt and fn. to coarse, ang. to rnd. gravel, trace dense sand, large yellow cobble, no odor.
10			dry	
				10-12' Green red fn. to coarse grained subang. to
12			damp	rnd. gravely fn. sand, no odor
14			satur zone	Broke through a cobble.
				15-16.5' Very dense greenish fn. to med. ang. to rnd. gravely fn. sand, very large cobble, no odor.
16			damp	
18				
20				20-21' Brown silty fn. to coarse subrnd. to rnd. gravel
			damp	with trace clay, no odor.
25				25-26' Very dense red silty fn. to coarse ang. to subrnd. gravel, no odor.
			dry	

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hill Site W.O. Number 301-05

Well Number E-1 Total Depth 40' Diameter

Surface Elevation 1096.89 Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/11/84

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
28				
30			dry	30-30.8' (6") red silt, trace fn. gravel, no odor.
32			dry	Very dense (3") grey fn. to med. ang. gravely silt with trace clay, no odor.
34				
36				35-35.6' Blue grey clayey fn. to coarse ang. gravel trace silt.
38			satur	38.5' Bedrock.
40				40-40.1' Bedrock fragments - grey shale, no odor.
				Note: hole was backfilled with bentonite slurry and cuttings.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location East Route 8 along fence W.O. Number 301-05

Well Number E-2 Total Depth 28' Diameter

Surface Elevation 1086.86 Water Level: Initial 24-hrs.

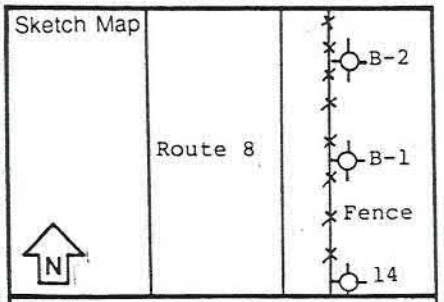
Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/11/84

Sketch Map



Notes: Hole used as test boring.

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
2			damp	0-2' Light brown sandy silt, trace gravel, no odor.
4			damp	2-4' Same as above, no odor.
6			damp	4-6' (6") brown silty sand with a trace gravel. (1.5') green brown sandy fn. to coarse subrnd. gravel, no odor.
8			damp	6-8' Green, red, and brown fn. to coarse ang. to rnd. gravel and cobbles with trace silt, sand, no odor.
10			satur	8-8.8' (6") brown sandy fn. to coarse rnd. gravel. (3") green silty fn. to coarse gravel, no odor.
12			dry	10-11.5' Red brown sandy fn. to coarse to rnd. gravel, no odor.
14				
16			damp	15-16.0' Green brown silty fn. to coarse subrnd. gravel with cobbles of sandstone, trace clay, no odor.
18				
20				
22			damp	20-21.5' (3") green silty fn. to med. ang. to rnd. gravel, very dense. (15") red fn. to coarse ang. to rnd. gravely silt, no odor.
24			satur	Water bearing zone.
26			satur	25-26.5' (6") red clayey fn. to coarse subang. to rnd. gravel. SOFT (1') red fine rnd. gravely silt, no odor.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location W.O. Number 301-05

Well Number E-2 Total Depth 28' Diameter

Surface Elevation 1086.86 Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/11/84

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
28			satur	27' Bedrock. 28' Chips of red shale in spoon, no recovery, no odor. N.B. Hole was backfilled with cuttings.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hill Site W.O. Number 301-05

Well Number E-3 Total Depth 20 feet Diameter 6"

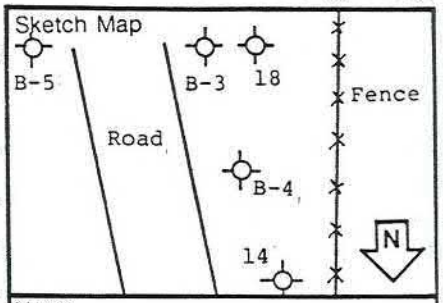
Surface Elevation 1100.25' Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/26/84



Notes
dry-damp-saturated
soft-compact-l. dense-
v. dense

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
				Continuous Split Spoon Sampling
0				
				0-2' Light brown fn. to med. grained subrnd. to rnd. soft gravely silt and fn. to coarse sand, trace clay, no odor.
2			damp	
				2-4' Same as above, no odor.
				Soft.
4			damp	
				4-6' Green brown fn. to med. sand and fn. to coarse dense
6			dry	ang. to rnd. gravel, no odor.
				6-8' Red fn. to med. sand and fn. to med. subrnd. dense
8			damp	to rnd. gravel, little silt, no odor.
			satur zone	8-10' red med. sand and fn. to coarse subrnd. dense to
10			satur	rnd. gravel, trace silt, no odor.
				10-12' red silty fn. sand and fn. to coarse subrnd. dense
12			damp	to rnd. gravel, no odor.
				12-14' red silt and fn. to coarse subrnd. to dense rnd.
14			damp	gravel, no odor.
				14-16' red silty fn. to coarse subang. to rnd. very dense
16			dry	gravel, no odor.
				16-17.5' red and green silty fn. to coarse subang. to rnd.
18			dry	gravel, no odor.
				Cobble.
20				18.5-20' red fn. to coarse subang. to rnd. gravely clay,
			dry	little silt, no odor.

N.B. Hole was backfilled with cuttings.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location W.O. Number 301-05

Well Number E-4 Total Depth 21.5' Diameter

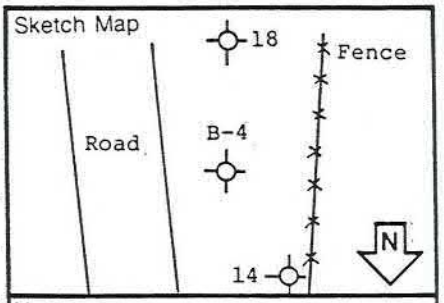
Surface Elevation 1099.10 Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/26/84



Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				
				0-2' Light brown sandy silt, trace clay, soft,
2			damp	no odor.
				2-4' Light brown and green fn. to med. sand, little silt,
4			damp	soft trace ang. fn. gravel no odor.
				4-5.5' Brown fn. sandy fn. to coarse subang. to rnd. (very
6			dry	dense) gravel, little silt. Till, no odor.
				No recovery - cobble.
8				7-9' Red brown silt to vn. sand and fn. to coarse ang.
			dry	(very dense) to subrnd. gravel, no odor. Till.
10				9-11' Same as above.
			dry	Very dense, no odor.
12				11-13' Red (little green) fn. to med. sandy fn. to coarse
			dry	dense ang. to rnd. gravel, no odor, till.
14				13-15' Red and green fn. to medium sandy fn. to coarse very
			dry	dense ang. to rnd. gravel, no odor, till.
			satur	15-16.4' (6") less dense red fn. to coarse sand and fn. to
16			zone	coarse ang. to rnd. gravel, no odor, very dense.
			satur	(1') red fine to coarse ang. to subrnd. gravely silt to med. sand, trace clay, no odor.
18			dry	17.5-18.4' Red fn. to coarse ang. to subrnd. gravely, very
			dry	dense silt, little fn. to med. sand, no odor.
20			cable	No recovery.
				20-21.5' Red fn. to coarse sand, little silt, trace fn.
22			damp	very dense gravel, no odor.
				Hole was backfilled with cuttings.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hill Site W.O. Number 301-05

Well Number E-5 Total Depth 20' Diameter 6"

Surface Elevation 1103.64 Water Level: Initial 24-hrs.

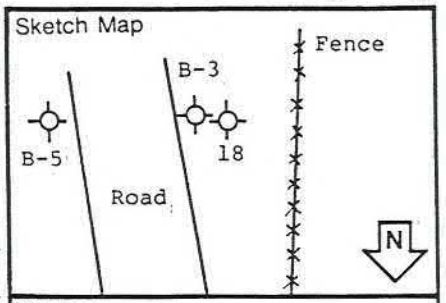
Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Parratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/26/84

Sketch Map



Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				0-2' Light brown silty fn. to med. sand, soft, no odor.
2			damp	2-4' Brown fn. sandy silt, little fn. to med. subang. to soft rnd. gravel, no odor.
4			damp	Cobble - no recovery.
6				6.5-8.5' (.5') Red fn. to med. sand.
8				v. dense (1.5') Red sandy silt, little fn. to coarse subang.
			dry	to rnd. gravel, no odor.
10				9-11' Red silt and fn. to coarse subang. to rnd. v. dense
			dry	gravel, little fn. sand, no odor.
12				11-12.0' Red fn. to med. subrnd. to rnd. gravely silt, little
			dry	fn. sand, v. dense, no odor.
14				13-15' Red fn. to coarse sand, little fn. to med. subrnd.
			damp	to rnd. gravel, trace silt, no odor.
16				15-17' Red fn. to coarse subrnd. to rnd. gravely v. dense
			dry	silt, no odor.
18				17-18' Red silt and fn. to coarse subrnd. to v. dense
			dry	rnd. gravel, no odor.
20				19-20' Red silt and fn. to coarse subrnd. to rnd. gravel,
			dry	trace fn. to med. sand, no odor.
				N.B. Hole was backfilled with cuttings.

Environmental Resources Management

Drilling Log

Project Bendix-Sidney Owner

Location Hill Site W.O. Number 301-05

Well Number E-6 Total Depth 20.5' Diameter 6"

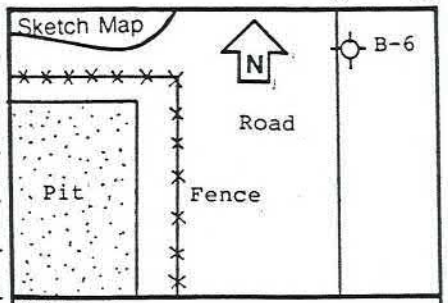
Surface Elevation 1119.69 Water Level: Initial 24-hrs.

Screen: Dia. Length Slot Size

Casing: Dia. Length Type

Drilling Company Paratt Wolff, Inc. Drilling Method Hollow Stem Auger

Driller Mike Ellingworth Log By Bob Keating Date Drilled 4/26/84



Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				0-2' Green brown silty med. sand, soft, no odor.
2			damp	2-4' Brown fine to med. sand, little silt, soft, no odor.
4			damp	4-6' Red fn. to med. subrnd. to rnd. v. dense gravelly silt, no odor.
6			damp	6-8' Red med. sand and fn. to coarse subang. to l. dense rnd. gravel, no odor.
8			damp	8-10' (1') L. dense red med. sand, little fn. to coarse to subrnd. to rnd. gravel, no odor.
			satur	(1') v. dense red silt and fn. to coarse subrnd. to rnd. gravel, no odor.
10			dry	10-12' Red fn. to med. sand and fn. to coarse subang. to l. dense subrnd. gravel, no odor.
12			damp	12-13' Red silty fn. to coarse ang. to rnd. gravel, v. dense, no odor.
14			dry	14-15' Green cobble, red silty fn. to coarse ang. to rnd. v. dense gravel, no odor.
16			dry	16.5-17' Red silt, little fn. to med. rnd. gravel, little clay, v. dense, no odor.
18			dry	19-20.5' Red fn. to coarse subang. to rnd. gravelly silt, trace clay, no odor.
20			dry	N.B. Hole was backfilled with cuttings.
22				

HILL SITE BACKHOE TRENCH LOGS

NOVEMBER 1984

Pit T - 1	Length - 15.0 ft.	Total Depth - 13.0 ft.
	0-2 ft.	Yellow-brown slightly sandy loose silt.
	2-7.5 ft.	Brown till. Dense silty med. to coarse gravel. Collected Sample T-1-A at 3.5 ft and sample T-1-B from saturated gravel stringer at 13.0 ft.
	7.5-13 ft.	Red till. Dense silt, coarse gravel, and boulders. Collected sample T-1-C at 8.5 ft. and sample T-1-D from saturated gravel stringer at 13.0 ft.

Pit T - 2	Length - 20.0 ft.	Total Depth - 20.0 ft.
	0-2.5 ft.	Yellow-brown loose sandy silt
	2.5 - 4.0 ft	Yellow-brown silt lens. Damp, no odor. Collected sample T-2-A at 3.5 ft. Lens pinches out between 3.0 and 4.0 ft.
	4-16.0 ft.	Red till. Fine sandy silt w/coarse gravel, some boulders. Trace fine sand. Not cohesive. Damp. No odor. Collected samples T-2-B at 4.5-5.0 ft. and sample T-2-C or 9.5 -10 ft.
	16-17.0 ft.	Red till. Silty fine-sand w/gravel and some boulders. Softer. Very damp. Collected sample T-2-D at 16.0 ft.
	17-20.0 ft.	Red till. Equal amounts of sand, gravel, silt and clay. Saturated, but no water flows into pit. No odor. Collected sample T-2-E.

Pit T - 3	Length - 15.0 ft.	Total Depth - 16.0 ft.
	0-3.0 ft.	Yellow-brown soft silt. Collected sample T-3-A at 2.5 ft.
	3-7.0 ft.	Red till. Soft red silt with medium subrounded gravel. Moist. No odor. Collected sample T-3-B at 6 to 7.0 ft.
	7-12.5 ft.	Red till. Subangular to angular boulders with red silt marix.
	12.5 - 15.0 ft.	Red till. Red silt w/ fine to coarse subrounded to subangular gravel, and some clay. Dense, moist, no odor. Some small saturated pockets. Collected sample T-3-C at 15.0 ft.
	15-16.0 ft.	Red till. Red silt, sand, gravel lens. Saturated, 1' thick, limited to one end of pit. No odor.
Pit T - 4	Length - 28.0 ft.	total Depth - 14.0 ft.
	0-3.0 ft.	Brown-grey soft silt. Reduced color with red mottling. Collected sample T-4-A at 2.5-3.0 ft.
	3-8.0 ft.	Grey, reduced silty f. sand and med. to coarse gravel and boulders (30-40% gravel). Damp. Collected sample T-4-B at the 5-6 ft. interval.
	8-13.0 ft.	Red and grey mottled clayey silt, coarse sand, and medium to coarse gravel. Very damp. Collected sample T-4-C at 10 ft. Strong odors to 13.0 ft.
	12.0	Same - Oily seep zone sampled - T-4-D.
	13-14.0 ft.	Red till. Red clayey silt. Dense, moist, unsaturated. No odor.

