REMEDIAL INVESTIGATION

Investigation and Remediation Contract C100610: Call Out 128321

FINAL

For

NIAGARA SANITATION / NASH ROAD LANDFILL SITE 7415 NASH ROAD TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK NYSDEC SITE NUMBER 932054



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGION 9
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List of Acronyms

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AMSL Above Mean Sea Level ATV All Terrain Vehicle

AWQSGVs Ambient Water Quality Standards and Guidance Values

BGS Below Ground Surface COC Chain of Custody

COPCs Chemicals of Potential Concern
CSCO Commercial Soil Cleanup Objective
DER Division of Environmental Remediation

DUSR Data Usability Summary Report

ELAP Environmental Laboratory Approval Program

FSP Field Sampling Plan
GPM Gallons Per Minute
GPS Global Positioning System
HASP Health and Safety Plan
HSL Hazardous Substance List
I&R Investigation and Remediation
IRM Interim Remedial Measure

LBP Lead Based Paint
LiRo Engineers, Inc.
MG/KG Milligrams Per Kilogram

MS Matrix Spike

MSD Matrix Spike Duplicate NAD North American Datum

NAVD 88 North American Vertical Datum of 1988

NOAA National Oceanic and Atmospheric Administration

NTUs Nephelometric Turbidity Units

NYCRR New York Codes Rules and Regulations

NYS New York State

NYSDEC New York State Department of Environmental Conservation

NYSDOH New York State Department of Health NYSDOL New York State Department of Labor

NYSDOT New York State Department of Transportation

OPP Organic Priority Pollutant

P2RI Phase 2 – Remedial Investigation PAH Polycyclic Aromatic Hydrocarbon

PCB Polychlorinated Biphenyls PID Photo-Ionization Detector

PRI Preliminary Remedial Investigation

PVC Polyvinyl Chloride

QHHEA Qualitative Human Health Exposure Assessment

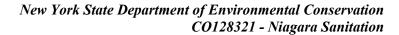
RIR Remedial Investigation Report RSCO Residential Soil Cleanup Objective SCGs Standards, Criteria, and Guidance

SCOs Soil Cleanup Objectives

SVOC Semi-Volatile Organic Compound

TAL Target Analyte List
TCL Target Compound List

TCLP Toxicity Characteristic Leaching Procedure





THO Total Halogenated Organics
TICs Tentatively Identified Compounds

TOGS Technical and Operational Guidance Series

USACE US Army Corps of Engineers

USEPA United States Environmental Protection Agency

USGS United States Geological Survey VOC Volatile Organic Compound



List of References

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1.0 INTRODUCTION

LiRo Engineers, Inc. (LiRo) is in contract agreement with the New York State Department of Environmental Conservation (NYSDEC) to provide a Remedial Investigation Report (RIR) for the Niagara Sanitation Site (Site) in Wheatfield, New York. The Site location, 7415 Nash Road in the Town of Wheatfield, Niagara County, New York, is shown on Figure 1-1. The Site is bordered by the Society of Catholic Apostolate property to the north, a cemetery and property that contains a motel and livery service to the east, a utility right-of-way (both overhead electric and underground natural gas and brine lines) and residences to the south, and Nash Road and residences to the west.

Documents previously prepared by LiRo for this project include the Preliminary Remedial Investigation (PRI) work plan (March 2017), Field Sampling Plan (FSP) (March 2017), the Site Health and Safety Plan (HASP) (March 2016) and the Phase 2 – Remedial Investigation (P2RI) work plan (LiRo, June 2017). These four documents, which were approved by the NYSDEC, define the scope of work, technical approach, and procedures for conducting the Remedial Investigation (RI). This Remedial Investigation Report (RIR) summarizes the results of LiRo's RI investigation activities at the Niagara Sanitation Site.

1.1 Project Objectives

The Remedial Investigation (RI) was undertaken to determine the nature and extent of contamination at the Site for purposes of evaluating and selecting a remedial alternative. The specific objectives of the RI are to:

- 1. Determine the nature and extent of contamination relating to the landfilling of waste at the site.
- 2. Determine the physical extents of Site wastes;
- 3. Further characterize the composition of surface soil contamination at the Site;
- 4. Complete a preliminary hydrogeological evaluation of the Site to determine impacts of the Site contamination on groundwater quality; and,
- 5. Determine if on-site waste is adversely impacting surface soil, wetlands, and surface water bodies on and adjacent to the Site.

1.2 Project and Report Organization

The Niagara Sanitation RI was conducted under a standby contract with the NYSDEC for Investigation and Remediation (I&R) services at contaminated sites within New York State (NYS).

This Remedial Investigation Report (RIR) is structured in accordance with NYSDEC Division of Environmental Remediation (DER)-10 guidance. This report contains 6 sections. Section 1 provides an overview of the project and scope. Section 2 presents site background and summarizes previous investigation information. Section 3 outlines the scope of work, details the RI program and identifies standards, criteria, and guidance values for the Site. Section 4 summarizes the geologic and hydrogeologic conditions at and near the Site. Section 5 discusses the nature and extent of contamination and summarizes the extents of on-site wastes. Section 6 presents the conceptual site model and the qualitative human health exposure assessment conducted for the Site.



2.0 BACKGROUND

2.1 Site Setting

The Niagara Sanitation Site, also known as the Nash Road Landfill, is an inactive landfill located on Nash Road in the Town of Wheatfield, Niagara County, New York (Figure 1-1). The property is owned by the Town of Wheatfield and is adjacent to the municipal boundary that separates the Town of Wheatfield from the City of North Tonawanda (Figures 1-1 and 2-1). The property is zoned for Public Service use.

The Site is bordered by the Society of Catholic Apostolate property to the north, a cemetery and property that contains a motel and livery service to the east, a utility right-of-way (both overhead electric and underground natural gas and brine lines) and residences to the south, and Nash Road and residences to the west (Figure 2-1).

The landfill is located approximately 1,400 feet east of Nash Road (Figure 2-1) and the portion of the property that is a landfill is generally rectangular in shape and consists of approximately 18.7 acres of the single 22.63-acre parcel (Figure 2-2).

The Site property is vacant and overgrown with mature trees, dense brush, and patches of phragmites. The Site is poorly drained and contains wetlands on the western, northern, and eastern portions of the property (Figure 2-2). The Town of Wheatfield completed installation of a 6-foot tall perimeter fence with locking gates encompassing the majority of the landfill area of the Site in December 2017. Prior to that time, based on the walking paths and trails, it appears that trespassers entered the site which resulted in foot paths and ATV trails across the Site.

Previous Investigation Work Plans and Reports:

The following documents were used to provide a comprehensive Site history and are the primary sources used to prepare this Site background section:

- 1) Phase I Report: Engineering Investigations and Evaluations at Inactive Hazardous Waste Disposal Sites, Engineering Science and Dames & Moore, June 1983;
- 2) Phase II Investigation: Engineering Investigations and Evaluations at Inactive Hazardous Waste Sites, Engineering Science and Dames & Moore, July 1985;
- 3) Phase II Supplemental Investigation: Engineering Investigations and Evaluations at Inactive Hazardous Waste Sites, Engineering Science, September 1989;
- 4) Site Characterization Report, Groundwater Environmental Services, Inc., November 2013;
- 5) Supplemental Site Characterization Report, Groundwater Environmental Services, Inc., July 2014;
- 6) *Interim Remedial Measure (IRM) Project Summary Report*, Glenn Springs Holdings, Inc., January 2016; and,
- 7) Phase 2 Remedial Investigation Work Plan, LiRo Engineers, Inc., June 2017.

Comprehensive summaries, sorted by source report, of field and laboratory samples collected by previous investigations and the LiRo's 2017 investigation at the Site are provided in Tables 2-1 and 2-2, respectively.



A sequential timeline summary of Site activities, from oldest to most recent as derived from a review of the reports listed above, is provided below.

2.1.1 Landfill Operations (1955-1968)

Available records indicate that the Site was operated as a landfill by the Niagara Sanitation Company from approximately 1955 to 1968. The landfill accepted both municipal and industrial solid wastes, including caustic materials, plating tank sludge, fly ash, salt solids, graphite, carbon, scrap adhesives, and miscellaneous laboratory chemicals. Records from the NYSDEC indicate that Bell Aerospace, Carborundum, Graphite Specialties, and Greif Brothers disposed of waste at the Site.

The historic landfilling activities have resulted in irregular ground surface topography (Figure 2-3). Numerous mounds can be observed throughout the Site, with waste and debris visible at the surface in some areas. During completion of the 2013 NYSDEC Site Characterization Study, tires, drums, battery casings, metal and plastic debris were observed.

2.1.2 LaSalle Expressway Construction and Waste Disposal (1968)

In June 1968, shortly before the Site's formal disposal operations were discontinued, the NYSDOT discovered waste while constructing the LaSalle Expressway. NYSDOT disposed of approximately 1,600 cubic yards of this material in a defined area within the Site (*Phase II Supplemental Investigation: Engineering Investigations and Evaluations at Inactive Hazardous Waste Sites*, Engineering Science, 1989). This material was excavated from the southern end of the area that later became known as Love Canal. Landfill records indicate that the 1,600 cubic yards of excavated materials were placed into a 30-foot wide by 100-foot long by 27-foot deep trench at the northeast end of the Site. The trench was excavated into the underlying clay and then covered with excavated soil.

2.1.3 Landfill Observations (1983)

Documentation of Site visits conducted by the Niagara County Department of Health (NCDOH) on June 11, 1981, and June 19, 1981, reported observations of municipal waste(s) readily visible at the ground surface without the need for equipment to remove any soil cover. Additionally, the NCDOH report stated that there was evidence of recent post-operational informal dumping of household wastes at the Site.

A United States Environmental Protection Agency (USEPA) *Potential Hazardous Waste Site – Site Inspection Report*, dated April 28, 1983, detailed similar observations and conditions as the NCDOH report.

2.1.4 Phase I and Phase II Reports (1983 to 1989)

The NYSDEC completed a Phase I Investigation (historical records review and Site walk over) of the Site in 1983, a Phase II Investigation (on-site data collection) in 1985, and an expanded Phase II Investigation in 1989. The investigations included the collection of surface water, sediment, subsurface soil, and groundwater samples. Fourteen (14) groundwater monitoring wells were installed during these investigations (Figure 2-4).

In association with these investigations, the New York State Department of Health (NYSDOH) completed surface soil sampling in 1991 to evaluate potential exposure risks. At that time, it was determined by NYSDEC and NYSDOH that the Site did not pose a significant threat to public health or the environment because the exposure was limited; the wastes were buried, contained, or sufficiently



covered to avoid significant exposure. Groundwater as a potential exposure path was also limited because the area was served by public water and the closest private well was approximately one mile away. As a result, the Site was designated as Class 3 (action can be deferred) in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (Registry).

2.1.5 2013 and 2014 Site Characterization Investigation

NYSDEC continuously monitors and evaluates sites on the Registry of Inactive Hazardous Waste Sites. In 2013, as part of these efforts the NYSDEC completed a Site Characterization Study to re-evaluate the Class 3 NYSDEC Registry designation for the Site, to confirm the location of the wastes from the LaSalle Expressway project (see Section 2.1.2), and to re-evaluate the potential for direct contact exposures. The Site Characterization was heavily focused on the eastern portion of the Site where the wastes associated with the construction of the LaSalle Expressway were placed (Figure 2-5).

In 2014, the NYSDEC conducted a Supplemental Site Characterization Study to characterize the municipal and industrial waste in the remainder of the landfill (Figure 2-6). While the majority of the Site contained contaminant concentrations typical of non-hazardous municipal/industrial waste, two locations (SB-R and SB-U) were identified that contained hazardous concentrations of Lead (5.0 milligrams per liter [mg/l]) as per 40 CFR Part 261 Subpart C for toxicity. One location (SB-N) exceeded its 6 NYCRR Part 375 commercial soil cleanup objective (CSCO) of 1 mg/kg for polychlorinated biphenyls (PCBs). Several surface soil samples exceeded 6 NYCRR Part 375 residential SCOs (RSCOs) for polycyclic aromatic hydrocarbons (PAHs) and Metals. Groundwater within the footprint of the landfill contained elevated concentrations of Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Pesticides, and Metals that exceeded Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Groundwater.

2.1.6 2014 to 2015 IRM

Under a Consent Order, which was negotiated with NYSDEC, Glenn Spring Holdings, an affiliate of the Occidental Chemical Corporation, completed an Interim Remedial Measure (IRM) to characterize and remove wastes.

The historical records indicate that the NYSDOT disposed of approximately 1,600 cubic yards of material excavated during the construction of the LaSalle Expressway. The waste was removed from the southern portion of the area that eventually became known as the Love Canal Landfill (Figure 2-7). The records indicated that the 1,600 cubic yards of this excavated materials were placed into a 30-foot wide by 100-foot long by 27-foot deep trench at the northeast end of the Site. The trench was excavated into the underlying clay and then covered with excavated soil.

Glenn Spring Holdings' IRM included approximately 601 linear feet of sub-surface sheet pile cut-off walls. The individual sheet piling sections were constructed of steel and measured 2.25 feet in width and 23 feet in length. The sheet piling was installed to a depth of approximately 20 feet below ground surface (bgs) into the native clay to slow the influx of groundwater into the excavation area. Due to worker safety-related concerns associated with the winter weather conditions and the need to prevent precipitation from increasing the moisture content of the soil for transport and incineration, a temporary structure was constructed over the IRM area. The IRM area soil and wastes were excavated from the Site during the Fall/Winter of 2014 and the Winter/Spring of 2015, and transported out of state for incineration (Figure 2-7). After the IRM excavation was complete the temporary structure and sheet



piles were removed from the Site, and the excavation was back-filled with clean (as per DER-10) soil and the ground surface was restored with a vegetative cover.



3.0 SITE INVESTIGATION PROGRAM

3.1 Scope of Work

This Remedial Investigation (RI) was undertaken to determine the physical extents and chemical characteristics of soils and wastes at the Site in order to develop a data set sufficient to evaluate the mobility and transport mechanisms of the contamination, perform a qualitative exposure assessment and evaluate the extent to which site contaminants pose a risk to human health or the environment. The following sections detail the approach and rationale for the work elements conducted during the RI. The RI field sampling, work zone air monitoring, and equipment decontamination were conducted in accordance with the methods and protocols described in the Site Work Plans and the Site Health and Safety Plan (LiRo, 2017).

The RI was performed in four (4) primary phases:

- 1) A review of previous investigations,
- 2) An on-site Preliminary Remedial Investigation;
- 3) A supplemental off-site surface soil investigation; and,
- 4) An on-site Phase II Remedial Investigation.

To determine on-site soil boring, monitoring well, piezometer, staff gauge, and test pit locations, LiRo completed a review of existing Site analytical data, conducted Site reconnaissance, and completed preliminary investigations. The reconnaissance work included a Site walk-through with the Town of Wheatfield Supervisor and NYSDEC personnel. Several follow-up reconnaissance visits were conducted either by LiRo or in concert with the NYSDEC to evaluate specific sample point locations and potential sampling constraints posed by Site conditions. Based on discussions with the NYSDEC and a review of previous reports, LiRo developed surface soil sample, monitoring well, piezometer, staff gauge, and test pit locations based on field observations (e.g., locations of waste piles, distribution of existing monitoring wells, boundaries of wetlands and intermittent overland and surface-water flow).

The sample locations are shown on Figures 3-1 through Figure 3-6 and Table 2-2 summarizes the RI sample identification numbers, sample dates, sample media (i.e. surface soil, subsurface soil, groundwater, etc.) and analysis performed.

A full summary of Preliminary Remedial Investigation (PRI) and Phase II Remedial Investigation (P2RI) investigation activities and sampling results have been combined in this comprehensive RI Report (RIR).

All sampling and analysis were conducted as detailed in the FSP.

3.2 Preliminary Remedial Investigation and Supplemental Off-Site Investigation

In early 2017, LiRo conducted a PRI to supplement surface soil, sediment and surface water sampling data collected in 2013 and 2014, and to collect surface soil data from residential and commercial properties immediately adjacent to the Site.

Details of the PRI investigation activities are provided in the sections below.



3.2.1 Surface Water and Sediment Sampling

LiRo collected four (4) on-site surface water grab samples (LSW-01 through LSW-04) and nine (9) sediment samples from six locations (LSED-01 through LSED-06) for analysis of Target Analyte List (TAL) Metals, Target Compound List (TCL) PCBs, SVOCs, and Pesticides in surface water bodies on and adjacent to the Site to evaluate environmental impacts related to the Site (see Figure 3-1). Surface water samples LSW-01 through LSW-04 were collected in the same locations as sediment samples LSED-01 through LSED-04, respectively.

3.2.2 On-Site Surface Soil Sampling

LiRo collected 37 (excluding duplicates) on-site surface soil grab samples from 22 locations (LSS-001 through LSS-022) for analysis of TAL Metals, TCL PCBs, SVOCs, and Pesticides from throughout the Site to supplement existing shallow surface soil (i.e. 0 to 2 inches bgs) and near surface (i.e. 2 to 12 inches bgs) soil sampling data (see Figure 3-2).

Twelve supplemental surface soil samples and near surface soil samples (including duplicates) were collected from five locations (i.e. NS-North, NS-South, NS-East, NS-West and SB-NR) in the vicinity of previous soil sampling location SB-N (Figure 3-2).

3.2.3 Off-Site Surface Soil Sampling

LiRo collected 26 (including duplicates) off-site (i.e., residential and commercial) shallow surface soil samples from 24 locations (i.e. RSS sample locations) and submitted for analysis of TAL Metals, TCL PCBs, SVOCs, and Pesticides from residential and commercial properties immediately adjacent to the Site (see Figure 3-3).

3.2.4 Sampling Location GPS Coordinates

Global Positioning System (GPS) coordinates for all of LiRo's PRI and subsequent sediment and surface soil locations were obtained using a Trimble® GeoExplorer 2005 series GeoXTTM handheld GPS unit (GeoXT) for the preparation of Site maps.

3.3 Phase II Remedial Investigations

Between June and November 2017, LiRo conducted a P2RI to supplement PRI surface soil and subsurface soil data and collect groundwater samples from Site wells. The P2RI focused on on-site subsurface locations along the perimeter of the Site and groundwater. A summary of P2RI activities is provided below.

3.3.1 Soil Boring Installations

LiRo completed three (3) soil borings (LSB-01 to LSB-03) on the Site between July 27 and September 14, 2017. The three (3) soil borings were completed to supplement Site soil stratigraphy. The soil boring locations are shown in Figure 3-4.

Drilling services were provided by SJB/Empire Geo Services, Inc. (SJB) using an ATV mounted drill rig. Soil borings were advanced using 4 1/4" augers and sampled using 2" diameter split spoons. Soil samples were screened using a photo-ionization detector (PID) and then classified in the field by LiRo's Geologist. Soil boring logs are shown in Attachment 1.



3.3.2 Monitoring Wells/Piezometer Installation

LiRo installed 14 monitoring wells/piezometers (LPZ-01S through LPZ-13S and OW-14BR) on the Site between July 25 and September 14, 2017. One (1) replacement well (OW-14BR) and one (1) Piezometer (LPZ-13S) were installed as replacement for OW-14B and OW-08, respectively. Monitoring wells OW-14B and OW-08 were replaced due to well failure from frost action/heaving on well surface completions. The 12 remaining piezometers (LPZ-01S to LPZ-12S) were installed to supplement the existing monitoring well network. Monitoring well and piezometer locations are shown in Figure 3-4.

Drilling services were provided by SJB using an ATV mounted drill rig. Monitoring wells were advanced using 4 1/4" augers and sampled using 2" diameter split spoons. Soil samples were screened using a PID and then classified in the field by LiRo's Geologists. Monitoring well and piezometer soil boring logs are provided in Attachment 1 and well construction diagrams are presented in Attachment 2.

Once the target depth for each well/piezometer was encountered, LiRo's Geologist instructed the drilling crew to install the piezometers and monitoring wells. All monitoring wells and piezometers were constructed using 2-inch inner diameter, schedule 40 polyvinyl chloride (PVC) risers and screens. The wells were installed with filter packs, bentonite seals and finished to grade with grout and locking steel protective casing.

3.3.3 Hand Drilled Piezometer Installation

LiRo installed four hand drilled piezometers (LDP-01 to LDP-04) on the subject Site on September 24 and September 25, 2017. Three hand drilled wells (LDP-01 to LDP-03) were located within the brine/gas line right-of-way, along the southern property boundary of the Site. National Fuel Gas and brine line operators did not allow rig mounted drilling within the right-of-way and consequently hand-drilling methods were used. Hand drilled piezometer LDP-04 was installed in the northwest corner of the Site due to the inability of the drill rig to access that location due to the high topographic relief in that area of the Site. The hand drilled piezometer locations are shown in Figure 3-4.

Piezometers were advanced by one of LiRo's technicians using a 4" diameter hand auger. Soil samples were screened using a PID and then classified in the field by one (1) of LiRo's Geologists. Composite soil samples were collected from borehole soil and the piezometers were installed once the target depth was encountered. Hand drilled piezometers were constructed using 1" schedule 40 PVC risers and screens, the wells were installed with filter packs, bentonite seals, and finished to grade with concrete pads and locking steel protective casings. Hand drilled piezometer soil boring logs are provided in Attachment 1 and well construction diagrams are presented in Attachment 2.

3.3.4 Staff Gauges

Two (2) staff gauges (i.e., SG-01 and SG-02) were installed at the Site during the 2017 RI to provide on-site surface water elevation data correlated with groundwater elevation measurements. The staff gauges were constructed using 5-foot long, 3-inch inner diameter Schedule 40 PVC casings mounted on a steel post driven approximately 2-feet into surface water sediments. The bottom of each casing is set approximately 0.25-feet above sediment/grade surface. PVC well caps are attached to the top of each casing using a lockable thru-bolt. SG-01 is located within the north swale/ditch located along the northeast boundary of the Site and SG-02 is located within the IRM constructed wetland and pond in



the northeast quadrant of the Site (see Figure 3-5). The top of each staff gauge casing was surveyed for measuring point elevation and the sediment surface immediately below each staff gauge was surveyed for ground/grade elevation and location.

3.3.5 Test Pits

LiRo completed 18 test pits (TP-01 through TP-18) on the subject Site between July 19 and July 21, 2017. The test pit locations are shown in Figure 3-6. Sixteen composite soil samples (including duplicates) were collected from 13 test pit locations (TP-01, TP-03, TP-04, TP-05, TP-07, TP-09, TP-11, TP-12, TP-13, TP-15, TP-16, TP-17 and TP-18) and submitted for analysis of TAL Metals, TCL PCBs, SVOCs, and Pesticides.

Test pits TP-01 through TP-15 were completed with the objective of determining the presence of municipal wastes along the south boundary of the landfill area of the Site. Test pits TP-16 and TP-17 were completed with the objective of determining the presence of municipal wastes along the north boundary of the landfill area of the Site. Test pit TP-18 was completed with the objective of determining the presence of municipal wastes along the west boundary of the landfill area of the Site. Test pits were not completed within delineated wetland areas in compliance with the US Army Corps of Engineers (USACE) Wetlands Permit (National Wetland Permit #38) obtained for the IRM excavation.

Excavation services were provided by SJB using a backhoe loader. Soils were screened using a PID and then classified in the field by LiRo's Geologists. Test pit soil logs are presented in Attachment 3.

3.3.6 Fence Post Soil Cuttings

LiRo reviewed and logged soil cuttings from posts completed along the perimeter of the Site during Site perimeter fence installation to supplement delineation of the extents of municipal wastes along the Site boundary. Fence post soil/cutting locations are shown on Figure 3-7 and logs are provided in Attachment 4.

3.3.7 Hand Drilled Soil Borings

LiRo completed and logged soil cuttings from hand drilled soil borings completed along the perimeter of the Site in areas where test pits or well drilling could not be completed due to subsurface utilities. Hand drilled soil borings were completed after Site perimeter fence installation. Soils were screened using a PID and then classified in the field by LiRo's Geologists. Hand boring locations are shown on Figure 3-8 and logs are provided in Attachment 4.

3.3.8 Site Precipitation, Surface Water Elevation and Groundwater Elevation Data

An average of the total precipitation (in inches of water) reported by the National Oceanic and Atmospheric Administration (NOAA) for the Buffalo/Niagara International Airport and the Niagara Falls International Airport was used as a proxy for on-site precipitation amounts for comparison to surface water and groundwater elevation data. All precipitation, surface water and groundwater elevation data have been tabulated and are provided in Attachment 5. Charts of surface water and groundwater elevations for each individual location are plotted with precipitation data for comparison and analysis and are provided in Attachment 5.



3.3.9 Sampling and Analysis

Soil and groundwater samples were collected into laboratory supplied, pre-cleaned sample jars and labeled with a unique sample identification code, packed in a cooler with ice, and transported by LiRo field staff under chain-of-custody control to Test America Laboratories, Inc. (Test America) of Amherst, New York.

Soil and groundwater samples were analyzed for TCL VOCs using USEPA Method 8260C, TCL SVOCs using Method 8270D, TCL PCBs using Method 8082A, TCL Pesticides/Herbicides using Method 8081B and TAL Metals (recoverable and dissolved) using Method 6010C and 7470A.

During the investigation, a supplemental surface water sample was collected from the drainage ditch on the north border of the property at the direction of NYSDEC for comparison with groundwater data. The ditch surface water sample was analyzed for Anions using Method 300.00 and Alkalinity using Method 2320B.

Laboratory analytical reports and data are presented in Attachment 6. All analyses were performed by a NYSDOH ELAP accredited laboratory.

Data Usability Summary Reports (DUSRs) were prepared in general compliance with NYSDEC Analytical Services Protocols and USEPA National Functional Guidelines. The 2017 RI laboratory data were found to be usable as qualified. The DUSRs are provided electronically in Attachment 7.

3.3.10 Surveying and Mapping

Soil borings, monitoring wells, test pits, and staff gauges were surveyed for horizontal and vertical location to the North American Vertical Datum of 1988 (NAVD 88) to an accuracy of ± 0.01 foot and State Plane West Zone (feet), North American Datum (NAD) of 1983 to an accuracy of ± 0.25 foot by a NYS licensed surveyor from KHEOPS Architecture, Engineering and Survey DPC.

GPS coordinates for all of LiRo's P2RI sediment and surface soil locations were obtained using a GeoXT handheld GPS unit for preparation of Site maps.

3.3.11 Standards, Criteria, and Guidance Values

Standards, Criteria, and Guidance (SCGs) are cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, or location. Guidance values include non-promulgated criteria and guidelines that are not legal requirements but should be considered if determined to be applicable to the Site.

Analytical data for sediment, surface soil and subsurface soil samples have been compared to chemical-specific SCGs based on 6 NYCRR Part 375 soil cleanup objectives (SCOs) for residential (off-site) and commercial (on-site) use. Analytical data for samples collected from piezometers, groundwater monitoring wells and surface water have been compared with Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (AWQSGVs).



4.0 TOPOGRAPHY, GEOLOGY, AND HYDROGEOLOGY

The property is vacant, undeveloped, and overgrown with mature trees, dense brush, and patches of phragmites. The Site is poorly drained and contains delineated wetlands along the perimeters of the western, northern, and eastern portions of the property. The Town of Wheatfield installed a 6-foot tall perimeter fence with locking gates encompassing the majority of the landfill area of the Site in December 2017. Prior to that time, based on the walking paths and trails, it appears that it was used by nearby residents for hiking and off-road vehicles. Two areas of the Site, which includes the gas/brine line southern right-of-way and a small area in the northeast corner of the Site (due to high topographic relief and the presence of the northern swale/ditch) were not fenced. Access to the fenced areas of the Site is restricted except for personnel authorized by the Town of Wheatfield.

4.1 Site Topography

Historic landfilling activities have resulted in an irregular ground surface topography at the Site (see Figure 2-3). Numerous soil/debris mounds predominate in the western 2/3^{rds} of the Site but can be observed throughout the Site, with waste protruding to ground surface at most mounded locations. During a Site reconnaissance completed for the 2013 NYSDEC Site Characterization Study and during the 2017 RI, evidence of residential/municipal waste, either partially buried or lying directly on the ground surface was observed in discrete areas across the Site. Identifiable municipal wastes found at the surface typically include used/discarded clothing, shoes, children's toys, sports equipment, household appliances, containers for residential cleaning supplies, food containers, dishes, glassware, silverware, tires, and battery casings along with generally unidentifiable metal, glass, rubber, and plastic debris. There is also evidence of industrial wastes at the Site (i.e., empty steel drums and 2-inch diameter core samples of industrial materials [i.e. carbon]) mixed within the predominating residential/municipal waste.

4.2 Site Geology and Hydrogeology

As described in the Supplemental Site Characterization Report completed by Groundwater & Environmental Services, Inc. (GES) in 2013, other previous reports, and verified by this investigation, there are seven distinct stratigraphic units found within five water-bearing zones underlying the Site, which are summarized as follows:

1) Fill/Upper Sand Water-Bearing Zone

The Fill/Upper Sand Water-Bearing Zone is comprised of the following distinct stratigraphic units, which are understood to be intermingled and act as a single water-bearing unit across the Site:

Fill: general refuse (glass, plastic, cloth, etc.) mixed with native fine sand and clay that ranges in thickness from 0 to 16 feet;

Upper Sand: An upper gray sand lens that ranges in thickness from 0 to 8 feet;

2) Upper Clay Aquitard

The Upper Clay Aquitard is comprised of both of the following distinct stratigraphic units across the Site:

Gray/Brown Clay: A silty brown lacustrine clay that ranges in thickness from 3 to 7 feet;



Red/Gray Clay: a layered red lacustrine clay containing thin sand seams. This deposit ranges in thickness from 17 to 32 feet;

The gray-brown silty clay deposit and underlying red/gray layered clay act as an aquitard, preventing the downward migration of groundwater and contaminants from the fill/upper sand to lower water-bearing units.

3) Lower Sand Water-Bearing Zone

The Lower Sand Water-bearing Zone is a lower red/brown sand lens that ranges in thickness from 1 to 6 feet. This deposit is thickest in the northern portion of the Site, and thins to the south, east, and west;

4) Till Aquitard

The Till Aquitard is a very dense pink glacial till that ranges in thickness from 22 to 42 feet; and,

5) Bedrock Water-Bearing Zone

Bedrock at the Site is primarily a dolomitic limestone (Dolostone) bedrock at depths ranging from 65 to 71 feet bgs.

LiRo prepared geologic cross-sections utilizing historic data and 2017 RI soil boring logs. A map of cross-section locations is shown in Figure 4-1 and individual cross-sections are shown in Figures 4-2 through 4-5.

LiRo's cross-sections are similar to cross-sections provided in the July 1985 *Phase II Investigation* (Engineering Science and Dames & Moore [ES], 1985) that show the lower sand layer to be present at monitoring wells OW-1B, OW-6, and OW-3.

The soil boring log for OW-3 reports a medium to fine grained sand lens at 26.2 feet bgs, which is assumed to be a continuation of the lower sand layer at this location. Review of the boring logs for OW-1B and OW-6 show that the lower sand layer was not observed, but likely missed, due to the large sampling intervals utilized at the depths the lower sand would be expected to be found. In the deep monitoring wells, five (5) foot sampling intervals were used after 20 feet bgs and consequently it is possible that the lower sand layer was bypassed and not recovered in samples.

4.2.1 Delineation of Horizontal Extent of Municipal Wastes

A review of soil boring logs, test pit logs, hand drilled soil borings and fence post cuttings logs along the perimeter of the landfill indicates that the municipal wastes are primarily located within the Site property boundary (see Figures 4-6 and 4-7 and Attachments 1, 3 and 4). In general, wastes that were observed in the Test Pits, were near the surface (i.e. less than 1-foot bgs) and appeared to be recently discarded. Exceptions were noted in test pits TP-07, TP-10 through TP-12, TP-14 and TP-18. During the on-site fence installation, fence post logs documented various amounts of municipal wastes at or near the surface. Supplemental hand drilled soil borings completed in areas where test pits could not be completed due to subsurface utilities determined the limits of municipal waste in the vicinity of LPZ-06S, LPZ-12S, TP-12 and TP-18. Detailed maps of the estimated limits of municipal wastes in the West and East halves of the landfill/study area are provided in Figures 4-6 and 4-7.



4.3 Site Hydrogeology

There are 38 active piezometers and monitoring wells and two staff gauges installed at the Site to monitor groundwater and surface water elevations and provide locations for the collection of water samples for laboratory analysis (Table 4-1). The surface completions and well casings at two previously installed monitoring wells (OW-13 and OW-14B) were found to be heaved/damaged due to frost action and were no longer considered accurate for groundwater and hydrogeological data collected. During the 2017 RI, monitoring well OW-13 was replaced by LPZ-08S and monitoring well OW-14B was replaced by OW-14BR.

Recent and historical groundwater and surface water levels and elevations are summarized in Tables 4-2a to 4-2f. Graphs of average total precipitation (in inches of water) and recent water elevations for staff gauges, piezometers and monitoring wells are provided in Attachment 5. The graph of the average total precipitation (in inches of water) utilizes data reported by the National Oceanic and Atmospheric Administration (NOAA) for the Buffalo/Niagara International Airport and the Niagara Falls International Airport. The average precipitation data are used as a proxy for on-site precipitation amounts for comparison to and analysis with groundwater levels.

4.3.1 Surface Water, Groundwater Bearing Zones, and Aquitards

Surface Water

Site monitored surface water elevations ranged between highs of 575.33 feet above mean sea level (AMSL) (SG-01) and 575.35 feet AMSL (SG-02) to lows of 574.12 feet AMSL (SG-01) and 573.53 feet AMSL (SG-02).

During a significant (i.e., >1.0 inches of precipitation within 24 hours) rain event LiRo observed surface overland flow and channel flow in the eastern portion of the Site, which terminated at the northeast swale/ditch without an apparent surface flow outlet (Figure 2-3). Flow from the off-site property north of the Site is channeled southward into shallow drainage swales and small (i.e. <4") buried drain/pipe lines that discharge directly into the northeast swale/ditch. Flow from the neighboring pond east of the Site was carried by a buried 8-inch diameter pipe directly into the northeast corner of the Site's northeast swale/ditch. Flow from the south followed a shallow off-site ditch east of the Site property boundary that feeds directly into the northeast swale/ditch. On-site overland flow in the east portion of the Site is generally into the Site pond in the northeast wetland which is subsequently channeled northward into the northeast swale/ditch. There was no surface water/flow outlet observed for the northeast swale/ditch and it is believed that all impounded water is lost by either evapotranspiration or infiltration into the subsurface as groundwater.

Fill/Upper Sand Water-Bearing Zone

Four 2017 RI hand-drilled piezometers (LDP-01 through LDP-04), fourteen 2017 RI piezometers (LPZ-01S through LPZ-13S and OW-14BR), and 13 previously installed active monitoring wells (OW-01, OW-13, OW-16, OW-21, OW-22, OW-23, and OW-31 through OW-37) are screened within the Fill/Upper Sand water bearing zone (see Table 4-1).

Hand-drilled piezometers LDP-01 through LDP-03 were located within the south gas-line and brine-line right-of-way and LPD-04 is located in the northwest corner of the landfill. All LDP piezometers are constructed within the fill/upper sand water bearing-zone.



Upper Clay Aquitard

One previously installed monitoring well (OW-02) is screened within the Upper Clay aquitard.

Lower Sand Water Bearing Zones

Two previously installed monitoring wells (OW-14A and OW-15) are screened within the Lower Sand water-bearing Zone.

Till Aquitard and Bedrock Water Bearing Zone

Five previously installed monitoring wells (OW-01B, OW-03, OW-04, OW-05, and OW-06) were reportedly screened in the Till aquitard. Bedrock monitoring wells were reportedly not installed at the Site; however, recharge and field parameter observations recorded during monitoring well redevelopment and purging suggest that monitoring wells OW-05 and OW-06 are hydraulically connected to bedrock groundwater.

The OW-05 well development logs from August 10, 2017, reported the extraction of 47-gallons of groundwater over a period of 62 minutes at an approximate rate of 0.75 gallons per minute (gpm). During re-development, the maximum drawdown in groundwater elevation was 9.46 feet, out of an available 56.48 feet of water column prior to pumping. The 47-gallons removed was greater than 4.5x the calculated well volume. Additionally, the water was noted to have a Sulfur odor which is a typical characteristic of groundwater pumped from local bedrock (i.e., Dolomite/Limestone) due to the presence and dissolution of Sulfur containing minerals e.g. Pyrite (Iron Sulfide: FeS) and Sphalerite (Iron/Zinc Sulfide: Fe/ZnS) in the bedrock.

Similar to OW-05, monitoring well OW-06 produced 50 gallons (i.e., 5.70x the initial well volume) over 93 minutes at an approximate rate of 0.53 gpm with minimal drawdown noted.

Monitoring wells OW-1B, OW-03, and OW-04 were reported to be screened within the Till and are not hydraulically connected to bedrock groundwater based on well development observations. These wells went dry repeatedly during their re-developments, typically after the removal of only one (1) well volume. At each of these locations, it was necessary to conduct re-development over a number of days due to poor recharge and in order to achieve acceptable field parameter results. However, the turbidity at OW-04 did not sustain readings below 800 Nephelometric Turbidity Units (NTUs) even after the removal of a total of 67.5 gallons over six separate days of purging events.

4.3.2 Groundwater Elevations and Flow Directions

A groundwater elevation contour map generated from the September 25, 2017, data is provided in Figure 4-8. As depicted in Figure 4-8, the overall groundwater flow direction is generally from hydraulic highs in the center of the Site toward the south and east with typical horizontal hydraulic gradients ranging between 0.003 and 0.005 foot per foot (ft/ft). The groundwater elevation conditions as depicted in Figure 4-8 are understood to represent the predominant groundwater flow patterns in the fill/upper sand water-bearing zone at the Site.

During the RI groundwater elevations in the fill/upper sand water-bearing zone were observed to fluctuate in direct response to significant (i.e. >1.0-inch within 24-hours) precipitation events. The September 25, 2017, elevation measurements were recorded at the end of an approximate 2-week long dry period with little to no precipitation (see charts in Attachment 5).



However, subsequent water level measurements collected on October 17, 2017, after a significant precipitation event, show that the flow directions in the fill/upper sand water bearing zone reversed from southward to northward, along the southern boundary of the Site. A groundwater elevation contour map generated from the October 17, 2017, water level data is presented in Figure 4-9.

