CAMP SUMMIT SITE

SCHOHARIE COUNTY

TOWN OF FULTON, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 448006

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York

Prepared by:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date
0	07/2005	Original Version	
1	6/2020	Update to Current Template Format, Remove Requirement to Analyze for Volatile Organic Compounds	Robert Strang Approved 8/12/2020

JUNE 2020

CERTIFICATION STATEMENT

I, Matthew R. DeVinney, P.E. 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).

Matthew R DeVinney P.E.
8-13-20 DATE

CAMP SUMMIT SITE
SCHOHARIE COUNTY
TOWN OF FULTON, NEW YORK

SITE MANAGEMENT PLAN

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LIST OF ACRONYMS

AOC	Area of Concern
AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision

LIST OF ACRONYMS (Continued)

RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-Slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound

ES EXECUTIVE SUMMARY

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

Site Identification:	448006 Camp Summit Site, Town of Fulton, Schoharie County, NY
Institutional Controls:	1. Require compliance with the approved site management plan.
	2. Prohibit use and development of the capped area.
	3. Restrict use of shallow groundwater as a source of potable or process water.
	4. Evaluate the potential for vapor intrusion for any buildings developed on the site, including provisions for mitigation of any impacts.
	5. Require the property owner to complete and submit to the NYSDEC an annual certification to ensure compliance with the use restrictions.
	6. The Site owner or remedial party will submit to NYSDEC an annual written statement 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. his certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.
Engineering Controls:	The engineering controls and/or mechanical systems that are components of the Site remedy include an impermeable multi-layer geomembrane cap over the on-site consolidation area consisting of a low permeability layer, synthetic barrier, and vegetative layer. Maintenance of the vegetative layer is under the direction of the NYSDEC.

Inspections:	Frequency
1. Site-Wide including groundwater monitoring wells	Annually (15-month seasonal rotation)

Site Identification: 448006 Camp Summit Site, Town of Fulton, Schoharie County, NY

Monitoring:	
1. Groundwater	Biennially (30-month seasonal rotation)
Maintenance:	
1. Groundwater Monitoring Wells 2. Vegetative cover 3. Drainage Channels and Culverts	Annually, or as Needed
Reporting:	
1. Site Inspection Report	Annually
2. Site Management Report	Biennially
3. Periodic Review Report	Every 5 Years

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

1.0 INTRODUCTION

1.1 General

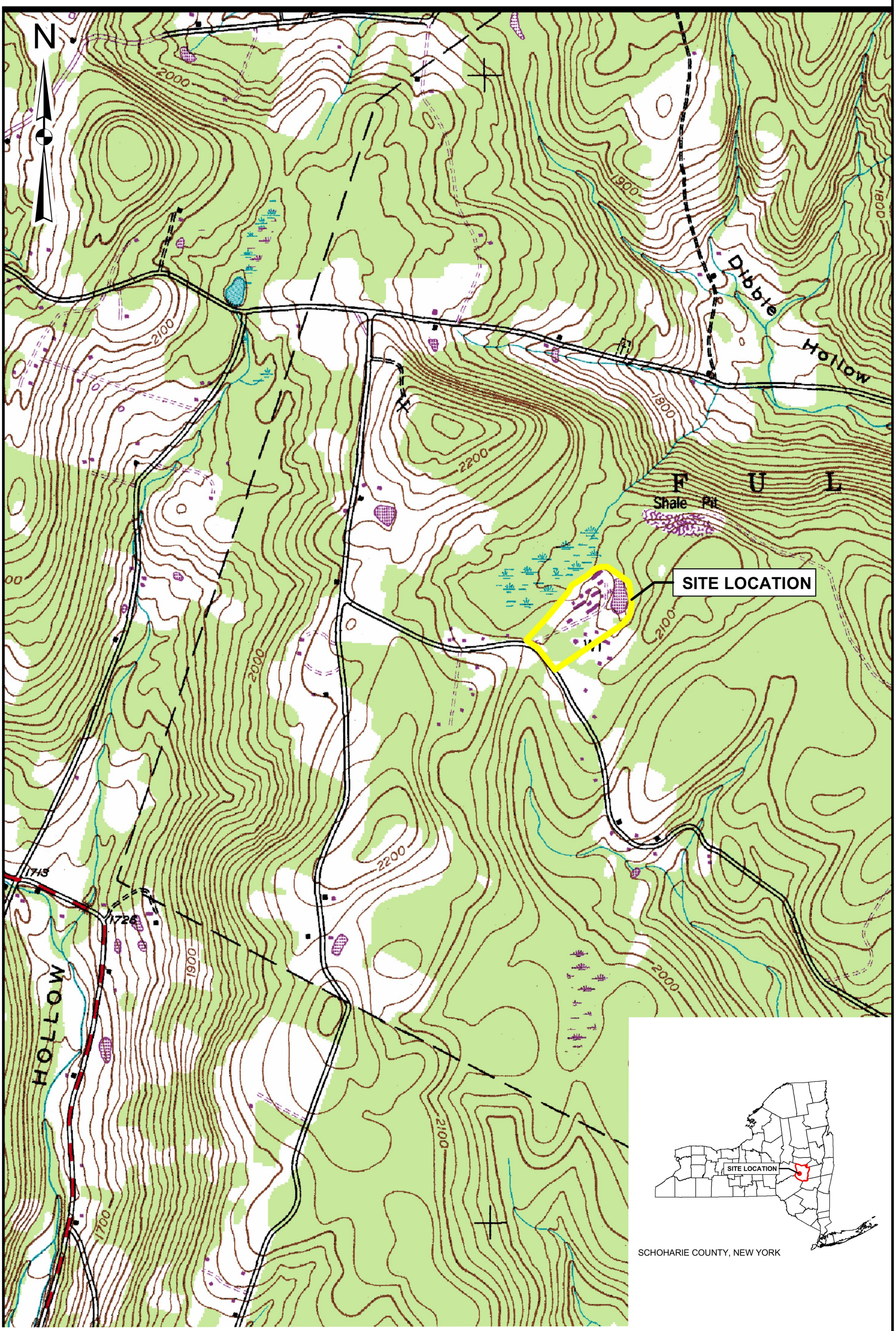
This Site Management Plan (SMP) is a required element of the remedial program for the Camp Summit Inactive Hazardous Waste Site located in the Town of Fulton, New York (hereinafter referred to as the "Site"). See **Figure 1-1** for a site location map. The Site is a New York State Department of Environmental Conservation (NYSDEC) Class 4 Inactive Hazardous Waste Disposal Site (Site Registry Number 448006) which is administered by New York State Department of Environmental Conservation (NYSDEC).

A Record of Decision (ROD) for the site was issued in March 2004 (NYSDEC 2004) to document a remedial approach consistent with the RI/FS.

Consistent with March 2004 ROD, the Site remedial action activities conducted in 2006 consisted of excavation and off-site disposal of grossly contaminated soil, followed by the consolidation of the remaining impacted soil within an on-site consolidation area constructed with an impermeable multi-layer geomembrane cap. Stormwater management controls were enhanced and/or created to accommodate the on-site consolidation area. The Site is currently classified as a Class 4 inactive hazardous waste disposal site, indicating the Site has been properly closed but requires continued site management consisting of operation, maintenance and/or monitoring. As a result of contamination remaining onsite, the Site relies on site management. Since completion of the remedial action activities at the Site, site management was performed in general conformance with the SMP (URS, July 2005) and Long Term Monitoring Plan (LTMP, URS, 2006) to ensure continued protection of human health and the environment. This revised SMP incorporates updated NYSDEC SMP requirements and takes into consideration monitoring data collected during the implementation of site management activities. Specifically, based on monitoring data this SMP eliminates the need to collect samples for volatile organic compound (VOC) analysis as there has not been a detection of VOCs above Class GA groundwater standards or guidance values in any of the monitoring events.

A figure showing the location and boundary of the Site is provided in **Figure 1-2**. The boundary of the Site is more fully described in the metes and bounds survey map that is part of the Environmental Notice 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 Controls (ICs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Notice has been prepared by the NYSDEC dated September 9, 2011. The Environmental Notice places the following restrictions on the Site: Ground Water Use Restriction, Land-use Restriction, Site Management Plan, Groundwater Monitoring Plan, and IC Plan.



SCHOHARIE COUNTY, NEW YORK

D&B ENGINEERS AND ARCHITECTS, P.C.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CAMP SUMMIT

SITE LOCATION

SCALE: N.T.S.

FIGURE 1-1

F:\3150-45W\dwg\3150-C-SP01.dwg, Layout1, 2/10/2020 1:41:09 PM, rferrell

Legend

- Monitoring Well
- Decommissioned Well
- Consolidation Cell

Note: MW-15 has not been able to be located since the October 2006 sampling event.

Source: ESRI World Imagery

D&B Engineers and Architects, P.C.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CAMP SUMMIT

SITE PLAN

100 0 100 Feet

FIGURE 1-2

Figure 2 - Site Plan.indd (04/14/20 - 9:49 AM)

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 Deed Restriction 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 Deed Restriction. Failure to properly implement the SMP is a violation of the Deed Restriction.
- Failure to comply with this SMP is also a violation of Environmental Conservation Law and 6 NYCRR Part 375, 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 D&B Engineers and Architects, P.C. on behalf of New York State Department of Environmental Conservation, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated August, 2015, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the institutional controls (ICs) and/or engineering controls (ECs) that are required by the Environmental Notice for the site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated soil, or other significant change to the site conditions. In accordance with the

Environmental Notice for the Site, the NYSDEC will provide a notice of any approved changes to the SMP and append these notices to the SMP that is retained in its files.

1.3 Notifications

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

- 60-day advance notice of any proposed changes in site use that are required under the terms of 6 NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or ECs that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

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

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

Table 1-1 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**.

Table 1-1: Notifications*

Name	**Contact Information**
Robert Strang Project Manager NYS Department of Environmental Conservation	Phone: (518) 402-8642 Email: robert.strang@dec.ny.gov
Anik Gibeau Citizen Participation Specialist NYS Department of Environmental Conservation	Phone: (518) 475-0294 Email: Anik.gibeau@dec.ny.gov
Andrew Fleck Region 4 Remediation Engineer NYS Department of Environmental Conservation	Phone: (518)357-2192 Email: Andrew.fleck@dec.ny.gov
Shaun Surani New York State Department of Health Bureau of Environmental Exposure Investigation	Phone: (518) 402-7860 Email: Shaun.surani@health.ny.gov

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

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

Camp Summit is in the Town of Fulton, Schoharie County, New York (**Figure 1**). The property is located in a New York State Reforestation Area known as the Schoharie County Reforest Area No. 6, located in a rural area in the foothills of the Catskill Mountains. The 290-acre property is owned by the NYSDEC but was operated by New York State Department of Correctional Services (NYSDCS) as an active incarceration facility from the early 1960s until it was closed in 2011. The incarceration facility comprised of a 20-acre parcel (including the main prison office building), at 137 Eagle Heights Road in the town of Fulton, Schoharie County, was sold in 2014. The inactive hazardous waste disposal site (Site) occupies approximately 12 acres situated about 300 feet south of the former main prison office building.

2.2 Physical Setting

2.2.1 Land Use

The site is bordered on the southeast by State owned land. The remainder of the property is bordered by private property, some of which is used for residential purposes. The local topography is hilly. An onsite pond feeds a tributary of Panther Creek. The tributary is a Class C (fish propagation) stream and Panther Creek is a Class C (TS) (trout spawning) stream. A NYSDEC Regulated Wetland is located approximately 0.5 miles northwest of the site.

2.2.2 Geology

Depth to bedrock across the property varies greatly, ranging from zero to 95 feet or more below ground surface (bgs). Rock outcrops are present at the ground surface in the shale quarry (northeast portion of the camp property) and site boring logs document 21 to 95 feet of overburden. In general, the top two feet of overburden consists of broken gray shale that ranges in size from

gravel to boulders. Intermixed within the shale is brown silt and sand, boulders and gray clay. Boring and well construction logs are provided as **Appendix C**.

2.2.3 Hydrogeology

Groundwater at the Site is located primarily in sand and gravel lenses within the overburden. Depth to groundwater ranges from 2 to 20 feet bgs (Shaw 2004a). Groundwater contours indicate flow in a generally northeasterly direction following surface topography toward the pond area. Boring and well construction logs for monitoring wells MW-2 through MW-14 are provided in **Appendix C**. Boring and well construction logs for monitoring wells MW-15 through MW-19 that were installed during September 2006 are not included in the project files.

2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a summary of the available project records to document key investigative and remedial milestones for the Site.

Between 1964 and 1975, Camp Summit inmates operated a sawmill and wood treatment operation. The treatment plant was constructed as a dip tank process. Initial treatment was with copper napthenate, which began during the fall of 1964, and continued for approximately one year. Pentachlorophenol (PCP) was used beginning in late 1965 or early 1966. From that time, the treatment process consisted of soaking poles and lumber in the pentachlorophenol-filled dip tanks, hanging the wood over the tanks to allow a majority of the treating material to drip off, and transporting the treated wood on a small rail cart to drip and dry in a staging area outside the building. The plant was shut down in July of 1975 due to a fish kill in the on-site pond, resulting from a spill at the treatment building.

From November 2001 through July 2003, Shaw Environmental and Infrastructure Engineering of New York, P.C. (Shaw) conducted remedial investigation (RI) activities at the site. Shaw submitted a Remedial Investigation Report in February 2004.

The primary contaminants of concern are PCP from the former lumber treatment process and dioxins/furans that were typically present in PCP formulations. Several areas of concern (AOCs), associated with stages of the lumber treatment process, were identified, and delineated to various degrees. Based on the RI Report, a Feasibility Study (FS) Report was submitted in March 2004. The FS recommended a remedial approach to address Site contaminated soils consisting of excavation and on-site consolidation with limited off-site disposal. A ROD was issued in March 2004 to delineate a remedial design consistent with the RI/FS.

Remedial activities were conducted at the Site between March 2006 and November 2006 in accordance with the March 2004 ROD. The following is a summary of the Remedial Actions performed at the Site:

- Excavation of contaminated soil within AOCs with limited off-site disposal of grossly contaminated material;
- Consolidation of most of the impacted soil and the foundations of several on-site structures that were demolished within an on-site cell, capped with an impermeable multilayer geomembrane cap;
- Temporary on-site treatment of groundwater emanating from the area of concern during remedial construction activities;
- Enhancement and the creation of stormwater management controls that will accommodate the on-site consolidation area;
- Implement groundwater-monitoring program to assess the effectiveness of the cap;
- Development of institutional controls to limit future use of the site, including restricting the use of shallow groundwater in the area subject to long term monitoring;
- Development of institutional controls to prohibit redevelopment or use of the capped area; and
- Conduct periodic certification of institutional and engineering controls.

2.4 Remediation Goals

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375 as outlined in the ROD. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- Exposures of persons at or around the site to PCP, dioxins/furans and metals in soil and groundwater;
- Environmental exposures of flora or fauna to PCP, dioxins, and metals in surface soil and groundwater; and
- The release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards.

Further, the remediation goals for the site include attaining to the extent practicable:

- Ambient groundwater quality standards; and
- Compliance with all applicable SCGs and cleanup goal.

2.5 Remaining Contamination

Impacted soil containing PCP, dioxins and furans, PAHs, arsenic, and copper remaining at the Site was consolidated within an on-site cell, under an impermeable multi-layer geomembrane cap.

Based on groundwater data collected through 2019, semi-volatile organic compounds (SVOCs), dioxins and furans, and metals remain in Site groundwater at concentrations greater than applicable NYSDEC Class GA groundwater standards. PCP concentrations currently exceed the

NYSDEC Class GA groundwater standard in MW-9 and MW-18. In addition, it should be noted that 1,4-Dioxane was detected in MW-11 at a concentration of 0.54 µg/L in 2017.

The toxicity equivalency of the detected dioxins and furans currently exceeds the NYSDEC Class GA groundwater standard of 0.7 pg/L in only two of the 14 groundwater sample locations (MW-9, MW-19).

Arsenic and copper have not been detected at concentrations exceeding NYSDEC Class GA groundwater standards in the last several groundwater samplings events. In general, metals (iron, manganese, and sodium) exceeded the NYSDEC Class GA groundwater standards across all monitoring events. However, as noted in the ROD, the presence of iron, manganese and sodium most likely represent background conditions as they are not considered to be associated with the site wood treatment operations that were discontinued in 1975.

A summary of 2019 analytical data relative to SCGs is presented in Table 1 through 4 provided in **Appendix D** and exceedances from previous sampling events are shown on **Figure 2-1**, below.

MW-13	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
SVOCs:								
bis(2-Ethylhexyl)phthalate	5	23	BC	ND	ND	ND	ND	ND
Metals:								
Iron	300	11200	5460	530	390	BC	BC	BC
Manganese	300	5160	4580	620	2500	1200	1200	310
Selenium	10	10.6	ND	ND	ND	ND	ND	ND
Sodium	20000	73100	58700	66200	37500	53600	45300	33800
Thallium	0.5	8.3	ND	ND	ND	ND	ND	ND

MW-14	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
SVOCs:								
bis(2-Ethylhexyl)phthalate	5	6	ND	ND	ND	ND	ND	ND
Dioxins & Furans:								
Toxicity Equivelency	0.7	1.3	BC	1	BC	BC	BC	ND
Metals:								
Iron	300	5150	2550	17700	2500	2500	890	4500
Manganese	300	1580	917	330	BC	BC	BC	340
Sodium	20000	90800	116000	85800	87400	82600	70200	49500

MW-09	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
SVOCs:								
Pentachlorophenol	1	ND	BC	ND	3.2	ND	ND	26
Dioxins & Furans:								
Toxicity Equivalency	0.7	BC	2.9	0.81	0.9	3.4	3.3	2.41
Metals:								
Iron	300	1900	6760	480	580	5900	3000	3100
Magnesium	35000	BC	BC	BC	BC	42500	BC	BC
Manganese	300	7690	35800	BC	5700	32100	15500	10300
Selenium	10	12.9	ND	ND	ND	ND	ND	ND
Sodium	20000	173000	1130000	109000	439000	1780000	1060000	761000
Thallium	0.5	10.1	ND	ND	ND	ND	ND	ND

MW-04	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Metals:								
Arsenic	25	ND	BC	60	BC	ND	ND	ND
Beryllium	3	ND	ND	6.5	ND	ND	ND	ND
Chromium	50	BC	ND	90	BC	BC	BC	BC
Iron	300	1350	1700	130000	5700	3900	1700	BC
Lead	25	ND	ND	100	BC	BC	BC	ND
Magnesium	35000	39600	BC	BC	46200	BC	BC	BC
Manganese	300	3320	3960	2700	4100	440	BC	BC
Nickel	100	BC	BC	140	BC	BC	BC	ND
Sodium	20000	35500	BC	26600	29000	24900	BC	BC

MW-08	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Metals:								
Iron	300	4910	4560	BC	BC	380	880	BC
Magnesium	35000	BC	36300	43200	35200	BC	BC	BC
Manganese	300	2110	2420	630	900	410	1600	350
Selenium	10	17.7	ND	ND	ND	ND	ND	ND
Sodium	20000	45500	50000	64900	73400	74000	67300	57100
Thallium	0.5	3.5	ND	ND	ND	ND	ND	ND

MW-15	CRIT	10/06
Metals:		
Iron	300	418
Manganese	300	1320
Selenium	10	10.5
Sodium	20000	55900

MW-16	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Metals:								
Iron	300	13100	8420	20300	4600	9900	1200	9900
Manganese	300	1000	655	570	BC	BC	340	BC
Thallium	0.5	3.8	ND	ND	ND	ND	ND	ND

MW-11	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Dioxins & Furans:								
Toxicity Equivalency	0.7	BC	5.1	BC	ND	ND	ND	ND
Metals:								
Iron	300	2990	748	BC	BC	BC	BC	BC
Manganese	300	811	916	BC	BC	430	360	BC
Thallium	0.5	3.1	ND	ND	ND	ND	ND	ND

MW-02	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
SVOCs:								
Pentachlorophenol	1	ND	2	ND	ND	4.8	ND	ND
Dioxins & Furans:								
Toxicity Equivalency	0.7	1	BC	1.4	BC	BC	ND	BC
Metals:								
Iron	300	1040	1110	BC	2000	5600	5600	BC
Manganese	300	3170	6220	3500	13400	17500	14000	1700
Sodium	20000	104000	152000	46900	76100	79900	61400	31300
Thallium	0.5	4.4	ND	ND	ND	ND	ND	ND

MW-03	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Dioxins & Furans:								
Toxicity Equivalency	0.7	1.7	BC	BC	BC	BC	BC	BC
Metals:								
Iron	300	6020	8800	1700	10700	9700	1200	1000
Manganese	300	9130	8800	2400	8800	8200	1700	1500
Sodium	20000	74500	47400	BC	BC	BC	BC	BC
Thallium	0.5	9.6	ND	ND	ND	ND	ND	ND

MW-19	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Dioxins & Furans:								
Toxicity Equivalency	0.7	3.2	BC	6.6	1.63	5.7	6.6	7.89
Metals:								
Iron	300	10400	15600	4200	34400	10500	14900	10200
Manganese	300	6930	9040	3400	4100	4800	4400	3600
Thallium	0.5	6.3	ND	ND	ND	ND	ND	ND

MW-05	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Metals:								
Iron	300	3070	1690	3200	430	4200	BC	410
Manganese	300	1010	1100	600	BC	BC	BC	BC
Selenium	10	12.4	ND	ND	ND	ND	ND	ND
Sodium	20000	20800	BC	BC	BC	BC	BC	BC

MW-18	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
SVOCs:								
Pentachlorophenol	1	12	16	ND	10	4.9	ND	4.3J
Metals:								
Iron	300	745	2510	1800	4500	BC	370	BC
Manganese	300	1660	1660	BC	7000	BC	BC	1500
Sodium	20000	BC	BC	42500	BC	BC	BC	BC

MW-17	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Metals:								
Iron	300	385	773	1200	BC	920	750	BC
Lead	25	ND	ND	ND	ND	ND	30	ND
Manganese	300	851	486	BC	BC	BC	BC	BC

MW-10	CRIT	10/06	6/07	3/13	9/14	9/15	12/17	6/19
Metals:								
Iron	300	1100	1510	BC	400	BC	650	BC
Manganese	300	568	612	BC	370	380	520	BC

Source: ESRI World Imagery

D&B Engineers and Architects, P.C.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CAMP SUMMIT

GROUNDWATER ANALYTICAL EXCEEDANCES

100 0 100 Feet

FIGURE 2-1

Figure 4 - GW Exceedances.indd (04/14/20 - 9:59 AM)

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

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

This plan provides:

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

3.2 Institutional Controls

A series of ICs is required by the ROD to: prevent future exposure to remaining contamination by controlling disturbances of the contamination; prohibit the Site from ever being used for purposes other than for its current land use as a landfill; and limit the use of the groundwater without proper treatment. Adherence to these ICs on the site is required by the Environmental Notice and will be implemented under this SMP. ICs identified in the

Environmental Notice may not be discontinued without an amendment to or extinguishment of the Environmental Easement. These ICs are:

- Compliance with the Environmental Notice and this SMP by the Grantor and the Grantor's successors and assigns;
- Groundwater, soil vapor and other environmental or public health monitoring must be performed as defined in this SMP; and
- 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.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- Require compliance with the approved SMP;
- Prohibit the use and development of the capped area;
- Restrict the use of shallow groundwater as a source of potable or process water without the necessary water quality treatment;
- Evaluate the potential for vapor intrusion for any buildings developed on the site, including provisions for mitigation of any impacts;
- Require the property owner to complete and submit to the NYSDEC a periodic certification to insure compliance with the use restrictions; and
- The site owner or remedial party will submit to NYSDEC a written statement 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. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

3.2.1 Soil Vapor Intrusion Evaluation for New Construction

As identified above, and as presented in the ROD (NYSDEC, 2004), continued evaluation of the potential for vapor intrusion must be conducted for any buildings developed on the site, including provision for mitigation of any impacts identified.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York". Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

If buildings developed at Site require an active SSD system, the active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH. If monitoring data indicates that the SSD system may no longer be required, a proposal to discontinue the SSD system will be submitted by the remedial party to the NYSDEC and NYSDOH.

3.3 Engineering Controls

Exposure to remaining contamination at the Site is prevented by an impermeable multi-layer geomembrane cap over the on-Site consolidation cell. **Figure 1-2** presents the location of the on-Site consolidation cell. The EWP provided in **Appendix E** outlines the procedures required

to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. 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) provided in **Appendix F** and associated Community Air Monitoring Plan (CAMP) prepared for the specific site activities.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

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

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

- Sampling and analysis of groundwater.
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards.
- 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.
- Analytical sampling program requirements.
- Inspection and maintenance requirements for monitoring wells.
- Monitoring well decommissioning procedures.
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site-Wide Inspection

A comprehensive Site-wide inspection will be performed once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. The following remedial components will be included in this inspection:

- Cap Grading
- Cap Vegetation
- Drainage Channels
- Perimeter Access Road
- Culverts
- Groundwater Monitoring Wells
- Gates, Fences, and other Security Features.
- Gas Vents

During these inspections, an inspection form will be completed as provided in **Appendix H** – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage.
- General site conditions at the time of the inspection.
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection.
- Confirm that site records are up to date.

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:

- Compliance with requirements of this SMP and the Deed Restriction.

- Achievement of remedial performance criteria.
- If site records are complete and up to date.

Reporting requirements are outlined in Section 7.0 of this plan.

4.2.1 Routine Inspection

This section covers the annual routine inspection and maintenance of the consolidation area cap, the stormwater management system, and other miscellaneous features of the remediation. Should inspectors find other problems, corrective action such as those described below in non-routine maintenance will be developed.

Cap Grading

Cap grading promotes controlled drainage by eliminating depressions in the cap. Depressions can reoccur after closure due to decomposition/settling of the underlying waste. Only minor settlement of the Site consolidation area is anticipated because underlying waste is comprised almost entirely of compacted soil, but excessive or localized settlement could cause subsidence which could cause water to pond or concentrate runoff. Ponded water could kill vegetation, promote cap veneer instability, or promote infiltration through the cap into the underlying waste. Concentrated runoff, where stormwater collects as shallow concentrated flow, can lead to significant erosion of the cover soil.

Significant depressions may also cause rupture of the underlying cap components, including the gas vent layer/piping, geomembrane or geosynthetic clay liner seams. Though such damage would be difficult to identify without subsurface investigation, the possibility of such damage should be borne in mind when evaluating the impact of subsidence and other changes in cap grading.

Check for the following:

- Obvious subsidence, depressions, or cracks;
- Evidence of ponded water;
- Stressed vegetation;
- Evidence of signs of erosion occurring at a localized change in grade;
- Evidence of breaching of drainage channel side walls; and
- Animal burrows.

Cap Vegetation

Cap Vegetation prevents erosion of the cap soils. Inadequate cap vegetation will allow erosion to occur in the barren area, and could be caused by mowing too low, inadequate moisture, soil compaction, infertile soils, bad seed, ponded water, methane leakage from the gas venting layer/pipes, or other causes.

Check for the following:

- Areas of sparse, dead, or missing vegetation;
- Small rill erosion; and
- Animal burrows.

Drainage Channels.

Drainage channels include the lined channels, both adjacent to, and away from the consolidation area cap. The vegetated/stone lining functions to prevent erosion and maintain tranquil (slow) flow of the collected stormwater.

Check for the following:

- Missing or displaced stones and areas of stressed vegetation;
- Woody vegetation growing in the channels;
- Signs of breaching of the channel walls; and
- Accumulated debris in the channels.

Perimeter Access Road

Perimeter access road provides access around the cap outside of the drainage channels.

Check for the following:

- The condition of the road surface; and
- Signs of ponding or erosion within the adjacent lined channels.

Culverts

Culverts allow flow under the perimeter access roads and into the downgradient pond. Failure of a culvert could be caused by one or more of the following: blockage, which would pond water behind the culvert; seepage through the culvert bedding, causing material loss and ultimately the undermining of the road; and corrosion of the culvert and loss of strength, particularly in the invert. The outlet protection (stone aprons) must also be inspected; a small amount of displaced stones is typically not of concern, unless the displacement (scour hole) appears to be worsening. A small, stable scour hole is acceptable.

Check for the following:

- Blockage of the culvert inlet;
- Signs of seepage around the outside of the culverts;

- Evidence of localized subsidence in the road surface above the culvert;
- Corrosion of the culverts and end sections; and
- Significant or on-going displacement of stones in the culvert outlet protection.

Groundwater Monitoring Wells

Groundwater monitoring wells allow for sampling and monitoring of groundwater at the site in proximity to the consolidated area cap and remediated areas.

Monitoring wells listed in **Table 4-2**, below, should be checked for the following:

- Signs of damage to the casing or collar;
- Degraded condition of the lock and cover;
- Degraded condition of the weep hole from casing; and
- Evidence of tampering.

Gates, Fences, and other Security Features

Gates. fences, and other security features should be fully inspected at each visit to ensure that no unauthorized access is occurring to the site. Additionally, signs of other site usage should be noted.

Check for the following:

- Cutting or bending or fence fabric;
- Missing locks, hinges, etc. from gates;
- Motorbike or snowmobile tracks;
- Shotgun shell casings;
- Cans or other trash; and

- Other signs of unauthorized access or vandalism.

Gas Vents

Gas vents installed in the consolidation area cap allow for gases resulting from the decay of the organic components of the waste fill, to escape to the atmosphere.

Check for the following:

- Plumbness and differential settlement of the pipes;
- Corrosion or loss of integrity of the pipes and joints; and
- Obstruction of vents by bird, insect, or animal nests.

4.2.2 Non-Routine Inspections

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster occurs that reduces or has the potential to reduce the effectiveness of the Site remedy, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the ICs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Post Remediation Groundwater Sampling

Samples shall be collected from the overburden groundwater monitoring wells on an biennial basis with a seasonal rotation and will include all 14 monitoring wells (MW-02, MW-03, MW-04, MW-05, MW-08, MW-09, MW-10, MW-11, MW-13, MW-14, MW-16, MW-17, MW-18, and MW-19). The required analytical parameters, containers, recommended sample volume and preservation requirement are provided in **Table 4-1** – Analytical Methods, Sample Container,

Sample Volume and Preservation below. Modification to the frequency or sampling requirements will require approval from the NYSDEC. Detailed sample collection and analytical procedures and protocols are provided in **Appendix G** – QAPP.

Table 4-1 – Analytical Parameters, Containers, Sample Volume and Preservation

Analytical Parameters	Method Number/Reference	Container/Sample Volume	Preservation
Water			
TCL Semi-volatile Organic Compounds (SVOCs)	8270D	Amber Glass/ 2 x 1 Liter	Cool, 4°C
TAL Metals	6010C/7470A	HDPE / 1 x 500mL	HNO_3 to pH < 2
Polychlorinated dibenzo-p-dioxins (PCDDs) / Polychlorinated dibenzofurans (PCDFs)	8290A	Amber Glass/ 2 x 1 Liter	Cool, 4°C

The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the site. The network of on-site and offsite wells (**Figure 1-2**) consists of permanent overburden monitoring wells. Groundwater elevations observed in December 2019 ranged from 1.19 to 12.95 feet below top of riser. Historical groundwater elevations are presented in **Appendix I**.

Monitoring well construction details are provided in **Table 4-2** (below) and monitoring well construction logs are included in **Appendix C** of this document.

Table 4-2 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	*	Northing (feet)	Easting (feet)	Screen Interval (ft bgs)	Top of Casing (ft amsl)	Top of Riser (ft amsl)
MW-2	Downgradient	1	1358926.0760	482574.8046	3-8	2051.84	2051.81
MW-3	Downgradient	1	1358892.4751	482670.5368	3-8	2050.15	2050.05
MW-4	Downgradient	1	1358819.5748	482480.8621	5-15	2060.33	2059.81
MW-5	Downgradient	1	1358727.2392	482578.2420	7.5-17.5	2057.54	2057.20
MW-8	Sidegradient	2	1358707.3953	482341.6476	7-17	2075.05	2074.22
MW-9	Sidegradient	2	1358826.6939	482315.2543	6-16	NA	2075.38
MW-10	Upgradient	1	1358324.1324	482650.6541	9-19	2084.47	2084.10
MW-11	Upgradient	1	1358335.9044	482529.6228	8-18	2081.89	2081.50
MW-13	Sidegradient	2	1358950.9134	482509.5011	9-19	2051.00	2050.79
MW-14	Sidegradient	2	1358916.2584	482423.8023	12-22	NA	2068.29
MW-16	Upgradient	1	1358428.8066	482345.3693	7-17	2079.41	2078.76
MW-17	Downgradient	1	1358596.4391	482736.1721	3.5-13.5	2072.48	2072.02
MW-18	Downgradient	1	1358677.9890	482685.0970	3-7	2059.32	2059.08
MW-19	Downgradient	1	1358846.8049	482751.0157	3-13	2055.17	2054.62

NOTES:

*–Survey Data Source

1 - Lawson Surveying and Mapping, September 27, 2006

2 - Susan M. Anacker, PLS, October 22, 2004 (MW-9 and MW-14 assumed to be top of riser)

(1) –New York State Plane Coordinate System and Vertical Datum not specified.

(2) – NA - Survey data for these locations is not available.

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

4.3.1 Soil Vapor Intrusion Sampling

As identified above, and as presented in the ROD (NYSDEC, 2004), continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified.

4.3.2 Monitoring and Sampling Protocol

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

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

The Site remedy does not rely on any active 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. However, the Site remedy does rely on passive mechanical systems to monitor and/or protect public health and the environment.

5.1.1 Routine Maintenance

Routine maintenance for the Site includes maintenance of the following components:

- Cap Vegetation;
- Drainage Channels and Culverts; and
- Monitoring Well Repairs, Replacement and Decommissioning.

Cap Vegetation

Mowing shall be performed at least annually, or as necessary, to maintain a dense vegetation cover on the cap, and to suppress the growth of woody vegetation. Mowing height shall be no lower than 6 inches. Mowing should be scheduled during a period of dry weather to prevent scarring and/or rutting of the surface.

Drainage Channels and Culverts

Woody vegetation should also be removed from within the lining of the drainage channels on an annual basis, or as necessary. Herbaceous vegetation can remain and should be maintained in the same manner as the cap vegetation. The drainage channels and culverts (upstream and downstream) will be maintained by cleaning to keep the systems clear of sediment, excessive plant

growth and accumulated debris to prevent ponding or overflow. Sediment, debris, or other materials collected from the drainage channels and culverts will be properly disposed of off-site or spread-out on-site in the case of sediment and/or non-woody vegetative matter.

Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring and/or injection wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable and the NYSDEC determines that replacement is necessary.

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 will be notified prior to any repair, decommissioning or replacement of monitoring and/or injection wells. Any repair, decommissioning or replacement will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's documented entitled "CP-43: Groundwater Monitoring Well Decommissioning Policy", dated November 2009. Wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

5.1.2 Non-Routine Maintenance

Non-routine final cover maintenance will be undertaken if signs of excessive differential settlement or subsidence of the final cover system are found during routine inspections, which could affect the proper functioning of the final cover. These areas will be regraded and reseeded as soon as the area can be safely accessed.

Minor repairs to the final cover system will be completed as needed, as determined by the final cover system inspections. Minor repairs will generally consist of regrading, reseeding, and

stabilization activities to repair erosion features or depressions caused by the settlement of waste. All repairs will be performed using low ground pressure type equipment suitable for fine grading. Additional soil suitable for the development of vegetation will be placed and graded as necessary. The soil will be placed in a manner to match the surrounding grade and the area will be reseeded either by broadcasting or hydroseeding, depending on the size of the repair. Temporary erosion controls such as tack mulch, rolled erosion fabrics, and silt fences will be installed, as necessary.

In general, regarding, seeding and stabilization activities will be performed in accordance with applicable sections of the specifications and drawings developed during the landfill closure design and NYSDEC's document entitled "DER-10 Technical Guidance for Site Investigation and Remediation", dated May 2010.

Erosion control will be performed in a manner consistent with procedures set forth in NYSDEC's document entitled "New York Standards and Specifications for Erosion and Sediment Control", dated August 2005. Erosion and sediment control procedures will be developed and implemented as necessary to prevent erosion and sediment migration based on the actual site conditions and surface water drainage patterns at the time of work. All erosion and sediment control procedures will be maintained until suitable vegetation has been established.

If final cover differential settlement is suspected to have potentially compromised one or more of the deeper layers of the final cover such as the geotextile or geomembrane, a qualified engineer will inspect the area of final cover in question. The engineer will then decide as to whether excavation down to the geosynthetic layers is necessary to facilitate inspection and possible repair. If necessary, excavation of topsoil and the various barrier protection soil layers will be completed in the area of settlement, and at least 4 to 5 feet beyond, to expose a sufficient portion of the geosynthetic layers for inspection/repair.

The engineer will then complete inspection of the geosynthetic layers, noting items such as stress/deformation and/or trampolining of geosynthetics, damaged seams, or other visible damage. The area will be inspected to assess underlying subgrade. If deemed necessary, the geosynthetic layers will be removed to evaluate the underlying layer/subgrade. Prior to restoration of the geosynthetic layers, compaction may be performed to further consolidate waste beneath the final cover to reduce the potential for additional future settlement. Structural fill soil may also be

placed above the waste layer to match surrounding grades and provide a suitable subgrade for the geosynthetics repair, if necessary. The geosynthetics would then be reinstalled over the area by a qualified geosynthetics installer in accordance with the specifications approved during the design, as may be adjusted based on prevailing practice. Due to availability of qualified installers and/or ability to perform repairs based on site conditions/weather, a temporary patch of low permeability soil and/or geomembrane cover may be placed over the area prior to making the final repairs. Finally, soil suitable for the development of vegetative cover will be placed over the restored portion of the final cover. Stabilization and reseeding will be completed in a manner consistent with procedures set forth in NYSDEC's entitled "New York Standards and Specifications for Erosion and Sediment Control".

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

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

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 located in an area of minimal flooding; however, flooding may occur during instances of severe weather. If flooding does occur in the future it is not expected to affect the monitoring well network as currently installed. The site and will be inspected annually and after any significant weather event to evaluate the condition of the site.

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).

Waste Generation

Monitoring, maintenance and reporting activities associated with the groundwater sampling result in material consumption and the generation of waste. A summary of the current material consumption and waste generation activities for the groundwater monitoring are summarized below:

- Personal protective equipment associated with groundwater sampling, such as disposable gloves, etc.;
- Polyethylene tubing for groundwater sampling events.;
- Packaging material and ice used to pack and preserve samples to be submitted for laboratory analysis;
- Paper and office supplies associated with monitoring logs, groundwater injections and report preparation; and
- Repair and replacement of monitoring wells.

Fossil Fuel Usage

Groundwater monitoring does not directly use fossil fuels as part of its routine operation; however, fossil fuels are indirectly used during the completion of groundwater monitoring. Indirect fossil fuel use results from completion of the following Site related activities:

- Transportation to and from the Site for monitoring and sampling; and
- Off-site transportation and shipment of samples collected for laboratory analysis.

Water Usage

Minimal amounts of water are used during groundwater sampling to decontaminate sampling equipment.

Efforts will be made to minimize to the extent practicable the energy consumption, waste generation and water usage for implementation of this SMP.

6.2.1 Timing of Green Remediation Evaluations

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

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

6.2.2 Frequency of Sampling and Other Periodic Activities

Transportation to and from the Site and use of consumables in relation to visiting the Site in order to collect and ship 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. The initial sampling frequency will be annually with a 15-month seasonal rotation to save resources and obtain seasonal variation data. The sampling period may be increased as results are obtained, contaminant levels stabilize and where contaminant rebound is not occurring. Recommendations regarding modifications to the sampling frequency and other periodic activities will be presented in the PRR for Department approval.

6.2.3 Metrics and Reporting

As discussed in Section 7.0 and as shown in **Appendix H** – Site Management Forms, information on energy usage, solid waste generation, transportation and shipping, water usage and land use and ecosystems will be recorded to facilitate and document consistent implementation of

green remediation during site management and to identify corresponding benefits; a set of metrics has been developed.

6.3 Remedial System Optimization

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC 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;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

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

The RSO study will focus on overall site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to site operations to increase efficiency, cost effectiveness and remedial time frames.

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 H**. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of **Table 7-1** and summarized in the Periodic Review Report.

Table 7-1: Schedule of Interim Monitoring/Inspection Reports

Task/Report	**Reporting Frequency***
Site-Wide Inspection	Annually
Site Management Report	Biennially
Periodic Review Report	Every 5 Years

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

All interim monitoring/inspections reports (to be prepared on an as-needed basis) will include, at a minimum:

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

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

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 to the Department every five (5) years. 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** – Environmental Notice. 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 ICs required by the remedy for the site;

- Results of the required annual site inspections and severe condition inspections, if applicable;

- Summary of any maintenance injections completed, if applicable;

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

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

- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends; and

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

- A site evaluation, which includes the following:

  – The compliance of the remedy with the requirements of the site-specific ROD;

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

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

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

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

  – The overall performance and effectiveness of the remedy.

A quantitative and qualitative overview of a site's environmental impacts must be provided through the completion of the Summary of Green Remediation Metrics provided in **Appendix J**.

This form as well as a summary of the Green Remediation evaluation will be included in the Periodic Review Report.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a Professional Engineer licensed to practice 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/or engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental notice;*
- *The engineering control systems are performing as designed and are effective (if applicable);*
- *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/Remedial Party or Owner's/Remedial Party's Designated Site Representative]. I have been authorized and designated by all site owners/remedial parties to sign this certification for the site."

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

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

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed, the RSO activities, findings and recommendations will be summarized in an RSO report which shall be submitted to the Department for approval. A general outline for the RSO report is provided in **Appendix K**. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present

recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

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

8.0 REFERENCES

D&B, 2020. *Periodic Review Report, Camp Summit Site, Town of Fulton, Schoharie County, New York.* (April 2020).

URS, 2018. *Site Monitoring Report for 2017, Camp Summit Site, NYSDEC Site Number 448006, Town of Fulton, Schoharie County, New York.* (March 2018).

URS, 2015. *Site Monitoring Report for 2015, Camp Summit Site, NYSDEC Site Number 448006, Town of Fulton, Schoharie County, New York.* (October 2016).

URS, 2014. *Site Monitoring Report for 2014, Camp Summit Site, NYSDEC Site Number 448006, Town of Fulton, Schoharie County, New York.* (December 2014).

URS, 2013. *Site Monitoring Report for 2013, Camp Summit Site, NYSDEC Site Number 448006, Town of Fulton, Schoharie County, New York.* (June 2013).

URS, 2007. *2007 Annual Groundwater Monitoring Report, Camp Summit Site, NYSDEC Site Number 448006, Town of Fulton, Schoharie County, New York.* (October 2007).

URS, 2007. *2006 Annual Groundwater Monitoring Report, Camp Summit Site, NYSDEC Site Number 448006, Town of Fulton, Schoharie County, New York.* (August 2007).

URS, 2006. *Long Term Monitoring Plan, Camp Summit Site, Town of Fulton, Schoharie County, New York.* (August 2006).

URS, 2005. *Site Management Plan, Camp Summit Site, Town of Fulton, Schoharie County, New York.* (July 2005).

NYSDEC, 2004. *Record of Decision, Camp Summit Site, State Superfund Project, Town of Fulton, Schoharie County, NYSDEC Site Number 448006.* (March 2004).