Pit T - 5	Length - 25.0 ft.	Total Depth - 13.0 ft.
	0-5.0 ft.	Tan and red silt, trace clay, occasional coarse sand. Soft, damp, slight odor. Collected sample T-5-A at 4-5.0 ft interval.
	5-11.5 ft.	Grey silty coarse sand and fine to coarse gravel with cobbles and boulders. Very damp. Strong solvent odor. Collected sample T-5-B at 9-10 ft. interval and sample T-5-C at 11.0 ft. saturated zone.
	11.5-13.0 ft.	Red till. Dense silt with coarse sand and fine to coarse gravel. Damp. Slight odor. Collected sample T-5-D at 13.0 ft.
Pit T - 6	Length - 20.0 ft.	Total Depth - 15.0 ft.
	0-6.0 ft.	Gray silty f. sand to f. sandy silt. Soft, damp, chemical odor. Reduced color. Collected sample T-6-A at 3.0 ft.
	6-8.0 ft.	Black silty coarse sand and fine to coarse gravel. Some boulders. Wet, oily, reduced color. Collected sample T-6-B at 8.0 ft.
	8-14.0 ft.	Grey coarse gravel and boulder till. Reduced color.
	14-15.0 ft.	Red, dense till. Clayey silt with some fine sand and medium to coarse gravel. Moist, slight odor. Collected sample T-6-C at 14-15.0 ft. interval.
Pit T - 7	Length 13 ft.	Total Depth - 9.5 ft.
	0-4.0 ft.	Grey silty f. sand and f. sandy silt.
	4-7.5 ft.	Red/grey mottled silty f. sand and coarse cobble and boulders. Moist to wet, strong odors. Collected sample T-7-A.

	7.5 - 9.5 ft.	Red clayey silt till. Dense. Medium to coarse gravel. Damp. No odor. No saturated zones encountered.
Pit T - 8	Length - 20.0 ft.	Total Depth - 16.0 ft.
	0-5.5 ft.	Grey silty v. fine sand. Soft damp, slight odor. Collected sample T-8-A at 0-5.5A at 0-5.5 ft. interval.
	5.5-11.0 ft.	Red w/ grey mottled till. Silty coarse sand and gravel/ boulder. Moist, slight odor. Collected sample T-8-B.
	11-14.0 ft	Red and grey silty sand and gravel/boulder till. Wet, odors. Collected sample T-8-C.
	14-16.0ft.	Red clayey silt with fine to medium gravel. Moist to dry. Very hard. No odor. collected Sample T-8-C.
Pit T - 9	Length - 18.0 ft.	Total Depth -2 0.0 ft.
	0-2.5 ft.	Grey silt
	2.5 - 4.0 ft.	Grey sandy silt coarse gravel w/small boulders. Slight odor. Grey zone may indicate reduction/mottling. Collected sample T-9-A.
	4-9.0 ft.	Red silty very fine sand and coarse gravel with some small boulders. Damp. Slight odor. Collected sample T-9-B.
	9-12.0 ft.	Red silt and coarse gravel till. Gravel unbedded. Trace of clay. Dense. Moist. No odor. collected sample T-9-C.

Pit T - 10	Length-10.0 ft.	Total Depth - 5.0 ft.
	0-1.5 ft.	Dark red, silty coarse sand and fine/medium gravel. Very damp. No odor.
	1.5-3.0 ft.	Sandy silt. Tan w/ one grey mottled area. Collected sample T-10-A as composite over 0-3.0 ft.
	3.0-5.0 ft.	Red silty sand and gravel w/ cobbles.

APPENDIX D – EXCAVATION WORK PLAN (EWP)

D-1 NOTIFICATION

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

Table D-1: Notifications*

NYSDEC Project Manager	NYSDEC Region 4 Division of Environmental Remediation NYS Department of Environmental Conservation 1130 North Westcott Rd, Schenectady, NY (518) 357-2045
NYSDEC Regional HW Engineer	NYSDEC Region 4 Division of Environmental Remediation NYS Department of Environmental Conservation 1130 North Westcott Rd, Schenectady, NY (518) 357-2045
NYSDEC Site Control	Chief, Site Control Division of Environmental Remediation NYS Department of Environmental Conservation 625 Broadway, Albany NY 12233

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

This notification will include:

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

D-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 cover system. 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.

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

D-3 SOIL STAGING METHODS

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

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

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

D-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional 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).

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

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

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

D-5 MATERIALS TRANSPORT OFF-SITE

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

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

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. Truck transport routes shall be provided to NYSDEC with the notification prior to start of work.

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

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

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

D-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed 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 Periodic Review Report. 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 360-15 registered or permitted facility).

D-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 a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

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 October 2020 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 X-2 and X-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 will not be reused on-site.

D-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed 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 SPDES permit.

D-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the Record of Decision. The existing cover system is comprised of a minimum of 12inches of clean soil. A demarcation layer,

will be placed to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

D-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional, 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 industrial use. 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.

D-11 STORMWATER POLLUTION PREVENTION

If the NYSDEC determines that a Stormwater Pollution Prevention Plan (SWPPP) is applicable, the following conditions shall be adhered to (in addition to other conditions required by the NYSDEC):

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

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

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

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

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

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

D-12 EXCAVATION CONTINGENCY PLAN

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

D-13 COMMUNITY AIR MONITORING PLAN

Air monitoring will be conducted in accordance with the New York State Department of Health (NYSDOH) Community Air Monitoring Plan. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers. The NYSDEC and the NYSDOH Project Managers will be apprised of corrective actions taken pertaining to any CAMP exceedances.

D-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-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 Periodic Review Report.

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

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

D-15 DUST CONTROL PLAN

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

- Dust suppression will be achieved 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.

APPENDIX E – HEALTH AND SAFETY PLAN

Health and Safety Plan

BCO Hill Site

Delaware Avenue
Sidney, New York 13038

Prepared for

Amphenol Corporation

40-60 Delaware Avenue
Sidney, New York 13038

January 2021

Barton&Loguidice

BCO Hill Site
Delaware Avenue
Sidney, New York 13038

Health and Safety Plan

January 2021

Prepared For:

Amphenol Corporation
40 - 60 Delaware Avenue
Sidney, New York 13038

Prepared By:

Barton & Loguidice, D.P.C.
443 Electronics Parkway
Liverpool, NY 13088

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS – Continued

Section **Page**

Tables

Figures

1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been developed to provide both general procedures and specific requirements to be followed during site management activities at the BCO Hill site in Sidney, NY.

Please note that this site falls within the definition of a hazardous waste sites for the purposes of 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response Plan*. This was prepared in accordance with 29 CFR 1910.120. This plan was prepared, and will be implemented, by a qualified person as defined under 29 CFR 1910.120; this is also in accordance with NYSDEC DER-10, *Technical Guidance for Site Investigation and Remediation*.

This HASP describes the responsibilities, training requirements, protective equipment, and standard operating procedures to be used to address potential health and safety hazards while in work areas. This plan specifies procedures and equipment to be used during work activities and emergency response to minimize exposures of personnel to hazardous materials. The Plan is based on the site information available at this time and anticipated conditions to be encountered during the different phases of work. This Plan is subject to modification as data are collected and evaluated.

All personnel conducting activities on-site must comply with all applicable Federal and State rules and regulations regarding safe work practices. Personnel conducting field activities must also be familiar with the procedures, requirements and provisions of this Plan. In the event of conflicting Plans and requirements, personnel must implement those safety practices that afford the highest level of protection.

1.1 Amphenol Site Location and Description

The site is located in Sidney, Delaware County, New York and is identified as Parcel 138.00-1-7 on the Delaware County Name Tax Map. The Site is zoned industrial, and is located in a mixed-use area. The Site consists of a former disposal site and woods.

1.2 Implementation of Health and Safety Plan

The requirements and guidelines presented in this HASP are based on a review of available information and an evaluation of potential hazards. This HASP incorporates by reference the applicable Occupational Safety and Health Administration (OSHA) requirements in 29 CFR Part 1910 and 29 CFR Part 1926. The protective equipment selection was made according to Subpart I of 29 CFR 1910. Site personnel are required to read this HASP before beginning work. This HASP will be available for inspection and review by site personnel while work activities are underway.

1.3 Project Organization

Personnel involved in the site management activities implicitly have a part in implementing the HASP. Among them, the Program Manager, the Project Manager, the Corporate Associate for Safety and Health, and the SSHC have specifically designated responsibilities.

Key project personnel and their responsibilities with regard to the sampling activities are discussed below.

Project Manager: The Project Manager is directly responsible for the technical progress

Site Safety and Health Coordinator: The Site Safety and Health Coordinator (SSHC) for this investigation will be designated by the Project Manager. The SSHC reports to the Project Manager, and establishes operating standards and coordinates overall project safety and health activities associated with implementation of the site management activities. The SSHC reviews project plans and revisions to plans to determine that safety and health procedures are maintained throughout the investigation. The SSHC audits the effectiveness of the HASP on a continuing basis and suggests changes, if necessary, to the Project Manager.

Specifically, the SSHC is responsible for the conducting the following actions:

- Provide a complete copy of the HASP before the start of activities;
- Familiarize workers with the HASP;
- Conduct health and safety training and briefing sessions;
- Document the availability, use, and maintenance of personal protective and other safety or health equipment;
- Maintain safety awareness among employees and communicating safety and health matters to them;
- Monitor health and safety conditions during field activities;
- Coordinate with emergency response personnel and medical support facilities;
- Notify the Project Manager of the need to initiate corrective actions in the event of an emergency, an accident, or identification of a potentially unsafe condition;
- Notify the Project Manager of an emergency, an accident, the presence of a potentially unsafe condition, a health or safety problem encountered, or an exception to this HASP;
- Recommend improvements in safety and health measures to the Project Manager; and
- Conduct safety and health performance and system audits.

The SSHC has the authority to recommend that the Project Manager take the following actions:

- Suspend field activities or otherwise limit exposures if the health or safety of any employee appears to be endangered;
- Notify personnel to alter work practices that the SSHC deems to not protect them; and
- Suspend an employee from field activities for violating the requirements of this HASP.

2.0 HEALTH AND SAFETY RISK ANALYSIS

2.1 General Site Management Activity Hazards

2.1.1 Chemical Hazards

Chemical hazards that may be encountered during the site management are related to inhalation, ingestion, and skin exposure to constituents of potential concern (COPCs). COPCs may include volatile organic compounds (VOCs).

The potential for unprotected personnel for inhalation of constituents during intrusive field activities is low to moderate. The potential for unprotected personnel for dermal contact with soils, sediments or water containing COPCs during drilling and sampling operations is moderate to high. Proper use of personnel protective equipment is intended to reduce potential exposure to contaminants.

2.1.2 Environmental and Physical Hazards

Prior to initiating activity, the work conditions will be discussed with all employees. Hazards will be identified and protective measures will be explained.

A list of Environmental and Physical hazards associated with the site are:

1. *Slip, Trip, and Fall During All Activities (Uneven Terrain):* The site contains numerous potential safety hazards such as pits, broken glass, slippery surfaces and fire debris. The work itself may be a potential safety hazard. Site personnel should constantly look out for potential safety hazards and should immediately inform the SSHC of any new hazards.
2. *Excavation Debris:* Excavation projects pose potential safety hazards from materials falling from the excavator as they are removed from the working excavation. The excavation work is a potential safety hazard and the SSHC will provide oversight during demolition activities.
3. *Moving Parts of Heavy Equipment:* Heavy equipment poses dangers though moving parts. Where feasible, access to moving parts will be guarded and equipment will be equipped with backup alarms.
4. *Noise from Heavy Equipment:* Work around large equipment often creates excess noise. Engineering controls and personal protective equipment will be used to protect employees' hearing.
5. *Electrical Hazards:* As in all site work, overhead power lines, buried power lines, electrical wires and cables, site electrical equipment, and lightning also pose a potential hazard to site workers. Site personnel should constantly look out for potential safety hazards and should immediately inform the SSHC of any new hazards.

6. *Biological Hazards (Insects, Poison Ivy, etc.):* Other biological hazards that may be present at the site include rodents and insects. PPE can reduce the potential for exposure. The SSHC can assist in determining the correct PPE for the hazard present.

2.1.3 Hazard and Contaminant Control

For each field task, Level D personal protective equipment (PPE) is to be worn initially. Protective equipment will also include boots with good treads will be worn and personnel will be reminded to remain alert of the area where they are walking to decrease the chance of slipping. Eye protection will be worn to minimize splashing into eyes. The specific requirements for Level D PPE are presented in Section 4.

The primary hazards for contaminant exposure for each task are summarized on Table 2-1. If odors are observed during field activities, air monitoring with a PID should be conducted to evaluate the concentrations that are present. Action levels for upgrading PPE are presented in Section 6.2.

Field equipment will be inspected and in proper working condition. Mechanical assistance will be provided for large lifting tasks. Ground Fault Circuit Interrupter (GFCI) will be used on all electric power tools and extension cords in outdoor work locations. Electrical extension cords will be protected or guarded from damage (i.e., cuts from other machinery) and be maintained in good condition.