A map plotting the differential elevation data between September 25, 2017, and October 17, 2017, was generated and is shown in Figure 4-10. The greatest elevation changes were generally observed along the southern and northern boundaries of the Site. All Site fill/upper sand monitoring wells and piezometers reported a positive net change in groundwater elevation, which ranged between 0.24 feet (LPZ-09S) and 3.05 feet (LDP-02). Estimated hydraulic gradients were on the order of 0.002 ft/ft during the flow reversal. The duration of this reversed flow condition is unknown; however, the observed average rate of groundwater elevation decline in piezometers along the south boundary (i.e. LDP-01, LDP-02, LDP-3 and LPZ-03S through LPZ-07S) between October 17, 2017, and October 27, 2017, was 0.04 feet per day.



5.0 ANALYTICAL RESULTS

Laboratory analysis was performed by Test America at Hazelwood Drive #106, Amherst, New York, a NYSDOH Environmental Laboratory Approval Program (ELAP) Certified laboratory (No. 10026).

The following analytical methods (USEPA methods) were used for analysis of the RI samples:

- VOCs SW-846-8260C
- SVOCs SW-846-8270D
- PCBs SW-846-8082A
- Pesticides SW-846-8081B
- Metals SW-846-6010 and 7174B (Mercury)
- Anions 300.0, Ion Chromatography
- Alkalinity SM 2320B

Contamination and cross-contamination from field sampling were minimized to the extent possible by the use of disposable or dedicated equipment for the collection of soil, groundwater, sediment and surface water samples. Standard chain-of-custody (COC) procedures were utilized to track the possession of all samples from the time of collection to delivery/receipt at the analytical laboratory. LiRo provided same-day courier service directly to the lab from the Site with no third-party shipping required. All analyses were performed using the standard preservation procedures and required holding times.

Field duplicate samples and Matrix Spike (MS)/Matrix Spike Duplicate (MSD) samples were collected at a frequency of one (1) each for every 20 investigative samples collected.

The following subsections present a discussion of the analytical results for each media sampled. Laboratory analytical reports are contained electronically in Attachment 6. The laboratory data was subjected to a third party review by Vali-Data of WNY, LLC (Vali-Data) of West Falls, NY. Data Usability Summary Reports (DUSRs) were prepared in general compliance with NYSDEC Analytical Services Protocols and USEPA National Functional Guidelines. The 2017 RI laboratory data were found to be usable as qualified. The DUSRs are provided electronically in Attachment 7.

Sample summary tables presented in the sections below only include sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

5.1 Surface Water Sample Results

Surface water samples were collected from 17 historical and current RI sampling locations generally in the north and east portions of the Site. Surface water analytical results have been compared to the NYS Ambient Water Quality Standards and Guidance Values (AWQSGVs) found in the Division of Water Technical Operations Guidance Series 1.1.1 (TOGS 1.1.1). Surface water sample locations are shown on Figure 3-1.

5.1.1 Surface Water - Volatile Organic Compounds (VOCs)

There were five surface water samples (SW-1 through SW-5) collected in July 1983 and VOC analytical results were presented in the ES July 1985 *Phase II Investigation Report* (see Attachment 8). There were no VOCs detected above laboratory limits in any of the surface water samples (Figure 5-1A).



There were seven surface water samples (SW-1 through SW-7) collected in May 2013 and VOC analytical results were presented in the GES November 2013 *Site Characterization Report* (see Attachment 8). There were no VOCs detected above laboratory limits in any of the surface water samples (Figure 5-1A).

VOC analysis of surface water samples were not required by the work plan during the 2017 RI due to the absence of previous sample detections.

5.1.2 Surface Water - Semi-Volatile Organic Compounds (SVOCs)

There were seven surface water samples (SW-1 through SW-7) collected in May 2013 and submitted for SVOC analysis. Analytical results were presented in the GES November 2013 *Site Characterization Report*. There were no SVOCs reported above laboratory limits in any of the surface water samples.

There were four RI surface water samples (LSW-01 through LSW-04) collected in March 2017 and submitted for SVOC analysis. There were no SVOCs reported at concentrations above NYSDEC AWQSGVs.

5.1.3 Surface Water - Polychlorinated Biphenyls (PCBs)

There were four RI surface water samples (LSW-01 through LSW-04) collected in March 2017 and submitted for PCB analysis. There were no PCBs detected above laboratory limits in any of the surface water samples.

5.1.4 Surface Water - Pesticides and Herbicides

There were seven surface water samples (SW-1 through SW-7) collected in May 2013 and submitted for Pesticide and Herbicide analysis. Analytical results were presented in the GES November 2013 *Site Characterization Report*. There were no Herbicides detected above laboratory limits in any of the surface water samples. A summary of the May 2013 Pesticide analytical results is presented in Table 5-1. One or more Pesticides were reported at concentrations above AWQSGVs including Alpha-BHC, Beta-BHC, Dieldrin, and Gamma-Chlordane in samples SW-2, SW-3 and SW-5. Figure 5-1B shows the locations where the Pesticides surface water samples were collected and provides concentrations exceeding AWQSGVs.

There were four surface water samples (LSW-01 through LSW-04) collected in March 2017 and submitted for Pesticide analysis. Herbicides analysis of surface water samples were not required by the work plan during the 2017 RI due to the absence of previous sample detections. A summary of the March 2017 Pesticide analytical results is presented in Table 5-2. There were two Pesticides reported above AWQSGVs including Alpha-BHC (LSW-03) and Toxaphene (LSW-02). Figure 5-1B shows the locations where the Pesticides surface water samples were collected and provides concentrations exceeding AWQSGVs.

5.1.5 Surface Water - Metals

There were four surface water samples (LSW-01 through LSW-04) collected in March 2017 and submitted for TAL Metals analysis. A summary of the March 2017 TAL Metals analytical results is presented in Table 5-3. There were two TAL Metals detected at concentrations above AWQSGVs including Aluminum (LSW-01, LSW-02 and LSW-03) and Iron (LSW-01 and LSW-02). Figure 5-2



shows the locations where the TAL Metals in surface water samples were collected and provides concentrations exceeding AWQSGVs.

5.1.6 Surface Water - Other Analysis

There was one surface water sample collected near SG-01 in August 2017 and submitted for Anions and Alkalinity analysis. Chloride, Sulfate and Total Alkalinity were reported at concentrations of 1.9 milligram per liter (mg/L), 6.7 mg/L and 120 mg/L, respectively. Chloride and sulfate concentrations did not exceed the NYSDEC AWQSGVs of 250 mg/L. Total alkalinity does not have a NYSDEC AWQSGV.

5.2 Sediment Sample Results

Sediment samples were collected from 13 sampling locations generally in the north and east portions of the Site. Sediment analytical results have been compared to the NYCRR Part 375 CSCOs to provide comparison for public exposure. Sediment sample locations are shown on Figure 3-1.

5.2.1 Sediment - Volatile Organic Compounds (VOCs)

There were three sediment samples (SD-1 through SD-3) collected in the summer of 1984 and VOC analytical results were presented in the ES July 1985 *Phase II Investigation Report*. There were no VOCs detected above laboratory limits in any of the sediment samples.

VOC analysis of sediment samples were not required by the work plan for the 2017 RI due to the absence of previous sample detections.

5.2.2 Sediment - Semi-Volatile Organic Compounds (SVOCs)

There were three sediment samples (SD-1 through SD-3) collected in the summer of 1984 and SVOC/PAH analytical results were presented in the ES July 1985 *Phase II Investigation Report*. There were no SVOCs/PAHs detected above laboratory limits in any of the sediment samples.

There was one sediment sample (SED-1) collected in May 2013 and SVOC/PAH analytical results were presented in the GES November 2013 *Site Characterization Report*. There were no SVOCs/PAHs reported at concentrations above CSCOs in the sediment sample.

There were nine sediment samples collected from six locations (LSED-01 through LSED-06) in March 2017 and submitted for SVOC analysis. There were no SVOCs reported at concentrations above CSCOs.

5.2.3 Sediment - Polychlorinated Biphenyls (PCBs)

There were nine sediment samples collected from six locations (LSED-01 through LSED-06) in March 2017 and submitted for PCB analysis. There were no PCBs reported at concentrations above CSCOs.

5.2.4 Sediment - Pesticides

There were nine sediment samples collected from six locations (LSED-01 through LSED-06) in March 2017 and submitted for Pesticide analysis. There were no Pesticides reported at concentrations above CSCOs.



5.2.5 Sediment - Metals

There were three sediment samples (SD-1 through SD-3) collected in the summer of 1984 and submitted for a select list of Metals analysis: i.e., Cadmium, Chromium, Copper, Mercury, Lead, Nickel and Zinc. There were no Metals reported at concentrations above CSCOs.

There was one sediment sample (SED-1) collected in May 2013 and submitted for Metals analysis. Metals analytical results were presented in the GES November 2013 *Site Characterization Report*. There were no Metals reported at concentrations above CSCOs in the sediment sample.

There were nine RI sediment samples (LSED-01 through LSED-06) collected in March 2017 and submitted for TAL Metals analysis. There were no Metals reported at concentrations above CSCOs. A summary of the March 2017 TAL Metals analytical results is presented in Table 5-4.

5.3 Surface Soil Sample Results

Sixty-two surface soil samples (including duplicates) were collected from 41 on-site sampling locations and 26 off-site surface soil samples were collected from 24 off-site locations. On-Site surface soil sample analytical results have been compared to the NYCRR Part 375 Commercial SCOs (CSCOs). On-site 2017 RI surface soil sample locations are shown on Figure 3-2. Off-Site RI surface soil sample analytical results have been compared to the NYCRR Part 375 Residential SCOs (RSCOs) and sample locations are shown on Figure 3-3. RI surface soil samples were not submitted for analysis of VOCs.

5.3.1 Surface Soil - Semi-Volatile Organic Compounds (SVOCs)

There were eleven surface soil samples (SOIL-1 through SOIL-11) collected in May 2013 and submitted for analysis of SVOCs/PAHs. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There were two SVOCs/PAHs detected at concentrations above CSCOs including Benzo(a)Pyrene and Dibenzo(a,h)Anthracene. A summary of the May 2013 SVOCs/PAHs analytical results is presented in Table 5-5. Figure 5-3 shows the locations where the SVOC/PAHs surface soil samples were collected and provides concentrations exceeding CSCOs.

There were 37 on-site surface soil samples (LSS-001 through LSS-022) collected from 0 to 2 inches bgs, 2 to 6 inches bgs, 6 to 12 inches bgs and 2 to 12 inches bgs (see Table 2-2) in March/May 2017 and submitted for analysis of SVOCs. There were five SVOCs/PAHs detected at concentrations above CSCOs including Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Dibenzo(a,h)Anthracene, and Indeno(1,2,3-C,D)Pyrene. A summary of the March/May 2017 PAH analytical results is presented in Table 5-6. Figure 5-3A shows the locations where the SVOC surface soil samples were collected and provides concentrations exceeding CSCOs.

There were 26 off-site surface soil samples (i.e. RSS sample locations) collected from 0 to 2 inches bgs in May 2017 and submitted for analysis of SVOCs. There were no SVOCs reported at concentrations above RSCOs.

There were 12 on-site surface soil samples (SB-NR, NS-North, NS-South, NS-East, and NS-West) collected in November 2017 and submitted for analysis of SVOCs. Five SVOCs were reported at concentrations above CSCOs including Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene,



Dibenzo(a,h)Anthracene, and Indeno(1,2,3-C,D)Pyrene. A summary of the November 2017 SVOC analytical results is presented in Table 5-7. Figure 5-3A shows the locations where the SVOC surface soil samples were collected and provides concentrations exceeding CSCOs.

5.3.2 Surface Soil - Polychlorinated Biphenyls (PCBs)

There were 37 on-site surface soil samples (LSS-001 through LSS-022) collected in March/May 2017 and submitted for analysis of PCBs. There were no PCBs reported at concentrations above CSCOs.

There were 26 off-site surface soil samples (i.e. RSS sample locations) collected in May 2017 and submitted for analysis of PCBs. There were no PCBs reported at concentrations above RSCOs.

There were 12 on-site surface soil samples (SB-NR, NS-North, NS-South, NS-East, and NS-West) collected in November 2017 and submitted for analysis of PCBs. There were no PCBs reported at concentrations above CSCOs.

5.3.3 Surface Soil - Pesticides

There were 37 on-site surface soil samples (LSS-001 through LSS-022) collected in March/May 2017 and submitted for analysis of Pesticides. There were no Pesticides reported at concentrations above CSCOs.

There were 26 off-site surface soil samples (i.e. RSS sample locations) collected in May 2017 and submitted for analysis of Pesticides. There were no Pesticides detected at concentrations above RSCOs.

5.3.4 Surface Soil - Metals

There were 11 surface-soil samples (SOIL-1 through SOIL-11) collected in May 2013 and submitted for RCRA 8 Metals analysis. Metals analytical results were presented in the GES November 2013 *Site Characterization Report*. There were no Metals reported at concentrations above CSCOs.

There were 37 on-site surface-soil samples (LSS-001 through LSS-022) collected in March/May 2017 and submitted for TAL Metals analysis. There were six TAL Metals reported at concentrations above CSCOs including Arsenic, Barium, Cadmium, Copper, Lead, and Mercury. A summary of the March/May 2017 TAL Metals analytical results is presented in Table 5-8. Figure 5-4 shows the locations where the TAL Metals surface-soil samples were collected and provides concentrations exceeding CSCOs.

There were 26 off-site surface-soil samples (i.e. RSS sample locations) collected in March 2017 and submitted for TAL Metals analysis. There was one TAL Metal (Mercury [Hg]) reported at a concentration (1.5 mg/kg) above its RSCO of 0.81 mg/kg. A summary of the March off-site 2017 TAL Metals analytical results is presented in Table 5-9. Figure 5-4 shows the locations where the TAL Metals surface-soil samples were collected and provides concentrations exceeding RSCOs.

5.4 Subsurface Soil Sample Results

Eighty-two subsurface soil samples were collected from 71 soil boring or test pit locations across the Site. Subsurface soil sample analytical results have been compared to the NYSDEC Part 375 CSCOs. Subsurface soil sample locations are shown on Figure 3-4 (soil borings) and Figure 3-6 (test pits).

It should be noted that the soils at several subsurface soil sampling locations (i.e., SB-B, SB-H, SB-J, SB-L, and SB-M) were completely removed by excavation during the June 2014 to 2015 IRM as reported in



the GSH *January 2016 IRM Project Summary Report* (see Attachment 8). Since this material is no longer present on site and does not represent current conditions at those locations, the sample analytical results from these locations are not included in the summary Table results nor are they included on Figures.

5.4.1 Subsurface Soil - Volatile Organic Compounds (VOCs)

There were five subsurface soil samples collected between July 1981 and June 1982 and submitted for Total Halogenated Organics (THO) analysis. Halogenated compounds include organic compounds with Chlorine, Fluorine, Bromine and/or Iodine. THO analytical results were presented in the ES June 1983 *Phase I Investigation Report*. There were only Tentatively Identified Compounds (TICs) detected above laboratory limits.

There were 15 subsurface soil samples collected in June 2013 and submitted for analysis of VOCs. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There were no VOCs reported at concentrations above CSCOs.

There were 27 subsurface soil samples collected in April 2014 and submitted for analysis of VOCs. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. There were no VOCs detected at concentrations above CSCOs.

There were 21 excavation end-point subsurface soil samples collected between February and June 2015 and submitted for analysis of VOCs. End-point samples were collected and analyzed to determine the complete removal of contaminated soils. Analytical results were presented in the GSH January 2016 *IRM Project Summary Report*. There were no VOCs detected at concentrations above CSCOs in final end-point samples.

There were 16 subsurface soil samples (TP-01 through TP-05, TP-07, TP-09, TP-11, TP-12, TP-13 and TP-15 through TP-18) collected in July 2017 and submitted for analysis of VOCs. There were no VOCs detected at concentrations above CSCOs.

5.4.2 Subsurface Soil – Semi-Volatile Organic Compounds (SVOCs)

There were fifteen subsurface soil samples (SB-A, SB-B, and SB-D through SB-M) collected in June 2013 and submitted for analysis of SVOCs. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There was one SVOCs detected at a concentration above its CSCO in one sample (SB-A: 4 to 12 feet bgs): Benzo(a)Pyrene. A summary of the June 2013 SVOC analytical results is presented in Table 5-10. Figure 5-5 shows the location where the SVOC subsurface soil sample was collected and provides the concentration exceeding the CSCO.

There were 27 subsurface soil samples (SB-N through SB-Z, SB-AA through SB-CC, and SB-FF through SB-KK) collected in April 2014 and submitted for analysis of SVOCs. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. There were one or more SVOCs detected at concentrations above CSCOs in four samples (SB-N: 0 to 2 feet bgs; SB-U: 0 to 4 feet bgs; SB-V: 0 to 4 feet bgs and SB-W: 0 to 4 feet bgs) including Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Dibenzo(a,h)Anthracene, and Indeno(1,2,3-C,D)Pyrene. A summary of the June 2013 SVOC analytical results is presented in Table 5-11. Figure 5-5 shows the locations where the SVOC subsurface soil samples were collected and provides concentrations exceeding CSCOs.



There were 16 subsurface soil samples (TP-01 through TP-05, TP-07, TP-09, TP-11, TP-12, TP-13 and TP-15 through TP-18) collected in July 2017 and submitted for analysis of SVOCs. There was one SVOC (Benzo[a]Pyrene) detected at a concentration above its CSCO in one sample (TP-12: 1 to 6 feet bgs). A summary of the July 2017 SVOC analytical results is presented in Table 5-12. Figure 5-5 shows the locations where the SVOC subsurface soil samples were collected and provides concentrations exceeding CSCOs.

5.4.3 Subsurface Soil – Polychlorinated Biphenyls (PCBs)

There was a single subsurface soil sample (SB-N: 0 to 2 feet bgs) collected in April 2014 and submitted for analysis of PCBs. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. Total PCBs were detected at a concentration (68 mg/kg) above its CSCO (1 mg/kg). A summary of the April 2014 PCB analytical results is presented in Table 5-13. Figure 5-6 shows the location where the SB-N subsurface soil sample was collected and provides the Total PCB concentration.

There were 16 subsurface soil samples (TP-01 through TP-05, TP-07, TP-09, TP-11, TP-12, TP-13 and TP-15 through TP-18) collected in July 2017 and submitted for analysis of PCBs. Total PCBs were detected at a concentration (1.68 mg/kg) above its CSCO (1 mg/kg) at one (1) location (TP-11: 1 to 6 feet bgs). Figure 5-6 shows the locations where the PCB subsurface soil samples were collected and provides concentrations exceeding CSCOs (see Table 5-13).

5.4.4 Subsurface Soil – Pesticides and Herbicides

There were 15 subsurface soil samples (SB-A, SB-B, and SB-D through SB-M) collected in June 2013 and submitted for analysis of Pesticides and Herbicides. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There were no Pesticides reported at concentrations above CSCOs.

There were 27 subsurface soil samples (SB-N through SB-Z, SB-AA through SB-CC, and SB-FF through SB-KK) collected in April 2014 and submitted for analysis of Pesticides and Herbicides. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. There was one (1) Pesticide (Dieldrin) reported at a concentration (2.6 mg/kg) above its CSCO of 1.4 mg/kg (SB-N: 0 to 2 feet bgs). A summary of the April 2014 Pesticide analytical results is presented in Table 5-13. Figure 5-6 shows the locations where the Pesticide subsurface soil samples were collected and provides concentrations exceeding CSCOs. There were no Herbicides reported at concentrations above CSCOs.

There were 21 IRM excavation end-point subsurface soil samples (SM-001 through SM-019) collected between February and June 2015 and submitted for analysis of VOCs and Pesticides. Analytical results were presented in the GSH January 2016 *IRM Project Summary Report*. There were no VOCs or Pesticides detected at concentrations above CSCOs in the final end-point samples.

There were 19 subsurface soil samples (TP-01 through TP-05, TP-07, TP-09, TP-11, TP-12, TP-13 and TP-15 through TP-18) collected in July 2017 and submitted for analysis of Pesticides. There were no Pesticides reported at concentrations above CSCOs.



5.4.5 Subsurface Soil – Metals

There were five subsurface soil samples (SOIL-1 through SOIL-5) collected between July 1981 and June 1982 and submitted for Metals analysis. Metal analytical results were presented in the ES June 1983 *Phase I Investigation Report*. Metals analytical results were not compared to CSCOs.

There were 15 subsurface soil samples (SB-A, SB-B, and SB-D through SB-M) collected in June 2013 and submitted for analysis of RCRA Metals. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There were no RCRA Metals reported at a concentration above CSCOs.

There were 27 subsurface soil samples (SB-N through SB-Z, SB-AA through SB-CC, and SB-FF through SB-KK) collected in April 2014 and submitted for analysis of RCRA Metals. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. There were one or more RCRA Metals detected at concentrations above CSCOs including Arsenic, Barium, Cadmium, Lead, and Mercury. A summary of the April 2014 RCRA Metals analytical results is presented in Table 5-14. Figure 5-7 shows the locations where the RCRA Metal subsurface soil samples were collected and provides concentrations exceeding CSCOs.

Nine of the 27 subsurface soil samples collected in April 2014 were also submitted for analysis of selected RCRA Metals (see Table 2-1) using the USEPA Method SW-846 Toxicity Characteristic Leaching Procedure (TCLP) as per 40 CFR Part 261 (CFR-261) for the identification of hazardous waste. There was one Metal (Lead) reported at a concentration above its CFR-261 threshold (5.0 milligrams per liter [mg/L]) in two samples SB-R: 4 to 5 feet bgs (8.9 mg/L) and SB-U: 0 to 4 feet bgs (37.6 mg/L). A summary of the April 2014 TCLP Metals results is presented in Table 5-15. Figure 5-7 shows the locations where the RCRA Metal subsurface soil sample concentrations exceeded TCLP criteria.

There were 19 subsurface soil samples collected in July 2017 and submitted for analysis of TAL Metals. There were one or more TAL Metals reported at concentrations above CSCOs including Barium, Copper, and Iron. A summary of the July 2017 TAL Metals analytical results is presented in Table 5-16. Figure 5-7 shows the locations where the TAL Metals subsurface soil samples were collected and provides concentrations exceeding CSCOs.

5.5 Groundwater Sample Results

Between July 1985 and September 2017 seventy-nine (79) groundwater samples have been collected from Site monitoring wells and piezometers installed across the Site. Four groundwater samples were collected from reported Site monitoring wells between July 1981 and June 1982. The locations and construction of these wells are unknown. Post 1982 groundwater sample analytical results have been compared to NYSDEC TOGS AWQSGVs. Monitoring well and piezometer locations are shown on Figure 3-4.

It should be noted that four (4) monitoring wells (i.e., shallow wells OW-11, OW-24, OW-25 and deep well OW-12) were destroyed and removed by excavation during the 2014 to 2015 IRM as reported in the GSH January 2016 IRM Project Summary Report and are understood to not represent current groundwater conditions at those locations. Sample analytical results from these locations are included in summary Table results, but are not included on Figures.



5.5.1 Groundwater – Fill/Upper Sand - Volatile Organic Compounds (VOCs)

There were eight (8) Fill/Upper Sand groundwater samples (see Table 2-1) collected in July 1984 and submitted for analysis of Organic Priority Pollutant (OPP) list compounds. Analytical results were presented in the ES July 1985 *Phase II Investigation*. These groundwater analytical results were not compared to AWQSGVs.

There were six (6) Fill/Upper Sand groundwater samples (see Table 2-1) collected between February and November 1988 and submitted for analysis of Hazardous Substance List (HSL) organic compounds. Analytical results were presented in the ES September 1989 *Supplemental Phase II Investigation*. There were eight (8) HSL VOCs reported at concentrations above AWQSGVs including 1,1,1-Trichloroethane, Acetone, Benzene, Chlorobenzene, Ethylbenzene, Methylene Chloride, Tetrachloroethene and Toluene. A summary of the February and November 1988 VOCs analytical results is presented in Table 5-17. Figure 5-8 shows the locations where the VOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were nine (9) Fill/Upper Sand groundwater samples (see Table 2-1) collected in August 2013 and submitted for analysis of VOCs. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There were three (3) VOCs reported at concentrations above AWQSGVs including 1,4-Dichlorobenzene, Benzene, and Chlorobenzene. A summary of the August 2013 VOCs analytical results is presented in Table 5-18. Figure 5-8 shows the locations where the VOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were eight (8) Fill/Upper Sand groundwater samples (see Table 2-1) collected in May 2014 and submitted for analysis of VOCs. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. There were six (6) VOCs reported at concentrations above AWQSGVs including 1,4-Dichlorobenzene, Benzene, Chlorobenzene, Ethylbenzene, Isopropylbenzene, and Total Xylenes. A summary of the May 2014 VOCs analytical results is presented in Table 5-19. Figure 5-8 shows the locations where the VOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were 35 Fill/Upper Sand groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 from 14 previously installed/active monitoring wells and 17 new piezometers/monitoring wells and submitted for analysis of VOCs. There were six (6) VOCs reported at concentrations above AWQSGVs including 1,4-Dichlorobenzene, Benzene, Chlorobenzene, Ethylbenzene, 2-Hexanone, and Total Xylenes. A summary of the August/September 2017 VOCs analytical results is presented in Tables 5-20 and 5-21. Figure 5-8 shows the locations where the VOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

5.5.2 Groundwater – Fill/Upper Sand – Semi-Volatile Organic Compounds (SVOCs)

There were six (6) Fill/Upper Sand groundwater samples collected between February and November 1988 and submitted for analysis of HSL organic compounds. Analytical results were presented in the ES September 1989 *Supplemental Phase II Investigation*. There were two (2) SVOCs reported at concentrations above AWQSGVs including 4-Methylphenol and Bis[2-ethylhexyl]phthalate (Table 5-17). All of the Bis[2-ethylyhexyl]phthalate results were all flagged with a "B" qualifier indicating the compound was detected in laboratory blanks. Figure 5-8 shows the locations where the SVOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.



There were nine (9) Fill/Upper Sand groundwater samples (see Table 2-1) collected in August 2013 and submitted for analysis of SVOCs. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There were three (3) SVOCs reported at concentrations above AWQSGVs including 4-Methylphenol, Nitrobenzene, and Phenol. A summary of the August 2013 SVOCs analytical results is presented in Table 5-18. Figure 5-8 shows the locations where the SVOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were eight (8) Fill/Upper Sand groundwater samples (see Table 2-1) collected in May 2014 and submitted for analysis of SVOCs. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. There were five (5) SVOCs reported at concentrations above AWQSGVs including 4-Chloro-3-Methylphenol, 4-Methylphenol, Biphenyl, Bis-(2-Ethylhexyl)Phthalate, and Phenol. A summary of the May 2014 SVOCs analytical results is presented in Table 5-19. Figure 5-8 shows the locations where the SVOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were 35 Fill/Upper Sand groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 from 14 previously installed/active monitoring wells and 17 new piezometers/monitoring wells and submitted for analysis of SVOCs. There were four (4) SVOCs reported at concentrations above AWQSGVs including 2-Methylphenol, 4-Methylphenol, Biphenyl, and Phenol. A summary of the August/September 2017 SVOCs analytical results is presented in Tables 5-20 and 5-21. Figure 5-8 shows the locations where the VOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

5.5.3 Groundwater – Fill/Upper Sand – Polychlorinated Biphenyls (PCBs)

There were 35 Fill/Upper Sand groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 (i.e., 14 previously installed/active monitoring wells and 17 new piezometers/monitoring wells) and submitted for analysis of PCBs. There was one PCB, Arochlor-1242, reported at a concentration above its AWQSGV. A summary of the August/September 2017 PCBs analytical results is presented in Table 5-22. Figure 5-9 shows the locations where the PCB groundwater samples were collected and provides the concentration exceeding the AWQSGV.

5.5.4 Groundwater – Fill/Upper Sand – Pesticides and Herbicides

There were eight (8) Fill/Upper Sand groundwater samples (see Table 2-1) collected in August 2013 and submitted for analysis of Pesticides and Herbicides. Analytical results were presented in the GES November 2013 Supplemental Site Characterization Report. There were eight Pesticides and no Herbicides reported at concentrations above AWQSGVs including Aldrin, Alpha-BHC, Alpha-Chlordane, Beta-BHC, Delta-BHC, Dieldrin, Gamma-BHC, and Gamma-Chlordane. A summary of the August 2013 Pesticides analytical results is presented in Table 5-23. Figure 5-9 shows the locations where the Pesticides groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were eight (8) Fill/Upper Sand groundwater samples (see Table 2-1) collected in May 2014 and submitted for analysis of Pesticides and Herbicides. Analytical results were presented in the GES July 2014 Supplemental Site Characterization Report. There were five Pesticides and no Herbicides reported at concentrations above AWQSGVs including Aldrin, Alpha-BHC, Delta-BHC, Dieldrin, and Endrin. A summary of the May 2014 Pesticides analytical results is presented in Table 5-24. Figure



5-9 shows the locations where the Pesticides groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were 35 Fill/Upper Sand groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 (i.e., 14 previously installed/active monitoring wells and 17 new piezometers/monitoring wells) and submitted for analysis of Pesticides. There were four Pesticides reported at concentrations above AWQSGVs including Aldrin, Alpha-BHC, Beta-BHC, and Gamma-BHC. A summary of the August/September 2017 Pesticides analytical results is presented in Tables 5-22 and 5-25. Figure 5-9 shows the locations where the Pesticides groundwater samples were collected and provides concentrations exceeding AWQSGVs.

5.5.5 Groundwater – Fill/Upper Sand – Metals

There were four (4) Fill/Upper Sand groundwater samples (see Table 2-1) collected between July 1981 and June 1982 and submitted for analysis of Lead and Nickel and three (3) samples were submitted for analysis of RCRA Metals. Metals analytical results were presented in the ES June 1983 *Phase I Investigation Report*. These groundwater analytical results were not compared to AWQSGVs.

There were four (4) Fill/Upper Sand groundwater samples (see Table 2-1) collected between February and November 1988 and submitted for Metals analysis. Analytical results were presented in the ES September 1989 *Supplemental Phase II Investigation*. There were twelve (12) Metals reported at concentrations above AWQSGVs including Antimony, Beryllium, Cadmium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel and Sodium. A summary of the 1988 Metals analytical results is presented in Table 5-26. Figure 5-10 shows the locations where the Metals groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were eight (8) Fill/Upper Sand groundwater samples (see Table 2-1) collected in August 2013 and submitted for Metals analysis. Analytical results were presented in the GES November 2013 *Supplemental Site Characterization Report*. There was one (1) Metal reported at a concentration above AWQSGVs including Lead. A summary of the August 2013 Metals analytical results is presented in Table 5-27. Figure 5-10 shows the locations where the Metals groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were eight (8) Fill/Upper Sand groundwater samples (see Table 2-1) collected in May 2014 and submitted for Metals analysis. Analytical results were presented in the GES July 2014 *Supplemental Site Characterization Report*. There were no Metals reported at concentrations above AWQSGVs.

There were 35 Fill/Upper Sand groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 (i.e., 14 previously installed/active monitoring wells and 17 new piezometers/monitoring wells) and submitted for analysis of Total/Recoverable (i.e. unfiltered) and Dissolved (i.e., filtered) Metals analysis. There were six (6) Total Metals reported at concentrations above AWQSGVs including Arsenic, Barium, Iron, Magnesium, Manganese and Sodium. A summary of the August/September 2017 Total Metals analytical results is presented in Tables 5-28 and 5-29.

There were four (4) dissolved/filtered Metals reported at concentrations above AWQSGVs including Iron, Magnesium, Manganese and Sodium. A summary of the August/September 2017 Dissolved Metals analytical results is presented in Tables 5-28 and 5-29. Figure 5-10 shows the locations where the concentrations of dissolved Metals exceeding AWQSGVs.



5.5.6 Groundwater - Lower Sand, Till and Bedrock - Volatile Organic Compounds (VOCs)

There were five (5) Lower Sand, Till or Bedrock groundwater samples (see Table 2-1) collected in July 1984 and submitted for analysis of Organic Priority Pollutant (OPP) list compounds. Analytical results were presented in the ES July 1985 *Phase II Investigation*. There was one HSL/VOCs reported at a concentration above AWQSGVs: Methylene Chloride in well OW-6. Figure 5-11A identifies the locations where the VOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were three (3) Lower Sand, Till or Bedrock groundwater samples (see Table 2-1) collected between February and November 1988 and submitted for analysis of Hazardous Substance List (HSL) organic compounds. Analytical results were presented in the ES September 1989 *Supplemental Phase II Investigation*. There was one HSL VOCs reported at a concentration above AWQSGVs: Tetrachloroethene in one well (OW-12). A summary of the February and November 1988 VOCs analytical results is presented in Table 5-30.

There were nine (9) Lower Sand, Till or Bedrock groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 from 6 previously installed/active Lower Sand, Till or Bedrock monitoring wells and submitted for analysis of VOCs. There was one VOC reported at concentrations above AWQSGVs: Acetone in well OW-3. A summary of the August/September 2017 VOCs analytical results is presented in Table 5-31. Figure 5-11A shows the locations where the VOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

5.5.7 Groundwater – Lower Sand, Till and Bedrock – Semi-Volatile Organic Compounds (SVOCs)

There were five (5) Lower Sand, Till or Bedrock groundwater samples collected in July 1984 and submitted for analysis of Organic Priority Pollutant (OPP) list compounds. Analytical results were presented in the ES July 1985 *Phase II Investigation*. These groundwater analytical results were not compared to AWQSGVs.

There were three (3) Lower Sand, Till or Bedrock groundwater samples collected between February and November 1988 and submitted for analysis of HSL SVOC compounds. Analytical results were presented in the ES September 1989 *Supplemental Phase II Investigation*. There was one SVOC reported at a concentration above AWQSGVs: Bis-(2-Ethylhexyl)Phthalate (Table 5-30). Figure 5-11A shows the locations where the SVOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were nine (9) Lower Sand, Till or Bedrock groundwater samples (including duplicates) collected in August/September 2017 from 6 previously installed/active Lower Sand, Till or Bedrock monitoring wells and submitted for analysis of VOCs. There was one (1) SVOC reported at concentrations above AWQSGVs: Di-n-butylphthalate. A summary of the August/September 2017 SVOCs analytical results is presented in Table 5-31. Figure 5-11A shows the locations where the SVOC groundwater samples were collected and provides concentrations exceeding AWQSGVs.

5.5.8 Groundwater – Lower Sand, Till and Bedrock – Polychlorinated Biphenyls (PCBs)

There were five (5) Lower Sand, Till or Bedrock groundwater samples collected in July 1984 and submitted for analysis of PCBs. Analytical results were presented in the ES July 1985 *Phase II Investigation*. These groundwater analytical results were not compared to AWQSGVs.



There were nine (9) Lower Sand, Till or Bedrock groundwater samples (including duplicates) collected in August/September 2017 from 6 previously installed/active Lower Sand, Till or Bedrock monitoring wells and submitted for analysis of PCBs. There were no PCBs detected at concentrations above laboratory limits. Figure 5-11B identifies the locations where the PCBs groundwater samples were collected.

5.5.9 Groundwater – Lower Sand, Till and Bedrock Water Bearing Zones – Pesticides

There were five (5) Lower Sand, Till or Bedrock groundwater samples (see Table 2-1) collected in July 1984 and submitted for analysis of Pesticides. Analytical results were presented in the ES July 1985 *Phase II Investigation*. These groundwater analytical results were not compared to AWQSGVs.

There were nine (9) Lower Sand, Till or Bedrock groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 from 6 previously installed/active Lower Sand, Till or Bedrock monitoring wells and submitted for analysis of Pesticides. There were no Pesticides detected at concentrations above laboratory detection limits. Figure 5-11B identifies the locations where the Pesticides groundwater samples were collected.

5.5.10 Groundwater – Lower Sand, Till and Bedrock – Metals

There were three (3) Lower Sand, Till and Bedrock groundwater samples (see Table 2-1) collected between February and November 1988 and submitted for Metals analysis. Analytical results were presented in the ES September 1989 *Supplemental Phase II Investigation*. There were nine (9) Metals reported at concentrations above AWQSGVs including Antimony, Beryllium, Chromium, Iron, Lead, Magnesium, Manganese, Nickel and Sodium. A summary of the 1988 Metals analytical results is presented in Table 5-32. Figure 5-12 shows the locations where the Metals groundwater samples were collected and provides concentrations exceeding AWQSGVs.

There were nine (9) Lower Sand, Till or Bedrock groundwater samples (including duplicates; see Table 2-2) collected in August/September 2017 from 7 previously installed/active monitoring wells and submitted for analysis of Total/ Recoverable (i.e. unfiltered) and Dissolved (i.e., filtered) Metals analysis. There were three (3) Total Metals (Iron, Magnesium and Sodium) reported at concentrations above AWQSGVs. A summary of the August/September 2017 Total Metals analytical results is presented in Table 5-33.

There were two (2) Dissolved Metals (Magnesium and Sodium) reported at concentrations above AWQSGVs. A summary of the August/September 2017 Total Metals analytical results is presented in Table 5-33. Figure 5-12 shows the locations where the Metals groundwater samples were collected and provides dissolved concentrations exceeding AWQSGVs.



6.0 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

6.1 General

A qualitative human health exposure assessment (QHHEA) for the Niagara Sanitation Site has been performed in accordance with the requirements of NYSDEC DER- 10 Appendix 3B (NYSDEC May 2010) and is presented in the following sub-sections.

The objective of the QHHEA is to evaluate the presence of completed or potential exposure pathways in order to determine if Site contamination poses an existing or potential hazard to current or future Site users. The QHHEA will identify the potential for human exposures, if any, associated with chemical constituents detected in soil, groundwater, and air at the Site. The QHHEA will address on-site and off-site receptors for current use and future use scenarios. The anticipated future use of the Site is for a secured, non-accessible undeveloped land.

The QHHEA consists of five (5) elements to document exposure pathways (listed below). An exposure pathway is complete when all five (5) elements are documented; a potential exposure pathway exists when one (1) or more of the elements is not documented.

- Identified contaminant sources, affected media, and chemicals of potential concern (COPCs) from site-specific data collected during Site investigations;
- Identified contaminant release and transport mechanisms (e.g., vaporization, migration, etc.);
- Identified points of exposure for current and future Site use (e.g., on-site soil, potable wells, etc.);
- Identified exposure routes (i.e., inhalation, ingestion, dermal contact); and,
- Identified receptor population(s) (e.g., construction workers, future Site workers, trespassers).

Following the identification and documentation of the exposure pathways, the QHHEA will recommend the need for mitigation and/or remedial measures to reduce potential exposures.

6.2 Identification of Contaminant Sources and COPCs

Site investigation data indicate the historic disposal of municipal and industrial wastes. Available records indicate that the Site was operated as a landfill which accepted both municipal and industrial solid wastes, including caustic materials, plating tank sludge, fly ash, salt solids, graphite, carbon, scrap adhesives, and miscellaneous laboratory chemicals. These wastes were reportedly buried in trenches that were excavated to facilitate disposal. In 2014-2015, approximately 6,300 tons of waste and adjacent impacted soil were removed from the site. Additional wastes remain buried at the Site and municipal wastes/debris can be seen at, or protruding from, the ground surface.