APPENDIX A

ENVIRONMENTAL NOTICE

ENVIRONMENTAL NOTICE

THIS ENVIRONMENTAL NOTICE is made the 9th day of September 2011, by the New York State Department of Environmental Conservation (Department), having an office for the transaction of business at 625 Broadway, Albany, New York 12233

WHEREAS, that parcel of real property located at the address of 137 Eagle Heights Road, in the Town of Fulton, County of Schoharie and State of New York, known and designated on the tax map of the County Clerk of Schoharie and tax map parcel numbers: 125-1-5, being the same as that property conveyed by deed dated July 5, 1940 and recorded in the office of the Schoharie County Clerk on July 10, 1940 in book 225 of deeds at page 351. Commencing from lots 1, 8. 7 and 9 with its east side residing in the Town of Fulton, County of Herkimer, State of New York, the property being more particularly described in Metes and Bounds description and attached hereto as Appendix "A" to this notice and made a part hereof, and hereinafter referred to as "the Property" and is the subject of a remedial program performed by the Department; and

WHEREAS, the Department approved a cleanup to address contamination disposed at the Property and such cleanup was conditioned upon certain limitations.

NOW, THEREFORE, the Department provides notice that:

FIRST, the part of lands subject to this Environmental Notice is as shown on a map attached to this Notice 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 disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results or may result in a significantly increased threat of harm or damage at any site as a result of exposure to soils. A violation of this provision is a violation of 6 NYCRR 375-1.1 1(b)(2).

THIRD, no person shall disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of engineering controls required for the Remedy, including but not limited to those engineering controls described in the SMP and listed below, unless in each instance they first obtain a written waiver of such prohibition from the Department or Relevant Agency.

FOURTH, the owners of the Property shall prohibit the Property from ever being used for purposes other than for its current land use as a landfill without the express written waiver of such prohibition by the Department or Relevant Agency.

FIFTH, the no person shall use the groundwater underlying the Property without treatment rendering it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the Department or Relevant Agency. Use of the groundwater without appropriate treatment may result in a significantly increased threat of harm or damage at

any site.

SIXTH, it is a violation of 6 NYCRR 375-1.11(b) to use the Property in a manner inconsistent with this environmental notice.

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

By: _____
Dale A. Desnoyers, Director
Division of Environmental Remediation

STATE OF NEW YORK) ss:
COUNTY OF ALBANY)

On the 9th day of September in the year 2011, before me, the undersigned, personally appeared Dale Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public – State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

Camp Summit
137 Eagle Heights Rd Fulton
Fulton, NY
Tax Map: 125-1-5

APPENDIX "A"

METES AND BOUNDS DESCRIPTION

ALL THAT CERTAIN PLOT, piece or parcel of land situate, lying and being in the Town of Fulton, County of Schoharie and State of New York; being more particularly bounded and described as follows:

BEGINNING AT THE COMMON CORNER of lots 1, 8, 7 and 9, a point marked by a point with its east side and running from this along land now owned by said people with the following two courses and distances:

1) Along the land owned by the said people, South 38°-11' West along the dividing line between lots 2 and 7, a distance of 2016.3 feet to a point; thence
2) Along the same, South 45°-07'-East, a distance of 742.5 feet to another point: thence
3) Along the same, South 40°-00'- West along land owned by now or formerly known by Harvey Ryder 1240.8 feet to the dividing line between lots 2 and 3; thence
4) Along the same, North 58°-08'-West along said dividing line between said lots and being also land owned by said people that is 528 feet to the common corner of lots 2, 3 and 8; thence
5) Along the same, North 50°-25'-West along dividing lines between lots 6 and 7 and being also along land owned by said people which is 756.36 feet from a point; thence
6) Along the same, North 48°-14'-West along the dividing line between lots 6 and 7 and 10 and 11 and being also 3921.06 feet from the most westerly corner of said lot 10; thence
7) Along the same, North 35°-50' East along the northwesterly line of said lot 10 and being 2514.6 feet from the most northerly corner of said lot 10; thence

8) Along the same, South 52°-16' East along the dividing lines between lots 9 and 10, and 7 and 8 and being also along a line of distance 3646.5 feet from a point; thence

9) Along the same, South 60°-04'-East along the dividing line between lots 7 and 8and being also along land now owned by said people that is 928.62 feet from the point of beginning.

Containing 290.96 acres.

Parcel Information Sheet

Schoharie County RPTO

Tax Map Number	125.-1-5
Owner 1	State Of New York
Owner 2	
Acres	290.96
Frontage	400
Prop Class Code	930
Prop Class	State forest
School District	Middleburgh
Property Address	137 EAGLE HEIGHTS RD
Book	225
Page	351
Land Value	306126
Total Value	306126
Town	Fulton

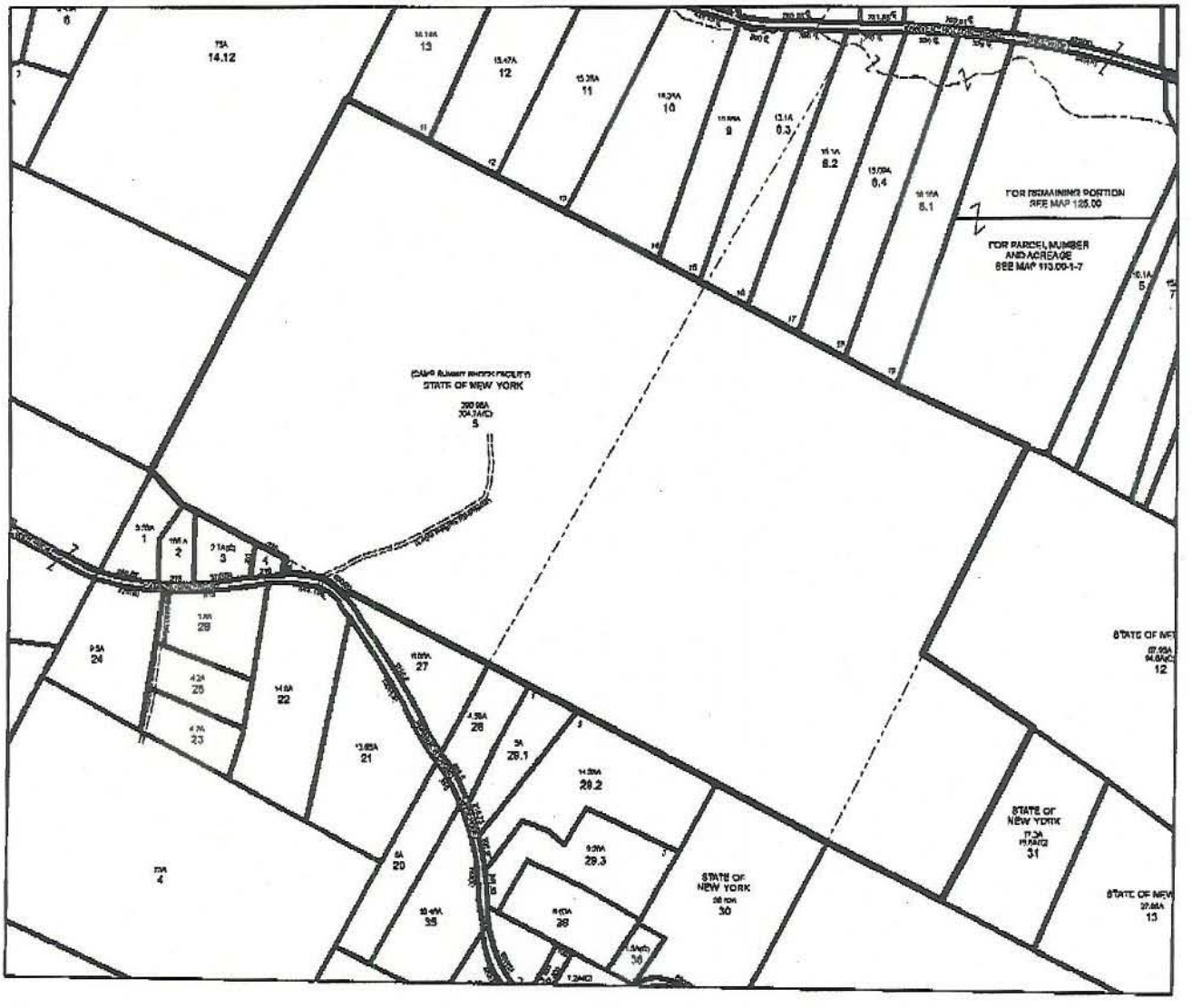
1 " = 1000 '

N

IMPORTANT NOTICE AND DISCLAIMER

The owner and deed reference information provided may be incomplete. Abstract verification is the user's responsibility.

This map and information is provided as is. We make no warranties or guarantees, expressed or implied. The user assumes all risks and responsibility for determining whether this map is sufficient for purposes intended. The data is deemed reliable but not guaranteed.



Chicago Title Insurance Company

Rochester Office
19 West Main Street, Suite 100
Rochester, NY 14614
Office 585-546-6350
Fax: 585-546-4236
Email: susan.hindmarsh@ctt.com

Last Owner Report

Date: 9/7/2011

Chicago Title Search No.: 1116-98218 **AECOM Site #4-48-06**

Address: 137 Eagle Heights Rd., **Town: Fulton**

Assessed to: State of New York

Tax Map No. 125-1-5 **Acreage: 290.96**

Class Code: 930 (State Owned Forest)

A Last Owner Search has been conducted against the name(s) of The People of the State of New York and The State of New York at the property located at 137 Eagle Heights Road from 7/04/40 to 5/19/11 in the Schoharie County Clerk's Office:

1. Deed between Tobia Wayman and Robie Wayman, his wife to The People of the State of New York dated 7/5/1940 and recorded 7/10/1940 in Liber 225 at page 351.

Chicago Title of New York does hereby certify that the records of the above governmental agency were examined. The information reported above is true and accurate of the information reported therein and no liability is assumed. This report is submitted for information purposes only.

BK: 225

Pg: 351

Recorded and examined
July 8, 1940--8:15 A.M.
Florence S. West
COUNTY CLERK
Florence S. West, Clerk.

Reforestation-Schoharie 6-D

THIS INDENTURE

Made the Fifth day of July in the year nineteen hundred forty

BETWEEN TOBIAS WAYMAN and ROBIE WAYMAN, his wife, both of the Town of Fulton, County of Schoharie and State of New York, parties of the first part,

AND THE PEOPLE OF THE STATE OF NEW YORK, parties of the second part.

WITNESSETH, That the parties of the first part, in consideration of ONE THOUSAND ONE HUNDRED SIXTY-THREE and 84/100 DOLLARS ($1,163.84) lawful money of the United States, paid by the parties of the second part, do hereby grant and release unto the said parties of the second part, and their successors and assigns forever, all that tract or parcel of land situate as follows:

State of New York
County of Schoharie
Town of Fulton
Butler's Patent (Usually known as Stroesburgh Patent)
Second Tract, West end

All of Lots 7 and 10 and part of Lot 2, said lots and part of lot together being bounded and described as follows:

BEGINNING at the common corner of lots 1, 2, 7 and 8, a point marked by an ash tree with a tack in its east side and running from thence along land now owned by said People and being also along wire fences the following two courses and distances:
S. 38° 11' W. along the dividing line between lots 2 and 7, 20.55 chains to a hemlock stake and stones and S. 45° 07' E. 11.25 chains to a hemlock stake and stones, being also a point marked by a blazed maple tree; thence S. 40° 00' W. along land owned now or formerly by Harvey Ryder 19.80 chains to the dividing line between lots 2 and 3, a point marked by a hemlock stake and stones; thence N. 58° 05' W. along said dividing line between lots 2 and 3 and being also along land now owned by said People and being also along a stone wall in part and a wire fence in part 8.00 chains to the common corner of lots 2, 3 6 and 7; thence N. 50° 25' W. along the dividing line between lots 6 and 7 and being also along land now owned by said People and being also along a stone wall 11.46 chains to a hemlock stake and stones; thence N. 48° 14' W. along the dividing lines between lots 6 and 7 and 10 and 11 and being also along stone walls in part and wire fences in part 59.41 chains to the most westerly corner of said lot 10, a point marked by a hemlock stake and stones; thence N. 36° 00' E. along the northwesterly line of said lot 10 and being also along a wire fence in part, a stone wall in part and a blazed line in part 38.10 chains to the most northerly corner of said lot 10, a point marked by a found iron pin and stones; thence S. 52° 15' E. along the dividing lines between lots 9 and 10, and 7 and 8 and being also along a blazed line in part, a wire fence in part and a stone wall in part, 55.25 chains to an ironwood stake and stones; thence S. 50° 04' E. along the dividing line between lots

7 and 8 and being also along land now owned by said People and being also along a stone wall in part and a wire fence in part 14.07 chains to the point of beginning.

Containing 290.95 acres, be the same more or less.

All bearings are referred to magnetic north 1933.

All as shown on a map of Schoharie County Reforestation Area No. 6, Proposal D, made for the Conservation Department by E. Tremper, following a survey made for said department by said Tremper; survey and map having been completed April 30, 1940; said map being now on file in the office of said department in Albany, N. Y.

Reserving, however, to the parties of the first part, their successors or assigns, for a period of one year from the date of the recording of this deed the right to remove any or all of the buildings now standing on the hereby conveyed premises.

This conveyance is made subject, however, to a timber agreement made under date of Aug. 12, 1939 between the parties of the first part hereto and Frank Churchill, which said agreement and all rights thereunder expire on January 1st, 1942.

TOGETHER with the appurtenances of all the estate, rights and interest of the parties of the first part in and to said premises.

TO HAVE AND TO HOLD, the above granted premises unto the said parties of the second part, their successors and assigns forever.

And the said parties of the first part do covenant with said parties of the second part as follows:

FIRST. That said parties of the first part are seized of said premises in fee simple, and have good right to convey the same;

SECOND. That the parties of the second part shall quietly enjoy the said premises;

THIRD. That said premises are free from incumbrances;

FOURTH. That said parties of the first part will execute or procure any further necessary assurance of the title to said premises;

FIFTH. That said parties of the first part will forever WARRANT the title to said premises.

SIXTH. That, if any improvements, repairs or alterations have been commenced upon the foregoing premises and have not been completed at least four months before the making and recording of this deed, the grantors will receive the consideration for this conveyance as a trust fund to be applied first for the purpose of paying the cost of the improvements, and that the grantors will apply the same first to the payment of the cost of the improvements before using any part of the total of the same for any other purpose.

IN WITNESS WHEREOF, the said parties of the first part have hereunto set their hands and seals the day and year first above written.

IN PRESENCE OF — Tobias Wayman (L.S.)

Francis L. Smith — Robie Wayman (L.S.)

STATE OF NEW YORK)
) ss.:
COUNTY OF SCHOHARIE)

On this Fifth day of July in the year one thousand nine hundred forty before me, the subscriber, personally came TOBIAS WAYMAN and ROBIE WAYMAN, his wife, to me known to be the persons described in and who executed the within instrument, and they each duly acknowledged that they executed the same.

Francis L. Smith
Notary Public.
Schoharie County NY

Recorded and examined
July 10, 1940--11 A.M.
Florence S. West, Clerk.
County Clerk

Parcel Information Sheet

Schoharie County RPTO

Tax Map Number	125.-1-5
Owner 1	State Of New York
Owner 2	
Acres	290.96
Frontage	400
Prop Class Code	930
Prop Class	State forest
School District	Middleburgh
Property Address	137 EAGLE HEIGHTS RD
Book	225
Page	351
Land Value	306126
Total Value	306126
Town	Fulton

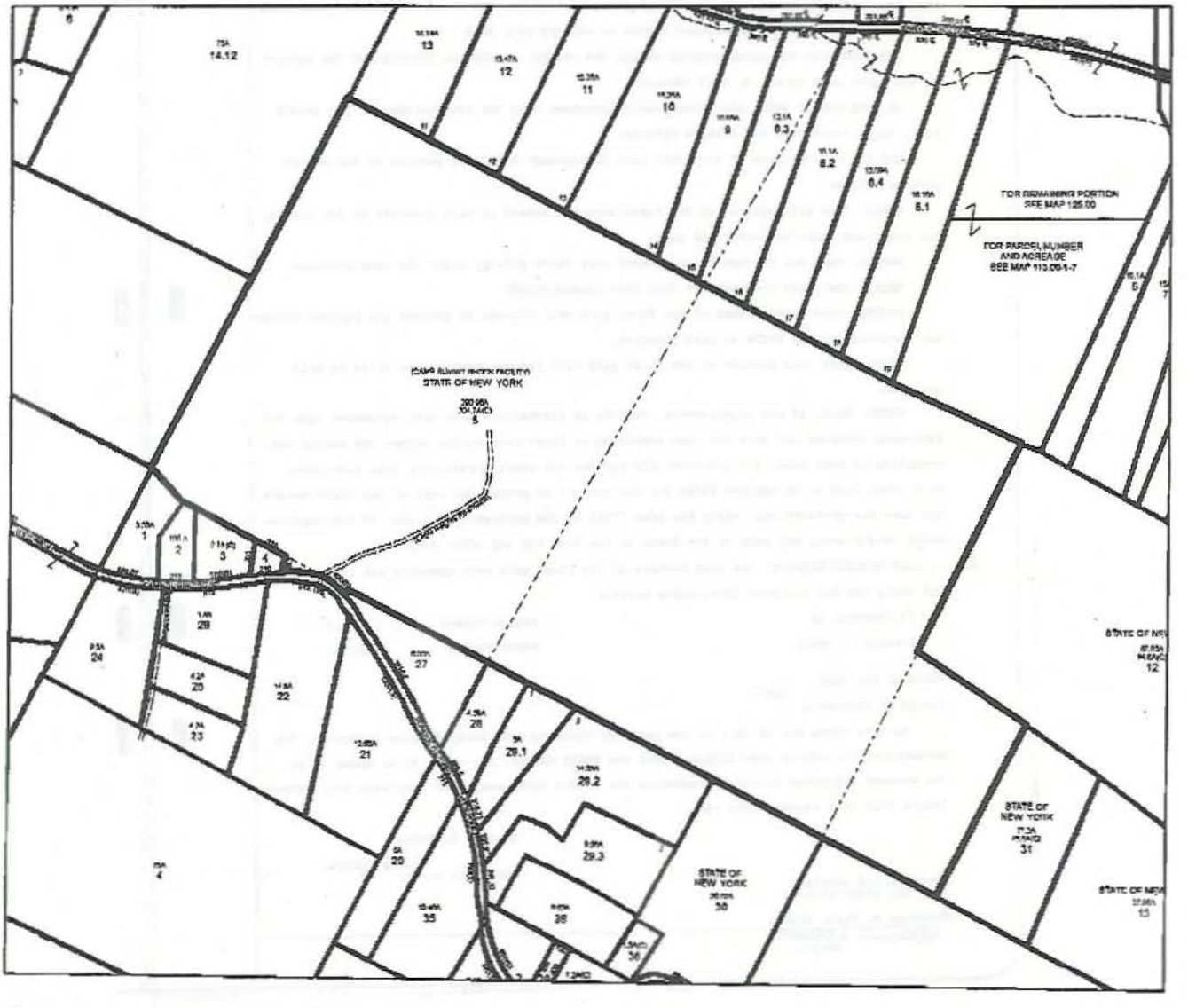
IMPORTANT NOTICE AND DISCLAIMER

The owner and deed reference information provided may be incomplete. Abstract verification is the user's responsibility.

This map and information is provided as is. We make no warranties or guarantees, expressed or implied. The user assumes all risks and responsibility for determining whether this map is suffcient for purposes intended. The data is deemed reliable but not guaranteed.

1 " = 1000 '

N



Schoharie County Real Property Search
Parcel Details

New Parcel Search

Return to Parcel List

Home

Help

Roll Year	Tax Map #	Address	Town
2011	125.-1-5	137 Eagle Heights Rd Fulton	Fulton

Property Class State forest **School District** Middleburgh
Roll Section S.O.L. **Acres** 290.96 **Front** 400.00 **Depth** 0.00
Account Number 465M401792 **Assessed Value Land** 306126 **Total** 306126

Owners

State Of New York Schoharie Co Treasurer Box 9 Par No 0440001 0440002 Schoharie NY 121570009

Special Districts

W Fulton fire dist

Exemptions

Type	Amount
RPTL534	306126

Deed References (Click on Book for County Clerk Deed Information) - Note: Only the current deed reference is shown.

Book	Page	Sale Date	Sale Price	Previous Owner
225	351			

Certificate as to Taxes

SCHOWRIGHT ABSTRACT CORP., a New York Corporation, does hereby certify that, having examined the tax rolls filed in the Office of the Treasurer of Schoharie County for taxes which are a lien and charge upon real property for TEN (10) years last past, find no unpaid taxes or tax sale certificates affecting the premises described as follows:

Assessed to:	**STATE OF NEW YORK**		
Town of:	Fulton	Location:	137 Eagle Heights Rd.
Tax Map No:	125 - 1 - 5	Account:	465M401792
Valuation:	306,126-land 306,126-total	Acreage:	290.96
School District:	Middleburgh Central School	Class Code:	930

EXCEPT AS FOLLOWS:

NONE

NOTE: 2011 Town / County tax was PAID 2-1-11 in the amount of $ 2568.49

2010-11 school tax was PAID 10-5-10 in the amount of $ 8880.52

Date: May 19, 2011

SCHOWRIGHT ABSTRACT CORP.

by: _____

GERALD T. WRIGHT

APPENDIX B

LIST OF SITE CONTACTS

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
NYSDEC (Property Owner)	
Frank DeVita, D&B Engineers and Architects., P.C.	516-364-9890 fdevita@db-eng.com
Robert Strang, Project Manager; NYS Department of Environmental Conservation	518-402-8642 robert.strang@dec.ny.gov
Anik Gibeau Citizen Participation Specialist; NYS Department of Environmental Conservation	518-475-0294 Anik.gibeau@dec.ny.gov
Andrew Fleck Region 4 Remediation Engineer; NYS Department of Environmental Conservation	518-357-2192 Andrew.fleck@dec.ny.gov
Shaun Surani NYS Department of Health; Bureau of Environmental Exposure Investigation	518-402-7860 Shaun Surani@health.ny.gov

APPENDIX C

BORING AND MONITORING WELL CONSTRUCTION LOGS

Contractor: Applied Earth Tech.
Driller: Kevin Hawkins
Inspector: Dillman
Rig Type: CME-55

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. MW-2 Sheet 1 of 1

PROJECT NAME: Camp Summit
PROJECT NUMBER: 733114.01000

Location Description: Between pond and parking area, northern end.

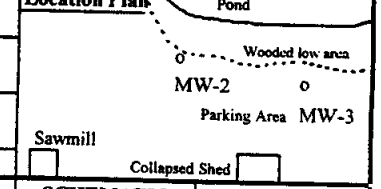
GROUNDWATER OBSERVATIONS				
Water Level	7.67 feet			
Date	8/26/98			
Time	7:40			
Meas. From	toc/PVC 985.53			

Weather: Cloudy, hot, humid, thunderstorms forecast

Date/Time Start: August 25, 1998 11:40 AM

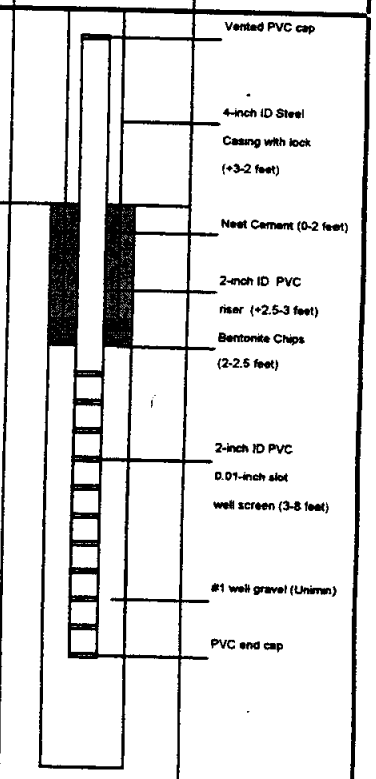
Date/Time Finish: August 25, 1998 3:00 PM

Location Plan



Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					
0					Ground elevation 982.9 feet (amsl), top PVC 985.53 feet (amsl), top steel casing 985.66 (amsl).
		3	45	NA	Tan-brown Silt, some shale gravel, dry, loose, Fill.
1		3			
		2			
2		2			
		4	40	NA	As above.
3		2			
		2			
4		3			
		5	60	0.3	As above (4-5 feet).
5		2			
		2	25	240	Fill as above over brown silt-very fine sand, some organics, trace roots, wet. Water in augers to approx. 5 feet.
6		2			
		4			
7		5			
		8	80	40	Till, tan-gray Silt, some coarse rounded sand and gravel, little clay, dense, moist-wet.
8		13			
		14			
9		14			
		12	40	140	Till as above.
10		14			Screened with FID (inside augers 40-80 ppm) & (breathing zone 0.0 ppm).
					Boring terminated at 10 feet.
11					
12					
13					
14					
15					

SCHEMATIC



COMMENTS

Contractor: Applied Earth Tech.
Driller: Kevin Hawkins
[redacted]ctor: Dillman
[redacted]ype: CME-55

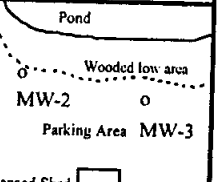
PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: Camp Summit
PROJECT NUMBER: 733114.01000

BORING/ WELL NO. MW-3 **Sheet** 1 of 1

Location Description:
Between pond and parking area, northern end.

Location Plan



Weather: Cloudy, hot, humid, thunderstorms forecast

Date/Time Start: August 25, 1998 3:30 PM

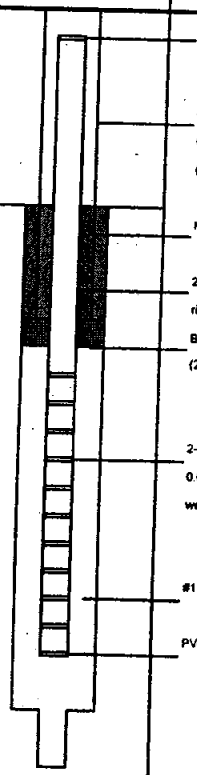
Date/Time Finish: August 25, 1998 5:15 PM

GROUNDWATER OBSERVATIONS

Water Level	7.40 ft.			
Date	8/26/98			
Time	7:45			
Meas. From	toc/pvc 983.85			

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					
0					Ground elevation 981.1 feet (amsl), top PVC elevation 983.85 feet (amsl), top steel casing 983.98 (amsl).
		5	70	0.1	Gray Silt-very fine sand, some gravel, shale chips, trace wood, dry, Fill.
1		13			
		6			
2		8			
		6	45	0	Tan Silt, some gravel, shale chips, dry, Fill.
3		6			
		6			
4		4			
		3	0	NA	As above? No recovery. End of sampler was wet.
5		2			
[redacted]		4	80	78	Gray-brown Silt, little clay, organics, roots, (native wetland soils).
		14			
		36			Gray Silt-very fine sand, interbedded with red weathered shale (6-7 feet).
7		18			
		17	95	15	Till, tan Silt, some coarse rounded sand and gravel, little clay, moist.
8		16			
		19			
9		18			
		5	0	NA	No recovery of sample, some auger slop, caved material from above.
10		7			
					Auger boring terminated at 9 feet. Sampling terminated at 10 feet.
11					
12					
13					
14					
15					
16					
17					
18					

SCHEMATIC



COMMENTS

SAMPLING METHOD
SS = SPLIT SPOON
[redacted] = AUGER CUTTINGS
[redacted] = CORED

COMMENTS:

Contractor: Applied Earth Tech.
Driller: Kevin Hawkins
Inspector: Dillman
Rig Type: CME-55

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: Camp Summit
PROJECT NUMBER: 733114.01000

BORING/WELL NO. SB-3/MW-1 Sheet 1 of 3

Location Description: North of Shop and Wood Storage Building in pine trees.

Weather: Partly sunny, cool.

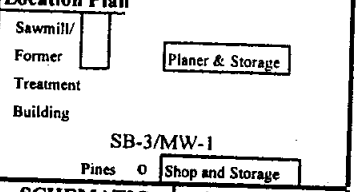
Date/Time Start: August 31, 1998 12:15 PM

Date/Time Finish: September 1, 1998 4:00 PM

GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Location Plan



Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
+3							
+2							
+1							
0					Ground elevation 1012.4 feet (amsl).		
		3	50	22	Tan Silt to very fine Sand, trace gravel, dry. Cobble at 1.8 to 2.5 feet.		
1		13					
		25					
2		50/3"					
3		23	65	2.1	Till, clayey Silt, some coarse sand and fine gravel, weathered.		
		39					
4		36					Cement/Bentonite Grout
		12	85	6.2	Tan-brown Till, Silt, some coarse sand and gravel, little-some clay. Weathered on top grading to less weathered, damp-moist.		
5		16					
		27					
		33					
		46	90	2.8	Tan-brown dense Till, Silt, some coarse sand and gravel, little clay, compacted.		
7		43					
		35					
8		37					
		42			Dense Till as above. Geotech sample collected.		
9		45					
		100/2"					
10							
		19	80	0.2	Dense Till as above, some coarse sand and gravel, little clay, damp-moist.		
11		23					
		31					
12		27					
		50/4"	90	0.3	Dense Till as above, boulder from 12.5 feet to 14 feet. Begin drilling with roller bit.		
13							
14							
		25	80	+10	Till as above.		
15		27					
		50/1"					
16							
17							
		21	25	4.8	Till as above.		
18		21					

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
No well was set in monitoring well boring (SB-3/MW-1). No saturated aquifer materials encountered.

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. Sheet 2 of 3 — SB-3/MW-1

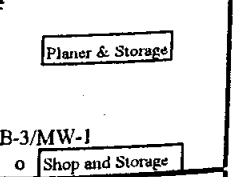
Contractor: Applied Earth Tech.
Driller: Kevin Hawkins
Inspector: Dillman
Rig Type: CME-55

PROJECT NAME: Camp Summit
PROJECT NUMBER: 733114.01000

Location Description: North of Shop and Wood Storage Building in pine trees.

Weather: Partly sunny, cool.
Date/Time Start: August 31, 1998 12:15 PM
Date/Time Finish: September 1, 1998 4:00 PM

Location Plan

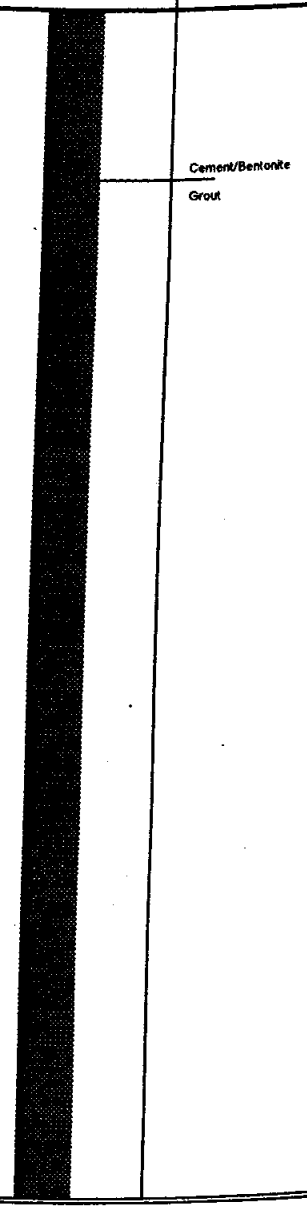


GROUNDWATER OBSERVATIONS

Water Level				
Date				
Time				
Meas. From				

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
		23			
19		20			
		17	60	6.4	Till as above, slightly clayier.
20		19			
		21			
21		26			
		14	75	4.1	Till as above.
22		17			
		50/1"			
23					
24					
		17	30	4.6	Till as above.
25		14			
		17			
26		23			
		16	0	NA	No recovery.
27		21			
		23			
		22			
		21	60	7.6	Tan-gray Till, Silt, some coarse sand and gravel, little clay, moist.
29		23			Slightly softer than above, more clay or more moisture?
		27			
30		24			
		27	40	1.3	Till as above, dense. Boulder from 30.8 to 32 feet.
31		50/4"			
32					
		18	60	5.3	Till as above.
33		23			
		26			
34		73			
		32	80	+10	Till as above.
35		34			
		37			
36		50/5"			Cobble/boulder 36 to 37.5 feet.
37					
38					
		41	70	7	Till as above.
39		31			

SCHEMATIC



COMMENTS

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS:
No well was set in monitoring well boring (SB-3/MW-1). No saturated aquifer materials encountered.
Ground elevation 1012.4 feet (amsl).

Contractor: Applied Earth Tech.
Driller: Kevin Hawkins
Inspector: Dillman
Rig Type: CME-55

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. MW-4 — Sheet 1 of 1

PROJECT NAME: Camp Summit
PROJECT NUMBER: 733114.01000

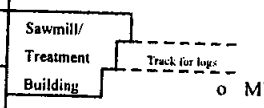
Location Description:

Weather: Partly sunny, cool, calm.

Date/Time Start: August 26, 1998 8:19 AM

Date/Time Finish: August 26, 1998 11:15 AM

Location Plan

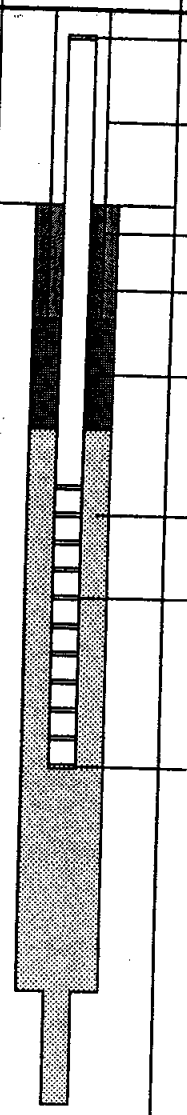


GROUNDWATER OBSERVATIONS

Water Level	8.51 ft.			
Date	8/27/98			
Time	7:45			
Meas. From	toc/pvc 997.56			

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					
0					Ground elevation 995.1 feet (amsl), top PVC elevation 997.56 feet (amsl), top steel casing 997.73 feet (amsl).
		12	20	15	Tan Silt, some coarse sand and gravel, Fill, dry.
1		14			
		11			
2		8			
		7	30	4	As above.
3		7			
		4			
4		4			
		2	30	100	As above (4-5.8 feet).
5		3			
		3			
		4			Brown Silt, some clay, moist, semiplastic.
		4	35	780	Greenish-gray Silt, some clay, some coarse sand, moist-wet, soft, semiplastic.
7		6			Odor in sample.
		8			
8		6			
		6	60	+1000	Coarse sand and gravel, wet (8-9 feet).
9		12			
		14			Gray Silt, some coarse sand/fine gravel, trace clay, Till as in other wells.
10		16			Odor, Sheen. Screened hole with FID (+100 ppm), breathing zone (0.1 ppm).
		13	65	490	Till, gray-tan Silt, some coarse sand and gravel, shale in gravel, trace clay.
11		19			Wet at top, more dense and compact at bottom, moist-wet.
		21			
12		16			
		23	80	530	Tan Till as above, dense, little clay, moist.
13		26			
		27			
14		36			
		NA	50	60	Tan dense Till, Silt, some rounded coarse sand and gravel, little-trace clay,
15		NA			moist, no odor.
		NA			
16		NA			Augering terminated at 14 feet. Sampling terminated at 16 feet.
					Boring plugged back to 10 feet and well set.
17					
18					

SCHEMATIC



COMMENTS

COMMENTS:

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

Contractor: Applied Earth Tech.
Driller: Kevin Hawkins
Inspector: Dillman
Type: CME-55

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. MW-5 Sheet 1 of 1

PROJECT NAME: Camp Summit
PROJECT NUMBER: 733114.01000

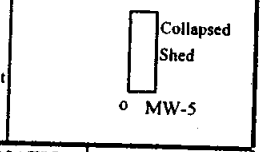
Location Description: Near northwest corner of collapsed building.

Weather: Partly cloudy, 60's, forecast low 80's.

Date/Time Start: August 28, 1998 12:00 PM

Date/Time Finish: August 28, 1998 2:40 PM

Location Plan Pond

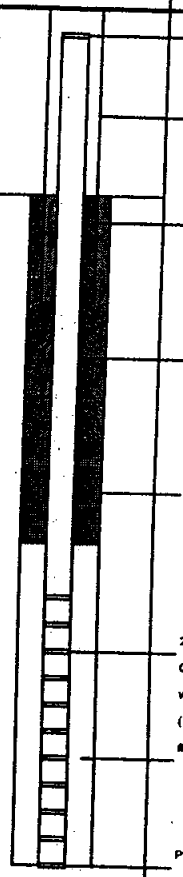


GROUNDWATER OBSERVATIONS

Water Level	Dry			
Date	8/31/98			
Time	10:15			
Meas. From	toc/pvc 994.08			

Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					
0					Ground Elevation 991.6 feet (amsl), Top PVC Casing 994.08 (amsl), Top Steel Casing 994.17 feet (amsl).
1					Shale fill (0-2')
2					
		8	90	7	Gray Silt-very fine Sand, moist-wet.
3		50/5"			Gray/tan silty Clay, some gravel, dry.
4					
		22	40	5.4	Tan Silt, some gravel, little clay, dry, dense, compacted.
5		20			Pushing cobble with sampler.
		10	35	8.5	Tan Silt, some gravel, little clay, dry-damp, dense, compacted. Till.
		21			
		30			
		15			
		18	80	0.2	Tan Silt, some coarse rounded sand and gravel, little clay, moist,
8		19			dense, compacted. Till.
		30			Water level in boring SB-1 was 8.3 feet below ground surface on 8/27/98.
9		28			
		19	80	6.2	As above, cobble/boulder (calcareous shale) in end of sampler, moist.
10		43			
		50/1"			Augered through boulder.
11					
12		14	65	2	Tan-brown Silt, some coarse rounded sand and gravel, little clay,
		21			dense, dry-damp, compact. Till.
13					Well boring terminated at 12.5 feet.
14					
15					
16					
17					
18					

SCHEMATIC



COMMENTS

COMMENTS:
Lithologic description and drilling information from boring SB-1 drilled adjacent to MW-5.

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

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Drilling Log

Monitoring Well **MW-06**

Project *NYSDEC Camp Summit* Owner *NYSDEC*

Location *Schoharie County, NY* Proj. No. *830271*

Surface Elev. *NA* Total Hole Depth *15.0 ft.* North ____ East ____

Top of Casing *NA* Water Level Initial ▽ *8.0 ft.* Static *NA* Diameter *4.25 in.*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *pvc/10 slot in.*

Casing: Dia *2 in.* Length *5 ft.* Type *pvc*

Fill Material *sand, bentonite* Rig/Core ____

Drill Co. *American Auger* Method *Air Hammer*

Driller ____ Log By *J. Santacroce* Date *11/20/01* Permit # *NA*

Checked By ____ License No. ____

COMMENTS
sample taken 7-9' bgs

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
							Geologic descriptions are based on ASTM Standard D 2467-93 and the USCS.
0		NA	1 / 5%				Concrete
2						GP	Poor recovery, pushing coarse gravel with spoon
4		1.2	2 / 10%			SP SM	Tan, silt and fine to medium sand, some gray clay, trace gravel, moist, fuel-like odor
6		7.6	3 / 30%				
8 ▽		50.8	4 / 30%			GP	Gravel lens with little fine to medium sand, wet
10		26.3	5 / 30%			SP SM	Moist, till, tan silt and fine sand, trace clay, trace shale, few cobbles, strong fuel-like odor @ 10-11 ft bgs
12		17.5	6 / 50%				
14		10.3	7 / 75%				
16							
18							
20							
22							
24							

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Drilling Log

Monitoring Well **MW-07**

Project *NYSDEC Camp Summit* Owner *NYSDEC*
Location *Schoharie County, NY* Proj. No. *630271*
Surface Elev. *NA* Total Hole Depth *16.0 ft.* North ____ East ____
Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *4.25 in.*
Screen: Dia *2 in.* Length *10 ft.* Type/Size *pvc/10 slot in.*
Casing: Dia *2 in.* Length *6 ft.* Type *pvc*
Fill Material *sand, bentonite* Rig/Core ____
Drill Co. *American Auger* Method *Air Hammer*
Driller ____ Log By *J. Santacroce* Date *11/20/01* Permit # *NA*
Checked By ____ License No. ____

COMMENTS
sample taken from 2-4 ft bgs

Depth (ft)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Brown Topsoil
2		0.0	1 / 80%			ML	Light brown, silt and fine to medium sand
4		140	2 / 85%				Tan, till, silt and fine sand, trace medium sand, some shale and fine gravel (slight fuel-like odor)
6		100	3 / 40%			ML	
8		81	4 / 80%				
10		20.4	5 / 80%				Moist, tan to gray till, tight silt with increasing clay content, trace weathered shale and fine to medium gravels
12		1.3	6 / 80%			CL ML	
14		1.3	7 / 80%				
16		0.0	8 / 90%				
18							
20							
22							
24							

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev. 12/6/99 IT_CORP.GPJ IT_CORP.GDT 4/23/02

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Drilling Log

Monitoring Well **MW-08**

Project *NYSDEC Camp Summit* Owner *NYSDEC*
Location *Schoharie County, NY* Proj. No. *830271*
Surface Elev. *NA* Total Hole Depth *20.0 ft.* North ____ East ____
Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *4.25 in.*
Screen: Dia *2 in.* Length *10 ft.* Type/Size *pvc/10 slot in.*
Casing: Dia *2 in.* Length *10 ft.* Type *pvc*
Fill Material *sand, bentonite* Rig/Core ____
Drill Co. *American Auger* Method *Air Hammer*
Driller ____ Log By *J. Santacroce* Date *11/20/01* Permit # *NA*
Checked By ____ License No. ____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Brown topsoil
2		0.0	1 / 30%			ML	Tan/gray, till, silt and fine to medium sand, trace clay and fine to medium gravel and cobbles
4		0.0	2 / 95%				
6		0.0	3 / 60%				
8		0.0	4 / 50%				
10		0.0	5 / 90%				
12		0.0	6 / 75%				
14		0.0	7 / 80%			CL ML	gray, clay, some silt, trace medium pebbles, moist
16		0.0	8 / 80%				
18		0.0	9 / 90%				
20		0.0	10 / 90%				
22							
24							

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Monitoring Well **MW-09**

Project NYSDEC Camp Summit Owner NYSDEC
Location Schoharie County, NY Proj. No. 830271
Surface Elev. NA Total Hole Depth 16.0 ft. North ____ East ____
Top of Casing NA Water Level Initial NA Static NA Diameter 4.25 in.
Screen: Dia 2 in. Length 10 ft. Type/Size pvc/10 slot in.
Casing: Dia 2 in. Length 6 ft. Type pvc
Fill Material sand, bentonite Rig/Core ____
Drill Co. American Auger Method Air Hammer
Driller ____ Log By J. Santacroce Date 11/21/01 Permit # NA
Checked By ____ License No. ____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Asphalt
2		0.0	1 / 5%				Till, tan, silt and fine sand, trace fine to medium gravel, moist at 8 feet bgs, trace clay content
4		0.0	2 / 30%				
6		0.0	3 / 90%				
8		0.0	4 / 80%			SM	
10		0.0	5 / 90%				
12		0.0	6 / 80%				
14		0.0	7 / 60%				
16		0.0	8 / 80%			CL ML	Gray, silty-clay, till
18							
20							
22							
24							

IT_COMMERCIAL Rev: 12/6/99 IT_CORP.GPJ IT_CORP.GDT 4/23/02

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Monitoring Well **MW-10**

Project NYSDEC Camp Summit Owner NYSDEC

Location Schoharie County, NY Proj. No. 830271

Surface Elev. NA Total Hole Depth 19.0 ft. North ____ East ____

Top of Casing NA Water Level Initial ▽ 11.0 ft. Static NA Diameter 4.25 in.