2.1.4 Heat and Cold Stress

Workers will be routinely observed by the SSHC for symptoms of heat stress or cold exposure, as dictated by the weather conditions and work being conducted. Heat stress and cold exposure can be avoided by periodic, regular rest breaks.

Heat stress may be a potential hazard for personnel wearing PPE, particularly working in hot and humid conditions. Workers should take regular rest breaks within a shaded area, removing their PPE, and drink electrolyte replacing liquids and/or water. The SSHC is responsible for scheduling the amount of time each individual can work under the existing site conditions, and how often and how long they will break. Workers will be required to take their breaks in the support zone after going through the decontamination area, or they may undergo partial decontamination and rest in a clean area within the decontamination/buffer area. Please refer to Section 7 (Site Control) of this HASP for a detailed description of the above referenced support zone and decontamination area/buffer zone.

2.2 Soil Excavation Activities

Future site development may include soil excavation. The physical hazards of this operation are primarily associated with operation of the excavator and contact with potentially contaminated soil and water.

2.2.1 Potential Health Hazards and Contaminants

Hazards generally associated with well drilling operations include noise levels exceeding the OSHA PEL of 90 dBA that are both a hazard and a hindrance to communication, carbon monoxide from the excavator, and overhead electrical and telephone wires which can be hazardous when the excavation.

Moving parts on the excavator may catch clothing. Moving the excavator over uneven terrain may cause the vehicle to roll over or get stuck in a rut or mud. High pressure hydraulic lines and air lines used on excavators are hazardous when they are in disrepair or incorrectly assembled.

Other hazards that may be encountered include exposure to vapors and contact with hazardous materials during monitoring soil excavation and stockpiling.

2.2.2 Hazard Contaminant Control

General PPE requirements presented Section 2.2 applies to this task. Personnel must wear hard hats and ear muffs and/or earplugs when working near operating heavy machinery. Prior to approaching an excavator, loose clothing will be secured and the boom position will be checked.

Site personnel will remain upwind from the vehicle exhausts to the extent practicable unless required by sampling work. The breathing zone will be periodically monitored for volatile organic vapors using a PID during the test pit excavations and monitoring well installations. Subsequent monitoring and respirator wear will be in accordance with Chapter 6 of this HASP.

The excavation subcontractor will be required to inspect chains, lines, cables, and high-pressure lines daily for weak spots, frays, and other signs of wear. The excavation subcontractor will be required to make repairs as necessary.

Back strain can be prevented by employing proper lifting and bailing techniques. Heavy equipment, such as pumps and generators, will only be lifted with the legs, preferably using two or three personnel.

3.0 TRAINING PROGRAM

3.1 Hazardous Waste Operations Health and Safety Training

Employees who are assigned to perform duties on hazardous waste sites will receive the OSHA initial 40-hour health and safety training prior to on-site activities, in accordance with 29 CFR 1910.120 (e). In addition, such personnel provide documentation of having received three days of supervised field experience applicable to this site, or receive three days of supervised field experience at this site. Applicable employees will receive yearly 8-hour refresher courses. On-site managers and supervisors who are directly responsible for or who supervise workers engaged in hazardous waste operations receive, in addition to the appropriate level of worker HAZWOPER training described above, eight additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

Because this site is meets the definition of a hazardous waste site, employees who work during field activities are required to have completed HAZWOPER initial and refresher training.

3.2 Additional Training

As site activities change, supplemental training will be provided to employees to address changes in identified hazards, risks, operations procedures, emergency response, site control, and personal protective equipment. Specialty training will be provided as determined by task and responsibility.

Site-specific training will be provided to each employee and will be reviewed at safety briefings. Specialized training will be provided as dictated by the nature of site activities. Specialized training will be provided for activities such as the handling of unidentified substances. Employees involved in these types of activities will be given off-site instruction regarding the potential hazards involved with such activities and the appropriate health and safety procedures to be followed. Off-site instruction is meant to include any areas where employees will not be exposed to site hazards.

3.3 Emergency Response Personnel

Site personnel who respond to emergency situations involving health and safety hazards must be trained in how to respond to such emergencies in accordance with the provisions of 29 CFR 1910.120(l). Skills such as cardiopulmonary resuscitation (CPR), mouth-to-mouth rescue breathing, and basic first aid skills may be necessary. Personnel who respond to emergencies on site will be briefed on potential hazards by the SSHC before being permitted to enter the buffer and exclusion zones.

3.4 Other Required Training

Other training that may be required by workers that is in addition to required training described above is detailed below:

- Hazard communication, in accordance with 29 CFR 1910.1200
- Respirator use, in accordance with 29 CFR 1910.134
- Hearing conservation, in accordance with 29 CFR 1910.95
- Working safely around heavy equipment
- Heat and cold stress prevention
- Confined space entry, in accordance with 289 CFR 1910.146

3.5 Training Records

A record of employee training completion will be maintained by the SSHC for each employee who is trained. This record will include the dates of the completion of worker training, supervisor training, refresher training, emergency response training, and specific training for on-site employees. Additionally, an employee sign off sheet indicating that each worker has reviewed a copy of this HASP and understands its contents is stored at the same location.

3.6 Pre-Entry Briefing

A site-specific briefing will be provided to all individuals, including site visitors, who enter this site beyond the site entry point. For visitors, the site-specific briefing provides information about site hazards, the site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

The SSHC will brief personnel as to the potential hazards likely to be encountered. Topics will include:

- Availability of this HASP.
- General site hazards and specific hazards in the work areas, including those attributable to the chemicals present.
- Selection, use, testing and care of the body, eye, hand and foot protection being worn, with the limitations of each.
- Decontamination procedures for personnel, their personal protective equipment, and other equipment used on the site.
- Emergency response procedures and requirements.

- Emergency alarm systems and other forms of notification, and evacuation routes to be followed.
- Methods to obtain emergency assistance and medical attention.

4.0 PERSONNEL PROTECTION

The basic level of personal protective equipment (PPE) to be used during field activities associated with implementation of the RP is OSHA Level D. PPE may be upgraded based on air monitoring results or at the discretion of the Project Manager and based on the SSHC's recommendations. A downgrade of PPE must be approved by the SSHC and the Project Manager.

If the SSHC determines that field measurements or observations indicate that a potential exposure is greater than the protection afforded by the equipment or procedures specified in this or other sections of this HASP, the work will be stopped. Personnel will be removed from the site until the exposure has been reduced or the level of protection has been increased.

Respirator users must be trained, medically approved, and fit tested to use respiratory protection. Respirators issued are approved for protection against dust and organic vapors by the National Institute for Occupational Safety and Health (NIOSH). Respirators are issued for the exclusive use of one worker and will be cleaned and disinfected after each use by the worker. Respirator users must check the fit of the respirator before each day's use to see that it seals properly. The respirator must seal against the face so that the wearer receives air only through the air purifying cartridges attached to the respirator. No facial hair that interferes with the effectiveness of a respirator will be permitted on personnel required to wear respiratory PPE. Cartridges and filters for air-purifying respirators in use will be changed at the end of each workday that an air-purifying respirator is worn, unless the SSHC determines that a change is not necessary.

4.1 Protective Equipment Description

The level of PPE is categorized as Level A, B, C, or D, based upon the degree of protection required. For each level, hard hats will be required if dangers related to overhead objects may be present. For drilling and test pitting activities, hard hats will be worn at all times. For other tasks, hard hats will be worn, as necessary. The following is a brief summary of the PPE levels that may be used on this site.

Level C – The concentration(s) and type(s) of airborne substance(s) is known and the criteria for using air- purifying respirators are met. The following constitute Level C equipment:

- NIOSH approved full-face air purifying respirator with organic vapor/acid gases cartridges and P100 filters;
- Chemical-resistant clothing (polyethylene coated overalls, chemical-splash suit, disposable chemical- resistant overalls) with ankles and cuffs taped closed;
- Gloves, outer, nitrile, chemical-resistant;
- Gloves, inner, nitrile, chemical-resistant;
- Shoes, with steel toe and shank meeting ANSI requirements;
- Boots, outer neoprene or Chemical resistant (latex or neoprene) boot covers;

- Hearing protection, if necessary
- Hard hat, if necessary; and
- Face shield when not wearing a full-face respirator.

Modified Level D – A work uniform providing additional skin protection when respiratory protection is not necessary. The following constitute Modified Level D equipment:

- Chemical-resistant clothing (polyethylene coated overalls, chemical-splash suit, disposable chemical- resistant overalls) with ankles and cuffs taped closed;
- Gloves, outer, nitrile, chemical-resistant;
- Gloves, inner, nitrile, chemical-resistant;
- Shoes, with steel toe and shank meeting ANSI requirements;
- Boots, outer neoprene or chemical resistant (latex or neoprene) boot covers;
- Hearing protection, if necessary
- Hard hat, if necessary;
- Escape mask (optional); and,
- Face shield when not wearing other eye protection.
- Filtering respirator (i.e., dust mask) voluntary use.

Level D – A work uniform affording minimal protection, used for nuisance contamination only. The following constitute Level D equipment:

- Coveralls or other appropriate work clothing;
- Shoes, with steel toe and shank meeting ANSI requirements;
- Optional chemical resistant boot covers;
- Safety glasses or chemical splash goggles;
- Gloves, nitrile if handling wet materials;
- Hearing protection, if necessary
- Hard hat, if necessary; and
- Escape mask (optional)
- Filtering respirator (i.e., dust mask) voluntary use.

4.2 Protective Equipment Failure

If an individual experiences a failure or other alteration of PPE that may affect its protective ability, that person is to leave the work area immediately. The Project Manager or the SSHC must be notified and, after reviewing the situation, is to determine the effect of the failure on the continuation of on-going operations. If the Project Manager or the SSHC determine that the failure affects the safety of workers, the work site, or the surrounding environment, workers are to be evacuated until corrective actions have been taken. The SSHC will not allow re- entry until the equipment has been repaired or replaced and the cause of the failure has been identified.

5.0 MEDICAL MONITORING

5.1 Medical Surveillance Program

A medical monitoring program in accordance with 29 CFR 1910.120, the Hazardous Waste Operations regulations and in 1910.134, the Respiratory Protection regulations is required for field personnel. The program shall be designed to monitor and reduce health risks to employees potentially exposed to hazardous materials and to provide baseline medical data for each employee involved in work activities. It shall also be designed to determine the employee's ability to wear personal protective equipment such as chemical resistant clothing and respirators. The examination may include the OSHA required Medical Questionnaire, Respirator Suitability Form, a Medical Examination, Audiology Test, Pulmonary Function Test, and testing for complete blood count and chemistry profile.

Medical examinations are administered on a post-employment and annual basis and as warranted by symptoms of exposure or specialized activities. These medical examinations and procedures are performed by or under the supervision of a licensed physician. The examining physician is required to make a report of any medical condition that would increase the employee's risk when wearing a respirator or other PPE. Site personnel medical records shall be maintained as required by 29 CFR 1910.120 and by 29 CFR 1910.1020, as applicable.

5.2 Respirator Clearance

Employees who wear, or may wear, respiratory protection will be provided respirators as regulated by 29 CFR 1910.134 before performing designated duties. Prior to issuance of a respirator, a medical professional must have medically certified the individual's ability to wear respiratory protection. It is not anticipated the respirator use will be required at the site.

5.3 Frequency

1. *Baseline Examinations:* Individuals who are assigned temporarily or permanently to fieldwork at hazardous waste sites or the use of a respirator will receive a baseline examination prior to job assignment.
2. *Periodic Examinations:* Individuals who are assigned temporarily or permanently to fieldwork at hazardous waste sites or the use of a respirator will receive periodic examinations as required.
3. *Termination Examinations:* Field employees permanently leaving the company who were in the medical surveillance program will receive an exit examination.
4. *Possible Exposure Examinations:* As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that an employee has been injured or exposed above the permissible exposure limits in an emergency situation, that employee will be required to receive medical attention.

6.0 AIR MONITORING

Unidentified organic vapors and/or dust particulate may be present in the investigation areas. Real time monitoring of these substances may be conducted on-site by, or under the supervision of, the SSHC. The SSHC will evaluate whether the personal protective measures employed during field activities are appropriate and will modify the protective measures accordingly. The SSHC will be responsible to maintain monitoring instruments throughout the remedial program.

Personal monitoring must be conducted in the breathing zone and, if workers are wearing respiratory protective equipment, outside the face piece.

6.1 Field Instrumentation and Sampling

Field health and safety air sampling for the RP field investigation will consist of organic vapor monitoring using a PID (Section 6.1.1) according to provisions of Section 2 and Table 2 1.

6.1.1 Photoionization Detector (PID)

The air will be monitored with a portable PID equipped with a 10.2 electron volt detector to determine the presence and concentration of organic vapors before sampling, during intrusive field activities (monitoring well installations and test pit excavations). PID monitoring is conducted in the work zone.

PID monitoring will be initiated before starting sampling and, if the action levels are exceeded, continuously in the breathing zone of the worker collecting the samples.

Personnel monitoring samples will be collected in the breathing zone and, if workers are wearing respiratory protective equipment, outside the face piece. The sampling strategies may change if work tasks or operations change. Monitoring instruments will be checked for appropriate response, in accordance with the manufacturer's instructions, before use each sampling day.

Hazard Monitored: Many organic and some inorganic gases and vapors.

Application: Detects the presence and total concentration of many organic and some inorganic gases and vapors.

Detection Method: Ionizes molecules using UV radiation, produces a current that is proportional to the number of ions present.