Analytical results reported concentrations of VOCs, SVOCs, Pesticides, PCBs, and Metals at concentrations above applicable standards, guidance values, and clean-up levels in one or more of the following: Site surface soil, surface water, subsurface soil, and groundwater. Soil vapor was not evaluated since the Site is undeveloped and there are no occupied or unoccupied structures on-site.



Based on the data provided in Section 5 the following COPCs have been identified as summarized in the table below:

Summary of COPCs

-		One or More Exceedances of	
	Contaminant	CSCO or RSCOs	COPC
Media	Classes	(as applicable)	(Y/N)
	VOCs	No Exceedances	N
	SVOCs	No Exceedances	N
Surface Water	PCBs	No Exceedances	N
	Pesticides	5 Samples/Locations	Y
	Metals	3 Samples/Locations	Y
	VOCs	No Exceedances	N
	SVOCs	No Exceedances	N
Sediment	PCBs	No Exceedances	N
	Pesticides	No Exceedances	N
	Metals	No Exceedance	N
	VOCs	Not Submitted for Analysis	N
Surface Soil	SVOCs	22 Samples/Locations	Y
(On-Site)	PCBs	No Exceedances	N
(On-Site)	Pesticides	No Exceedances	N
	Metals	7 Samples/Locations	Y
	VOCs	No Exceedances	N
	SVOCs	11 Samples/Locations	Y
Subsurface Soil	PCBs	2 Samples/Locations	Y
	Pesticides	1 Samples/Locations	Y
	Metals	24 Samples/Locations	Y
	VOCs	5 Wells/Piezometers	Y
Groundwater	SVOCs	15 Wells/Piezometers	Y
(Fill/Upper Sand)	PCBs	1 Piezometer	Y
(FIII/Opper Sand)	Pesticides	17 Wells/Piezometers	Y
	Metals	26 Wells/Piezometers	Y
	VOCs	2 Wells	Y
Groundwater	SVOCs	3 Wells	Y
(Lower Sand, Till	PCBs	No Exceedances	N
and Bedrock)	Pesticides	No Exceedances	N
	Metals	2 Wells	Y

Details of COPCs, sorted by sample media and contaminant class, with maximum reported concentrations and sample location ID are provided in the text below.

Surface Water

COPCs for surface water were identified based on exceedances of AWQSGVs discussed in Section 5.0 of this report. The maximum detected concentrations of the contaminants exceeding AQWSGVs in surface water locations are tabulated below:



Summary of Maximum Concentrations of COPCs Reported Above AWQSGVs

		NYSDEC		Max. Detected	
	Contaminant	TOGS 1.1.1		Concentration	Sample
Contaminant	Class	AWQSGV	Units	(µg/L)	ID
Alpha-BHC	Pesticide	0.01	μg/L	0.024	SW-3
Beta-BHC	Pesticide	0.04	μg/L	0.042	SW-3
Dieldrin	Pesticide	0.004	μg/L	0.011	SW-2
Gamma-Chlordane	Pesticide	0.05	μg/L	0.33	SW-2
Toxaphene	Pesticide	0.06	μg/L	0.32	LSW-002
Aluminum	Metal	0.100	mg/L	2.5	LSW-001
Iron	Metal	0.300	mg/L	1.8	LSW-001

Notes: $\mu g/L = \text{micrograms per liter (parts per billion)}$, mg/L = milligrams per liter (parts per million)

Surface Soil

COPCs for surface soil were identified based on exceedances of CSCOs discussed in Section 5.0 of this report. The maximum detected concentrations of the contaminants exceeding CSCOs (on-site) or RSCOs (off-site) in surface soil and locations are tabulated below:

Summary of Maximum On-Site Surface Soil Concentrations of COPCs Reported Above CSCOs

	mary of Frankinam on Site Surface Son Concentrations of Col es Reported 115070 CSCOS											
		NYSDEC		Max. Detected								
Contaminant	Class	CSCO	Units	Concentration	Sample ID							
Benzo(A)Anthracene	SVOC	5.6	mg/kg	22	LSS-014 (2-12")							
Benzo(A)Pyrene	SVOC	1.0	mg/kg	23	LSS-014 (2-12")							
Benzo(B)Fluoranthene	SVOC	5.6	mg/kg	34	LSS-014 (2-12")							
Dibenz(A,H)Anthracene	SVOC	0.56	mg/kg	3.6	LSS-013 (0-2")							
Indeno(1,2,3-C,D)Pyrene	SVOC	5.6	mg/kg	14	LSS-014 (2-12")							
Arsenic (As)	Metal	16	mg/kg	17.9	LSS-004 (0-2")							
Barium (Ba)	Metal	400	mg/kg	892	LSS-004 (0-2")							
Cadmium (Cd)	Metal	9.3	mg/kg	21.3	LSS-004 (0-2")							
Copper	Metal	270	mg/kg	5,800	LSS-004 (0-2")							
Mercury	Metal	2.8	mg/kg	3.1	LSS-004 (0-2")							

Notes: mg/kg = milligrams per kilograms (parts per million), " = inches



Subsurface Soil

COPCs for subsurface soil were identified based on exceedances of CSCOs discussed in Section 5.0 of this report. The maximum detected concentrations of the contaminants exceeding CSCOs in subsurface soil and locations are tabulated below:

Summary of Maximum Concentrations of Subsurface Soil COPCs Reported Above CSCOs

·		NYSDEC		Max. Detected	
Contaminant	Class	CSCO	Units	Concentration	Sample ID
Benzo(a)Anthracene	SVOC	5.6	mg/kg	13	SB-V (0-4')
Benzo(a)Pyrene	SVOC	1.0	mg/kg	15	SB-V (0-4')
Benzo(b)Fluoranthene	SVOC	5.6	mg/kg	19	SB-V (0-4')
Dibenzo(a,h)Anthracene	SVOC	0.56	mg/kg	2.3	SB-V (0-4')
Indeno(1,2,3-c,d)Pyrene	SVOC	5.6	mg/kg	7.5	SB-V (0-4')
Deldrin	Pesticide	1.4	mg/kg	2.6	SB-N (0-2')
PCBs (Total)	PCB	1	mg/kg	1.68	TP-11 (1-6')
Arsenic (As)	Metal	16	mg/kg	27.7	SB-H (8-12')
Barium (Ba)	Metal	400	mg/kg	1,690	SB-U (0-4')
Cadmium (Cd)	Metal	9.3	mg/kg	98.7	SB-U (0-4')
Total Chromium (Cr)	Metal	1,500	mg/kg	404	SB-V (0-4')
Copper	Metal	270	mg/kg	998	TP-11 (1-6')
Iron	Metal	2,000*	mg/kg	46,400	TP-11 (1-6')
Lead	Metal	1,000	mg/kg	1,870	SB-X (0-4')
Mercury	Metal	2.8	mg/kg	187	SB-T (4-8')

Notes: mg/kg = milligrams per kilograms (parts per million), ' = feet

Groundwater – Fill/Upper Sand

COPCs for Fill/Upper Sand (i.e. shallow) groundwater were identified based on exceedances of AWQSGVs discussed in Section 5.0 of this report. The maximum detected concentrations of the contaminants exceeding AWQSGVs in groundwater and locations are tabulated below:

^{* =} Residential soil cleanup objective from Commissioner's Policy CP-51 entitled "Soil Cleanup Guidance", NYSDEC, 2010.



Summary of Maximum Concentrations of COPCs Reported Above AWQSGVs Since 2013

		NYSDEC				
	a	TOGS		M D ()	6 1	
a	Contaminant	1.1.1	TT *.	Max. Detected	Sample	G I D
Contaminant	Class	AWQSGV	Units	Concentration	ID	Sample Date
1,4-Dichlorobenzene	VOC	3	μg/L	5.4	OW-24	8/2/2013
Ethylbenzene	VOC	5	μg/L	200	OW-36	5/19/2014
Isopropylbenzene	VOC	5	μg/L	13	OW-36	5/19/2014
Xylene, Total	VOC	15	μg/L	1,700	OW-36	5/19/2014
4-Chloro-3-Methylphenol	SVOC	1	μg/L	7.5	OW-36	5/19/2017
2-Methylphenol	SVOC	1	μg/L	1.8	LPZ-08S	8/29/2017
4-Methylphenol	SVOC	1	μg/L	17	LPZ-05S	8/2/2017
Biphenyl	SVOC	5	μg/L	39	OW-36	8/29/2017
Nitrobenzene	SVOC	0.4	μg/L	0.89	OW-2	8/2/2013
Phenol	SVOC	1	μg/L	4.6	OW-36	8/29/2017
Aldrin	Pesticide	ND	μg/L	0.085	OW-16	8/2/2013
Alpha-BHC	Pesticide	0.01	μg/L	0.33	OW-22	8/2/2013
Alpha-Chlordane	Pesticide	0.05	μg/L	0.10	OW-16	8/2/2013
Beta-BHC	Pesticide	0.04	μg/L	0.12	LPZ-08S	8/29/2017
Delta-BHC	Pesticide	0.04	μg/L	0.096	OW-16	8/2/2013
Dieldrin	Pesticide	0.004	μg/L	0.089	OW-16	8/2/2013
Gamma-BHC (Lindane)	Pesticide	0.05	μg/L	0.095	OW-1	8/2/2013
Gamma-Chlordane	Pesticide	0.05	μg/L	0.072	OW-13	8/2/2013
Endrin	Pesticide	ND	μg/L	0.070	OW-32	5/19/2014
Arsenic	Metal	25	μg/L	55	LPZ-03S	8/21/2017
Barium	Metal	1,000	μg/L	1,100	OW-35	8/30/2017
Iron	Metal	300	μg/L	41,500	LPZ-10S	9/2/2017
Lead	Metal	25	μg/L	39	OW-22	8/2/2013

Notes: μg/L = micrograms per liter (parts per billion)

Groundwater – Lower Sand, Till and Bedrock

COPCs for Lower Sand, Till and Bedrock groundwater were identified based on exceedances of AWQSGVs discussed in Section 5.0 of this report. The maximum detected concentrations of the contaminants exceeding AWQSGVs in groundwater and locations are tabulated below:

Summary of Maximum Concentrations of Groundwater COPCs Reported Above AWQSGVs Since 2013

Contaminant	Contaminant Class	NYSDEC TOGS 1.1.1 AWQSGV	Units	Max. Detected Concentration (μg/L)	Sample ID	Date
Acetone	VOC	50	μg/L	6,400	OW-3	9/22/17
Methylene Chloride	VOC	5	μg/L	15	OW-6	8/2/13
Di-n-Butylphthalate	SVOC	50	μg/L	410	OW-3	9/22/17
Iron	Metal	300	mg/L	1,100	OW-3	9/22/17

Notes: μ g/L = micrograms per liter (parts per billion)



These locations monitor deep groundwater beneath the Site and there is no anticipated exposure pathway with deep groundwater given the absence of groundwater use for drinking water and the thickness of the intervening clay layers.

6.3 Conceptual Site Model

The transport and migration of the COPCS as well as other risks in various media (air, soil, surface water, soil vapor and groundwater) are evaluated in a Conceptual Site Model

Waste from various sources have been deposited at the Site. These wastes are the assumed principal source of the various contaminants found in soils, surface water and groundwater.

Direct transport of waste or impacted soil may occur due to natural erosion processes (wind, rain, and surface run-off). Secondary transport and migration of COPCs is through leaching of the COPCs from the waste to surface soils, subsurface soils, surface water and groundwater. Contamination in surface water may be from direct leaching from waste or from secondary leaching from surface soils or subsurface soils.

Groundwater contamination may be the result of direct leaching of COPCs from waste material or from leaching of contaminated surface soils and/or subsurface soils. Groundwater may also be contaminated through infiltration of contaminated surface water. The contaminants in groundwater would be transported by hydraulic transport (dispersion owing to groundwater elevation differences) and diffusion (due to chemical concentration gradients).

Impacted media at the Site include surface water, surface soil, subsurface soil and groundwater. Soil vapor (air) was not evaluated as an impacted medium due to the absence of any on-site occupied or unoccupied structures currently or anticipated in the future. Groundwater beneath the Site is not currently used as a potable drinking water source.

6.4 Exposure Assessment

As part of the assessment process, potential exposure pathways are determined through an evaluation of the physical setting of the Site and the potentially exposed populations.

Current/Future Land Use

The Site is owned by the Town of Wheatfield. It is vacant and undeveloped land secured by a locked perimeter fence. It is understood that the secure access to the Site will be maintained and the Site is likely to remain as undeveloped vacant land for the long term. The current and future potentially exposed population includes adult resident (off-site), child resident (off-site), trespasser (on-site) and industrial/municipal and utility/maintenance workers (on-site and off-site).

The Site is bordered by a religious shrine to the north, a cemetery and property that contains a motel and livery service to the east, a utility right-of-way (both overhead electric and underground natural gas and brine lines) and residences to the south, and Nash Road and residences to the west.

Exposure Pathways

Under the current use scenario, trespassers on the site would have a potentially complete pathway through dermal contact or ingestion of contaminated soil or surface water. Nearby residents could potentially be exposed through inhalation of contaminated soil from wind dispersion of fugitive dust from the site to off-site areas. Nearby residents could potentially be exposed through dermal contact or ingestion of surface water in the northern swale area (a portion of which is off-site and outside of the perimeter fence).



Under the future use scenario, trespassers on the Site would have a potentially complete pathway through dermal contact or ingestion of contaminated soil or surface water. Nearby residents could potentially be exposed through inhalation of fugitive dust from the site to off-site areas. Nearby residents could potentially be exposed through dermal contact or ingestion of surface water in the northern swale area (a portion of which is off-site and outside of the perimeter fence).

Future site utility/maintenance workers would have a potentially complete pathway through dermal contact and ingestion of contaminated soil or surface water.

Under the current and future use scenarios, groundwater is not known to be used or anticipated to be used as a potable water supply, therefore the groundwater ingestion exposure pathway is considered incomplete. VOCs in groundwater were evident in on-site wells, however, the wells along the southern boundary of the site (between the site and nearby residences) did not report VOCs. Therefore, off-gassing of VOCs in groundwater is also considered an incomplete pathway.

Summary of Exposure Scenarios and Completed Exposure Pathways

Based on an understanding of the components of an exposure pathway and the current/future conditions of the Site, potential human exposure pathways were identified in the assessment and are summarized in the following table:

Completed Potential Human Exposure Pathways

On-Site or Off-Site	Exposure Point to Site COPCs	Exposure Route	Potentially Exposed Population
	Surface Water (Within Perimeter Fence)	Dermal Contact Incidental Ingestion Incidental Inhalation	Maintenance Worker Utility Worker Trespasser
On-Site	Surface soils	Dermal Contact Incidental Ingestion	Maintenance Worker Utility Worker Trespasser
	Subsurface soils	Dermal Contact Incidental Ingestion	Utility Worker
O\$\$ \$:40	Surface Water (In Northern Swale/Ditch Beyond Perimeter Fence)	Dermal Contact Incidental Ingestion Incidental Inhalation	Maintenance Worker Utility Worker Resident Adult Resident Child
Off-Site	Surface soils	Incidental Inhalation of Fugitive Dust	Maintenance Worker Utility Worker Resident Adult Resident Child

Exposure routes for on-site COPCs in surface soils, surface water and subsurface soils have been mitigated and controlled by the installation of the Site perimeter fence and through operational control of Site access. The exposure route for off-site surface soil inhalation is mitigated by the presence of a vegetative cover.



TABLES

TABLE 2-1 SUMMARY OF PREVIOUS SITE SAMPLING NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Investigation/ Report	Sample ID	Media	Depth Interval/ Aquifer	Date	VOCs	SVOCs/ PAHs	Metals	Pest/ Herb	PCBs
	Well 9	Groundwater	Upper Sand	7/16/1981	4 ,	NS	(Pb, Ni)	NS	NS
Report Ingineering Science Dames and Moore Tune 1983 Phase I Report Report Ingineering Science Tunes & Moore July 1985 Phase II Investigation	Well 10	Groundwater	Upper Sand	7/16/1981	(phenols) & TOH	NS	(Pb, Ni)	NS	NS
Engineering Science	Well 28	Groundwater	Upper Sand	8/12/1981	(phenols) & TOH	NS	(Pb, Ni)	NS	NS
	Soil 19	Soil	0-2"	7/24/1981	(phenols) & TOH	NS	(Pb, Ni)	NS	NS
	Soil 20	Soil	0-2"	7/24/1981	(phenols) & TOH	NS	(Pb, Ni)	NS	NS
	Sample 1	Groundwater	Upper Sand	6/24/1982	(TCL)	NS	(As, Cd, Cr, Cu, Fe, Hg, Pb, Ni)	NS	NS
керогі	Sample 2	Soil	9.5'	6/24/1982	(TCL)	NS	(As, Cd, Cr, Cu, Fe, Hg, Pb, Ni)	NS	NS
	Sample 3	Soil	7.0'	6/24/1982	(TCL)	NS	(As, Cd, Cr, Cu, Fe, Hg, Pb, Ni)	NS	NS
	Sample 4	Soil	6.5'	6/24/1982	(TCL)	NS	(As, Cd, Cr, Cu, Fe, Hg, Pb, Ni)	NS	NS
	SW-1	Surface water	Surface	6/30/1983	(volatile organics) & TOH	NS	NS	NS	NS
	SW-2	Surface water	Surface	6/30/1983	(volatile organics) & TOH	NS	NS	NS	NS
	SW-3	Surface water	Surface	6/30/1983	(volatile organics) & TOH	NS	NS	NS	NS
	SW-4	Surface water	Surface	6/30/1983	(volatile organics) & TOH	NS	NS	NS	NS
	SW-5	Surface water	Surface	6/30/1983	(volatile organics) & TOH NS NS		NS	NS	
aginooring Sojonoo	SD-1	Sediment	0-2"	7/1984	(acid/base organics), OPP & Cyanide	NS	(Cd, Cr, Cu, Fe, Hg, Pb, Ni), Alkalynity & Anions	(Pest/Herb)	(PCB)
0 0	SD-2	Sediment	0-2"	7/1984	(acid/base organics), OPP & Cyanide NS (Cd, Cr, Cu, Fe, Hg, Pb, Ni), Alkalynity		(Cd, Cr, Cu, Fe, Hg, Pb, Ni), Alkalynity & Anions	(Pest/Herb)	(PCB)
& Dames & Moore July 1985	SD-3	Sediment	0-2"	7/1984	(acid/base organics), OPP & Cyanide	NS	(Cd, Cr, Cu, Fe, Hg, Pb, Ni), Alkalynity & Anions	(Pest/Herb)	(PCB)
•	OW-1	Groundwater	Upper Sand	7/2/0984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
	OW-1B	Groundwater	Till	7/3/1984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
Investigation	OW-2	Groundwater	Upper Sand	7/3/1984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
Engineering Science & Dames & Moore July 1985 Phase II Investigation Engineering Science September 1989	OW-3	Groundwater	Till	7/2/1984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
	OW-4	Groundwater	Till	7/3/1984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
	OW-5	Groundwater	Till	7/10/1984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
	OW-6	Groundwater	Till	7/10/1984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
	OST-1	Groundwater	Bedrock	7/11/1984	(volatile/base organics) & TOH	NS	NS	Herb NS NS NS NS NS NS NS N	(PCB)
	OW-11	Groundwater Upper Sand 7/16/1981 (phenols) & TOH NS (Pb, Ni) Groundwater Upper Sand 8/12/1981 (phenols) & TOH NS (Pb, Ni) Soil 0-2" 7/24/1981 (phenols) & TOH NS (Pb, Ni) Soil 0-2" 7/24/1981 (phenols) & TOH NS (Pb, Ni) Groundwater Upper Sand 6/24/1982 (TCL) NS (As, Cd, Cr, Cu, Fe, Hg, Pb, Ni) Soil 9.5' 6/24/1982 (TCL) NS (As, Cd, Cr, Cu, Fe, Hg, Pb, Ni) Soil 7.0' 6/24/1982 (TCL) NS (As, Cd, Cr, Cu, Fe, Hg, Pb, Ni) Soil 6.5' 6/24/1982 (TCL) NS (As, Cd, Cr, Cu, Fe, Hg, Pb, Ni) Surface water Surface (6/30/1983) (volatile organics) & TOH NS NS Surface water Surface (6/30/1983) (volatile organics) & TOH NS NS Surface water Surface (6/30/1983) (volatile organics) & TOH NS NS Sediment 0-2" 7/1984	NS	(dioxin)					
	OW-12	Groundwater		2/17/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
Engineering Science	OW-13	Groundwater	Upper Sand	2/17/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
September 1989	OW-14A	Groundwater	• •	2/17/1988		(HSL)	(HSL)	NS	(dioxin)
Supplemental Phase	OW-14B	Groundwater		2/17/1988		(HSL)	(HSL)	NS	(dioxin)
* *	OW-15		• •				, ,	NS	(dioxin)
	OW-16				· /	(- /	(- /	NS	(dioxin)
	OW-11					(- /			(dioxin)

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TABLE 2-1 SUMMARY OF PREVIOUS SITE SAMPLING NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Investigation/	Sample ID	Media	Depth Interval/ Aquifer	Date	VOCs	SVOCs/ PAHs	Metals	Pest/ Herb	PCBs
керогі									
	SOIL-1	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
Groundwater and Environmental Services November 2013 Supplemental Site	SOIL-2	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
	SOIL-3	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
	SOIL-4	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
	SOIL-5	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
_	SOIL-6	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
_	SOIL-7	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
_	SOIL-8	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
_	SOIL-9	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
_	SOIL-10	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
_	SOIL-11	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
	SED-1	Sediment	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SW-1	Surface water	Surface	5/29/2013	(TCL)	(TCL)	NS	(Pest/Herb)	NS
	SW-2	Surface water	Surface	5/29/2013	(TCL)	(TCL)	NS	(Pest/Herb)	NS
	SW-3	Surface water	Surface	5/29/2013	(TCL)	(TCL)	NS	(Pest/Herb)	NS
	SW-4	Surface water	Surface	5/29/2013	(TCL)	(TCL)	NS	(Pest/Herb)	NS
	SW-5	Surface water	Surface	5/29/2013	(TCL)	(TCL)	NS	(Pest/Herb)	NS
	SW-6	Surface water	Surface	5/29/2013	(TCL)	(TCL)	NS	(Pest/Herb)	NS
	SW-7	Surface water	Surface	5/29/2013	(TCL)	(TCL)	NS	(Pest/Herb)	NS
Groundwater and	SB-A	Soil	4-12'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Environmental	SB-B	Soil	0-4'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Services	SB-B	Soil	10-11'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
November 2013	SB-D	Soil	4-8'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Supplemental Site	SB-E	Soil	4-8'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Characterization	SB-F	Soil	4-8'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Report	SB-G	Soil	4-8'	6/4/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-H	Soil	4-8'	6/5/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-H	Soil	8-12'	6/5/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-I	Soil	4-7'	6/5/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-J	Soil	0-4'	6/6/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-J	Soil	8-10'	6/6/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-K	Soil	2-4'	6/6/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-L	Soil	0-4'	6/6/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-M	Soil	4-8'	6/6/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-1	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-2	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-11	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-13	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-14B	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-16	Groundwater	Fill	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-21	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-22	Groundwater	Fill	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-23	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-24	Groundwater	Fill	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
<u> </u>	OW-25	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS

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Investigation/ Report	Sample ID	Media	Depth Interval/ Aquifer	Date	VOCs	SVOCs/ PAHs	Metals	Pest/ Herb	PCBs
	SB-N	Soil	2-4'	4/14/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-N	Soil	0-2'	4/14/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: As, Ba, Cd, Cd, Cr & Hg)	(Pest/Herb)	(PCB)
	SN-O	Soil	4-6'	4/14/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-P	Soil	4-6'	4/14/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-Q	Soil	4-8'	4/14/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-R	Soil	4-5'	4/15/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: Pb)	(Pest/Herb)	NS
	SB-S	Soil	1-4'	4/15/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-T	Soil	0-3'	4/15/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: Cd, Cr & Hg)	(Pest/Herb)	NS
	SB-T	Soil	4-8'	4/15/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: Pb)	(Pest/Herb)	NS
	SB-U	Soil	0-4'	4/16/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: As, Ba, Cd, Cd, Cr Pb, Ag & Hg)	(Pest/Herb)	NS
	SB-V	Soil	0-4'	4/16/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: As, Ba, Cd, Cd, Cr Pb, Ag & Hg)	(Pest/Herb)	NS
	SB-W	Soil	0-4'	4/16/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-X	Soil	0-4'	4/16/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: As, Cr & Pb)	(Pest/Herb)	NS
	SB-X	Soil	4-8'	4/16/2017	(TCL)	(TCL)	(RCRA 8 & TCLP: Cr)	(Pest/Herb)	NS
Groundwater and	SB-Y	Soil	4-8'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Environmental	SB-Z	Soil	0-4'	4/18/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: Cd)	(Pest/Herb)	NS
Services	SB-AA	Soil	4-8'	4/18/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
July 2014	SB-BB	Soil	0-4'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Supplemental Site	SB-BB	Soil	4-8'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Characterization	SB-CC	Soil	4-8'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Report	SB-FF	Soil	6-8'	4/18/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
Keport	SB-GG	Soil	4-6'	4/18/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-HH	Soil	6-8'	4/18/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-II	Soil	0-4'	4/21/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-II	Soil	4-8'	4/21/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-JJ	Soil	4-8'	4/21/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-KK	Soil	0-4'	4/21/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-16	Groundwater	Fill	5/19/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-31	Groundwater	Upper Sand	5/20/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-32	Groundwater	Upper Sand	5/19/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
-	OW-33	Groundwater	Upper Sand	5/20/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-34	Groundwater	Upper Sand	5/19/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-35	Groundwater	Upper Sand	5/19/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-36	Groundwater	Upper Sand	5/19/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-37	Groundwater	Upper Sand	5/20/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS

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Investigation/ Report	Sample ID	Media	Depth Interval/ Aquifer	Date	VOCs	SVOCs/ PAHs	Metals	Pest/ Herb	PCBs
	SO-85121-020915-SM-001	Soil	9-10'	2/9/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-020915-SM-002	Soil	5'	2/9/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-021115-SM-003	Soil	7'	2/11/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-021115-SM-004	Soil	8'	2/11/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-022715-SM-005	Soil	6-7'	2/27/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-022715-SM-006	Soil	8-9'	2/27/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-030215-SM-007	Soil	11'	3/2/2015	(TCL)	NS	NS	(Pest/Herb)	NS
Glenn Springs	SO-85121-030215-SM-008	Soil	13'	3/2/2015	(TCL)	NS	NS	(Pest/Herb)	NS
Holdings, Inc.	SO-85121-031215-SM-008B	Soil	17-18'	3/12/2015	(TCL)	NS	NS	(Pest/Herb)	NS
January 2016	SO-85121-050115-SM-009	Soil	8-9'	5/1/2015	(TCL)	NS	NS	(Pest/Herb)	NS
Interim Remedial	SO-85121-050115-SM-010	Soil	8-9'	5/1/2015	(TCL)	NS	NS	(Pest/Herb)	NS
Measure Project	SO-85121-051315-SM-011	Soil	9-10'	5/13/2015	(TCL)	NS	NS	(Pest/Herb)	NS
Summary Report	SO-85121-051315-SM-012	Soil	20-21'	5/13/2015	(TCL)	NS	NS	(Pest/Herb)	NS
Summary Report	SO-85121-051315-SM-013	Soil	16-17'	5/13/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-052815-SM-014	Soil	25-26'	5/28/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-060415-SM-014B	Soil	30'	6/4/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-052815-SM-015	Soil	23-24'	5/28/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-052815-SM-016	Soil	23-24'	5/28/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-060315-SM-017	Soil	30'	6/3/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-060415-SM-018	Soil	26-27'	6/4/2015	(TCL)	NS	NS	(Pest/Herb)	NS
N. 4	SO-85121-060415-SM-019	Soil	26-27'	6/4/2015	(TCL)	NS	NS	(Pest/Herb)	NS

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Investigation/ Report	Sample ID	Media	Depth Interval/ Aquifer	Date	VOCs	SVOCs/ PAHs	Metals	Pest/ Herb	PCBs
Report	LSS-001		0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-001 LSS-002	Soil	0-2"				. ,		
		Soil		3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-002	Soil	2-12"	3/28/2017	NS NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-003	Soil	0-2"	3/29/2017		(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-004	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-005	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-006	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-007	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-007	Soil	2-12"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-008	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-009	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-009	Soil	2-12"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-010	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-010	Soil	2-6"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-010	Soil	6-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-011	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
LiRo Engineers	LSS-011	Soil	2-6"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
March 2017-	LSS-011	Soil	6-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
November 2017	LSS-012	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
Remedial	LSS-012	Soil	2-6"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
Investigation	LSS-012	Soil	6-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-013	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-013	Soil	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-014	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-014	Soil	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-015	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-015	Soil	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-016	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-016	Soil	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-017	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-017	Soil	2-12"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-018	Soil	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-018	Soil	2-12"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-019	Soil	0-2"	5/11/2017	NS	NS	NS	NS	(TCL PCB)
	LSS-020	Soil	0-2"	5/11/2017	NS	NS	NS	NS	(TCL PCB)
	LSS-021	Soil	0-2"	5/11/2017	NS	NS	NS	NS	(TCL PCB)
	LSS-022	Soil	0-2"	5/11/2017	NS	NS	NS	NS	(TCL PCB)

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Investigation/ Report	Sample ID	Media	Depth Interval/ Aquifer	Date	VOCs	SVOCs/ PAHs	Metals	Pest/ Herb	PCBs
	LSED-001	Sediment	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-002	Sediment	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-002	Sediment	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-003	Sediment	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-004	Sediment	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-004	Sediment	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-005	Sediment	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-005	Sediment	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSED-006	Sediment	0-2"	3/29/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSW-01	Surface water	Surface	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSW-02	Surface water	Surface	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSW-03	Surface water	Surface	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSW-04	Surface water	Surface	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-001	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-002	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-003	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB
	RSS-004	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
LiRo Engineers	RSS-005	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
March 2017-	RSS-006	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
November 2017	RSS-007	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB
Remedial	RSS-008	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB
Investigation	RSS-009	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-010	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-011	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-011 DUP	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-012	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-013	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-014	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-015	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-016	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-017	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-018	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB
	RSS-019	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB
	RSS-020	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-021 DUP	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-021	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-022	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-023	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-024	Soil	0-2"	5/11/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)

- TAL=Target Analyte List
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- 3) TCL=Target Compound List
- 4) NS=Not Sampled

Investigation/ Report	Sample ID	Media	Depth Interval/ Aquifer	Date	VOCs	SVOCs/ PAHs	Metals	Pest/ Herb	PCBs
Report	TP-01	Soil	1-6'	7/19/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-03	Soil	1-6'	7/19/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-04	Soil	1-6'	7/19/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-05	Soil	1-6'	7/19/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-05 DUP	Soil	1-6'	7/19/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-07	Soil	1-6'	7/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-07 DUP	Soil	1-6'	7/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-09	Soil	1-6'	7/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-11	Soil	1-6'	7/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-12	Soil	1-6'	7/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-13	Soil	1-6'	7/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-13 DUP	Soil	1-6'	7/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-15	Soil	1-6'	7/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-16	Soil	1-6'	7/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-17	Soil	1-6'	7/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	TP-18	Soil	1-6'	7/19/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-1	Groundwater	Upper Sand	8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-1	Groundwater	Upper Sand	8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
LiRo Engineers	OW-1B	Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
March 2017-	OW-1B DUP	Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
November 2017	OW-1B DOP		Upper Sand	8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
Remedial	OW-2	Groundwater Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
Investigation	OW-4	Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-5		Till	8/31/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-5 OW-5 DUP	Groundwater Groundwater	Till	8/31/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-6	Groundwater	Till	9/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-14A		Lower Sand	9/25/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-14A OW-15	Groundwater Groundwater	Lower Sand	9/23/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-15 OW-16	Groundwater	Fill	8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-16 DUP	Groundwater	Fill	8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-16 DOP	Groundwater		8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	
	OW-21 OW-22	Groundwater	Upper Sand Upper Sand	8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
<u> </u>	OW-22 OW-23	Groundwater	Upper Sand Upper Sand	8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
-	OW-23 OW-31	_		8/22/2017	(TCL)	(TCL)	(TAL)		
	OW-31 OW-32	Groundwater Groundwater	Upper Sand Upper Sand	8/22/2017 8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb) (TCL Pest/Herb)	(TCL PCB) (TCL PCB)
	OW-32 OW-33	Groundwater	Upper Sand Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
-	OW-33	_		8/22/2017	(TCL)	(TCL)	(TAL)		
	OW-34 OW-35	Groundwater	Upper Sand	8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb) (TCL Pest/Herb)	(TCL PCB)
	OW-36	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
		Groundwater	Upper Sand		\ /		. /		
	OW-37	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCI

- 1) TAL=Target Analyte List
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- 3) TCL=Target Compound List
- 4) NS=Not Sampled

			Depth						
Investigation/	Sample	M 11	Interval/	ъ.	Voc	SVOCs/	W. 1	Pest/	ncn
Report	ID	Media	Aquifer	Date	VOCs	PAHs	Metals	Herb	PCBs
<u> </u>	LDP-01	Groundwater	Upper Sand	8/24/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
<u> </u>	LDP-02	Groundwater	Upper Sand	8/24/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
L	LDP-03	Groundwater	Upper Sand	8/24/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LDP-04	Groundwater	Upper Sand	8/25/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-01S	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-01S DUP	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-02S	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-03S	Groundwater	Upper Sand	8/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-04S	Groundwater	Upper Sand	8/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-05S	Groundwater	Upper Sand	8/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-06S	Groundwater	Upper Sand	8/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-07S	Groundwater	Upper Sand	8/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-08S	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-09S	Groundwater	Upper Sand	9/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
LiRo Engineers	LPZ-09S DUP	Groundwater	Upper Sand	9/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
March 2017-	LPZ-10S	Groundwater	Upper Sand	9/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
November 2017	LPZ-09S DUP	Groundwater	Upper Sand	9/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
Remedial	LPZ-11S	Groundwater	Upper Sand	9/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
Investigation	LPZ-12S	Groundwater	Upper Sand	9/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-13S	Groundwater	Upper Sand	9/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	SG-01	Surface water	Surface	8/28/2017	(TCL)	(TCL)	(TAL) Alkalinity and Ions	(TCL Pest/Herb)	(TCL PCB)
	SB-NR	Soil	0-2"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	SB-NR	Soil	2-12"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-North	Soil	0-2"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-North	Soil	2-12"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-NorthDup	Soil	0-2"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-NorthDup	Soil	2-12"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-South	Soil	0-2"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-South	Soil	2-12"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-East	Soil	0-2"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-East	Soil	2-12"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-West	Soil	0-2"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)
	NS-West	Soil	2-12"	11/7/2017	NS	(TCL)	NS	NS	(TCL PCB)

- 1) TAL=Target Analyte List
 2) TCLP=Toxicity characteristic leaching procedure
 3) TCL=Target Compound List
 4) NS=Not Sampled

TABLE 4-1 MONITORING WELL AND PIEZOMETER CONSTRUCTION SUMMARY NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Well Number	Ground Surface Elevation * (feet)	Top of Riser Elevation * (feet)	Total Boring Depth (ft. BGS)	Sandpack Interval (ft. BGS)	Sandpack Interval * (feet)	Well Screen Interval (ft. BGS)	Well Screen Interval * (feet)	Screened Water-Bearing Zone
LDP-01	576.92	580.34	5.3	3.3 to 5.3	573.62 to 571.62	4.3 to 5.3	572.62 to 571.62	Upper Sand
LDP-02	577.46	581.03	5.3	3.3 to 5.3	574.16 to 572.16	4.3 to 5.3	573.16 to 572.16	Upper Sand/Silty Clay
LDP-03	577.25	580.73	5.1	2.4 to 5.1	574.85 to 572.15	4.1 to 5.1	573.15 to 572.15	Upper Sand/Silty Clay
LDP-04	578.15	581.42	5.3	3.3 to 5.3	574.85 to 572.85	4.3 to 5.3	573.85 to 572.85	Upper Sand
LPZ-01S	577.25	580.31	7.0	4.0 to 7.0	573.25 to 570.25	4.9 to 6.9	572.36 to 570.36	Upper Sand/Silty Clay
LPZ-02S	577.66	581.03	6.0	2.0 to 6.0	575.66 to 571.66	3.0 to 6.0	574.70 to 571.70	Upper Sand/Silty Clay
LPZ-03S	577.86	581.16	18.0	2.0 to 8.0	575.86 to 569.86	3.0 to 8.0	574.86 to 569.86	Upper Sand/Silty Clay
LPZ-04S	576.87	579.68	6.0	2.0 to 6.0	574.87 to 570.87	3.0 to 6.0	573.87 to 570.87	Upper Sand/Silty Clay
LPZ-05S	577.33	580.41	8.0	2.0 to 6.0	575.33 to 571.33	3.0 to 6.0	574.33 to 571.33	Upper Sand/Silty Clay
LPZ-06S	578.03	581.00	18.0	2.0 to 8.0	576.03 to 570.03	3.0 to 8.0	575.03 to 570.03	Upper Sand/Silty Clay
LPZ-07S	577.43	580.56	8.0	2.0 to 7.0	575.43 to 570.43	3.0 to 7.0	574.43 to 570.43	Upper Sand/Silty Clay
LPZ-08S	575.95	579.47	6.0	2.0 to 4.0	573.95 to 571.95	2.5 to 4.0	573.45 to 571.95	Upper Sand
LPZ-09S	578.12	581.51	10.0	3.0 to 8.0	575.12 to 570.12	4.0 to 8.0	574.12 to 570.12	Upper Sand
LPZ-10S	577.41	580.38	8.0	3.0 to 6.0	574.41 to 571.41	4.0 to 6.0	573.45 to 571.45	Upper Sand
LPZ-11S	577.65	579.96	8.0	3.0 to 7.0	574.65 to 570.65	4.0 to 7.0	573.65 to 570.65	Upper Sand
LPZ-12S	577.09	580.03	8.0	3.0 to 7.0	574.09 to 570.09	4.0 to 7.0	573.09 to 570.09	Upper Sand
LPZ-13S	578.75	581.66	8.0	4.0 to 7.5	574.75 to 571.25	5.0 to 7.5	573.75 to 571.25	Upper Sand
OW-1	577.31	578.30	10.0	4.0 to 10.0	573.31 to 567.31	4.0 to 9.0	573.31 to 568.31	Upper Sand/Silty Clay
OW-13	575.52	579.33	6.0	2.5 to 5.0	573.02 to 570.52	3.0 to 5.0	572.52 to 570.52	Upper Sand
OW-14A	576.73	580.05	40.0	32.5 to 36.5	544.23 to 540.23	33.5 to 36.5	543.23 to 540.23	Lower Sand
OW-14B	576.91	579.92	10.0	2.5 to 7.0	574.41 to 569.91	3.0 to 7.0	573.91 to 569.91	Upper Sand
OW-14BR	577.18	580.03	8.0	4.0 to 7.0	573.18 to 570.18	5.0 to 7.0	572.18 to 570.18	Upper Sand

Notes:

All data based off field measurements and well construction logs.