Screen: Dia 2 in. Length 10 ft. Type/Size pvc/10 slot in.

Casing: Dia 2 in. Length 9 ft. Type pvc

Fill Material sand, bentonite Rig/Core ____

Drill Co. American Auger Method Air Hammer

Driller ____ Log By J. Santacroce Date 11/26/01 Permit # NA

Checked By ____ License No. ____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0							
		0.0	1 / %				Concrete
2		0.0	2 / 10%				Brown topsoil, wood fragments, wet Tan, till, silt and fine sand, some fine to medium gravel, trace clay
4		0.0	3 / 75%				
6		0.0	4 / 65%			SM	
8		0.0	5 / 75%				
10		0.0	6 / 40%			SC SM	Moist, gray till, higher clay content, some shale fragments
12		0.0	7 / 90%				Wet, same as above, with some fine pebbles and shale
14		0.0	8 / 50%			SC SM	
16		0.0	9 / 25%				
18							Refusal at 17 feet bgs, auger to 19 feet bgs
20							
22							
24							

IT_COMMERCIAL Rev. 12/6/99 IT_CORP.GPJ IT_CORP.GDT 4/23/02

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Shaw Environmental, Inc.

Drilling Log

Monitoring Well **MW-11**

Project *NYSDEC Camp Summit* Owner *NYSDEC*
Location *Schoharie County, NY* Proj. No. *830271*
Surface Elev. *NA* Total Hole Depth *18.0 ft.* North ____ East ____
Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *4.25 in.*
Screen: Dia *2 in.* Length *10 ft.* Type/Size *pvc/10 slot in.*
Casing: Dia *2 in.* Length *8 ft.* Type *pvc*
Fill Material *sand, bentonite* Rig/Core ____
Drill Co. *American Auger* Method *Air Hammer*
Driller ____ Log By *J. Santacroce* Date *11/26/01* Permit # *NA*
Checked By ____ License No. ____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0							Dark brown topsoil
2		0.0	1 / 50%			ML	Tan silt and fine sand, trace fine gravel
4		0.0	2 / 60%			GP	coarse gravel with fine to medium sand
6		22.3	3 / 50%			ML	Moist, tan silt and fine sand, trace clay
8		0.0	4 / 50%				
10		0.0	5 / 100%			SC SM	Gray, silt and clay, increasing clay content with depth, little fine sand and pebbles, moist at 10 feet bgs
12		0.0	6 / 50%				
14		0.0	7 / 10%				Drill through boulder, no recovery
16		NA	8 / 0%			CL ML	Dark gray, clay, little silt, trace fine pebbles
18		0.0	9 / 40%				
20							
22							
24							

IT_COMMERCIAL Rev: 12/6/99 IT_CORP.GPJ IT_CORP.GDT 4/23/02

Drilling Log

Monitoring Well **MW-12**

Project *Summit Shock Camp* Owner *NYSDOC*

Location *Summit, New York* Proj. No. *830271*

Surface Elev. *NA* Total Hole Depth *14.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial ▽ *6.0 ft.* Static *NA* Diameter *3.125 in.*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC/0.01 inch in.*

Casing: Dia *2 in.* Length *3.5 ft.* Type *PVC*

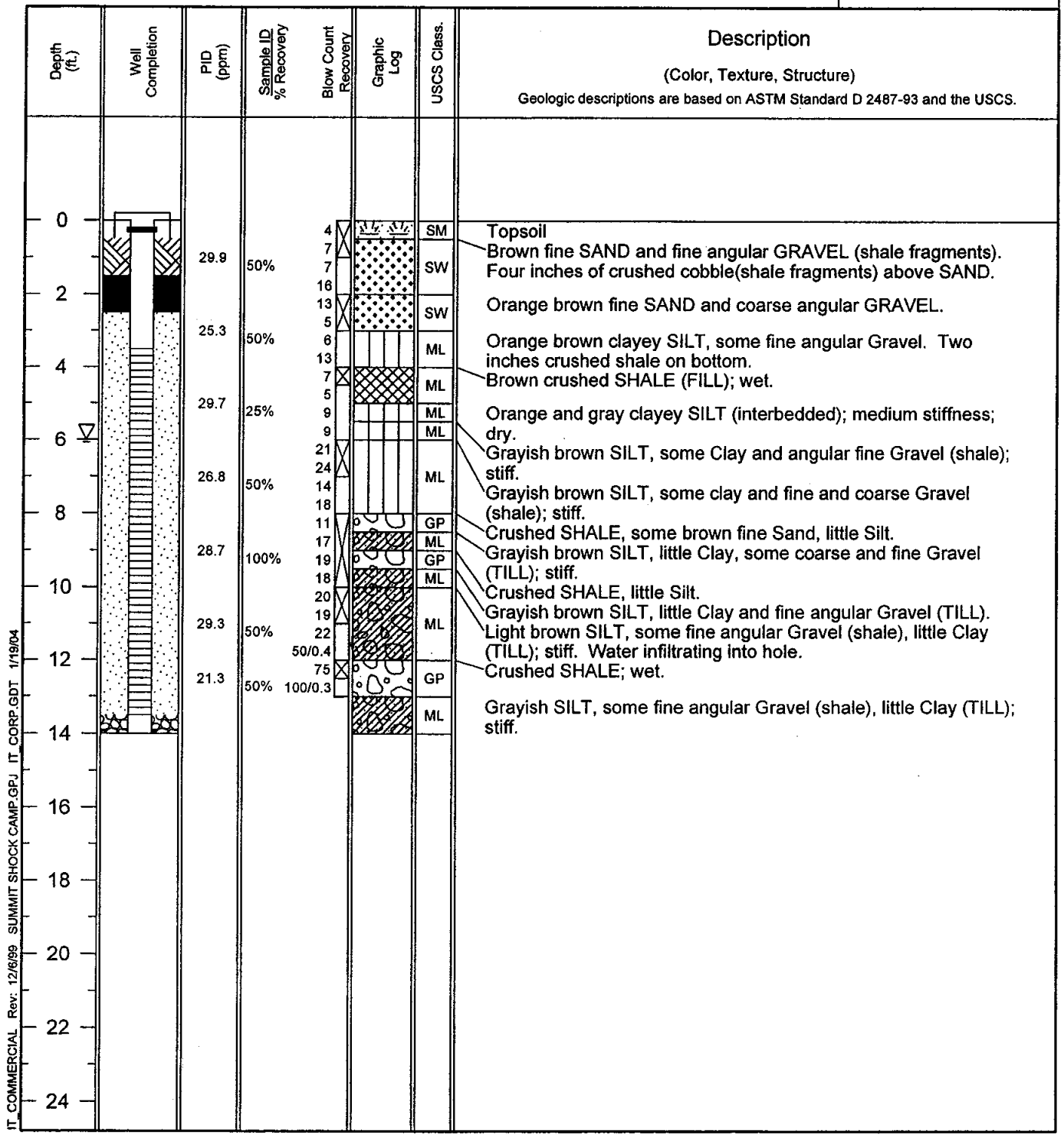
Fill Material *Sand/bentonite* Rig/Core *1R8300*

Drill Co. *Parratt Wolfe* Method *Air rotary*

Driller *Doug/Joe* Log By *JF* Date *7/23/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS



Description

(Color, Texture, Structure)

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Topsoil

Brown fine SAND and fine angular GRAVEL (shale fragments). Four inches of crushed cobble(shale fragments) above SAND.

Orange brown fine SAND and coarse angular GRAVEL.

Orange brown clayey SILT, some fine angular Gravel. Two inches crushed shale on bottom.

Brown crushed SHALE (FILL); wet.

Orange and gray clayey SILT (interbedded); medium stiffness; dry.

Grayish brown SILT, some Clay and angular fine Gravel (shale); stiff.

Grayish brown SILT, some clay and fine and coarse Gravel (shale); stiff.

Crushed SHALE, some brown fine Sand, little Silt.

Grayish brown SILT, little Clay, some coarse and fine Gravel (TILL); stiff.

Crushed SHALE, little Silt.

Grayish brown SILT, little Clay and fine angular Gravel (TILL).

Light brown SILT, some fine angular Gravel (shale), little Clay (TILL); stiff. Water infiltrating into hole.

Crushed SHALE; wet.

Grayish SILT, some fine angular Gravel (shale), little Clay (TILL); stiff.

Drilling Log

Monitoring Well **MW-13**

Project *Summit Shock Camp* Owner *NYSDOC*

Location *Summit, New York* Proj. No. *830271*

Surface Elev. *NA* Total Hole Depth *20.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial ▽ *17.5 ft.* Static *NA* Diameter *3.125 in.*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC/0.01 inch in.*

Casing: Dia *2 in.* Length *10 ft.* Type *PVC*

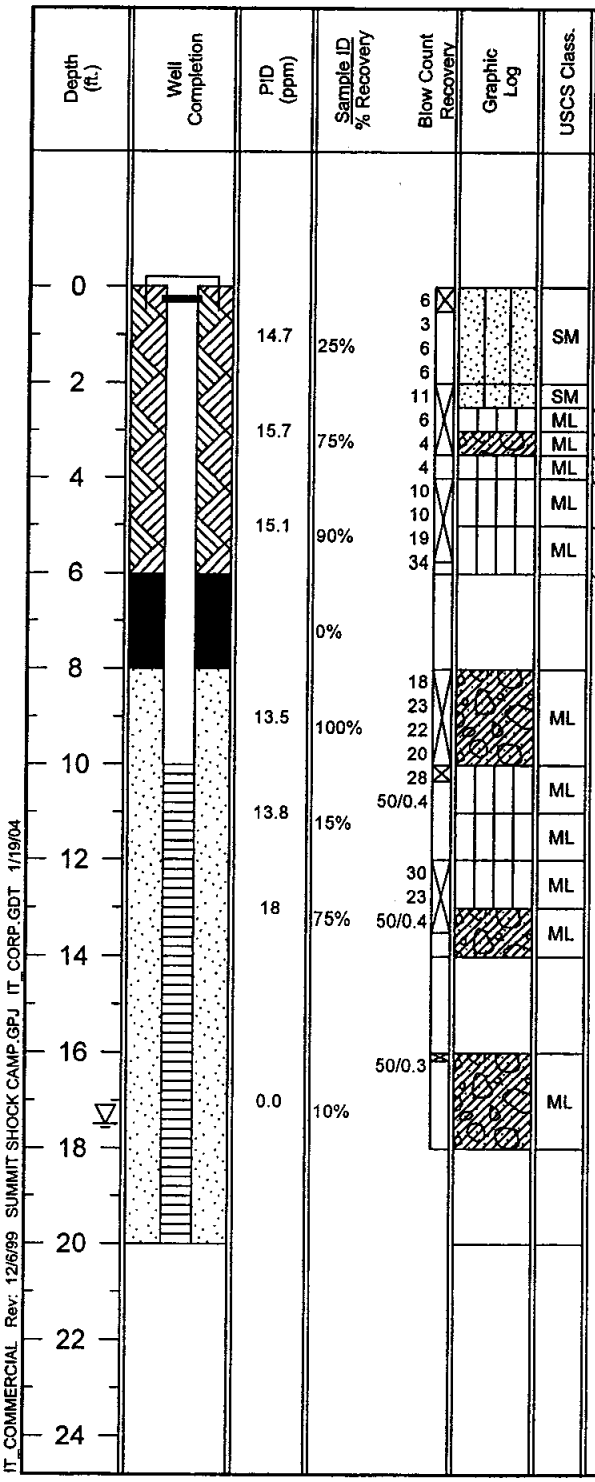
Fill Material *Sand/bentonite* Rig/Core *1R8300*

Drill Co. *Parratt Wolfe* Method *Air rotary*

Driller *Doug/Joe* Log By *JF* Date *7/24/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS



Description

(Color, Texture, Structure)

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Brown silty fine SAND and fine to coarse GRAVEL (shale); fresh wood fragments.

Brown silty fine SAND and fine angular GRAVEL (shale); soft; dry.

Light brown clayey SILT, some fine Gravel; soft.

Grayish brown SILT, little Clay and fine Gravel (TILL).

Light brown clayey SILT, little fine Gravel; soft.

Light brown clayey SILT, some fine angular Gravel; soft; wet.

Grayish brown SILT, some angular fine and coarse Gravel (shale), little Clay; dry.

No recovery. Drilled through boulder 6 to 8 ft.

Grayish brown SILT, some fine and coarse Gravel (shale), little Clay (TILL); very stiff.

Grayish brown clayey SILT, little fine Gravel; soft.

Grayish brown SILT, little Clay and fine Gravel; stiff.

Grayish brown clayey SILT, little fine Gravel; soft.

Olive gray SILT, some fine angular Gravel, little Clay (TILL); stiff.

No spoon collected.

Olive brown clayey SILT, little coarse and fine Gravel (shale); soft.

No spoon collected.

Drilling Log

Monitoring Well **MW-14**

Project *Summit Shock Camp* Owner *NYSDOC*

Location *Summit, New York* Proj. No. *830271*

Surface Elev. *NA* Total Hole Depth *22.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial ▽ *17.0 ft.* Static *NA* Diameter *3.125 in.*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC/0.01 inch in.*

Casing: Dia *2 in.* Length *14 ft.* Type *PVC*

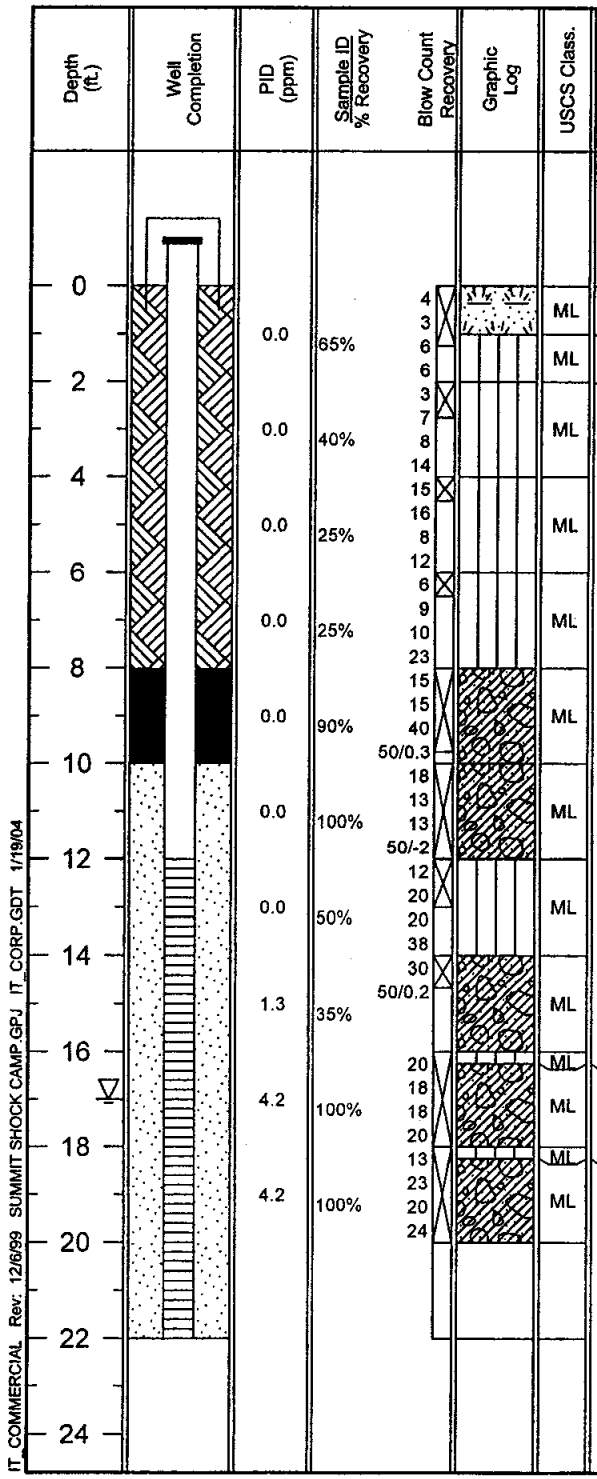
Fill Material *Sand/bentonite* Rig/Core *1R8300*

Drill Co. *Parratt Wolfe* Method *Air rotary*

Driller *Doug/Joe* Log By *JF* Date *7/25/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS



Description

(Color, Texture, Structure)

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Brown soft clayey SILT, some fine angular Gravel, little fine Sand (Topsoil).

Brown SILT, some Clay and fine Gravel, little coarse Gravel; slightly stiff.

Brown SILT, some Clay, some fine and coarse angular Gravel (shale); slightly stiff.

Brown SILT, some Clay, some fine and coarse angular Gravel (shale); slightly stiff.

Brown SILT, some Clay, some fine and coarse angular Gravel (shale); slightly stiff.

Graysih brown SILT, some angular coarse Gravel (shale), little Clay (TILL). Last two inches crushed shale.

Brown SILT, some Clay and fine Gravel, little coarse Gravel (TILL); slightly stiff; wet.

Brown clayey SILT, little fine Gravel (shale); stiff; wet (for 4 inches). Grading into 8 inches of grayish brown silt, little clay and fine angular gravel (TILL) very stiff.

Grayish brown SILT, little Clay, little fine and coarse angular Gravel (TILL); very stiff.

Brown clayey SILT, little fine Gravel; soft.

Brown SILT, little Clay, little fine and coarse Gravel (shale) (TILL); stiff.

Grayish brown clayey SILT, little fine Gravel; soft.

Grayish brown SILT, some clay, little fine Gravel (TILL); stiff.

No spoon collected.

APPENDIX D

2019 ANALYTICAL DATA TABLES

Table 1
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Volatile Organic Compounds

Sample ID	MW-02	MW-03	MW-04	MW-05	MW-08	MW-09	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/10/2019	6/11/2019	6/11/2019	6/11/2019	6/10/2019	6/10/2019	
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOLATILE COMPOUNDS							
1,1,1-Trichloroethane	U	U	U	U	U	U	5
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	5
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	5
1,1,2-Trichloroethane	U	U	U	U	U	U	1
1,1-Dichloroethane	U	U	U	U	U	U	5
1,1-Dichloroethene	U	U	U	U	U	U	5
1,2,4-Trichlorobenzene	U	U	U	U	U	U	5
1,2-Dibromo-3-Chloropropane	U	U	U	U	U	U	0.04
1,2-Dibromoethane	U	U	U	U	U	U	0.0006
1,2-Dichlorobenzene	U	U	U	U	U	U	3
1,2-Dichloroethane	U	U	U	U	U	U	0.6
1,2-Dichloropropane	U	U	U	U	U	U	1
1,3-Dichlorobenzene	U	U	U	U	U	U	3
1,4-Dichlorobenzene	U	U	U	U	U	U	3
2-Butanone (MEK)	U	U	U	U	U	U	50
2-Hexanone	U	U	U	U	U	U	50
4-Methyl-2-pentanone (MIBK)	U	U	U	U	U	U	--
Acetone	U	U	U	U	U	U	50
Benzene	U	U	U	U	U	U	1
Bromodichloromethane	U	U	U	U	U	U	50
Bromoform	U	U	U	U	U	U	50
Bromomethane	U	U	U	U	U	U	5
Carbon Disulfide	U	U	U	U	U	U	60
Carbon Tetrachloride	U	U	U	U	U	U	5
Chlorobenzene	U	U	U	U	U	U	5
Chloroethane	U	U	U	U	U	U	5
Chloroform	U	U	U	U	U	U	7
Chloromethane	U	U	U	U	U	U	5
Cis-1,2-Dichloroethylene	U	U	U	U	U	U	5
Cis-1,3-Dichloropropene	U	U	U	U	U	U	0.4
Cyclohexane	U	U	U	U	U	U	--
Dibromochloromethane	U	U	U	U	U	U	50
Dichlorodifluoromethane	U	U	U	U	U	U	5
Ethylbenzene	U	U	U	U	U	U	5
Isopropylbenzene	U	U	U	U	U	U	5
Methyl Acetate	U	U	U	U	U	U	--
Methyl tert-butyl ether	U	U	U	U	U	U	10
Methylcyclohexane	U	U	U	U	U	U	--
Methylene Chloride	U	U	U	U	U	U	5
Styrene	U	U	U	U	U	U	5
Tetrachloroethylene	U	U	U	U	U	U	5
Toluene	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	5
Trans-1,3-Dichloropropene	U	U	U	U	U	U	0.4
Trichloroethylene	U	U	U	U	U	U	5
Trichlorofluoromethane	U	U	U	U	U	U	5
Vinyl Chloride	U	U	U	U	U	U	2
Xylenes total	U	U	U	U	U	U	5
Total Volatile Compounds	0	0	0	0	0	0	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter

--: No standard

U: Analyzed for but not detected

J: Estimated value or limit

UB: Non detect based on blank results

Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

Table 1
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Volatile Organic Compounds

Sample ID	MW-10	MW-11	MW-13	MW-14	MW-16	MW-17	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/11/2019	6/11/2019	6/10/2019	6/10/2019	6/10/2019	6/11/2019	
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOLATILE COMPOUNDS							
1,1,1-Trichloroethane	U	U	U	U	U	U	5
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	5
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	U	5
1,1,2-Trichloroethane	U	U	U	U	U	U	1
1,1-Dichloroethane	U	U	U	U	U	U	5
1,1-Dichloroethene	U	U	U	U	U	U	5
1,2,4-Trichlorobenzene	U	U	U	U	U	U	5
1,2-Dibromo-3-Chloropropane	U	U	U	U	U	U	0.04
1,2-Dibromoethane	U	U	U	U	U	U	0.0006
1,2-Dichlorobenzene	U	U	U	U	U	U	3
1,2-Dichloroethane	U	U	U	U	U	U	0.6
1,2-Dichloropropane	U	U	U	U	U	U	1
1,3-Dichlorobenzene	U	U	U	U	U	U	3
1,4-Dichlorobenzene	U	U	U	U	U	U	3
2-Butanone (MEK)	U	U	U	U	U	U	50
2-Hexanone	U	U	U	U	U	U	50
4-Methyl-2-pentanone (MIBK)	U	U	U	U	U	U	--
Acetone	U	U	U	U	U	U	50
Benzene	U	U	U	U	U	U	1
Bromodichloromethane	U	U	U	U	U	U	50
Bromoform	U	U	U	U	U	U	50
Bromomethane	U	U	U	U	U	U	5
Carbon Disulfide	U	U	U	U	U	U	60
Carbon Tetrachloride	U	U	U	U	U	U	5
Chlorobenzene	U	U	U	U	U	U	5
Chloroethane	U	U	U	U	U	U	5
Chloroform	U	U	U	U	U	U	7
Chloromethane	U	U	U	U	U	U	5
Cis-1,2-Dichloroethylene	U	U	U	U	U	U	5
Cis-1,3-Dichloropropene	U	U	U	U	U	U	0.4
Cyclohexane	U	U	U	U	U	U	--
Dibromochloromethane	U	U	U	U	U	U	50
Dichlorodifluoromethane	U	U	U	U	U	U	5
Ethylbenzene	U	U	U	U	U	U	5
Isopropylbenzene	U	U	U	U	U	U	5
Methyl Acetate	U	U	U	U	U	U	--
Methyl tert-butyl ether	U	U	U	U	U	U	10
Methylcyclohexane	U	U	U	U	U	U	--
Methylene Chloride	U	U	U	U	U	U	5
Styrene	U	U	U	U	U	U	5
Tetrachloroethylene	U	U	U	U	U	U	5
Toluene	U	U	U	U	U	U	5
Trans-1,2-Dichloroethene	U	U	U	U	U	U	5
Trans-1,3-Dichloropropene	U	U	U	U	U	U	0.4
Trichloroethylene	U	U	U	U	U	U	5
Trichlorofluoromethane	U	U	U	U	U	U	5
Vinyl Chloride	U	U	U	U	U	U	2
Xylenes total	U	U	U	U	U	U	5
Total Volatile Compounds	0	0	0	0	0	0	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter

--: No standard

U: Analyzed for but not detected

J: Estimated value or limit

UB: Non detect based on blank results

Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

Table 1
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Volatile Organic Compounds

Sample ID	MW-18	MW-19	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/11/2019	6/10/2019	
Units	ug/l	ug/l	ug/l
VOLATILE COMPOUNDS			
1,1,1-Trichloroethane	U	U	5
1,1,2,2-Tetrachloroethane	U	U	5
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	5
1,1,2-Trichloroethane	U	U	1
1,1-Dichloroethane	U	U	5
1,1-Dichloroethene	U	U	5
1,2,4-Trichlorobenzene	U	U	5
1,2-Dibromo-3-Chloropropane	U	U	0.04
1,2-Dibromoethane	U	U	0.0006
1,2-Dichlorobenzene	U	U	3
1,2-Dichloroethane	U	U	0.6
1,2-Dichloropropane	U	U	1
1,3-Dichlorobenzene	U	U	3
1,4-Dichlorobenzene	U	U	3
2-Butanone (MEK)	U	U	50
2-Hexanone	U	U	50
4-Methyl-2-pentanone (MIBK)	U	U	--
Acetone	U	U	50
Benzene	U	U	1
Bromodichloromethane	U	U	50
Bromoform	U	U	50
Bromomethane	U	U	5
Carbon Disulfide	U	U	60
Carbon Tetrachloride	U	U	5
Chlorobenzene	U	U	5
Chloroethane	U	U	5
Chloroform	U	U	7
Chloromethane	U	U	5
Cis-1,2-Dichloroethylene	U	U	5
Cis-1,3-Dichloropropene	U	U	0.4
Cyclohexane	U	U	--
Dibromochloromethane	U	U	50
Dichlorodifluoromethane	U	U	5
Ethylbenzene	U	U	5
Isopropylbenzene	U	U	5
Methyl Acetate	U	U	--
Methyl tert-butyl ether	U	U	10
Methylcyclohexane	U	U	--
Methylene Chloride	U	U	5
Styrene	U	U	5
Tetrachloroethylene	U	U	5
Toluene	U	U	5
Trans-1,2-Dichloroethene	U	U	5
Trans-1,3-Dichloropropene	U	U	0.4
Trichloroethylene	U	U	5
Trichlorofluoromethane	U	U	5
Vinyl Chloride	U	U	2
Xylenes total	U	U	5
Total Volatile Compounds	0	0	--

Footnotes/Qualifiers:
ug/l: Micrograms per liter
--: No standard
U: Analyzed for but not detected
J: Estimated value or limit
UB: Non detect based on blank results
Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

Table 2
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Semi-Volatile Organic Compounds

Sample ID	MW-02	MW-03	MW-04	MW-05	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/10/2019	6/11/2019	6/11/2019	6/11/2019	
Units	ug/l	ug/l	ug/l	ug/l	ug/l
SEMIVOLATILE COMPOUNDS					
2,4,5-Trichlorophenol	U	U	U	U	1
2,4,6-Trichlorophenol	U	U	U	U	1
2,4-Dichlorophenol	U	U	U	U	5
2,4-Dimethylphenol	U	U	U	U	50
2,4-Dinitrophenol	U	U	U	U	10
2,4-Dinitrotoluene	U	U	U	U	5
2,6-Dinitrotoluene	U	U	U	U	5
2-Chloronaphthalene	U	U	U	U	10
2-Chlorophenol	U	U	U	U	1
2-Methylnaphthalene	U	U	U	U	--
2-Methylphenol	U	U	U	U	1
2-Nitroaniline	U	U	U	U	5
2-Nitrophenol	U	U	U	U	1
3,3-Dichlorobenzidine	U	U	U	U	5
3-Nitroaniline	U	U	U	U	5
4,6-Dinitro-2-methylphenol	U	U	U	U	1
4-Bromophenyl-phenylether	U	U	U	U	--
4-Chloro-3-methylphenol	U	U	U	U	1
4-Chloroaniline	U	U	U	U	5
4-Chlorophenylphenyl ether	U	U	U	U	--
4-Methylphenol	U	U	U	U	1
4-Nitroaniline	U	U	U	U	5
4-Nitrophenol	U	U	U	U	1
Acenaphthene	U	U	U	U	20
Acenaphthylene	U	U	U	U	--
Acetophenone	U	U	U	U	--
Anthracene	U	U	U	U	50
Atrazine	U	U	U	U	7.5
Benzaldehyde	U	U	U	U	--
Benzo(a)anthracene	U	U	U	U	0.002
Benzo(a)pyrene	U	U	U	U	ND
Benzo(b)fluoranthene	U	U	U	U	0.002
Benzo(ghi)perylene	U	U	U	U	--
Benzo(k)fluoranthene	U	U	U	U	0.002
Biphenyl	U	U	U	U	5
Bis(2-chloroisopropyl)ether	U	U	U	U	--
Bis(2-chloroethoxy)methane	U	U	U	U	5
Bis(2-chloroethyl)ether	U	U	U	U	1
Bis(2-ethylhexyl)phthalate (BEHP)	U	U	U	U	5
Benzyl butyl phthalate	U	U	U	U	50
Caprolactam	U	U	U	U	--
Carbazole	U	U	U	U	--
Chrysene	U	U	U	U	0.002
Dibenzo(a,h)anthracene	U	U	U	U	--
Dibenzofuran	U	U	U	U	--

Next page for footnotes/qualifiers

Table 2
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Semi-Volatile Organic Compounds

Sample ID / Sampling Date / Units	MW-02 6/10/2019 ug/l	MW-03 6/11/2019 ug/l	MW-04 6/11/2019 ug/l	MW-05 6/11/2019 ug/l	NYSDEC Class GA Standard or Guidance Value ug/l
COMPOUNDS CONTINUED					
Diethyl phthalate	U	U	U	U	50
Dimethyl phthalate	U	U	U	U	50
Di-n-butyl phthalate	U	U	U	U	50
Di-n-octyl phthalate	U	U	U	U	50
Fluoranthene	U	U	U	U	50
Fluorene	UB	U	UB	UB	50
Hexachlorobenzene	U	U	U	U	0.04
Hexachlorobutadiene	U	U	U	U	0.5
Hexachlorocyclopentadiene	U	U	U	U	5
Hexachloroethane	U	U	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	U	U	0.002
Isophorone	U	U	U	U	50
Naphthalene	U	U	U	U	10
Nitrobenzene	U	U	U	U	0.4
N-Nitroso-di-n-propylamine	U	U	U	U	--
N-Nitrosodiphenylamine	U	U	U	U	50
Pentachlorophenol	U	U	U	U	1
Phenanthrene	UB	UB	UB	UB	50
Phenol	U	U	U	U	1
Pyrene	U	U	U	U	50
Total Semivolatile Compounds	0	0	0	0	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter
--: No standard
ND: Any detect exceeds limit
U: Analyzed for but not detected
J: Estimated value
UB: Qualified as non detect due to blank result

Exceeds Class GA Standard or Guidance Value

Table 2
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Semi-Volatile Organic Compounds

Sample ID	MW-08	MW-09	MW-10	MW-11	MW-13	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/10/2019	6/10/2019	6/11/2019	6/11/2019	6/10/2019	
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMIVOLATILE COMPOUNDS						
2,4,5-Trichlorophenol	U	U	U	U	U	1
2,4,6-Trichlorophenol	U	U	U	U	U	1
2,4-Dichlorophenol	U	U	U	U	U	5
2,4-Dimethylphenol	U	U	U	U	U	50
2,4-Dinitrophenol	U	U	U	U	U	10
2,4-Dinitrotoluene	U	U	U	U	U	5
2,6-Dinitrotoluene	U	U	U	U	U	5
2-Chloronaphthalene	U	U	U	U	U	10
2-Chlorophenol	U	U	U	U	U	1
2-Methylnaphthalene	U	U	U	U	U	--
2-Methylphenol	U	U	U	U	U	1
2-Nitroaniline	U	U	U	U	U	5
2-Nitrophenol	U	U	U	U	U	1
3,3-Dichlorobenzidine	U	U	U	U	U	5
3-Nitroaniline	U	U	U	U	U	5
4,6-Dinitro-2-methylphenol	U	U	U	U	U	1
4-Bromophenyl-phenylether	U	U	U	U	U	--
4-Chloro-3-methylphenol	U	U	U	U	U	1
4-Chloroaniline	U	U	U	U	U	5
4-Chlorophenylphenyl ether	U	U	U	U	U	--
4-Methylphenol	U	U	U	U	U	1
4-Nitroaniline	U	U	U	U	U	5
4-Nitrophenol	U	U	U	U	U	1
Acenaphthene	U	U	U	U	U	20
Acenaphthylene	U	U	U	U	U	--
Acetophenone	U	U	U	U	U	--
Anthracene	U	U	U	U	U	50
Atrazine	U	U	U	U	U	7.5
Benzaldehyde	U	U	U	U	U	--
Benzo(a)anthracene	U	U	U	U	U	0.002
Benzo(a)pyrene	U	U	U	U	U	ND
Benzo(b)fluoranthene	U	U	U	U	U	0.002
Benzo(ghi)perylene	U	U	U	U	U	--
Benzo(k)fluoranthene	U	U	U	U	U	0.002
Biphenyl	U	U	U	U	U	5
Bis(2-chloroisopropyl)ether	U	U	U	U	U	--
Bis(2-chloroethoxy)methane	U	U	U	U	U	5
Bis(2-chloroethyl)ether	U	U	U	U	U	1
Bis(2-ethylhexyl)phthalate (BEHP)	U	U	U	U	U	5
Benzyl butyl phthalate	U	U	U	U	U	50
Caprolactam	U	U	U	U	U	--
Carbazole	U	U	U	U	U	--
Chrysene	U	U	U	U	U	0.002
Dibenzo(a,h)anthracene	U	U	U	U	U	--
Dibenzofuran	U	U	U	U	U	--

Next page for footnotes/qualifiers

Table 2
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Semi-Volatile Organic Compounds

Sample ID / Sampling Date / Units	MW-08 6/10/2019 ug/l	MW-09 6/10/2019 ug/l	MW-10 6/11/2019 ug/l	MW-11 6/11/2019 ug/l	MW-13 6/10/2019 ug/l	NYSDEC Class GA Standard or Guidance Value ug/l
COMPOUNDS CONTINUED						
Diethyl phthalate	U	U	U	U	U	50
Dimethyl phthalate	U	U	U	U	U	50
Di-n-butyl phthalate	U	U	U	U	U	50
Di-n-octyl phthalate	U	U	U	U	U	50
Fluoranthene	U	U	U	U	U	50
Fluorene	UB	U	UB	UB	UB	50
Hexachlorobenzene	U	U	U	U	U	0.04
Hexachlorobutadiene	U	U	U	U	U	0.5
Hexachlorocyclopentadiene	U	U	U	U	U	5
Hexachloroethane	U	U	U	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	U	U	U	0.002
Isophorone	U	U	U	U	U	50
Naphthalene	U	U	U	U	U	10
Nitrobenzene	U	U	U	U	U	0.4
N-Nitroso-di-n-propylamine	U	U	U	U	U	--
N-Nitrosodiphenylamine	U	U	U	U	U	50
Pentachlorophenol	U	***26 J***	U	U	U	1
Phenanthrene	UB	U	UB	UB	UB	50
Phenol	U	U	U	U	U	1
Pyrene	U	U	U	U	U	50
Total Semivolatile Compounds	0	26	0	0	0	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter
--: No standard
ND: Any detect exceeds limit
U: Analyzed for but not detected
J: Qualified as non detect due to blank result
UB: Estimated value or limit

Exceeds Class GA Standard or Guidance Value

Table 2
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Semi-Volatile Organic Compounds

Sample ID	MW-14	MW-16	MW-17	MW-18	MW-19	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/10/2019	6/10/2019	6/11/2019	6/11/2019	6/10/2019	
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMIVOLATILE COMPOUNDS						
2,4,5-Trichlorophenol	U	U	U	U	U	1
2,4,6-Trichlorophenol	U	U	U	U	U	1
2,4-Dichlorophenol	U	U	U	U	U	5
2,4-Dimethylphenol	U	U	U	U	U	50
2,4-Dinitrophenol	U	U	U	U	U	10
2,4-Dinitrotoluene	U	U	U	U	U	5
2,6-Dinitrotoluene	U	U	U	U	U	5
2-Chloronaphthalene	U	U	U	U	U	10
2-Chlorophenol	U	U	U	U	U	1
2-Methylnaphthalene	U	U	U	U	U	--
2-Methylphenol	U	U	U	U	U	1
2-Nitroaniline	U	U	U	U	U	5
2-Nitrophenol	U	U	U	U	U	1
3,3-Dichlorobenzidine	U	U	U	U	U	5
3-Nitroaniline	U	U	U	U	U	5
4,6-Dinitro-2-methylphenol	U	U	U	U	U	1
4-Bromophenyl-phenylether	U	U	U	U	U	--
4-Chloro-3-methylphenol	U	U	U	U	U	1
4-Chloroaniline	U	U	U	U	U	5
4-Chlorophenylphenyl ether	U	U	U	U	U	--
4-Methylphenol	U	U	U	U	U	1
4-Nitroaniline	U	U	U	U	U	5
4-Nitrophenol	U	U	U	U	U	1
Acenaphthene	U	U	U	U	U	20
Acenaphthylene	U	U	U	U	U	--
Acetophenone	U	U	U	U	U	--
Anthracene	U	U	U	U	U	50
Atrazine	U	U	U	U	U	7.5
Benzaldehyde	U	U	U	U	U	--
Benzo(a)anthracene	U	U	U	U	U	0.002
Benzo(a)pyrene	U	U	U	U	U	ND
Benzo(b)fluoranthene	U	U	U	U	U	0.002
Benzo(ghi)perylene	U	U	U	U	U	--
Benzo(k)fluoranthene	U	U	U	U	U	0.002
Biphenyl	U	U	U	U	U	5
Bis(2-chloroisopropyl)ether	U	U	U	U	U	--
Bis(2-chloroethoxy)methane	U	U	U	U	U	5
Bis(2-chloroethyl)ether	U	U	U	U	U	1
Bis(2-ethylhexyl)phthalate (BEHP)	U	U	U	U	U	5
Benzyl butyl phthalate	U	U	U	U	U	50
Caprolactam	U	U	U	U	U	--
Carbazole	U	U	U	U	U	--
Chrysene	U	U	U	U	U	0.002
Dibenzo(a,h)anthracene	U	U	U	U	U	--
Dibenzofuran	U	U	U	U	U	--

Next page for footnotes/qualifiers

Table 2
Camp Summit Site
Schoharie, New York
Groundwater Monitoring Well Samples
Semi-Volatile Organic Compounds

Sample ID / Sampling Date / Units	MW-14 6/10/2019 ug/l	MW-16 6/10/2019 ug/l	MW-17 6/11/2019 ug/l	MW-18 6/11/2019 ug/l	MW-19 6/10/2019 ug/l	NYSDEC Class GA Standard or Guidance Value ug/l
COMPOUNDS CONTINUED						
Diethyl phthalate	U	U	U	U	U	50
Dimethyl phthalate	U	U	U	U	U	50
Di-n-butyl phthalate	U	U	U	U	U	50
Di-n-octyl phthalate	U	U	U	U	U	50
Fluoranthene	U	U	U	U	U	50
Fluorene	UB	UB	UB	UB	UB	50
Hexachlorobenzene	U	U	U	U	U	0.04
Hexachlorobutadiene	U	U	U	U	U	0.5
Hexachlorocyclopentadiene	U	U	U	U	U	5
Hexachloroethane	U	U	U	U	U	5
Indeno(1,2,3-cd)pyrene	U	U	U	U	U	0.002
Isophorone	U	U	U	U	U	50
Naphthalene	U	U	U	U	U	10
Nitrobenzene	U	U	U	U	U	0.4
N-Nitroso-di-n-propylamine	U	U	U	U	U	--
N-Nitrosodiphenylamine	U	U	U	U	U	50
Pentachlorophenol	U	U	U	***4.3 J***	U	1
Phenanthrene	UB	UB	UB	UB	UB	50
Phenol	U	U	U	U	U	1
Pyrene	U	U	U	U	U	50
Total Semivolatile Compounds	0	0	0	4.3	0	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter
--: No standard
ND: Any detect exceeds limit
U: Analyzed for but not detected
J: Qualified as non detect due to blank result
UB: Estimated value
Exceeds Class GA Standard or Guidance Value

Table 3
Camp Summit Site
Schoharie, New York
Groundwater Samples
Total Metals

Sample ID	MW-02	MW-03	MW-04	MW-05	MW-08	MW-09	MW-10	MW-11	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/10/2019	6/11/2019	6/11/2019	6/11/2019	6/10/2019	6/10/2019	6/11/2019	6/11/2019	
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
METALS									
Aluminum	U	U	0.18 J	0.34	U	0.36	U	0.069 J	--
Antimony	U	U	U	U	U	U	U	U	0.003
Arsenic	U	U	U	U	U	U	U	U	0.025
Barium	0.014	0.014	0.041	0.011	0.011	0.058	0.0055	0.007	1
Beryllium	U	U	U	U	U	U	U	U	0.003
Cadmium	U	U	U	U	U	U	U	U	0.005
Calcium	62.1	64.9	48.2	36.8	80.3	133	46.6	41.6	--
Chromium, Total	U	U	0.001 J	0.0016 J	U	0.0022 J	U	U	0.05
Cobalt	U	U	U	U	U	0.01	U	U	--
Copper	U	U	U	U	U	U	U	U	0.2
Iron	0.047 J	***1***	0.24	***0.41***	0.19	***3.1***	0.038 J	0.05	0.3
Lead	U	U	U	U	U	0.004 J	U	U	0.025
Magnesium	8.2	6.3	6.7	9.5	25.1	28.4	11.1	12.1	35
Manganese	***1.7***	***1.5***	0.0047	0.017	***0.35***	***10.3***	0.081	0.16	0.3
Mercury	U	U	U	U	U	U	U	U	0.0007
Nickel	U	U	U	U	U	0.014	U	U	0.1
Potassium	1.5	2	0.98	2.3	3.1	2.2	0.52	1.1	--
Selenium	U	U	U	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	U	U	0.05
Sodium	***31.3***	7	3.3	4.8	***57.1***	***761***	3.9	7.7	20
Thallium	U	U	U	U	U	U	U	U	0.0005
Vanadium	U	U	U	U	U	0.0069	U	U	--
Zinc	U	U	U	0.062	U	0.0017 J	U	U	2

Footnotes/Qualifiers:

mg/l: Milligrams per liter
--: No standard
U: Analyzed for but not detected
UB: Qualified as non detect due to blank result
J: Estimated value