General Care and Maintenance: Recharge daily or replace the battery. Regularly clean the lamp window. Regularly clean and maintain the instrument and its accessories. Turn the function switch to "stand-by" and allow the instrument to "warm up" for 5 min.

Typical Operating Time: 10 hours, or 5 hours with strip chart recorder.

6.2 Action Levels

Action levels presented in this section are intended primarily for the protection of workers implementing the RP activities. The action levels are used to determine when activities should stop, to determine when site evacuation is necessary, to select emergency response levels, and to change PPE levels.

6.2.1 Organic Vapors

Organic vapors may be released during intrusive activities such as soil boring, well and test pit installation. A PID will be used to determine the presence of organic vapors.

The breathing zone will be monitored continuously when VOC levels in the sampling zone exceeds 5 ppm above background. Actions, such as keeping the sampling upwind of motors and fuel areas will be implemented to reduce potential interference due to vapors that may be associated with motor operation.

PPE will upgraded to Level C which includes air purifying respirators and chemical resistant clothing (Section 4) when the VOC concentration in the respective breathing zone exceeds 5 ppm above background as indicated on the PID. If the measured VOC concentration is greater than or equal to 50 ppm above background, the workers will leave that work area.

Table 6-1. Vapor Monitoring Requirements

Total VOC Concentration (ppm)	Method	Monitoring Zone	Monitoring Requirements	Level of PPE
<5	PID	Work Zone	Periodically in the work zone at minimum 30-minute intervals	Level D
>5	PID	Work Zone	Continually in the work zone	Level C
>50	PID	Work Zone	Vacate area	Vacate area

6.3 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) has been established for the site and will be deployed to screen VOC levels and fugitive dust emissions during intrusive work activities.

This section serves as the Community Air Monitoring Plan (CAMP). Monitoring described in this CAMP will be implemented during invasive RP field activities, which will include soil boring and soil excavation for the purpose of collecting subsurface soil samples and removal and disposal of contaminated soils. In the event that additional monitoring well installation is required, CAMP monitoring will be performed as necessary.

The upwind and downwind perimeter of the exclusion zone will be monitored during intrusive work. A PID will monitor total organic vapors while a particulate meter will monitor particulate

concentrations. The monitors will be equipped with audible and visual alarms, have recorders and display 15 minute time weighted averages. All readings will be downloaded and available for New York State Department of Health (NYSDOH) and NYSDEC personnel to review. Action levels for organic vapors and particulate emissions are outlined in the following subsections as well as on Table 6-2.

6.3.1 Organic Vapors

If the 15-minute average VOC level remains below 5 ppm above background, intrusive work activities may continue. If the 15-minute average VOCs level exceeds 5 ppm above background, intrusive work activities will be suspended. Monitoring will continue under the provisions of the Vapor Emission Response Plan described below. If the 15-minute average VOCs level exceeds 25 ppm above background, intrusive work will be stopped and the Major Vapor Emissions Plan described below will be activated. Monitoring will continue under the provisions of the Major Vapor Emission Plan described below.

Vapor Emission Response Plan

If the vapor levels increase above 5 ppm above background at the downwind perimeter of the exclusion zone but remain below 25 ppm above background, work can resume provided:

- The source of the vapors has been identified and corrective actions have been taken to abate the emissions. These actions must reduce the exclusion zone perimeter emissions below 5 ppm.
- The organic vapor level 200 feet downwind of the work area or half of the distance to the nearest residential or commercial structure, whichever is less, is less than 5 ppm over background. If the distance to the nearest occupied building is less than 20 feet, the monitor will be placed at the perimeter of the work area.
- Continuous monitoring continues.

Major Vapor Emission Plan

If organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half of the distance to the nearest residential or commercial property, whichever is less, all work activities at the site will be halted.

If, following the cessation of the work activities, the downwind organic levels persist above 5 ppm above background, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20-Foot Zone).

If efforts to abate the emission source are unsuccessful and if organic vapors persist at levels ≥5 ppm for more than 30 minutes or any level ≥10 ppm in the 20-foot Zone, then the following actions will be taken:

1. Monitoring will be conducted continuously in the "20 foot zone" until VOC levels are below 5 ppm. All intrusive site activities will be halted during this time.
2. The site owner will be notified.
3. The NYSDEC will be notified.

6.3.2 Dust Particles

When the 15-minute average dust level remains below 0.1 milligrams per cubic meter (mg/m3) above background, intrusive work activities may continue.

If the downwind PM-10 particulate level is 0.1 mg/m3 greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 0.15 mg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 0.15 mg/m3 of the upwind level and in preventing visible dust migration.

Particulate Emission Response Plan

If the particulate levels increase above 0.1 mg/m3 over background at the downwind perimeter of the exclusion zone but remain below 0.15 mg/m3 above background, work can resume provided dust suppression techniques are employed and no visible dust is migrating from the work area.

If the particulate levels increase above 0.15 mg/m3 over background at the downwind perimeter of the exclusion zone, work can resume provided dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

Table 6-2. Community Air Monitoring Plan (CAMP) Action Levels			
Contaminant (Equipment/Method)	**Frequency**	**Downwind Action Levels***	**SSHC Action/Response**
Volatile Organic Vapors Odor Observations and PID (PIC with 11.7 eV lamp)	1. Continuously downwind during invasive work activities. 2. When observations of any unusual odors are reported to the SSHC.	<5 ppm (at the exclusion zone perimeter)	1. Work may continue. 2. Readings shall be recorded and made available for NYSDEC/NYSDOH review.
		5 ppm (at the exclusion zone perimeter)	1. STOP work. 2. Move to a location 200' downwind or at half the distance between the exclusion zone and nearest dwelling (but not closer than 20') and continue air monitoring and recording readings at this location. If the VOC level at the downwind location is <5 ppm, return to the exclusion zone perimeter and take additional VOC readings. 3. Work may continue if exclusion zone perimeter readings are <5 pm and additional vapor controls have been implemented. 4. Monitoring must continue at the exclusion zone perimeter for as long as VOC levels are ≥5 ppm.
		25 ppm (at the exclusion zone perimeter)	1. STOP work. 2. Implement additional vapor emission controls to reduce VOC levels below 5 ppm (at the exclusion zone perimeter). 3. Notify the Project Manager and Amphenol representative.
Dust Observations and Dust Meter (Dust Trak or MiniRam)	1. Continuously downwind during invasive work activities. 2. When observations of any unusual odors are reported to the SSHC.	<0.1 mg/m^3 (at the exclusion zone perimeter)	1. Work may continue. 2. Readings shall be recorded and made available for NYSDEC/DYSDOH review.
		0.1-0.15 mg/m^3 (at the exclusion zone perimeter)	1. Work may continue, but use dust suppression controls.
		>0.15 mg/m^3 (at the exclusion zone perimeter)	1. STOP work. 2. Work may continue if exclusion zone dust readings are <0.15 mg/m^3 and additional dust controls have been implemented. 3. Immediately notify the Project Manager, and Amphenol representative. 4. Work will not restart until the cause of the elevated dust levels has been evaluated and corrective action identified.

*Sustained readings for 1-minute above background. Background readings are taken at upwind locations relative to exclusion zones.

7.0 SITE OPERATING PROCEDURES

During any activity conducted on-site in which a potential exists for exposure to hazardous materials, accident or injury, at least two persons must be present who are in constant communication with each other. At least two persons must also be present during all demolition or excavation activities.

Samples obtained from areas known or suspected to contain contaminated substances or materials must be handled with appropriate personal protection equipment.

All equipment used to conduct the Site Investigation must be properly decontaminated and maintained in good working order. Equipment must be inspected for signs of defects and/or contamination before and after each use.

The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated will result in the evacuation of the activity zone until a complete evaluation of the hazard can be performed.

7.1 Daily Operating Procedures

The following are the daily operating procedures that are to be followed by on-site personnel:

- Hold Tailgate Safety Meetings prior to work start and as needed thereafter (suggest daily; however, minimum of weekly).
- Use monitoring instruments and follow designated protocol and contaminant action levels.
- Use PPE as specified.
- Use hearing protection around heavy equipment.
- Remain upwind of operations and airborne contaminants, if possible.
- Establish a work/rest regimen when ambient temperatures and protective clothing create potential thermal hazards.
- Eating, drinking, applying cosmetics and smoking are prohibited in work areas.
- Refer to the SSHC for specific safety concerns for each individual site task.
- On-site personnel are encouraged to be alert to their own physical condition, as well as their co-workers.
- **All accidents, no matter how minor,** must be immediately reported to the SSHC

7.2 Site Security

Site security will be monitored and controlled by the SSHC. Their duties will include limiting access to the work area to authorized personnel, overseeing project equipment and materials, and overseeing work activities. The procedures specified below will be followed to control access to each work site to prevent persons who may be unaware of site conditions from exposure to hazards. Work area control procedures may be modified as required by site conditions.

7.3 Site Control

Work zones will be required during site activities identified in this HASP. The following two categories of work zones will be established at each sampling point: an exclusion zone and a buffer zone. The remainder of the site will be the support zone.

7.3.1 Exclusion/Activity Zone

The exclusion zone is where sampling activities are conducted. The SSHC will identify this zone. It must be at least 30 ft. in diameter and centered on the work activities.

7.3.2 Buffer/Decontamination Zone

The buffer zone contains personnel and equipment decontamination stations and staging areas for samples. The buffer zone will be located upwind of the work activities. It will only be large enough to contain equipment and personnel necessary to keep potentially contaminated media and materials in the immediate work area.

7.3.3 Support Zone

The remainder of the area is defined as the support zone. The support zone contains support facilities, extra equipment, transport vehicles, and additional personnel and equipment necessary to manage and perform work activities.

7.4 Buddy System

Most activities in a contaminated or otherwise hazardous area should be conducted with a partner who is able to:

- Provide his or her partner with assistance.
- Observe his or her partner for signs of chemical or heat exposure.
- Periodically check the integrity of his or her partner's protective clothing.
- Notify the SSHC if emergency help is needed.

7.5 Site Access Procedures

Access during field activities will be limited to those personnel required. Such personnel are anticipated to include, but will not necessarily be limited to, sampling team members, or subcontractors and those representatives as designated by the NYSDEC or local agencies. Site access will be monitored by the SSHC, who will maintain a log-in sheet describing their arrival and departure times and their destination on the site.

7.6 Confined Space Entry

No entry of permit required confined spaces is expected for the tasks listed in the FAP. A confined space is defined as a space that has limited or restricted means for entry (for example tanks, vessels, silos, storage bins, hoppers, vaults, and pits), is not designed for continuous employee occupancy, and large enough to enter.

8.0 DECONTAMINATION

8.1 Personnel Decontamination Procedures

The SSHC will be responsible for supervising the proper use and decontamination of PPE. The SSHC will also establish and monitor the decontamination line.

Decontamination involves scrubbing with a soap and water solution followed by rinses with potable water. Decontamination will take place on a decontamination pad. Dirt, oil, grease, or other foreign materials that are visible will be removed from surfaces. Scrubbing with a brush may be required to remove materials that adhere to the surfaces. Splash protection garments will be washed with soap and potable water before removal. Non- disposable garments will be air dried before storage. Waste waters from personnel decontamination will be disposed of with the waste waters from equipment decontamination. Respirators will be sanitized as well as decontaminated each day before re-use. The manufacturer's instructions will be followed to sanitize the respirator masks.

The following decontamination protocol, or one providing the same level of decontamination, will be followed:

Station 1. Equipment Drop: Provide an area covered with a plastic drop cloth. Deposit equipment used on-site including tools, sampling devices and containers, monitoring instruments, radios and clipboards on the plastic drop cloth. During hot weather a cool down station with chairs, fans, and replenishing beverages may be set up in this area.

Station 2. Outer Garment, Boots, and Gloves Wash and Rinse: Establish a wash station for gloves, boots, and the protective suit (when worn). Scrub outer boots, outer gloves, and protective suit with detergent and water. Rinse with potable water.

Station 3a. Outer Boot and Glove Removal: Provide seating for use during the removal and collection of outer boots. Remove outer boots. Deposit them in a container with a plastic liner. If the boots are to be reused after cleaning, place them in a secure location near the work site. Provide a location for removal, collection, and disposal of outer gloves. Remove the outer gloves. Deposit them in a container for disposal.

Station 3b. Filter or Cartridge Exchange: This station will be established only if respirators are worn. The worker's respirator cartridges and filters can be exchanged, new outer gloves and outer boots donned, and joints taped at this station. From here the worker can return to work duties in the exclusion zone.

Station 4. Outer Garment Removal: This station will only be provided if a protective outer garment is worn. Provide a bench to sit on during the removal of the protective garment. If the garment is disposable, deposit it in a container with a plastic liner; otherwise, hang it up to air dry.

Station 5. Respirator Removal: This station will be established only if respirators are worn. Remove the respirator. Avoid touching the face with gloved fingers. Deposit the respirator on a plastic sheet.

Station 6. Inner Glove Removal: Remove and dispose of inner gloves. Deposit them in a container with a plastic liner. If the gloves are to be reused, place them in a secure location near the work site, preferably in a plastic container.

Station 7. Field Wash: Provide a place for a field wash. Wash hands and face thoroughly. Shower if body contamination is suspected.

8.2 Emergency Decontamination Procedures

Although no contact with chemicals that present a hazard is anticipated for the field program, this section has been included in the event of an emergency. The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Minimum decontamination will consist of detergent washing, rinsing and removal of contaminated outer clothing and equipment. If time does not permit the completion of all of these actions, it is acceptable to remove the contaminated clothing without washing it. If the situation is such that the contaminated clothing cannot be removed, the person should be given required first aid treatment, and then wrapped in plastic or a blanket prior to transport to medical care. If heat stress is a factor in the victim's illness/injury, outer clothing will be removed from the victim immediately.