^{* =} All elevations are in feet relative to an assumed datum.

^{** =} Well included in two water-bearing zones because it screens most or all of both zones.

Ft. BGS = Feet below ground surface.

TABLE 4-1 MONITORING WELL AND PIEZOMETER CONSTRUCTION SUMMARY NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Well Number	Ground Surface Elevation * (feet)	Top of Riser Elevation * (feet)	Total Boring Depth (ft. BGS)	Sandpack Interval (ft. BGS)	Sandpack Interval * (feet)	Well Screen Interval (ft. BGS)	Well Screen Interval * (feet)	Screened Water-Bearing Zone
OW-15	577.14	579.56	45.0	38.0 to 45.0	539.14 to 532.14	40.0 to 45.0	537.14 to 532.14	Lower Sand
OW-16	579.23	581.88	10.0	4.0 to 10.0	575.23 to 569.23	5.0 to 10.0	574.23 to 569.23	Fill/Silty Clay
OW-1B	577.41	579.14	68.6	55.0 to 68.6	522.41 to 508.81	58.1 to 68.1	519.31 to 509.31	Glacial Till
OW-2	576.37	577.26	14.0	5.0 to 14.0	571.37 to 562.37	9.0 to 14.0	567.37 to 562.37	Silty Clay/Red-Gray Clay
OW-21	577.71	580.00	12.0	2.5 to 8.0	575.21 to 569.71	3.0 to 8.0	574.76 to 569.76	Upper Sand/Silty Clay
OW-22	577.45	579.46	12.0	2.5 to 8.0	574.95 to 569.45	3.0 to 8.0	574.45 to 569.45	Fill/Upper Sand?
OW-23	577.16	579.26	8.0	2.5 to 8.0	574.66 to 569.16	3.0 to 8.0	574.16 to 569.16	Upper Sand/Silty Clay
OW-3	577.28	579.56	68.7	43.0 to 55.0	534.28 to 522.28	45.0 to 55.0	532.28 to 522.28	Glacial Till
OW-31	577.71	580.64	8.0	1.0 to 6.0	576.71 to 571.71	1.0 to 6.0	576.71 to 571.71	Upper Sand
OW-32	578.56	581.44	12.0	4.0 to 10.0	574.56 to 568.56	5.0 to 10.0	573.56 to 568.56	Upper Sand
OW-33	579.83	582.43	12.0	3.0 to 9.0	576.83 to 570.83	4.0 to 9.0	575.83 to 570.83	Fill/Upper Sand
OW-34	579.00	581.10	16.0	5.0 to 12.0	574.00 to 567.00	7.0 to 12.0	572.00 to 567.00	Upper Sand
OW-35	578.80	581.57	12.0	3.0 to 9.0	575.80 to 569.80	4.0 to 9.0	574.80 to 569.80	Fill/Upper Sand
OW-36	578.81	580.95	12.0	2.0 to 9.0	576.81 to 569.81	4.0 to 9.0	574.81 to 569.81	Fill/Upper Sand
OW-37	577.32	580.15	8.0	1.0 to 6.0	576.32 571.32	1.0 to 6.0	576.32 to 571.32	Fill/Upper Sand
OW-4	577.04	579.45	70.3	55.0 to 70.1	522.04 to 506.94	60.1 to 70.1	516.94 to 506.94	Glacial Till
OW-5	578.37	579.75	70.0	56.0 to 70.0	522.37 to 508.37	60.0 to 70.0	518.37 to 508.37	Glacial Till
OW-6	579.69	582.36	66.0	55.0 to 66.0	524.69 to 513.69	56.0 to 66.0	523.69 to 513.69	Glacial Till
SG-1	573.53		-	0.0 to 0.0	to	to	to	Northern Boundary Ditch
SG-2	574.11			0.0 to 0.0	to	to	to	Site Pond (Northeast Corner)

Notes:

Ft. BGS = Feet below ground surface.

All data based off field measurements and well construction logs.

^{* =} All elevations are in feet relative to an assumed datum.

^{** =} Well included in two water-bearing zones because it screens most or all of both zones.

Location ID	Measuring Point Elevevation ¹ (Feet AMSL ²)	Measurement Date	Depth to Water (Feet)	Water Elevation ¹ (Feet AMSL)	Note
OW-11	NA	2/8/1988	8.30	NA	Destroyed prior to October 2017 Survey.
OW-14B	579.92	2/8/1988	3.20	576.72	Desiroyea prior to october 2017 Survey.
OW-14B	579.56	2/8/1988	10.80	568.76	
OW-02	577.26	2/18/1988	3.20	574.06	
OW-02 OW-11	NA	2/18/1988	8.50	NA	Destroyed prior to October 2017 Survey.
OW-11 OW-12	NA NA	2/18/1988	16.90	NA NA	Destroyed prior to October 2017 Survey. Destroyed prior to October 2017 Survey.
OW-12 OW-13	579.33	2/18/1988	2.80	576.53	Destroyed prior to October 2017 Survey.
OW-14A	580.05	2/18/1988	15.50	564.55	
OW-14A OW-14B	579.92	2/18/1988	3.20	576.72	
OW-14B OW-15	579.56	2/18/1988	10.80	568.76	
OW-15 OW-16	581.88	2/18/1988	4.80	577.08	
OW-01	578.30 577.26	6/2/1988	5.30	573.00	
OW-02 OW-03	577.26	6/2/1988	3.90	573.36	
	579.56	6/2/1988	15.00	564.56	
OW-04	579.45	6/2/1988	14.50	564.95	
OW-05	579.75	6/2/1988	15.10	564.65	
OW-06	582.36	6/2/1988	17.30	565.06	2
OW-11	NA	6/2/1988	4.60	NA	Destroyed prior to October 2017 Survey.
OW-12	NA	6/2/1988	11.50	NA	Destroyed prior to October 2017 Survey.
OW-14A	580.05	6/2/1988	11.30	568.75	
OW-14B	579.92	6/2/1988	4.20	575.72	
OW-15	579.56	6/2/1988	11.40	568.16	
OW-16	581.88	6/2/1988	6.30	575.58	
OW-1B	579.14	6/2/1988	14.10	565.04	
OW-03	579.56	10/12/1988	14.40	565.16	
OW-05	579.75	10/12/1988	15.10	564.65	
OW-06	582.36	10/12/1988	17.70	564.66	
OW-11	NA	10/12/1988	4.50	NA	Destroyed prior to October 2017 Survey.
OW-14A	580.05	10/12/1988	11.70	568.35	
OW-15	579.56	10/12/1988	11.80	567.76	
OW-16	581.88	10/12/1988	8.70	573.18	
OW-01	578.30	8/2/2013	3.09	575.21	
OW-02	577.26	8/2/2013	2.17	575.09	
OW-11	NA	8/2/2013	4.29	NA	Destroyed prior to October 2017 Survey.
OW-13	579.33	8/2/2013	3.06	576.27	· · ·
OW-14B	579.92	8/2/2013	3.23	576.69	
OW-16	581.88	8/2/2013	6.18	575.70	
OW-21	580.00	8/2/2013	4.66	575.34	
OW-22	579.46	8/2/2013	3.96	575.50	
OW-23	579.26	8/2/2013	3.68	575.58	
OW-24	NA	8/2/2013	5.20	NA	Destroyed prior to October 2017 Survey
OW-25	NA	8/2/2013	4.24	NA	Destroyed prior to October 2017 Survey
OW-16	581.88	5/19/2014	4.66	577.22	, , , , , , , , , , , , , , , , , , , ,
OW-31	580.64	5/19/2014	3.80	576.84	
OW-32	581.44	5/19/2014	4.59	576.85	
OW-33	582.43	5/19/2014	6.03	576.40	
OW-34	581.10	5/19/2014	4.00	577.10	
OW-35	581.57	5/19/2014	4.66	576.91	
OW-36	580.95	5/19/2014	3.99	576.96	
OW-37	580.15	5/19/2014	3.50	576.65	
OW-37	580.15	5/19/2014	3.50	576.65	
Notes:	200.13	J/17/2014	3.30	370.03	

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88)

²⁾ AMSL = Above Mean Sea Level

	Measuring Point Elevevation ¹	Measurement	Depth to Water	Water Elevation ¹	
Location ID	(Feet AMSL ²)	Date	(Feet)	(Feet AMSL)	Note
OW-01	578.30	8/2/2017	3.98	574.32	
OW-02	577.26	8/2/2017	2.62	574.64	
OW-03	579.56	8/2/2017	13.94	565.62	
OW-04	579.45	8/2/2017	13.83	565.62	
OW-05	579.75	8/2/2017	14.33	565.42	
OW-06	582.36	8/2/2017	16.89	565.47	Casing tab for lock corroded.
OW-14A	580.05	8/2/2017	4.66	575.39	
OW-14B	579.92	8/2/2017	11.42	568.50	Outer casing has heaved.
OW-16	581.88	8/2/2017	6.60	575.28	
OW-1B	579.14	8/2/2017	13.46	565.68	
OW-21	580.00	8/2/2017	5.73	574.27	
OW-31	580.64	8/2/2017	6.74	573.90	
OW-32	581.44	8/2/2017	6.61	574.83	
OW-33	582.43	8/2/2017	7.31	575.12	
OW-34	581.10	8/2/2017	6.51	574.59	
OW-35	581.57	8/2/2017	6.59	574.98	
OW-37	580.15	8/2/2017	5.12	575.03	
OW-37	580.15	8/2/2017	5.12	575.03	
OW-01	578.30	8/3/2017	4.20	574.10	
OW-02	577.26	8/3/2017	2.62	574.64	
OW-04	579.45	8/3/2017	13.83	565.62	
OW-05 OW-21	579.75 580.00	8/3/2017	14.33	565.42	
OW-21 OW-31	580.64	8/3/2017 8/3/2017	5.92 6.99	574.08 573.65	
OW-31 OW-32	581.44	8/3/2017	6.61	574.83	
OW-14B	579.92	8/4/2017	4.64	575.28	Outer casing has heaved.
OW-14B	582.43	8/4/2017	6.64	575.79	Outer easing has heaved.
OW-35	581.57	8/4/2017	6.74	574.83	
LPZ-03S	581.16	8/7/2017	5.70	575.46	
LPZ-04S	579.68	8/7/2017	4.79	574.89	
LPZ-05S	580.41	8/7/2017	5.86	574.55	
LPZ-06S	581.00	8/7/2017	6.23	574.77	
OW-06	582.36	8/7/2017	16.84	565.52	Casing tab for lock corroded.
OW-16	581.88	8/7/2017	6.93	574.95	
OW-33	582.43	8/7/2017	6.12	576.31	
LPZ-02S	581.03	8/8/2017	5.90	575.13	
OW-02	577.26	8/8/2017	3.20	574.06	
OW-04	579.45	8/8/2017	13.84	565.61	
OW-15	579.56	8/8/2017	11.79	567.77	Casing tab for lock corroded.
OW-37	580.15	8/8/2017	5.18	574.97	
LPZ-02S	581.03	8/9/2017	5.92	575.11	
OW-15	579.56	8/9/2017	14.87	564.69	Casing tab for lock corroded.
OW-1B	579.14	8/9/2017	13.45	565.69	
OW-33	582.43	8/9/2017	7.54	574.89	
OW-05	579.75	8/10/2017	14.34	565.41	
OW-03	579.56	8/15/2017	13.91	565.65	
OW-13	579.33	8/15/2017	4.22	575.11	Casing tab for lock corroded & outer casing heaved.
OW-22	579.46	8/15/2017	5.31	574.15	
OW-23	579.26	8/15/2017	4.35	574.91	
OW-31	580.64	8/15/2017	7.27	573.37	
LPZ-03S	581.16	8/21/2017	5.42	575.74	
LPZ-04S	579.68	8/21/2017	5.34	574.34	
LPZ-05S	580.41	8/21/2017	5.25	575.16	
LPZ-06S	581.00	8/21/2017	5.47	575.53	
LPZ-07S	580.56	8/21/2017	5.92	574.64	

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88)

²⁾ AMSL = Above Mean Sea Level

Location ID	Measuring Point Elevevation ¹ (Feet AMSL ²)	Measurement Date	Depth to Water (Feet)	Water Elevation ¹ (Feet AMSL)	Note
OW-05	579.75	8/21/2017	14.34	565.41	
SG-01	579.33	8/21/2017	4.20	575.13	
SG-02	579.57	8/21/2017	4.27	575.30	
LPZ-01S	580.31	8/22/2017	5.22	575.09	
LPZ-02S	581.03	8/22/2017	5.80	575.23	
LPZ-03S	581.16	8/22/2017	5.42	575.74	
LPZ-04S	579.68	8/22/2017	5.44	574.24	Corrected field recorded DTW from 4.44 to 5.44.
LPZ-05S	580.41	8/22/2017	5.41	575.00	
LPZ-06S	581.00	8/22/2017	5.55	575.45	
LPZ-07S	580.56	8/22/2017	5.95	574.61	
LPZ-08S	579.47	8/22/2017	4.33	575.14	
OW-01	578.30	8/22/2017	3.67	574.63	
OW-01B OW-02	579.14 577.26	8/22/2017 8/22/2017	14.19 2.11	564.95 575.15	
OW-02 OW-03	579.56	8/22/2017	13.81	565.75	
OW-03	579.45	8/22/2017	13.79	565.66	
OW-05	579.75	8/22/2017	14.20	565.55	
OW-06	582.36	8/22/2017	16.80	565.56	Casing tab for lock corroded.
OW-13	579.33	8/22/2017	4.06	575.27	Casing tab for lock corroded & outer casing heaved.
OW-14A	580.05	8/22/2017	20.69	559.36	cusing the fer foot correduct to outer chang neared.
OW-14B	579.92	8/22/2017	4.64	575.28	Outer casing has heaved.
OW-14BR	580.03	8/22/2017	4.90	575.13	
OW-15	579.56	8/22/2017	11.72	567.84	Casing tab for lock corroded.
OW-16	581.88	8/22/2017	6.65	575.23	
OW-21	580.00	8/22/2017	5.48	574.52	
OW-22	579.46	8/22/2017	4.85	574.61	
OW-23	579.26	8/22/2017	4.03	575.23	
OW-31	580.64	8/22/2017	6.33	574.31	
OW-32	581.44	8/22/2017	6.45	574.99	
OW-33	582.43	8/22/2017	7.49	574.94	
OW-34	581.10	8/22/2017	6.47	574.63	
OW-35	581.57	8/22/2017	6.54	575.03	
OW-36 OW-37	580.95 580.15	8/22/2017 8/22/2017	5.93 5.06	575.02 575.09	
SG-01	579.33	8/22/2017	4.15	575.18	
SG-02	579.57	8/22/2017	4.30	575.27	
LDP-01	580.34	8/30/2017	6.64	573.70	TD = 8.36 (TOIC), BTM Elev = 571.98
LDP-02	581.03	8/30/2017	6.65	574.38	12 0.30 (1010), 21.11 210, 0,11.50
LDP-03	580.73	8/30/2017	6.60	574.13	
LDP-04	581.42	8/30/2017	7.20	574.22	
LPZ-01S	580.31	8/30/2017	5.38	574.93	
LPZ-02S	581.03	8/30/2017	6.18	574.85	
LPZ-03S	581.16	8/30/2017	7.06	574.10	
LPZ-04S	579.68	8/30/2017	5.65	574.03	
LPZ-05S	580.41	8/30/2017	6.36	574.05	
LPZ-06S	581.00	8/30/2017	6.62	574.38	
LPZ-07S	580.56	8/30/2017	6.73	573.83	
LPZ-08S	579.47	8/30/2017	4.68	574.79	
OW-01	578.30	8/30/2017	4.19	574.11	
OW-01B	579.14	8/30/2017	13.97	565.17	
OW-02	577.26	8/30/2017	2.52	574.74	
OW-03	579.56	8/30/2017	13.92	565.64	
OW-04	579.45	8/30/2017	13.88	565.57	
OW-05	579.75	8/30/2017	14.28	565.47	Cooling talk for look gormaded
OW-06	582.36	8/30/2017	16.92	565.44	Casing tab for lock corroded.
OW-13	579.33	8/30/2017	4.39	574.94	Casing tab for lock corroded & outer casing heaved.

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88)

²⁾ AMSL = Above Mean Sea Level

	Measuring				
	Point		Depth to	Water	
	Elevevation ¹	Measurement	Water	Elevation ¹	
Location ID	(Feet AMSL ²)	Date	(Feet)	(Feet AMSL)	Note
OW-14A	580.05	8/30/2017	17.85	562.20	
OW-14B	579.92	8/30/2017	4.97	574.95	Outer casing has heaved.
OW-14BR	580.03	8/30/2017	5.36	574.67	
OW-15	579.56	8/30/2017	11.85	567.71	Casing tab for lock corroded.
OW-16 OW-21	581.88 580.00	8/30/2017 8/30/2017	7.25 6.11	574.63 573.89	
OW-21 OW-22	579.46	8/30/2017	5.30	574.16	
OW-23	579.26	8/30/2017	4.56	574.70	
OW-31	580.64	8/30/2017	7.23	573.41	
OW-32	581.44	8/30/2017	6.85	574.59	
OW-33	582.43	8/30/2017	7.82	574.61	
OW-34	581.10	8/30/2017	6.86	574.24	
OW-35	581.57	8/30/2017	6.90	574.67	
OW-36	580.95	8/30/2017	6.25	574.70	
OW-37	580.15	8/30/2017	5.45	574.70	
SG-01	579.33	8/30/2017	4.49	574.84	
SG-02	579.57	8/30/2017	4.70	574.87	
LDP-01	580.34	9/12/2017	7.24	573.10	TD = 8.36 (TOIC), BTM Elev = 571.98
LDP-02	581.03	9/12/2017	6.89	574.14	
LDP-03 LDP-04	580.73 581.42	9/12/2017 9/12/2017	6.97 7.79	573.76	
LPZ-01S	580.31	9/12/2017	5.90	573.63 574.41	
LPZ-01S LPZ-02S	581.03	9/12/2017	6.38	574.65	
LPZ-03S	581.16	9/12/2017	7.59	573.57	
LPZ-04S	579.68	9/12/2017	6.26	573.42	
LPZ-05S	580.41	9/12/2017	6.86	573.55	
LPZ-06S	581.00	9/12/2017	7.15	573.85	
LPZ-07S	580.56	9/12/2017	7.23	573.33	
LPZ-08S	579.47	9/12/2017	4.89	574.58	
OW-01	578.30	9/12/2017	4.52	573.78	
OW-01B	579.14	9/12/2017	13.68	565.46	
OW-02	577.26	9/12/2017	2.70	574.56	
OW-03	579.56	9/12/2017	14.03	565.53	
OW-04 OW-05	579.45 579.75	9/12/2017	13.96	565.49	
OW-05 OW-06	582.36	9/12/2017 9/12/2017	14.35	565.40 565.31	Casing tab for lock corroded.
OW-06 OW-13	579.33	9/12/2017	17.05 4.64	574.69	Casing tab for lock corroded. Casing tab for lock corroded & outer casing heaved.
OW-14A	580.05	9/12/2017	17.40	562.65	Change and for fook corroded to outer cusing neared.
OW-14R	579.92	9/12/2017	5.20	574.72	Outer casing has heaved.
OW-14BR	580.03	9/12/2017	5.74	574.29	<i>y</i>
OW-15	579.56	9/12/2017	11.83	567.73	Casing tab for lock corroded.
OW-16	581.88	9/12/2017	7.75	574.13	
OW-21	580.00	9/12/2017	6.52	573.48	
OW-22	579.46	9/12/2017	5.85	573.61	
OW-23	579.26	9/12/2017	4.74	574.52	
OW-31	580.64	9/12/2017	7.75	572.89	
OW-32	581.44	9/12/2017	7.20	574.24	
OW-33	582.43	9/12/2017	8.29	574.14	
OW-34 OW-35	581.10 581.57	9/12/2017 9/12/2017	7.40 7.24	573.70 574.33	
OW-36	580.95	9/12/2017	6.58	574.37	
OW-37	580.15	9/12/2017	5.85	574.30	
SG-01	579.33	9/12/2017	4.83	574.50	
SG-02	579.57	9/12/2017	4.94	574.63	

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88)

²⁾ AMSL = Above Mean Sea Level

TABLE 4-2 (b) SUMMARY OF WATER LEVEL MEASUREMENTS **SEPTEMBER 25, 2017**

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

	Measuring Point Elevevation ¹	Measurement	Depth to Water	Water Elevation ¹	
Location ID	(Feet AMSL ²)	Date	(Feet)	(Feet AMSL)	Note
LDP-01	580.34	9/25/2017	Dry	NA	TD = 8.36 (TOIC), BTM Elev = 571.98
LDP-02	581.03	9/25/2017	8.39	572.64	
LDP-03	580.73	9/25/2017	8.13	572.60	
LDP-04	581.42	9/25/2017	8.61	572.81	
LPZ-01S	580.31	9/25/2017	6.55	573.76	
LPZ-02S	581.03	9/25/2017	7.01	574.02	
LPZ-03S	581.16	9/25/2017	8.80	572.36	
LPZ-04S	579.68	9/25/2017	7.23	572.45	
LPZ-05S	580.41	9/25/2017	7.59	572.82	
LPZ-06S	581.00	9/25/2017	8.24	572.76	
LPZ-07S	580.56	9/25/2017	8.19	572.37	
LPZ-08S	579.47	9/25/2017	5.33	574.14	
LPZ-09S	581.51	9/25/2017	7.74	573.77	
LPZ-10S	580.38	9/25/2017	7.12	573.26	
LPZ-11S	579.96	9/25/2017	6.43	573.53	
LPZ-12S	580.03	9/25/2017	6.69	573.34	
LPZ-13S	581.66	9/25/2017	8.64	573.02	
OW-01	578.30	9/25/2017	5.23	573.07	
OW-01B	579.14	9/25/2017	13.85	565.29	
OW-02	577.26	9/25/2017	3.52	573.74	
OW-03	579.56	9/25/2017	14.10	565.46	
OW-04	579.45	9/25/2017	14.09	565.36	
OW-05	579.75	9/25/2017	14.50	565.25	
OW-06	582.36	9/25/2017	17.20	565.16	Casing tab for lock corroded.
OW-13	579.33	9/25/2017	5.79	573.54	Casing tab for lock corroded & outer casing heaved.
OW-14A	580.05	9/25/2017	21.09	558.96	
OW-14B	579.92	9/25/2017	5.68	574.24	Outer casing has heaved.
OW-14BR	580.03	9/25/2017	6.36	573.67	
OW-15	579.56	9/25/2017	11.98	567.58	Casing tab for lock corroded.
OW-16	581.88	9/25/2017	8.54	573.34	
OW-21	580.00	9/25/2017	7.23	572.77	
OW-22	579.46	9/25/2017	6.47	572.99	
OW-23	579.26	9/25/2017	5.30	573.96	
OW-31	580.64	9/25/2017	8.15	572.49	
OW-32	581.44	9/25/2017	7.77	573.67	
OW-33	582.43	9/25/2017	9.14	573.29	
OW-34	581.10	9/25/2017	8.46	572.64	
OW-35	581.57	9/25/2017	7.66	573.91	
OW-36	580.95	9/25/2017	6.93	574.02	
OW-37	580.15	9/25/2017	6.44	573.71	
SG-01	579.33	9/25/2017	Dry	NA	Ground Elevation = 574.12.
SG-02	579.57	9/25/2017	Dry	NA	Ground Elevation = 573.53.

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88) 2) AMSL = Above Mean Sea Level

TABLE 4-2 (c) SUMMARY OF WATER LEVEL MEASUREMENTS **OCTOBER 17, 2017**

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

	Measuring Point Elevevation ¹	Measurement	Depth to Water	Water Elevation ¹	
Location ID	(Feet AMSL ²)	Date	(Feet)	(Feet AMSL)	Note
LDP-01	580.34	10/17/2017	5.58	574.76	TD = 8.36 (TOIC), BTM Elev = 571.98
LDP-02	581.03	10/17/2017	5.34	575.69	
LDP-03	580.73	10/17/2017	5.69	575.04	
LDP-04	581.42	10/17/2017	7.35	574.07	
LPZ-01S	580.31	10/17/2017	5.39	574.92	
LPZ-02S	581.03	10/17/2017	6.35	574.68	
LPZ-03S	581.16	10/17/2017	5.95	575.21	
LPZ-04S	579.68	10/17/2017	4.79	574.89	
LPZ-05S	580.41	10/17/2017	6.06	574.35	
LPZ-06S	581.00	10/17/2017	6.09	574.91	
LPZ-07S	580.56	10/17/2017	6.65	573.91	
LPZ-08S	579.47	10/17/2017	4.72	574.75	
LPZ-09S	581.51	10/17/2017	7.50	574.01	
LPZ-10S	580.38	10/17/2017	5.98	574.40	
LPZ-11S	579.96	10/17/2017	5.16	574.80	
LPZ-12S	580.03	10/17/2017	5.29	574.74	
LPZ-13S	581.66	10/17/2017	7.74	573.92	
OW-01	578.30	10/17/2017	3.98	574.32	
OW-01B	579.14	10/17/2017	13.69	565.45	
OW-02	577.26	10/17/2017	2.29	574.97	
OW-03	579.56	10/17/2017	14.05	565.51	
OW-04	579.45	10/17/2017	14.14	565.31	
OW-05	579.75	10/17/2017	14.53	565.22	
OW-06	582.36	10/17/2017	17.24	565.12	Casing tab for lock corroded.
OW-13	579.33	10/17/2017	4.19	575.14	Casing tab for lock corroded & outer casing heaved.
OW-14A	580.05	10/17/2017	11.73	568.32	
OW-14B	579.92	10/17/2017	5.02	574.90	Outer casing has heaved.
OW-14BR	580.03	10/17/2017	5.08	574.95	
OW-15	579.56	10/17/2017	11.66	567.90	Casing tab for lock corroded.
OW-16	581.88	10/17/2017	8.01	573.87	
OW-21	580.00	10/17/2017	6.03	573.97	
OW-22	579.46	10/17/2017	5.47	573.99	
OW-23	579.26	10/17/2017	4.36	574.90	
OW-31	580.64	10/17/2017	7.44	573.20	
OW-32	581.44	10/17/2017	7.31	574.13	
OW-33	582.43	10/17/2017	8.40	574.03	
OW-34	581.10	10/17/2017	6.46	574.64	
OW-35	581.57	10/17/2017	7.28	574.29	
OW-36	580.95	10/17/2017	6.68	574.27	
OW-37	580.15	10/17/2017	5.78	574.37	
SG-01	579.33	10/17/2017	4.35	574.98	
SG-02	579.57	10/17/2017	4.81	574.76	

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88) 2) AMSL = Above Mean Sea Level

TABLE 4-2 (d) SUMMARY OF WATER LEVEL MEASUREMENTS OCTOBER 20, 2017

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

	Measuring				
	Point		Depth to	Water	
	Elevevation ¹	Measurement	Water	Elevation ¹	
Location ID	(Feet AMSL ²)	Date	(Feet)	(Feet AMSL)	Note
LPZ-03S	581.16	10/20/2017	6.43	574.73	
LPZ-04S	579.68	10/20/2017	5.13	574.55	
LPZ-05S	580.41	10/20/2017	6.22	574.19	
LPZ-06S	581.00	10/20/2017	6.34	574.66	
LDP-01	580.34	10/20/2017	5.95	574.39	TD = 8.36 (TOIC), BTM Elev = 571.98
LPZ-07S	580.56	10/20/2017	6.70	573.86	
LDP-02	581.03	10/20/2017	5.89	575.14	
LDP-03	580.73	10/20/2017	6.09	574.64	
OW-31	580.64	10/20/2017	7.37	573.27	
OW-03	579.56	10/20/2017	13.98	565.58	14.50' from TOC (0.52' above TOIC).
LPZ-10S	580.38	10/20/2017	6.06	574.32	
OW-22	579.46	10/20/2017	5.45	574.01	
OW-21	580.00	10/20/2017	6.03	573.97	
OW-01	578.30	10/20/2017	5.72	572.58	4.91' from TOC (0.89' above TOIC)
SG-01	579.33	10/20/2017	4.25	575.08	
OW-01B	579.14	10/20/2017	13.62	565.52	
SG-02	579.57	10/20/2017	4.75	574.82	
OW-02	577.26	10/20/2017	4.27	572.99	3.35' from TOC (0.92' above TOIC).
OW-14A	580.05	10/20/2017	11.60	568.45	Casing tab for lock corroded.
OW-14B	579.92	10/20/2017	5.08	574.84	Outer casing has heaved.
OW-37	580.15	10/20/2017	5.79	574.36	
OW-14BR	580.03	10/20/2017	5.18	574.85	
OW-15	579.56	10/20/2017	11.68	567.88	Casing tab for lock corroded.
LPZ-01S	580.31	10/20/2017	5.49	574.82	
OW-04	579.45	10/20/2017	14.10	565.35	
LPZ-11S	579.96	10/20/2017	5.28	574.68	
LPZ-12S	580.03	10/20/2017	5.38	574.65	
LDP-04	581.42	10/20/2017	7.38	574.04	
OW-06	582.36	10/20/2017	17.19	565.17	Casing tab for lock corroded.
OW-16	581.88	10/20/2017	7.92	573.96	
OW-36	580.95	10/20/2017	6.64	574.31	
OW-35	581.57	10/20/2017	7.30	574.27	
LPZ-09S	581.51	10/20/2017	7.48	574.03	
OW-33	582.43	10/20/2017	8.46	573.97	
LPZ-02S	581.03	10/20/2017	6.37	574.66	
LPZ-08S	579.47	10/20/2017	4.79	574.68	
OW-13	579.33	10/20/2017	4.53	574.80	Casing tab for lock corroded & outer casing heaved.
OW-32	581.44	10/20/2017	7.38	574.06	
OW-05	579.75	10/20/2017	14.50	565.25	
OW-23	579.26	10/20/2017	4.51	574.75	

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88)

²⁾ AMSL = Above Mean Sea Level

TABLE 4-2 (e) SUMMARY OF WATER LEVEL MEASUREMENTS **OCTOBER 27, 2017**

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Location ID	Measuring Point Elevevation ¹ (Feet AMSL ²)	Measurement Date	Depth to Water (Feet)	Water Elevation ¹ (Feet AMSL)	Nata
	,		,	,	Note
OW-06	582.36	10/27/2017	17.32	565.04	Casing tab for lock corroded.
OW-16	581.88	10/27/2017	7.91	573.97	
OW-36	580.95	10/27/2017	6.61	574.34	
LDP-04	581.42	10/27/2017	7.29	574.13	
OW-35	581.57	10/27/2017	7.31	574.26	
LPZ-12S	580.03	10/27/2017	5.39	574.64	
OW-04	579.45	10/27/2017	13.85	565.60	
OW-15	579.56	10/27/2017	11.62	567.94	Casing tab for lock corroded.
OW-37	580.15	10/27/2017	5.81	574.34	
LPZ-11S	579.96	10/27/2017	5.23	574.73	
LPZ-01S	580.31	10/27/2017	5.54	574.77	
OW-14BR	580.03	10/27/2017	5.25	574.78	
OW-14A	580.05	10/27/2017	11.39	568.66	Casing tab for lock corroded.
OW-14B	579.92	10/27/2017	5.09	574.83	Heaved
OW-02	577.26	10/27/2017	2.42	574.84	3.35' from TOC (0.92' above TOIC)
SG-01	579.33	10/27/2017	4.36	574.97	
OW-01B	579.14	10/27/2017	13.62	565.52	Latta magazara mata
OW-01	578.30	10/27/2017	3.91	574.39	4.91' from TOC (0.89' above TOIC)
SG-02	579.57	10/27/2017	4.93	574.64	
OW-22	579.46	10/27/2017	5.42	574.04	
OW-21	580.00	10/27/2017	5.91	574.09	
OW-23	579.26	10/27/2017	4.55	574.71	
LPZ-08S	579.47	10/27/2017	4.78	574.69	
OW-13	579.33	10/27/2017	5.54	573.79	Casing tab for lock corroded &outer casing heaved
LPZ-10S	580.38	10/27/2017	6.14	574.24	
OW-03	579.56	10/27/2017	13.97	565.59	14.50' from TOC (0.52' above TOIC)
OW-31	580.64	10/27/2017	7.10	573.54	
LDP-03	580.73	10/27/2017	6.39	574.34	
LDP-02	581.03	10/27/2017	6.47	574.56	TD 0.26 (TOLG) DTM EL 571.00
LDP-01	580.34	10/27/2017	6.33	574.01	TD = 8.36 (TOIC), BTM Elev = 571.98
LPZ-07S	580.56	10/27/2017	6.60	573.96	
LPZ-13S	581.66	10/27/2017	7.55	574.11	
LPZ-02S	581.03	10/27/2017	6.37	574.66	
OW-33	582.43	10/27/2017	8.40	574.03	
LPZ-09S	581.51	10/27/2017	7.44	574.07	
OW-32	581.44	10/27/2017	7.35	574.09	
OW-05	579.75	10/27/2017	14.45	565.30	
LPZ-06S	581.00	10/27/2017	6.42	574.58	
LPZ-05S	580.41	10/27/2017	6.13	574.28	
LPZ-04S	579.68	10/27/2017	5.15	574.53	
OW-34	581.10	10/27/2017	6.55	574.55	
LPZ-03S	581.16	10/27/2017	6.58	574.58	

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88) 2) AMSL = Above Mean Sea Level

TABLE 4-2 (f) SUMMARY OF WATER LEVEL MEASUREMENTS NOVEMBER 7/8, 2017

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

	Measuring				
	Point		Depth to	Water	
	Elevevation ¹	Measurement	Water	Elevation ¹	
Location ID	(Feet AMSL ²)	Date	(Feet)	(Feet AMSL)	Note
LPZ-13S	581.66	11/7/2017	6.37	575.29	
OW-33	582.43	11/7/2017	7.41	575.02	
LPZ-09S	581.51	11/7/2017	6.61	574.90	
OW-32	581.44	11/7/2017	6.56	574.88	
OW-05	579.75	11/7/2017	14.61	565.14	
OW-06	582.36	11/7/2017	17.28	565.08	Casing tab for lock corroded.
OW-16	581.88	11/7/2017	7.00	574.88	
OW-36	580.95	11/7/2017	5.65	575.30	
OW-35	581.57	11/7/2017	6.64	574.93	
LDP-04	581.42	11/7/2017	6.09	575.33	
LPZ-12S	580.03	11/7/2017	4.67	575.36	
OW-04	579.45	11/7/2017	14.19	565.26	
OW-15	579.56	11/7/2017	11.45	568.11	Casing tab for lock corroded.
OW-37	580.15	11/7/2017	5.19	574.96	
LPZ-02S	581.03	11/7/2017	5.75	575.28	
LPZ-01S	580.31	11/7/2017	5.04	575.27	
OW-14BR	580.03	11/7/2017	4.72	575.31	
OW-14A	580.05	11/7/2017	11.19	568.86	Casing tab for lock corroded.
OW-14B	579.92	11/7/2017	4.52	575.40	Outer casing has heaved.
OW-02	577.26	11/7/2017	1.82	575.44	3.35' from TOC (0.92' above TOIC)
OW-01	578.30	11/7/2017	2.51	575.79	4.91' from TOC (0.89' above TOIC)
OW-01B	579.14	11/7/2017	13.71	565.43	
SG-01	579.33	11/7/2017	4.00	575.33	
OW-21	580.00	11/7/2017	4.06	575.94	
OW-22	579.46	11/7/2017	3.75	575.71	
OW-31	580.64	11/7/2017	4.77	575.87	
OW-03	579.56	11/7/2017	14.06	565.50	14.50' from TOC (0.52' above TOIC)
LPZ-10S	580.38	11/7/2017	4.73	575.65	
OW-23	579.26	11/7/2017	3.76	575.50	
SG-02	579.57	11/7/2017	4.22	575.35	
OW-13	579.33	11/7/2017	4.01	575.32	Casing tab for lock corroded &outer casing heaved
LPZ-08S	579.47	11/7/2017	4.23	575.24	
LPZ-06S	581.00	11/7/2017	4.32	576.68	
LDP-01	580.34	11/7/2017	3.97	576.37	TD = 8.36 (TOIC), BTM Elev = 571.98
LPZ-07S	580.56	11/7/2017	4.90	575.66	
LDP-02	581.03	11/7/2017	4.55	576.48	
LDP-03	580.73	11/7/2017	4.25	576.48	
LPZ-05S	580.41	11/7/2017	3.85	576.56	
LPZ-04S	579.68	11/7/2017	5.02	574.66	
OW-34	581.10	11/7/2017	5.10	576.00	
LPZ-03S	581.16	11/7/2017	4.81	576.35	
LPZ-11S	579.96	11/8/2017	4.55	575.41	
LPZ-13S	581.66	NA	NM	NA	

¹⁾ Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88)

²⁾ AMSL = Above Mean Sea Level

TABLE 5-1

SUMMARY OF SURFACE WATER ANALYTICAL RESULTS TARGET COMPOUND LIST PESTICIDES

MAY 2013

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	SW-2	SW-3	SW-5
Sample Date	Surface Water Standard●	05/29/13	05/29/13	05/29/13
Pesticides (ug/L)				
alpha-BHC	0.01	0.016	0.024	0.012
beta-BHC	0.04		0.042	
Dieldrin	0.004	0.011		
gamma-Chlordane	0.05	0.33		

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-2 SUMMARY OF SURFACE WATER ANALYTICAL RESULTS TARGET COMPOUND LIST PESTICIDES MARCH 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number Sample Date	NYSDEC Surface Water Standard	LSW-02 03/28/17	LSW-03 03/28/17					
Pesticides (ug/L)								
alpha-BHC	0.01		0.018 J					
Toxaphene	0.06	0.32 J						

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- J = Compound reported at an estimated concentration below the reporting limit. ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-3

SUMMARY OF SURFACE WATER ANALYTICAL RESULTS TARGET ANALYTE LIST METALS

MARCH 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054

TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	LSW-01	LSW-02	LSW-03
Sample Date	Surface Water Standard●	03/28/17	03/28/17	03/28/17
Metals (mg/L)				
Aluminum	0.100	2.5	2	0.18 JH
Barium	1.00	0.018	0.020	0.027
Cadmium	0.005			0.00081 JH
Calcium	NS	25.3	32.5	71.4
Chromium	0.050	0.0023 JH	0.0021 JH	
Copper	0.200	0.0052 JH	0.0021 JH	0.0051 J
Iron	0.300	1.8	1.6	0.25 JH
Lead	0.050			0.005 J
Magnesium	35.0	7.2	9.1	10.2
Manganese	0.300	0.01 JH	0.027 JH	0.068 JH
Nickel	0.100	0.0024 J	0.002 J	0.0014 J
Potassium	NS	6.5 J	6.1 J	5.5
Sodium	NS	1.9 JH	2.1 JH	4.6
Vanadium	0.014	0.0050	0.0037 J	
Zinc	2.0 G	0.022 JH	0.014 JH	0.02 JH

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

G = Guidance value.