Exceeds Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

Table 3
Camp Summit Site
Schoharie, New York
Groundwater Samples
Total Metals

Sample ID	MW-13	MW-14	MW-16	MW-17	MW-18	MW-19	NYSDEC Class GA Standard or Guidance Value
Sampling Date	6/10/2019	6/10/2019	6/10/2019	6/11/2019	6/11/2019	6/10/2019	
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
METALS							
Aluminum	U	4.3	8	0.089 J	U	0.13 J	--
Antimony	U	U	U	U	U	U	0.003
Arsenic	U	U	U	U	U	U	0.025
Barium	0.0043	0.033	0.046	0.0049	0.008	0.0088	1
Beryllium	U	U	0.00035 J	U	U	U	0.003
Cadmium	U	U	U	U	U	U	0.005
Calcium	26.5	67.9	32.3	34.6	43.8	23	--
Chromium, Total	U	0.0063	0.011	U	U	U	0.05
Cobalt	U	0.0022 J	0.0036 J	U	U	0.0054	--
Copper	0.0017 J	0.0061 J	0.008 J	U	U	U	0.2
Iron	0.077	***4.5***	***9.9***	0.088	0.098	***10.2***	0.3
Lead	U	0.0041 J	0.0061 J	U	U	U	0.025
Magnesium	6.6	16.9	9.2	11.3	7	4.4	35
Manganese	***0.31***	***0.34***	0.22	0.029	***1.5***	***3.6***	0.3
Mercury	U	U	U	U	U	U	0.0007
Nickel	U	0.0053 J	0.0096 J	U	U	0.0027 J	0.1
Potassium	1.1	2.5	3.3	0.76	1.2	1.7	--
Selenium	U	U	U	U	U	U	0.01
Silver	U	U	U	U	U	U	0.05
Sodium	***33.8***	***49.6***	5.3	6.8	3.8	4.7	20
Thallium	U	U	U	U	U	U	0.0005
Vanadium	U	0.0069	0.012	U	U	U	--
Zinc	0.0034 J	0.01	0.026	U	U	U	2

Footnotes/Qualifiers:

mg/l: Milligrams per liter
--: No standard
U: Analyzed for but not detected
UB: Qualified as non detect due to blank result
J: Estimated value
Exceeds Class GA Standard or Guidance Value

Table 4
Camp Summit Site
Schoharie, New York
Groundwater Samples
Dioxins and Furans

Sample ID / Sampling Date	MW-02 6/10/2019	MW-03 6/11/2019	MW-04 6/11/2019	MW-05 6/11/2019	MW-08 6/10/2019	MW-09 6/10/2019	MW-10 6/11/2019
Furans in pg/l							
1,2,3,4,6,7,8-Heptachlorodibenzofuran	UB	UB	U	UB	UB	15 J	UB
1,2,3,4,6,7,8-Heptachlorodibenzo-P-Dioxin	UB	17 J	UB	UB	UB	120	UB
1,2,3,4,7,8,9-Heptachlorodibenzofuran	U	U	U	U	U	U	U
1,2,3,4,7,8-Hexachlorodibenzofuran	U	UB	U	U	U	UB	U
1,2,3,4,7,8-Hexachlorodibenzo-P-Dioxin	U	U	U	U	U	UB	U
1,2,3,6,7,8-Hexachlorodibenzofuran	0.72 J	1.9 J	U	0.56 J	U	3.8 J	U
1,2,3,6,7,8-Hexachlorodibenzo-P-Dioxin	0.46 J	0.96 J	U	U	U	3.4 J	U
1,2,3,7,8,9-Hexachlorodibenzofuran	U	U	U	U	U	U	U
1,2,3,7,8,9-Hexachlorodibenzo-P-Dioxin	0.36 J	0.76 J	0.37 J	U	U	1.8 J	U
1,2,3,7,8-Pentachlorodibenzofuran	U	U	U	U	U	U	U
1,2,3,7,8-Pentachlorodibenzo-P-Dioxin	U	UB	U	U	U	UB	U
2,3,4,6,7,8-Hexachlorodibenzofuran	U	0.52 J	U	U	U	U	U
2,3,4,7,8-Pentachlorodibenzofuran	U	U	U	U	U	U	U
2,3,7,8-Tetrachlorodibenzofuran	U	U	U	U	U	U	U
2,3,7,8-Tetrachlorodibenzo-P-Dioxin	U	U	U	U	U	U	U
Octachlorodibenzofuran	UB	14 J	UB	UB	UB	69 J	UB
Octachlorodibenzo-P-Dioxin	UB	120	UB	42 BJ	UB	1500	UB

Footnotes/Qualifiers:
pg/l: Picogram per liter
U: Analyzed for but not detected
UB: Qualified as non detect due to blank result
J: Estimated value

Table 4
Camp Summit Site
Schoharie, New York
Groundwater Samples
Dioxins and Furans

Sample ID Sampling Date	MW-11 6/11/2019	MW-13 6/10/2019	MW-14 6/10/2019	MW-16 6/10/2019	MW-17 6/11/2019	MW-18 6/11/2019	MW-19 6/11/2019
Furans in pg/l							
1,2,3,4,6,7,8-Heptachlorodibenzofuran	U	UB	UB	U	UB	UB	26 J
1,2,3,4,6,7,8-Heptachlorodibenzo-P-Dioxin	UB	UB	UB	UB	UB	UB	250
1,2,3,4,7,8,9-Heptachlorodibenzofuran	U	U	U	U	UB	U	UB
1,2,3,4,7,8-Hexachlorodibenzofuran	U	U	U	U	U	U	UB
1,2,3,4,7,8-Hexachlorodibenzo-P-Dioxin	U	U	U	U	U	U	UB
1,2,3,6,7,8-Hexachlorodibenzofuran	U	U	U	U	U	0.47 J	13 J
1,2,3,6,7,8-Hexachlorodibenzo-P-Dioxin	U	U	U	U	U	U	16 J
1,2,3,7,8,9-Hexachlorodibenzofuran	U	U	U	U	U	U	U
1,2,3,7,8,9-Hexachlorodibenzo-P-Dioxin	U	U	U	U	U	U	17 J
1,2,3,7,8-Pentachlorodibenzofuran	U	U	U	U	UB	U	UB
1,2,3,7,8-Pentachlorodibenzo-P-Dioxin	U	U	U	U	U	U	UB
2,3,4,6,7,8-Hexachlorodibenzofuran	U	U	U	U	U	U	1.9 J
2,3,4,7,8-Pentachlorodibenzofuran	U	U	U	U	UB	U	UB
2,3,7,8-Tetrachlorodibenzofuran	U	U	U	U	0.35 J	U	0.69 J
2,3,7,8-Tetrachlorodibenzo-P-Dioxin	U	U	U	U	U	U	0.23 J
Octachlorodibenzofuran	UB	UB	UB	UB	UB	UB	57 J
Octachlorodibenzo-P-Dioxin	UB	32 J	33 J	UB	UB	33 J	360

Footnotes/Qualifiers:
pg/l: Picogram per liter
U: Analyzed for but not detected
UB: Qualified as non detect due to blank result
J: Estimated value

APPENDIX E

EXCAVATION WORK PLAN

APPENDIX E – EXCAVATION WORK PLAN (EWP)

E-1 NOTIFICATION

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

Table E-1: Notifications*

Name	**Contact Information**
Robert Strang Project Manager; NYS Department of Environmental Conservation	Phone: (518) 402-8642 Email: robert.strang@dec.ny.gov
Anik Gibeau Citizen Participation Specialist NYS Department of Environmental Conservation	Phone: (518) 475-0294 Email: Anik.gibeau@dec.ny.gov
Andrew Fleck Region 4 Remediation Engineer NYS Department of Environmental Conservation	Phone: (518)357-2192 Email: Andrew.fleck@dec.ny.gov
Shaun Surani New York State Department of Health Bureau of Environmental Exposure Investigation	Phone: (518) 402-7860 Email: Shaun.surani@health.ny.gov

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

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control.

- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling.
- A schedule for the work, detailing the start and completion of all intrusive work.
- A summary of the applicable components of this EWP.
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120.
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from HASP provided in **Appendix F** of this SMP.
- Identification of disposal facilities for potential waste streams.
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

E-2 SOIL SCREENING METHODS

Visual and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the certificate of completion (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 10 of this Appendix.

E-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.

E-4 MATERIALS EXCAVATION AND LOAD-OUT

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

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

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

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

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

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

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

E-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 approved truck routes. The most appropriate route shall take 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; (g) community input, where necessary.

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.

E-6 MATERIALS DISPOSAL OFF-SITE

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

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

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-15 Registration Facility).

E-7 MATERIALS REUSE ON-SITE

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

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

E-8 FLUIDS MANAGEMENT

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

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

E-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities, the site will be restored in a manner that complies with the Record of Decision.

E-10 BACKFILL FROM OFF-SITE SOURCES

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

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

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

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

E-11 STORMWATER POLLUTION PREVENTION

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

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

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

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

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

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

E-12 EXCAVATION CONTINGENCY PLAN

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

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

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

E-13 COMMUNITY AIR MONITORING PLAN

The location of air sampling stations shall be based on generally prevailing wind conditions. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

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

E-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 soil. 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.

E-15 DUST CONTROL PLAN

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

Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.

Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.

Gravel will be used on roadways to provide a clean and dust-free road surface.

On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

E-16 OTHER NUISANCES

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

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

APPENDIX F

HEALTH AND SAFETY PLAN

SITE-SPECIFIC HASP

The following site-specific information will be filled out by project personnel for each site and will be posted on-site:

Site Name:	Camp Summit Site
Address:	137 Eagle Heights Road County
	Town of Fulton, Schoharie County, NY 12175
Telephone:	
Date of HASP Preparation:	April 24, 2020
Dates of Field Investigation:	TBD
Entry Objectives:	Control exposure to remaining contamination after previous remedial actions.

	Name	Phone
NYSDEC Project Manager:	Robert Strang	(518) 402-8642
D&B Project Manager:	R. Petrella	(516) 364-9890
D&B Site Project Manager:	M. Hoskins	(315) 437-1142
D&B HSO:	M. Hoskins	(315) 437-1142
Field team staff:	TBD	
Subcontractors:		

Medical Assistance

Hospital:	Cobleskill Regional Hospital
Address:	178 Grandview Drive; Cobleskill, NY 12043

SITE-SPECIFIC HASP

Emergency Telephone: (518) 254-3337/ 911

Directions: Head west on Eagle Heights Rd toward Tamarack Rd. In 256 feet, turn right onto Camp Summit Rd. In 0.5 miles, turn right to stay on Camp Summit Rd. In 0.7 miles, turn left onto Sawyer Hollow Rd. In 2.1 miles, turn right to stay on Sawyer Hollow Rd. In 0.2 miles, turn right onto NY-10 N. In 4.9 miles, turn right onto NY-10 N/NY-7 E. In 4.7 miles, turn left onto North St. In 0.5 miles, Turn right onto Ridgewood Dr. In 486 feet, Turn left onto Grandview Dr. In 26 feet miles, turn right and the hospital will be on the left.

Please attach a route to hospital

Emergency Telephones

Agent/Facility	Telephone	Emergency No.
EMS - Ambulance		911
Police Department (NYS Police)	(518)-234-9400	911
Fire Department	(518) 287-1717	911
Hospital	(518) 254-3337	911
Poison Control Center	1-800-222-1222	1-800-222-1222

Additional site related information (may include special hazards, site control, waste storage and disposal, PPE, decon area location, special engineering controls, etc.).

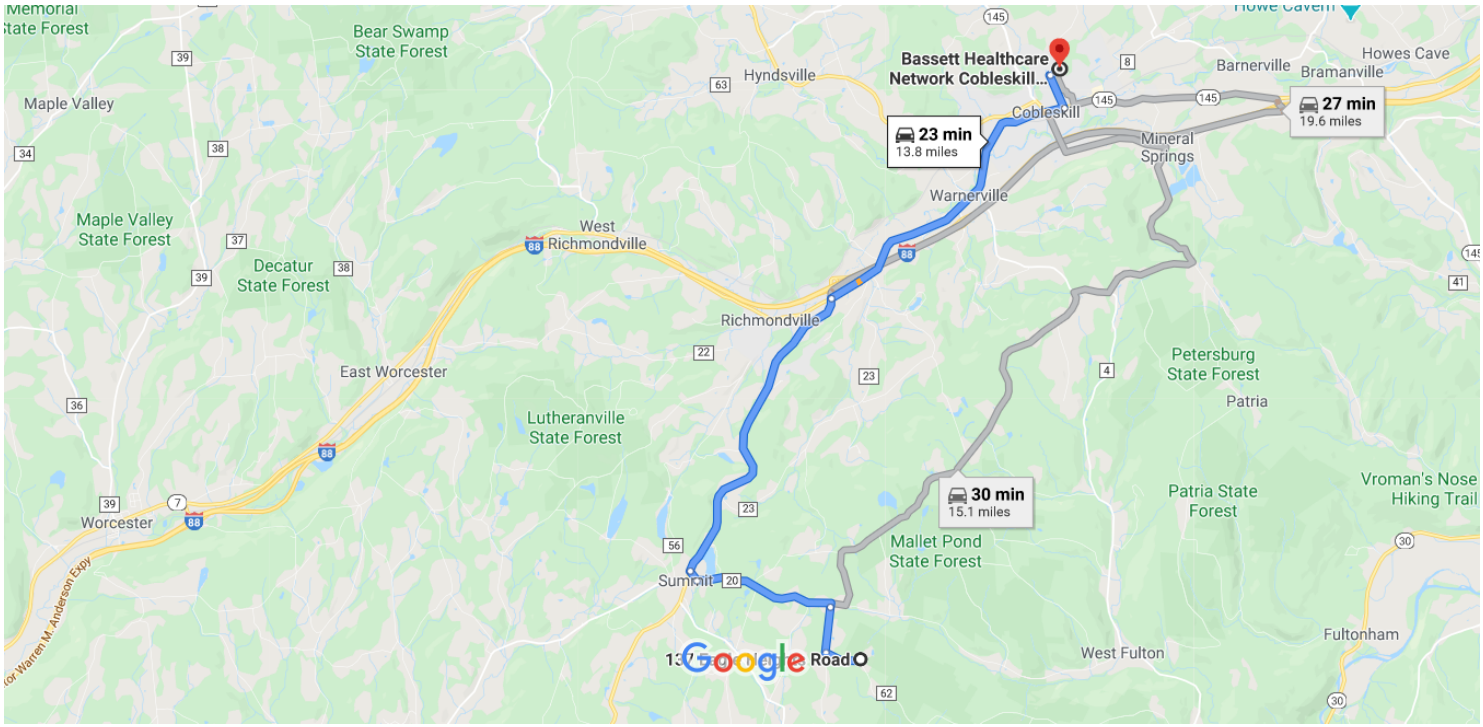
Sampling and analysis of groundwater, surface water, soil, sediments, to take place on-site. All accumulated waste shall be properly handled, transported, and disposed of in accordance with all applicable local, State, and Federal regulations. Use PPE typically associated with sampling (i.e. disposable gloves).

Google Maps

137 Eagle Heights Rd, Summit, NY 12175 to hospitals near cobleskill, Schoharie County

Drive 13.8 miles, 23 min

Route from Camp Summit Site (Site No. 448006) to Bassett Healthcare Network Cobleskill Regional Hospital



137 Eagle Heights Rd

Summit, NY 12175

Follow Camp Summit Rd and Sawyer Hollow Rd to NY-10 N in Summit

7 min (3.5 mi)

1. Head west on Eagle Heights Rd toward Tamarack Rd

256 ft

2. Turn right onto Camp Summit Rd

0.5 mi

3. Turn right to stay on Camp Summit Rd

0.7 mi

4. Turn left onto Sawyer Hollow Rd

2.1 mi

5. Turn right to stay on Sawyer Hollow Rd

0.2 mi

Continue on NY-10 N to Cobleskill

14 min (9.6 mi)

6. Turn right onto NY-10 N

4.9 mi

7. Turn right onto NY-10 N/NY-7 E

Continue to follow NY-7 E

4.7 mi

Continue on North St to your destination

2 min (0.7 mi)

8. Turn left onto North St

0.5 mi

9. Turn right onto Ridgewood Dr

486 ft

10. Turn left onto Grandview Dr

26 ft

11. Turn right

Destination will be on the left

361 ft

Bassett Healthcare Network Cobleskill Regional Hospital

178 Grandview Dr, Cobleskill, NY 12043

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

New York State Department of Environmental Conservation

Generic Health and Safety Plan

Prepared for:

New York State Department of Environmental Conservation

Standby Engineering Contract

April 2011

Prepared by:

D&B/TRC Joint Venture

db TRC
A Joint Venture

GENERIC HEALTH AND SAFETY PLAN

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STANDBY ENGINEERING CONTRACT

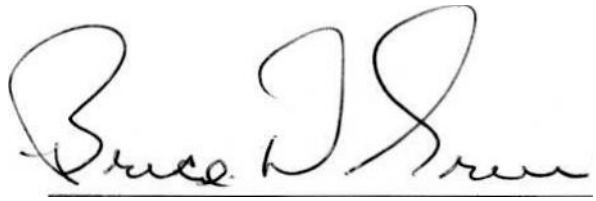
Prepared by:

D&B/TRC JOINT VENTURE
WOODBURY, NEW YORK

APRIL 2011

CERTIFICATION

This Health and Safety Plan (HASP) has been prepared under the supervision of, and has been reviewed by, a Certified Industrial Hygienist (CIH) certified by the American Board of Industrial Hygiene.



(Bruce Groves, CIH)
ABIH No. ark

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HEALTH AND SAFETY PLAN

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1.0 INTRODUCTION

1.1 General

This Health and Safety Plan (HASP) is prepared to meet the requirements contained in 29 CFR §1910.120 and §1926, NIOSH/OSHA/USCG/USEPA Guidance Manual for Hazardous Waste Site Activities (NIOSH No. 85-115), USEPA "Standard Operating Safety Guides," and Superfund Amendments and Reauthorization Act (SARA), Title I, Section 126. The HASP addresses activities associated with field investigations conducted at New York State Department of Environmental Conservation (NYSDEC) Superfund sites. Compliance with the HASP is required of all on-site personnel entering and/or conducting investigation activities at the site. Personnel conducting activities at the sites will be subject to the requirements of this HASP and accountable to the authorities having jurisdiction at the site. Site-specific information regarding health and safety will be included in a site-specific work plan, if required.

1.2 Purpose and Scope of the HASP

This HASP sets forth the requirements for on-site health and safety supervision, air monitoring, medical monitoring, personal protective equipment, controls, safe work practices and proper decontamination in order to ensure health and safety during activities associated with field investigation in the restricted zones of a site.

1.3 Site Description

The sites covered under this plan include a wide variety of active and inactive commercial and industrial facilities. Specific information pertaining to each site will be provided in a site-specific work plan, if required.

2.0 PERSONNEL ORGANIZATION AND RESPONSIBILITIES

Investigation of sites will require the interaction of contractors, site facility operators and technical specialists, both on-site and off-site. The project team will comprise representatives of the New York State Department of Environmental Conservation (NYSDEC), Dvirka and Bartilucci Consulting Engineers (D&B), the environmental consultant and various contractors.

2.1 Project Director

The Project Director will have overall responsibility for implementation of the corporate and site-specific Health and Safety Plan, if required, and the supervision and monitoring of employees and contractors.

2.2 Project Manager

The Project Manager will assure that all elements of this HASP are implemented where applicable and that all project staff are protected and working in a safe manner.

2.3 Health and Safety Officer (HSO)

The HSO will be responsible for preparation of the site-specific HASP, if required, and has the final authority to resolve health and safety issues at the site. The HSO has overall responsibility for ensuring that the policies and procedures of this HASP are implemented.

The HSO will provide regular support for all health and safety activities, including recommendations for upgrading or downgrading the level of personal protection, as needed.

The HSO will be on-site as needed during the field investigation. The HSO has the authority to stop work at any time unsafe work conditions are present. Any potentially hazardous condition posing a risk beyond the defined role or mission is anticipated to require the HSO to consult with the Field Operations Manager (FOM) and Project Director.

The HSO will be a Certified Hazardous Materials Manager (CHMM), Certified Safety Professional (CSP), Certified Industrial Hygienist (CIH) or designee, and will be available off-site on an as-needed basis to provide technical support to the FOM. Any decisions requiring use or selection of personal protection equipment (PPE), or monitoring devices other than those in the HASP, will be approved by the HSO or designee.

2.4 Field Operations Manager and Alternate HSO

The FOM, or designee, will serve as the Alternative HSO and will be responsible for conducting the work and for assuring that the work is conducted in accordance with the requirements of the HASP. The FOM will be on-site as needed during the field investigation and will manage all day-to-day activities of all parties on the site.

The FOM will be responsible for implementing safety precautions and procedures during all investigation phases, and has final authority to resolve health and safety issues at the site when the HSO is not on-site.

2.5 Physician

A physician will be responsible for all medical review, diagnosis and certification of all site personnel. An on-call physician will be available for each investigation designated in the site-specific work plan, if required.

2.6 General Health and Safety Requirements for all Employees

The following general health and safety requirements will apply to all persons working at the site:

- All persons working on the investigation team will read, sign and become familiar with the HASP (a copy of the Health and Safety Plan Review Acknowledgment Form is provided in Exhibit 1). If any information is unclear, the reader will contact the

HSO for clarification prior to any field work. A copy of the plan will be available for review through the Project Manager, FOM or designee.

- No one will be allowed in active investigation areas without the prior knowledge and approval of the HSO, Project Manager or FOM. All active areas that could pose a potential threat to health and safety will be designated with warning tape or other measures to prevent access by other site personnel or the public.

- Sufficient backup personnel will be available for all site activities. At a minimum, two persons will be present at any location during investigation activities.

- All personnel involved in the investigation at the site will notify the HSO, Project Manager or FOM of any unsafe conditions or activities.

- Standard hygiene practices will be implemented, such as no smoking, eating or drinking during site investigation work activities. A thorough washing of hands and face prior to smoking, eating or drinking will be conducted.

- Workers will avoid unnecessary contamination, such as walking through, sitting on, leaning on or kneeling in areas that are known or suspected to be contaminated.

- All site personnel will observe their partners for any signs of adverse effects associated with the work activity, and will inform their partner or supervisor of any unusual signs or symptoms that they are experiencing themselves.

3.0 HAZARD ASSESSMENT AND RISK ANALYSIS

3.1 Potential Health Hazards

The general hazard potential at hazardous waste sites is characterized in Table 3-1. The primary concern at these sites is to protect workers from potential exposure to contaminated soil, vapors, dust, groundwater and other contaminated materials when conducting the field investigation. In addition to the chemical hazards, physical, biological, radiological and underground hazards may also exist. These hazards are identified on Table 3-2 and are discussed below.

3.1.1 Health Hazard Identification

A list of the chemical contaminants that are commonly found at hazardous waste sites is found in Table 3-2. These chemical contaminants may be present, along with other compounds, at levels which, upon release and contact, may result in concentrations approaching the OSHA Pemiissible Exposure Limits (PELs). There may also be chemicals or mixtures of chemicals for which no information at the time of preparation of this HASP have been identified. Workers should be observant of any unplanned occurrences (unusual odor, soil colorations, etc.).

3.1.2 Health Hazard Evaluation

The primary potential health hazards of concern to workers from contaminants are from the inhalation of vapors and dusts, and skin exposure to corrosive substances or skin absorptive poisons. Potential for these exposures exist when conducting field programs using various investigation techniques.

Table 3-1

SUMMARY OF CHARACTERISTICS AND HEALTH HAZARDS

Type of site	Active and inactive commercial and industrial facilities
Apparent hazard	Low-moderate (in general)
Potential source	Contaminated surface and subsurface soil, groundwater, wastewater, drainage water, surface water, sediment and sanitary waste/sludge
Contamination characteristics	Toxic, corrosive, flammable
Form of hazards	Dust, liquids, vapors
Routes of exposure	Inhalation, ingestion, dermal contact

Table 3-2

SUMMARY OF POTENTIAL HAZARDS

CHEMICAL HAZARDS	Volatile organic compounds
	Semivolatile organic compounds
	Pesticides
	PCBs
	Metals
	Cyanide
PHYSICAL HAZARDS	Noise
	Slips, trips, falls
	Deteriorated overhead surfaces
	Heavy equipment traffic
	Heat or cold stress
	Striking and struck by (heavy equipment)
BIOLOGICAL HAZARDS	Pigeon droppings
	Rabies carrying animals (rats, raccoons, etc.)
	Poisonous snakes (weather dependent)
	Stinging insects (weather dependent)
	Poisonous plants (weather dependent)
ELECTRICAL HAZARDS	Overhead or underground power lines
	Lightning
	Electrical equipment
FIRE/EXPLOSION HAZARDS	Combustible gas
OXYGEN DEFICIENCY	Working in confined spaces
RADIATION HAZARDS	Wastes
UNDERGROUND HAZARDS	Contaminated media
	Gas lines
	Water lines
	Sewer/storm lines
	Electrical lines
	Telecommunication lines

During work on-site, air monitoring will be performed in accordance with Section 7.2 — Air Monitoring. OSHA PELs and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) may be exceeded during investigation activities. A list of PELs and Health Hazards of Typical Contaminants of Concern are listed on Table 3-3. This list must be updated based on site specific contaminants of concern in the site specific Health and Safety Plan. The activities to be performed during typical site investigations are summarized in Table 3-4. Air monitoring will be performed during the implementation of these activities. Further discussion of air monitoring is provided in Section 7.2 and in the event of the potential exposure, personal protective equipment requirements are provided in Section 5.

3.1.3 Potential Exposures

Potentially contaminated samples include soil, groundwater, wastewater, sludge, stoiin water, surface water and sediment. The expected risk of exposure to these chemicals would be from inhalation, ingestion, skin or eye contact with volatile compounds, contaminated dusts, etc. Potential exposures can be mitigated through appropriate investigation procedures, work practices, air monitoring and personal protective equipment. Duration and frequency of exposure will be short and intermittent over a period of several weeks. All personnel related to the investigation will keep upwind of all soil disturbances and sampling activities, when possible. In addition, splashing of liquids and generation of dust should be minimized by employing careful handling practices.

3.1.4 Physical and Biological Hazards

Anticipated potential physical hazards from routine investigative work are low to moderate, but still require consideration due to their ability to cause injury. Workers may encounter sharp objects, pinch points or unsecured footing. Improper or careless use of sampling, drilling and excavation equipment increases the risks of accidents from underground and overhead utilities, and operation of the equipment. When working around machinery, there

Table 3-3

PERMISSIBLE EXPOSURE LIMITS AND HEALTH HAZARDS OF CONTAMINANTS OF CONCERN

Chemical	OSHA Permissible Exposure Limits	Primary Health Hazard (Target Organs)
Acetone	1,000 ppm, IDLH 2,500 ppm	Eyes, skin, respiratory system (RS), central nervous system (CNS)
Benzene	1 ppm, IDLH 500 ppm	Eyes, skin, RS, blood, CNS, bone marrow
Chlorobenzene	100 ppm, IDLH 1000 ppm	Eyes, skin, liver, RS, CNS
1,1-Dichloroethene	100 ppm, IDLH 3000 ppm	Skin, liver, lungs, kidneys, CNS
1,2-Dichloroethene	200 ppm, IDLH 1000 ppm	Eyes, RS, CNS
Chloroform	TLV 10 ppm, C 50 ppm	Eyes, skin, liver, Reproductive System
1,1,2-Trichloroethane	10 ppm, IDLH 100 ppm	Eyes, RS, liver, kidneys, CNS
1,1-Dichloroethylene	None (carcinogen)	Eyes, skin, blood, liver, kidneys, CNS
Trichloroethene	100 ppm, IDLH 1000 ppm	Eyes, skin, RS, heart, liver, CNS
Tetrachloroethene (Perchloroethene)	100 ppm, C 200 ppm	Eyes, RS, skin, liver, kidneys, CNS
1,1,1-Trichloroethane	350 ppm, IDLH 700 ppm	Eyes, skin, CNS, cardiovascular system (CVS), liver
Ethylbenzene	100 ppm, IDLH 800 ppm	Eyes, skin, RS, CNS
1,4-Dichlorobenzene	75 ppm, IDLH 150 ppm	Eyes, RS, liver, kidneys, skin
1,3-Dichlorobenzene	Not listed	Not listed
Ethene	Not listed	Not listed
Methane	Not listed	Not listed
Methylene Chloride	25 ppm, IDLH 2300 ppm	Eyes, skin, CVS, CNS
Toluene	200 ppm, IDLH 500 ppm	Eyes, skin, RS, CNS, liver, kidneys
Vinyl Chloride	1 ppm, C 5 ppm	Liver, CNS, blood, RS, lymphatic system

C - Ceiling Limit
IDLH - Immediately Dangerous to Life and Health
ST - Short Term Exposure Limit

Table 3-3 (continued)

PERMISSIBLE EXPOSURE LIMITS AND HEALTH HAZARDS OF CONTAMINANTS OF CONCERN

Chemical	OSHA Permissible Exposure Limits	Primary Health Hazard (Target Organs)
Benzene	1 ppm, ST* 5 ppm	Eyes, skin, respiratory system (RS), blood, central nervous system (CNS), bone marrow
Toluene	200 ppm C**300 ppm	Eyes, skin, RS, CNS, liver, kidneys
Ethylbenzene	100 ppm	Eyes, skin, RS, CNS
Xylene	100 ppm	Eyes, skin, RS, CNS, gastrointestinal (GI) tract, blood, liver, kidneys
Naphthalene	10 ppm	Eyes, skin, blood, liver, kidneys, CNS
Fluoranthene	0.2 mg/m^3	No specific hazard listed
Coal Tar Pitch (phenanthrene, anthracene, pyrene, chrysene and benzo(a)pyrene)	0.2 mg/m^3	RS, skin, bladder, kidneys
Arsenic	0.010 mg/m^3	Liver, kidneys, skin, lungs, lymphatic system
Barium	0.5 mg/m^3	Eyes, nose, throat, lungs, heart and GI tract
Cadmium	0.005 mg/m^3	RS, kidneys, prostate, blood
Chromium	0.5 mg/m^3	Eyes, skin, RS
Lead	0.050 mg/m^3	Eyes, GI tract, CNS, kidneys, blood, gingival tissue
Mercury	C**0.1 mg/m^3	Eyes, skin, RS, CNS, kidney
Selenium	0.2 mg/m^3	Eyes, skin, RS, liver, kidneys, blood, spleen
Silver	0.01 mg/m^3	Nasal septum, skin, eyes
PCBs	0.5 mg/m^3 (skin)	Skin, eyes, liver, reproductive system
Hydrogen Cyanide	10 ppm (11 mg/m^3)	CNS, CVS, thyroid, blood
Cyanide (potassium or sodium cyanide, as CN)	5.0 mg/m^3	Heart, eyes, nose, throat, skin

ST - Short Term Exposure Limit
C - Ceiling Limit

Table 3-4

ACTIVITIES TO BE PERFORMED DURING INVESTIGATIONS

Soil vapor sampling
Dry well, storm water drainage system and on-site sanitary system sampling
Test pit excavation
Surface soil sampling
Borehole construction and subsurface soil sampling
Monitoring well construction
Groundwater sampling
Surface water and surface water sediment sampling
Ambient air sampling

are also potential electrical hazards. In addition, workers may be exposed to poison ivy, stinging and biting insects, ticks and vermin. Personnel working at sites should take precautions against possible deer tick bites. Deer ticks are carrier of spirochete (borrelia bergdorfii) which causes Lyme Disease that can be transmitted to humans when bitten. To prevent tick bites, personnel should wear long pants made of light-colored, tightly woven cloth; tuck pant legs inside of socks; use an insect repellant; check themselves frequently and wash themselves thoroughly at the end of each day. Heat/cold stress, sunlight and UV radiation, and biological hazards are also potential hazards. Refer to Exhibit 6 for heat/cold stress guidelines.

Open excavations, pits, trenches, drill pit, sanitary system and other confined spaces as defined in 29 CFR 1910.14b(c)(1) and 29 CFR 1910.14b(d)(2) also represent hazards and under no circumstances will they be entered unless written procedures are in place for confined space entry. D&B's corporate confined space entry procedure is provided as Exhibit 2. Anyone performing confined space operations has received the necessary training. Oxygen content, flammable gasses or vapors and toxic air contaminants monitoring must be performed in accordance with Exhibit 2.

3.1.5 Radiological Hazards

Humans receive a continuous exposure to ionizing radiation that results from natural sources such as cosmic radiation from outer space and from radioactive materials in the earth and materials both around and within the body. This is referred to as "background radiation" and is part of the normal environment. The degree of injury inflicted on an individual by radiation exposure depends on such factors as the total dose, the rate at which the dose is received, the kind of radiation as well as the body parts receiving it.

Extensive work has been performed in an attempt to relate radiation dose to resulting damage. Based upon all the studies performed "maximum permissible levels" of exposure have been established which denote the radiation dose that can be tolerated with little chance of later development of adverse effects. A Geiger counter will be utilized as a screening tool to ensure that no source other than natural radioactive materials or background levels are present on-site.

Readings indicative of elevated radioactive activity will be cause to assess the current levels of personnel protective equipment and determine their adequacy. The HSO will be consulted immediately if investigative activities result in elevated Geiger counter readings.

3.2 Activity Safety and Health Hazard Analysis

Field activities for hazardous waste sites will include collecting samples from various locations and environmental media using techniques including:

- Soil vapor sampling;
- Dry well, storm water drainage system and on-site sanitary system sampling;
- Test pit excavation;
- Direct push sampling;
- Surface soil sampling;
- Borehole construction and subsurface soil sampling;
- Monitoring well construction;
- Groundwater sampling;
- Surface water and surface water sediment sampling; and
- Ambient air sampling.

Potential safety risks will vary with the specific activity and equipment used, and with the sampling sites themselves. When any new data is collected, potential health and safety hazards will be evaluated with respect to the current and planned activities at the site. All sampling work in which the potential hazards have not been identified may require additional precautions to assure protection against potential hazards. Any modifications of the investigation work plan will require evaluation to determine if the existing Health and Safety Plan is adequate in protecting on-site investigators.

With the installation of groundwater monitoring wells and soil borings, soil and groundwater sampling, test pit excavations, and dry well, storm water drainage system and sanitary system sampling during the investigation, some safety risks inherent with these activities may be expected. There is the potential for mechanical and physical "struck-by" hazards associated with the equipment and sampling activities. There are also potential electrical hazards from underground lines, overhead lines and use of electrical equipment and tools. The location of all underground utilities must be determined in areas where subsurface investigation is to be performed. Utility companies will be contacted to provide "mark-outs" on and off site at all investigation locations prior to initiation of subsurface activities. The property owner will also be contacted to determine utility locations on site. When conducting work inside structures, machinery lockout/tagout must be performed. A Lockout/Tagout Program has been established to protect employees from injuries that could result from the unexpected or unplanned start-up or movement of machinery or equipment during maintenance, installation, adjustment or servicing operations. This policy sets forth procedures which will be used to ensure that employees are provided with the information and equipment they need to perform these tasks safely. Exhibit 4 provides lockout/tagout procedures.

With regard to projects where excavating and trenching operations are being undertaken, personnel shall not enter the excavation for collection of a sample. D&B's corporate excavation trenching operations guidelines are provided as Exhibit 3.

The direct handling of contaminated drums, containers or concentrated/pure chemicals is not expected during the investigation. In the event that such materials are encountered during the field program, the operation will cease and uncovered drums which have been damaged will be immediately covered with soil to minimize release of volatile compounds. This condition will be recorded and reported to NYSDEC, and the field team will be instructed to secure the area until health and safety risks are properly assessed and the course of further action is determined.

The activities to be conducted at hazardous waste sites typically represent low to moderate health risk relative to the potential to encounter contaminated material. The risk

associated with safety hazards is also low to moderate. Potential levels of airborne contaminants may dictate use of appropriate personal protective equipment as deemed necessary by the HSO.

Initial work will be conducted in Level D personal protection. Monitoring equipment to be used includes: portable PID/FID, and combustible gas, oxygen, hydrogen sulfide indicator and Geiger counter. Additional instrumentation and sampling systems may be utilized if deemed necessary by the HSO or designee. The HSO or designee may modify these requirements as deemed necessary.

Proper wearing of protective equipment and employment of stringent personal hygiene practices should reduce potential health hazards.

Restricting access of on-site personnel to all equipment operations, maintaining safe distances from equipment and wearing proper safety equipment will reduce risk of injuries.

4.0 TRAINING REQUIREMENTS

4.1 General Health and Safety Training

All on-site personnel assigned to or regularly entering areas of the site other than the Support Zone (once established) will be trained in accordance with 29 CFR 1910.120. This training will be required for personnel performing or supervising work; for health, safety, security, or administrative purposes; for maintenance; or for any other site related function.

The training will include a minimum of 40 hours of general health and safety training meeting the requirements of 29 CFR 1910.120(e)(3)(i), and 8-hour annual refresher training. All management and supervisory personnel on-site must have received an additional 8 hours of training in accordance with 29 CFR 1910.120(e)(4). Instructors providing the training must meet the criteria outlined in 29 CFR 1910.120(e)(5). Documentation of all such training will be made available to the HSO, HSO designee or FOM before any person will be allowed to enter any potentially contaminated area (namely, the Exclusion Zone or the Contaminant Reduction Zone - see Section 8.0 for further discussion of Work Zones). Visitors who will enter the exclusion and contamination reduction zones must meet the training requirements listed above.

4.2 Site-Specific Training

All site personnel will attend a site-specific training meeting and will become familiar with the HASP and site-specific information, and certify their understanding of this plan (see Exhibit 1). This meeting will include, at a minimum, discussion in the following areas:

- Site specific hazard analysis (chemical/physical hazards);
- Standard safety operating procedures;
- Personal hygiene;
- Safety equipment to be used;
- Personal protective equipment to be worn, including care, use and proper fitting;

- Decontamination procedures;
- Areas of restricted access and prohibitions in work areas;
- Emergency procedures and plans;
- On-site and off-site communications;
- Hazardous materials handling procedures;
- Air monitoring instrumentation use and calibration;
- Hazardous materials recognition; and
- The "Buddy System" to be used at the site.

Visitors entering the Exclusion and Contaminant Reduction Zones will also be briefed on similar information. This briefing will be conducted by the HSO or the FOM/Altemate HSO. Abbreviated awareness briefings for visitors who remain in the Support Zone will also be provided by the HSO, HSO designee or FOM.

Documentation of training for all on-site personnel will be included in the site-specific HASP or provided to the HSO prior to commitment of field activities. Personnel who have not successfully completed the required training will not be permitted to enter the Exclusion Zone or the Contaminant Reduction Zone.

New employees involved in hazardous activities will be indoctrinated by the HSO prior to entering the site to work. All training requirements will be completed by a new employee prior to indoctrination. Indoctrination will be comprised of the site-specific refresher briefing, the task/operation safety and health risk analysis and accident prevention plan.

5.0 PERSONAL PROTECTIVE EQUIPMENT

5.1 General

All on-site personnel will be issued appropriate personal protective equipment (PPE). All PPE is to be used properly and protective clothing is to be kept clean and well maintained. The HSO or designee will maintain constant communication with the Project Director when conducting air monitoring as discussed in Section 7.2 and consult the Project Director with regard to "action levels" at which the specified minimum levels of protection are either upgraded or downgraded based upon air monitoring results and direct contact potential. Action levels are described in Section 7.2 The HSO or designee has the authority to require the use of additional equipment, if necessary, for specific operations, or may tailor PPE specifications to best fit the hazard control requirements as appropriate.

5.2 General Site Safety Equipment Requirements

The following is the basic work uniform and will be worn primarily outside the Exclusion Zone and the Contaminant Reduction Zone at the site. Equipment includes:

- Coveralls - (optional, may be disposable type);
- Boots/shoes - (OSHA compliant construction footwear);
- Hard hat with splash shield, if needed - ANSI approved; and
- Gloves (optional).

5.3 Level D Protection

Level D protection will be initially worn in the Exclusion Zone and Contaminant Reduction Zone during intrusive sampling and investigative activities. Equipment includes:

- Coveralls - One or two piece disposable suit, tyvek or equivalent;

- Gloves - Outer (neoprene, nitrile, or equivalent); Inner (nitrile);
- Boots - Outer (vulcanized rubber or equivalent); Inner (steel toe and shank) or equivalent combination (ANSI approved);
- Safety glasses or goggles (ANSI approved);
- Hard hat with splash shield, if needed (ANSI approved); and
- Hearing protection (if work is near heavy or noisy equipment).

5.4 Level C Protection

Level C protection will be selected when a modified level of respiratory protection is needed. Selection will be made when air monitoring results for the site or individual work areas exceed the action level criteria as described in Section 7.2 of this HASP. Equipment includes:

- Respirators - Full facepiece, air purifying respirator with combination organic vapor and particulate (P100) air cartridges (OSHA/NIOSH approved);
- Coveralls- Hooded one or two piece chemical resistant suit, PE - Tyvek or equivalent (modification of protective suits may be made upon the approval of the HSO);
- Gloves - Outer (nitrile or equivalent); Inner (nitrile);
- Boots - Outer (neoprene or equivalent), Inner (steel toe and shank) or equivalent combination (ANSI approved);
- Two-way radio communications (for remote operations);
- Hard hat with splash shield (ANSI approved); and
- Hearing protection (if work is near heavy or noisy equipment).

5.5 Level B Protection

Level B protection requires full chemical resistant clothing with a full facepiece SCBA or supplied air respirator. Generally, this level of protection is generally not expected for investigations at hazardous waste sites. However, provision will be made to have this equipment available should its use be determined to be required based on all monitoring as performed in

accordance with Section 7.2 of this HASP. Investigation activities which may result in this level of protection being required will not be implemented until the equipment has been transported to the site. The HSO will be notified should air monitoring indicate this level of protection is required. The use of Level B protection will only be implemented when sufficiently trained personnel (minimum of two) are available on-site.

5.6 Confined Spaces

Under no circumstances will confined spaces be entered unless discussed with the Project Director and HSO, and the site-specific HASP is prepared to incorporate additional safety requirements, and all personnel are trained appropriately to deal with confined space hazards. D&B's corporate confined space entry procedure is provided as Exhibit 2.

5.7 Standing Orders

5.7.1 Eye Protection

Prescription lens inserts will be provided or personal contact lenses may be used for full-face respirators. All eye and face protection will conform to OSHA 1910.133.

5.7.2 Respiratory Protection

Programs for respiratory protection will conform to OSHA 1910.134 and ANSI Z88.2-1980. A respiratory program addressing respirator care and cleaning is described in Exhibit 5.

5.7.3 Respirator Fit-testing

Personnel unable to pass a fit-test will not engage in any investigation activities that will require level C or higher protection.

5.7.4 Respirator Maintenance and Repair

Each respirator will be individually assigned and not interchanged between workers without cleaning and sanitizing. Cartridges/canisters and filters will be changed daily or upon breakthrough, whichever occurs first. If breakthrough occurs, a reevaluation by the HSO of the protection level will be made. A procedure for assuring periodic cleaning, maintenance, and change of filters will be followed by each respirator wearer. This procedure is described in Exhibit 5.

5.7.5 Head Protection

A hard hat will be worn by all personnel. All head protection will conform to the requirements in OSHA 1910.135.

5.7.6 Reuse and Retirement of PPE

All non-disposable Level D or C personal protective equipment worn on-site will be decontaminated before being reissued. The FOM, HSO or designee is responsible for ensuring all non-disposable personal protective equipment is decontaminated before being reissued. Disposable PPE will be properly disposed of according to NYSDEC requirements and regulations.

5.7.7 Foot Protection

All safety boots will conform to OSHA 1910.136.

5.7.8 Noise Protection

Power equipment may generate excessive noise levels (in excess of 85 decibels). Proper ear protection will be provided and used in accordance with OSHA 1926.52.