8.3 Monitoring Equipment Decontamination Procedures

Sampling equipment used for health monitoring purposes will be cleaned of visible contamination and debris before initial use on site, between uses, and after final use. Monitoring equipment that contacts contaminated media will be decontaminated after each use by a low phosphate detergent brushing followed by a clean water rinse. After decontamination, monitoring equipment will be stored separately from personal protective equipment. Decontaminated or clean equipment not in use will be covered with plastic and stored in a designated storage area in the support zone.

8.4 Decontamination Supplies

The following supplies will be available on site for the decontamination of personnel and equipment:

- Plastic drop cloths;
- Plastic bags or DOT-approved fiberboard drums to collect non-reusable protective clothing;
- Plastic wash tubs;

- Soft bristled long-handle brushes;
- DOT-approved drums or appropriate other containers, to collect wash and rinse water;
- Hand spray units for decontamination;
- Soap, water, alcohol wipes, and towels to wash hands, faces, and respirators; and
- Washable tables and benches or chairs.

8.5 Collection and Disposition of Contaminated Materials

Cuttings and field decontamination wastes are to be collected, drummed, and disposed of in accordance with the procedures in the FAP. Investigation derived waste will be managed as described in the FAP.

8.6 Refuse Disposal

Site refuse will be contained in appropriate areas or facilities. Trash from the project will be properly disposed.

9.0 EMERGENCY RESPONSE

9.1 Notification of Site Emergencies

In an emergency, site personnel will signal distress either by yelling or with three blasts from a horn (vehicle horn, air horn and so forth). The SSHC, or the Project Manager will immediately be notified of the nature and extent of the emergency.

The nearest hospital is Tri-Town Regional Hospital locate at 43 Pearl St W, Sidney, NY (607) 563-7080.

Directions to Tri-Town Regional Hospital from the site are provided below:

- Travel east on Delaware Avenue to W. Pearl Street; turn right
- Go approximately one-half mile to hospital, on right.

Should someone be transported to a hospital or doctor, a copy of this HASP should accompany them.

The following table contains emergency telephone numbers. This table will be kept with the portable telephone and updated as needed by the SSHC. The portable telephone will be used to notify off-site personnel of emergencies. The operating condition of this telephone will be determined daily before initiation of activities.

Table 9-1. Emergency Contact Numbers

Agency	Contact/Function	Phone Number
Joseph M. Bianchi	Amphenol	(607) 563-5940
NYSDEC Project Manager	Division of Environmental Remediation	(518) 357-2045
Law Enforcement	(v) Sidney Police Department	911 (607) 561-2301
Fire Department	(v) Sidney Fire Department	911 (607) 563-3466 (non-emergency)
Hospital - Emergency	Tri-Town Regional Hospital	(607) 563-7080

9.2 Responsibilities

The SSHC is responsible for responding to, or coordinating the response of off-site personnel to, emergencies. In the event of an emergency, the SSHC will direct notification and response, and will assist the Site Supervisor in arranging follow-up actions. Upon notification of an exposure incident, the SSHC will call the hospital, fire, and police emergency response personnel for recommended medical diagnosis, treatment if necessary, and transportation to the hospital.

Before the start of investigation activities, the SSHC will:

- Confirm that the following safety equipment is available: eyewash station, first aid supplies, and a fire extinguisher.
- Have a working knowledge of the safety equipment.
- Confirm the most direct route to Tri-Town Regional Hospital is prominently posted with the emergency telephone numbers.
- Confirm that employees who will respond to emergencies have been appropriately trained.

Before work may resume following an emergency, used emergency equipment must be recharged, refilled, or replaced and government agencies must be notified as required.

The Project Manager, assisted by the SSHC, must investigate the incident as soon as possible. The Project Manager will determine whether and to what extent exposure actually occurred, the cause of exposure, and the means to prevent similar incidents. The resulting report must be signed and dated by the Project Manager, and the SSHC.

9.3 Accidents and Injuries

In the event of an accident or injury, workers will immediately implement emergency isolation measures to assist those who have been injured or exposed and to protect others from hazards. Upon notification of an exposure incident, the SSHC will contact emergency response personnel who can provide medical diagnosis and treatment. If necessary, immediate medical care will be provided by personnel trained in first aid procedures. Other on-site medical or first aid response to an injury or illness will be provided only by personnel competent in such matters.

9.4 Safe Refuge

Before commencing site activities the SSHC will identify the location that will serve as the place of refuge for workers in case of an emergency evacuation. During an emergency evacuation, personnel in the exclusion zone should evacuate the work area both for their own safety and to prevent hampering rescue efforts. Following an evacuation, the SSHC will account for site personnel.

9.5 Fire Fighting Procedures

A fire extinguisher meeting the requirements of 29 CFR Part 1910 Subpart L, as a minimum, will be available in the support zone during on-site activities. This is intended to control small fires. When a fire cannot be controlled with the extinguisher, the exclusion zone will be evacuated, and the fire department will be contacted immediately. The SSHC will determine when to contact the fire department.

9.6 Emergency Equipment

The following equipment, selected based on potential site hazards, will be maintained in the support zone for safety and emergency response purposes:

- Fire extinguisher;
- First aid kit; and
- Eye wash bottles.

9.7 Emergency Site Communications

There will be a cellular telephone located in the SSHC's vehicle for emergency use. There will be air horns, walkie-talkies, and/or other audible emergency signals located within the exclusion zone and decontamination area to signal others of an emergency. The SSHC should brief all personnel regarding audible emergency signals to be used during the site activities prior to starting the work. Site personnel will use the following hand signals to inform others of emergencies:

- Hand gripping throat – out of air, cannot breathe.
- Grip partner's wrist or both hands around waist – leave area immediately.
- Hands on top of head – need assistance.
- Thumbs up – everything's OK, or I understand.
- Thumbs down – No.

9.8 Security and Control

Work zone security and control during emergencies, accidents, and incidents will be monitored by the SSHC or the Site Supervisor. The duties of the SSHC or the Site Supervisor include limiting access to the work zones to authorized personnel and overseeing emergency response activities.

10.0 SPECIAL PRECAUTIONS AND PROCEDURES

The activities listed in the Work Plan may expose personnel to both chemical and physical hazards. The hazards associated with specific site activities are discussed in Section 2. The potential for exposure to hazardous situations will be significantly reduced through the use of air monitoring, PPE, hazard awareness training, and administrative and engineering controls. Other general hazards that may be present on a hazardous waste work site are discussed below.

10.1 Heat Stress

The timing and location of this project may be such that heat stress could pose a threat to the health and safety of site personnel. The SSHC will implement work and rest regimens so that personnel do not suffer adverse effects from heat. These regimens will be developed by the SSHC following the guidelines in the 1997 edition of the ACGIH Threshold Limit Values for Physical Agents in the Work Environment. Special clothing and an appropriate diet and fluid intake will be recommended to personnel involved in the activities specified in Section 2 to further reduce this hazard. In addition, ice and fluids will be provided as appropriate in the support zone.

10.2 Cold Injury

The project requires work over water and thus the timing and location of this project may be such that cold injury could pose a threat to the health and safety of site personnel. Factors that influence the development of a cold related injury include ambient temperatures, wind velocity and wet clothing and skin. The SSHC will implement work and rest regimens so that personnel do not suffer adverse effects from cold. These regimens will be developed by the SSHC following the guidelines in the 1997 edition of the ACGIH Threshold Limit Values for Physical Agents in the Work Environment. Special clothing and an appropriate diet and fluid intake will be recommended to personnel involved in the activities specified in Section 2 to further reduce this hazard. In addition, ice and fluids will be provided as appropriate in the support zone.

10.3 Heavy Equipment/Machinery

Employees performing site activities may use or work near operating heavy equipment and machinery. Respiratory protection and protective eyewear may be worn during portions of work activities. Since this protective equipment reduces peripheral vision of the wearer, personnel should exercise extreme caution in the vicinity of operating equipment and machinery to avoid physical injury to themselves or others.

10.4 Additional Safety Practices

The following are important safety precautions that will be enforced during the completion of the activities listed in Section 2:

- Contact with potentially contaminated surfaces should be avoided whenever possible. Workers should minimize walking through puddles, mud, or other discolored surfaces; kneeling on ground; and leaning, sitting, or placing equipment on drums, containers, vehicles, or the ground.
- Medicine and alcohol can mask the effects of exposure to certain compounds. Consumption of prescribed drugs must be at the direction of a physician.
- Personnel and equipment in the work areas will be minimized consistent with effective site operations.
- Unsafe or inoperable equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.
- Activities in the exclusion zone will be conducted using the "Buddy System." The Buddy is another worker fully dressed in the appropriate personal protective equipment who can perform the following activities:
    - Provide partner with assistance
    - Observe partner for sign of chemical or heat exposure
    - Periodically check the integrity of partner's PPE
    - Notify others if emergency help is needed.
- The HASP will be reviewed frequently for its applicability to the current and upcoming operations and activities.

10.5 Daily Log Contents

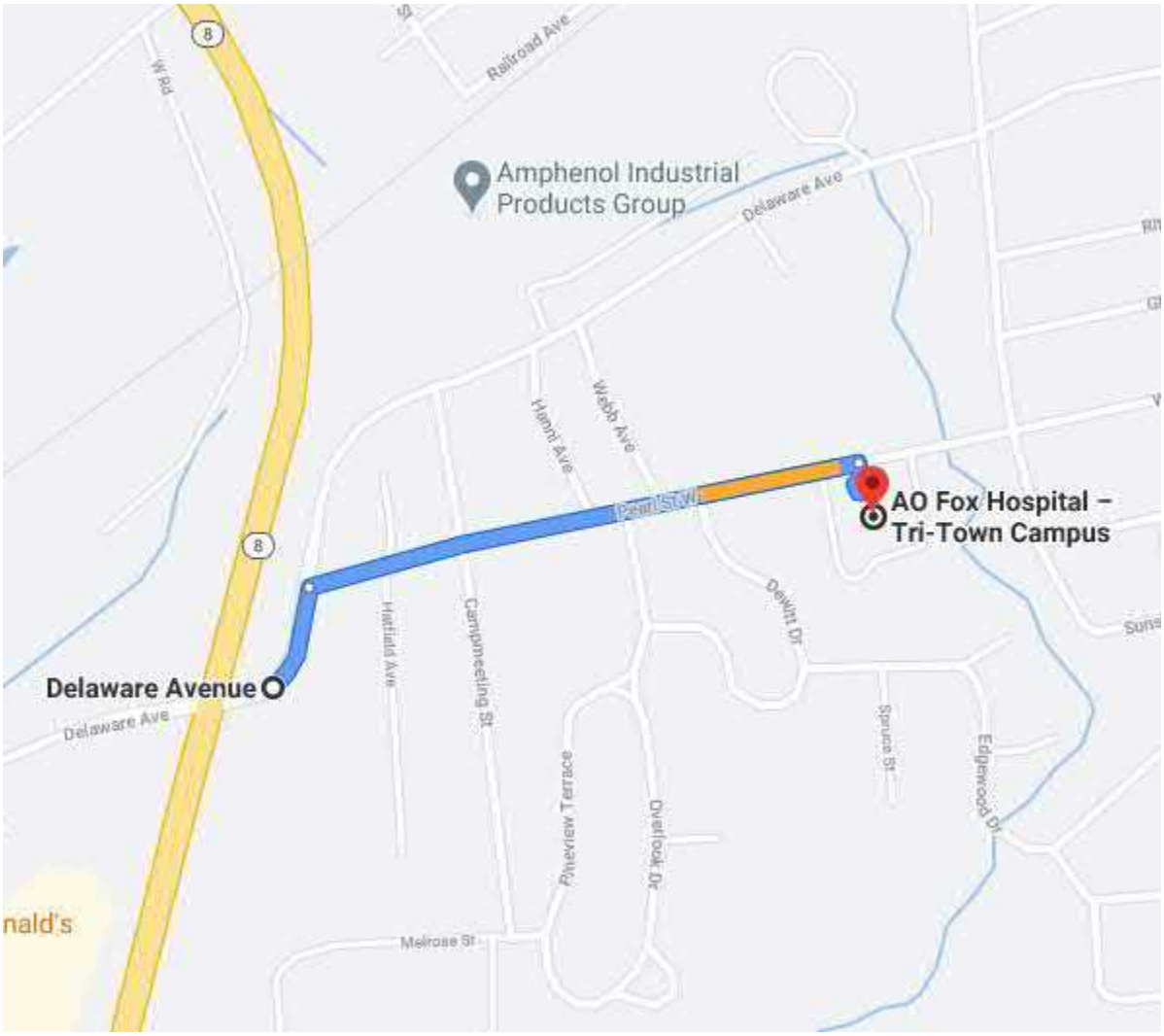
The Project Manager and the SSHC will establish a system appropriate to the SMC Brownfield Site investigation areas that will record, at a minimum, the following information:

- Personnel conducting the site activities, their arrival and departure times, and their destination at the investigation areas
- Incidents and unusual activities that occur on the site such as, but not limited to, accidents, breaches of security, injuries, equipment failures and weather related problems
- Changes to the Work Plan and the HASP

- Daily Information such as:
    - Work accomplished and the current site status
    - Air monitoring results

Figure 1

Route to Tri-Town Regional Hospital from Site



The experience to
listen
The power to
solve℠

Barton
&Loguidice

www.bartonandloguidice.com

APPENDIX F – QUALITY ASSURANCE PROJECT PLAN

Amphenol Corporation
BCO Hill and Route 8 Sites
Sidney, New York

Quality Assurance Project Plan

March 2021

Amphenol Corporation
BCO Hill and Route 8 Sites
Sidney, New York

Quality Assurance Project Plan

March 2021

Prepared for:

Amphenol Corporation
40-60 Delaware Avenue
Sidney, New York 13838

Prepared by:

Barton & Loguidice, D.P.C.
443 Electronics Parkway
Liverpool, New York 13088

Table of Contents

1.0 Introduction

This Quality Assurance Project Plan (QAPP) amendment details specific Quality Assurance and Quality Control (QA/QC) requirements that apply to the site management program for the Amphenol Corporation BCO Hill and Route 8 sites in New Hartford, New York. The QA/QC requirements are designed to assist in achieving the project data quality objectives (DQOs) and analytical DQOs for sampling activities and groundwater monitoring that will be performed at the site associated with the monitoring programs under the Site Management Plan (SMP).