NS = No standard or guidance value available.

mg/L = milligrams per liter or parts per million.

Blanks = concentration below laboratory detection limits.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

J = Compound is positively identified and reported at an estimated concentration below the reporting limit.

H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.

TABLE 5-4

SUMMARY OF SEDIMENT ANALYTICAL RESULTS TARGET ANALYTE LIST METALS

MARCH 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Sample Point	Part 375	Freshwater	Freshwater	Freshwater	LSED-001		LSED-002		LSED-002		LSED-003		LSED-004		LSED-004		LSED-005		LSED-005		LSED-006	
Sample Type	Commercial	Guidance	Guidance	Guidance	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Depth (ft)	Use	Values ●	Values ●	Values ●	0-2"		0-2"		2-12"		0-2"		0-2"		2-12"		0-2"		2-12"		0-2"	
Sample Date	SCOs*	Class A	Class B	Class C	03/28/17		03/28/17		03/28/17		03/29/17		03/28/17		03/28/17		03/28/17		03/28/17		03/29/17	
Total Metals (mg/kg)	T Of Or																					
Aluminum	NS	NS	NS	NS	13,500		15,400		9,660		9,500	JH	11,500		9,490		11,300		9,560	T	6,200	JH
Antimony	NS	NS	NS	NS	0.28		0.36		0.26	J	0.12	JF1	1.3		0.39		0.32		0.34		0.18	
Arsenic	16	<10	10-33	>33	4.5		2.5		3.4	JH	3.5	J	3.9		4.8		3		4.6		1.7	J
Barium	400	NS	NS	NS	75.5		85		58.7		56.6	JH	107		107		81.1		74		39.5	JH
Beryllium	590	NS	NS	NS	0.59		0.61		0.46		0.43		0.52		0.45		0.52		0.51		0.31	
Cadmium	9.3	<1	1-5	>5	0.46		0.85		0.33		0.32		8.5		1.9		0.98		0.74		0.25	
Calcium	NS	NS	NS	NS	7,550		8,280		6,280	J	14,400		43,800		32,300		6,010		20,500		3,040	
Chromium, Total	1,500	<43	43-110	>110	16.4		18.7		14.9		13.3		18.3		14.1		15.3		17.4		8.6	
Cobalt	NS	NS	NS	NS	7	JH	6.5	Ξ	5.4	JH	6	J	7.7	JH	6.1	JH	4.4	JH	5.1	JH	2.9	J
Copper	270	<32	32-150	>150	15		20.9		13	J	9.6		126		31.2		25		19.8		8.5	
Iron	NS	NS	NS	NS	18,200		15,100		14,700	J	13,400	J	22,600		26,800		14,500		21,400		7,250	J
Lead	1,000	<36	36-130	>130	17.1		22.8		19.9		16.7		129		37.2		30.9		36		11.1	
Magnesium	NS	NS	NS	NS	5,130		4,380		3,730		5,750		9,920		8,990		2,370		5,980		1,330	
Manganese	10,000	NS	NS	NS	240		122		108		249		326		287		75.9		175		50.9	
Nickel	310	<23	23-49	>49	17.3		21.4		15.3		12.8		36.9		20.9		16.5		16.2		11.5	
Potassium	NS	NS	NS	NS	1,080		1,380		767	J	854		1,490		1,090		936		610		499	
Selenium	1,500	NS	NS	NS	0.96	JH	0.58	Ξ	0.69	JH	0.64	J	0.95	JH	0.71	JH	0.63	JH	0.9	JH	0.59	J
Silver	1,500	<1	1-2.2	>2.2	0.046	J	0.091	-	0.13		0.053	J	1.6		1.5		0.18		0.18		0.058	J
Sodium	NS	NS	NS	NS	66.3	JH	105	Ξ	52	JH	61.6	JH	103	JH	84.4	JH	80.6	JH	63.2	JH	62.4	JH
Thallium	NS	NS	NS	NS	0.16	JH	0.2	ĭ	0.12	JH	0.098		0.18	JH	0.12	JH	0.16	JH	0.12	JH	0.063	J
Vanadium	NS	NS	NS	NS	25.6		28.1		18.1		22.7		25.2		24.7		20.5		18.9		12.8	
Zinc	10,000	<120	120-460	>460	66.2	JH	81.1	J	74	JH	62.7	JH	388	JH	140	JH	133	JH	110	JH	38.9	JH
Mercury	2.8	<0.2	0.2-1	>1	0.064		0.083		0.089		0.065		0.740		0.210		0.084		0.084		0.038	

Notes:

- * = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.
- = NYSDEC Division of Fish, Wildlife and Marine Resources Bureau of Habitat, Screening and Assessment of Contaminated Sediment, June 24, 2014.

Class A = If the concentration of a contaminant in sediment is below the Soil Guidance Value (SGV) that defines this class, the contaminant can be considered to present little to no potential for risk to aquatic life

Class B = If the concentration of a contaminant lies between the SGVs that define Class Aand Class C, additional information is needed to determine the potential risk to aquaticate.

Class C = - If the concentration of a contaminant is above the SGV that defines this class, where is a high potential for the sediments to be toxic to aquatic life.

- J = Compound reported at an estimated concentration below the reporting limit.
- H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.
- F1 = MS and/or MSD recovery is outside acceptable limits.
- NS = No standard or guidance value available.
- mg/kg = milligrams per kilogram or parts per million.

TABLE 5-5 SUMMARY OF SITE SURFACE SOIL SAMPLING TARGET COMPOUND LIST SVOCs/PAHS MAY 2013

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Sample Point	Part 375	SOIL-3	SOIL-10
Sample Type	Commercial	Soil	Soil
Depth (ft)	Use	0.0'-0.17'	0.0'-0.17'
Sample Date	SCOs*	05/29/13	05/29/13
Semi-Volatile Organic Compounds (mg/kg)			
Benzo(A)Pyrene	1.0	1.3	0.27
Dibenz(A,H)Anthracene	0.56	0.23	0.60

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

* = 6 NYCRR Part 375: Environmental Remediation Programs, Commercail Soil Cleanup Objectives, NYSDEC, 2006.

 μ g/kg = micrograms per kilogram or parts per billion.

Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives (SCOs).

TABLE 5-6

SUMMARY OF SITE SURFACE SOIL SAMPLING TARGET COMPOUND LIST SVOCs/PAHs

MARCH 2017

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Sample Point	Part 375	LSS-004		LSS-005	LSS-006	LSS-013		LSS-013		LSS-014	LSS-014				
Sample Type	Commercial	Soil		Soil		Soil	Soil			Soil		Soil		Soil	
Depth (ft)	Use	0.0-2.0"		0.0-2.0"	0.0-2.0"		0.0-2.0"			2.0-12.0"		0.0-2.0"		2.0-12.0"	
Sample Date	SCOs*	3/29/2017		3/29/2017		3/29/2017	3/28/2017		3/28/2017		3/28/2017		3/28/2017		
Semi-Volatile Organic Compounds (mg	/kg)														
Butylbenzphthalate	500														
2-Methylnaphthalene	NS														
Acenaphthene	500			1.7	J									1.6	J
Acenaphthylene	500							3.8	J	2.7	J	4.1	J	5.4	J
Anthracene	500			3.2	J			6.6	J	5.2	J	5.3	J	11.0	
Benzo(A)Anthracene	5.6	17		11.0		3.1	J	22.0		18.0		20.0		29.0	
Benzo(A)Pyrene	1.0	20		12.0		3.1	J	18.0		14.0		18.0		23.0	
Benzo(B)Fluoranthene	5.6	30		14.0		4.0	J	24.0		20.0		23.0		34.0	
Benzo(G,H,I)Perylene	500	14		8.3		2.4	J	12.0		9.0	J	13.0		15.0	
Benzo(K)Fluoranthene	56	10	J	8.0		1.9	J	12.0		9.6	J	11.0	J	12.0	
Benzyl Butyl Phthalate	NS														
Bis(2-Ethylhexyl) Phthalate	NS														
Carbazole	NS	1	J	2.4	J			2.8	J	1.8	J			3.8	J
Chrysene	56	21		13.0		3.1	J	20.0		16.0		19.0		26.0	
Dibenz(A,H)Anthracene	0.56	4	J					3.6	J					2.3	J
Dibenzofuran	NS			0.8	J									2.7	J
Di-N-Octylphthalate	500														
Fluoranthene	500	16		21.0		4.9	J	45.0		36.0		37.0		64.0	
Fluorene	500			1.3	J			2.5	J	1.5	J			4.6	J
Indeno(1,2,3-C,D)Pyrene	5.6	12		6.8		2.0	J	11.0	J	9.1	J	12.0	J	14.0	
Naphthalene	500													1.3	J
Phenanthrene	500	7	J	15.0		2.5		22.0		17.0		13.0		40.0	
Pyrene	500	15		17.0		3.7		28.0		23.0		25.0		37.0	

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

* = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.

μg/kg = micrograms per kilogram or parts per billion.

 ${\sf J}$ = Compound is positively identified and reported at an estimated concentration below the reporting limit.

NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.

Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.

Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives (SCOs).

TABLE 5-6

SUMMARY OF SITE SURFACE SOIL SAMPLING TARGET COMPOUND LIST SVOCs/PAHs

MARCH 2017

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Sample Point	Part 375	LSS-015	LSS-015			LSS-016		LSS-016		LSS-019		LSS-021		
Sample Type	Commercial	Soil		Soil		Soil		Soil		Soil		Soil		
Depth (ft)	Use	0.0-2.0" 2.0-		2.0-12.0"		0.0-2.0"		2.0-12.0"		0.0-2.0"		0.0-2.0"		
Sample Date	SCOs*	3/28/2017		3/28/2017		3/28/2017		3/28/2017		5/11/2017	5/11/2017			
Semi-Volatile Organic Compounds (mg	/kg)													
Butylbenzphthalate	500													
2-Methylnaphthalene	NS													
Acenaphthene	500													
Acenaphthylene	500	2.9	J			4.7	J	2.6	J	2.1	J			
Anthracene	500	4.5	J			6.6	J	5.7	J	3.4	J			
Benzo(A)Anthracene	5.6	17.0		6.4	J	22.0		22.0		16.0		5.3	J	
Benzo(A)Pyrene	1.0	14.0		5.5	J	20.0		17.0		14.0		4.5	J	
Benzo(B)Fluoranthene	5.6	22.0		8.2	J	26.0		23.0		20.0		5.8	J	
Benzo(G,H,I)Perylene	500	10.0	J	3.7	J	12.0		11.0		9.1		3.0	J	
Benzo(K)Fluoranthene	56	7.9	J	2.8	J	12.0		11.0		8.6	J	4.1	J	
Benzyl Butyl Phthalate	NS													
Bis(2-Ethylhexyl) Phthalate	NS													
Carbazole	NS					2.1	J	1.6	J					
Chrysene	56	15.0		5.9	J	21.0		18.0		15.0		5.1	J	
Dibenz(A,H)Anthracene	0.56					2.1	J			3.6	J			
Dibenzofuran	NS													
Di-N-Octylphthalate	500													
Fluoranthene	500	32.0		13.0		43.0		41.0		30.0		8.9	J	
Fluorene	500					2.1	J	1.9	J					
Indeno(1,2,3-C,D)Pyrene	5.6	10.0	J	3.6	J	12.0		10.0		9.2		2.9	J	
Naphthalene	500													
Phenanthrene	500	11.0	J	5.5	J	18.0		17.0	0	10.0		2.7	J	
Pyrene	500	21.0		7.8	J	28.0		27.0		21.0		6.5	J	

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

* = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.

 μ g/kg = micrograms per kilogram or parts per billion.

J = Compound is positively identified and reported at an estimated concentration below the reporting limit.

NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.

Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.

Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives (SCOs).

SUMMARY OF SITE SURFACE SOIL SAMPLING TARGET COMPOUND LIST SVOCs

NOVEMBER 2017

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Sample Point	Part 375	SB-NR		NS-North		NS-North		NS-North-D		NS-East		NS-East		NS-Sout	1	NS-West	
Sample Type	Commercial	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Depth (ft)	Use	0-2"		0-2"		2-12"		2-12"		0-2"		2-12"		0-2"		2-12"	
Sample Date	SCOs*	11/7/2017		11/7/2017		11/7/2017		11/7/2017		11/7/2017		11/7/2017		11/7/201	7	11/7/2017	
Semi-Volatile Organic Compounds (mg/kg)																	
Butylbenzphthalate	500																
2-Methylnaphthalene	NS																
Acenaphthene	500			0.6	J	6.4		0.7	J	0.7	J	0.9	J	0.7	J		
Acenaphthylene	500											2.5	J				
Anthracene	500	0.6	J	1.7	J	9.6		1.6	J	1.7	J	4.3	J	1.4	J,F1,F2		
Benzo(A)Anthracene	5.6	1.6	J	5.5		19.0		4.2		4.4	J	12.0		3.6	F1,F2	2.3	J
Benzo(A)Pyrene	1.0	1.6	J	4.8		17.0		3.7	J	3.7	J	10.0		3.2	F1,F2	2.4	J
Benzo(B)Fluoranthene	5.6	1.9	J	6.0		19.0		4.4		4.9	J	13.0		4.7	F1,F2	3.2	J
Benzo(G,H,I)Perylene	500	1.3	J	3.7		15.0		2.5	J	2.8	J	7.6		2.3	F1,F2	2.0	J
Benzo(K)Fluoranthene	56	0.91	J	2.9		10.0		2.3	J	2.4	J	7.1		2.5	F1	1.0	J
Benzyl Butyl Phthalate	NS																
Bis(2-Ethylhexyl) Phthalate	NS																
Carbazole	NS	0.3	J	0.6	J	5.2		0.9	J	0.9	J	2.3	J	0.9	J		
Chrysene	56	1.7	J	5.5		18.0		4.4		4.1	J	12.0		4.0	F1,F2	2.4	J
Dibenz(A,H)Anthracene	0.6			0.88	J			0.7	J			2.5	J				
Dibenzofuran	NS			0.34	J	2.9	J			0.9	J	1.7	J	0.5	J		
Di-N-Octylphthalate	500																
Fluoranthene	500	3.2		11.0		47.0		9.0		9.4		26.0		7.8	F1,F2	4.5	
Fluorene	500	0.24	J	0.63	J	4.7		0.6	J	1.5	J	2.7	J	0.8	J		
Indeno(1,2,3-C,D)Pyrene	5.6	1.0	J	2.9		12.0		2.3	J	2.5	J	7.0		2.2	F1,F2	1.7	J
Naphthalene	500					1.7	J			1.1	J	1.2	J	0.8	J		
Phenanthrene	500	2.4		7.3		43.0		7.5		8.5		20.0		5.4	F1,F2	3.5	J
Pyrene	500	3.0		10.0		41.0		8.1		7.8		20.0		6.5	F1	4.1	

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- * = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006. μg/kg = micrograms per kilogram or parts per billion.
- J = Compound is positively identified and reported at an estimated concentration below the reporting limit.
- F1 = MS and/or MSD recovery is outside acceptable limits.
- F2 = MS/MSD RPD exceeds control limits.
- NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.

Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.

SUMMARY OF SITE SURFACE SOIL SAMPLING TARGET ANALYTE LIST METALS

MARCH/MAY 2017

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Sample Point		LSS-004		LSS-006		LSS-011		LSS-011		LSS-013		LSS-018		LSS-018	
Sample Type	Part 375	SOIL													
Depth (ft)	Commercial	0-2"		0-2"		2-6"		6-12"		0-2"		0-2"		2-12"	
Sample Date	Use	03/29/17		03/29/17		03/28/17		03/28/17		03/28/17		03/29/17		03/29/17	
Total Metals (mg/kg)	SCOs*														
Aluminum	NS	12,100		10,500		11,900		11,200		9,250	J	10,200	J	9,300	J
Antimony	NS	21	JH	6	JH	4.2	JH	10.4	JH	0.91	J	2.5	JH	1.4	JH
Arsenic	16	17.9	JH	9.1	JH	6		8.1		17.7	JH	8.5		6.4	
Barium	400	892		501		691		141		72.3		872		506	
Beryllium	590	0.42		0.49		0.58		0.41		0.82		0.66		0.54	
Cadmium	9.3	21.3		17		5.7		9.8		1.3		1.1		0.8	
Calcium	NS	9,160		15,300		21,700	JH	22,600	JH	34,000	JH	21,600		24,300	
Chromium, Total	1,500	126		105		45.9		79.3		23.5		42.7		17.5	
Cobalt	NS	15.9		9.6		8.4		8.5		6.1		5.9		5.6	
Copper	270	5,800		247		227	J	350	J	35	J	48.5		28.6	
Iron	NS	120,000		36,600		27,600	JH	48,500	JH	14,000		21,300	J	16,900	J
Lead	1,000	5,860	JH	286	JH	122		265		90.6		47.6		27	
Magnesium	NS	3,210		2,920		10,000	JH	8,050	JH	12,100		8,260		8,290	
Manganese	10,000	916	JH	964	JH	292	JH	603	JH	465	JH	253		358	
Nickel	310	151		90.9		44.6		91.7		21.6		35		18.1	
Potassium	NS	1,040		1,860		1,870		1,270		1,760		1,870		1,560	
Selenium	1,500	4.1	JH									1.1	JH		
Silver	1,500	43.2		9.5		3.9	J	5.9	J			0.39	J		
Sodium	NS	113	J	100	J	171	J	158		157	J	121	J	106	J
Vanadium	NS	82.5	J	25.6	J	25.6	J	27.5	J	19.7	J	29	J	25.2	J
Zinc	10,000	2,020	JH	1,040	JH	466	JH	970	JH	145	JH	147	JH	88.7	JH
Mercury	2.8	3.100		2.900		1.600	JH	1.800	JH	0.300		0.220		0.120	

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

J = Compound is positively identified and reported at an estimated concentration below the reporting limit.

H = This flag indicates that the analyte in question was quantified using peak heights rather than peak areas for both analyte and its interal standard.

NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.

Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit. Yellow shaded values exceed the 6 NYCRR Part 375 Commercail Soil Cleanup Objectives (SCOs).

^{* = 6} NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006. mg/kg = milligrams per kilogram or parts per million.

SUMMARY OF OFF-SITE SURFACE SOIL SAMPLING TAL METALS

May 2017

NIAGARA SANITATION / NASH ROAD LANDFILL 7415 NASH ROAD, WHEATFIELD, NEW YORK

Sample Point		RSS	
Sample Type	Part 375	Soil	
Depth (ft)	Residential	0-2"	
Sample Date	Use	05/10/17	
Total Metals (mg/kg)	SCOs		
ALUMINUM	NS	7,480	J
ANTIMONY	NS	0.56	J
ARSENIC	16	2.8	JH
BARIUM	350	58.5	
BERYLLIUM	14	0.35	
CADMIUM	2.5	1.1	
CALCIUM	NS	17,200	JH
CHROMIUM, TOTAL	36	16.5	
COBALT	NS	4.2	
COPPER	270	34.5	
IRON	NS	10,300	
LEAD	400	32.4	
MAGNESIUM	NS	6,960	
MANGANESE	2,000	198	
NICKEL	140	15.4	
POTASSIUM	NS	1,080	
SELENIUM	36		
SILVER	36	1.3	J
SODIUM	NS	112	J
VANADIUM	NS	16.6	
ZINC	2,200	105	
MERCURY	0.81	1.4	

Notes

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

mg/kg = milligrams per kilogram or parts per million.

* = Residential use soil cleanup objective from Commissioner Policy CP-51, Soil Cleanup Guidance.

NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.

J = result is less than the RL but greater than or equal to the MDL and the concentration is an estimated value.

H = This flag indicates that the analyte in question was quantified using peak heights rather than peak areas for both analyte and its interal standard.

Blanks = concentration below laboratory detection limits.

Yellow shaded values exceed the 6 NYCRR Part 375 or Commissioner Policy CP-51 Residential Use Soil Cleanup Objectives.

TABLE 5-10 SUMMARY OF SITE SUBSURFACE SOIL SAMPLING TCL VOCs SVOCs JUNE 2013

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Sample Point		SB-A							
Sample Type	Commercial	Soil							
Sample Depth (ft)	Soil Cleanup	4-12'							
Sample Date	Objectives *	06/03/13							
Semi-Volatile Organic Compounds (μg/kg)									
Benzo[A]Pyrene (PAH)	1.0	1.2							

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

μg/kg = micrograms per kilogram or parts per billion.

Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.

^{* = 6} NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.

TABLE 5-11 SUMMARY OF SITE SUBSURFACE SOIL SAMPLING TCL SVOCs APRIL 2014

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Sample Point		SB-N	SB-U	SB-V	SB-W						
Sample Type	Commercial	Soil	Soil	Soil	Soil						
Sample Depth (ft)	Soil Cleanup	0-2'	0-4'	0-4'	0-4'						
Sample Date	Objectives *	04/14/14	04/16/14	04/16/14	04/16/14						
Semi-Volatile Organic Compounds (μg/kg)											
Benzo[A]Anthracene (PAH)	5,600	1,300	3,100	13,000	4,200						
Benzo[A]Pyrene (PAH)	1,000	1,400	3,100	15,000	3,800						
Benzo[B]Fluoranthene (PAH)	5,600	2,000	4,200	19,000	5,200						
Dibenzo[A,H]Anthracene (PAH)	560	340	600	2,300	710						
Indeno(1,2,3-CD)Pyrene	5,600	900	1,500	7,500	1,700						

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

^{* = 6} NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006. μ g/kg = micrograms per kilogram or parts per billion.

TABLE 5-12 SUMMARY OF SITE SUBSURFACE SOIL SAMPLING TCL SVOCs JULY 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Sample Point		TP-12 ●
Sample Type	Commercial	Soil
Sample Depth (ft)	Soil Cleanup	1' - 6'
Sample Date	Objectives *	07/21/17
Semi-Volatile Organic Compounds (mg/kg)		
Anthracene (PAH)	500	0.47 J
Benzo[A]Anthracene (PAH)	5.6	2
Benzo[A]Pyrene (PAH)	1.0	1
Benzo[B]Fluoranthene (PAH)	5.6	2
Benzo[G,H,I]Perylene (PAH)	500	1 J
Benzo[K]Fluoranthene (PAH)	56	0.7 J
Carbazole	NS	0.15 J
Chrysene (PAH)	56	1.7
Dibenzo[A,H]Anthracene (PAH)	0.56	0.31 J
Fluoranthene (PAH)	500	2.8
Indeno[1,2,3-CD]Pyrene (PAH)	5.6	0.86 J
Phenanthrene (PAH)	500	2.1
Pyrene (PAH)	500	3.0

Notes:

* = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.

mg/kg = milligrams per kilogram or parts per million.

- = Test pit completed along the proposed fence line because the presence of underground utilities precluded the test pit from being completed on the property boundary.
- J = Compound is positively identified and reported at an estimated concentration below the reporting limit.

NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.

TABLE 5-13 SUMMARY OF SITE SUBSURFACE SOIL SAMPLING TCL PESTICIDES/PCBs (2014 and 2017) NYSDEC - NIAGARA SANITATION SITE, SITE #932054

TOWN OF WHEATFIELD, NEW YORK

Sample Point		TP-11	SB-N
Sample Type	Commercial	Soil	Soil
Sample Depth (ft)	Soil Cleanup	1-6'	0-2'
Sample Date	Objectives *	07/21/17	04/14/14
Pesticides/PCBs (mg/kg)			
Dieldrin	1.4		2.6
PCBs (Total)	1.0	1.68	68

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

* = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.

Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.

TABLE 5-14 SUMMARY OF SITE SUBSURFACE SOIL SAMPLING TAL METALS APRIL 2014

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Sample Point		SB-N	SB-T	SB-T	SB-U	SB-V	SB-W	SB-X				
Sample Type	Commercial	Soil										
Sample Depth (ft)	Soil Cleanup	0-2'	0-3'	4-8'	0-4'	0-4'	0-4'	0-4'				
Sample Date	Objectives *	04/14/14	04/15/14	04/15/14	04/16/14	04/16/14	04/16/14	04/16/14				
Metals (mg/kg)												
Arsenic	16	10.1	4.8	3.0	12.3	27.2	18.9	16.8				
Barium	400	648	213	17.2	1,690	1,070	1,520	278				
Cadmium	9.3	32.2	11.9	0.25	98.7	31.2	26.1	6.4				
Lead	1,000	211	152	6.1	1,620	886	850	1,870				
Mercury	2.8	1.8	108	187	4.8	2.5	3.4	0.57				

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

^{* = 6} NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006. mg/kg = milligrams per kilogram or parts per million.

TABLE 5-15 SUMMARY OF SITE SUBSURFACE SOIL SAMPLING TCLP METALS APRIL 2014

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Sample Point		SB-R	SB-U								
Sample Type	EPA	Soil	Soil								
Sample Depth (ft)	TCLP	4-5'	0-4'								
Sample Date	Standard*	04/15/14	04/16/14								
TCLP Metals (mg/L)**											
Lead	5	8.9	37.6								

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria. mg/L = milligrams per liter.

Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives.

* = USEPA Method SW-846: Toxicity Characteristic Leaching Procedure (TCLP) Metals (as per 40 CFR Part 261 Subpart C).

${\bf SUMMARY\ OF\ SITE\ SUBSURFACE\ SOIL\ SAMPLING}$

TAL METALS

JULY 2017

${\bf NYSDEC\text{ -} NIAGARA\text{ SANITATION SITE, SITE } \$932054}$

TOWN OF WHEATFIELD, NEW YORK

Sample Point		TP-01	TP-03	TP-04	TP-05	TP-05	TP-07	TP-07
Sample Type	Commercial	Soil	Soil	Soil	Soil	Duplicate	Soil	Duplicate
Sample Depth (ft)	Soil Cleanup	1' - 6'	1' - 6'	1' - 6'	1' - 6'	1' - 6'	1' - 6'	1' - 6'
Sample Date	Objectives *	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/20/17	07/20/17
Metals (mg/kg)								
Aluminum	NS	17,800	14,600	9,820	9,420	12,600	15,100	11,800
Antimony	NS						6.9 J	7.5 J
Arsenic	16	3.8	2.2 J	2.4	2.5	3.3	4.2	7.0
Barium	400	82	66.5	43.7	39	55	160 JH	213 JH
Beryllium	590	0.90	0.42	0.25	0.35	0.37	0.62	0.48
Cadmium	9.3			0.16 J	0.073 J	0.053 J	4.0 JH	7.4 JH
Calcium	NS	4,210 JH	8,920 JH	13,600 JH	21,500 JH	11,500 JH	10,400 JH	30,500 JH
Chromium	1,500	22.5	16.3	11.1	13	15.2	46.1 JH	38.9 JH
Cobalt	30 **	6.8	4.2	2.6	4	4.2	8.9	7.2
Copper	270	19.9	5.9	16.1	9.1	10	214 JH	998 JH
Iron	2,000 **	26800 JH	10500 JH	7,460 JH	11400 JH	13700 JH	20,000 JH	25,400 JH
Lead	1,000	14.2	7	12.6 J	9.1 J	9.8 J	340	193
Magnesium	NS	2,800	2,280	5,500 JH	9,500	5,890	5,390	12,900
Manganese	10,000	119 JH	56.8 JH	106 JH	189 JH	264 JH	362 JH	530 JH
Mercury	2.8	0.059	0.036	0.023 J	0.032	0.027	0.23	0.29
Nickel	310	18.4	12.6	9.7	10.8	12.6	101	45.9
Potassium	NS	1,710	1,440	1,220 JH	1,350	1,360	1,590	1170 JH
Selenium	1,500							0.78 J
Silver	1,500						12.9 J	8.9 J
Sodium	NS	157	201 JH	352 JH	268 JH	304 JH	222	220
Vanadium	100 **	41.2 JH	28 JH	18.3 JH	25	27.5	25.8	21.3
Zinc	10,000	54.7 JH	38.1 JH	50.5 JH	41.6 J	44 J	349 JH	435 JH

Notes:

- * = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.
- ** = Residential soil cleanup objective from Commissioner's Policy CP-51 entitled "Soil Cleanup Guidance", NYSDEC, 2010.
- mg/kg = milligrams per kilogram or parts per million.
- = Test pit completed along the proposed fence line because the presence of underground utilities precluded the test pit from being completed on the property boundary.
- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- H = This flag indicates that the analyte in question was quantified using peak heights rather than peak areas for both analyte and its interal standard.
- F1 = MS and/or MSD recovery is outside accetance limits.
- F2 = MS/MSD RPD exceeds control limits.
- J = Compound is positively identified and reported at an estimated concentration below the reporting limit.
- NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.
 Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.
- Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives.

SUMMARY OF SITE SUBSURFACE SOIL SAMPLING

TAL METALS

JULY 2017

${\bf NYSDEC\text{-}NIAGARA\text{ SANITATION SITE, SITE}\text{ } \$932054}$

TOWN OF WHEATFIELD, NEW YORK

Sample Point		TP-09	TP-11 ●	TP-12 ●	TP-13 ●	TP-13 ●	TP-15 ●	TP-16
Sample Type	Commercial	Soil	Soil	Soil	Soil	Duplicate	Soil	Soil
Sample Depth (ft)	Soil Cleanup	1' - 6'	1' - 6'	1' - 6'	1' - 6'	1' - 6'	1' - 6'	1' - 6'
Sample Date	Objectives *	07/20/17	07/21/17	07/21/17	07/21/17	07/21/17	07/20/17	07/21/17
Metals (mg/kg)								
Aluminum	NS	5,270	6,360 JH	11,200	6,360	5030 JH	8590 JH	3,610
Antimony	NS		0.80 J F1					
Arsenic	16	2.0 J	3.2 J	8.0	3.4 J	3.6	3.1	3.2
Barium	400	151 JH	522 J	73.5 JH	27.1 JH	18.9	34.6 JH	14.5 JH
Beryllium	590	0.22 J	0.27 J	0.49	0.25	0.22 J	0.33	0.16 J
Cadmium	9.3		0.93 J	1.7	0.11 J	0.13 J		0.16 J
Calcium	NS	44,800 JH	44,500 JH	30,400 JH	47,600 JH	58,800 JH	37,400 JH	44,100 JH
Chromium	1,500	8.4 J	19.5 J	41.8 JH	8.1 JH	7.4	11.2 J	5.9 JH
Cobalt	30 **	3.4	4.3 J	8.8	3.7	3.3	4.5	3.3
Copper	270	7.5 J	22.4 JH	52 JH	8.4 JH	7.4 JH	10.9 J	7.8 JH
Iron	2,000 **	10,700 J	11,700 J	46400 JH	10200 JH	9,620	11,700 J	8040 JH
Lead	1,000	6.5	87.2 J	43	5.7	5.4	11.7	5.6
Magnesium	NS	17,000	15,700 JH	11,100 JH	14,200 JH	20,800 JH	11,900	17,700 JH
Manganese	10,000	392 JH	299 JH	387 JH	267 JH	325 JH	289 JH	317 JH
Mercury	2.8	0.039	0.74 J	0.27 J			0.022 J	
Nickel	310	8	23.4 J	33.3	9.2	8.5	12.4	7.3
Potassium	NS	1,460	1,370 JH	2930 JH	1400 JH	1,240	1470 JH	1040 JH
Selenium	1,500							
Silver	1,500		1.1 J					
Sodium	NS	180 J	155 J	199	177	186	140 J	154 J
Vanadium	100 **	20.3	16.6 J	25.4	16.1	14.3	21 J	12.7
Zinc	10,000	38.4 JH	97.9 J	212 JH	31.8 JH	32.1 JH	38.4 JH	39.3 JH

Notes:

- * = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.
- ** = Residential soil cleanup objective from Commissioner's Policy CP-51 entitled "Soil Cleanup Guidance", NYSDEC, 2010.
- mg/kg = milligrams per kilogram or parts per million.
- = Test pit completed along the proposed fence line because the presence of underground utilities precluded the test pit from being completed on the property boundary.
- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- H = This flag indicates that the analyte in question was quantified using peak heights rather than peak areas for both analyte and its interal standard.
- F1 = MS and/or MSD recovery is outside accetance limits.
- F2 = MS/MSD RPD exceeds control limits.
- J = Compound is positively identified and reported at an estimated concentration below the reporting limit.
- NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.
 Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.
- Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives.

SUMMARY OF SITE SUBSURFACE SOIL SAMPLING

TAL METALS JULY 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Sample Point		TP-17	TP-18	LDP-01	LDP-02	LDP-03
Sample Type	Commercial	Soil	Fill	Soil	Soil	Soil
Sample Depth (ft)	Soil Cleanup	1' - 6'	1' - 6'	1' - 6'	1' - 6'	1' - 6'
Sample Date	Objectives *	07/21/17	07/19/17	08/24/17	08/24/17	08/24/17
Metals (mg/kg)						
Aluminum	NS	3,780	10,500	11,100	6,710	6,020
Antimony	NS					
Arsenic	16	3.8	3.7	3.7	4.1	2.6
Barium	400	19.5 JH	55.2	66.0	30.9	18.3
Beryllium	590	0.17 J	0.37	0.52	0.31	0.32
Cadmium	9.3	0.17 J	1.4	0.16 JB	0.33 B	0.079 JB
Calcium	NS	38,000 JH	38,300 JH	66,300 B	53,800 B	37,000 B
Chromium	1,500	5.7 JH	16.7	15.5 B	9.9 B	11.8 B
Cobalt	30 **	3.4	5.5	6.9	6.5	3.5
Copper	270	6.8 JH	39.2	16.9	12.8	10.4
Iron	2,000 **	7820 JH	15,500	18,800 B	12,200 B	14,300 B
Lead	1,000	5.4	27.9	8.4	9.0	7.7
Magnesium	NS	15,000 JH	13,300	12,100 B	22,900 B	19,400 B
Manganese	10,000	290 JH	302 JH	336 B	428 B	236 B
Mercury	2.8		0.091			
Nickel	310	7.2	16.6	16.9	14.2	8.7
Potassium	NS	1010 JH	1,940	2,470	2,020	1,590
Selenium	1,500					
Silver	1,500					
Sodium	NS	140 J	172.0	151 J	199.0	169 J
Vanadium	100 **	12.1	24.7	26.7	18.1	26.1
Zinc	10,000	36.5 JH	104	41.6	89.5	44

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- * = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.
- ** = Residential soil cleanup objective from Commissioner's Policy CP-51 entitled "Soil Cleanup Guidance", NYSDEC, 2010.

mg/kg = milligrams per kilogram or parts per million.

 = Test pit completed along the proposed fence line because the presence of underground utilities precluded the test pit from being completed on the property boundary.

B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

H = This flag indicates that the analyte in question was quantified using peak heights rather than peak areas for both analyte and its interal standard.

F1 = MS and/or MSD recovery is outside accetance limits.

F2 = MS/MSD RPD exceeds control limits.

J = Compound is positively identified and reported at an estimated concentration below the reporting limit.

NS = No standard given in 6 NYCRR Part 375 or Commissioner Policy CP-51.
Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.

TABLE 5-17 SUMMARY OF SITE GROUNDWATER HSL ORGANICS

FEBRUARY AND NOVEMBER 1988

NYSDEC - NIAGARA SANITATION SITE, SITE #932054

TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-11	OW-12	OW-14B	OW-16					
Sample Date	Groundwater	02/17/88	02/17/88	02/17/88	02/18/88					
Well Screen Interval (feet bgs)	Standard ●	7.0-9.0	29.5-32.5	3.0 - 7.0	5.0 - 10.0					
Screened Unit		Sand	Sand	Sand	Fill/SC					
HSL Organic Compunds (ug/L)										
1,1,1-Trichloroethane	5	67 J (f)								
4-Methylphenol	*1				25					
Acetone	50	2,300 (f)								
Benzene	1	4,500 (f)			12					
Bis[2-ethylhexyl]phthalate	5		1,600 B	720 BX						
Chlorobenzene	5	590 (f)			25					
Ethylbenzene	5				55					
Methylene Chloride	5	240 J (f)								
Tetrachloroethene	5		110 JX	120 JX	67 JX					
Toluene	5	14,000 (f)			5.2					

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- * = Standard applies to total chlorinated phenols.

Samples collected by Engineering Science on February 17-18, 1988 and November 17, 1988.

- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- J = Compound reported at an estimated concentration below the reporting limit.
- (f) = Concentration/dilution factor = 75.
- X = Data validation recommends this value be considered an estimate.
- ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF GROUNDWATER TCL VOCs SVOCs

AUGUST 2013

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-2	OW-13	OW-16	OW-21	OW-24
Sample Date	Groundwater	08/02/13	08/02/13	08/02/13	08/02/13	08/02/13
Well Screen Interval (feet bgs)	Standard ●	9.0 - 14.0	3.0 - 5.0	5.0 - 10.0	3.0 - 8.0	5.0 - 10.0
Screened Unit		Silty Clay	Sand	Fill/SC	Sand/SC	Fill
Volatile Organic Compounds (ug/L)						
1,4-Dichlorobenzene	3.0					5.4
Acetone	50.0					
Benzene	1.0			2.9 J		1.8
Carbon Disulfide	NS					
Chlorobenzene	5.0			15.0		88.0
Ethylbenzene	5.0					
Isopropylbenzene	5.0					
Methyl Ethyl Ketone	50.0					
Xylene (Total)	5.0					
Semi-Volatile Organic Compounds (ug/L)						
2,4-Dimethylphenol	50.0					
2-Chlorophenol	1*					
2-Methylnaphthalene	NS					
2-Methylphenol (O-Cresol)	1*					
4-Chloro-3-Methylphenol	1*					
4-Methylphenol (P-Cresol)	1*		3.2 J			
Acetophenone	NS			1.5 J		
Anthracene (PAH)	50.0		0.82 J			0.97
Benzaldehyde	NS		0.86 JB	0.36 JB		0.29
Biphenyl	5.0					
Bis[2-ethylhexyl]phthalate	5.0				2.8 J	3.1
Diethylphthalate	50.0			0.49 J		0.33
Di-n-butylphthalate	50.0	0.47 JB	0.48 JB	1.0 JB	0.59 JB	
Fluoranthene (PAH)	50.0		0.51 JB	0.41 JB		0.43
Fluorene	50.0					
Isophorone	50.0			0.43 J		
Naphthalene (PAH)	10.0					
Nitrobenzene	0.4	0.89 J				
N-Nitrosodi-N-Propylamine	NS					
Phenanthrene (PAH)	50.0		0.84 JB	0.83 JB	0.91 JB	1
Phenol	1*		-	-	2.5 J	
Pyrene (PAH)	50.0		0.36 J			

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- * = Standard applies to total chlorinated phenols.
- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- J = Compound reported at an estimated concentration below the reporting limit.
- NS = No standard or guidance value available.
- SC = Silty clay.
- ug/L = micrograms per liter or parts per billion.
- Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER TARGET COMPOUND LIST VOCs AND SVOCs

MAY 2014

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-16	OW-31	OW-32	OW-33	OW-34	OW-35	OW-36	OW-37
Sample Date	Groundwater	05/19/14	05/20/14	05/19/14	05/20/14	05/19/14	05/19/14	05/19/14	05/20/14
Well Screen Interval (feet bgs)	Standard ●	5.0 - 10.0	1.0 - 6.0	5.0 - 10.0	4.0 - 9.0	7.0 - 12.0	4.0 - 9.0	3.0 - 8.0	1.0 - 6.0
Screened Unit		Fill/SC	Sand	Sand	Fill/Sand	Sand	Fill/Sand	Fill/Sand	Fill/Sand
Volatile Organic Compounds (ug/L)									
1,4-Dichlorobenzene	3.0	3.4 J							
Acetone	50.0		6.6 J						4.6 J
Benzene	1.0	3.2 J					3.8 J	3.1 J	
Carbon Disulfide	NS		1.7						1.0
Chlorobenzene	5.0	16.0					80.0	19.0	
Ethylbenzene	5.0							200.0	
Isopropylbenzene	5.0							13.0	
Methyl Ethyl Ketone	50.0		2.0 J						
Xylene (Total)	15.0							1,700	
Semi-Volatile Organic Compounds (ug,	/L)								
2,4-Dimethylphenol	50.0							18.0	
2-Chlorophenol	1*						0.68 J		
2-Methylnaphthalene	NS	0.92 J						1.2 J	
2-Methylphenol (O-Cresol)	1*		0.47 J						
4-Chloro-3-Methylphenol	1*							7.5	
4-Methylphenol (P-Cresol)	1*	2.1 JB	3.5 JB	1.8 JB	1.4 JB	2.2 JB	2.8 JB	2.7 JB	1.8 JB
Acetophenone	NS	1.5 J	1.4 J						
Anthracene (PAH)	50.0								
Benzaldehyde	NS	0.45 JB	0.44 JB				0.39 JB		0.32 JB
Biphenyl	5.0							17.0	
Bis[2-ethylhexyl]phthalate	5.0	3.6 J						5.4	
Diethylphthalate	50.0	0.70 JB		0.47 JB				0.79 JB	
Di-n-butylphthalate	50.0	0.48 JB	0.81 JB	0.53 JB	0.58 JB	0.41 JB	0.63 JB	1.3 JB	0.40 JB
Fluoranthene (PAH)	50.0								
Fluorene	50.0								
Isophorone	50.0								
Naphthalene (PAH)	10.0	0.82 J	0.78 J					7.1	2.0 J
Nitrobenzene	0.4								
N-Nitrosodi-N-Propylamine	NS							0.50 J	
Phenanthrene (PAH)	50.0	0.45 J	0.75 J	0.96 J	0.50 J	0.46 J	0.62 J	0.60 J	0.85 J
Phenol	1*		1.1 J					2.8 J	
Pyrene (PAH)	50.0								

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- * = Standard applies to total chlorinated phenols.
- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- ${\sf J}$ = Compound reported at an estimated concentration below the reporting limit.
- NS = No standard or guidance value available.
- SC = Silty clay.
- ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER

TARGET COMPOUND LIST VOCs AND SVOCs - Pre-2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-14BR	OW-16	OW-21	OW-35	OW-36
Sample Date	Groundwater	08/28/17	08/30/17	08/28/17	08/30/17	08/29/17
Well Screen Interval (feet bgs)	Standard ●	5.0 - 7.0	5.0 - 10.0	3.0 - 8.0	4.0 - 9.0	3.0 - 8.0
Screened Unit		Sand	Fill/SC	Sand/SC	Fill/Sand	Fill/Sand
Volatile Organic Compounds (ug/L)						
1,4-Dichlorobenzene	3.0		4.4			2.8
Acetone	50.0	5.6 J				
Benzene	1.0		3.5 J		4.9	4.0
Carbon Disulfide	NS					
Chlorobenzene	5.0		18.0		78.0	16.0
Ethylbenzene	5.0					28.0
2-Hexanone	50 G					9.6
Isopropylbenzene	5.0					
Methyl Ethyl Ketone	50.0					0.73 J
Xylene (Total)	5.0					460.0
Semi-Volatile Organic Compounds (ug/L)						
2,4-Dimethylphenol	50.0					5.1
2-Chlorophenol	1*					
2-Methylnaphthalene	NS					2.3 J
2-Methylphenol (O-Cresol)	1*			1.4 J		
4-Chloro-3-Methylphenol	1*					
4-Methylphenol (P-Cresol)	1*	4.4 J		16.0		
Acetophenone	NS					
Anthracene (PAH)	50.0					
Benzaldehyde	NS				0.36 J	
Biphenyl	5.0					39.0
Bis[2-ethylhexyl]phthalate	5.0					4.2 J
Diethylphthalate	50.0					0.62 J
Di-n-butylphthalate	50.0					
Fluoranthene (PAH)	50.0					
Fluorene	50.0					0.38 J
Isophorone	50.0					
Naphthalene (PAH)	10.0					10.0
Nitrobenzene	0.4					
N-Nitrosodiphenylamine	50 G					1.4 J
N-Nitrosodi-N-Propylamine	NS					
Phenanthrene (PAH)	50.0					
Phenol	1*			1.0 J		4.6 J
Pyrene (PAH)	50.0					

Notes:

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- * = Standard applies to total chlorinated phenols.
- G = Guidance value.
- J = Compound reported at an estimated concentration below the reporting limit.
- NS = No standard or guidance value available.
- SC = Silty clay.
- ug/L = micrograms per liter or parts per billion.
- Blanks = concentration below laboratory detection limits.
- Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

SUMMARY OF SITE GROUNDWATER

TARGET COMPOUND LIST VOCs SVOCs - 2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	LPZ-01S	LPZ-05S	LPZ-07S	LPZ-08S	LPZ-12S
Sample Date	Groundwater	08/29/17	08/21/17	08/21/17	08/29/17	09/21/17
Well Screen Interval (feet bgs)	Standard ●	5.0 - 7.0	3.0 - 6.0	3.0 - 7.0	2.5 - 4.0	4.0 - 7.0
Screened Unit		Sand/SC	Sand/SC	Sand/SC	Sand	Sand
Volatile Organic Compounds (ug/L)						
1,4-Dichlorobenzene	3.0					
Acetone	50.0	6.7 J			5.6 J	9.5 J
Benzene	1.0					1.9 J
Carbon Disulfide	NS					
Chlorobenzene	5.0					
Ethylbenzene	5.0					
2-Hexanone	50 G					
Isopropylbenzene	5.0					
Toluene	50.0				12.0	
Xylene (Total)	5.0					
Semi-Volatile Organic Compounds (ug/L)						
2,4-Dimethylphenol	50.0					
2-Chlorophenol	1*					
2-Methylnaphthalene	NS					
2-Methylphenol (O-Cresol)	1*		1.2 J		1.8 J	
4-Chloro-3-Methylphenol	1*					
4-Methylphenol (P-Cresol)	1*	15.0	17.0	4.6 J	13.0	
Acetophenone	NS					
Anthracene (PAH)	50.0					
Benzaldehyde	NS				0.62 J	
Biphenyl	5.0					
Bis[2-ethylhexyl]phthalate	5.0					
Diethylphthalate	50.0		1.6 J			0.48 J
Di-n-butylphthalate	50.0					
Fluoranthene (PAH)	50.0					
Fluorene	50.0					
Isophorone	50.0					
Naphthalene (PAH)	10.0					
Nitrobenzene	0.4					
N-Nitrosodiphenylamine	50 G					
N-Nitrosodi-N-Propylamine	NS					
Phenanthrene (PAH)	50.0	0.58 J				
Phenol	1*		2.3 J		1.0 J	
Pyrene (PAH)	50.0					

Notes:

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- * = Standard applies to total chlorinated phenols.
- G = Guidance value.
- J = Compound reported at an estimated concentration below the reporting limit.
- NS = No standard or guidance value available.
- SC = Silty clay.
- ug/L = micrograms per liter or parts per billion.
- Blanks = concentration below laboratory detection limits.
- Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

SUMMARY OF SITE GROUNDWATER TCL PESTICIDES/PCBs - 2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	LDP-01	LDP-02	LDP-03	LDP-04	LPZ-02S	LPZ-07S	LPZ-08S	LPZ-09S
Sample Date	Groundwater	08/24/17	08/24/17	08/24/17	08/25/17	08/29/17	08/21/17	08/29/17	09/21/17
Well Screen Interval (feet bgs)	Standard ●	4.3 - 5.3	4.3 - 5.3	4.1 - 5.1	4.3 - 5.3	3.0 - 6.0	3.0 - 7.0	2.5 - 4.0	4.0 - 8.0
Screened Unit		Sand	Sand/SC	Sand/SC	Sand	Sand/SC	Sand/SC	Sand	Sand
Pesticides (ug/L)									
4,4'-DDD	0.3	0.042 J		0.044 J	0.031 J				0.024 J
4,4'-DDE	0.2								
4,4'-DDT	0.2		0.086 J	0.043 J	0.056				0.041 J
Aldrin	ND	0.019 J	0.073 J	0.021 J					
alpha-BHC	0.01	0.054 JH			0.038 J	0.012 J	0.021 J		
alpha-Chlordane	0.05								
beta-BHC	0.04							0.12 J	0.031 J
delta-BHC	0.04					0.013 J	0.014 J		0.020 J
Dieldrin	0.004								
Endosulfan I	NS			0.029 J					
Endosulfan II	NS								
Endosulfan Sulfate	NS								
Endrin	ND								
Endrin Aldehyde	5.0								
Endrin Ketone	5.0								
gamma-BHC (Lindane)	0.05		0.072 J						
gamma-Chlordane	0.05								
Heptachlor	0.04								
Heptachlor epoxide	0.03								
Methoxychlor	35.0								
PCBs (ug/L)									
PCB-1242	0.09		_						0.67 J

Notes:

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- J = Compound reported at an estimated concentration below the reporting limit.
- NS = No standard or guidance value available.
- H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.
- SC = Silty clay.
- ug/L = micrograms per liter or parts per billion.
- Blanks = concentration below laboratory detection limits.
- Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

SUMMARY OF SITE GROUNDWATER TARGET COMPOUND LIST PESTICIDES/HERBICIDES AUGUST 2013

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-1	OW-13	OW-16	OW-21	OW-22
Sample Date	Groundwater	08/02/13	08/02/13	08/02/13	08/02/13	08/02/13
Well Screen Interval (feet bgs)	Standard ●	4.0 - 9.0	3.0 - 5.0	5.0 - 10.0	3.0 - 8.0	3.0 - 8.0
Screened Unit		Silty Clay	Sand	Fill/SC	Sand/SC	Fill/Sand
Pesticides (ug/L)						
4,4'-DDD	0.3			0.087		
4,4'-DDE	0.2					
4,4'-DDT	0.2		0.039 J	0.16		
Aldrin	ND		0.018 J	0.085		
alpha-BHC	0.01		0.019 J		0.026 J	0.33 J
alpha-Chlordane	0.05			0.10		
beta-BHC	0.04			0.084		
delta-BHC	0.04			0.096		
Dieldrin	0.004			0.089		
Endosulfan I	NS			0.10		
Endosulfan II	NS			0.18		
Endosulfan Sulfate	NS			0.050		
Endrin	ND					
Endrin Aldehyde	5.0		0.038 J	0.13		
Endrin Ketone	5.0		0.019 J			
gamma-BHC (Lindane)	0.05	0.095 J	0.01 J	0.058		0.031 J
gamma-Chlordane	0.05		0.072	0.011 J		
Heptachlor	0.04					
Heptachlor epoxide	0.03					
Methoxychlor	35.0		0.050	0.027 J		

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- J = Compound reported at an estimated concentration below the reporting limit.

NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER TARGET COMPOUND LIST PESTICIDES/HERBICIDES

MAY 2014

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-31	OW-32	OW-33	OW-34	OW-35	OW-36	OW-37
Sample Date	Groundwater	05/20/14	05/19/14	05/20/14	05/19/14	05/19/14	05/19/14	05/20/14
Well Screen Interval (feet bgs)	Standard ●	1.0 - 6.0	5.0 - 10.0	4.0 - 9.0	7.0 - 12.0	4.0 - 9.0	3.0 - 8.0	1.0 - 6.0
Screened Unit		Sand	Sand	Fill/Sand	Sand	Fill/Sand	Fill/Sand	Fill/Sand
Pesticides (ug/L)								
4,4'-DDD	0.3		0.039 J		0.012 J	0.016 J	0.022 J	0.032 JB
4,4'-DDE	0.2	0.033 J		0.011 J		0.019 J	0.019 J	0.015 J
4,4'-DDT	0.2	0.056	0.053	0.029 J		0.025 J	0.032 J	0.051
Aldrin	ND		0.011 J		0.033 J			
alpha-BHC	0.01	0.031 JB		0.017 JB		0.013 J	0.022 J	0.029 JB
alpha-Chlordane	0.05	0.030 J						
beta-BHC	0.04							
delta-BHC	0.04	0.015 J	0.069 B		0.015 JB		0.018 JB	
Dieldrin	0.004	0.013 J	0.027 J					0.0094 J
Endosulfan I	NS	0.024 J	0.028 J					
Endosulfan II	NS	0.014 J						0.011 J
Endosulfan Sulfate	NS							
Endrin	ND	0.015 J	0.070					0.019 J
Endrin Aldehyde	5.0		0.038 J	0.024 J			0.022 J	0.042 J
Endrin Ketone	5.0	0.016 J	0.017 J					
gamma-BHC (Lindane)	0.05	0.014 J			0.016 J	0.026 J	0.022 J	
gamma-Chlordane	0.05	0.045 J		0.012 J		0.011 J		0.020 J
Heptachlor	0.04	0.014 J	0.021 J					
Heptachlor epoxide	0.03							0.018 J
Methoxychlor	35.0	0.044 J	0.094		0.051			0.053

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- J = Compound reported at an estimated concentration below the reporting limit.

NS = No standard or guidance value available.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER TARGET COMPOUND LIST PESTICIDES/PCBs - Pre-2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-16	OW-21	OW-35	OW-36		
Sample Date	Groundwater	08/30/17	08/28/17	08/30/17	08/29/17		
Well Screen Interval (feet bgs)	Standard ●	5.0 - 10.0	3.0 - 8.0	4.0 - 9.0	3.0 - 8.0		
Screened Unit		Fill/SC	Sand/SC	Fill/Sand	Fill/Sand		
Pesticides (ug/L)							
4,4'-DDD	0.3		0.0096 J		0.11		
4,4'-DDE	0.2						
4,4'-DDT	0.2		0.019 J		0.018 J		
Aldrin	ND			0.0091 J	0.0088 J		
alpha-BHC	0.01	0.011 J	0.012 J				
alpha-Chlordane	0.05						
beta-BHC	0.04						
delta-BHC	0.04						
Dieldrin	0.004						
Endosulfan I	NS						
Endosulfan II	NS						
Endosulfan Sulfate	NS						
Endrin	ND						
Endrin Aldehyde	5.0						
Endrin Ketone	5.0						
gamma-BHC (Lindane)	0.05						
gamma-Chlordane	0.05						
Heptachlor	0.04						
Heptachlor epoxide	0.03						
Methoxychlor	35.0						

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- J = Compound reported at an estimated concentration below the reporting limit.
- NS = No standard or guidance value available.
- SC = Silty clay.
- ug/L = micrograms per liter or parts per billion.
- Blanks = concentration below laboratory detection limits.

TABLE 5-26 SUMMARY OF SITE GROUNDWATER

HSL METALs FEBRUARY 1988

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-11	0W-13	OW-14B	OW-16					
Sample Date	Groundwater	02/17/88	02/17/88	02/17/88	02/18/88					
Well Screen Interval (feet bgs)	Standard ●	7.0-9.0	3.0-5.0	3.0-7.0	5.0-10.0					
Screened Unit		Sand	Sand	Sand	Fill					
Metals (ug/L)										
Antimony	3		311 X		150					
Beryllium	3				[4]					
Cadmium	5		7 X							
Chromium	50	15	32		90					
Copper	200	120 X	2,270 X	[24] X	160 X					
Iron	300	34,500	34,100	9,800	131,000					
Lead	25	180 (f)	81.6 X	28.4 (d)	600 (g)					
Magnesium	35,000	398,000 X	72,100	33,300 X	165,000					
Manganese	300	12,100 X	2,350	1,200 X	1,600 X					
Mercury	0.7	0.3	0.2		0.8					
Nickel	100	180	250 X		110					
Sodium	20,000	165,000 X	68,200	21,900 X	361,000					

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Samples collected by Engineering Science on February 17-18, 1988.

- (d) = Dilution factor = 2.
- (f) = Dilution factor = 10.
- (g) = Dilution factor = 100.

X = Data validation recommends this value be considered an estimate.

Brackets = If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

TABLE 5-27 SUMMARY OF SITE GROUNDWATER TARGET ANALYTE LIST METALS AUGUST 2013

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-22	OW-23
Sample Date	Groundwater	08/02/13	08/02/13
Well Screen Interval (feet bgs)	Standard ●	3.0 - 8.0	3.0 - 8.0
Screened Unit		Fill/Sand	Sand/SC
Metals (ug/L)			
Arsenic	25.0	6.1 J	12.0
Barium	1,000	210.0	170.0
Cadmium	5.0	1.4	3.2
Chromium	50.0	7.2	27.0
Lead	25.0	39.0	30.0
Mercury	0.7		
Selenium	10.0		

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

J = Compound reported at an estimated concentration below the reporting limit.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - Pre-2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-1	OW-1	OW-2	OW-2	OW-14BR	OW-14BR	OW-16
Sample Date	Groundwater	08/28/17	08/28/17	08/30/17	08/30/17	08/28/17	08/28/17	08/30/17
Well Screen Interval (feet bgs)	Standard ●	4.0 - 9.0	4.0 - 9.0	9.0 - 14.0	9.0 - 14.0	5.0 - 7.0	5.0 - 7.0	5.0 - 10.0
Screened Unit		Silty Clay	Silty Clay	Silty Clay	Silty Clay	Sand	Sand	Fill/SC
Total/Dissolved		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Metals (ug/L)								
Aluminum	NS							
Antimony	3.0							
Arsenic	25.0							
Barium	1,000	31.0	32.0	42.0 JH	33.0	57.0	56.0	230 JH
Beryllium	3.0							
Cadmium	5.0							
Chromium	50.0							1.5 JH
Cobalt	NS	2.3 J	3.0 J			2.6 J	2.7 J	3.0 J
Copper	200.0			16.0				1.9 J
Iron	300.0	2,900 J	2,300	7,100 J		770 J	97	14,800 J
Lead	25.0							8.7 J
Magnesium	35,000	102,000	109,000	87,300	78,300	54,200	52,900	85,900
Manganese	300.0	1,600 JH	1,600 JH	800 JH	750	1,600 JH	1,500 JH	180 JH
Mercury	0.7							
Nickel	100.0	5.6 J	8.8 J	1.9 J	4.1 J	4.0 J	5.0 J	2.6 J
Selenium	10.0							
Silver	50.0							
Vanadium	NS							
Sodium	20,000	66,100	68,200	49,100	44,200	27,100	26,400	81,900
Zinc	2,000 G	2.0 J		9.7 JH	160 JH	2.9 J	11.0 JH	9.2 JH

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

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Dissolved = Results of filtered samples, Total = Results of unfiltered samples.

B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

G = Guidance value.

 \boldsymbol{J} = Compound reported at an estimated concentration below the reporting limit.

H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.

NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

 $\label{thm:continuous} \mbox{Yellow shaded values exceed NYSDEC groundwater standards or guidance values.}$

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - Pre-2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-16	OW-21	OW-21	OW-22	OW-22	OW-23	OW-23
Sample Date	Groundwater	08/30/17	08/28/17	08/28/17	08/28/17	08/28/17	08/28/17	08/28/17
Well Screen Interval (feet bgs)	Standard •		3.0 - 8.0	3.0 - 8.0	3.0 - 8.0	3.0 - 8.0	3.0 - 8.0	3.0 - 8.0
Screened Unit		Fill/SC	Sand/SC	Sand/SC	Fill/Sand	Fill/Sand	Sand/SC	Sand/SC
Total/Dissolved		Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (ug/L)								
Aluminum	NS		79 J					
Antimony	3.0							
Arsenic	25.0		8.6 J					
Barium	1,000	160.0	260.0	190.0	230.0	160.0	60.0	55.0
Beryllium	3.0							0.30 J
Cadmium	5.0	0.51 J					1.4 J	0.51 J
Chromium	50.0							
Cobalt	NS	2.5 J	6.0 J	4.4			2.9 J	3.5 J
Copper	200.0						20.0	
Iron	300.0	150.0	16,300 J	4,000	23,600 J	5,800	8,100 J	3,700
Lead	25.0				4.8 J			3.1 J
Magnesium	35,000	85,000	52,600	57,600	30,500	30,000	46,200	45,700
Manganese	300.0	170.0	1,600 JH	1,600 JH	780 JH	760 JH	2,500 JH	2,500 JH
Mercury	0.7							
Nickel	100.0	3.0 J	5.5 J	4.5 JB		1.6 J	18.0 J	19.0
Selenium	10.0							
Silver	50.0							
Vanadium	NS							
Sodium	20,000	78,200	64,000	67,600	42,900	40,900	64,400	63,900
Zinc	2,000 G		6.4 J		5.6 J		11.0	25.0 JH

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Dissolved = Results of filtered samples, Total = Results of unfiltered samples. B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

- G = Guidance value.
- \boldsymbol{J} = Compound reported at an estimated concentration below the reporting limit.
- H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.
- NS = No standard or guidance value available.
- SC = Silty clay.
- ug/L = micrograms per liter or parts per billion.
- Blanks = concentration below laboratory detection limits.
- Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - Pre-2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-31	OW-31	OW-32	OW-32	OW-33	OW-33	OW-34
Sample Date	Groundwater	08/22/17	08/22/17	08/30/17	08/30/17	08/29/17	08/29/17	08/22/17
Well Screen Interval (feet bgs)	Standard •	1.0 - 6.0	1.0 - 6.0	5.0 - 10.0	5.0 - 10.0	4.0 - 9.0	4.0 - 9.0	7.0 - 12.0
Screened Unit		Sand	Sand	Sand	Sand	Fill/Sand	Fill/Sand	Sand
Total/Dissolved		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Metals (ug/L)								
Aluminum	NS							
Antimony	3.0							
Arsenic	25.0			8.2 J		5.7 J		7.7 J
Barium	1,000	36.0	35.0	130 JH	110.0	28.0	26.0	150.0
Beryllium	3.0							
Cadmium	5.0				0.54 J	0.60 J	0.56 J	
Chromium	50.0							
Cobalt	NS	1.9 J	2.1 JH	4.5	4.1	8.8	9.2	0.72 J
Copper	200.0		3.2 JB			2.5 J		
Iron	300.0	780.0	19.0 J	3,000 J	21.0 J	6,700	1,100	3900.0
Lead	25.0	16.0 J	21.0 J					
Magnesium	35,000			106,000	102,000	163,000	165,000	
Manganese	300.0	750 B	830 B	950 JH	940	3,000 JH	3,000 JH	490 B
Mercury	0.7							
Nickel	100.0	3.3 J	5.5 J	16.0	15.0	18.0	16.0	
Selenium	10.0							
Silver	50.0							
Vanadium	NS							
Sodium	20,000			90,700	83,000	153,000	156,000	
Zinc	2,000 G	7.7 J	6.0 JB	17.0 JH	21.0 JH	25.0	23.0 JH	9.0 J

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Dissolved = Results of filtered samples, Total = Results of unfiltered samples.

B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

G = Guidance value.

 \boldsymbol{J} = Compound reported at an estimated concentration below the reporting limit.

H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.

NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

 $\label{thm:continuous} \mbox{Yellow shaded values exceed NYSDEC groundwater standards or guidance values.}$

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - Pre-2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-34	OW-35	OW-35	OW-36	OW-36	OW-37	OW-37
Sample Date	Groundwater	08/22/17	08/30/17	08/30/17	08/29/17	08/29/17	08/29/17	08/29/17
Well Screen Interval (feet bgs)	Standard ●	7.0 - 12.0	4.0 - 9.0	4.0 - 9.0	3.0 - 8.0	3.0 - 8.0	1.0 - 6.0	1.0 - 6.0
Screened Unit		Sand	Fill/Sand	Fill/Sand	Fill/Sand	Fill/Sand	Fill/Sand	Fill/Sand
Total/Dissolved		Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (ug/L)								
Aluminum	NS		87.0 J				89 J	
Antimony	3.0							
Arsenic	25.0		20.0	7.6 J				
Barium	1,000	130.0	1,100 JH	880.0	480.0	330.0	80.0	69.0
Beryllium	3.0							
Cadmium	5.0							0.62 J
Chromium	50.0		1.1 JH		2.3	1.0 JH		
Cobalt	NS	0.72 J	5.2	4.5			5.5	4.2
Copper	200.0	3.0 JB	3.2 J				2.8 J	
Iron	300.0	630.0	10,200 J	31.0 J	41,200	24,000	10,400	1,100
Lead	25.0	4.2 J	4.8 J	3.3 J	3.8 J			
Magnesium	35,000		94,000	90,100	33,100	33,600	95,400	96,800
Manganese	300.0	460 B	200 JH	320	280 JH	260 JH	2,200 JH	2,100 JH
Mercury	0.7							
Nickel	100.0		15.0	17.0	2.0 J	1.8 J	8.2 J	8.1 J
Selenium	10.0							
Silver	50.0							
Vanadium	NS		1.7 JH					
Sodium	20,000		116,000	103,000	10,300	10,800	49,700	49,800
Zinc	2,000 G	11.0 B		21.0 JH	10.0	22.0 JH	18.0	18.0 JH

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Dissolved = Results of filtered samples, Total = Results of unfiltered samples.

B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

G = Guidance value.

J = Compound reported at an estimated concentration below the reporting limit

H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.

NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

 $\label{thm:continuous} \mbox{Yellow shaded values exceed NYSDEC groundwater standards or guidance values.}$

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - 2017 WELLS AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	LDP-01	LDP-01	LDP-02	LDP-02	LDP-03	LDP-03	LDP-04	LDP-04
Sample Date	Groundwater	08/24/17	08/24/17	08/24/17	08/24/17	08/24/17	08/24/17	08/25/17	08/25/17
Well Screen Interval (feet bgs)	Standard ●	4.3 - 5.3	4.3 - 5.3	4.3 - 5.3	4.3 - 5.3	4.1 - 5.1	4.1 - 5.1	4.3 - 5.3	4.3 - 5.3
Screened Unit		Sand	Sand	Sand/SC	Sand/SC	Sand/SC	Sand/SC	Sand	Sand
Total/Dissolved		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (ug/L) +									
Aluminum	NS	2,800		1,100		1,500		300	
Antimony	3								
Arsenic	25								
Barium	1,000	57.0	40.0	76.0	66.0	52.0	44.0	76.0	73.0
Beryllium	3								
Cadmium	5								0.52 J
Chromium	50	4.0		1.7 J		2.1 J			
Cobalt	NS	1.2	0.66 J					1.3 J	1.1 J
Copper	200	3.4		3.0 J	2.2 J	2.7 J	2.4 J	1.7 J	
Iron	300	2,600		130.0		1,500		210.0	
Lead	25								
Magnesium	35,000	41,600	41,300	37,300	34,700	48,800	47,400	71,600	69,000
Manganese	300	66 B	31.0	44 B	11.0	49 B	22.0	240 B	220 JH
Mercury	0.7								
Nickel	100	5.5 J	3.9 J	2.4 J	3.5 J	2.4 J	2.5 J	6.6 J	5.2 J
Selenium	10								
Silver	50				-	-			
Vanadium	NS			2.9 J		3.5 J			
Sodium	20,000	15,800	16,700	23,400	23,500	13,800	13,800	51,000	49,800
Zinc	2,000 G		13.0 JH	7.8 J	13.0 JH	7.3 J	7.5 JB	5.2 J	8.2 JB

Notes:

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• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

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G = Guidance value.

 $\mbox{\sc J}=\mbox{\sc Compound}$ reported at an estimated concentration below the reporting limit.

H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.

NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - 2017 WELLS AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	LPZ-01S	LPZ-01S	LPZ-02S	LPZ-02S	LPZ-03S	LPZ-03S	LPZ-04S	LPZ-04S
Sample Date	Groundwater	08/29/17	08/29/17	08/29/17	08/29/17	08/21/17	08/21/17	08/21/17	08/21/17
Well Screen Interval (feet bgs)	Standard ●	5.0 - 7.0	5.0 - 7.0	3.0 - 6.0	3.0 - 6.0	3.0 - 8.0	3.0 - 8.0	3.0 - 6.0	3.0 - 6.0
Screened Unit		Sand/SC							
Total/Dissolved		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (ug/L) +									
Aluminum	NS								
Antimony	3								
Arsenic	25					55.0	24.0		
Barium	1,000	38.0	37.0	23.0	22.0	83.0	76.0	46.0	44.0
Beryllium	3								
Cadmium	5		0.54 J	0.9 J	1.1 J			0.64 J	0.52 J
Chromium	50								
Cobalt	NS	3.7 J	3.4 J	3.2 J	3.2 J			3.4 J	3.1
Copper	200			3.3 J	1.7 J			3.5 J	11.0 B
Iron	300	2.2		67.0		7,200	1,600	600.0	
Lead	25								
Magnesium	35,000	74,100	74,000	114,000	113,000	47,100	47,100	293,000	282,000
Manganese	300	1,000 JH	950 JH	1,300 JH	1,300 JH	470 B	460 B	740 B	760 B
Mercury	0.7								
Nickel	100	6.5 J	6.0 J	28.0	29.0			14.0	14.0
Selenium	10								
Silver	50								
Vanadium	NS								
Sodium	20,000	42,900	43,400	61,600	63,000	28,300	28,700	500,000	484,000
Zinc	2,000 G	5.9 JB	8.9 JB	16.0	22.0 JH	6.2 J	4.1 JB	12.0	12.0 B

Notes:

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G = Guidance value.

 $\mbox{\sc J}=\mbox{\sc Compound}$ reported at an estimated concentration below the reporting limit.

H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.

NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - 2017 WELLS AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	LPZ-05S	LPZ-05S	LPZ-06S	LPZ-06S	LPZ-07S	LPZ-07S	LPZ-08S	LPZ-08S	LPZ-09S
Sample Date	Groundwater	08/21/17	08/21/17	08/21/17	08/21/17	08/21/17	08/21/17	08/29/17	08/29/17	09/21/17
Well Screen Interval (feet bgs)	Standard ●	3.0 - 6.0	3.0 - 6.0	3.0 - 8.0	3.0 - 8.0	3.0 - 7.0	3.0 - 7.0	2.5 - 4.0	2.5 - 4.0	4.0 - 8.0
Screened Unit		Sand/SC	Sand/SC	Sand/SC	Sand/SC	Sand/SC	Sand/SC	Sand	Sand	Sand
Total/Dissolved		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Metals (ug/L) +										
Aluminum	NS							150 J		310 JH
Antimony	3									
Arsenic	25	31.0	17.0							8.7 J
Barium	1,000	150.0	120.0	30.0	29.0	33.0	29.0	230.0	140.0	72 JH
Beryllium	3									
Cadmium	5								0.73 J	
Chromium	50							12.0	3.9 JH	1.6 JH
Cobalt	NS	2.2 J	2.1 J			2.6 J	2.4 J	7.3	9.0	6.5
Copper	200					1.8 J	4.9 JB		4.1 J	
Iron	300	8200		320.0		3,500	120.0	21,400	2,400	10,300 JH
Lead	25				6.6 J			4.1 J		4.3 J
Magnesium	35,000	174,000	170,000	66,700	64,600	131,000	123,000	128,000	150,000	101,000
Manganese	300	500 B	480 B	260 B	240 B	1,300 B	1,200 B	3,800 JH	4,200 JH	1,800 JH
Mercury	0.7									
Nickel	100	5.0 J	4.7 J	1.5 J	1.3 J	5.5 J	5.9 J	13.0	13.0	20.0
Selenium	10									
Silver	50	-					-			_
Vanadium	NS	1.5 J					-	3.2 J		1.5 J
Sodium	20,000	198,000	194,000	66,300	65,100	45,700	42,600	98,700	107,000	34,900
Zinc	2,000 G	4.5 J	6.5 JB	6.2 J	13.0 B	9.2 J	10.0 B	7.7 J	25.0 JH	19.0 JH

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Dissolved = Results of filtered samples, Total = Results of unfiltered samples.

B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

G = Guidance value.

J = Compound reported at an estimated concentration below the reporting limit.
H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.
NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALs - 2017 WELLS

AUGUST 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	LPZ-09S	LPZ-10S	LPZ-10S	LPZ-11S	LPZ-11S	LPZ-12S	LPZ-12S	LPZ-13S	LPZ-13S
Sample Date	Groundwater	09/21/17	09/20/17	09/20/17	09/21/17	09/21/17	09/21/17	09/21/17	09/20/17	09/20/17
Well Screen Interval (feet bgs)	Standard ●	4.0 - 8.0	4.0 - 6.0	4.0 - 6.0	4.0 - 7.0	4.0 - 7.0	4.0 - 7.0	4.0 - 7.0	5.0 - 7.5	5.0 - 7.5
Screened Unit		Sand	Fill/Sand	Fill/Sand	Sand	Sand	Sand	Sand	Sand	Sand
Total/Dissolved		Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (ug/L) +										
Aluminum	NS		67.0 J		60.0 JH	60.0 JH	210 JH		80 J	
Antimony	3									
Arsenic	25				20.0	12.0 J	6.8 JH			
Barium	1,000	57 JH	39 JH	25 JH	130 JH	120 JH	330 JH	250 JH	29 JH	29 JH
Beryllium	3									
Cadmium	5	0.51 J		0.50 J	0.60 J	0.55 J	0.65 J	0.61 J	0.74 J	0.92 J
Chromium	50				1.3 JH		1.5 JH	1.0 JH		1.1 JH
Cobalt	NS	5.0	3.1 J	2.9 J	2.3 J	2.2	1.9 J	2.6 J		
Copper	200									
Iron	300	3,700 JH	41,500 JH	5300 JH	1,200 JH	190 JH	8,600 JH	360 JH	89.0 JH	19.0 JH
Lead	25					3.0 J	5.8 J			
Magnesium	35,000	92,100	114,000	110,000	68,800	66,000	69,500	62,300	118,000	118,000
Manganese	300	1,500 JH	3,800	3600 JH	370 JH	340 JH	340 JH	370 JH	49.0	51 JH
Mercury	0.7									
Nickel	100	16.0	6.0 J	4.6 J	6.9 J	6.7 J	6.9 J	8.8 J	3.5 J	3.7 J
Selenium	10									
Silver	50						•			
Vanadium	NS		1.6 J				•			
Sodium	20,000	32,300	100,000	100,000	46,200	43,800	39,000	35,500	87,000	90,700
Zinc	2,000 G	14.0	7.8 J	4.0 J	3.4 JH	9.3 J	15.0 JH	8.5 J	10.0	11.0

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Dissolved = Results of filtered samples, Total = Results of unfiltered samples.

B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

G = Guidance value.

J = Compound reported at an estimated concentration below the reporting limit.
H = This flag indicates that the analyte in question was quantitated using peak heights

rather than peak areas for both the analyte and its internal standard.

NS = No standard or guidance value available.

SC = Silty clay.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER HSL ORGANICS - LOWER SAND (VOCs)

NOVEMBER 1988

NYSDEC - NIAGARA SANITATION SITE, SITE #932054

TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-12	OW-15
	Groundwater		
Screened Unit	Standard ●	Lower Sand	Lower Sand
HSL Organic Compunds (ug/L)			
Bis[2-ethylhexyl]phthalate	5	1,600 B	790 BX
Tetrachloroethene	5	110 JX	

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Samples collected by Engineering Science on February 17-18, 1988 and November 17, 1988.

NS = No standard

- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).
- J = Compound reported at an estimated concentration below the reporting limit.
- X = Data validation recommends this value be considered an estimate.
- ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

TABLE 5-31 SUMMARY OF SITE GROUNDWATER TCL VOCs AND SVOCs - LOWER SAND (AUG/SEPT 2017)

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-3
Sample Date	Groundwater	09/22/17
Well Screen Interval (feet bgs)	Standard ●	45.0 - 55.0
Screened Unit		Till
Volatile Organic Compounds (ug/L)		
1,4-Dichlorobenzene	3.0	
Acetone	50.0	6,400 J
Benzene	1.0	
Carbon Disulfide	NS	
Chlorobenzene	5.0	
Ethylbenzene	5.0	
2-Hexanone	50 G	
Isopropylbenzene	5.0	
Methyl Ethyl Ketone	50.0	
Xylene (Total)	5.0	
Semi-Volatile Organic Compounds (ug/L)		
2,4-Dimethylphenol	50.0	
2-Chlorophenol	1*	
2-Methylnaphthalene	NS	
2-Methylphenol (O-Cresol)	1*	
4-Chloro-3-Methylphenol	1*	
4-Methylphenol (P-Cresol)	1*	
Acetophenone	NS	
Anthracene (PAH)	50.0	
Benzaldehyde	NS	
Biphenyl	5.0	
Bis[2-ethylhexyl]phthalate	5.0	
Diethylphthalate	50.0	
Di-n-butylphthalate	50.0	410 J
Fluoranthene (PAH)	50.0	
Fluorene	50.0	
Isophorone	50.0	
Naphthalene (PAH)	10.0	
Nitrobenzene	0.4	
N-Nitrosodi-N-Propylamine	NS	
Phenanthrene (PAH)	50.0	
Phenol	1*	
Pyrene (PAH)	50.0	

Notes:

Table presented only includes sample locations with one or more analytes reported at concentrations above applicable standards or criteria.