6.0 MEDICAL SURVEILLANCE

All on-site personnel involved in hazardous waste operations will have satisfactorily completed a comprehensive medical examination prior to the initiation of investigation activities at the site. Medical examinations are required for any and all personnel entering Exclusion or Contamination Reduction Zones.

Medical examinations are not required for people making periodic deliveries provided they do not enter Exclusion or Contamination Reduction Zones.

The date of physical examination of each site worker will be documented. A specific Medical Data Sheet for each individual will be filed with the HSO or designee prior to commencing operations and with the Project Manager.

All personnel who will enter the Exclusion Zone or the Contaminant Reduction Zone will be provided with medical surveillance at the start of their employment (entrance examination) and at the end of the on-site personnel's employment (exit examination). Medical surveillance protocol is the physician's responsibility, but will meet the requirements of OSHA Standard 29 CFR 1910.120 for all personnel. The protocol will be selected by the physician. Additional clinical tests may be included at the discretion of the attending physician performing the medical examination. Non-scheduled medical exams may be conducted as determined necessary by the physician, but will be conducted:

- After acute exposure to any toxic or hazardous material.
- At the discretion of the Project Director and/or the physician, when an employee has been exposed to potentially dangerous levels of toxic or hazardous materials.
- At the discretion of the Project Director and/or the physician, and at the request of an employee with demonstrated symptoms of exposure to toxic or hazardous materials.

In addition to non-scheduled exams, any medical, biological or radiological monitoring required by an OSHA standard when OSHA Action Levels are exceeded will be performed.

Companies contracted to perform work on-site in the Exclusion Zone or Contaminant Reduction Zone will provide equivalent medical surveillance to their on-site personnel and supply documentation to that effect.

6.1 Documentation and Record Keeping

The examining physician will notify the Project Director in writing that the individual has received a medical examination and advise as to any specific limitations upon such individual's ability to work at the project site, which were identified as a result of the examination. Appropriate action will be taken in light of the advice given pursuant to this paragraph.

The ability of on-site personnel to wear respiratory protection during hazardous waste activities will be certified by the physician. Cardiopulmonary system examination and pulmonary function testing are minimum requirements.

The physician will maintain and provide access for employees to his medical surveillance records according to OSHA requirement 29 CFR 1910.120.

7.0 ENVIRONMENTAL AND PERSONAL MONITORING PROGRAM

7.1 General

In order to protect site workers from harmful levels of airborne toxic materials, potentially explosive gases, or excessively cold conditions, regular environmental and personnel monitoring will be accomplished to document exposures and to decide when to increase protective measures.

7.2 Air Monitoring

Particular phases of work will require the utilization of specific air monitoring equipment to detect relative levels of contaminants or identify unknown environments.

Air monitoring will be conducted by the HSO, FOM or designee for the express purpose of safeguarding the health and welfare of site workers and the general public residing in the vicinity of the site.

7.2.1 Air Monitoring Instrumentation

On-site air monitoring will be performed using the following direct reading instruments:

- Portable photo ionization device (PID) for the detection of organic vapors
- Portable combustible gas/oxygen/hydrogen sulfide detector will be available for determining lower explosive limits, oxygen and hydrogen sulfide levels in any identified confined spaces. Under no circumstances will confined spaces be entered unless discussed with the Project Director, the HASP is revised to incorporate additional safety requirements and all personnel are trained appropriately to deal with confined space hazards.
- Geiger counter for detecting radiological contamination (if appropriate)
- Colorometric detector tubes for detecting specific contaminants.
- Respirable dust monitor(s) will be used to monitor particulate emissions.

All monitoring and surveillance equipment will be operated, maintained and calibrated each working day in accordance with the manufacturer's instructions and quality assurance procedures. Organic vapor monitoring will be conducted by trained field staff prior to, during and following sampling, and disturbance of soils or sediments at a sampling site. Should contamination levels indicate high hazard potential, the HSO will review monitoring procedures and results.

A daily air monitoring form or entries in a daily log book will be used to record monitoring data. (See Exhibit 6.)

Instruction and calibration manuals for the proper use of these, as well as other field instrumentation, will be provided as a separate document available for use at the site.

Monitoring and surveillance equipment can be impacted by cold weather, communication transmissions and possibly high voltage electrical transmission wires and other interferences. Any unusual meter responses will be noted on the air monitoring form and a diagnosis of potential influencing factors made to determine and eliminate the cause.

7.2.2 Air Monitoring Locations and Action Level Criteria

The primary areas to be monitored during the site investigation are the work zones established around sampling, drilling or excavation locations. Air monitoring protocols for each area will differ, since target populations, contaminant concentrations and atmospheric conditions will vary. Monitoring will be conducted within these work zones and at the site perimeter.

Air monitoring conducted at the sampling locales will focus on workers' breathing zones and may include personal breathing zone samples. Air monitoring just outside of these locations will consist of instruments attempting to quantify the types and degrees of emissions originating from sampling sites.

7.2.2.1 - Duration, Frequency and Protocol

Monitoring will be conducted daily or as deemed necessary by the HSO or designee during all activities in the Exclusion Zone, particularly during intrusive activities. The HSO or designee may modify the work zone sampling frequency upon review of previously analyzed work zone samples.

7.2.2.2 - Background Air Monitoring

Background monitoring for contaminants will be conducted at the upwind perimeter of the Exclusion Zone prior to allowing workers to enter the Exclusion Zone. Monitoring will occur continuously, or at the discretion of the HSO or designee, downwind and crosswind while work is occurring in the Exclusion Zone. Data will be annotated in the Air Monitoring Form for that day. Indoor air quality monitoring will also be conducted when working inside.

Changes in wind direction will require reassessment of air monitoring locations. Wind directions may be determined with the aid of a wind sock (if appropriate). Levels of contaminants that warrant use of respiratory protection by site workers may require initiation of site perimeter and personal sampling as deemed necessary by the HSO or designee.

7.2.2.3 - Exclusion Zone Air Monitoring

Air monitoring conducted in the Exclusion Zone will focus on real time measurement of toxic compounds that pose inhalation hazards, levels of flammable compounds for explosive hazards, and oxygen deficient atmospheres. A summary of the action levels are provided in Table 7-1.

Table 7-1

ACTION LEVELS FOR INVESTIGATIONS

Action Level	**Action To Be Taken**
PID	
Background	**Level D** (See Section 5.3)
Background to 5 units* above background in breathing zone, and no vinyl chloride or benzene present.	Halt work, evacuate area and allow area to ventilate prior to resuming work. Should levels persist, upgrade to **Level C** protection (See Section 5.4) if required upon approval by HSO and FOM.
Greater than 5 units* above background in breathing zone, and no vinyl chloride or benzene present.	Halt work, evacuate work area and allow area to ventilate prior to resuming work. Should levels persist, contact FOM and upgrade to **Level B** (See Section 5.5) protection if required upon approval by HSO and FOM.
DRAEGER COLORIMETRIC TUBE	
Positive color change for vinyl chloride or benzene _. 0.5 ppm	Halt work, evacuate area and allow area to ventilate prior to resuming work. Contact FOM. If levels persist, upgrade to Level **C** protection if required upon approval by HSO and FOM.
Vinyl chloride or benzene 0.5 - 1.0 ppm	Halt work, evacuate area and allow area to ventilate prior to resuming work. Contact FOM. If levels persist, upgrade to **Level B** protection if required upon approval by HSO and FOM.
Vinyl chloride or benzene > 1 ppm	Shut down work activities. Monitor site to check for off-site migration.
COMBUSTIBLE GAS METER	
Greater than 10% Lower Explosive Limit (LEL)	Halt work, evacuate area and allow area to ventilate to below 10% LEL prior to resuming work. Notify FOM.
OXYGEN	
Less than 20.5%	Continuous monitoring. Consider engineering controls.
Less than 19.5%	Evacuate work area. Institute ventilation and engineering controls. Maintain site conditions for at least 15 minutes before proceeding. Notify FOM.

* Units equal total ionizable organic/inorganic vapors and gases.
** Reading sustained for 1 minute (60 seconds) or longer.

Table 7-1 (continued)

ACTION LEVELS FOR INVESTIGATIONS

Action Level	Action To Be Taken
OXYGEN (continued)	
Greater than 22%	Continuous monitoring and identify combustion sources.
Greater than 23.5%	Evacuate and institute engineering controls as necessary before proceeding. Explosive condition may be present. Notify FOM.
HYDROGEN SULFIDE	
Less than 10 ppm at breathing zone	Level **D** and continuous monitoring.
Above 10 ppm at breathing zone	Halt work, evacuate area and allow area to ventilate to below 10 ppm. If levels persist, upgrade to Level B protection if required upon approval by HSO and FOM.
GEIGER COUNTER	
Above background	Halt work, evacuate work area and confer with HSO
DUST MONITOR	
Respirable dust >100 ug/m^3 above BKGD	Implement dust suppression techniques to reduce dust levels
Respirable dust >150 ug/m^3	Monitoring upwind background levels and implement dust suppression techniques. If levels persist, halt work, contact HSO and FOM. Work can only resumed if control measures can be implemented to remedy the situation.

* Units equal total ionizable organic/inorganic vapors and gases.
** Reading sustained for 1 minute (60 seconds) or longer.

Vapor Emission

If the ambient air concentration of total organic vapors exceeds 5 ppm (or 5 units) above background at the perimeter of the Exclusion Zone, work at that location will be stopped, and the area evacuated until a review of work procedures, air monitoring needs, and use of appropriate respiratory protection and equipment is performed by the HSO or FOM. In addition, downwind monitoring at the site perimeter will be performed to determine whether off-site contaminant migration is occurring. Work will proceed only after review and approval by the HSO or FOM, and the appropriate corrective action is taken or level of protection established. More frequent intervals of monitoring will be conducted as directed by the HSO, including Draeger tube screening for specific contaminants.

If the organic vapor level decreases to below 5 ppm (5 units), and vinyl chloride and benzene are not present, activities can resume, but more frequent intervals of monitoring, as directed by the HSO, must be conducted and must include monitoring for vinyl chloride and benzene. If the organic vapor levels are greater then 5 ppm but less than 25 ppm over background at the perimeter of the Exclusion Zone, activities can resume provided Level B protection is worn and the area is monitored for vinyl chloride until levels fall below background.

If the organic vapor level is above 25 ppm at the perimeter of the Exclusion Zone, work activities must be shut down. When work shutdown occurs, downwind air monitoring as directed by the HSO will be implemented to ensure that vapor emissions do not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

7.2.2.4 - Community Air Monitoring Plan

Air monitoring for volatile organic compounds will be accomplished at the upwind and downwind perimeter of the Exclusion Zone to document real time levels of contaminants which might be moving off-site. The plan must include the following:

- VOCs will be monitored at the downwind perimeter of the Exclusion Zone daily at 2-hour intervals. If total organic vapor levels exceed 5 ppm above background, activities must be halted and monitoring continued under the provisions of Major Vapor Emission Response Plan (see below). All readings must be recorded and be available for NYSDEC and New York State Department of Health (NYSDOH) personnel to review.

Major Vapor Emission

If organic levels greater than 5 ppm (or 5 units) above background are identified 200 feet downwind from the Exclusion Zone or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind, or half the distance to the nearest residential or commercial property from the Exclusion Zone, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (10-foot zone).

If either of the following criteria are exceeded in the 20-foot zone, then the Major Vapor Emission Response Plan will be implemented:

- Organic vapor levels approaching 5 ppm above background for a period of more than 30 minutes; or
- Organic vapor levels greater than 10 ppm above background for any time period.

Major Vapor Emission Response Plan

Upon activation, the following actions will be undertaken:

1. The local emergency response will be immediately contacted by the HSO and advised of the situation.

2. Frequent air monitoring will be conducted at 30 minute intervals within the 20 foot zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the HSO.

3. All emergency contacts will go into effect as appropriate.

Off-Site Migration Procedures

The same procedures and protocols practiced by on-site workers will aid in preventing any potential adverse conditions with respect to areas adjacent to the site. That is, these procedures are designed to assist in eliminating or minimizing the potential for extensive off-site migration. In the unlikely event that such migration occurs, the following notification procedures and work procedures are listed below:

1. Notification of local police, fire and rescue personnel advising them of the remedial investigation activities and the schedule of events on-site.

2. Immediate notification of NYSDEC, NYSDOH and local officials in the event of a threatening hazardous condition that may effect the health and safety of on-site workers and the surrounding community.

3. Decontamination procedures for equipment to prevent off-site migration of contaminants.

4. Use of a flame or photo ionization detector to monitor volatile organic vapors and potential off-site migration of contaminants.

5. Wetting down the ground surface or using clean cover material or calcium chloride to suppress particulate dust in the event that dust levels in the air of the work area are exceeded.

General visual observation will also be used during all intrusive activities to identify airborne releases (vapors, smoke, etc.), changes in the coloration of excavated materials, changes to the structural integrity of the surface or mechanical integrity of the equipment. Should such conditions be noticed or encountered, work will be halted, and the area evacuated until such time the FOM can be contacted and specific procedures for characterizing and handling the hazard can be developed.

The HSO or designee will observe site conditions daily with special attention to the aforementioned conditions. Depending on site conditions, additional personal protection measures will be implemented during the course of site work.

7.2.3 Heat/Cold Stress Monitoring

Heat/cold stress guidelines are described in detail in Exhibit 7.

7.3 Quality Assurance and Control

All monitoring instruments will be protected from surface contamination during use to allow easy decontamination. All instrumentation will be calibrated before and after use, and operational checks conducted periodically in the field over the duration of the day's field activities.

The following data will be recorded by the HSO or designee on the Air Monitoring Data form (Exhibit 3):

- Date and time of monitoring;
- Air monitoring location;
- Instrument, model number, serial number;
- Calibration/background levels; and
- Results of monitoring.

Interpretation of the data and any further recommendations will be made by the HSO or designee.

Air monitoring results will be provided verbally to the FOM following each site scan that indicates volatile organic vapor concentrations in excess of the action levels. Results will then be documented in writing and provided to the FOM by the end of that work day.

8.0 SITE CONTROL MEASURES

8.1 Work Zones

Site investigations will be subject to the designation of work zones. The Restricted Zone (RZ) will be identified as the area within which all project operations take place. At each sampling site, three work areas will be established: the Exclusion Zone (EZ), Contaminant Reduction Zone (CRZ) and Support Zone (SZ). Only authorized personnel will be allowed in the RZ. Typically, a 5-foot wide (or distance determined by the HSO or FOM) strip of land bordering the EZ is considered the CRZ. In addition to this strip of land, a specially demarcated area that connects the decontamination area to the CRZ is treated as an extension of the CRZ. All other areas inside the restricted area that are not an active Exclusion or Contaminant Reduction Zone are treated as a Support Zone.

8.1.1 Exclusion Zone

The Exclusion Zone includes the intrusive activities and isolates the area of contaminant generation, and restricts (to the extent possible) the spread of contamination from active areas of the site to support areas and off-site locations. This area will encompass all intrusive work. The Exclusion Zone is demarcated by the Hot Line (i.e., a tape or rope line or physical barrier). Personnel entering the Exclusion Zone must:

- Enter through a controlled access point (the Contaminant Reduction Zone);
- Wear the prescribed level of protection; and
- Be authorized to enter the Exclusion Zone.

Personnel, equipment and materials exiting the Exclusion Zone will be subject to decontamination in the containment reduction zone. Equipment and materials (e.g., drill rods) will be decontaminated at decontamination facilities.

Specific access for emergency services to areas of specific site operations will be established by the HSO prior to commencing any operation. The delineated area of the Exclusion Zone may vary with task.

8.1.2 Contaminant Reduction Zone

The extent and configuration of the CRZ will be at the discretion of the HSO or FOM. Certain safety equipment (e.g., emergency eye wash, fire extinguisher and first aid kit) will be located near the sampling location.

The level of protection to be used for decontamination will typically be Level D. However, the HSO will determine appropriate levels of protection based upon air monitoring readings, and visual inspection of personnel and equipment operations in the Exclusion Zone. Equipment operators (e.g., truck drivers) physically performing tasks outside the EZ may be exempt from this requirement as approved by the HSO or FOM. Personnel shall remove all personal protective equipment in the CRZ.

8.1.3 Support Zone

Equipment and materials, paperwork, MSDS, emergency equipment and communications equipment will be stored in the Support Zone. A log of all persons entering the site will be maintained by the FOM.

8.2 Operations Start-Up

No personnel will be positioned downwind of Exclusion Zone during intrusive activities and sampling, if possible.

8.3 Buddy System

All on-site personnel will utilize a buddy system when any task performed at the site requires:

- Personnel to assist in performing an activity;
- Intrusive work performed in the Exclusion Zone;
- Use of protective clothing; and
- Communication between the Exclusion Zone and outside the Exclusion Zone.

The FOM, HSO or designee will enforce the buddy system and has the authority to modify the criteria stated above to deal with changing site-specific and environmental conditions.

In order to ensure that help will be provided in an emergency, all on-site personnel will be in line-of-sight contact or in communication with the HSO or FOM when working in the Exclusion Zone.

8.4 Site Communications Plan

- Internal communications on-site should be instituted prior to initiating any task in the Exclusion Zone.
- Internal communications will be used by on-site supervisory personnel.
- The FOM, HSO or designee will ensure that all site personnel are trained to use internal communications to:
  - alert personnel on-site of emergencies;
  - pass along safety information (such as for heat stress, cold stress control, or rest period time, etc.);
  - changes in work scope, scheduling or sequencing of operations; and
  - maintain site control (such as notification of vandalism, intruders or violations of HASP protocol).

- Verbal communications and hand signals will be used for all tasks associated with the project. However, for those tasks performed in Level D or Level C, radio communications may be used.

- Any Exclusion Zone work activity being performed out of the line of sight may require use of radio communications.

- Air horns will be positioned at any Exclusion Zone work area to be used for emergency response only. The HSO or designee will designate air horn blast sequences for identification of work location, type of emergency and need for evacuation of all personnel.

- Wind direction indicators will be installed such that a line-of-sight is maintained with all personnel in all work zones. The HSO or designee will designate specific locations for wind direction indicators.

- All moving machinery, bulldozers, cranes, dump trucks, etc. will have working backup alarms.

- External communications (outside the site) will be maintained and used to coordinate emergency response, report to management and maintain contact with essential off-site personnel.

- All on-site personnel will be informed of external communications hardware (such as telephone, etc.) and the necessary telephone numbers to contact in the event of an emergency situation (fire, police, ambulance, etc.).

- All emergency numbers will be available at the site (see the site specific work plan for listing of important telephone numbers).

- Appropriate action will be taken should any hazardous environmental condition be observed on site. These conditions and the appropriate action to be taken will be as follows:

Observation	Potential Hazard	Action
Muddy condition	Personnel slip, equipment instability	Monitor work until condition improves
Lightning	Electrocution	Stop work until condition subsides
Horn blasts or other notification by site personnel	Site emergency	Stop work - evacuate to van or trailer - follow emergency notification procedures
Personal injury	Other personnel may be affected	Follow emergency notification procedures
Personal fatigue	Cold stress	Follow cold stress guidelines

Observation	Potential Hazard	Action
Windy condition	Overhead hazards, visual impairment	Stop work until condition subsides

8.5 Medical Assistance and General Emergency Procedures

Site-specific information regarding medical assistance and emergency numbers will be listed in the site-specific HASP. Emergency medical information for substances potentially present on-site will be addressed, if known.

8.5.1 General Emergency Procedures

The following standard emergency procedures will be used by on-site personnel. The HSO or designee will be notified of any on-site emergencies and will be responsible for ensuring that the appropriate procedures are followed.

- Personnel Injury: Personnel holding a current first aid/CPR certification shall administer first aid and/or CPR, if appropriate. Arrange for medical attention.
- Fire/Explosion: Alert the fire department. Personnel will move a safe distance from the involved area.

8.6 Safe Work Practices

Workers will adhere to established safe work practices for their respective specialties. The need to exercise caution in the performance of specific work tasks is made more acute due to:

- Physical, chemical and toxicological properties of contaminated material present;
- Other types of hazards present, such as heavy equipment, falling objects, loss of balance or tripping;
- Weather restrictions;

- Restricted mobility and reduced peripheral vision caused by the protective gear itself;
- Need to maintain the integrity of the protective gear; and/or
- Increased difficulty in communicating caused by respirators.

Work at the site will be conducted according to established protocols and guidelines for the safety and health of all involved. Among the most important of these principles are the following:

8.6.1 General

- In any unknown situation, always assume the worst conditions and plan responses accordingly.
- Because no personal protective equipment is 100 percent effective, all personnel must minimize contact with contaminated materials. Plan work areas, decontamination areas and procedures accordingly.
- Smoking, eating, chewing gum or tobacco, or drinking in the Contaminant Reduction Zone and the Exclusion Zone will not be allowed. Oral ingestion of contaminants is the second most likely means of introducing toxic substances into the body (inhalation is the first).
- Work breaks should be planned to prevent stress related accidents or fatigue related to wearing protective gear.
- Medicine and alcohol can increase the effects from exposure to toxic chemicals and cold stress. Prescribed drugs should not be taken if working in the Contaminant Reduction Zone or Exclusion Zone, unless approval has been given by the physician. Alcoholic beverage consumption will be prohibited on the site.
- Personnel must be observant of not only one's own immediate surrounding, but also those of others. Everyone will be working under constraints; therefore, a team effort is needed to notice and warn of impending dangerous situations. Extra precautions are necessary when working near heavy equipment and while utilizing personal protective gear because vision, hearing and communication will be restricted.
- All facial hair that interferes with the respirator facepiece fit, must be removed prior to donning a respirator for all tasks requiring Level C or Level B protection.

- Personnel must be aware that chemical contaminants may mimic or enhance symptoms of other illnesses or intoxication. Avoid use of alcohol or working while ill during the duration of task assignment.

8.6.2 Site Personnel

- All personnel at the site will be identified to the HSO and FOM.
- All personnel operating in respective work zones will dress according to the protection levels set forth in this HASP.
- No red head wooden matches or lighters of any kind will be allowed in the Contaminant Reduction Zone or Exclusion Zone.
- All personnel will notify the HSO or FOM of any unusual occurrences that might effect the overall safe operation of the site.
- Any time a fire extinguisher is used, personnel will notify the HSO or FOM of what took place.
- All injuries and accidents will be immediately reported to the HSO or FOM and the appropriate reports filed.

8.6.3 Traffic Safety Rules

- Any vehicles that will not be involved in the site operations will be secured and the motor shut down.
- Only personnel assigned to this remedial investigation will be allowed to enter the site. Any other people, whether from OSHA, USEPA or vendors supplying equipment, etc., will have to be met prior to entering the site.
- At no time will any equipment be allowed to block any access road. If in the moving of equipment, a temporary blockage will exist, that equipment will have an operator available to move that equipment.
- The locations of all fire fighting equipment, valves, hydrants, hose storage places and fire extinguishers will be indicated to all personnel so that they will not be inadvertently blocked at any time.
- Project personnel may be required to wear safety vests when working on or adjacent to roadways and must comply with all applicable rules and regulations for traffic safety.

8.6.4 Equipment Safety Rules

- Proper loading and operation of trucks on-site will be maintained in accordance with DOT requirements covering such items as grounding, placarding, driver qualifications and the use of wheel locks.

- Operation of heavy construction equipment will be in accordance with OSHA regulations 29 CFR 1910 and 1926.

- All equipment that is brought on-site will be available for inspection by the HSO.

- The HSO, or designee, will assign protective equipment to all site personnel and this equipment will be made available for inspection at anytime.

- All equipment will be installed with appropriate equipment guards and engineering controls. These include rollover protective structures.

- Safe distances will be maintained when working around heavy equipment.

- All equipment and tools to be operated in potentially explosive environments will be intrinsically safe and not capable of sparking or be pneumatically or hydraulically driven. Portable electric tools and appliances can be used where there is no potential for flammable or explosive conditions use three-wire grounded extension cords to prevent electric shocks. Ground fault interrupters will be used as well.

- With hydraulic power tools, fire-resistant fluid that is capable of retaining its operating characteristics at the most extreme temperatures will be used.

- Cutting or welding operations will not be carried out without the approval of the HSO and FOM.

- At the start of each work day and on a weekly basis, inspection of brakes, hydraulic lines, light signals, fire extinguishers, fluid levels, steering, and splash protection will be made by the equipment operators.

- All non-essential personnel will be kept out of the work area.

- Loose-fitting clothing, loose long hair and wearing of jewelry around moving machinery will be prohibited.

- Cabs will be free of all non-essential items and all loose items will be secured.

- The rated load capacity of a vehicle will not be exceeded.

- Dust control measures will be employed to prevent the movement of dust from contaminated areas to clean areas. The method employed will be determined and reviewed by the HSO and the FOM.

- Equipment operators will report to their supervisor(s) any abnormalities such as equipment failure, oozing liquids, unusual odors, etc.

- When an equipment operator must negotiate in tight quarters, a second person will be used to ensure adequate clearance.

- A signalman will be used to direct backing as necessary.

- Refueling will be done in safe areas. Engines will not be fueled while vehicle is running. Ignition sources near a fuel area will be prohibited.

- All blades and buckets will be lowered to the ground and parking brakes set before shutting off the vehicles.

- An ongoing maintenance program for all tools and equipment will be implemented by the responsible subcontractor equipment supervisor. All tools and moving equipment will be regularly inspected to ensure that parts are secured and intact with no evidence of cracks or areas of weakness, that the equipment turns smoothly with no evidence of wobble, and that it is operating according to manufacturer's specifications.

- Tools will be stored in clean, secure areas so that they will not be damaged, lost or stolen.

- All heavy equipment that is used in the Exclusion Zone will be kept in that zone until the investigation is complete or the equipment is decontaminated. Equipment will be completely decontaminated before moving it into the Support Zone.

8.6.5 Drilling and Excavation and Equipment Safety Rules

Drill rig and excavator operation, maintenance and safety will be the responsibilities of the drill rig/excavator operator.

8.6.6 Electrical Safety

Electrical hazards can exist at sites because of downed power lines, contact with subsurface utilities or improper use of electrical equipment. The presence of underground electric lines will be checked before any digging or excavating is undertaken. When using cranes

or material handlers, care will be taken that the machinery does not come in contact with any energized lines. Equipment must maintain the following distances from energized overhead power lines:

- 10 feet up to 50 kV
- 10 feet plus 4 inches for every 10 kV over 50 kV

The following should be used for protecting personnel from electrical shocks:

- Ground equipment
- Double-insulating tools
- Over-current devices such as fuses and circuit breakers
- Ground fault circuit interrupter
- Tools and flexible cords will be inspected for damage that could lead to shock

8.6.7 Daily Housekeeping

The site and all work zones will be kept in an orderly fashion and the site is to be left safe and secure upon completion of each day's work.

8.6.8 Site Personnel Conduct

- All site personnel will conduct themselves properly and in accordance with generally accepted good work practice.
- At all times, the HSO will monitor all safe operations at the site. Any operation not within the scope of the HASP will be discussed fully before that operation begins.

9.0 PERSONAL HYGIENE AND DECONTAMINATION

9.1 General

- All personnel performing or supervising remedial work within a hazardous work area, or exposed or subject to exposure to hazardous chemical vapors, liquids or contaminated solids, will observe and adhere to the personal hygiene-related provisions of this section.

- Any personnel found to be repeatedly disregarding the personal hygiene-related provisions of the HASP will be barred from the site by the HSO.

- All on-site personnel will wear personal protective equipment as required at all times whenever entering the Exclusion Zone or the Decontamination Area.

- Personal hygiene and decontamination facilities, in accordance with OSHA 29 CFR 1910.120 (N), will be provided on-site, when necessary, and include the following:

  – Storage and disposal containers for used disposable outerwear.

  – Hand washing facilities.

  — An uncontaminated lunch area.

  — An uncontaminated rest/break area.

  – Chemical toilet, if no other facilities are located on-site.

- All personnel must enter and leave the work site through the facilities. The portable chemical toilet (if required), if possible, will be located in the Support Zone.

- The personal hygiene and decontamination facilities will be provided so that any personnel leaving the Exclusion Zone may perform decontamination, safely remove all protective outer clothing, and wash face and hands.

- Decontamination will be performed prior to taking breaks, eating lunch or leaving the work site.

- All site personnel will be given orientation training to the use and operation of the personal hygiene and decontamination facilities.

9.2 Contamination Prevention

To minimize contact with contaminated substances and lessen the potential for contamination, the following will be adhered to:

- Personnel will make every effort not to walk through any areas of obvious contamination (i.e., liquids, discolored surfaces, smoke/vapor clouds, etc.).
- Personnel will not kneel or sit on the ground in the Exclusion Zone and/or the Decontamination Area.

9.3 Personal Hygiene Policy

- Smoking and chewing tobacco will be prohibited except in a designated break area.
- Eating and drinking will be prohibited except in the designated lunch or break area.
- All outer protective clothing (e.g., chemically protective suits, gloves, and boots) will be removed and personnel will thoroughly cleanse their hands and other exposed areas before entering the break or lunch area.
- Drinking of replacement fluids will be permitted in a designated area outside the Exclusion Zone. Personnel will, as a minimum, remove outer and inner gloves, respirator and coverall top, and wash hands prior to drinking replacement fluids.
- All personnel should change into fresh clothing after each working period or shift. Showering is mandatory upon return to each individual's rest place.

9.4 Personnel Decontamination Procedures

Decontamination procedures are followed by all personnel leaving the Exclusion Zone. Generalized procedures for decontamination follow. All procedures apply for Level C personal protection, however for Level D only steps 2, 3, and 8 apply. The HSO may modify these procedures based on site conditions.

Step 1 Drop tools, monitors, samples, and trash at designated drop stations (i.e., plastic containers or drop sheets).

Step 2 Scrub outer boots and outer gloves with decon solution or detergent and water. Rinse with water.

Step 3 Remove tape from outer boots (if applicable) and remove boots and discard tape in disposal container. Place boots on boot rack.

Step 4 Remove tape from outer gloves (if applicable) and remove only outer gloves and discard in disposal container.

Step 5 This is the last step in the decontamination procedure if the worker has left the Exclusion Zone to exchange the cartridges on his/her air purifying respirator. The cartridges should be exchanged, new outer gloves and boot covers donned, the joints taped, if necessary, and the worker returns to duty.

Step 6 Remove outer garments and discard in disposal container. New outer garments will be issued at the beginning of each work day or as deemed necessary by the HSO.

Step 7 Remove respirator and place or hang in the designated area.

Step 8 Remove inner gloves and discard in disposal container.

Note: Disposable items (i.e., coveralls, gloves, and boots) will be changed on a daily basis unless there is reason to change more frequently. Dual respirator cartridges will be changed daily, unless more frequent changes are deemed appropriate by site surveillance data or by assessments made by the HSO.

Pressurized sprayers or other designated equipment will be available in the decontamination area for wash down and cleaning of samples and equipment.

A waterless hand cleaner and paper towels may be used for hands, arms and any other skin surfaces potentially in contact with contaminated material.

Respirators (if used) will be decontaminated daily and taken from the drop area. The masks will be disassembled, the cartridges set aside and all other parts placed in a cleansing solution. After an appropriate time in the solution, the parts will be removed and rinsed with tap water. Old cartridges will be discarded in the contaminated trash container for disposal. In the morning, the masks will be reassembled and new cartridges installed, if appropriate. Personnel will inspect their own masks and readjust the straps for proper fit.

9.5 Emergency Decontamination

Decontamination will be delayed if immediate medical treatment is required to save a life. Decontamination will then be performed after the victim is stabilized. When decontamination can be performed without interfering with medical treatment, or a worker has been contaminated with an extremely toxic or corrosive material that could cause additional injury or loss of life, decontamination will be performed immediately.

When decontamination cannot be done, the victim will be wrapped in a chemical protective barrier (clothing or sheeting) to reduce contamination of other personnel. Emergency and off-site medical personnel will be informed of potential contamination and will be instructed about specific decontamination procedures. When the victim is transported off the site, personnel knowledgeable of the incident, the site and decontamination procedure will accompany the victim.

9.6 General Equipment Decontamination

- All vehicles and equipment used in the Exclusion Zone will be decontaminated prior to leaving the site.
- No vehicles will leave the decontamination area until they are properly inspected and approved by the HSO or FOM for general cleanliness of frame and tires.
- No vehicle will leave the site unless it is in a broom-clean condition and free of loose dirt or material on tailgates, axles, wheels, etc.
- The HSO or designee will monitor all vehicles to confirm proper decontamination prior to exiting. Approval will be based on visual inspection of all exposed surfaces.
- Equipment decontamination wash water residues will be collected for disposal.
- Personnel engaged in vehicle decontamination will wear Level C or Level D equipment with respiratory protection consistent with the air monitoring results collected by the HSO, and perform personal decontamination at the completion of equipment decontamination.
- Only clean water will be used for personnel, equipment and vehicle decontamination.

9.7 Small Equipment Decontamination Procedures

Small equipment will be protected from contamination as much as possible by draping, masking or otherwise covering the instruments with plastic (to the extent feasible) without hindering operation of the unit. For example, the photoionization detector can be placed in a clear plastic bag to allow reading the scale and operation of the controls.

Step 1 Remove coverings from equipment left in the drop area and place the coverings in appropriate waste containers.

Step 2 Brush or wipe any soil or moisture with a disposal paper wipe. Place soiled wipes in appropriate containers.

Step 3 Place bare units in a clean plastic tub and wiped off with a damp, clean, disposable wipe. Equipment will then be allowed to air dry.

Step 4 Following decontamination, check and recharge equipment, as necessary, for the next day's operations.

Step 5 Prior to entering the Exclusion Zone, recover all small equipment with new, protective coverings, if necessary.

9.8 Heavy Equipment Decontamination Procedures

A decontamination area for the drill rig and excavator will be set up. A wash/rinse will be performed on all surfaces that came in contact with contaminants (e.g., augers). Prior to removing any heavy equipment or vehicles from the Exclusion Zone, they must be thoroughly decontaminated. Specific procedures are as follows:

Step 1 Initially, inspect equipment/vehicles to determine if gross decontamination is required first. Particular attention must be paid to tires, under surfaces, points of contact with the ground, and horizontal surfaces where dust or aerosols might settle.

Step 2 If visible contamination is present, the equipment/vehicle must be moved to the decontamination pad where gross contamination will be scraped, brushed or swept off.

Step 3 Following gross decontamination, or if visible contamination is no longer present, wash the equipment/vehicle with high pressure washer as deemed necessary by the

HSO or designee. Efforts should be made to minimize water usage to reduce wastewater quantities.

Step 4 Prior to releasing any heavy equipment or vehicles from the Contaminant Reduction Zone, decontamination personnel will contact the HSO for final approval.

10.0 EMERGENCY RESPONSE AND CONTINGENCY PLAN

10.1 General

This plan has been prepared in accordance with 29 CFR 1910.120 (1) and will address the following potential emergencies:

- Emergencies outside the site.
- Emergencies within the site.
- Chemical exposures.
- Site evacuation.

10.2 Emergency Equipment

Specially marked and readily accessible emergency equipment will be provided on-site.

10.3 Special Requirements

- The Project Director or FOM will be on-call for any after hour emergencies resulting from adverse weather conditions. Incidents resulting from adverse weather will be reported to the HSO who will in turn contact the Project Director.
- First aid kit locations will be specially marked and have adequate water and other supplies necessary to cleanse and decontaminate burns wounds, or lesions. First aid stations will also stock buffer solutions for treating acid and caustic burns.

10.4 Emergency/Accident Reporting and Investigation

In the event of an emergency associated with the site work, the HSO or FOM will, without delay take: 1) diligent action to remove or otherwise minimize the cause of the emergency; 2) alert the Project Director; and 3) institute whatever measures are necessary to prevent any repetition of any conditions or actions leading to, or resulting in, the emergency.

Notification of the Project Director will occur immediately and initially be verbal with written notification occurring within 24 hours of the incident (i.e., accident, explosion, serious exposure, etc.). The Incident Notification Form, provided in Exhibit 8, will be used for written notifications and documentation.

10.5 Emergency Medical Care

- Site-specific emergency medical information will be provided in the site-specific investigation work plan.
- The hospital will be informed by the HSO or FOM of potential medical emergencies that could result from site operations and advised on the types of hazardous materials that are on site. In the event of an incident requiring their assistance, specific details of hazardous materials should be provided to the hospital medical staff, if available.
- A list of emergency information and a map to the nearest medical facility/hospital will be posted at every work site telephone. Copies of this map will also be available to be placed in vehicles used to transport injured personnel to the medical facility.

10.6 Emergencies Outside the Site

- All work in the site area will stop when advised by any authorized personnel and will remain so until otherwise instructed.
- The HSO and FOM will be fully advised of any work that may affect the safety of on-site employees or property.
- Actions to be taken by on-site personnel in the event of an outside emergency will include:
    - All operations will cease immediately and all equipment will be shut down and secured.
    - All personnel will leave vehicles in work zone in a safe manner making sure any remaining vehicles will not hamper any emergency traffic in the area or block any fire hydrants or foam supply systems.
    - All personnel will evacuate to a prearranged muster area.
    - All personnel will remain in the muster area to await further instructions.

10.7 Emergencies Within the Site

- The HSO will monitor all operations from the roadway and assist any emergency personnel responding to an emergency within this work zone.
- It will be the HSO's responsibility to maintain communications with public works personnel.
- In the event of an emergency within the work zone at the site, the emergency notification procedures will be followed.
- In all emergency situations, it will be the responsibility of the HSO to ensure that all site personnel are accounted for.

10.8 Personnel Exposures

The emergency procedures which will be used in the event of acute exposure (eyes, skin contact, inhalation) are described in Exhibit 9.

10.9 Site Evacuation

The site area will be evacuated, and fire and police departments will be notified in the event of fire, explosion or their potential. Depending on the cause and magnitude of the conditions requiring evacuation, three stages have been designated. See Exhibit 9 for details.

11.0 POSTINGS

Postings will be available on-site. These postings will cover four specific areas:

- Use of personal protective equipment;
- Personal hygiene;
- Provisions for smoking, eating, chewing and drinking; and
- Emergency information.

These postings may be added to, based on need to disseminate information or policy. All postings will be coordinated for approval prior to posting. The specified postings are provided in Exhibit 10. The site-specific emergency information for each site will be included on Exhibit 11 and will be posted at each site.

EXHIBIT 1

HEALTH AND SAFETY PLAN REVIEW ACKNOWLEDGEMENT FORM

INSTRUCTIONS: This form is to be completed by each person working on the subject work-site. Upon completion, this form is to be given to the HSO.

JOB NUMBER: _____

CLIENT/PROJECT: _____

DATE: _____

I represent that I have read and understand the contents of the above mentioned Health and Safety Plan and agree to perform my work in accordance with this plan:

_____
Signature

_____
Name Printed

_____
Company/Office

_____
Date Signed

EXHIBIT 2

CONFINED SPACE OPERATIONS GUIDELINES

1.0 PURPOSE

To establish safe procedures for employees of D&B who have potential to be exposed to the hazards of a confined space pursuant to 29 CFR 1910.146

2.0 SCOPE

Applies to the activities of all employees of D&B/WFC exposed to the hazards of a confined

space. 3.0 DEFINITIONS

Attendant - A trained individual stationed outside the confined space who monitors the authorized entrant.

Authorized Entrant - A trained individual who's name is listed on the entry permit and who is authorized by the employer to enter a confined space.

Confined Space — A space that:

1) Is large enough and so configured that an employee's entire body can enter and perform assigned work (for example, storage tanks, stacks, pits, basements, silos, boilers, ventilation and exhaust ducts, manholes, sewers, tunnels, underground utility vaults); and
2) Has limited or restricted means for entry or exit; and
3) Is not designed for continuous employee occupancy.

Emergency — any occurrence or event internal or external to the permit space that could endanger entrants.

Engulfment — the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry — The act of intentionally passing through an opening into a confined space. Entry occurs as soon as any part of the entrant's body breaks the plane of the opening into the space.

Entry Permit — A written or printed document provided by the employer that authorizes the confined space entry and identifies acceptable conditions for entry into a confined space. At a multi employer site all affected employers must be in agreement regarding who will issue a Permit.

EXHIBIT 2 (continued)

CONFINED SPACE OPERATIONS GUIDELINES

Entry Supervisor — the person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned for authorizing entry, overseeing entry operations, and for terminating the confined space entry.

Hazardous Atmosphere — an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

1) Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL)
2) Airborne combustible dust at a concentration that meets or exceeds its LFL
3) Atmospheric oxygen concentration below 19.5% or above 23.5%
4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit (PEL) is published in OSHA 1919 Subpart Z, Toxic and Hazardous Substances, which could result in employee exposure in excess of its dose or permissible exposure limit
5) Any other atmospheric condition that is immediately dangerous to life or health.

Hot Work Permit — the employer's written authorization to perform operations (for example, welding, cutting, burning and heating) capable of providing a source of ignition.

Immediately Dangerous to Life or Health (IDLH) — any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit required confined space.

Isolation — the process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding, blocking, bleeding, and lockout or tagout of all sources of energy.

Line Breaking — the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Oxygen Deficient Atmosphere — an atmosphere containing less than 19.5 % oxygen.

Oxygen Enriched Atmosphere — an atmosphere containing greater than 23.5 % oxygen.

Permit Required Confined Space (PRCS) — a confined space that has one or more of the following characteristics:

1) contains or has potential to contain a hazardous atmosphere, or
2) contains a material with the potential for engulfillent of an entrant, or
3) has inwardly converging walls or floors that could trap or asphyxiate an entrant, or

4) contains any other recognized serious safety or health hazard.

Permit System — the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.
Prohibited Condition — any condition in a permit system that is not allowable by the permit during the period when entry is authorized.

Rescue Service — the personnel designated to rescue employees from permit required spaces.

Retrieval System — the equipment used for non-entry rescue of persons from permit required spaces.

Testing — the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

4.0 RESPONSIBILITIES

Entry Supervisor - The entry supervisor is responsible for:

1) Knowing the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
2) Completing the Entry Permit, verify that all requirements of the Permit have been met and all equipment specified in the permit is in place before endorsing the permit and allowing entry to begin.

Health and Safety Coordinator (HSC) - The HSC is responsible for:

1) Coordinating training for personnel designated as an Authorized Entrant, Attendant or Entry Supervisor.
2) Reviewing and updating this program annually to include new revisions by OSHA.
3) Conducting annual field audits of this program.

On-Site Health and Safety Representative (HSR) - The HSR is responsible for:

1) Making sure that the Permit requirements are implemented
2) Reporting all incidents or PRCS guidelines deficiencies
3) Making on-site H&S decisions related to field operations

HSR may take on an Entry Supervisor's responsibilities, if assigned.

Authorized Entrant - The authorized entrant is responsible for:

1) Knowing the hazards and understanding the consequences of exposure

2) Maintaining contact with the Attendant
3) Understanding and utilizing the provided personal protective equipment
4) Exiting the permit space if evacuation is ordered by the Attendant
5) Alert the Attendant whenever:
   - the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
   - the entrant detects a prohibited condition
6) Exit from the permit space as quickly as possible whenever:
   - An order to evacuate is given by the Attendant or the entry supervisor
   - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
   - The entrant detects a prohibited condition
   - An evacuation alarm is activated

Attendant— The Attendant is responsible for:

1) Knowing the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure
2) Continuously maintaining an accurate count and identity of authorized entrants in the permit space.
3) For remaining outside the permit space until relieved by another Attendant.
4) Maintaining continuous communication with all Authorized Entrants
5) Monitoring activities inside and outside the space to determine if it is safe for entrants to remain in the space and ordering the authorized entrants to evacuate the permit space immediately under any of the following conditions:
   - If the Attendant detects a prohibited condition of the entry
   - If the Attendant detects the behavioral effects of hazard exposure in an Authorized Entrant
   - If the Attendant detects a situation outside the space that could endanger the Authorized Entrants
   - If the Attendant cannot effectively and safely perform all of his or her required duties
6) Summoning rescue or emergency services as soon as the Attendant determines that authorized entrants may need assistance to escape from permit required confined space (P RC S) hazards
7) Perform non-entry rescue as specified in the rescue procedure.