2.0 Project Management

2.1 Purpose

The QAPP amendment is intended to provide field and laboratory personnel with guidance for the field activities as well as sample handling activities within the laboratory for each sampling event. The QAPP contains general and specific guidance on sample collection methodology, sample handling, sample containers, and laboratory procedures. Project personnel will follow the guidelines during each sampling event.

2.2 Scope and Objectives

This QAPP amendment is intended to provide guidance for Amphenol, Barton & Loguidice, D.P.C. (B&L), and analytical laboratories performing remedial actions, periodic groundwater monitoring, remedial system monitoring, and other applicable activities at the site. This QAPP is not intended to replace the laboratory's QAPP. It is, however, intended to provide guidance for related field QC collection, method selection, DQOs, and program specific validation guidelines.

2.3 Project Management Responsibilities

This section provides a description of the organizational structure of personnel involved with this project. This description defines the lines of authority and identifies key personnel assigned to various activities. The project manager will be the key operational manager for project execution, and will have the primary responsibility for project plan development and implementation of the project tasks. The Consultant and contracted laboratories responsible for performing and/or coordinating the tasks associated with this QAPP amendment are clearly defined in the following sections.

Lines of communication, management activities, and technical direction within this project team will follow this organization arrangement. Below identifies key team members and their respective responsibilities.

Company/Organization	Title	Name	Phone Number	Email
Regulatory Agency-NYSDEC	Project Manager	Joshua Haugh	518-357-2045	Joshua.haught@dec.ny.gov
Amphenol Aerospace	EHS&S Engineer	John Bianchi	315-798-2098	jbian@amphenol-aao.com
Barton & Loguidice, D.P.C.	Project Manager	Scott Nostrand, PE	315-457-5200	snostrand@bartonandloguidice.com
	Project Engineer	Jon Sundquist PhD	716-436-7857	jsundquist@bartonandloguidice.com
	Quality Assurance (QA) Officer	Andrew Barber	518-218-1801	abarber@bartonandloguidice.com

The staff performing the site activities will be directed by representatives of the project team. The personnel responsible for each of the site activities are listed below.

Company/ Organization	Title	Name	Phone Number	Email
B&L	Field Coordinator/Field Sampling Manager	Brian McGrath	585-325-7190	bmcgrath@bartonandloguidice.com
	Health and Safety Officer	Jeffrey Reed	315-457-5200	jreed@bartonandloguidice.com

2.3.1 Amphenol Personnel

The Amphenol EHS Manager will be the primary contact at point for work at the site. Mr. John Bianchi will be responsible for the Remedial Program, IRM, remedial design/construction, and site management plan (SMP) activities on behalf of Amphenol. All project-related activities will be addressed with the Amphenol EHS Manager.

EHS Manager: John Bianchi

Title: EHS Manager

Address: Amphenol Corporation
40-60 Delaware Avenue
Sidney, New York 13838

Telephone Number: (315) 798-2098

2.3.2 Consultant

The Consultant will appoint a Project Manager that will be responsible for the overall project implementation. The Consultant Project Manager will have the authority to commit the necessary resources to ensure timely completion of project tasks. The Consultant Project Manager reports directly to the Amphenol and is responsible for oversight of the subcontracted laboratories for all projects contracted to their consulting firm as well as reviewing project progress, and all documents, plans, and drawings prior to delivery to the Amphenol Project Manager.

Consulting firm: Barton & Loguidice, D.P.C.

Project Manager: Scott Nostrand PE

Title: Senior Vice President

Address: 443 Electronics Parkway
Liverpool, NY 13088

Telephone Number: (315) 457-5200

The Consultant Quality Assurance Officer will be responsible, if applicable, for managing field and laboratory audits, review of field QC sample collection, field and analytical data validation, and documentation of the field and analytical results.

Consulting Firm: Barton & Loguidice, D.P.C.

Quality Assurance Officer: Andrew Barber

Address: 10 Airline Drive
Albany, New York 12205

Telephone Number: (518) 218-1801

2.3.3 Analytical Laboratory

The Analytical Laboratory Project Manager(s) will act as the primary liaison to the Consultant during implementation of project activities and will be responsible for the review of the final analytical reports submitted for this project. The Analytical Laboratory Project Manager(s) will also be responsible for coordination with the laboratory QA officer to implement the DQOs established in this program QAPP and alerting the Consultant to DQO and method updates prior to analysis and data submittal. The Analytical Laboratory Project Manager is responsible for the oversight and deliverables submitted by laboratories subcontracted by the originating laboratory.

Laboratory: SGS North America

Project Manager: Caitlin Brice

Title: General Manager

Address: 2235 Route 130, Dayton, NJ 08810

Telephone Number: 732-329-0200

2.4 Project Goals

Data collection during the site management program for the Amphenol site will be compared to the regulatory standards criteria and guidance values that apply for documentation, confirmatory and monitoring samples collected pursuant to the Site Management Plan (SMP). Other site-specific project DQOs should be established at the on-set of each phase of the project

to assure that the field sample collection, data evaluation, if applicable, and overall project management are conducted in a manner that will achieve the overall project goals.

2.5 Project Documentation

The following list describes the documentation required for sites that are undergoing remedial activities or periodic groundwater and vapor sampling:

- Copies of all appropriate permits to complete the scope of work.
- Field notebook.
- Periodic water level measurement, as and where appropriate.
- Field sampling records, groundwater and vapor sampling, where appropriate, including the sample name, sample location, and purpose of sample.
- Sample chain-of-custody (COC) records.
- Sample COC records with the sample temperature at time of receipt at laboratory (for samples that are submitted to laboratory) noted.
- Final analytical data packages from the analyzing laboratory, completed as required in the Operation and Maintenance (O&M) Plan for the requested data deliverable level.
- Data validation report, if applicable.

The documentation listed above will be presented, if appropriate, in the remedial action report following completion of the remedial activities or in periodic groundwater monitoring reports. The Consultant will keep the documents on file for the duration of the project.

3.0 Field Measurement and Data Acquisition

3.1 Data Categories

The general categories of data that may be collected will include field screening data, and confirmational data, and system monitoring data for water samples. Site characterization samples may also be collected to determine the presence of site-related parameters in soil, sediment, soil gas, surface water and groundwater. The analytical methods to be used for soil, water and vapor analyses are summarized below.

3.1.1. Laboratory Analysis

The site data will be obtained by submitting soil, and water samples during the site management program to the laboratory to perform sample analysis. The fixed-based analytical laboratory will generate quantitative analytical data for soil, sediment, non-aqueous phase liquid, water and vapor using the methods listed in the Field Sampling Plan and SMP.

- Groundwater and treatment system influent/effluent samples will be analyzed for volatile organic compounds (VOCs) by EPA Method 8260 and polychlorinated biphenyls (PCBs) by EPA Method 8280.

3.2 Sampling Procedures

The samples will be collected for each project as described in the Field Sampling Plan (FSP), work plans, and SMP. The FSP and SMP provide descriptions of the sampling procedures, the sample containers, sample handling, and storage.

4.0 Analytical Data Quality Assessment

This section of the QAPP presents the established criteria for assuring data quality and consistency for laboratory QA/QC, laboratory reporting, and data validation. This is of particular importance when utilizing more than one analytical laboratory. The analytical DQOs discussed in the following sections will provide guidance for the Consultant Project Manager, the Consultant Quality Assurance Officer, and the Analytical Laboratory. In general, data validation will be performed for soil characterization and will not be required for confirmation or routine samples collected during operation, maintenance and monitoring activities.

4.1 Analytical Data Quality Objectives

Analytical DQOs are used as a guide for data quality assessment. The DQOs are precision, accuracy, representativeness, completeness, and comparability (The PARCC Parameters). These qualitative and quantitative objectives ensure the data generated during the site characterization activities, and if warranted remedial actions, are scientifically valid, defensible, and meet the needs of each project. The DQOs are dependent on the intended data usage and are based on the premise that the ultimate use of a particular data set should dictate the quantity and quality of these data.

Precision is a measure of the reproducibility of concentrations reported for duplicate analyses, calculated by determining the relative percent difference (RPD) between the two values. Precision will be reviewed for the following analysis: LCS/LCSD, MS/MSD, and field duplicate (groundwater samples collected from the same location).

Accuracy is the degree to which the measurement data approaches the "true" value for each analyte. For soil samples, accuracy is assessed by calculating the percent recovery for a sample spiked with the analyte of concern (LCS, surrogates, matrix spike).

Representativeness refers to the comparability of the sample collection procedures to those delineated in the sampling and analysis plan and to the degree which the analytical data represents the subsurface contaminant concentrations. Representativeness will be accomplished by adhering to consistent field sampling and analytical procedures for samples.

Completeness is defined as the ratio of usable laboratory measurements to the total number of planned measurements for this investigation.

Comparability is an evaluation of the relative consistency of the laboratory measurement data. Since comparability cannot be measured quantitatively, professional judgment is relied upon. Internal comparability will be achieved for groundwater by adhering to consistent sample collection procedures and analyses methods for any site characterization activities.

4.2 Sample Custody and Holding Times

Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for presenting sample analytical results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in these investigations will follow the chain-of-custody guidelines of *NEIC Policies and Procedures*, prepared by the National Enforcement Investigations Center (NEIC) of the USEPA Office of Enforcement.

4.2.1 Custody Definitions

- Chain-of-Custody Officer - The employee responsible for oversight of all associated chain-of-custody activities is the Onsite Geologist (or his/her designee).
- Under Custody - A sample is "Under Custody" if:
    - It is in one's possession, or
    - It is in one's view, after being in one's possession, or
    - It was in one's possession and one locked it up, or
    - It is in a designated secure area.

4.2.2 Responsibilities

The onsite Environmental Scientist will be responsible for monitoring all chain-of-custody activities and for collecting legally admissible chain-of-custody documentation for the permanent project file. The onsite Environmental Scientist will be responsible for:

- Initially reviewing sample labels or tags, closure tapes, and chain-of-custody record forms. The onsite Environmental Scientist shall document this review for the project file.

- Training all field sampling personnel in the methodologies for carrying out chain-of-custody and the proper use of all chain-of-custody forms and record documents.
- Monitoring the implementation of chain-of-custody procedures.
- Submit copies of the completed chain-of-custody forms to the Project Manager daily.

4.2.3 Chain-of-Custody

Chain-of-custody is initiated in the laboratory when the sample containers are cleaned, packed, and shipped to the site for use in the field. When the containers are received from the laboratory, they will be checked for any breach of custody including, but not limited to incomplete chain-of-custody records, broken chain-of-custody seals, or any evidence of tampering. Upon receipt of the samples, the laboratory will check for breach of custody as previously described.

4.2.4 Sample Containers and Holding Times

The following tables identify the analytical method, container, preservation, and holding time requirements. All holding times begin with the date/time of sample collection.

Water Analyses				
Analyses	**Methods**	**Container**	**Preservative**	**Holding Time**
Volatiles	8260	two 40-ml., glass vials with a teflon-lined septum cap	4° C, hydrochloric acid to pH below 2	14 Days
PCBs	8082	1000-mL amber glass bottle fitted with a teflon screw-cap	4° C	14 Days

4.3 Calibration Procedures and Frequency

In order to obtain a high level of precision and accuracy during sample processing procedures, laboratory instruments must be calibrated properly. Several analytical support areas must be considered so the integrity of standards and reagents is upheld prior to instrument calibration. The following sections describe the analytical support areas and laboratory instrument calibration procedures.

4.3.1 Analytical Support Areas

Prior to generating quality data, several analytical support areas must be considered:

Standard/Reagent Preparation - Primary reference standards and secondary standard solutions shall be obtained from National Institute of Standards and Technology (NIST), or other reliable commercial sources to verify the highest purity possible. The preparation and maintenance of standards and reagents will be accomplished per the referenced methods. All standards and standard solutions are to be formally documented (i.e., in a bound logbook) and should identify the supplier, lot number, purity/concentration, receipt/preparation date, preparer's name, method of preparation, expiration date, and any other pertinent information. All standard solutions shall be validated prior to use. Care shall be exercised in the proper storage and handling of standard solutions (e.g., separating volatile standards from nonvolatile standards). The laboratory shall continually monitor the quality of the standards and reagents through well documented procedures.

Balances - The analytical balances shall be calibrated and maintained in accordance with American Society of Testing Materials (ASTM) specifications. Calibration is conducted with two Class-1 weights that bracket the expected balance use range. The laboratory shall check the accuracy of the balances daily and properly document results in permanently bound logbooks.

Refrigerators/Freezers - The temperature of the refrigerators and freezers within the laboratory shall be monitored and recorded daily. This will verify that the quality of the standards and reagents is not compromised and the integrity of the analytical samples is upheld. Appropriate acceptance ranges ($4^{o}C \pm 2^{o}C$ for refrigerators) shall be clearly posted on each unit in service.