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- * = Standard applies to total chlorinated phenols.
- J = Compound reported at an estimated concentration below the reporting limit.

NS = No standard or guidance value available.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER

HSL METALS - LOWER SAND NOVEMBER 1988

NYSDEC - NIAGARA SANITATION SITE, SITE #932054 TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-14A	OW-12	OW-15
	Groundwater	11/01/88	11/01/88	11/01/88
Screened Unit	Standard ●	Lower Sand	Lower Sand	Lower Sand
Metals (ug/L)				
Aluminum	NS	70,300	50,400	79,800
Antimony	3	[53.0]		120
Arsenic	25		13.5	
Barium	1,000	800	550	710
Beryllium	3	6.0	[4.0]	7.0
Calcium	NS	890,000	290,000	430,000
Chromium	50	130	79.0	120
Cobalt	NS	65.0	[43.0]	81.0
Copper	200	180 X	130 X	190 X
Iron	300	131,000 X	80,800 X	144,000 X
Lead	25	140 (f)	92.6 (d)	130 (f)
Magnesium	35,000	181,000 X	93,200 X	134,000 X
Manganese	300	4,500 X	2,500 X	3,900 X
Mercury	0.7			0.3
Nickel	100	140	89.0	150
Potassium	NS	168,000	14,900	19,800
Sodium	20,000	97,600 X	55,000 X	64,500 X
Vanadium	NS	130	81.0	130
Zinc	2,000 G	580 X	330 X	570 X

Notes:

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• = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.

Samples collected by Engineering Science on February 17-18, 1988.

(d) = Dilution factor = 2.

(f) = Dilution factor = 10.

X = Data validation recommends this value be considered an estimate.

Brackets = If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALS - LOWER SAND

AUGUST/SEPTEMBER 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054

TOWN OF WHEATFIELD, NEW YORK

Well Number	NYSDEC	OW-14A	OW-14A	OW-15	OW-15	OW-1B	OW-1B	OW-3	OW-3
Sample Date	Groundwater	09/25/17	09/25/17	09/22/17	09/22/17	09/22/17	09/22/17	09/22/17	09/22/17
Well Screen Interval (feet bgs)	Standard ●	33.5 - 36.5	33.5 - 36.5	40.0 - 45.0	40.0 - 45.0	58.6 - 68.6	58.6 - 68.6	45.0 - 55.0	45.0 - 55.0
Screened Unit		Lower Sand	Lower Sand	Lower Sand	Lower Sand	Till	Till	Till	Till
Total/Dissolved		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (ug/L)									
Aluminum	NS	960 J				290		570	
Antimony	3.0								
Arsenic	25.0		8 J	6.6 J					
Barium	1,000	62 JH	58.0	99.0	25.0	44.0	90.0	55.0	24.0
Beryllium	3.0					0.43 J			
Cadmium	5.0					0.90 J			
Chromium	50.0					3.4 J		3.7 J	3.7 J
Cobalt	NS								
Copper	200.0								
Iron	300.0	640 J		25 J		300		1,100	
Lead	25.0								
Magnesium	35,000		2,900	8,300	41,200	29,800	7,700	46,700	38,900
Manganese	300.0	14 JH	5.6	2.1 JB	40 B	27.0 B	1.5 JB	49.0 B	38.0 B
Mercury	0.7								
Nickel	100.0				2.1 J	4.5 J		8.0 J	2.1 J
Selenium	10.0								
Silver	50.0								
Sodium	20,000	50,800	50,400	64,500	105,000	93,300	60,200	54,300	97,700
Vanadium	NS	3.7	1.5						
Zinc	2,000 G	2.5 J	9.4 J	2.4 JB	19 B	4.4 JB	8.8 JB	6.9 JB	6.4 JB

Notes:

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internal standard.

J = Compound reported at an estimated concentration below the

reporting limit.

NS = No standard or guidance value available.

ug/L = micrograms per liter or parts per billion.

Blanks = concentration below laboratory detection limits.

Yellow shaded values exceed NYSDEC groundwater standards or

SUMMARY OF SITE GROUNDWATER

TARGET ANALYTE LIST TOTAL/DISSOLVED METALS - LOWER SAND

AUGUST/SEPTEMBER 2017

NYSDEC - NIAGARA SANITATION SITE, SITE #932054

TOWN OF WHEATFIELD, NEW YORK

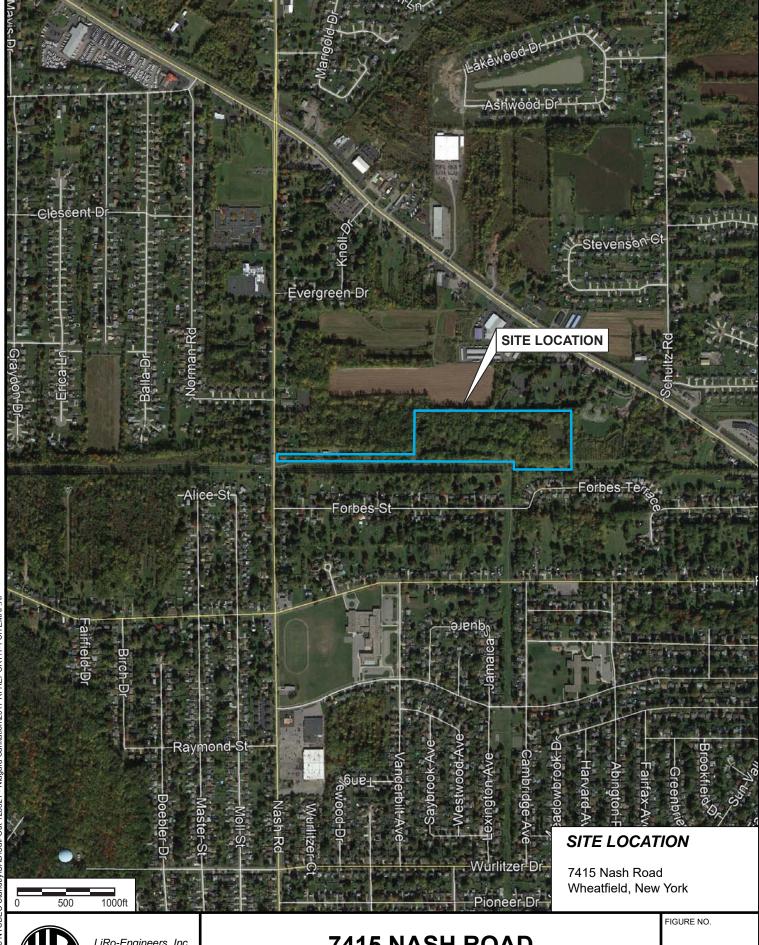
Well Number	NYSDEC	OW-4	OW-4	OW-5	OW-5	OW-6	OW-6
Sample Date	Groundwater	09/22/17	09/22/17	08/31/17	08/31/17	09/20/17	09/20/17
Well Screen Interval (feet bgs)	Standard ●	59.0 - 69.0	59.0 - 69.0	59.8 - 69.8	59.8 - 69.8	56.0 - 66.0	56.0 - 66.0
Screened Unit		Till	Till	Till/Bedrock	Till/Bedrock	Till/Bedrock	Till/Bedrock
Total/Dissolved		Total	Dissolved	Total	Dissolved	Total	Dissolved
Metals (ug/L)							
Aluminum	NS	200		210		480	320
Antimony	3.0						
Arsenic	25.0					8.3 J	
Barium	1,000	28.0	7.0	23.0	20.0	11.0	220.0
Beryllium	3.0						
Cadmium	5.0						
Chromium	50.0	1.8 J				1.9 J	
Cobalt	NS						
Copper	200.0						
Iron	300.0	330		350		760	130
Lead	25.0						
Magnesium	35,000	41,700	99,800	25,100	23,300	102,000	2,500
Manganese	300.0	46.0 B	60.0 B	17.0 B	11.0	77.0 B	1.1 B
Mercury	0.7						
Nickel	100.0	2.7 J				1.8 J	
Selenium	10.0						
Silver	50.0						
Sodium	20,000	107,000	126,000	84,800	79,300	131,000	363,000
Vanadium	NS						
Zinc	2,000 G	3.3 JB	16 JB	4.9 J	8.4 JB	2.5 JB	16 B

Notes:

- = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
- B = Analyte detected in the associated blank, as well as in the sample (organics); value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics). G = Guidance value.
- H = This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard.
- J = Compound reported at an estimated concentration below the reporting limit.
- NS = No standard or guidance value available.
- ug/L = micrograms per liter or parts per billion.
- Blanks = concentration below laboratory detection limits.
- Yellow shaded values exceed NYSDEC groundwater standards or



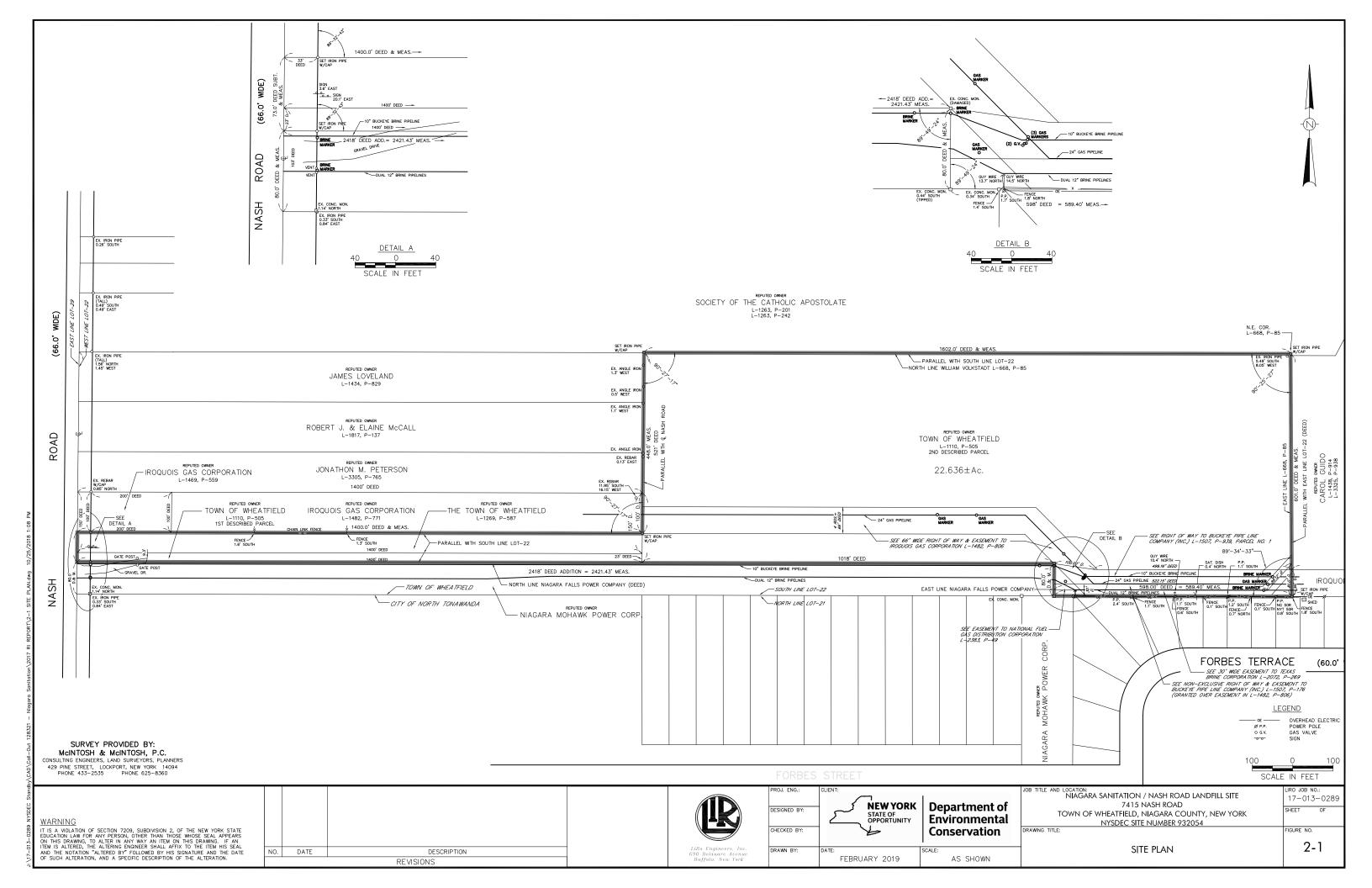
FIGURES

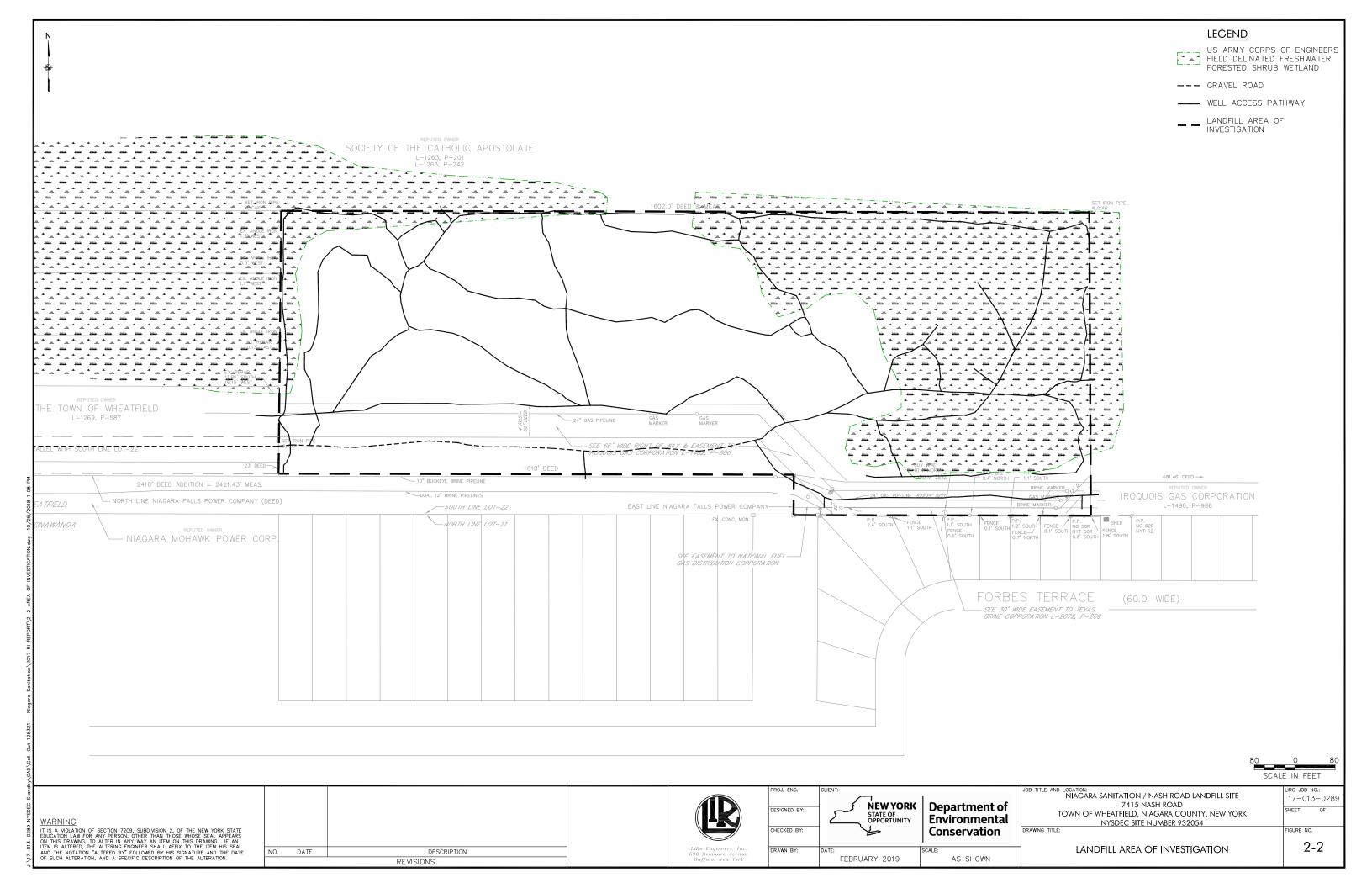


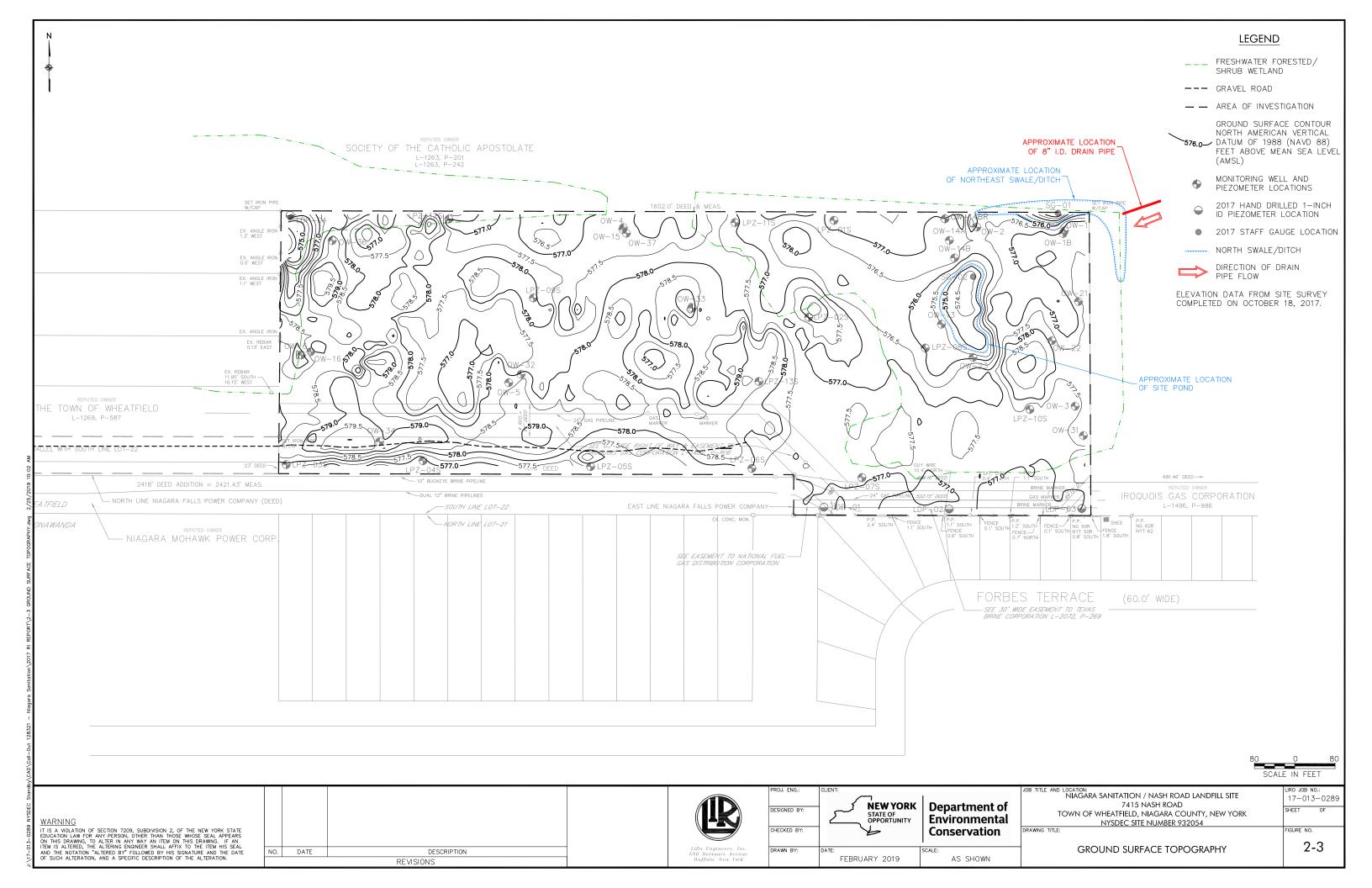
LiRo-Engineers, Inc. 690 Delaware Ave. Buffalo, New York