5.0 GUIDELINES

D&B/WFC will use these guidelines for any entry into a PRCS for testing, maintenance, inspection, or repair activities.

5.1 General

In general, the HSC or HSR should evaluate the workplace and identify the number, type and location of all confined space areas within the site that personnel may need to enter to perform work. Once the confined spaces have been identified, as defined in Section 3.0, a determination must be made if the space(s) requires an Entry Permit.

If a confined space has been defined as a PRCS, the HSC, HSR or his/her designee must inform site personnel of the existence, location and danger posed by the space. This can be accomplished by posting a danger sign with appropriate language (e.g. DANGER — PERMIT REQUIRED CONFINED SPACE).

NO ENTRY INTO A PRCS SHALL OCCUR WITHOUT A

***PERMIT*. 5.2 Reclassifying Permit-Required Confined Spaces**

PRCS can be temporarily reclassified as either a Non-Permit Confined Space or Alternate Space, providing the following is met.

5.2.1 Reclassification to a Non-Permit Confined Spaces

Some identified confined spaces are classified PRCS based solely upon the space containing hazards which can effectively be eliminated through lockout/tagout procedures. For a PRCS to be temporarily reclassified as a non-permit space, there must be no potential for the space to contain other hazards. The permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated. All measures for eliminating hazards within the space should be documented and reviewed by the HSC. Upon work completion and after the control measures have been removed, the space must be reclassified as a PRCS.

5.2.2 Reclassifying PRCS to Alternate Space

If the only hazard in a PRCS is a hazardous atmosphere, then it is possible to potentially reclassify the space as an Alternate Space. In order to consider such spaces as non-permit spaces, all atmospheric hazards must be eliminated without entry into the space. Monitoring and inspection data, collected during routine entry operations, must show that the atmospheric hazards were effectively abated through the use of ventilation equipment. The HSC or HSR shall verify an evaluation of designated Alternate Spaces. Although an Entry Permit is not required for entrance into an Alternate Space, the following precaution must be followed:

Entrants must be trained in the potential hazards of the space
Continuous ventilation shall be established and maintained throughout the entry period. The ventilation must be sufficient to maintain the space safe for entry

Prior to entry the space must be tested for oxygen content, flammable gases and vapors, potential toxic air contaminants

If a hazardous atmosphere is detected entrants must evacuate the space and the space then becomes a PRCS.

5.3 Hazard Identification

The Hazard Assessment Form in Appendix A can be used to assess the hazards of each confined space prior to entry.

5.4 Entry Permit

The Entry Permit (Appendix B) is a checklist designed to ensure that the proper precautions are implemented prior to entry.

All blocks on the permit must be completed. If an item is not applicable then "N/A" must be written in the space. NO blank spaces are to appear on the permit. The permit must be signed by the Entry Supervisor and posted at the entrance to the confined space until the entry is completed or the work shift ends. The permit is applicable for a single work shift. The entry permit will serve as safety briefing outline before entry and will be available for review by all affected employees.

The entry permit will identify:

1. The location of the confined space, a description of the entry task, date of entry and duration of permit.

2. Known and potential hazards that may be encountered during the confined space entry.

3. All mechanical apparatus within the confined space such as agitators and pumps, which if activated could injure the worker.

4. Isolation procedures to be implemented.

    a. Blanking and/or disconnecting of all lines
    b. Electrical lockout and tagout
    c. Mechanical isolation and tagout
    d. Mechanical ventilation (volumes)

EXHIBIT 2 (continued)

CONFINED SPACE OPERATIONS GUIDELINES

5. Safety and protective equipment required (specify routine and emergency requirements):

a. Level of respiratory protection
b. Personal protective equipment
c. Safety harness and/or lifelines
d. Extraction devices
e. Tools and equipment to be taken into the confined space by the entrant.

6. Pre-entry atmospheric monitoring and acceptable levels of contaminants:

a. Oxygen level (19.5 — 23.5 %)
b. Combustible gas/vapor level (< 10% LEL)
c. Toxic substances level less than established TLV, PEL

7. Provisions for continuous atmospheric monitoring:

a. Equipment
b. Evacuation criteria

8. Equipment/procedures to maintain acceptable atmospheric

conditions: a. Purging, ventilation, flushing, inerting

9. Identification of entry team (authorized and eligible):

a. Personnel to make entry (authorized entrant)
b. Personnel on stand-by (Attendant)

10. Emergency procedures and first aid:

a. Communication procedures
b. Equipment location
c. Rescue team

11. Training required (Specifics beyond Section 5.8 should be noted):

a. Authorized Entrant, Attendant and Entry Supervisor
b. Non-entry rescue
c. Respirator use

d. PPE

5.5 Work Practices

5.5.1 Pre-Entry

As part of the pre-entry procedure, the Entry Supervisor, HSC or HSR will review the entry permit with all authorized entrants and Attendants. The Entry Supervisor, HSC or HSR must make sure that all the necessary steps have been taken to ensure that there are safe conditions prior to issuing an entry permit. These steps include:

- *Pre-entry briefing:*
- *Preparation of the Entry Permit including:*
  - ✓ *Initial Atmospheric Testing* as necessary for oxygen deficiency or enrichment, for combustible gases, and for toxic gases and vapors
  - ✓ *Hazard Control/Elimination* to ensure that proper hazard control/elimination measures have been taken
  - ✓ *Space Preparation and Site Control* to ensure that unauthorized personnel do not impact the entry operation, that all necessary entry equipment can be staged effectively, that housekeeping at the entry location and in the space itself is adequate and that rescue services can locate and access the entry space as needed
  - ✓ *Training* which identifies the level of training required for all personnel involved with the entry
  - ✓ *Emergency Rescue Procedures* identifying the level and type of emergency services required for the entry
  - ✓ *Equipment and Instrumentation* required for monitoring, hazard control, safety, rescue

5.5.2 Purging and Ventilation

All confined space enclosures containing a hazardous atmosphere shall be subject to purging and continuous ventilation prior to an entry. Continuous ventilation may not be required if the confined space meets all of the following criteria:

1. No oxygen deficiency or enrichment (19.5 - 23.5 %)

2. LEL measurements are less than 10%

3. Toxicity measurement is less than 10% of the established IDLH of the airborne contaminant present

5.5.3 Isolation/Lockout and Tagging

Except for such confined spaces as manholes, sewers, and tunnels, where complete isolation is not physically possible, all confined spaces shall be completely isolated from all other systems by such means as lockout/tagout, double block and bleed, or physical disconnection of all lines into the confined space.

5.5.4 Buddy System

All tasks involving confined space entry will by performed by a team of not less than two (2) persons with specific duties as described in Section 4.0 Responsibilities.

5.5.5 Communication

The Authorized Entrants and the Attendant must maintain continuous communication with each other during the entire confined space entry. If visual contact and/or verbal communication cannot be maintained, the following code may be used which utilizes the lifeline:

Person Outside Confined Space	Person In Confined Space
1 Pull - Come out	1 Pull - Send help
2 Pulls- Back out	2 Pulls- Keep slack out of line
3 Pulls- Advance	3 Pulls- I am going ahead
4 Pulls- Are you okay?	4 Pulls- I am okay

If the person inside the confined space does not respond to the pull code, assume that there is trouble and begin effecting emergency procedures.

5.5.6 Testing and Monitoring

When preparing for an entry into a PRCS, appropriate initial testing must be conducted to assure that the atmosphere in the confined space is safe. Monitoring will be conducted for oxygen content, combustible gases/vapors, toxic contaminants, and any other contaminants identified. Air monitoring should be conducted continuously while personnel are within the confined space.

CONFINED SPACE OPERATIONS GUIDELINES

Entry into a confined space without proper personal protective equipment will not be permitted under the following conditions:

1. Oxygen concentrations less than 19.5% (148 mm Hg*) or greater than 23.5% (178 mm Hg*) * *Based on Atmospheric Pressure of 760 mm HG (Sea Level)*

2. Flammability measurements greater than 10% of the lower explosive limits (LEL)

3. Toxicity measurements indicating an IDLH atmosphere's existence in the confined space.

Initial atmospheric samples shall be drawn while outside the confined space at the following locations:

1. Outside the entry point(s)

2. Immediately inside the entry point(s)

3. Every four feet from the entrance.

All initial-monitoring results will be recorded on the entry permit.

5.6 Equipment

Equipment necessary for safe entry, including testing, monitoring, communication, and personal protective equipment must be available prior to entry. Personnel using the equipment must be trained in proper use and maintenance of such equipment.

5.6.1 Safety Equipment

Additional safety equipment such as safety belts, body harnesses, or wristlets with lifelines shall be provided and used for all confined space entries, as determined by Entry Supervisor, HSC or HSR. If necessary, lifelines shall be attached to a mechanical extraction device outside the confined space so the Attendant can perform non-entry rescue.

5.6.2 Illumination

Illumination must be provided, as necessary, pursuant to 29 CFR 1910.120(m).

5.6.3 Equipment Requirements

All tools and other equipment, including monitoring instruments, for use in PRCS shall be inspected for compliance with the following requirements:

1. Tools and equipment will be kept clean and in a good state of repair.

2. All electrical equipment including portable tools, lighting, and power cords should meet approvals in accordance with OSHA regulations found in 29 CFR 1910 subpart S, including provisions for ground fault circuit interruption.

3. Only explosion proof temporary lighting listed by the Underwriters Laboratory should be used during PRCS entry and be equipped with all necessary guards.

4. Air activated tools must be used where flammable liquids are present and be bonded to the confined space.

5. Compressed gas cylinders, except those that are part of SCBA or resuscitation equipment, shall never be permitted inside a confined space. Cylinders used to supply compressed gases to a confined space shall be turned off at the cylinder valve when not in use and the supply lines will be removed.

6. Ladders, scaffolding, and staging shall be adequately designed and secured in conformance with OSHA regulations found in 29 CFR 1910 subpart D.

7. Any equipment or instrumentation subject to use in a confined space where flammable atmospheres may occur shall be listed as explosion proof or intrinsically safe by a recognized testing laboratory.

5.7 Rescue

If it becomes necessary to remove a worker from a confined space, the Attendant should act in accordance with the predetermined emergency rescue plan as follows:

A. The Attendant will communicate through the predesignated communication network and request assistance. The following information should be given:

    1. The location of the confined space

    2. Request for emergency oxygen supply and first-aid kit

3. Request for self-contained air supply with full-face mask, safety harness, and lifeline

4. Call for professional medical assistance

B. The Attendant will only attempt a non-entry rescue. At no time will the Attendant place himself/herself inside the confined space to perform an in-space rescue.

C. If the person within the confined space is secured to a winch, begin hauling him/her out. This procedure must be performed at speed that will not further injure the person.

D. If the lifeline is not secured to a winch, the Attendant will secure lifeline.

5.8 Employee Information and Training

Employees shall be trained to recognize confined spaces, the hazards of working in a confined space, and demonstrate understanding, knowledge, and skills necessary for the safe performance of their assigned duties during any confined space entry. The HSC will also ensure employees are trained before an employee is assigned the duties of Entrant, Attendant or Entry Supervisor.

Training shall include:

1. Hazard recognition associated with confined space operations

2. Emergency entry and egress procedures

3. Respiratory Protection

4. First aid

5. Cardiopulmonary resuscitation

6. Lockout and tagout procedures

7. Personal Protective Equipment

8. Rescue operations

9. The Permit System

10. Work practices (see Section 5.4)

5.9 Subcontractors

Subcontractors shall be provided with all available information on existing confined spaces, their hazards, necessary permits (if applicable), and any other workplace hazards, safety rules and emergency procedures necessary to complete the task safely.

5.10 Recordkeeping

Copies of the entry permits and personnel exposure record will be maintained by the HSC as required under 29 CFR 1910.20.

6.0 REFERENCES

1. ANSI Z117.1-1989 "Safety Requirements for Confined Space"
2. 29 CFR 1910.146, Proposed Rulemaking "Permit Required Confined Spaces"
3. 29 CFR 1910.120(m) Hazardous Waste Operations (Illumination)
4. 29 CFR 1910 Subpart S (Electrical)
5. 29 CFR 1910 Subpart D (Walking-Working Surfaces)

7.0 APPENDICES

Appendix A- Hazard Assessment Form
Appendix B- Entry Permit

EXHIBIT 3

EXCAVATION/TRENCHING OPERATIONS GUIDELINES

1.0 PURPOSE

To establish safe operating procedures for employees working in or near excavation or trenching operations at D&B work sites.

2.0 SCOPE

Applies to all D&B activities where excavation or trenching operations take

place. 3.0 DEFINITIONS

Adjacent area — The horizontal surface area surrounding the excavation, which extends outward from the excavation edge up to a distance that is half the depth of the excavation.

Competent Person — A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authority to take prompt corrective measures to eliminate the hazard.

Excavation — Any manmade cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation.

Protective system — Shoring, Shielding, Sloping or equivalent.

Trench — A narrow excavation made below the earth's surface. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet.

4.0 RESPONSIBILITIES

Health and Safety Coordinator (HSC) responsible for revising the Trenching and Excavation program to include new OSHA updates. The HSC is also responsible for ensuring trenching and excavation training is available for applicable D&B employees. The HSC or a designee may conduct site inspections of all trenching and excavations that D&B employees will be exposed to.

All Site Personnel must follow these procedures when working in or around an excavation or trench.

EXHIBIT 3 (continued)

EXCAVATION/TRENCHING OPERATIONS GUIDELINES

5.0 GUIDELINES

D&B personnel may be providing oversight on projects where excavation and trenching operations are being undertaken. *D&B WILL NEVER BE PLACED IN THE ROLE OF THE DESIGNATED "COMPETENT PERSON", MAKING DECISIONS ON THE SAFETY CONDITIONS AND PROCEDURES OF THE EXCAVATION AND TRENCHING OPERATIONS.* D&B personnel should identify the contractor/subcontractor/sub-consultant "Competent Person". D&B personnel will also understand the basic H&S requirements for excavating and trenching to protect themselves and other D&B personnel.

5.1 Hazards Associated with Excavation/Trenching

The principle hazards associated with excavation/trenching are:

- Suffocation, crushing or other injury from falling material.
- Damage/failure of installed underground services and consequent hazards.
- Tripping, slipping or falling.
- Possibility of explosive, flammable, toxic or oxygen-deficient atmosphere in excavation.

5.2 Requirements for Protective Systems

- Whenever there is a potential for cave-in.
- The excavation is 5 or more feet in depth, as determined by the competent person, pursuant to 29 CFR Part 1926.501.

5.3 Inspections

The designated "competent person" from the contractor/subcontractor/sub-consultant will perform inspections pursuant to 29 CFR 1926.651 k(1) when employee exposure to hazards are reasonably anticipated:

- Each day before employees enter the excavation,
- After every rain storm,

- As needed throughout the shift, or
- As soil conditions change.

During the inspection the "competent person" must:

- Ensure the protective system is adequate for the soil classification and the external loads placed on the adjacent area,
- Evaluate the excavation, the adjacent area and the protective system, for
  - — Hazardous atmosphere
  - — Potential situations that could lead to cave-in
  - – Indications of failure of a protective system
  - – Cracks in the ground parallel to the top of the excavation
  - – Any other hazardous conditions
- Verify that ladders or other means of access/egress to excavations shall be provided at:
  - — maximum spacing of 100 feet on the perimeter of open excavations and
  - – maximum spacing of 25 feet for trench excavations greater than 4 feet in depth.

5.4 Entering the Excavation

D&B employee shall *NOT* enter an excavation unless the D&B site supervisor has coordinated with the contractor/subcontractor/sub-consultant competent person to ensure the excavation has been inspected and is safe.

6.0 REFERENCES

1. OSHA Regulations 29 CFR 1926 Subpart P - Excavations

EXHIBIT 4

LOCKOUT/TAGOUT GUIDELINES

1.0 PURPOSE

Lockout/Tagout guidelines have been established to protect D&B employees from injuries that could result from the unexpected or unplanned start-up or movement of machinery or equipment during inspections, maintenance, installation, adjustment, or servicing operations. These guidelines provide D&B personnel with information regarding the hazards and control measures associated with the release of such hazardous energy pursuant to OSHA Standard 29 CFR 1910.147.

If D&B is expected to take measures to control hazardous energy for site-specific operations, then a written Energy Control Procedure must be prepared for each site. Such procedures will include steps for equipment shutdown, isolation, application of locks and tags, dissipation of stored energy, verification of equipment isolation, removal of locks and tags, and restoration of energy to machines.

The components of the Lockout/Tagout Program include:

a. Energy Control Procedures, if applicable

b. Employee notification

c. Contractor activities

d. Employee training

e. Periodic audits of the Energy Control Procedures, if applicable

2.0 SCOPE

These guidelines apply to all D&B employees who perform activities (such as surveying, construction, installation, set-up, adjustment, inspection, maintenance, and repair) where a hazardous energy release potential exists. This applies to any source of electrical, hydraulic, pneumatic, potential (stored), chemical, thermal, or other energy.

3.0 DEFINITIONS

Affected Employee - an employee who performs job duties in an area in which lockout or tagout is performed. An affected employee does not perfolui servicing or maintenance on machines or

equipment and **is not** responsible for implementing energy control procedures or applying locks or tags.

Authorized Employee - an employee who performs servicing or maintenance on machines or equipment and who implements energy control procedures, including the application of locks or tags. (Note: A single employee may be both authorized and affected if he/she performs servicing or maintenance under Lockout/Tagout on a machine or equipment he/she normally operates).

Capable of Being Locked Out - an energy isolating device is considered to be capable of being locked out if it meets **one** of the following criteria:

- it is designed in such way so that a lock can be attached
- it is designed with any other integral part through which a lock can be affixed
- it has a locking mechanism built into it
- it can be locked without dismantling, rebuilding, or replacing the energy isolating device or permanently altering its energy control capability. (For example, although many valves are not designed with an integral locking device, they can be secured with chains, blocking braces, or wedges, which can then be locked).

Energized - machines and equipment are energized when they are connected to an energy source or they contain residual or stored energy.

Energy-Isolating Device - a mechanical device that physically prevents the transmission or release of energy -- including, but not limited to: manually operated circuit breakers; disconnect switches; valves, and blocks. The term does not apply to pushbuttons, selector switches, or other control circuit devices.

Energy Source - any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Energy Control Procedure - a written procedure which contains the information and steps an Authorized Employee needs to follow in order to safely isolate equipment to perform servicing or maintenance under Lockout/Tagout. Note, only Authorized Employees are permitted to use the Energy Control Procedures.

Lockout - the act of padlocking and tagging an energy-isolating device in the off or safe position. In cases where more than one employee is involved, provision will be made so that each Authorized Employee can affix his/her own lock and tag.

"Other" Employees - all D&B employees who are not Authorized or Affected Employees.

EXHIBIT 4 (continued)

LOCKOUT/TAGOUT GUIDELINES

Tagout - the act of placing an energy-isolating device in the off or safe position and placing a tag on it to indicate that the equipment **may not** be operated until the tag is removed.

4.0 RESPONSIBILITIES

The *Health and Safety Coordinator (HSC)* has an overall responsibility for the Lockout/Tagout Program. The HSC will coordinate Lockout/Tagout training for all authorized and affected employees, if necessary, and assess authorized employee's knowledge of the Lockout/Tagout Program.

The *On-Site Health and Safety Representative (HSR)* will:

- Be knowledgeable about the types and magnitude of hazardous energy sources and the hazards associated with the unexpected or unplanned start-up or movement of machinery or equipment during maintenance, installation, adjustment, or servicing operation.
- Be knowledgeable in the methods to control hazardous energy, verify that each authorized and affected D&B personnel has received Lockout/Tagout training before they begin work in an area where Energy Control Procedures are used
- Ensure that D&B /WFC personnel correctly obtain, review and apply the appropriate Energy Control Procedures, when required, and maintain adequate supply of Lockout devices and equipment
- Be responsible for developing new or modify existing Energy Control Procedures for each job site, if required, and attached them to the Site-Specific Health and Safety Plan (HASP)
- Coordinate Lockout/Tagout operations which, involve outside contractors.

Authorized Employees — D&B Authorized Employees, if designated, are responsible to correctly apply Energy Control Procedures, including the application of locks or tags. Authorized employees will:

- Be knowledgeable about the types and magnitude of hazardous energy and the hazards employed with the unexpected or unplanned start-up or movement of machinery or equipment during maintenance, installation, adjustment, or servicing operations

- Be knowledgeable in the methods used to control hazardous energy (Energy Control Procedures)

- Notify affected employees prior to application of Lockout/Tagout devices and after the devices are removed

- Coordinate the Lockout/Tagout activities when a Lockout/Tagout operation continues beyond one (1) shift.

Affected and "other" employees are generally responsible for operating or working near machines upon which Lockout/Tagout operations are performed. Affected employees will:

- Understand the purpose of Energy Control Procedures and the importance of not attempting to start-up or use machines that have been locked or tagged.

- Recognize when Energy Control Procedures are being implemented.

5.0 GUIDELINES FOR LOCKOUT/TAGOUT

5.1 General

It is anticipated that for most jobs, D&B personnel will not be responsible for developing Energy Control Procedures. However, when working in the areas of potential hazardous energy release, each employee must recognize the types and magnitudes of hazardous energy sources and the hazards associated with the unexpected or unplanned start-up or movement of machinery or equipment. They must also observe safe work practices.

Only authorized employees are permitted to implement the Energy Control Procedures.

5.2 Work Practices

Following is a typical sequence to implement the Lockout/Tagout procedures.

a. *Prepare for Shutdown* - Authorized employees must review the applicable Energy Control Procedure. If a specific Energy Control Procedure does not exist for a machine then the HSC or designee must ensure that a procedure is developed

b. *Notify AffectedAffected Employees* - Authorized employees must verbally notify affected employees prior to application of lockout or tagout devices

c. *Shut Down Machinery or Equipment*

d. Isolate Machinery or Equipment from Energy Source - Place manually operated circuit breakers, disconnect switches, valves and related equipment into the "off" or safe position. Place blocks where necessary to physically isolate the machinery or equipment from its energy source to prevent the transmission or release of energy.

e. Apply Lockout and/or Tagout Devices - Each authorized employee or outside contractor involved in the work which requires the use of Lockout/Tagout must personally place his/her lock and identification tag on each identified energy isolating device. The tag must be filled out with the authorized employee's name, the date it was placed, and the reason for the Lockout/Tagout operation. Each authorized employee must maintain possession of the key to his/her lock during the entire work operation. Where an energy-isolating device is not designed to accept a lock, a signed and dated tag may be used according to procedures specified in Section 5.4. After applying locks and tags, the energy isolating devices must be tested to make certain they cannot be moved into the "on" position.

f. Release Stored Energy in air lines, water lines, etc by bleeding off excess pressure. Bleed-off valves must be locked and/or tagged out in the open position. Disconnected lines must be tagged out. Restrain potential energy using safety blocks.

g. Verify that Machinery or Equipment is De-energized - Using normal operating controls, attempt to start the machinery or equipment to make sure that it has been completely de-energized.

5.3 Release from Lockout/Tagout

Upon completion of work requiring the use of Lockout/Tagout procedures, the following sequence can be used to restore machinery or equipment to service:

a. Check Equipment - Following completion of the work, the authorized employees who performed the work must inspect the area around the machinery or equipment to ensure that all tools or other nonessential items have been removed, machine guards have been reinstalled, and the machinery or equipment components are operationally intact and safe to energize.

b. Check Work Area - The authorized employees who performed the work must inspect the work area to make certain all employees are safely positioned away from the machinery or equipment.

c. *Removal of Lockout/Tagout Devices* - Locks and/or tags must be removed from each energy isolating device by the authorized employee or outside contractor who placed it. If the authorized employee or outside contractor is not available to remove his/her own lockout/tagout device, use the Emergency Lock or Tag Removal Procedures described in Section 5.7.

d. *Restore Energy to Machinery/Equipment* - Place manually operated circuit breakers, disconnect switches, valves, etc. into the "on" position. Remove safety blocks

e. *Notify Affected Employees* - Authorized employees must verbally notify affected employees following removal of locks and tags and the re-energization of the machinery or equipment.

5.4 Use of a Tagout System Only

In cases where machinery or equipment **is not** capable of being locked out, it will be necessary to use a completed "Do Not Operate" tag to provide the highest level of safety available without the use of locks. The tag must be filled out with the authorized employee's name, the date it was placed, and the reason for the Tagout operation. Note that tags alone **may not** be used as a substitute when the use of locks is specified in the applicable Energy Control Procedure. Only authorized employees are permitted to implement tagout. The following conditions apply to the use of tags without locks:

a. Only authorized D&B employees are permitted to place a "Do Not Operate" tag;

b. The tag must be placed at the same location that a lock would have been attached with a self-locking plastic or nylon tie wrap capable of withstanding at least 50 pounds of force;

c. The lockout tag can only be removed by the authorized employee who installed it. If the authorized employee is not available to remove his/her own tag, use the emergency lock or tag removal procedures in section 5.7.

5.5 Energy Control Procedures

Generally, Energy Control Procedures are developed by the client or the owner of the equipment and made available to D&B project personnel. If such procedures are not available, D&B can develop, if required, a site-specific written Energy Control Procedure, which will contain the steps and techniques to be used by authorized employees to properly de-energize machinery and equipment prior to the initiation of work.

When the operations involves more than one (1) authorized employee or outside contractor, provision must be made to ensure that each individual can place his/her lock and tag on each energy isolating device identified in the applicable Energy Control Procedure.

5.6 Shifts or Personnel Change

When Lockout/Tagout must continue beyond one (1) shift or when there is personnel change, the following procedures apply:

a. At the end of the shift, each authorized employee who is leaving work must remove his/her "Do Not Operate" tag(s) from each energy isolating device. Each oncoming authorized employee must affix his/her own personal "Do Not Operate" tag(s) on the padlock(s) to which his/her key corresponds and maintain possession of the padlock key(s)

b. Verify that machinery or equipment is de-energized using the procedures described in Section 5.2 g

c. Proceed with operations.

5.7 Emergency Lock or Tag Removal

In the event that the authorized employee or outside contractor who attached a lock or tag is not available to unlock or remove a lock or tag, the HSC, HSR or a designee may remove the lock or tag only using the following procedures:

a. Verify that the authorized employee or outside contractor who placed the lock or tag is not at the facility

b. Attempt to contact the authorized employee or outside contractor whose lock is still in place

c. Ensure that all work has been completed and the equipment machinery is safe to return to service

d. The HSC, HSR or a designee may cut the lock off using a saw or bolt cutters. Where tagout only is being used, tags may be removed by designated personnel using appropriate methods

e. Ensure that the authorized employee or outside contractor whose lock or tag has been removed is informed before he/she returns to work

f. Review the lockout/tagout requirements with the authorized employee or outside contractor who left their lock or tag on the isolated equipment

5.8 Testing and Positioning of Machines and Equipment

In some situations, it may be necessary for authorized employees to operate equipment for testing or positioning before it is ready to be used. These situations require the temporary removal of Lockout/Tagout devices only during the limited time necessary for the testing or positioning. Use the following procedures for testing and positioning of machines or equipment:

a. Release the machine, equipment or component from Lockout/Tagout

b. Perform the testing and positioning

c. De-energize and re-apply locks and tags.

5.9 Hardware and Tags

If Logout/Tagout will be employed by D&B authorized employees, the HSC is responsible for providing the resources to ensure that an adequate supply of Lockout/Tagout devices and equipment will be maintained for each project site. Lockout/Tagout hardware is issued to all authorized employees for use with this program. The HSC or his/hers designee will maintain a master list of all lockout padlocks and keys.

6.0 EMPLOYEE TRAINING

An initial training program will be provided to all authorized and affected employees, as required. The HSC has overall responsibility for coordinating employee training, including as needed "refresher" training.

Each HSR must verify that all employees have received initial lockout/tagout training prior to starting work involving the control of hazardous energy. The HSC must identify any employees who require re-training when there is a change in Energy Control Procedures, a change in equipment or processes which presents a new hazard, or when observations reveal that there are inadequacies in employees' knowledge or use of Energy Control Procedures.

EXHIBIT 4 (continued)

LOCKOUT/TAGOUT GUIDELINES

Authorized employees will receive site specific training in the recognition of hazardous energy, the sources, types and magnitudes of energy and the elements of the Energy Control Procedures. Affected employees will receive training in the purpose and use of Energy Control Procedures.

7.0 CONTRACTORS/SUBCONTRACTORS

Outside contractors and subcontractors performing operations which require the use of Lockout/Tagout must use *THEIR OWN* Energy Control Procedures

8.0 PERIODIC INSPECTIONS OF ENERGY CONTROL PROCEDURES

D&B will conduct periodic evaluations of the Lockout/Tagout Program including a review of Energy Control Procedures, as applicable. Authorized Employee(s) (other than those utilizing the Energy Control Procedure) will perform periodic inspections.

EXHIBIT 5

CARE AND CLEANING OF RESPIRATORS

General Requirements

Any organization using respirators on a routine basis should have a program for their care and cleaning. The purpose of a program is to assure that all respirators are maintained at their original effectiveness. If they are modified in any way, their Protection Factors may be voided. Usually one person in an organization is trained to inspect, clean, repair, and store respirators.

The program should be based on the number and types of respirators, working conditions, and hazards involved. In general, the program should include:

- Inspection (including a leak check)
- Cleaning and Disinfection
- Repair
- Storage

Inspection

Inspect respirators after each use. Inspect a respirator that is kept ready for emergency use monthly to assure it will perform satisfactorily.

On air-purifying respirators, thoroughly check all connections for gaskets and "0" rings and for proper tightness. Check the condition of the facepiece and all its parts, connecting air tubes, and headbands. Inspect rubber or elastic parts for pliability and signs of deterioration.

Maintain a record for each respirator inspection, including date, inspector, and any unusual conditions for findings.

EXHIBIT 5 (continued)

CARE AND CLEANING OF RESPIRATORS

Cleaning and Disinfection

Collect respirators at a central location. Brief employees required to wear respirators on the respirator program and assure them that they will always receive a clean and sanitized respirator. Such assurances will boost morale. Clean and disinfect respirators as follows:

- Remove all cartridges, canisters, and filters, plus gaskets or seals not affixed to their seats.
- Remove elastic headbands.
- Remove exhalation cover.
- Remove speaking diaphragm.
- Remove inhalation valves.
- Wash facepiece and breathing tube in cleaner/sanitizer powder mixed with warm water, preferably at 120 to 140°F. Wash components separately from the facemask, as necessary. Remove heavy soil from surfaces with a hand brush.
- Remove all parts from the wash water and rinse twice in clean, warm water.
- Air dry parts in a designated clean area.
- Wipe facepieces, valves, and seats with a damp lint-free cloth to remove any remaining soap or other foreign material.

Note: Most respirator manufacturers market their own cleaners/sanitizers as dry mixtures of a bactericidal agent and a mild detergent. One-ounce packets for individual use and bulk packages for quantity use are usually available.

EXHIBIT 5 (continued)

CARE AND CLEANING OF RESPIRATORS

Repairs

Only a trained person with proper tools and replacement parts should work on respirators. No one should ever attempt to replace components or to make adjustments or repairs beyond the manufacturers' recommendations. It may be necessary to send high pressure side components of SCBA's to an authorized facility for repairs.

Make repairs as follows:

- Disassemble and hand clean the pressure-demand and exhalation valve assembly (SCBA's only). Exercise care to avoid damage to the rubber diaphragm.
- Replace all faulty or questionable parts or assemblies. Use parts only specifically designed for the particular respirator.
- Reassemble the entire respirator and visually inspect the completed assembly.
- Insert new filters, cartridges, or canisters, as required. Make sure that gaskets or seals are in place and tightly sealed.

Storage

Follow manufacturers' storage instructions, which are always furnished with new respirators or affixed to the lid of the carrying case. In addition, these general instructions may be helpful:

- After respirators have been inspected, cleaned, and repaired, store them so to protect against dust, excessive moisture, damaging chemicals, extreme temperatures, and direct sunlight.

EXHIBIT 5 (continued)

CARE AND CLEANING OF RESPIRATORS

Storage (continued)

- Do not store respirators in clothes lockers, bench drawers, or tool boxes. Place them in wall compartments at work stations or in a work area designated for emergency equipment. Store them in the original carton or carrying case.

- Draw clean respirators from storage for each use. Each unit can be sealed in a plastic bag, placed in a separate box, and tagged for immediate use.

EXHIBIT 5 (continued)

RESPIRATORY CERTIFICATION RECORDS

RESPIRATORY PROTECTION PROGRAM
RECORD OF RESPIRATOR USE

Name_____Date_____

Social Security Number_____Age _____

Location _____

Department _____Supervisor_____

Area to be used in _____

Type of Respirator _____Fitted By _____

Medical Approval Date _____

Medical Facility/Physician _____

Specific contaminants for which respiratory protection is necessary:

EMPLOYEE STATEMENT

I, an employee of _____ , have received the above-referenced respirator. I have been fitted and properly instructed on its uses and limitations. I, also, understand that it is my responsibility to properly clean, maintain and store my respirator in a clean area unless other arrangements have been made to assure maintenance and care of the respiratory protection.

Signature _____

Date _____

EXHIBIT 6

AIR MONITORING RESULTS REPORT

Date:_____

Duration of Monitoring: _____

Work Location and Task: _____

_____

Instrument Reading _____ (Time)	Instrument Reading _____ (Time)	Instrument Reading_____ (Time)
_____	_____	_____
_____	_____	_____

(Note: If instruments have recorders, just attach tape to report. Also note any action levels when exceeded.)

Instrument Calibration: _____

Perimeter Samples Collected: _____

_____

Personnel Samples Collected:_____

_____

Perimeter and Personnel Sample Results From Previous Day (attach data once received):

_____

Comments: _____

_____

_____ _____

Name Title (Site Safety Officer)

Signature _____

EXHIBIT 7

HEAT/COLD STRESS GUIDELINES

1.0 WORKING CONDITIONS AS RELATED TO HEAT STRESS

1.1 Personal Protective Clothing

All of the protective ensemble does not lend itself to the release of body heat generated during work. With this in mind, the following will be taken into consideration during the work schedule so as to minimize the heat stress to all personnel:

- All personnel will be advised to wear lightweight undergarments with short sleeves, under the chemical protective coverall.
- Personnel will be advised that extra clothing be on-site for use as the workday progresses due to the clothing becoming wet from perspiration.
- Dressing-out will be done in a designated trailer and be scheduled so as not to extend time in the protective ensembles.
- The dress-out area will have a table with fresh water and/or other water replenishing liquids along with disposable cups. All personnel will be expected to drink liquids before each work cycle. The SSO will supervise the dressing and water intake.
- As the job progresses and more information becomes available as to the materials that the workers are coming in contact with, consideration as to modifications to the protective ensemble will be examined. Such things as allowing personnel to keep the protective garment's hood down allowing for the release of heat. All decisions regarding the protective ensemble will be the SSO's decision based on available information.
- After completion of each work cycle, personnel will pass through personnel decontamination and remove their protective ensembles in the designated area. All personnel will then be medically monitored, if deemed necessary by the SSO. Liquid replenishment will be mandatory after each work cycle.
- Eating facilities will allow for meal periods to be taken in the designated lunch area. On days of extreme temperatures, the use of air conditioning in the decontamination trailer will be limited so as not to have personnel exposed to temperature extremes.

EXHIBIT 7 (continued)

HEAT/COLD STRESS GUIDELINES

1.2 Causes of Heat Stress

Wearing the expected levels of protection on-site can put personnel at risk of developing heat stress. This section will discuss heat stress and what steps will be taken to monitor personnel for the signs of it.

The body's chemical activities take place in a limited temperature range. Heat is generated by these processes. Any heat not needed to sustain the activities must be lost from the body to maintain a balance. HYPOTHERMIA is an abnormally high body temperature. The three main avenues for the release of body heat are:

- Respiration is our breathing pattern. Care should be taken that the body is not fooled into believing it is cool based on skin temperature.
- Radiation is how heat is released from the skin. Blood will pool on the surface of the skin as body temperatures increase. The protective ensemble specified for this site will not allow for this type of heat release.
- Evaporative Heat Loss normally allows for a body to cool itself by the evaporation of perspiration. Because the protective ensemble stops any contact with moving air the sweat coming off of the body will not evaporate.

If any of these release mechanisms is out of balance, the following conditions can occur and may be considered emergencies needing care:

- HEAT RASH is a common occurrence in areas where body parts rub causing friction. The level of protection will heighten its effects. Proper treatment would be personal washing of the affected areas and administering powder to help healing.
- HEAT CRAMPS occur when people are exposed to heat for extended periods of time. Due to the wearing of the required protective ensemble, this will be expected. The person will sweat heavily and drink large quantities of water. The more the person sweats, the more electrolytes are lost. If enough body salts are lost, the individual will begin to experience body cramps and pain in the extremities.

EXHIBIT 7 (continued)

HEAT/COLD STRESS GUIDELINES

Proper treatment includes slow replenishment of body fluids augmented by a proper salt solution along with cooling the individual down, taking care not to expose the person to extreme cooling measures. The worker will not be allowed to return to work until the SSO has monitored and approved re-entry.

- HEAT EXHAUSTION occurs as the blood pools at the skin surface in an attempt to cool the body. Sweating is profuse, skin is moist and cool, and the patient will experience dizziness, nausea, or fainting. This condition is an indicator of overwork in the environmental conditions. Treatment includes all for heat cramps with an extended rest period before re-entry. Depending on the worker's physical condition, rest periods may be from 30-60 minutes. After experiencing heat exhaustion, the worker should be closely monitored for symptoms reoccurring.

- HEAT STROKE can occur if heat exhaustion is not cared for. This occurs when the body loses its ability to regulate its temperature. Sweating stops and, if not treated, can lead to death. Signs and symptoms include dry red skin with no perspiration along with nausea, dizziness and confusion. A strong, rapid pulse should be carefully monitored as this condition can lead to coma. Proper treatment begins by understanding that this is a true medical emergency and requires activating the emergency medical system as covered in other sections. When notifying the Emergency Medical Response organization, emphasis should be placed on the words HEAT STROKE and the need for rapid transportation to the medical facility. (See Appendix A of the SSHP). Emergency medical treatment in the field includes immediate cooling of the body with total body immersion preferable. Water temperature should be cool enough to absorb the high body heat but not cold. Ice packs can be applied to the person's head area and under the arms. Due to the personnel needed to treat the patient while awaiting emergency medical care, all work will stop and all attention will be devoted to the person in stress. The First Aid Technician will evaluate all personnel after the patient is transported to determine if they also are showing signs of heat stroke.

To facilitate treatment of all of the above, the trailer, with its air conditioning, fresh water supply and shower, will be used if necessary. In all cases requiring treatment, emergency decontamination procedures based on the individual's degree of contamination will be done before entry into the trailer. Remember: *You* are your own best indicator of signs of heat stress.

EXHIBIT 7 (continued)

HEAT/COLD STRESS GUIDELINES

2.0 COLD STRESS

The purpose of this section is to make all workers on-site aware of the problems associated with cold weather operations. As with heat related emergencies, cold weather injuries are progressive. That means that if the worker is aware of the problems beforehand he may prevent further damage and remain working.

Cold related injuries may be divided into two types:

- LOCAL COOLING affects the particular part of the body coming in direct contact with the cold air. This is commonly known as FROSTBITE.
- GENERAL COOLING affects the entire body and is known as HYPOTHERMIA. Hypothermia is a true medical emergency and should be recognized as such and treated immediately by trained medical personnel.

As stated, cold related injuries are progressive. The body loses heat either by CONDUCTION or direct transfer of body heat into the cold environment. An example would be an unprotected head allowing the surface area of the head to come in direct contact with the colder air. The other means by which the body loses heat is by CONVECTION. This occurs when colder air is allowed to pass over the body surface. When that air is also moist or the garments work become wet, a WATER CHILL or more commonly recognized WIND CHILL occurs. An example of wind chill would be a 20 mph wind during a 10 degree day would produce the same effect as -25 degree temperature. Both of these conditions may be easily prevented by proper work attire and safe work practices. Hardhat liners prevent the wind from blowing under the brim but will also affect your hearing ability.

EXHIBIT 7 (continued)

HEAT/COLD STRESS GUIDELINES

Lose layers of work clothes rather than bulky garments will allow the wearer to adapt to changing conditions. Use of rubber overboots will prevent leather workboots from getting wet and are excellent for stationary work to stop cold penetration.

Signs to Look For:

FROSTNIP, the first stage of frostbite occurs when a body part comes in direct contact to a cold object or cold air. This condition is not serious and can be remedied by warming of the region. The real problem is that a numbing effect can occur and keep the worker from realizing that he is going into the next stage SUPERFICIAL FROSTBITE.

The skin and under layers become effected. If not treated this can become a FREEZING condition in which the deeper structures of the body become effected.

CONDITION	SKIN SURFACE	TISSUE UNDER SKIN	SKIN COLOR
frostnip	soft	soft	red-white
frostbite	hard	soft	white/waxy
freezing	hard	hard	white/gray

HYPOTHERMIA occurs when the body is unable to maintain its proper temperature of 98.6 degrees. It is important for the worker to realize that this can occur in temperatures of 50 degrees and below. Submersion of a body part in cold water will also cause hypothermia very quickly. Some early signs are:

1. Shivering
2. Numbness in extremities
3. Drowsiness

4. Slow breathing and pulse rates
5. Failing eyesight
6. Loss of coordination, inability to do easy tasks
7. Freezing of body parts

Proper treatment begins by activation of emergency medical service procedure. Hypothermia required prompt qualified medical treatment. Initial site action would revolve around getting the affected worker out of the weather and begin the waiming process. The most important thing to realize is that Hypothermia is a MEDICAL EMERGENCY.

Workers exposed to cool temperatures for extended period of time can experience lesions in the form of red swollen areas that seem hot and itchy. These chronic lingering lesions are known as CHILBLAINS. Although not an emergency, the Chilblains indicate that the worker in not adequately protecting the affected area.

A common problem in wet work areas is TRENCH FOOT. The worker whose feet remain unprotected by leather footwear in water close to freezing will have swollen limbs that appear waxy and mottled in color. The affected limb will appear cold to the touch. Basic treatment revolves around getting the worker to a warm place and slowly removing the wet footwear. The obvious way to prevent TRENCH FOOT is to wear rubber protective footwear.

Some suggestions to prevent cold weather operation problems:

1. Plan ahead as to the proper work clothes to be worn.
2. Avoid early overheating which dampens clothes and hastens the release of body heat by evaporation.
3. Use of windbreaks in the work zone.

4. Elimination of standing water or avoid prolonged immersion in that water.

5. Provision of heated rest area (i.e., trailer or vehicle).

6. Avoid overheating of the rest area. Extreme temperature differentials between the work area and the rest area will lead to chilling upon return to work.