Water Supply System - The laboratory must maintain a sufficient water supply for all project needs. The grade of the water must be of the highest quality (analyte-free) in order to eliminate false-positives from the analytical results. Ultraviolet cartridges or carbon absorption treatments are recommended for organic analyses. Appropriate documentation of the quality of the water supply system(s) will be performed on a regular basis.

Air Supply System - The laboratory must maintain a sufficient clean (analyte free) air supply for all project needs if required. The grade of the air must be of the highest quality (analyte-free) in order to eliminate false-positives from the analytical results. Appropriate documentation of the quality of the air supply system(s) will be performed on a regular basis by the laboratory.

4.3.2 Laboratory Instruments

Calibration of instruments is required to verify that the analytical system is operating properly and at the sensitivity necessary to meet method established quantitation limits. Each instrument for organic analysis shall be calibrated with standards appropriate to the type of instrument and linear range established within the analytical method(s).

Calibration of an instrument must be performed prior to the analysis of any samples (initial calibration) and then at periodic intervals (continuing calibration) during the sample analysis to verify that the instrument is still properly calibrated. If the contract laboratory cannot meet the method-required calibration requirements, corrective action shall be taken as discussed in Section 11.0. All corrective action procedures taken by the contract laboratory are to be documented, summarized within the case narrative, and submitted with the analytical results.

QA/QC procedures, if applicable, will be implemented using methods that ensure each project's data needs for completeness, comparability, representativeness, accuracy, and precision are met. Based on these QA/QC objectives, the water sample analyses will be completed in accordance with USEPA or USEPA approved methodologies.

4.4 Laboratory Quality Assurance/Quality Control Procedures

QA/QC procedures, if applicable, will be implemented using methods that ensure each project's data needs for completeness, comparability, representativeness, accuracy, and precision are met. Based on these QA/QC objectives, the water sample analyses will be completed in accordance with USEPA or USEPA approved methodologies.

The laboratory will utilize QC samples to assess the validity of the analytical results of field samples. The laboratory QC samples will include: method blank analysis, laboratory control spike (LCS), surrogate spike analysis, MS/MSD analysis (duplicate analysis), and check standard analysis:

- A method blank is an analyte-free matrix similar to the field samples (solid or liquid), in which all of the reagents are added in the same proportion or concentration as used to process the field samples. Method blank analysis is performed to assess possible laboratory contamination each day of analysis, for each method of analysis and at a frequency of at least one per 20 samples analyzed. In the event compounds of interest are detected in the trip blank the raw data from the method blanks will be submitted with the analytical data package to determine the source of contamination. In the event that concentrations of constituents of concern are found to be greater than the PQL in the method blank, corrective action will be performed to identify and eliminate

the source of contamination prior to proceeding with the analyses. The analytical data will not be corrected based on the presence of an analyte in the method blank, and corrective action is not necessary in the event that the analyte is detected in the method blank but not in the sample. If an analyte continues to be found in the method blank and in the sample, and corrective actions are not implemented, the affected result will be flagged with the appropriate validation qualifier.

- The LCS or blank spikes are analyte-free samples of water, which are spiked with a known concentration of specific analytes. The spiking standard must be from a source independent of that used for calibration standards. The LCS is used to evaluate each preparation sample and to assess the statistical control of the method at a frequency of at least one per 20 samples. Corrective action will be implemented in the event that the LCS is found to be outside of the recovery acceptance limit.
- Surrogate spike analysis is used to evaluate the efficiency of the analytical procedure in recovering the true amount of a known compound. The surrogates are organic compounds similar to the target analyte(s) in chemical composition and behaviour in the analytical process, but do not normally occur in environmental samples. Surrogate spikes are added to all samples, including QC samples. Percent recovery values are provided along with the sample results. Corrective action will be implemented in the event that the surrogate recovery is found to be outside acceptable limits, and the sample will be prepared and analyzed again. If the surrogate continues to be found outside the acceptable QC limits, the affected result will be flagged with the appropriate validation qualifier.
- MS/MSD samples are used to evaluate the effect of the sample matrix on the analytical method. The spiking standard must be from a source independent of that used for calibration standards. MS/MSD samples are analyzed at a frequency of one pair per sample batch or at least one pair per 20 samples. Samples designated as (FB), and (TB) must not be used for MS/MSD analyses. The MS/MSD is intended to evaluate the matrix effect on the instrument, not to control the analytical process. If the MS or MSD is found to be outside the acceptable QC limits, the affected result will be flagged with the appropriate qualifier.

4.5 Quality Assurance/Quality Control Data Package

Data package documentation will be implemented as prescribed by the laboratory contract and the site specific needs. B&L Level II data deliverables are detailed below. All data packages will be reviewed for package completeness.

Level II Data Deliverables

- Cover page
- Report narrative
- Method Summary
- Sample Summary
- Chain of Custody
- Data Qualifier Definitions
- Dilution Log
- Sample Results
- Lab QC Results
- Surrogate Recoveries
- Spike Recoveries

4.6 Calculation of Data Quality Indicators

Precision

Precision is evaluated using results from field duplicate and/or MS/MSD analyses. The RPD between the parent sample/field duplicate or between the MS/MSD concentrations is used to evaluate precision and calculated by the following formula:

$$RPD = \left[\frac{|X_1 - X_2|}{(X_1 + X_2)/2} \right] x100\%$$

where:

X_1 = *Measured value of sample or matrix spike*
X_2 = *Measured value of duplicate or matrix spike duplicate*

RPD criteria for this project shall meet method-specific QC requirements.

Accuracy

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. Analytical accuracy is expressed as the %R of a compound that has been added to the environmental sample or laboratory demonstrated analyte free matrix at known concentrations before analysis. Accuracy will be determined from MS, MSD, MSB (or LCS) samples as well as from surrogate compounds and is calculated as follows:

$$\%R = \frac{(X_s - X_u)}{K} x\,100\%$$

where:

X_s = *Measured value of the spike sample*

X_u = *Measured value of the unspiked sample*

K = *Known amount of spike in the sample*

%R criteria for this project shall meet method-specific QC requirements.

Completeness

Completeness is calculated on a per matrix basis for the project and is calculated as follows:

$$\%\ Completeness = \frac{(N - X_n)}{N}\ x\ 100\%$$

where:

X_n = *Number of invalid measurements*

N = *Number of valid measurements expected to be obtained*

4.7 Corrective Actions

Laboratory corrective actions shall be implemented to resolve problems and restore proper functioning to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the analytical report case narrative. A discussion of the corrective actions to be taken is presented in the following sections.

Incoming Samples

Problems noted during sample receipt shall be documented by the laboratory. The Project manager (or designee) shall be contacted immediately for problem resolution. All corrective actions shall be documented thoroughly.

Sample Holding Times

If any sample extractions and/or analyses exceed method holding time requirements, the Project manager (or designee) shall be notified immediately for problem resolution. All corrective actions shall be documented thoroughly.

Instrument Calibration

Sample analysis shall not be allowed until all laboratory instrumentation is properly calibrated in accordance with method requirements. If any initial/continuing calibration standards exceed method QC limits, recalibration must be performed and, if necessary, samples back to the previous acceptable continuing calibration standard must be reanalyzed.

Method QC

All QC, including blanks, matrix spikes, matrix spike duplicates, surrogate recoveries, matrix spike blank samples, and other method-specified QC samples, shall meet the requirements of the referenced methods. Failure of method-required QC will result in the possible qualification of all affected data. If the laboratory cannot find any errors, the affected sample(s) shall be reanalyzed within method-required holding times to verify the presence or absence of matrix effects. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria as defined by the data validation guidelines identified in Section 12.2. If matrix effect is not confirmed, then the entire batch of samples may have to be reanalyzed. The Project manager shall be notified as soon as possible to discuss possible corrective actions should unusually difficult sample matrices be encountered.

Calculation Errors

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review, calculation and/or reporting errors exist, the laboratory will be required to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

4.8 Data Reduction, Validation, and Usability

For all analyses, NYSDEC ASP Category B deliverable requirements will be employed for documentation and reporting of all data. The standard NYSDEC Data Package Summary will be completed by the analytical laboratory and included in the deliverable data packages. In addition, analytical results will be reported in a NYSDEC EQuIS electronic data deliverable (EDD) format.

Data Reduction

Laboratory analytical data are first generated in raw form at the instrument. These data may be either graphic or printed tabular form. Specific data generation procedures and calculations are found in each of the referenced methods. Analytical results must be

reported consistently. Data for aqueous samples will be reported in concentrations of micrograms per liter (µg/L) or milligrams per liter (mg/L).

Identification of all analytes must be accomplished with an authentic standard of the analyte traceable to NIST or other reliable commercial sources. Individuals experienced with a particular analysis and knowledgeable of requirements will perform data reduction.

4.9 Data Evaluation

The effectiveness of the implementation of the QAPP and the QA/QC procedures will be assessed at various times to ensure that the data needs of each project continue to be met. This evaluation will include conducting data quality assessments on the data as it is received. In the event that the data is found to fall outside the parameters of the DQOs, additional assessments and corrective actions will be taken. The additional assessments may include, but are not limited to, a review of the sampling method, sample handling and storage methods, and or review of the laboratory management system.

4.9.1 Data Quality Assessment

An initial quality assessment of the data should be made by the laboratory to ensure that the analytical DQOs are achieved. The assessment will include, but not be limited to, ensuring that the sample preparation and analyses were performed within the specified holding times for each analysis, identification of any source of contamination, and performing a review for internal laboratory quality control. The laboratory will note any QC deficiencies in the final laboratory report.

Hold time criteria begins at the time of sample collection. In order to remain in compliance with each analytical method, the sample extraction or preparation process must be completed as described by each analytical method prior to any necessary extract cleanup and/or volume reduction procedures, and must be completed within the specified time frame in accordance with EPA guidelines. The analysis is considered finished when all analytical runs, including dilutions and any required re-analyses, are completed.

4.6.2 Data Validation

Data validation, if applicable, will be performed for any supplemental site characterization and design activities. Data validation of monitoring data will not be performed unless the assessment of the analytical results warrants further evaluation. Data validation will be performed by a qualified chemist or data validation Consultant. Data validation is a review of the supplied data documentation to assess data quality. All analytical data for which validation is performed will be evaluated against the DQOs presented in this program specific QAPP, and the analytical

method criteria. All program analytical data will be reviewed and evaluated according to the criteria established in this QAPP, and summarized in validation memos thereafter. In the case of parameters for which no criteria have been established in this QAPP, the laboratory's control limits will be used. All qualification will be documented in the validation reports and all professional judgment assessments will be clearly documented.

5.0 References

United States Environmental Protection Agency. *USEPA Guidance for Quality Assurance Project Plans*, USEPA/QA/G-5, USEPA/600/R-98/018. February 1998.

United States Environmental Protection Agency. *USEPA Guidance for Quality Assurance Project Plans for Environmental Data Operations*. USEPA QA/R-5.March 2001.

United States Environmental Protection Agency. *Guidance for Data Quality Assessment, Practical Methods for Data Analysis.* USEPA QA/G-9, QA97 Version. July 2001.

United States Environmental Protection Agency. *Guidance for the Data Quality Objectives Process.* USEPA/QA/G-4, USEPA/600/R-96/055. August 2001.

United States Environmental Protection Agency. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. USEPA*/540/R-99/008. October 1999.

APPENDIX G

SITE MANAGEMENT FORMS

Hillsite Landfill Inspection Report

Date:
Inspector:_____
Weather Conditions: temp_____precipation_____in.

1. Visual Evaluation Items

	Condition:Check Acceptable	Not Acceptable	Maintenance required yes	no	Not Applicable
1 General site Condition					
a. Erosion					
b.Housekeeping					
c.Fencing					

Comments:

2 Integrity of Drainage System

a. Sediment Build-up					
b. Pooling or ponding					
c. Slope Intregity					
d. Erosion Protection					
(Riprap,grout,vegetation)					
e. Obstruction of Culverts					
f. Vegetative growth					

Comments:

3 Condition of access roads/
Security of Fence/GWTP Building

a.Road condition					
b.Gates/Locks/Signs/Fence					
c. GWTP Building Structure					
Locks/Security Alarms					

Comments:

4 Integrity of Groundwater
monitoring wells/extraction
trench manholes

a. Well casing					
b. Lock					
c. Well cap					
d. Concrete Pad					
e. Depth Sounding					

Comments:

5 Integrity of Landfill cap

a. Erosion/Settlement				
b. Vegetative growth				
c. Gas vents				
d. Animal Borrows				

Comments:

6 Leachate Collection System

a. Condition of collection sump				
b.Condition of detection sump				

Specific Data Items (Write N/A if not applicable

1 Approximate size in FT of eroded area(s). (List separately)
a)_____ft by _____ft
b)_____ft by _____ft
c)_____ft by _____ft
2 How deep is the most extreme point of erosion when measured from the adjacent surface .. (list Separately)
a) _____ft
b) ____ft
c)_____ft
3 Level of Leachate in collection sump_____below TOC and Detection sump_____below TOC
4 Number of gallons of leachate removed from collection sump._____gallons.
5 Number of gallond removed from detection sump._____gallons.

Attach photographs and sketches as necessary to better describe O&M issues.

Signature of Inspector_____

Attachments
_____yes _____no

Summary of Green Remediation Metrics for Site Management

Site Name: _____ Site Code: _____
Address: _____ City: _____
State: _____ Zip Code: _____ County: _____

Initial Report Period (Start Date of period covered by the Initial Report submittal)
Start Date: _____

Current Reporting Period
Reporting Period From: _____ To: _____

Contact Information
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____

I. Energy Usage: Quantify the amount of energy used directly on-site and the portion of that derived from renewable energy sources.

	Current Reporting Period	**Total to Date**
Fuel Type 1 (e.g. natural gas (cf))		
Fuel Type 2 (e.g. fuel oil, propane (gals))		
Electricity (kWh)		
Of that Electric usage, provide quantity:		
Derived from renewable sources (e.g. solar, wind)		
Other energy sources (e.g. geothermal, solar thermal (Btu))		

Provide a description of all energy usage reduction programs for the site in the space provided on Page 3.

II. Solid Waste Generation: Quantify the management of solid waste generated on-site.

	Current Reporting Period (tons)	**Total to Date (tons)**
Total waste generated on-site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off-site to landfills		
Transported off-site to other disposal facilities		
Transported off-site for recycling/reuse		
Reused on-site		

Provide a description of any implemented waste reduction programs for the site in the space provided on Page 3.

III. Transportation/Shipping: Quantify the distances travelled for delivery of supplies, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	**Total to Date (miles)**
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the site in the space provided on Page 3. Include specifically any local vendor/services utilized that are within 50 miles of the site.

IV. Water Usage: Quantify the volume of water used on-site from various sources.

	Current Reporting Period (gallons)	**Total to Date (gallons)**
Total quantity of water used on-site		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
On-site groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the site in the space provided on Page 3.

V. Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	**Total to Date (acres)**
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the site in the space provided on Page 3.

Description of green remediation programs reported above (Attach additional sheets if needed)
Energy Usage:
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Other:

CERTIFICATION BY CONTRACTOR
I, _____ (**Name**) do hereby certify that I am _____ (**Title**) of the Company/Corporation herein referenced and contractor for the work described in the foregoing application for payment. According to my knowledge and belief, all items and amounts shown on the face of this application for payment are correct, all work has been performed and/or materials supplied, the foregoing is a true and correct statement of the contract account up to and including that last day of the period covered by this application. _____ **Date** **Contractor**

APPENDIX H –SAMPLING AND ANALYSIS PLAN

Sampling and Analysis Plan

BCO Hill and Route 8 Landfill Sites

Delaware Avenue
Sidney, New York 13038

Prepared for

Amphenol Corporation

40-60 Delaware Avenue
Sidney, New York 13038

March 2021

Barton&Loguidice

BCO Hill and Route 8 Landfill Sites
40 - 60 Delaware Avenue
Sidney, New York 13038

Field Sampling Plan

March 2021

Prepared For:

Amphenol Corporation
40 - 60 Delaware Avenue
Sidney, New York 13038

Prepared By:

Barton & Loguidice, D.P.C.
443 Electronics Parkway
Liverpool, NY 13088

TABLE OF CONTENTS

1.0 INTRODUCTION

This document presents the Field Sampling Plan (FSP) for routine groundwater sampling at the referenced sites. The FSP contains four sections including this Introduction (Section 1.0). Section 2.0 outlines the sampling objectives; Section 3.0 provides a description of sampling efforts, including sample designation, sample handling, and analytical requirements. Finally, Section 4.0 details the sampling procedures.

2.0 SAMPLING OBJECTIVES

2.1 Groundwater Monitoring

Groundwater will be monitored at the locations and frequencies specified in section 4.4 of each site's Site Management Plan. Collected samples will be analyzed for Volatile Organic Compounds (VOCs) and a subset analyzed for polychlorinated biphenyls (PCBs).

2.2 Data Quality Objectives

Data quality objectives (DQOs) are based on the concept that different data uses may require different levels of data quality. Data quality can be defined as the degree of uncertainty in the data with respect to precision, accuracy, and completeness. The five levels of data quality are:

- Screening (Level 1) - This provides the lowest level of data quality, but with the most rapid turnaround on results. It is often used for monitoring of health and safety conditions, preliminary comparison to Applicable or Relevant and Appropriate Requirements (ARARs), initial site characterization and location of areas designated for higher levels of sampling and analyses, and for screening of bench-scale remediation tests. These data are typically generated on-site using real-time measuring devices and include total organic vapor concentrations from PID readings, Draeger tube measurements, pH, specific conductance, dissolved oxygen, airborne particulates and any other data obtained using direct-reading instruments.
- Field Analyses (Level 2) - This level provides rapid results in the field and is generally of better quality than Level 1 data. Analyses include mobile lab generated data and computer generated modeling of site data (i.e., geophysical data, hydraulic conductivity data).
- Engineering (Level 3) - These methods provide an intermediate level of data quality and are used for site characterization. Engineering analyses may include higher levels of mobile lab generated data or laboratory generated data using rapid turnaround methods. These types of methods provide useful site characterization data, but are generally considered for screening purposes since the results are generated without the benefit of full quality control documentation.

- Confirmational (Level 4) - This provides the highest level of data quality and is appropriate for use in risk assessments, engineering design and for cost evaluations. This level requires the analytical laboratory to be NYSDOH ELAP certified for ASP/CLP categories and to provide internal quality control documentation derived from such reporting protocols. Projects requiring the full ASP/CLP laboratory reporting will also be subject to independent third-party data validation or an internal Data Usability Summary Report (DUSR).
- Non-Standard (Level 5) - This refers to analyses by non-standard protocols; for example, when exacting detection limits or analysis of an unusual chemical compound is required. These analyses often require method development or adaptation. The level of data quality is usually similar to that of Level 4.

A NYSDOH ELAP certified laboratory will generate Level 4 data, as previously described, for all the samples collected following startup of the remedial systems. Level 1 and 2 data can be generated in the field by a qualified environmental professional to document health and safety monitoring, field characterization of sampling media, demonstration of the adequacy of monitoring well development efforts, and to provide rationale for construction of groundwater monitoring wells and termination of contaminated soil excavation activities.

3.0 SAMPLING PROGRAM

3.1 General Sampling Program

All sample handling, record keeping, calibration, and other quality assurance/quality control matters will be handled in accordance with Quality Assurance Project Plan (QAPP) Appendix of each site's Site Management Plan.

3.2 Sample Designation

Samples will be designated using an alphanumeric code to identify the location and media sampled. Sampling media will be identified by the name of the monitoring well being sampled.

3.3 Sample Handling

3.3.1 Sample Container Requirements and Holding Times

Specific sample containers are required for each of the media types to be sampled, as well as the proposed analyses to be performed. Samples should be received by the laboratory within 48 hours of sample collection. In addition, there are specific holding time requirements for the type of analyses requested for each sample. These requirements are described below:

EPA Method 8260 analysis for VOCs requires samples to be collected in two 40-ml., glass vials with a teflon-lined septum cap and preserved with hydrochloric acid to pH below 2. The container must be completely filled with water to create a "zero head space" condition and placed on ice to keep at a temperature < 4ºC. The holding time is limited to 14 days from collection for analysis.

EPA Method 8082 analysis for PCBs requires samples to be collected in a 1000-mL amber glass bottle fitted with a teflon screw-cap.

3.3.2 Sample Packaging and Shipping

Samples will be packaged and shipped with consideration to preservative requirements and hold times. Samples will be delivered to the laboratory within 48 hours of sample collection.

3.3.3 Quality Assurance/Quality Control Samples

The proposed analytical program includes the collection and analysis of QA/QC samples. A trip blank will accompany each daily sample group delivered to the laboratory. The trip blank will consist of a pair of laboratory-prepared vials for VOC (i.e., EPA 8260) analysis only.

4.0 FIELD SAMPLING PROCEDURES

4.1 Preparation for Field Entry

Prior to the initiation of field activities, the following tasks will be performed:

- Kick-off meeting with all involved personnel to review the scope of work to be performed and the Field Sampling Plan;
- Review of the Health and Safety Plan by all on-site personnel;
- Operational checkout and pre-calibration of all equipment to be taken into the field;
- Location, flagging and labeling of all proposed soil probes and sampling locations;
- Identify and obtain clearance of all underground utilities associated with local utility companies and the Site;
- Arrange access for drill rig at proposed drilling locations;
- Designate decontamination area and identify water and power sources; and
- Mobilization of equipment and personnel to site.

4.2 Decontamination Procedures

Only dedicated disposable sampling equipment will be utilized.

4.3 Well Development

The purpose of well development is to remove fine materials from the area of the screen and prepare the monitoring well for future groundwater level measurement and sampling activities if deemed necessary. This is achieved through various development methods until consistent water quality conditions are observed and recorded. Well development will be performed using the following outlined field procedures.

4.3.1 Well Development Procedures

1. Inspect locking casing and surface concrete seal for integrity.
2. Open the well.
3. Measure the static water level from the top of the well casing and then the well bottom depth; calculate the volume of water in the well from the formula:

$V = \pi R^2 H$

Where:

V = volume (ft3)
R = inside well radius (ft)
H = length of water column (ft)
π = ~3.14

4. Lower a pre-cleaned or disposable bailer connected to a new solid braid nylon rope to the bottom of the well.
5. Bail the well until all fines are removed from the well and there is no solid sediment on the well bottom.
6. Continue bailing or install a well pumping system to complete well development. Pumps should be equipped with a backflow prevention valve.
7. If a pumping system is used, activate the pump; record the time and flow rate.
8. The pump will be periodically raised and lowered throughout the water column to ensure the screened interval is completely developed.
9. If low yield and slow recovery do not permit continuous pumping, the well will be periodically pumped or bailed.
10. When the preceding conditions have been met, remove the pump, measure the water level, and secure and lock the well.
11. Record all pertinent information in the field log.

4.4 Groundwater Sampling

4.4.1 Monitoring Well Sampling Procedure

The primary objective of field personnel in obtaining groundwater samples is to collect and preserve representative samples, and adhere to proper chain-of-custody procedures in their prompt shipment to the certified laboratory for analysis within the specified holding times. Upgradient monitoring wells will be sampled before downgradient wells. To collect representative groundwater samples, monitoring wells must be adequately purged prior to sampling. Low volume sampling equipment and procedures are preferred to purge the wells and retrieve groundwater samples. Purging will require the removal of one to three volumes of standing water. Low flow purging shall pump at a rate of less than one (1) liter per minute. Drawdown must not exceed ten percent of the standing water column. Sampling should commence immediately after purging.

1. Unlock and carefully remove the well cover to avoid having any foreign material enter the well. Monitored the interior of the riser pipe for organic vapors using

PID. If a reading of greater than 5 ppm is recorded, vent the well until levels are below 5 ppm before purging begins.

2. Using an electronic interface probe/water level detector, measure the water level below top of casing. Measure the depth of the well to determine the volume of water in the well. The end of the probe will be decontaminated between wells.

3. Calibrate all field chemistry equipment every day.

4. Low Flow purging/sampling: Purge the required water volume (i.e., until stabilization of pH, temperature, specific conductivity, and turbidity) using a low-flow pump (e.g., Solinst or Geopump) and dedicated HDPE tubing. New dedicated tubing will be used for each well. Purge the well until the water quality parameters have stabilized. The stabilization criteria are: specific conductivity - 3% full-scale range; pH - 0.10 pH unit; dissolved oxygen – 10%, Turbidity – 10% and oxidation/reduction (redox) potential - +/- 10 units. After well purging is completed, collect samples into the appropriate containers. Fill sample bottles in the following order: VOCs then any remaining parameters (if any).

5. Bailer purging/sampling: Purge a minimum of three well volumes will where possible. For wells that bail dry, purging will consist of complete evacuation. Following adequate recovery (within 80% of static levels), obtain sample with a disposable bailer suspended on new, solid-braid nylon rope. Transfer sample directly from the bailer to the parameter-specific sample container labeled appropriately (sample ID Number and preservative), and place in coolers with ice or ice packs. Fill sample bottles in the following order: VOCs then any remaining parameters (if any).

6. Follow record keeping and chain-of-custody procedures as detailed in the SMP QAPP.

7. Replace all well caps, and lock protective well cover.

8. At the end of the sampling day, the coolers will be taped shut with the custodian's initials placed on the tape at the points of entry. Samples will be delivered to the laboratory by field personnel upon departure from the site. Alternatively, an express carrier may be used to deliver the samples to the laboratory.

4.5 Water Level Monitoring

In order to determine the horizontal hydraulic gradient(s) exhibited by the surface of the water table and potential routes of contaminant migration, water level measurements will be made using the following procedures:

1. After noting the general conditions of the well (surface seal, lock, etc.) the bottom of the well will be sounded by lowering a decontaminated, weighted probe into the well.
2. Well bottom conditions will be noted (silty, blockages, etc.). The distance from the base of the screen to the top of the casing will be recorded to the nearest 1/100th of a foot.
3. The static water level will be measured and noted by sounding with an electronic tape or "popper" to the nearest 1/100th of a foot.
4. The water level readings will always be taken from a marked point on the well casing.
5. Other measurements to be taken are:
    - Stickup of well casing from ground surface or surface seal.
    - Depth to bottom of well from the top of the riser.
6. The date and time will be recorded for these measurements. Also, any pertinent weather conditions will be noted (i.e., significant recent precipitation or drought conditions).
7. Upon completion, the wells will be secured, and all downhole equipment will be decontaminated with methanol and deionized water.
8. As practicable, all water levels should be collected on the same day.

The experience to
listen
The power to
solve℠

Barton
&Loguidice

www.bartonandloguidice.com

APPENDIX I

REMEDIAL SYSTEM OPTIMIZATION TABLE OF CONTENTS

REMEDIAL SYSTEM OPTIMIZATION FOR BCO HILL SITE

TABLE OF CONTENTS