7. Proper diet and eating habits.

8. Avoid or cut down smoking which constricts the blood vessels.

REMEMBER, YOU ARE THE BEST PROVIDER OF INFORMATION ABOUT HOW YOU FEEL. THE BEST WAY TO PREVENT INJURIES FROM COLD WEATHER OPERATIONS IS TO RECOGNIZE THE EARLY SIGNS AND PREVENT SERIOUS INJURY.

EXHIBIT 8

INCIDENT NOTIFICATION FORM

TO: Project Manager

Date: _____

FROM: HSO and/or _____
(someone who has direct knowledge of the incident)

1. Contractor's Name:_____

2. Organization: _____

3. Telephone Number: _____

4. Location:_____

5. Reporter Name: _____

6. Name of Injured: _____Birth date: _____

7. Company Employing Injured: _____

8. Date of Incident: _____

9. Company Employing Injured: _____

10. Location of Incident: _____

11. Brief Summary of Incident (provide pertinent details including type of operation at time of incident):

_____

_____

_____

12. Cause, if known:_____

13. Casualties, if any: _____

EXHIBIT 8 (continued)

INCIDENT NOTIFICATION FORM

14. Details of Any Existing Chemical Hazards or Contamination:

_____

_____

15. Estimated Property Damage: _____

16. Affect on Contract Schedule: _____

17. Actions Taken by Contractor: _____

18. What Medical Help was Given: _____

_____

_____

19. Doctor and/or Hospital (if known): _____

_____

20. When did Employee Return to Work: _____

21. Other Damages/Injuries Sustained (public or private):

_____

_____

22. Additional Information:

_____

_____

_____

EXHIBIT 9

EMERGENCY INFORMATION

1. Emergencies Within the Site

- Contact the HSO On-Site
- Contact the FOM
- Contact Public Works
- Report the following:
  - Location of emergency in relation to a specific recognizable landmark.
    Nature of emergency:
    FIRE, if so of what kind and what equipment is involved.
    EMERGENCY MEDICAL INCIDENT, ALL INJURIES, ACCIDENTS OR FIRES.
    Communication will include:
    Number of injured people.
    Nature of injuries.
    If Project Field Team Members can't handle injuries with its resources, what emergency medical services will be needed.
  - If any outside personnel must enter the site, any hazards will be communicated and those people will be supervised by the HSO.
    In the event that any site personnel wearing protective equipment in the Exclusion Zone becomes injured, the HSO or designated individual will do whatever decontamination is necessary to remove that equipment.
    Any emergency treatment information dealing with the injury will accompany the injured party so that those treating that person will have any and all information.
    REQUEST FOR POLICE. If any person entering the site who does not belong there becomes a problem, Police will be notified. If that person either endangers the safe operation of Project Field Team members or himself, the HSO will suspend all work until that person can be removed.
    If site personnel will be evacuating the site due to emergency.

2. Personnel Exposures Within the Site

- Contact the HSO On-Site
- Contact the FOM
- Provide treatment as follows:
  - Eye Exposure - treat by immediate flushing with distilled water (portable eyewash). Transport for examination and treatment. Site-Specific hospital information can be found in Section 5.1.1.
    Skin Exposure - remove contaminated clothing and treat by washing with soap and water.

Inhalation - if a person inhales a large amount of organic vapor, the person will be removed from the work area to fresh air and artificial respiration will be administered if breathing has ceased. The affected person will be transported to the hospital by ambulance or emergency vehicle if overexposure to lungs has occurred.

Personal Injuries - in case of severe injury, the victim will receive emergency first aid at the site, as appropriate, and will be transported by ambulance or emergency vehicle to the hospital. An accident form must be completed for any accident or occupational exposure and forwarded to the Project Manager.

3. Evacuating the Site

- Contact the HSO On-Site
- Contact the FOM
- Follow the directions below:

Upwind withdrawal - withdraw to a safe upwind location if:

– Air quality concentration contain excessive concentrations of volatile organics, combustible gases, or oxygen percentage above or below safe levels for the level of protection being worn. The field team will withdraw to a safe upwind location determined by the HSO.

A minor accident occurs. The victim will undergo decontamination procedures and be transported to a safe upwind location. Field operations will resume after first aid and/or decontamination procedures have been administered to the affected individual.

- Protective clothing and/or respirator malfunctions.

Withdrawal from site - evacuate the site if:

Explosive levels of combustible gases, toxic gases, or volatile organics are recorded.

– A major accident or injury occurs.

– Fire and/or explosion occurs.

Shock-sensitive, unstable, or explosive materials are discovered.

High levels of radioactive materials are discovered.

- Evacuation of nearby facilities - a continuous release of toxic, flammable, or explosive vapors from the site could affect people off-site. Air quality should be monitored downwind to assess the situation. The FOM, or on-site designee, is responsible for determining if circumstances exist for any level of off-site contamination warranting concern for people off-site. he should always assume worst case conditions until proven otherwise. If conditions are marginal, evacuation should be conducted until acceptable conditions resume. Key personnel identified in the HASP should be contacted when evacuation of nearby facilities becomes necessary.

EXHIBIT 9 (continued)

EMERGENCY INFORMATION

TABLE I

EMERGENCY SIGNALS

In most cases, field personnel will carry portable radios for communications. If this is the case, a transmission that indicates an emergency will take priority over all other transmissions. All other site radios will yield the frequency to the emergency transmissions.

Where radio communication is not available, the following air-horn and/or hand signals will be used:

EMERGENCY AIR-HORN SIGNALS

HELP!	Three short blasts	. . .
EVACUATION!	Three long blasts	_
ALL CLEAR!	Alternating long and short blasts	• •

EMERGENCY HAND SIGNALS

OUT OF AIR, CAN'T BREATH	Hand gripping throat
LEAVE AREA IMMEDIATELY, NO DEBATE!	Grip partner's wrist or place both hands around waist
NEED ASSISTANCE	Hands on top of head
OKAY! - I'M ALRIGHT! - I UNDERSTAND!	Thumbs up
NO! - NEGATIVE!	Thumbs down

EXHIBIT 9 (continued)

EMERGENCY INFORMATION

TABLE II

LOCATION OF EMERGENCY EQUIPMENT

EQUIPMENT	TYPE	LOCATION(S)
Fire Extinguisher Dry Chemical	20A-80B:C	
First Aid Kit		
Eye Wash	Portable	
Emergency Sprayer	Portable	
Communication	Air Horns Each work area.	
Map	Hospital Route	

EXHIBIT 10

POSTING 1- USE OF PERSONAL PROTECTIVE EQUIPMENT

WHO This posting applies to all site workers, supervisors, and visitors, *without exception.*

WHEN Prior to entering the Contaminant Reduction Zone (CRZ) or Exclusion Zone (EZ) provisions of this posting will be followed.

WHAT This posting outlines the initial forms of PPE required to be worn while working in the CRZ and EZ. Particular types or forms of PPE may be altered based on the authority of the HSO. Specific guidelines are provided in Section 7.0 of this HASP. Disposable PPE will not be worn more than one work shift of workday. In some instances disposable PPE may have to be replaced more than once during a workday. The HSO will determine the frequency of replacing disposable PPE. Reusable PPE will be properly decontaminated, cleaned, sterilized (if appropriate), and stored. Doubts regarding what to wear will be directed to the HSO for resolution.

WHY The levels of protection specified in the SSHP were chosen to protect individuals from potentially harmful exposures to chemicals or physical hazards. No changes to PPE specifications are authorized without the permission of the HSO.

EXHIBIT 10 (continued)

POSTING 2 - PERSONAL HYGIENE

WHO This posting applies to all site workers, supervisors, and visitors, but is intended primarily for site workers.

WHEN Before beginning work, during scheduled breaks, and at the end of a workday.

WHAT This posting summarizes the policy on personal hygiene that applies to all site personnel. Personal hygiene includes those activities such as washing hands, showering, shaving, etc., that are conducive to keeping one's body clean and mind refreshed. For the individual's sake, and his/her coworkers, each worker will be responsible for maintaining a high level of personal hygiene. This is especially critical prior to breaks where food, beverages, or smoking will occur. If proper personal hygiene is not followed, potential ingestion, absorption, or inhalation of toxic materials may occur. Particular attention must be paid to close shaving whenever respirators are worn. Facial hair and long hair will interfere with respirator fit and will allow excessive contaminant penetration.

WHY To avoid accidental ingestion, absorption, or inhalation of hazardous materials. To maintain an elevated state of awareness, thus reducing potential mental errors and accidents.

EXHIBIT 10 (continued)

POSTING 3 - PROVISIONS FOR SMOKING,
EATING, CHEWING, AND DRINKING

WHO This posting applies to all site workers, supervisors, and visitors, *without exception.*

WHEN At all times personnel are on-site. This regulation will specifically apply during breaks and rest periods.

WHAT Site personnel are forbidden to smoke, eat, chew, or drink in the Exclusion Zone or Contaminant Reduction Zone. Only those areas specified as break areas or common areas in the Support Zone may be used for smoking, eating, chewing, or drinking. The rest/break facility and office trailers in the Support Zone may be used. Individuals found to be repeatedly disregarding these provisions will be released.

The only exception to this posting involves access to electrolytic fluids in the Contaminant Reduction Zone when the HSO has determined heat stress warrants regular replenishing of lost body fluids.

WHY To protect personnel from accidental exposures to hazardous materials, smoking, eating, chewing, and drinking is prohibited everywhere except designated break areas. To avoid potential fires and explosions, smoking is prohibited everywhere except designated break areas and office trailers.

EXHIBIT 11

SITE-SPECIFIC INFORMATION

The following site-specific information will be filled out by project personnel for each site and will be posted on-site:

Site Name: _____
Address: _____
_____

Telephone: _____
Date of HASP Preparation: _____
Dates of Field Investigation: _____
Entry Objectives: _____
_____
_____
_____

	Name	Phone
Site Organizational Structure:		
Project Director:		
Project Manager:		
HSO:		
FOM/Alternate HSO:		
Field team staff:		
Subcontractors:		

Medical Assistance
Physician: _____
Hospital: _____
Address: _____

EXHIBIT 11 (continued)

SITE-SPECIFIC INFORMATION

Emergency Telephone: _____

Directions: _____

_____

_____

_____

_____

Please attach a route to hospital

Emergency Telephones

Agent/Facility	Telephone	Emergency No.
EMS - Ambulance		911
Police Department		911
Fire Department		911
Hospital		
Poison Control Center		

Additional site related information (may include special hazards, site control, waste storage and disposal, PPE, decon area location, special engineering controls, etc.).

_____

_____

_____

_____

APPENDIX G

QUALITY ASSURANCE PROJECT PLAN

CAMP SUMMIT SITE
QUALITY ASSURANCE
PROJECT PLAN

Prepared for:

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Prepared by:

D&B ENGINEERS AND ARCHITECTS, P.C.
WOODBURY, NEW YORK

JUNE 2020

QUALITY ASSURANCE
PROJECT PLAN

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TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

1.0 INTRODUCTION

The purpose of this Quality Assurance Project Plan (QAPP) is to describe the detailed sample collection and analytical procedures that, when implemented, will result in the acquisition of documented, high-quality valid data, which will be legally defensible (should the need exist), for use in field investigations conducted for work assignments issued to D&B Engineers and Architects, P.C. (D&B) by the New York State Department of Environmental Conservation (NYSDEC) under the Standby Contract for Engineering Services D007620. The QAPP provides general information and references standard operating procedures applicable to the analytical sampling program detailed in each site-specific Work Plan. This information includes definitions and generic goals for data quality and required types and quantities of Quality Assurance/Quality Control (QA/QC) samples. The procedures address field documentation; sample handling, custody, and shipping; instrument calibration and maintenance; auditing; data reduction, validation, and reporting; corrective action requirements; and QA/QC reporting specific to the analyses performed by the contracted laboratory.

The field sampling program may include some or all of the following specific activities and environmental matrices:

- Sampling and analysis of groundwater;
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards; and,
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.

This document has been prepared in conformance with the NYSDEC guidelines for preparation of QAPP Plans, including the 2005 Analytical Services Protocol (ASP).

2.0 DATA USE OBJECTIVES

The data generated from the field investigations will be used to determine the nature, extent and source(s) of contamination at the site, prepare a qualitative human health risk and environmental assessment/site hazard assessment, and develop a cost-effective, environmentally sound, long-term remediation plan consistent with the planned use of the site. The data will also be utilized to monitor for the health and safety of workers at the site and potential off-site receptors.

2.1 Site Hazard Assessment Report

A Site Hazard Assessment Report may be prepared, if requested by the NYSDEC and/or is warranted by the work assignment. The assessment report may include one or more of the following recommendations:

- No additional actions required.
- Additional sampling is required.
- Remediation and additional sampling are required.

2.2 Data Quality Requirements and Assessment

Data quality requirements and assessments are provided in the 2005 NYSDEC ASP, which includes the detection limit for each parameter and sample matrix. Note that quantification limits, estimated accuracy, accuracy protocol, estimated precision and precision protocol are determined by the laboratory and will be in conformance with the requirements of the 2005 NYSDEC ASP, where applicable. Table 2-1 presents a summary of the data quality requirements.

Table 2-1

DATA QUALITY REQUIREMENTS

Parameter	Sample Matrix	CRDL*	Estimated Accuracy	Accuracy Protocol**	Estimated Precision	Precision Protocol**
Base Neutrals	Liquid Solid	10-50 330-1600	0.29 - 1.23 ug/l	Vol. IV, Part XIX, Method 8270, Table 7	0.13 - 1.05 ug/l	Vol. IV, Part XIX, Method 8270, Table 7
Acid Extractables	Liquid Solid	10-50 330-1600	0.29 - 1.23 ug/l	Vol. IV, Part XIX, Method 8270, Table 7	0.13 - 1.055 ug/l	Vol. IV, Part XIX, Method 8270, Table 7
Metal	Liquid Solid	0.2-5000 0.2-5000	--	Vol. III, Part XIV, Method 200.7*** Table 4	--	Vol. III, Part XIV, Method 200.7*** Table 4
Cyanide	Liquid Solid	10 10	85% - 102% of recovery	Vol. III, Part XV, Method 335.2, Subpart 10	+0.005 - +0.094 mg/l	Vol. III, Part XV, Method 335.2, Subpart 10

*Contract Required Detection Limits - units are ug/l for liquid samples
** Reference: NYSDEC 7/05 ASP.
***If trace ICP is not used, then SW-846 Methods for: Metal Method Selenium 7740 Lead 7421 Thallium 7841 Mercury 7470 Arsenic 7060

Table 2-1 (continued)

DATA QUALITY REQUIREMENTS
OBJECTIVES FOR PRECISION, ACCURACY, AND COMPLETENESS

Matrix/Parameter		Precision (%)	Accuracy (%)
Water			
Extractables[a]	See Table 2-1a	See Table 2-1a	
Metals[b][c]		± 25%	75-125

NOTES:

(a) Accuracy will be determined as percent recovery of surrogate spike compounds and matrix spike compounds. Surrogate and matrix spike compounds for extractables are listed in Table 2-1a. Precision will be estimated as the relative standard deviation of the percent recoveries per matrix.

(b) Accuracy will be determined as percent recovery of matrix spikes when appropriate or the percent recovery of a QC sample if spiking is inappropriate. Precision will be determined as relative percent difference of matrix spike duplicate samples, or duplicate samples if spiking is inappropriate.

(c) Precision will be determined as the average percent difference for replicate samples. Accuracy will be determined as the percent recovery of matrix spike samples or laboratory control samples, as appropriate.

Source: 2005 NYSDEC ASP

Table 2-1a

DATA QUALITY REQUIREMENTS OBJECTIVES FOR PRECISION AND ACCURACY OF EXTRACTABLE COMPOUNDS BASED UPON RECOVERY OF SURROGATE AND MATRIX SPIKE COMPOUNDS*

	Matrix	Precision	Accuracy %
Surrogate Compounds			
d5-Nitrobenzene	Water	≤ 20	35-114
2-Fluorobiphenyl	Water	≤ 20	43-116
d14-Terphenyl	Water	≤ 20	33-141
d5-Phenol	Water	≤ 20	10-110
2-Fluorophenol	Water	≤ 20	21-110
2,4,6-Tribromophenol	Water	≤ 20	10-123
2-Chlorophenol-d4 (Advisory)	Water	≤ 20	33-110
1,2-Dichlorobenzene-d4 (Advisory)	Water	≤ 20	16-110

Table 2-1b (continued)

DATA QUALITY REQUIREMENTS
OBJECTIVES FOR PRECISION AND ACCURACY
OF EXTRACTABLE COMPOUNDS
BASED UPON RECOVERY OF SURROGATE AND
MATRIX SPIKE COMPOUNDS*

	Matrix	Precision	Accuracy %
Matrix Spike Compounds			
1,2,4-Trichlorobenzene	Water	≤ 20	39-98
Acenaphthene	Water	≤ 20	46-118
2,4-Dinitrotoluene	Water	≤ 20	24-96
Pyrene	Water	≤ 20	26-127
N-Nitroso-Di-n-Propylamine	Water	≤ 20	41-116
1,4-Dichlorobenzene	Water	≤ 20	36-97
Pentachlorophenol	Water	≤ 20	9-103
Phenol	Water	≤ 20	12-110
2-Chlorophenol	Water	≤ 20	27-123
4-Chloro-3-methylphenol	Water	≤ 20	23-97
4-Nitrophenol	Water	≤ 20	10-80

*Contract Required Detection Limits - units are ug/l for liquid samples, ug/kg for solid samples.
** Reference: NYSDEC 7/05 ASP.

In addition to meeting the requirements provided in the 2005 NYSDEC ASP, the data must be of sufficient quality to ensure that sampling data accurately characterizes site conditions. Data obtained during the site investigations will be compared to specific Standards, Criteria and Guidelines (SCGs). The SCGs to be utilized on a preliminary basis for screening purposes include:

Matrix	**SCG**
Groundwater and Surface Water	NYSDEC Division of Water Technical and Operational Guidance Series (TOGs) (1.1.1) - Ambient Water Quality Standards and Guidance Values, dated June 1998, addendum April 2000.

Final selection of SCGs for site remediation and development will be based on the intended use of the property, potential receptors and potential contaminant migration pathways. These SCGs would consider the United States Environmental Protection Agency (USEPA) Region III Risk-Based Concentration Table.

The methods of analysis will be in accordance with the 2005 NYSDEC ASP. Specific analytical procedures and laboratory QA/QC descriptions are not included in this QAPP, but will be available upon request from the laboratory selected to perform the analyses. The laboratory will be New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified for organic and inorganic analyses.

2.2.1 Data Precision

Precision is the mutual agreement among individual measurements of the same property and is a measure of the random error component of the data collection process. The overall precision of the data is the sum of that due to sampling and analysis. The sampling precision is assessed by the collection of field duplicates. To determine the analytical precision of the method and/or laboratory analyst, a routine program of laboratory control sample analyses is performed, and precision is determined using a moving range value. The results of the replicate

sample analyses are used to calculate the relative percent difference (RPD), which is then used to evaluate precision associated with sampling and analysis.

For replicate results R_1 and R_2:

$$RPD = (2[R_1 - R_2]/ [R_1 + R_2]) \times 100$$

2.2.2 Data Accuracy

Accuracy is the agreement between a measurement and the true value. It is a measure of the bias or systematic error of the entire data collection process. Sampling accuracy is assessed by evaluating the results of field and trip blank samples. To determine the accuracy of an analytical method and/or the laboratory analyst, a periodic program of laboratory control sample spiking is conducted. The results of sample spiking are used to calculate the percent recovery (%R) as a measurement bias associated with the sample matrix.

$$\%R = 100(S_1 - S_2]/ T_1$$

where

S_1 = Observed spiked sample concentration;
S_2 = Sample concentration without spike addition; and,
T_1 = True concentration of the spike.

2.2.3 Data Representativeness

Representativeness is the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a quantitative parameter that is used to assess the design and implementation of the sampling program. The sampling program has been designed so that the samples collected are as representative as possible of the medium being sampled and that a

sufficient number of samples will be collected. Representativeness is addressed by the description of the sampling techniques and the rationale used to select the sampling locations.

Representative samples will be collected as follows:

* Groundwater (Monitoring Wells) - Samples will be collected using low-flow sampling procedures outlined in Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (USEPA, 2017). Submersible pumps (peristaltic and bladder), dedicated tubing and a flow-through-cell to monitor indicator field parameters will be utilized. Samples will be collected after indicator field parameters (turbidity, temperature, specific conductance, pH, oxidation reduction potential (ORP) and dissolved oxygen (DO)) have stabilized over three consecutive five minute intervals, or until the well is purged dry and the well has been allowed to recharge.

2.2.4 Data Comparability

Comparability is the extent to which comparisons among different measurements of the same quantity or quality will yield valid conclusions. For NYSDEC projects, comparability among measurements will be achieved through the use of standard procedures and uniform concentration units. All data will be presented in the units designated by the methods specified by a NYSDOH ELAP certified laboratory, and the 2005 NYSDEC ASP. In addition, sample locations, collection procedures and analytical methods from earlier studies will be evaluated for comparability with current procedures/methods.

2.2.5 Data Completeness

Completeness is the adequacy in quantity of valid measurements to prevent misinterpretation and to answer important questions. Percent completeness is calculated as the ratio of usable data to total data. The acceptability of 100% of the data is desired as a goal for this project. The acceptability of less than 100% complete data, meeting all laboratory QA/QC protocols/ standards, will be evaluated on a case-by-case basis.

3.0 SAMPLING DESIGN

The following presents a general discussion of the sampling that may be conducted during field investigations for work assignments.

* Groundwater - Groundwater samples will be obtained from monitoring wells installed as part of the site investigation, or from monitoring wells, which were installed previously at the site, to evaluating the overall performance and effectiveness of the remedy by monitoring remaining contamination in groundwater.

4.0 SAMPLING AND ANALYSES

4.1 Field Duplicates

Groundwater samples are to be analyzed using ASP methods, requiring duplicate samples will be taken at a frequency of at least 5% (1 in 20). If duplicate samples are collected for confirmation of field screening and laboratory data with limited analytical deliverables, at least 20% of the samples will be verified with duplicate samples analyzed by ASP methods for Target Compound List (TCL) analytes. These ASP method duplicate sample requirements apply to each distinct matrix.

4.2 Matrix Spikes/Matrix Spike Duplicates and Spiked Blanks

Matrix spike samples are quality control procedures, consistent with 2005 NYSDEC ASP specifications, used by the laboratory as part of its internal Quality Assurance/Quality Control program and will be collected at a frequency of at least 5% (1 in 20). The matrix spikes (MS) and matrix spike duplicates (MSD) are aliquots of a designated sample (water) which are spiked with known quantities of specified compounds. MS/MSD samples are used to evaluate the matrix effect of the sample upon the analytical methodology, as well as to determine the precision of the analytical method used. Samples to be analyzed as MS/MSDs may be designated in the field (that is, additional aliquots of a particular sample from the site may be collected) or they may be selected by the laboratory.

A matrix spike blank is an aliquot of analyte-free water, prepared in the laboratory, and spiked with the same solution used to spike the MS and MSD. The matrix spike blank (MSB) will be subjected to the same analytical procedure as the MS/MSD and used to indicate the appropriateness of the spiking solution by calculating the spike compound recoveries. The procedure and frequency regarding the MS, MSD and MSB samples are defined in the NYSDEC ASP.

4.3 Analytical Parameters

All samples collected during site management activities will be properly labeled and shipped under chain of custody documentation to the laboratory for analysis. Unless noted otherwise, all samples will be analyzed by a NYSDOH Environmental Laboratory Accreditation Program (ELAP) approved laboratory by an analytical method utilizing the most current NYSDEC Analytical Services Protocol (ASP) for the following Department of Environmental Remediation (DER)-10 required analytical parameters:

- Target compound list (TCL) semivolatile organic compounds (SVOCs) plus the 20 highest concentration tentatively identified compounds (TICs)
- Target Analyte List (TAL) metals
- Dioxins and Furans

Table 4-1 presents a summary of the parameters/sample fraction to be analyzed together with the sample location, type of sample, sample matrix, type of sample container, method of sample preservation, holding time and analytical method. Superfund category deliverables are required for all analytical results in order to perform complete validation of the results.

4.4 Field Blank (Field Rinsate Blank)/Equipment Blank

Field blanks are samples of water used for field decontamination purposes. Specifically, field blanks will include potable, site-supplied water used in decontamination activities and laboratory-supplied, reagent-grade, deionized water used for the final rinse in decontamination activities. Based upon discussions with the NYSDEC, field blanks will not be required for field investigations in which dedicated, disposable sampling equipment (for example, bailers or sterile scoops) are being utilized for sample collection. However, an equipment blank is required when a split spoon is utilized since it will be decontaminated on-site after each use. Equipment blanks will be collected at a rate of one per day and analyzed for the same parameters as that of the samples collected with that equipment. The equipment blank will be collected by pouring laboratory supplied deionized water over/through the decontaminated equipment early in the field effort to assess the quality of the potable water supply used in decontamination activities.

4.5 Trip Blanks (Travel Blanks)

Trip blanks are containers of reagent-grade deionized water which are kept with the field sample containers from the time they leave the laboratory until the time they are returned to the laboratory. The primary purpose of a trip blank is to detect sources of contamination which may be introduced into the sample during sample collection or transit that might potentially influence contaminant values reported in actual samples, both quantitatively and qualitatively. The following have been identified as potential sources of contamination:

- Laboratory reagent water;
- Sample containers;
- Cross contamination in shipment;
- Ambient air or contact with analytical instrumentation during preparation and analysis at the laboratory; and
- Laboratory reagents used in analytical procedures.

A trip blank will consist of a set of 40 ml sample vials filled at the laboratory with laboratory demonstrated analyte free water. Trip blanks will be handled, transported and analyzed in the same manner as the samples acquired that day, except that the sample containers themselves are not opened in the field. Rather, these sample containers only travel with the sample cooler. The temperature of the trip blanks will be maintained at 4°C while on-site and during shipment. Trip blanks will return to the laboratory with the same set of bottles they accompanied in the field.

The purpose of a trip blank is to control sample bottle preparation and blank water quality as well as sample handling. Thus, the trip blank will travel to the site with the empty sample bottles and back from the site with the collected samples in an effort to simulate sample handling conditions. Contaminated trip blanks may indicate inadequate bottle cleaning or blank water of questionable quality. Trip blanks will be implemented only when collecting water samples, including field blanks, and analyzed for volatile organic compounds only.

Table 4-1

SUMMARY OF MONITORING PARAMETERS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	Container Type/Size/No.	Sample Preservation	Maximum Holding Time*	Analytical Method
Water Supply Wells, Monitoring Wells	Grab	Groundwater	Base Neutral and Acids, Extractable Organics	Glass, amber/ 1L/2 ICHEM 300 series or equivalent	Cool to 4°C	5 days after VTSR for extraction, 40 days after extraction for analysis	7/05 NYSDEC ASP, Method 8270D**
	Grab	Groundwater	Metals	Plastic, 500 mL/1 ICHEM 300 series or equivalent	HNO_3 to pH < 2 Cool to 4°C	26 days after VTSR for Hg analysis, 6 months for analysis for others	7/05 NYSDEC ASP, Method 6010C/7470A**
	Grab	Groundwater	Dioxins and Furans	Glass, amber/ 1L/2 ICHEM 300 series or equivalent	Cool to 4°C	5 days after VTSR for extraction, 40 days to analysis	7/05 NYSDEC ASP, Method 8290A**

VTSR - Verified Time of Sample Receipt at the laboratory

*Holding times based on the NYSDEC 7/05 ASP

**Most recent version of method

4.6 Method Blanks/Holding Blanks

A method blank is an aliquot of laboratory water which is spiked with the same internal and surrogate compounds as the samples. The purpose of the method blank is to define and determine the level of laboratory background contamination. Frequency, procedure and maximum laboratory containment concentration limits are specified in the 2005 NYSDEC ASP. A holding blank is an aliquot of analyte-free water that is stored with the environmental samples in order to demonstrate that the samples have not been contaminated during laboratory storage. This blank will be analyzed using the same analytical procedure as the samples.

5.0 STANDARD OPERATING PROCEDURES

Environmental samples will be collected from different locations as part of the field investigation. For the Camp Summit Site, groundwater samples shall be collected. Sample locations will consist of fourteen monitoring (MW-02, MW-03, MW-04, MW-05, MW-08, MW-09, MW-10, MW-11, MW-13, MW-14, MW-16, MW-17, MW-18, and MW-19).

General sampling approaches and equipment are described in this section. A summary of the sampling program, including sample media, depths, equipment, rationale and analytical parameters, is provided in Table 5-1.

The materials involved in groundwater sampling are critical to the collection of high-quality monitoring information, particularly where the analyses of volatile, pH sensitive or reduced chemical constituents are of interest. The materials for bailers and pump parts will be PTFE (e.g., Teflon^{R}), stainless steel and/or polyethylene.

There will be several steps taken after the transfer of the water sample into the sample container that are necessary to properly complete collection activities. Once the sample is transferred into the appropriate container, the container will be capped and, if necessary, the outside of the container will be wiped with a clean paper towel to remove excess sampling material. The container will not be submerged in water in an effort to clean it. Rather, if necessary, a clean paper towel moistened with distilled/deionized water will be used.

The sample container will then be properly labeled. Information such as sample number, location, collection time and sample description will be recorded in the field log book. Associated paperwork (e.g., Chain of Custody forms) will then be completed and will stay with the sample. The samples will be packaged in a manner that will allow the appropriate storage temperature to be maintained during shipment to the laboratory. Samples will be delivered to the laboratory within 24 to 48 hours of collection, depending on required analysis.

Table 5-1

SUMMARY OF SAMPLING PROGRAM

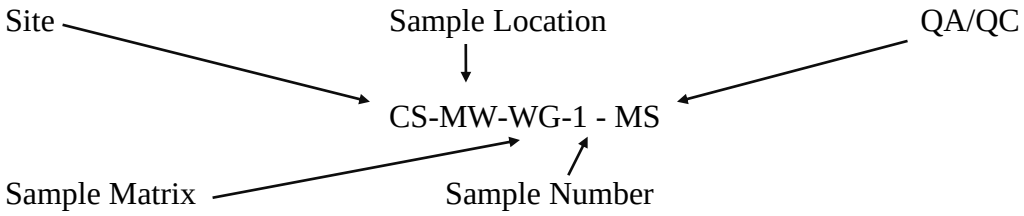
Environmental Media	Sample Location	Sample Point	Sample Depth	Equipment	Rationale	Sample Analysis
Groundwater	On-site or Off-site	Probe location	At surface of water in probe	Disposable polyethylene tubing with bottom check valve	To determine groundwater contamination	TCL SVOCs, TAL Metals Dioxins and Furans 2005 NYSDEC ASP
Groundwater	On-site or Off-site	Monitoring well	Within screen interval of well	Adjustable rate peristaltic or bladder pump, disposable polyethylene/ silicone tubing, multi-parameter instrument with a flow-through cell.	To determine groundwater contamination	TCL SVOCs, TAL Metals, Dioxins and Furans 2005 NYSDEC ASP

5.1 Sample Identification

All samples collected will be labeled with a sample identification code that is compatible with the NYSDEC EQuIS format. The code will identify the site, sample location, sample matrix and series numbers for sample locations with more than one sample. Samples will be labeled according to the following system:

- Site: - Site name (i.e., Camp Summit "CS")
- Sample Location: - Monitoring Well "MW"
- Sample Matrix (as listed in NYSDEC EQuIS reference values):
  - WG – Groundwater
- Sample Number: - For circumstances where more than one sample of the same type and/or from the same location will be collected, a consecutive sample number will be assigned. When more than one sample is collected from a borehole in a sampling round at different depths, the depth will be indicated on the sample container and in the field log book.
- Quality Assurance/ Quality Control (QA/QC): - Matrix Spike "MS"
  - Matrix Spike Duplicate "MSD"
  - Field Blank "FB"
  - Trip Blank "TB"

Based upon the above sample identification procedures, an example of a sample label may be:



5.2 Sample Handling, Packaging and Shipping

All samples will be placed in the appropriate containers as specified in the 2005 NYSDEC ASP. The holding time criteria identified in the 7/05 NYSDEC ASP Exhibit I will be followed as specified in Table 4-1.

Prior to packaging any samples for shipment, the sample containers will be checked for proper identification and compared to the field logbook for accuracy. The samples will then be wrapped with a cushioning material and placed in a cooler (or laboratory shuttle) with a sufficient amount of bagged ice or "blue ice" packs in order to keep the samples at 4°C until arrival at the laboratory.

All necessary documentation required to accompany the sample during shipment will be placed in a sealed plastic bag and taped to the underside of the cooler lid. The cooler will then be sealed with fiber (duct) or clear packing tape, and custody seals will be placed in such a manner that any opening of the cooler prior to arrival at the laboratory can be detected.

All samples will be shipped to ensure laboratory receipt within 24 to 48 hours of sample collection in accordance with NYSDEC and method specific requirements. The laboratory will be notified prior to the shipment of the samples.

5.3 Groundwater (Monitoring Well)

Sampling protocols for the collection of groundwater samples from monitoring wells will consist of the following minimum procedures:

1. Measure the depth of water using a decontaminated water level indicator and compute the volume of standing water in the well.
2. Install the pump or sampling tubing into the well to the appropriate depth (may not be the mid-point of the screen/open interval) at a depth that will remain under water at all times and at least two feet above the bottom of the well, if possible.
3. Initiate purging of well and record purge rate and well depth at five-minute intervals.

4. Monitor indicator field parameters (turbidity, temperature, specific conductance, pH, ORP and DO) until they have stabilized over three consecutive five minute intervals, or until the well is purged dry and the well has been allowed to recharge. Turbidity should be less than 50 NTUs prior to collection of a sample for metals analysis. Stabilization is achieved when three consecutive readings are within the following limits:

   - Turbidity (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized);
   - Dissolved Oxygen (10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized);
   - Specific Conductance (3%);
   - Temperature (3%);
   - pH (± 0.1 unit); and
   - Oxidation/Reduction Potential (±10 millivolts)

5. Remove the laboratory precleaned sample containers from sample cooler, label container with an indelible marker, fill out Sample Information Record and Chain of Custody Form.

6. Disconnect dedicated tubing from the flow-through multi-parameter cell. Do not sample through multi-parameter cell.

7. If the turbidity of the sample is greater than 50 NTUs, the metals; (iron and manganese) portion of the sample will be filtered in the field or by the laboratory. Both the filtered (soluble metals) and unfiltered (total metals) samples will be analyzed.

8. Gently pump the sample into the sample container taking care not to spill on the outside of the container or overfill container and replace the cover on the sample container. Samples for volatile organic analyses will have no air space in the sample vial prior to sealing. This is done by filling the vial such that there is a meniscus on top. Carefully slide the septum, Teflon side down, onto the top of the vial and cap the vial. Check for bubbles by turning the vial upside down and tapping it lightly. If bubbles appear, reopen the vial, remove the septum and add more sample (or resample). Replace the septum, recap and check for bubbles. Continue until vial is bubble-free.

9. Return sample container to sample cooler.

10. Place all disposable personal protective equipment and disposable sampling equipment into a 55-gallon drum and store in a secure area (fenced, if possible).

6.0 DECONTAMINATION PROCEDURES

Whenever possible, all field sampling equipment should be sterile/disposable and dedicated to a particular sampling point. In instances where this is not possible, a field cleaning/ decontamination procedure will be used in order to mitigate cross contamination between sample locations. A decontamination station/pad will be established for all field activities. This will be an area located away from the source of contamination so as not to adversely impact the decontamination procedure, but close enough to the sampling locations to keep equipment transport handling to a minimum after decontamination.

6.1 Field Decontamination Procedures

All non-disposable equipment will be decontaminated at appropriate intervals (e.g., prior to initial use, prior to moving to a new sampling location and prior to leaving the site). Different decontamination procedures are used for various types of equipment that are used to collect samples. When using field decontamination, sampling should commence in the area of the site with the lowest contamination, if known or probable, and proceed through to the areas of highest contamination.

6.2 Decontamination Procedure for Drilling/Probing Equipment

All equipment such as drill rigs and other mobile equipment will receive an initial cleaning prior to use at the site. The frequency of subsequent cleanings while on-site will depend on how the equipment is actually used in relation to collecting environmental samples. Decontamination fluids generated during steam cleaning/decontamination activities, will be collected in New York State Department of Transportation (NYSDOT) approved 55-gallon drums. The drums will be labeled as investigation-derived wastewater and temporarily stored in a secured area of the site on wooden pallets in a plastic-lined containment area pending characterization and proper disposal.

After the initial decontamination, cleaning may be reduced to those areas that are in close proximity to materials being sampled. Drill rig/probe items such as augers, drill/probe rods and drill bits will be cleaned in between sample locations.

Drilling/probing equipment will be decontaminated in the following manner:

- Wash thoroughly with non-residual detergent (alconox) and tap water using a brush to remove particulate matter or surface film. This is necessary in order to remove any solids buildup on the back of the rig, auger flights, drill rods, drilling head, etc. Any loose paint chips, paint flakes and rust must also be removed.
- Steam clean (212°F).
- Once decontaminated, remove all items from the decontamination area.

6.3 Decontamination Procedure for Sampling Equipment

Teflon, PVC, polyethylene and stainless steel sampling equipment decontamination procedures will be the following:

- Wash thoroughly with non-residual detergent (Alconox®) and clean potable tap water using a brush to remove particulate matter or surface film.
- Rinse thoroughly with tap water.
- Rinse thoroughly with acid (HNO_3) (only if metals samples are to be collected).
- Rinse thoroughly with distilled water.
- Rinse in a well-ventilated area with methanol (pesticide grade) and air dry.
- Rinse thoroughly with distilled water and air dry.
- Wrap completely in clean aluminum foil with dull side against the equipment. For small sampling items, such as scoops, decontamination will take place over a drum specifically used for this purpose.

The first step, a soap and water wash, will be performed to remove all visible particulate matter and residual oils and grease. This step will be followed by a tap water rinse and a

distilled/deionized water rinse to remove the detergent. Next, a high purity solvent rinse will be used for trace organics removal. Methanol has been chosen because it is not an analyte of concern on the Target Compound List. The solvent will be allowed to evaporate and then a final distilled/deionized water rinse will be performed. This rinse removes any residual traces of the solvent. The aluminum wrap will protect the equipment and keep it clean until it is used at another sampling location.

6.4 Decontamination Procedure for Well Casing and Development Equipment

Field cleaning of well casings will consist of a manual scrubbing to remove foreign material and steam cleaning, inside and out, until all traces of oil and grease are removed. This material will then be stored in such a manner so as to preserve it in this condition. Special attention to threaded joints will be necessary to remove cutting oil or weld burn residues.

Materials and equipment that will be used for the purposes of well development will also be decontaminated by steam cleaning. An additional step will involve flushing the interior of any hose, pump, etc. with a non-phosphate detergent solution and potable water rinse prior to the development of the next well. This liquid waste will be disposed of on-site, if possible, after testing.

7.0 LABORATORY SAMPLE CUSTODY, SAMPLE RECEIPT, STORAGE, SECURITY, AND DISPOSAL PROCEDURES

A NYSDOH ELAP certified laboratory meeting the requirements for sample custody procedures, including cleaning and handling sample containers and analytical equipment, will be used to analyze samples collected during the site investigation. Upon receipt of shipped samples at the laboratory, the laboratory's sample custodian will inspect the samples for integrity and check the shipment against the chain-of-custody. Discrepancies are reported to the laboratory's project manager who contacts the D&B project manager for resolution.

When the shipment and the chain-of-custody are in agreement, the sample custodian will enter the samples into the Laboratory Information Management System and will assign each sample a unique laboratory number. This number will be affixed to each sample bottle. The sample custodian will then enter the sample and analysis information into the laboratory computer system.

The selected laboratory must satisfy the sample chain-of-custody requirements by implementing the following standard operating procedure for laboratory/sample security within the laboratory facility:

- Samples are stored in a secure area;
- Access to the laboratory is through a monitored area;
- Visitors sign a visitor's log and are escorted while in the laboratory;
- Only the designated sample custodians have keys to sample storage area(s); and
- Transfers of samples in and out of storage are documented.

While in the laboratory, samples that require storage at $4^{\circ}C \pm 2^{\circ}C$ will be stored in a locked refrigerator unless they are being used for analysis. The laboratory's sample custodian will be responsible for sample storage and security to ensure that:

- Samples and extracts are stored for 60 days after the final analytical data report has been forwarded to D&B. The samples, extracts, and sample digestion byproducts are then discarded in accordance with Occupational Safety and Health Administration guidance; and,

- Samples are not stored with standards or sample extracts.

The selected laboratory's Standard Operating Procedures will be made available upon request.

8.0 SAMPLE DOCUMENTATION

Proper management and documentation of field and sampling activities is essential to ensure that all necessary work is conducted in accordance with the sampling plan and QAPP in an efficient and high-quality manner. Field management procedures will include following proper chain of custody procedures to track a sample from collection through analysis, noting when and how samples are split (if required); preparing a Location Sketch; completing Sample Information Records; completing Chain of Custody Forms; maintaining a daily Field Log Book; preparing Daily Field Activity Reports; and completing Field Change Forms. Copies of each of these forms are provided in **Appendix A**. Proper completion of these forms and the field log book are necessary to support the consequent actions that may result from the sample analysis. This documentation will support that the samples were collected and handled properly.

8.1 Location Sketch

For each sampling point, a Location Sketch will be completed using permanent references and distances to the sampling point noted, if possible.

8.2 Sample Information Record

At each sampling location, a Sample Information Record Form is filled out including, but not limited to, the following information:

- Site name
- Sample crew
- Sample location
- Field sample identification number
- Date
- Time of sample collection

- Weather conditions
- Temperature
- Sample matrix
- Method of sample collection and any factor that may affect its quality adversely
- Well information (groundwater only)
- Field test results
- Analysis to be performed
- Remarks

8.3 Chain of Custody

The Chain of Custody Form will be completed and is initiated at the laboratory with container preparation and shipment to the site. The form remains with the sample at all times and bears the name of the person assuming responsibility for the samples. This person is tasked with ensuring secure and appropriate handling of the containers and samples. When the form is complete, it will indicate that there was no lapse in sample accountability.

A sample is considered to be in an individual's custody if any of the following conditions are met:

- It is in the individual's physical possession, or
- It is in the individual's view after being in his or her physical possession, or
- It is secured by the individual so that no one can tamper with it, or
- The individual puts it in a designated and identified secure area.

In general, Chain of Custody Forms are provided by the laboratory selected to perform the analytical services. At a minimum, the following information will be provided on these forms:

- Project name and address
- Project number
- Sample identification number
- Date
- Time
- Sample location
- Sample type
- Analysis requested
- Number of containers and volume taken
- Remarks
- Type of waste
- Sampler(s) name(s) and signature(s)
- Spaces for relinquished by/received by signature and date/time.

For this particular study, forms provided by the laboratory will be utilized.

The Chain of Custody Form will be filled out and signed by the person performing the sampling. The original of the form will travel with the sample and will be signed and dated each time the sample is relinquished to another party, until it reaches the laboratory or analysis is completed. The field sampler will keep one copy and a copy will be retained for the project file. The sample bottle will also be labeled with an indelible marker with a minimum of the following information:

- Sample number
- Analysis to be performed
- Date of collection

A copy of the completed form will be returned by the laboratory with the analytical results.

8.4 Split Samples

Whenever samples are being split with another party, a Receipt for Samples Form will be completed and signed. A copy of the Chain of Custody Form will accompany this form.

8.5 Field Log Book

Field logbooks will be bound and have consecutively numbered water resistant pages. All pertinent information regarding the site and sampling procedures will be documented. Notations will be made in logbook fashion, noting the time and date of all entries. Information recorded in this logbook will include, but not be limited to, the following:

The first page of the log will contain the following information:

- Project name and address
- Name, address and phone number of field contact
- Waste generator and address, if different from above
- Type of process (if known), generating waste
- Type of waste
- Suspected waste composition, including concentrations

Daily entries will be made for the following information:

- Purpose of sampling
- Location of sampling point
- Number(s) and volume(s) of sample(s) taken

- Description of sampling point and sampling methodology
- Date and time of collection, arrival and departure
- Collector's sample identification number(s)
- Sample distribution and method of storage and transportation
- References, such as sketches of the sampling site or photographs of sample collection
- Field observations, including results of field analyses (e.g., pH, temperature, specific conductance) and water levels
- Signature of personnel responsible for completing log entries.

8.6 Daily Field Activity Report

At the end of each day of field work, the Field Operations Manager, or designee, will complete this report noting personnel on-site and summarizing the work performed that day, equipment, materials and supplies used, results of field analyses, problems and resolutions. This report will be signed and subject to review.

8.7 Field Changes and Corrective Actions

Whenever there is a required or recommended investigation/sampling change or correction, a Field Change Form will be completed by the Field Operations Manager and approved by the Project Manager.

9.0 CALIBRATION PROCEDURES AND PREVENTIVE MAINTENANCE

Periodic preventive maintenance may be required for all equipment. Instrument manuals will be kept on file for reference if equipment needs repair. The troubleshooting section of factory manuals may be used in assisting personnel in performing routine/minor maintenance tasks. The frequency of preventative maintenance for field equipment is indicated in each operating instruction manual.

The following information regarding equipment will be maintained at the project site:

1. Equipment calibration and operating procedures which will include provisions for documentation of frequency, conditions, standards and records reflecting the calibration procedures, methods of usage and repair history of the measurement system. Calibration of field equipment will be performed daily at the sampling site so that any background contamination can be taken into consideration and the instrument calibrated accordingly.

2. A schedule of preventive maintenance tasks, consistent with the instrument manufacturer's specific operation manuals that will be carried out to minimize down time of the equipment.

3. Critical spare parts, necessary tools and manuals will be on hand to facilitate equipment maintenance and repair.

Calibration procedures and preventive maintenance, in accordance with the NYSDEC 2005 ASP for laboratory equipment, will be contained in the laboratory's standard operating procedures (SOP), which will be available upon request.

10.0 PERFORMANCE OF FIELD AUDITS

During field activities, the QA/QC officer will accompany sampling personnel into the field, in particular in the initial phase of the field program, to verify that the site sampling program is being properly conducted, and to identify problems so that corrective action can be taken early in the field program. Prior to an audit, the designated lead auditor will prepare an audit checklist. During an audit and upon its completion, the auditor will discuss the findings with the individuals audited and discuss and agree on corrective actions to be initiated. All findings will be documented in an audit report and provided to the Field Operations Manager.

The Field Operations Manager will then prepare and submit, to the QA/QC Officer and Project Manager, a plan for implementing the corrective action to be taken on non-conformances indicated in the audit report, the date by which the corrective action will be completed, and actions taken to prevent reoccurrence. If the corrective action has been completed, supporting documentation will be attached to the reply. The auditor will ascertain, through a re-audit or other means, if appropriate and timely corrective action has been implemented.

A copy of the Field Audit Form is provided in **Appendix A**. Records of audits will be maintained in the project files.

11.0 CONTROL AND DISPOSAL OF CONTAMINATED MATERIAL

During construction and sampling of the monitoring wells and contaminated water may be generated from decontamination water, development water and purge water.

11.1 Decontamination Fluids

It is anticipated that decontamination fluids will be generated during steam cleaning activities, which will be collected in New York State Department of Transportation (NYSDOT) approved 55-gallon drums. The drums will be labeled as investigation-derived wastewater and temporarily stored in a secured chain-link fence area of the site on wooden pallets in a plastic-lined containment area pending characterization and proper disposal.

11.2 Development and Purge Water

It is anticipated that development and purge water will be generated during development and sampling of the monitoring wells. Development and purge water will be contained in NYSDOT approved 55-gallon drums. Groundwater from several monitoring wells maybe combined provided they are associated with the same disposal site and aquifer. The drums will be labeled as investigation-derived wastewater from the corresponding well and temporarily stored in a secured area of the property on wooden pallets in a plastic-lined containment area pending characterization and proper disposal as defined in DER-10 and the approved site-specific work plan. It should be noted that NAPL shall never be discharged to the ground.

11.3 Personal Protective Equipment

Personal protective equipment (PPE) will be placed in 55-gallon drums or roll-off containers and secured on-site for proper disposal.

11.4 Dedicated Sampling Equipment

In general, all dedicated groundwater sampling equipment (dedicated disposable polyethylene bailer and dedicated polypropylene line) will be placed in 55-gallon drums or roll-off containers and secured on-site for disposal.

12.0 DOCUMENTATION, DATA REDUCTION AND REPORTING

A NYSDOH ELAP certified laboratory meeting the New York State requirements for documentation, data reduction and reporting will be used. All data will be cataloged according to sampling locations and sample identification nomenclature which is described in Section 5.1 of this QAPP Plan. The laboratory analysis will be reported in the NYSDEC ASP Category B deliverables format. In addition, the laboratory will be providing an electronic data deliverable (EDD) for each data set in the most current NYSDEC EQuIS format.

NYSDEC "Sample Identification and Analytical Requirement Summary" and "Sample Preparation and Analysis Summary" forms (for organic and inorganic analysis) will be completed and included with each data package. These forms are contained in **Appendix B** of this QAPP. The sample tracking forms are required and supplied by the 2005 NYSDEC ASP.

13.0 DATA VALIDATION

Data validation will be performed in order to define and document analytical data quality in accordance with USEPA and NYSDEC requirements that investigation data must be of known and acceptable quality. The analytical and validation processes will be conducted in conformance with the NYSDEC 2005 ASP and NYSDEC DER-10.

Since the NYSDEC Analytical Services Protocol is based on the USEPA CLP, the USEPA Functional Guidelines for Evaluating Organics and Inorganics Analyses for the Contract Laboratory Program (CLP) will assist in formulating standard operating procedures (SOPs) for the data validation process. The data validation process will ensure that all analytical requirements specific the QAPP are followed. Procedures will address validation of routine analytical services (RAS) results based on the NYSDEC Target Compound List and Target Analyte List for standard sample matrices.

The data validation process will provide an informed assessment of the laboratory's performance based upon contractual requirements and applicable analytical criteria. The report generated as a result of the data validation process will provide a base upon which the usefulness of the data can be evaluated by the end user of the analytical results. The overall level of effort and specific data validation procedure to be used will be equivalent to a “100% validation” of all analytical data in any given data package.

During the review process, it will be determined whether the contractually required laboratory submittals for sample results are supported by sufficient back-up data and QA/QC results to enable the reviewer to conclusively determine the quality of data. Each data package will be checked for completeness and technical adequacy of the data. Upon completion of the review, the reviewers will develop a QA/QC data validation report for each analytical data package.

“Qualified” analytical results for any one field sample will be established and presented based on the results of specific QC samples and procedures associated with its sample analysis

group or batch. Precision and accuracy criteria (i.e., QC acceptance limits) will be used in determining the need for qualifying data. Where test data have been reduced by the laboratory, the method of reduction will be described in the report. Reduction of laboratory measurements and laboratory reporting of analytical parameters will be verified in accordance with the procedures specified in the NYSDEC and USEPA program documents for each analytical method (i.e., recreate laboratory calculations and data reporting in accordance with the method specific procedure).

The standard operating guideline manuals and any special analytical methodology required will specify documentation needs and technical criteria and will be taken into consideration in the validation process. Copies of the complete data package and the validation report, including the laboratory results data report sheets, with any qualifiers deemed appropriate by the data reviewer, and a supplementary field QC sample result summary statement, will be provided with the site investigation report.

The following is a description of the two-phased approach to data validation which will be used in the remedial investigation. The first phase is called checklisting and the second phase is the analytical quality review, with the former being a subset of the latter.

- Checklisting - The data package will be checked for correct submission of the contract required deliverables, correct transcription from the raw data to the required deliverable summary forms and proper calculation of a number of parameters.

- Analytical Quality Review - The data package will be closely examined to recreate the analytical process and verify that proper and acceptable analytical techniques have been performed. Additionally, overall data quality and laboratory performance will be evaluated by applying the appropriate data quality criteria to the data to reflect conformance with the specified, accepted QA/QC standards and contractual requirements.

At the completion of the data validation, a Summary Data Validation/Usability Report will be prepared as part of the site investigation report.

If the NYSDEC decides that a complete validation is not required, a Data Usability Summary Report (DUSR) will be prepared.

The DUSR is prepared by reviewing and evaluating the analytical data. The parameters to be evaluated in reference to compliance with analytical method protocols include all chain-of-custody forms, holding times, raw data (instrument print out data and chromatograms), calibrations, blanks, spikes, controls, surrogate recoveries, duplicates and sample data. If available, field sampling notes should also be reviewed, and any quality control problems should be evaluated as to their effect on the usability of the sample data.

The DUSR shall describe the samples and analysis parameters reviewed. Data deficiencies, analytical protocol deviations and quality control problems shall be described and their effect on the data discussed.

Resampling and reanalysis recommendations will be made, if necessary. Data qualifications are documented for each sample analyte following the NYSDEC ASP 7/05 guidelines.

14.0 PERFORMANCE AND SYSTEM AUDITS

A NYSDOH ELAP certified laboratory which has satisfactorily completed performance audits and performance evaluation samples will be used to perform sample analyses for the investigation.

15.0 CORRECTIVE ACTION

A NYSDOH ELAP certified laboratory will meet the requirements for corrective action protocols, including sample “clean up” to attempt to eliminate/mitigate matrix interference.

The 2005 NYSDEC ASP includes both mandatory and optional sample cleanup and extraction methods. Cleanup is required by the 2005 NYSDEC ASP in order to meet contract required detection limits. There are several optional cleanup and extraction methods noted in the 2005 NYSDEC ASP.

It should be noted that if these optional cleanup and extraction methods are utilized, holding time requirements will not be exceeded due to negligence of the laboratory. Subsequent to selection of the analytical laboratory for this project, a meeting or conference call will be undertaken with the laboratory to discuss these issues and establish procedures to ensure effective and timely communications among all parties.

APPENDIX A

FIELD FORMS

D&B ENGINEERS AND ARCHITECTS, P.C.		DATE:
		REPORT NO.
		PAGE NO.
		PROJECT NO.

DAILY FIELD ACTIVITY REPORT

PROJECT _____

LOCATION _____

ATTACHMENTS _____

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)

SITE CONDITIONS:

WORK GOAL FOR DAY:

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL

HEALTH & SAFETY:

PPE REQUIRED: ☐ ☐ ☐ ☐ **HASP?**

SITE SAFETY OFFICER:

H & S NOTES:

D&B ENGINEERS AND ARCHITECTS, P.C.		**DATE:**
		REPORT NO.
		PAGE NO.
		PROJECT NO.

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B ENGINEERS AND ARCHITECTS, P.C.		**DATE:**
		REPORT NO.
		PAGE NO.
		PROJECT NO.

DAILY FIELD ACTIVITY REPORT

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME:	PRINT NAME:
SIGNATURE:	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to NYSDEC – date:	☐ hardcopy to NYSDEC – date:

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE _____ DATE _____

WELL ID: _____ Time On-site: _____ Time Off-site: _____
SAMPLERS: _____

Depth of well (feet from top of casing/riser)..... _____ Depth to ____/____of screen
Initial static water level (feet from top of casing/riser)..... _____ top / bottom

Purging Method

Airlift	____	Centrifugal	___
Bailer	____	Pos. Displ.	___
Peristaltic Pump (dedicated tubing)	____	Disposable Bladder Pump (Low Flow)	___

Well Volume Calculation:
2 in. casing: _____ft. of water x 0.16 = _____ gallons
3 in. casing: _____ft. of water x 0.36 = _____ gallons
6 in. casing: _____ft. of water x 1.47 = _____ gallons

volume of water removed:
_____ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]

Purge Volume: Purging Time:
Purge Rate (gph):

Sampling
Time of Sample Collection: _____

Method:		Analyses:	
____	Stainless steel bailer	____	USEPA Method 8260C TCL VOCs
____	Teflon bailer	____	
____	Pos. Disp. Pump	____	
____	Disposable bailer	____	
X	Dedicated pump and tubing	____	

Observations
Well Observations: _____
Weather/Temperature: _____
Sample description: _____
Free Product? yes ____ no ____ describe _____
Sheen? yes ____ no ____ describe _____
Odor? yes ____ no ____ describe _____

D&B ENGINEERS AND ARCHITECTS, P.C.

SITE NAME: SITE ID.:

INSPECTOR:

MONITORING WELL FIELD INSPECTION LOG

DATE/TIME:

WEll ID.:

	YES	NO
WELL VISIBLE? (If not, provide directions below)		

WELL COORDINATES? NYTM X_____ NYTM Y_____

PDOP Reading from Trimble Pathfinder:_____ Satelites:_____

GPS Method (circle) Trimble And/Or Magellan

	YES	NO
WELL I.D. VISIBLE?		
WELL LOCATION MATCH SITE MAP? (if not, sketch actual location on back).....		

WELL I.D. AS IT APPEARS ON PROTECTIVE CASING OR WELL: .....

	YES	NO
SURFACE SEAL PRESENT?		
SURFACE SEAL COMPETENT? (If cracked, heaved etc., describe below)		
PROTECTIVE CASING IN GOOD CONDITION? (If damaged, describe below)		

HEADSPACE READING (ppm) AND INSTRUMENT USED.....

TYPE OF PROTECTIVE CASING AND HEIGHT OF STICKUP IN FEET (If applicable)

PROTECTIVE CASING MATERIAL TYPE: .....

MEASURE PROTECTIVE CASING INSIDE DIAMETER (Inches): .....

	YES	NO
LOCK PRESENT?		
LOCK FUNCTIONAL?		
DID YOU REPLACE THE LOCK?		
IS THERE EVIDENCE THAT THE WELL IS DOUBLE CASED? (If yes,describe below)		
WELL MEASURING POINT VISIBLE?		

MEASURE WELL DEPTH FROM MEASURING POINT (Feet): .....

MEASURE DEPTH TO WATER FROM MEASURING POINT (Feet): .....

MEASURE WELL DIAMETER (Inches): .....

WELL CASING MATERIAL: .....

PHYSICAL CONDITION OF VISIBLE WELL CASING: .....

ATTACH ID MARKER (if well ID is confirmed) and IDENTIFY MARKER TYPE .....

PROXIMITY TO UNDERGROUND OR OVERHEAD UTILITIES.....

DESCRIBE ACCESS TO WELL: (Include accessibility to truck mounted rig, natural obstructions, overhead power lines, proximity to permanent structures, etc.); ADD SKETCH OF LOCATION ON BACK, IF NECESSARY.

DESCRIBE WELL SETTING (For example, located in a field, in a playground, on pavement, in a garden, etc.) AND ASSESS THE TYPE OF RESTORATION REQUIRED.

IDENTIFY ANY NEARBY POTENTIAL SOURCES OF CONTAMINATION, IF PRESENT (e.g. Gas station, salt pile, etc.):

REMARKS:

Sketch

FIELD CHANGE FORM

Project Name:_____

Project Number:_____ Field Change Number:_____

Location: _____ Date:_____

Field Activity Description:_____

Reason for Change:_____

Recommended Disposition:_____

_____ _____
Field Operations Officer (D&B Consulting Engineers) (Signature) Date

Disposition:_____

_____ _____
On-site Supervisor (NYSDEC) (Signature) Date

Distribution: Project Manager (D&B) Others as Required:_____
Project Manager (NYSDEC) _____
Field Operations Officer _____
On-site Supervisor (NYSDEC) _____

FIELD AUDIT FORM

Site: _____ Date: _____

Persons On-site: _____ QA/QC Officer Conducting Audit: _____

_____ Project: _____

_____

1. Is safety equipment in use (hardhats, respirators, gloves etc.): YES NO

2. Is a decontamination station, equipment and supplies on-site and in working order:

Methanol	YES	NO
Alconox	YES	NO
D.I. Water	YES	NO
Scrub Brushes	YES	NO
Steam Cleaner	YES	NO

Comments: _____

_____

_____

3. Is the decontamination pad set up so water is contained: YES NO

Comments: _____

_____

_____

4. Is the site/investigation areas secured (fence, markers, etc.) or otherwise in accordance with project requirements: YES NO

Comments: _____

_____

_____

FIELD AUDIT FORM
(continued)

5. Is contaminated material properly stored and in a secure area or otherwise in accordance with project requirements: YES NO
   Are the drums of waste (water, soil, ppe) labeled properly: YES NO

   Comments: _____

   _____

   _____

6. Are field forms filled out properly, legibly and timely:

Field Log Book	YES	NO
Chain of Custody	YES	NO
Equipment Calibration Log	YES	NO
Daily Field Activity Report	YES	NO
Location Sketch	YES	NO
Sample Information Record	YES	NO
Equipment Usage Form	YES	NO
Boring Logs	YES	NO

   Comments: _____

   _____

   _____

7. Is the proper sampling and field measurement equipment, including calibration supplies on-site: YES NO

   Comments: _____

   _____

   _____

FIELD AUDIT FORM
(continued)

8. Are there adequate sample containers, including deionized water for QA/QC:

Field Blanks	YES	NO
Trip Blanks	YES	NO

Comments: _____

_____

_____

9. Is the equipment decontaminated in accordance with project requirements:

Sampling equipment	YES	NO
Construction equipment	YES	NO

Comments: _____

_____

_____

10. Is field measurement equipment calibrated:

Daily	YES	NO
Properly	YES	NO

Comments: _____

_____

_____

11. Are samples collected and labeled properly: YES NO

Comments: _____

_____

_____

FIELD AUDIT FORM
(continued)

12. Are samples stored at 4°C: YES NO

Comments: _____

_____

_____

13. Are coolers properly sealed and packed for shipment including Chain of Custody taped to underside of lid: YES NO

Comments: _____

_____

_____

14. Is a copy of the Field Investigation Work Plan available on-site: YES NO

Comments: _____

_____

_____

15. Is a copy of each equipment manual on-site: YES NO

Comments: _____

_____

_____

16. Is a copy of the QA/QC Plan available on-site: YES NO

Comments: _____

_____

_____

FIELD AUDIT FORM
(continued)

17. Are investigation personnel familiar with the Work Plan and QA/QC Plan: YES NO

Comments: _____

_____

_____

18. Are quality control samples taken:

Trip Blanks	YES	NO
Field Blanks	YES	NO

19. Are samples shipped in a timely and appropriate manner: YES NO

Comments: _____

_____

_____

20. Has the laboratory been contacted regarding planned shipment of samples: YES NO

Comments: _____

_____

_____

21. Certification - Based upon my audit at the above project, I hereby certify/do not certify compliance with QA/QC requirements for the project:

_____ _____

Dated Signed

FIELD AUDIT FORM
(continued)

General Comments: _____

_____

_____

_____

APPENDIX B

NYSDEC SAMPLE IDENTIFICATION, PREPARATION AND ANALYSIS SUMMARY FORMS

APPENDIX B

NYSDEC SAMPLE IDENTIFICATION, PREPARATION AND ANALYSIS SUMMARY FORMS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	Analytical Requirements					
		VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-IIa

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE (BNA)
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-IIb

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE (VOA)
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-IIc

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-III

SAMPLE PREPARATION AND ANALYSIS SUMMARY
MISCELLANEOUS ORGANIC
ANALYSES

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction Method	Auxiliary Cleanup	Dil/Conc Factor

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-IV

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

Laboratory Sample ID	Matrix	Metals Requested	Date Rec'd at Lab	Date Digested	Date Analyzed

APPENDIX C

TARGET COMPOUND AND TARGET ANALYTE LISTS

APPENDIX C

TARGET COMPOUND AND TARGET ANALYTE LISTS

Semivolatiles Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL) for Aqueous Samples

	Semivolatile Analyte	CAS Number	Low Water By SIM[1] (µg/L)	Water (µg/L)
1.	Benzaldehyde	100-52-7		5.0
2.	Phenol	108-95-2	0.10	5.0
3.	Bis-(2-chlorothyl) ether	111-44-4		5.0
4.	2-Chlorophenol	95-57-8	0.10	5.0
5.	2-Methylphenol	95-48-7	0.10	5.0
6.	2,2'-Oxybis (1-chloropropane)[3]	108-60-1		5.0
7.	Acetophenone	98-86-2		5.0
8.	4-Methylphenol	106-44-5	0.10	5.0
9.	N-Nitroso-di-n-propylamine	621-64-7		5.0
10.	Hexachloroethane	67-72-1		5.0
11.	Nitrobenzene	98-95-3		5.0
12.	Isophorone	78-59-1		5.0
13.	2-Nitrophenol	88-75-5	0.10	5.0
14.	2,4-Dimethylphenol	105-67-9	0.10	5.0
15.	Bis (2-chloroethoxy) methane	111-91-1		5.0
16.	2,4-Dichlorophenol	120-83-2	0.10	5.0
17.	Naphthalene	91-20-3	0.10	5.0
18.	4-Chloroaniline	106-47-8		5.0
19.	Hexachlorobutadiene	87-68-3		5.0
20.	Caprolactam	105-60-2		5.0
21.	4-Chloro-3-methylphenol	59-50-7	0.10	5.0
22.	2-Methylnaphthalene	91-57-6		5.0
23.	Hexachlorocyclopentadiene	77-47-4		5.0
24.	2,4,6-Trichlorophenol	88-06-2	0.10	5.0
25.	2,4,5-Trichlorophenol[4]	95-95-4	0.20	10.0
26.	1,1'-Biphenyl	92-52-4		5.0
27.	2-Chloronaphthalene	91-58-7		5.0

Semivolatiles Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL) for Aqueous Samples (Continued)

	Semivolatile Analyte	CAS Number	Low Water By SIM[1] (µg/L)	Water (µg/L)
28.	2-Nitroaniline[4]	88-74-4		10.0
29.	Dimethylphthalate	131-11-3		5.0
30.	2,6-Dinitrotoluene	606-20-2		5.0
31.	Acenaphthylene	208-96-8	0.10	5.0
32.	3-Nitroaniline[4]	99-09-2		10.0
33.	Acenaphthene	83-32-9	0.10	5.0
34.	2,4-Dinitrophenol[4]	51-28-5	0.20	10.0
35.	4-Nitrophenol[4]	100-02-7	0.20	10.0
36.	Dibenzofuran	132-64-9		5.0
37.	2,4-Dinitrotoluene	121-14-2		5.0
38.	Diethylphthalate	84-66-2		5.0
39.	Fluorene	86-73-7	0.10	5.0
40.	4-Chlorophenyl-phenyl ether	7005-72-3		5.0
41.	4-Nitroaniline[4]	100-01-6		10.0
42.	4,6-Dinitro-2-methylphenol[4]	534-52-1	0.20	10.0
43.	N-Nitrosodiphenylamine	86-30-6		5.0
44.	1,2,4,5-Tetrachlorobenzene	95-34-3		5.0
45.	4-Bromophenyl-phenylether	101-55-3		5.0
46.	Hexachlorobenzene	100-52-7		5.0
47.	Atrazine	108-95-2	0.10	5.0
48.	Pentachlorophenol	111-44-4	0.20	10.0
49.	Phenanthrene	95-57-8	0.10	5.0
50.	Anthracene	95-48-7	0.10	5.0
51.	Carbazole	108-60-1		5.0
52.	Di-n-butylphthalate	98-86-2		5.0

Semivolatiles Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL) for Aqueous Samples (Continued)

	Semivolatile Analyte	CAS Number	Low Water By SIM[1] (µg/L)	Water (µg/L)
53.	Fluoroanthene	106-44-5	0.10	5.0
54.	Pyrene	621-64-7		5.0
55.	Butylbenzylphthalate	67-72-1		5.0
56.	3,3'-Dichlorobenzidine	98-95-3		5.0
57.	Benzo (a) anthracene	78-59-1		5.0
58.	Chrysene	88-75-5	0.10	5.0
59.	Bis (2-ethylhexyl) phthalate	105-67-9	0.10	5.0
60.	Di-n-octylphthalate	111-91-1		5.0
61.	Benzo (b) fluoranthene	120-83-2	0.10	5.0
62.	Benzo (k) fluoranthene	91-20-3	0.10	5.0
63.	Benzo (a) pyrene	106-47-8		5.0
64.	Indeno (1,2,3-cd) pyrene	87-68-3		5.0
65.	Benzo (a,h) anthracene	105-60-2		5.0
66.	Benzo (g,h,i) perylene	59-50-7	0.10	5.0

Semivolatile Notes

[1] CRQLs for optional analysis of water and soil samples using SIM (Selected Ion Monitoring) techniques for PAHs and phenols.

[2] Denotes soil, sediment, tissue, or mixed phase samples.

[3] Previously known as bis (2-Chloroisoproply) ether.

[4] Seven semivolatile compounds are calibrated using only a four point initial calibration, eliminating the lowest standard. Therefore, the CRQL values for these eight compounds are 2 times higher for all matrices and levels.

Pesticide Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL) For Aqueous and Solid Samples

	Pesticide Analyte	CAS Number	Water (µg/L)	Solids[1] (µg/Kg)
1.	alpha-BHC	319-84-6	0.050	1.7
2.	beta-BHC	319-85-7	0.050	1.7
3.	delta-BHC	319-86-8	0.050	1.7
4.	gamma-BHC (Lindane)	58-89-9	0.050	1.7
5.	Heptachlor	76-44-8	0.050	1.7
6.	Aldrin	309-00-2	0.050	1.7
7.	Heptachlor epoxide[2]	1024-57-3	0.050	1.7
8.	Endosulfan I	959-98-8	0.050	1.7
9.	Dieldrin	60-57-1	0.10	3.3
10.	4,4'-DDE	72-55-9	0.10	3.3
11.	Endrin	72-20-8	0.10	3.3
12.	Endosulfan II	33213-65-9	0.10	3.3
13.	4,4'-DDD	72-54-8	0.10	3.3
14.	Endosulfan sulfate	1031-07-8	0.10	3.3
15.	4,4'-DDT	50-29-3	0.10	3.3
16.	Methoxychlor	72-43-5	0.10	3.3
17.	Endrin ketone	53494-70-5	0.10	3.3
18.	Endrin aldehyde	7421-93-4	0.10	3.3
19.	alpha-Chlordane	5103-71-9	0.050	1.7
20.	gamma-Chlordane	5103-74-2	0.050	1.7
21.	Toxaphene	8001-35-2	5.0	34

Pesticide Notes

[1] There is no differentiation between the preparation of low and medium soil samples in this method for the analysis of pesticides.

[2] Only the exo-epoxy isomer (isomer B) of heptachlor epoxide is reported on the data reporting forms (Exhibit B).

PCB Aroclor Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL) For Aqueous and Solid Samples

	Aroclor Analyte	CAS Number	Water (µg/L)	Solids[1] (µg/Kg)
1.	Arochlor-1016	12674-11-2	1.0	33
2.	Arochlor-1221	11104-28-2	1.0	33
3.	Arochlor-1232	11141-16-5	1.0	33
4.	Arochlor-1242	53469-21-9	1.0	33
5.	Arochlor-1248	12672-29-6	1.0	33
6.	Arochlor-1254	11097-69-1	1.0	33
7.	Arochlor-1260	11096-82-5	1.0	33
8.	Arochlor-1262	37324-23-5	1.0	33
9.	Arochlor-1268	11100-14-4	1.0	33

Aroclor PCB Notes

[1] There is no differentiation between the preparation of low and medium soil samples in this method for the analysis of Aroclor PCBs.

Inorganic Target Compound List (TCL) and Contract Required Quantitation Limits (CRQLs) For Aqueous and Solid Samples

	Analyte	CAS Number	ICP-AES[1] CRQL for Water (µg/L)	ICP-AES[1] CRQL for Solids (mg/Kg)	ICP-MS[1] for Water (µg/L)
1.	Aluminum	7429-90-5	200	40	30
2.	Antimony	7440-36-0	60	12	2
3.	Arsenic	7440-38-2	15	3	1
4.	Barium	7440-39-3	200	40	10
5.	Beryllium	7440-41-7	5	1	1
6.	Cadmium	7440-43-9	5	1	1
7	Calcium	7440-70-2	5000	1000	--
8.	Chromium	7440-47-3	10	2	2
9.	Cobalt	7440-48-4	50	10	0.5
10.	Copper	7440-50-8	25	5	2
11.	Iron	7439-89-6	100	20	--
12.	Lead	7439-92-1	10	2	1
13.	Magnesium	7439-95-4	5000	1000	--
14.	Manganese	7439-96-5	15	3	0.5
15.	Mercury[2]	7439-97-6	0.2	0.1	--
16.	Nickel	7440-02-0	40	8	1
17.	Potassium	7440-09-7	5000	1000	--
18.	Selenium	7782-49-2	35	7	5
19.	Silver	7440-22-4	10	2	1
20.	Sodium	7440-23-5	5000	1000	--
21.	Thallium	7440-28-0	25	5	1
22.	Vanadium	7440-62-2	50	10	1
23.	Zinc	7440-66-6	60	12	1
24.	Cyanide[2]	57-12-5	10	1	--

Inorganic Notes

[1] Any analytical method specified in Exhibit D, may be utilized as long as the documented instrument or method detection limits (IDLs or MDLs) are less than one half the Contract Required Quantitation Level (CRQL) requirements. Higher quantitation levels may only be used in the following circumstance:

If the sample concentration exceeds five times the quantitation limit of the instrument or method in use, the value may be reported even though the instrument or method detection limit may not equal the Contract Required Quantitation Limit. This is illustrated in the example below:

For lead:
Method in use = ICP
Instrument Detection Limit (IDL) = 40
Sample concentration = 220
Contract Required Quantitation Level (CRQL) = 3

The value of 220 may be reported even though instrument detection limit is greater than Contract Required Quantitation Limit. The instrument or method detection limit must be documented as described in Exhibit E.

[2] Mercury is analyzed by cold vapor atomic absorption. Cyanide is analyzed by colorimetry/spectrophotometry.

APPENDIX H

SITE MANAGEMENT FORMS

D&B ENGINEERS AND ARCHITECTS, P.C.		DATE:
		REPORT NO.
		PAGE NO.
		PROJECT NO.

DAILY FIELD ACTIVITY REPORT

PROJECT _____

LOCATION _____

ATTACHMENTS _____

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)

SITE CONDITIONS:

WORK GOAL FOR DAY:

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL

HEALTH & SAFETY:

PPE REQUIRED: ☐ ☐ ☐ ☐ **HASP?**

SITE SAFETY OFFICER:

H & S NOTES:

D&B ENGINEERS AND ARCHITECTS, P.C.		**DATE:**
		REPORT NO.
		PAGE NO.
		PROJECT NO.

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

D&B ENGINEERS AND ARCHITECTS, P.C.		**DATE:**
		REPORT NO.
		PAGE NO.
		PROJECT NO.

DAILY FIELD ACTIVITY REPORT

PREPARED BY (OBSERVER)	**REVIEWED BY**
PRINT NAME:	PRINT NAME:
SIGNATURE:	SIGNATURE:
☐ **ADDITIONAL SHEETS USED**	
☐ emailed draft / final to NYSDEC – date:	☐ hardcopy to NYSDEC – date:

FIELD OBSERVATION LOG
GROUNDWATER SAMPLING RECORD

SITE _____ DATE _____

WELL ID: _____ Time On-site: _____ Time Off-site: _____
SAMPLERS: _____

Depth of well (feet from top of casing/riser)..... _____ Depth to ____/____of screen
Initial static water level (feet from top of casing/riser)..... _____ top / bottom

Purging Method

Airlift	____	Centrifugal	___
Bailer	____	Pos. Displ.	___
Peristaltic Pump (dedicated tubing)	____	Disposable Bladder Pump (Low Flow)	___

Well Volume Calculation:
2 in. casing: _____ft. of water x 0.16 = _____ gallons
3 in. casing: _____ft. of water x 0.36 = _____ gallons
6 in. casing: _____ft. of water x 1.47 = _____ gallons

volume of water removed:
_____ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests

Time	Purge Rate (ml/min)	Depth to Water (ft)	pH [+/-0.1 units]	Temp (c°) [3%]	Spec. Cond. (ms/cm) [3%]	Turbidity (NTUs) [10% >5 NTU]	DO (mg/l) [10% >0.5mg/l]	ORP (mv) [+/- 10]

Purge Volume: Purging Time:
Purge Rate (gph):

Sampling
Time of Sample Collection: _____

Method:		Analyses:	
____	Stainless steel bailer	____	USEPA Method 8260C TCL VOCs
____	Teflon bailer	____	
____	Pos. Disp. Pump	____	
____	Disposable bailer	____	
X	Dedicated pump and tubing	____	

Observations
Well Observations: _____
Weather/Temperature: _____
Sample description: _____
Free Product? yes ____ no ____ describe _____
Sheen? yes ____ no ____ describe _____
Odor? yes ____ no ____ describe _____

D&B ENGINEERS AND ARCHITECTS, P.C.

SITE NAME: SITE ID.:

INSPECTOR:

MONITORING WELL FIELD INSPECTION LOG

DATE/TIME:

WEll ID.:

	YES	NO
WELL VISIBLE? (If not, provide directions below)		

WELL COORDINATES? NYTM X_____ NYTM Y_____

PDOP Reading from Trimble Pathfinder:_____ Satelites:_____

GPS Method (circle) Trimble And/Or Magellan

	YES	NO
WELL I.D. VISIBLE?		
WELL LOCATION MATCH SITE MAP? (if not, sketch actual location on back).....		

WELL I.D. AS IT APPEARS ON PROTECTIVE CASING OR WELL: .....

	YES	NO
SURFACE SEAL PRESENT?		
SURFACE SEAL COMPETENT? (If cracked, heaved etc., describe below)		
PROTECTIVE CASING IN GOOD CONDITION? (If damaged, describe below)		

HEADSPACE READING (ppm) AND INSTRUMENT USED.....

TYPE OF PROTECTIVE CASING AND HEIGHT OF STICKUP IN FEET (If applicable)

PROTECTIVE CASING MATERIAL TYPE: .....

MEASURE PROTECTIVE CASING INSIDE DIAMETER (Inches): .....

	YES	NO
LOCK PRESENT?		
LOCK FUNCTIONAL?		
DID YOU REPLACE THE LOCK?		
IS THERE EVIDENCE THAT THE WELL IS DOUBLE CASED? (If yes,describe below)		
WELL MEASURING POINT VISIBLE?		

MEASURE WELL DEPTH FROM MEASURING POINT (Feet): .....

MEASURE DEPTH TO WATER FROM MEASURING POINT (Feet): .....

MEASURE WELL DIAMETER (Inches): .....

WELL CASING MATERIAL: .....

PHYSICAL CONDITION OF VISIBLE WELL CASING: .....

ATTACH ID MARKER (if well ID is confirmed) and IDENTIFY MARKER TYPE .....

PROXIMITY TO UNDERGROUND OR OVERHEAD UTILITIES.....

DESCRIBE ACCESS TO WELL: (Include accessibility to truck mounted rig, natural obstructions, overhead power lines, proximity to permanent structures, etc.); ADD SKETCH OF LOCATION ON BACK, IF NECESSARY.

DESCRIBE WELL SETTING (For example, located in a field, in a playground, on pavement, in a garden, etc.) AND ASSESS THE TYPE OF RESTORATION REQUIRED.

IDENTIFY ANY NEARBY POTENTIAL SOURCES OF CONTAMINATION, IF PRESENT (e.g. Gas station, salt pile, etc.):

REMARKS:

Sketch

ENGINEERING AND INSTITUTIONAL CONTROL INSPECTION FORM

I. Site Background Information

A. Site Name and Location:

Site name as it appears on the Environmental Easement*:* _____

Name of the current property owner(s): _____

Site Street Address: _____

Municipality (-ies): _____ County (-ies): _____

Blocks: _____

Lots: _____

Source information obtained from: _____

B. Person responsible for preparing Engineering and Institutional Control Evaluation Form:

Person's Name: _____

Person's Title: _____

Company Name: _____

Relationship to the Site (check as appropriate): Owner _____ Operator_____

Lessee _____ Person Who Conducted the Cleanup _____
Other (describe)_____

Street Address: _____

City: _____ State: _____

Telephone Number: (___) ___-____

Fax Number: (___) ___-____

E-mail Address:_____

C. Case Specific Information (**Complete all that apply**)

- Site Name: _____
- Site Registry Number: _____
- Date of final Remediation Report and/or Certificate of Completion:_____
- Name and program of assigned Project Manager at issuance of Environmental Easement:
  _____

D. Existing Site Conditions

- Describe the physical characteristics of the site (features, topography, drainage, vegetation, access, etc.). If necessary, attach additional sheets.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

- Describe the current site operations/use. If necessary, attach additional sheets.

_____
_____
_____
_____
_____
_____
_____

_____

_____

_____

_____

_____

_____

- Describe visual integrity/condition engineering control. If necessary, attach additional sheets.

_____

_____

_____

_____

_____

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_____

_____

_____

_____

_____

II. Protectiveness Evaluation

A. Environmental Easement and Engineering Control Information (Complete below)

- Provide the following information for the recorded Environmental Easement:

  Book Number: _____

  Page Number: _____

  Date the date the Environmental Easement was filed in the office of the county recording officer: _____

- Have any amendments and/or additional filings been recorded that may modify or supersede the Environmental Easement?

Yes ____ No ____

If "Yes", provide an explanation. If necessary, attach additional sheets.

_____

_____

_____

_____

_____

B. Evaluation of Engineering and Institutional Controls

1. Zoning or Land Use Changes (Complete below)

a. Land use at the time the Environmental Easement was filed (check all that apply):

Non-Residential ____ Residential _____ Agricultural _____ Other _____

b. Current land use (check all that apply):

Non-Residential ____ Residential _____ Agricultural _____ Other _____

c. Has there been an actual or pending zoning or land-use change?

Yes ____ No ____

2. Inspections (Complete below)

Have periodic inspections of the site identified any excavation or other disturbance activities that have taken place within the restricted areas?

Yes____No_____

Date(s) of Disturbance: _____

Duration of Disturbance: Years ____ Months ____ Days ____

Date the NYSDEC was notified: _____

Date Work Plan Approved: _____

Description of the disturbance and methods to address the disturbance. If necessary, attach additional sheets.

_____

_____

_____

Name of Contact Person Relative to the Disturbance:

_____

Title: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Telephone Number: _____

Email Address: _____

3. Changes to Laws and Regulations (Complete below)

a. Are there any subsequently promulgated or modified environmental laws or regulations, which apply to the site?

Yes ____No ____

b. If "Yes", has the evaluation also determined that the Environmental Easement and engineering control, as applicable, meets the requirements of the new laws and regulations?

Yes____No_____

c. The Environmental Easement and engineering control, as applicable that did not meet the requirements of the new laws and regulations has been addressed in the following manner to bring them into compliance. If necessary, attach additional sheets.

_____

_____

_____

APPENDIX I

HISTORICAL GROUNDWATER ELEVATIONS

Table 1: Groundwater Elevation Measurements

WELL	NORTHING	EASTING	TOP OF RISER (ft AMSL)	DATE													
				10/06		7/07		3/13		9/14		9/15		12/17		6/19	
				DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV
MW-02	1358926.08	482574.80	2051.81	7.61	2044.20	7.69	2044.12	7.04	2044.77	8.07	2043.74	8.05	2043.76	7.10	2044.71	7.40	2044.41
MW-03	1358892.48	482670.54	2050.05	6.85	2043.20	7.19	2042.86	6.29	2043.76	7.14	2042.91	6.89	2043.16	6.01	2044.04	6.45	2043.60
MW-04	1358819.58	482480.86	2059.81	9.82	2049.99	7.38	2052.43	8.09	2051.72	7.65	2052.16	7.62	2052.19	5.29	2054.52	6.87	2052.94
MW-05	1358727.24	482578.24	2057.20	8.20	2049.00	2.34	2054.86	2.26	2054.94	2.59	2054.61	3.67	2053.53	1.70	2055.50	1.85	2055.35
MW-08	1358707.40	482341.65	2074.22	5.90	2068.32	6.19	2068.03	15.05	2059.17	7.00	2067.22	6.01	2068.21	6.32	2067.90	5.55	2068.67
MW-09	1358826.69	482315.25	2075.38	5.92	2069.46	5.95	2069.43	5.88	2069.50	6.67	2068.71	5.91	2069.47	4.96	2072.42	5.42	2069.96
MW-10	1358324.13	482650.65	2084.10	8.29	2075.81	9.03	2075.07	4.72	2079.38	8.11	2075.99	6.64	2077.46	5.12	2078.98	5.51	2078.59
MW-11	1358335.90	482529.62	2081.50	7.14	2074.36	5.50	2076.00	3.83	2077.67	5.66	2075.84	4.44	2077.06	3.40	2078.10	3.64	2077.86
MW-13	1358950.91	482509.50	2050.79	5.24	2045.55	5.16	2045.63	4.75	2046.04	5.45	2045.34	5.07	2045.72	4.51	2046.28	4.02	2046.77
MW-14	1358916.26	482423.80	2068.29	12.79	2055.50	12.71	2055.58	17.85	2050.44	13.16	2055.13	12.77	2055.52	12.88	2055.41	12.95	2055.34
MW-15	1358496.77	482295.94	---	2.33	---	NM	---	NM	---	NM	---	---	---	---	---	---	---
MW-16	1358428.81	482345.37	2078.76	6.71	2072.05	5.87	2072.89	4.59	2074.17	7.08	2071.68	5.60	2073.16	4.52	2074.24	5.08	2073.68
MW-17	1358596.4	482736.17	2072.02	7.21	2064.81	7.98	2064.04	6.77	2065.25	10.68	2061.34	7.04	2064.98	5.70	2066.32	6.05	2065.97
MW-18	1358678.0	482685.10	2059.08	2.61	2056.47	3.75	2055.33	0.95	2058.13	5.80	2053.28	3.51	2055.57	1.00	2058.08	1.19	2057.89
MW-19	1358846.8	482751.02	2054.62	10.10	2044.52	10.79	2043.83	10.41	2044.21	11.33	2043.29	10.55	2044.07	10.25	2044.37	10.25	2044.37

Notes:

ft: Feet
AMSL: Above Mean Sea Level
DTB : Depth to bottom of well relative to top of well casing
DTW : Depth to water in feet relative to top of well casing
NM : Not Measured

`1. The following well repairs have been conducted and survey data at these locations may not be representative:

- replacement of concrete well pads at MW-4 and MW-17;
- placement of concrete beneath the existing well pad at MW-18;
- the complete replacement of the well box and surface completion at MW-9; and
- the removal of approximately 3-inches from the PVC riser at MW-11.

APPENDIX J

SUMMARY OF GREEN REMEDIATION METRICES FOR SITE MANAGEMENT

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 K

REMEDIAL SYSTEM OPTIMIZATION TABLE OF CONTENTS

REMEDIAL SYSTEM OPTIMIZATION FOR CAMP SUMMIT SITE

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)