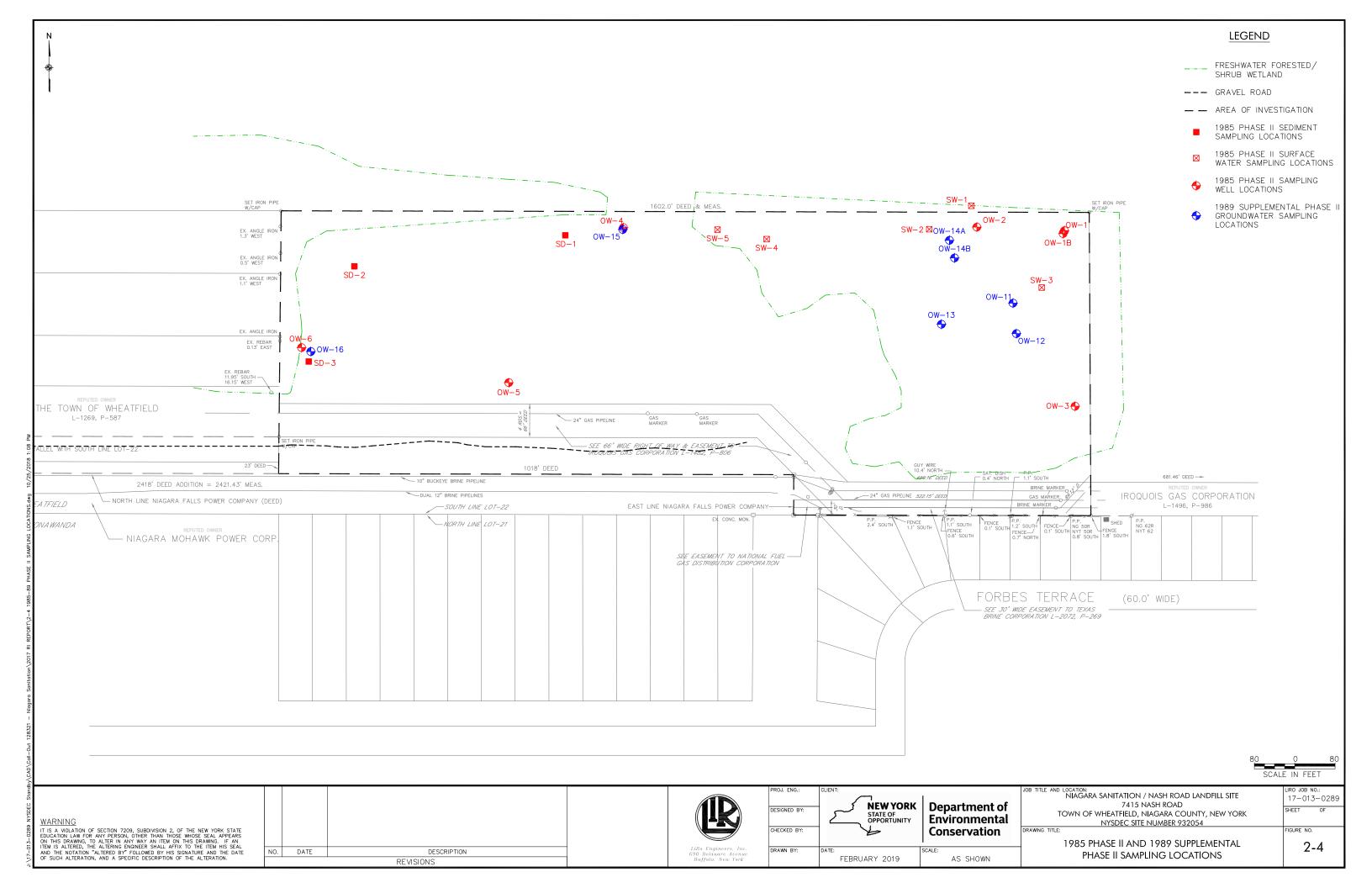
7415 NASH ROAD SITE LOCATION MAP

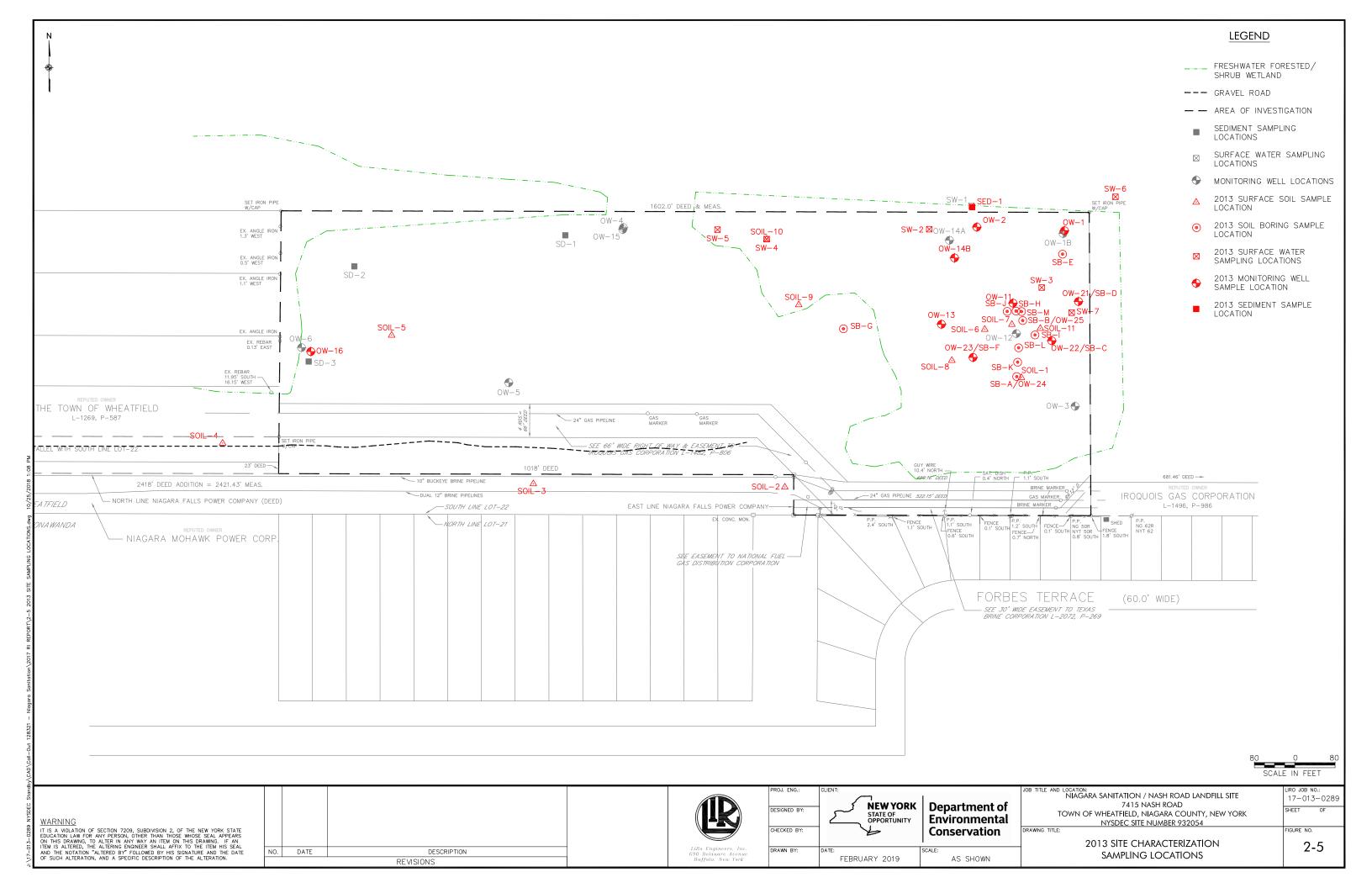
1-1

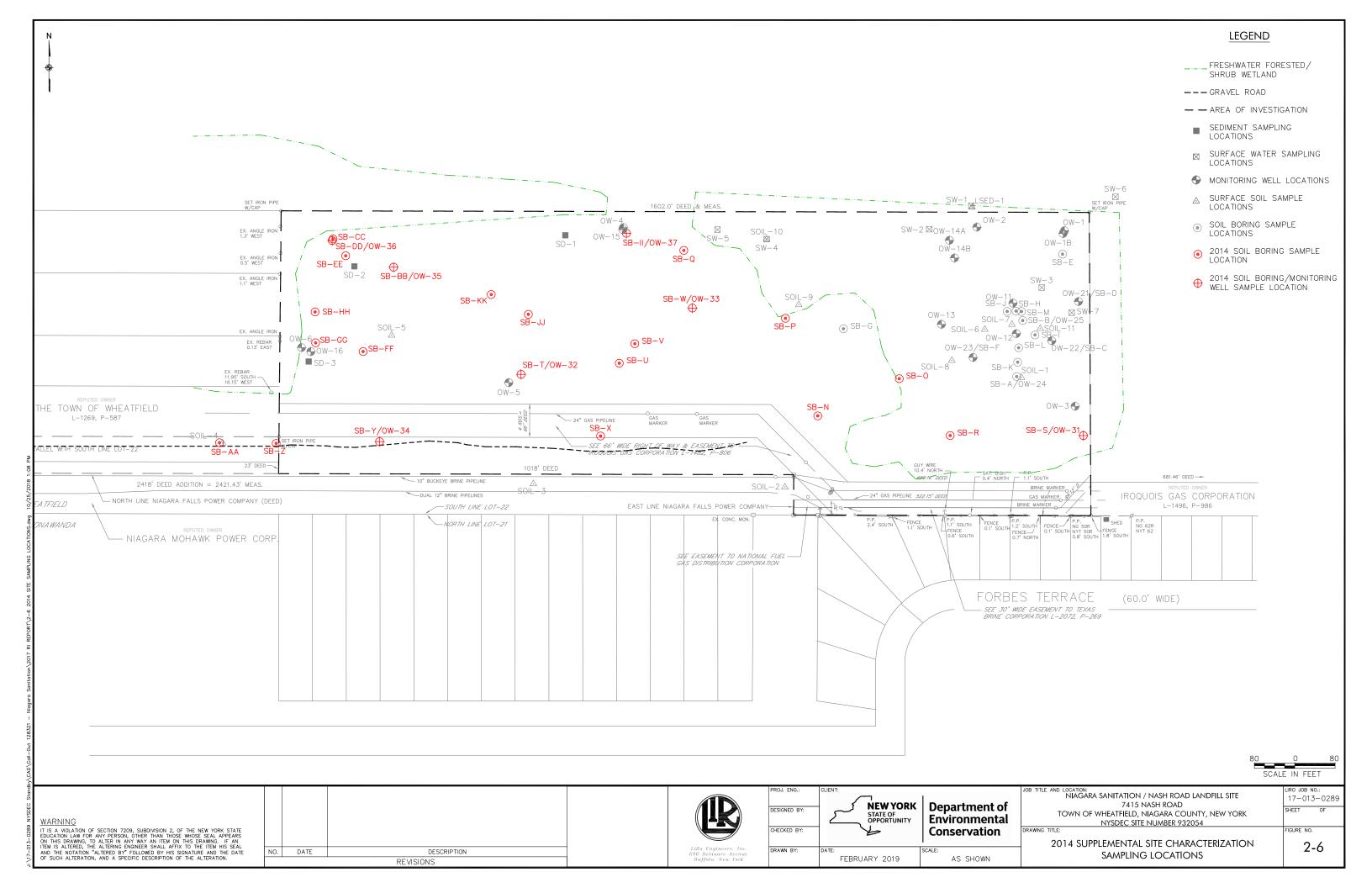


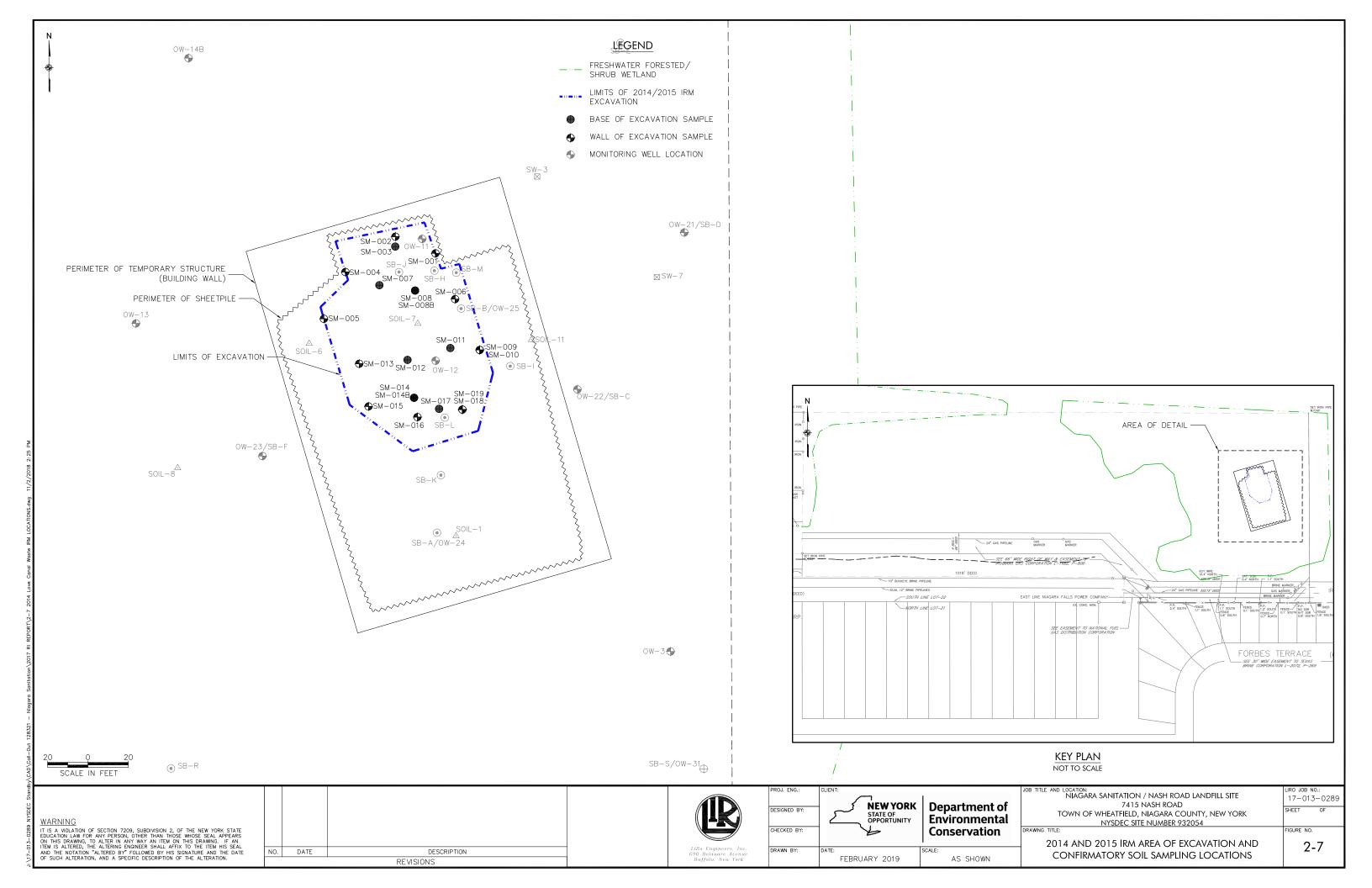


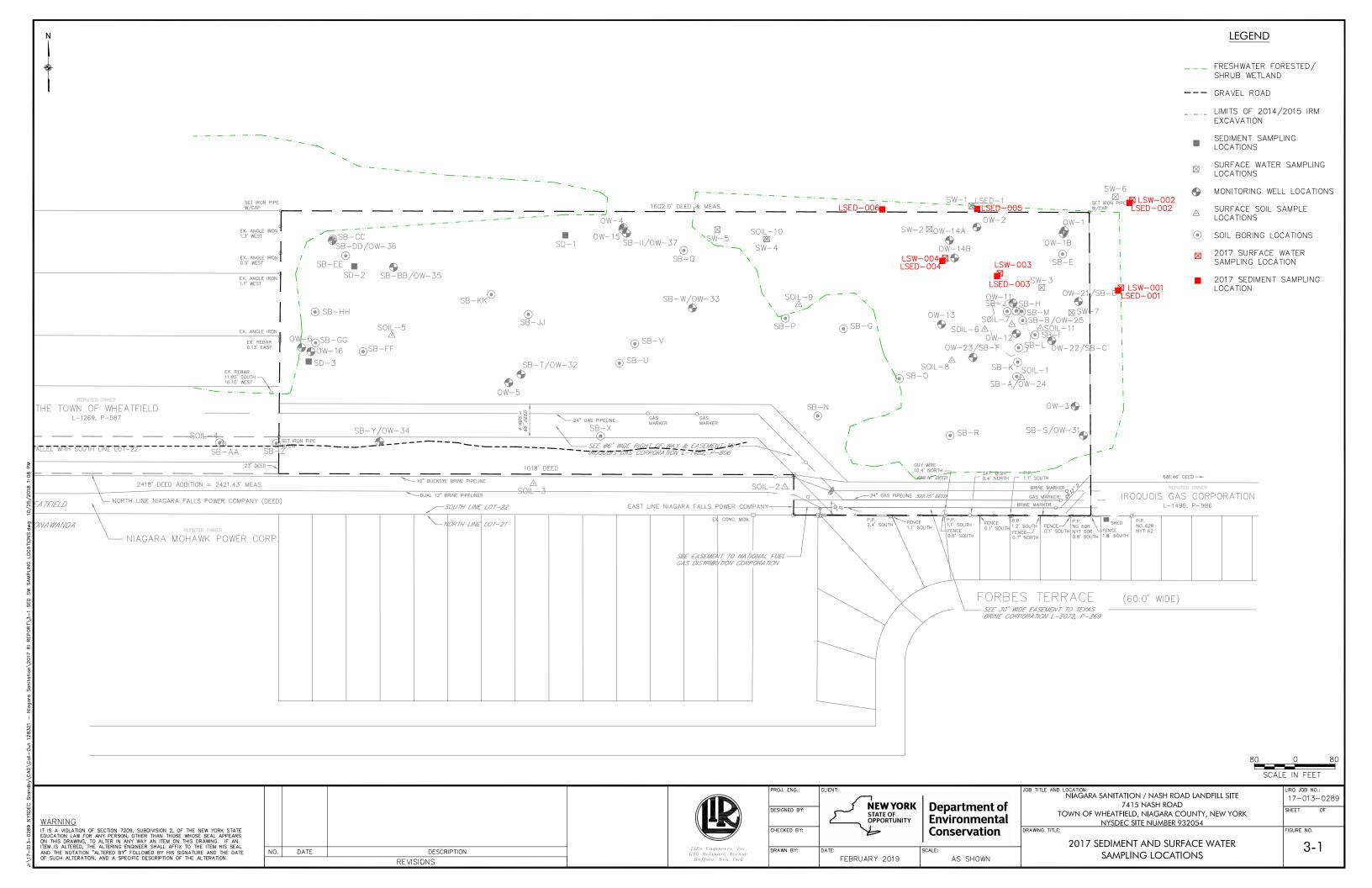


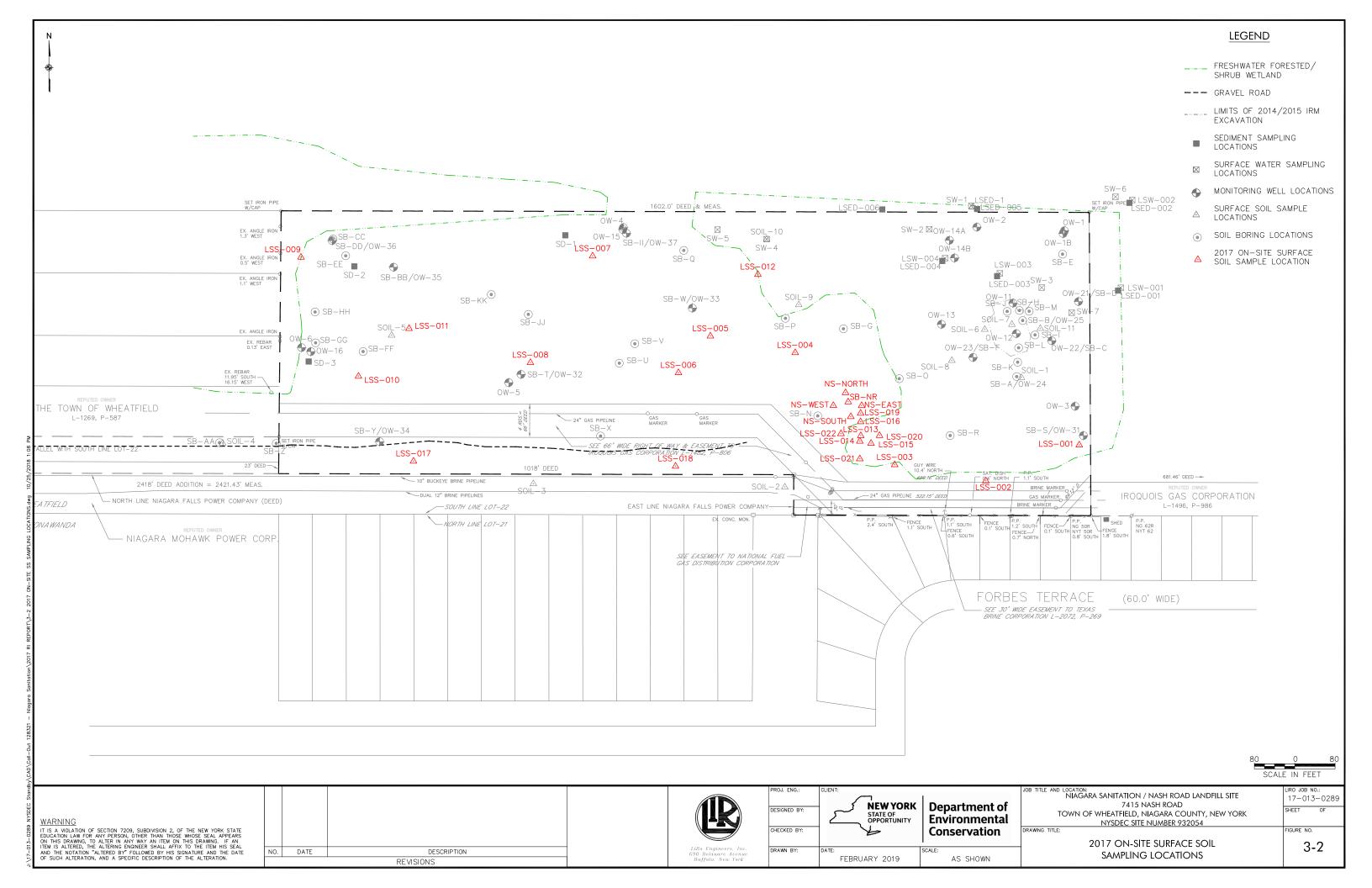


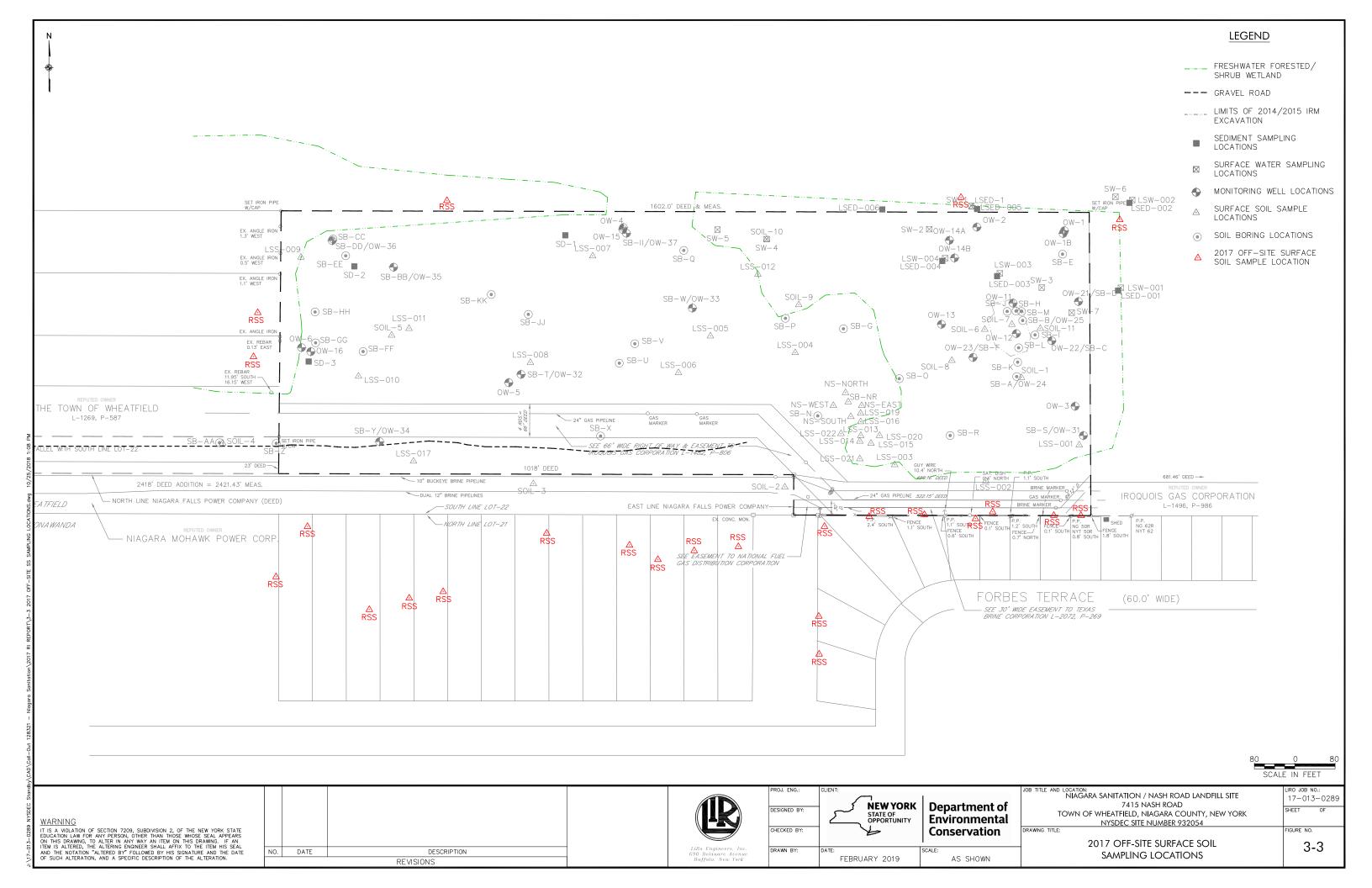


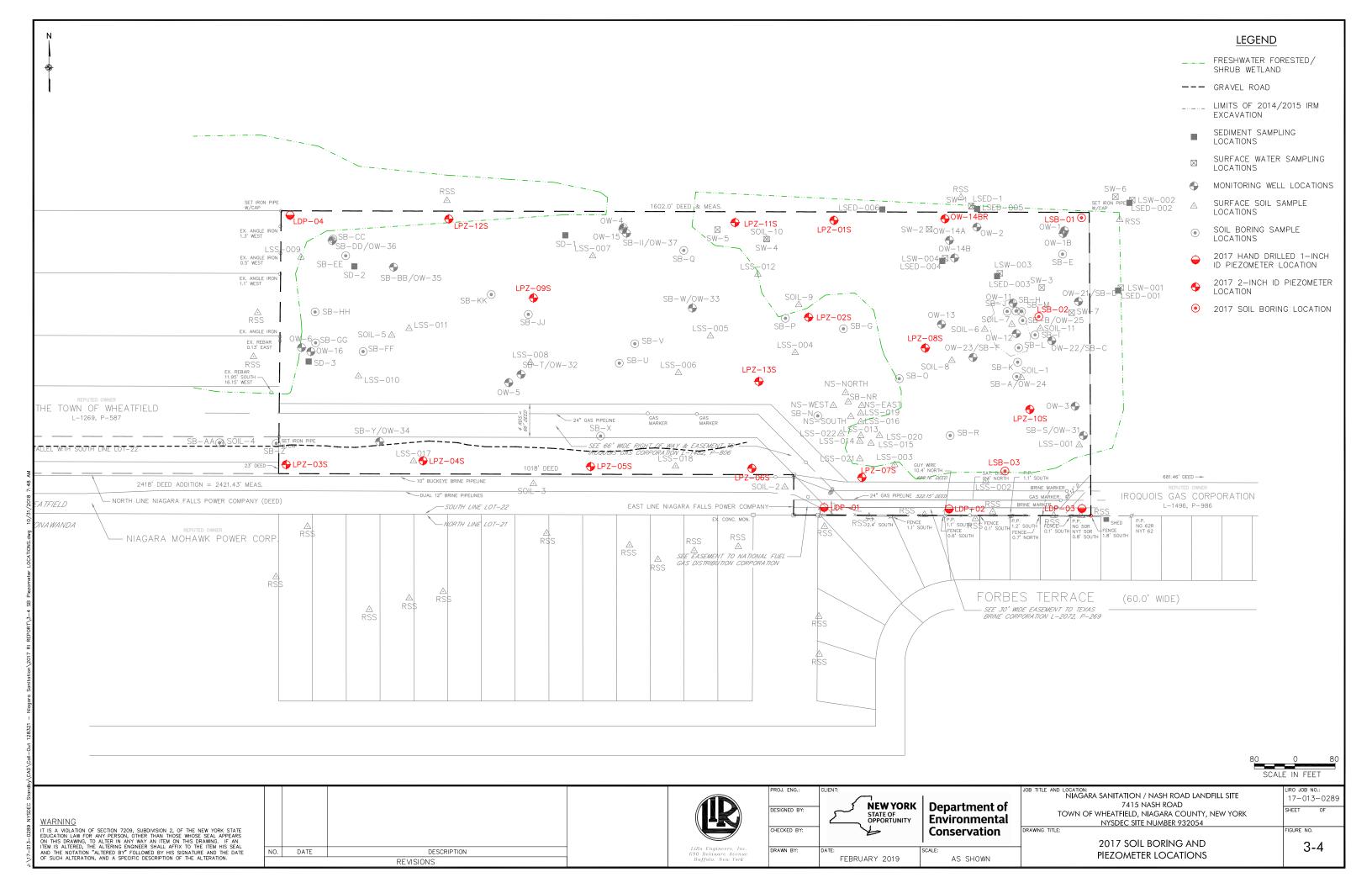


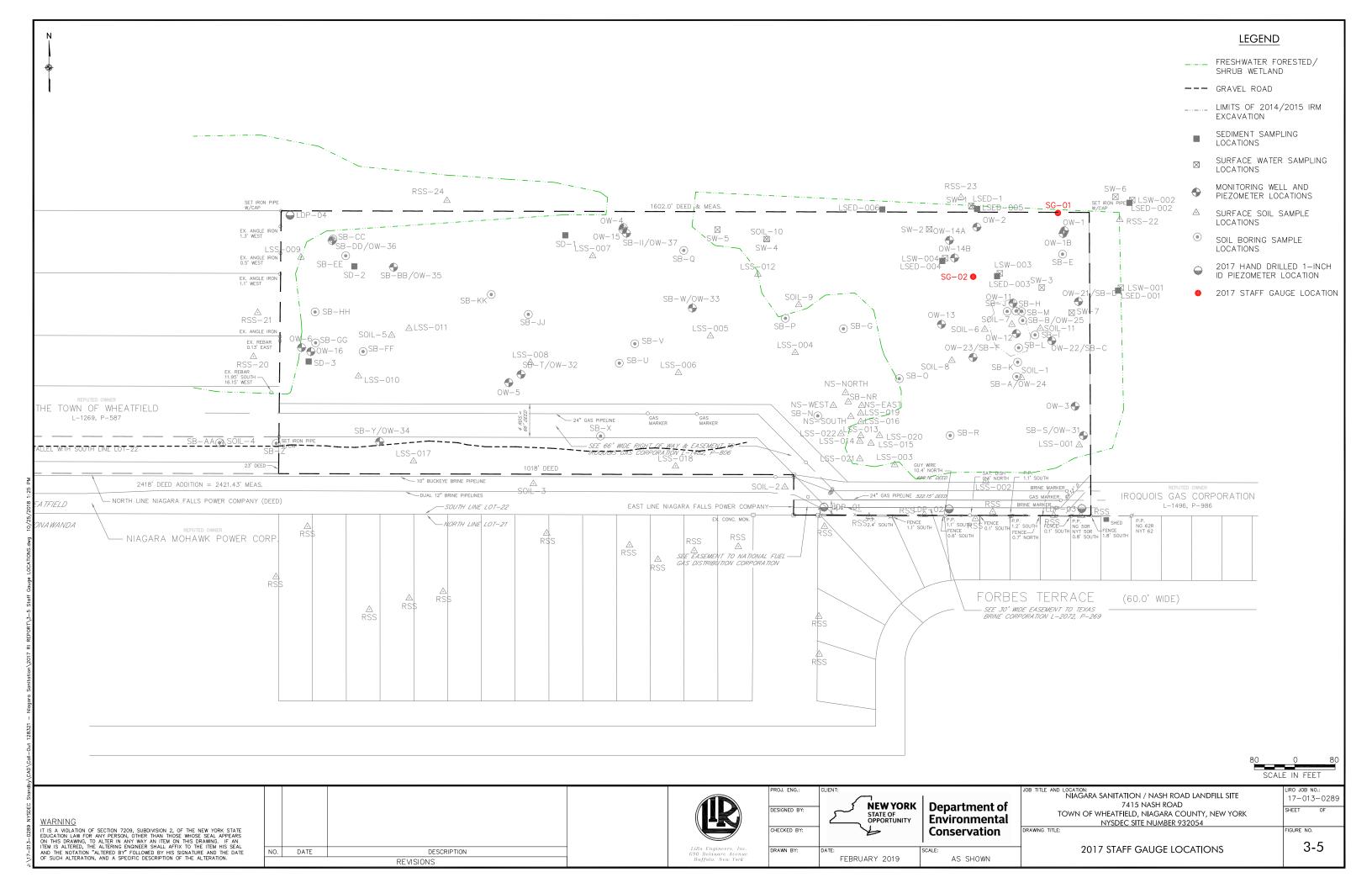


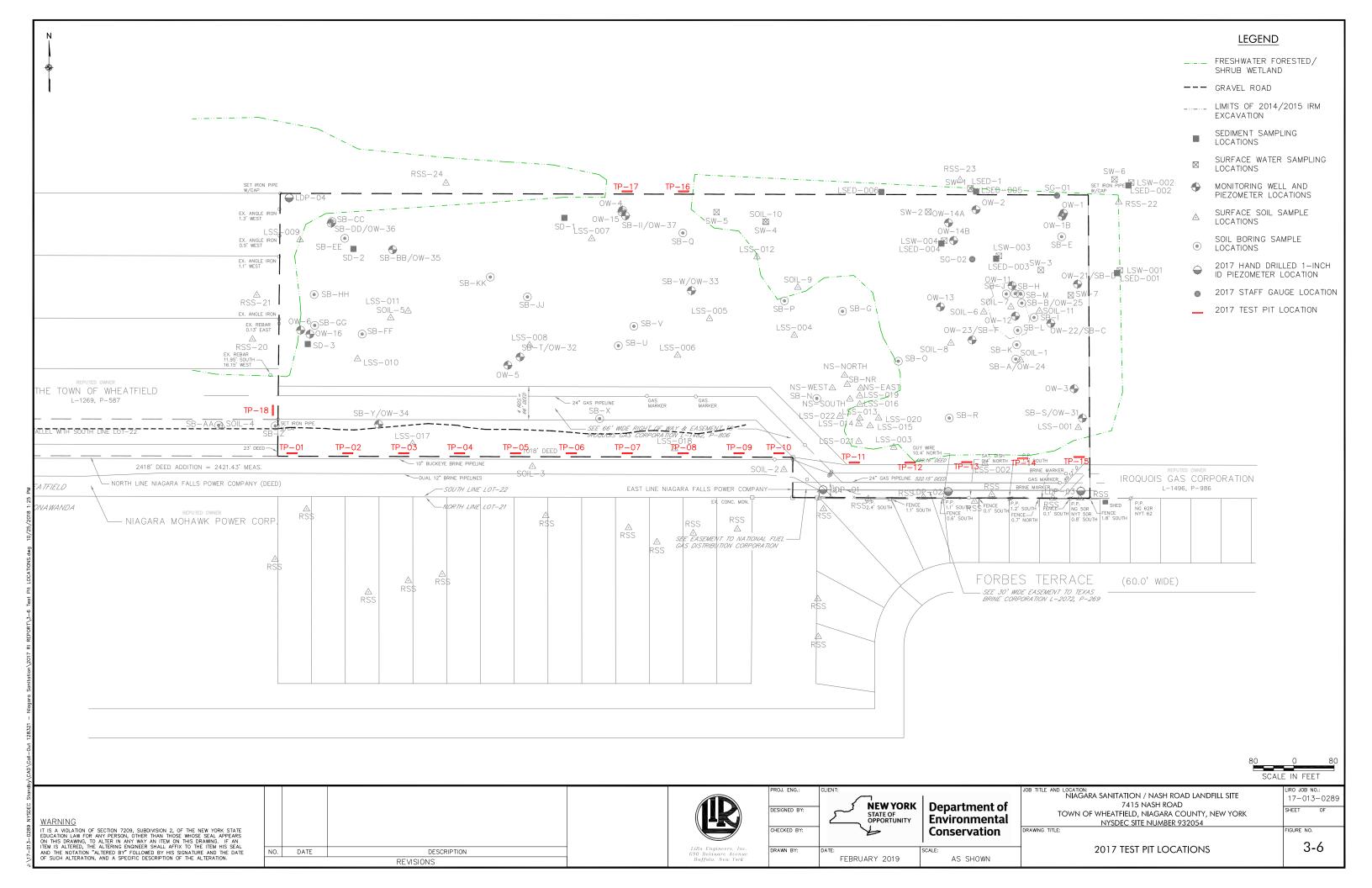


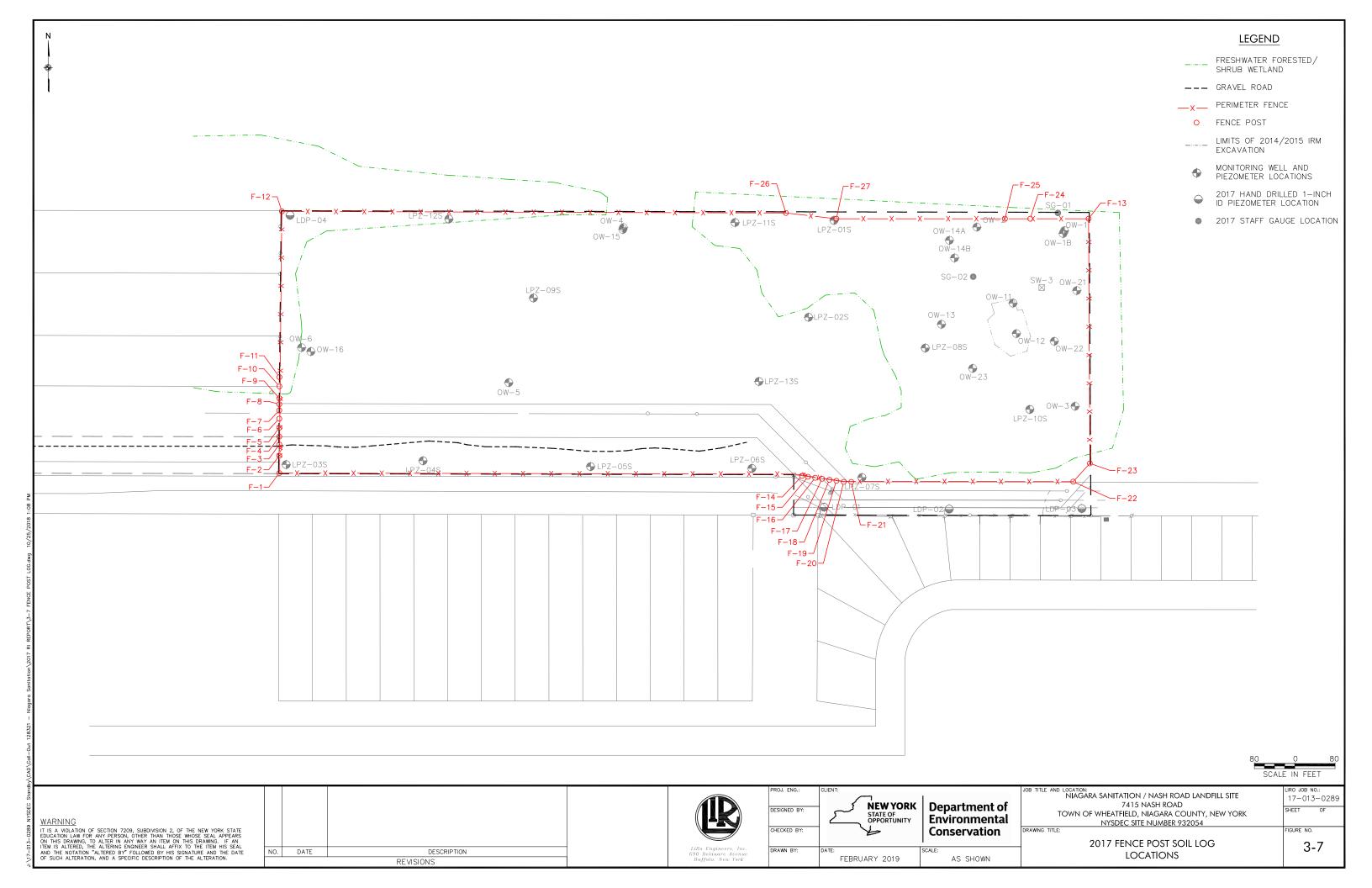


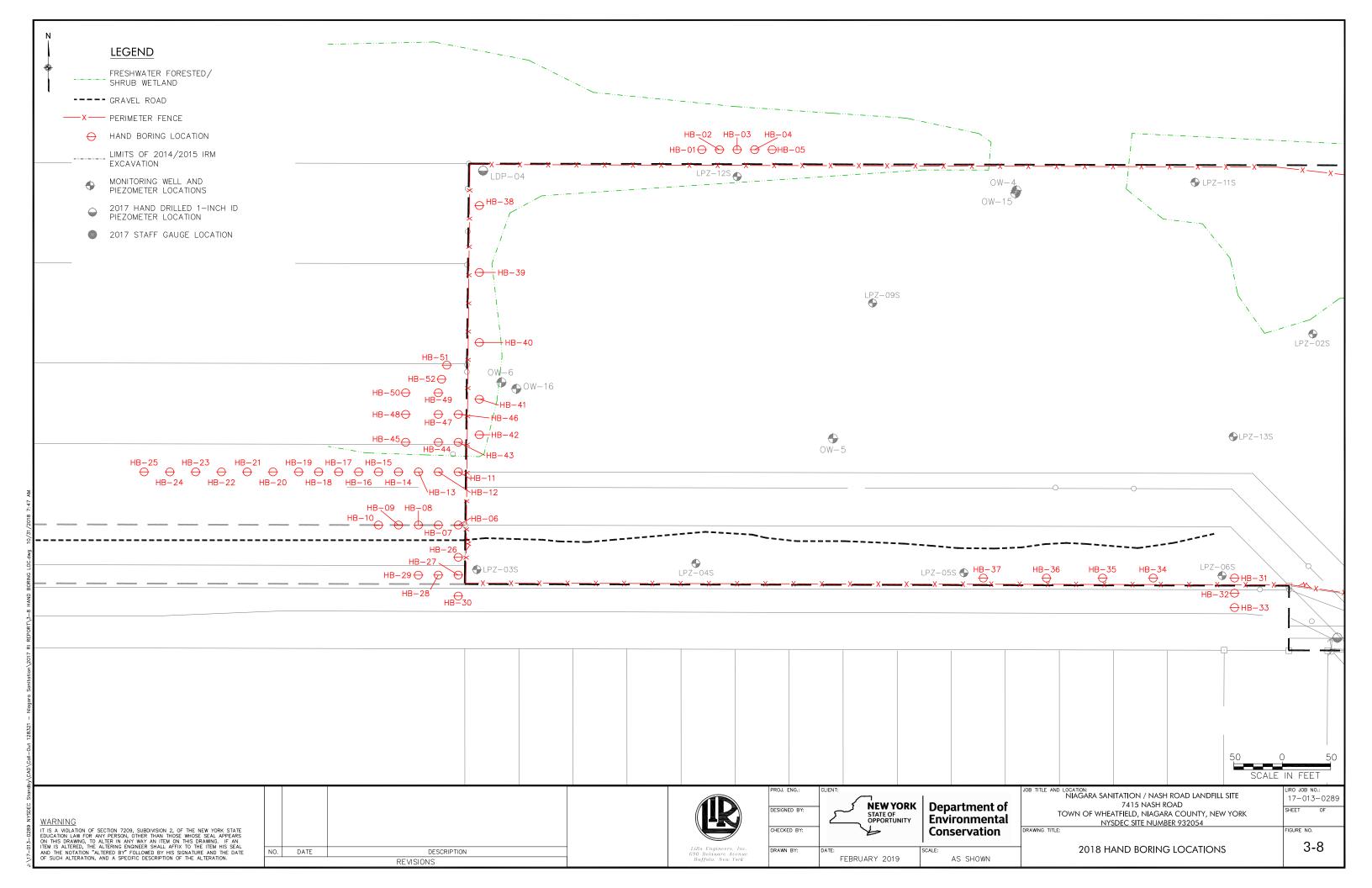


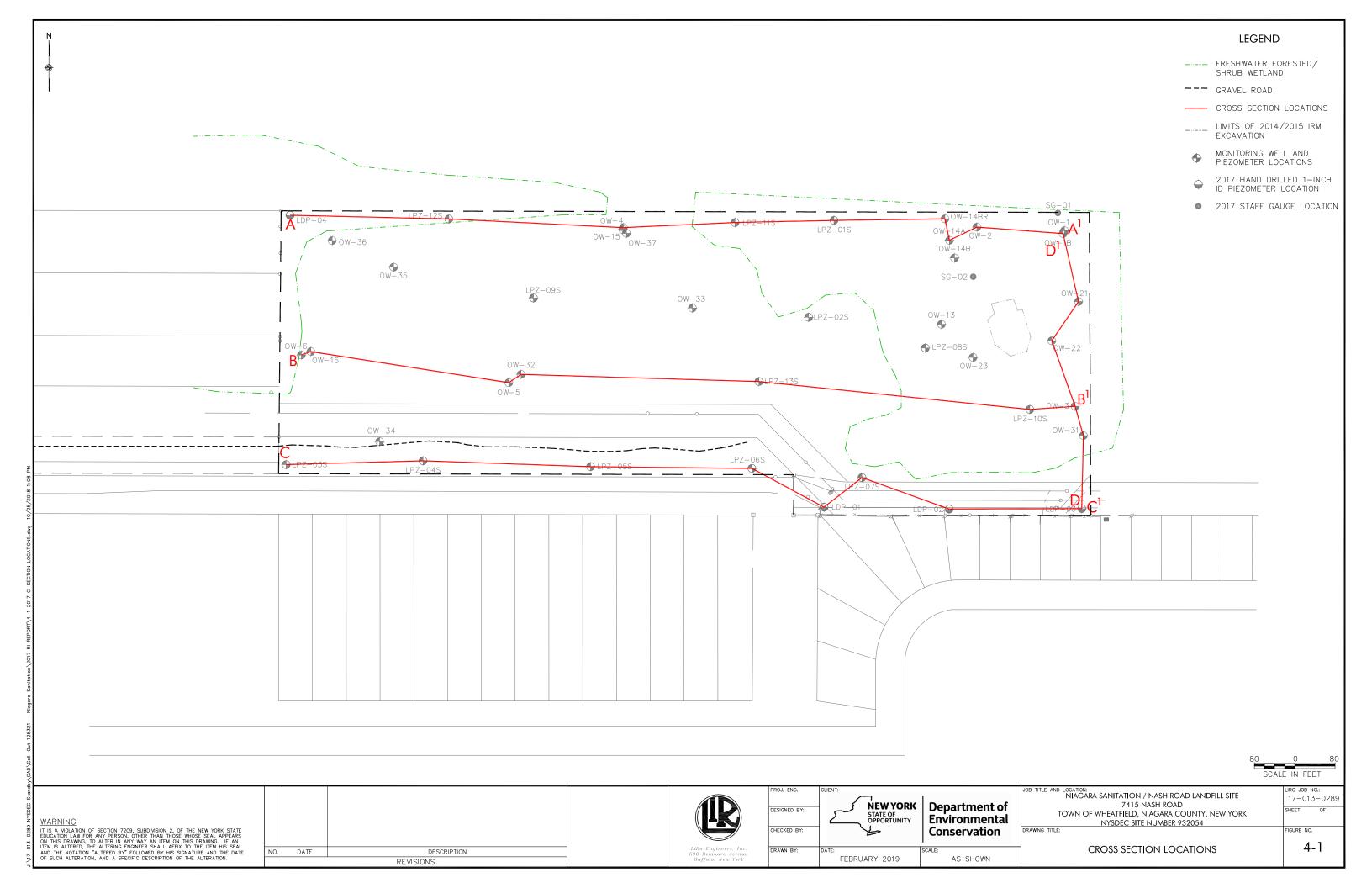


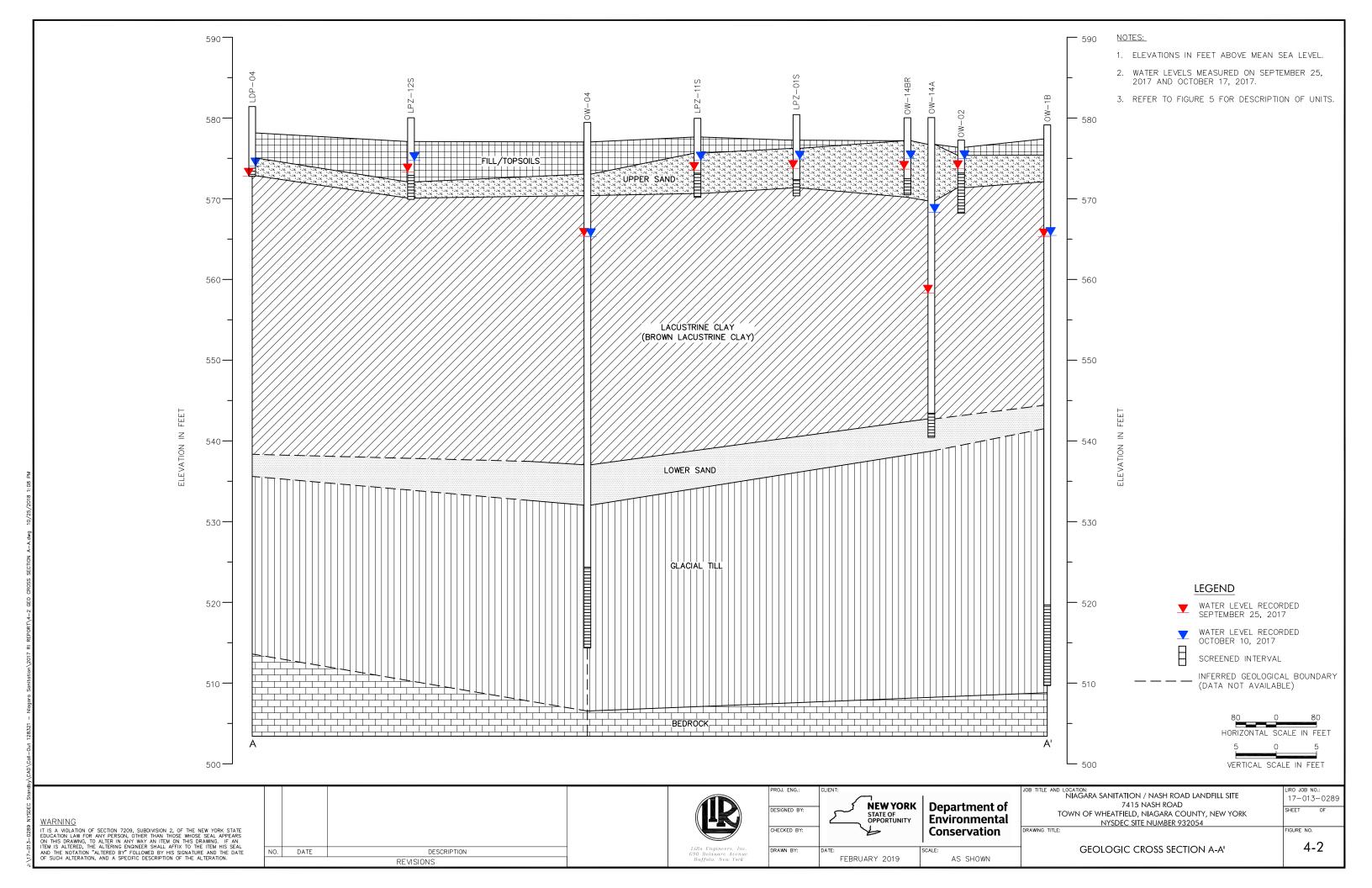


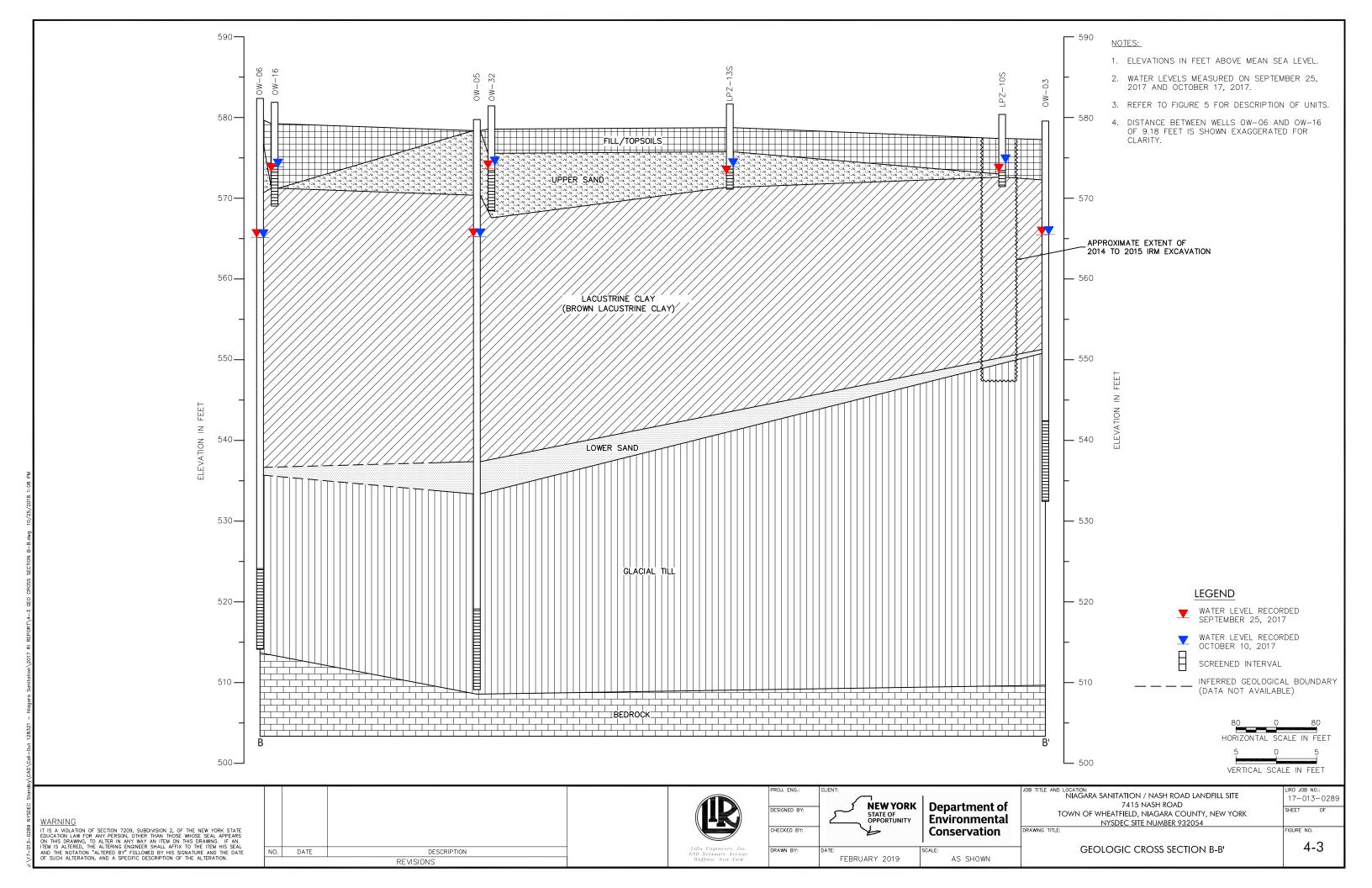


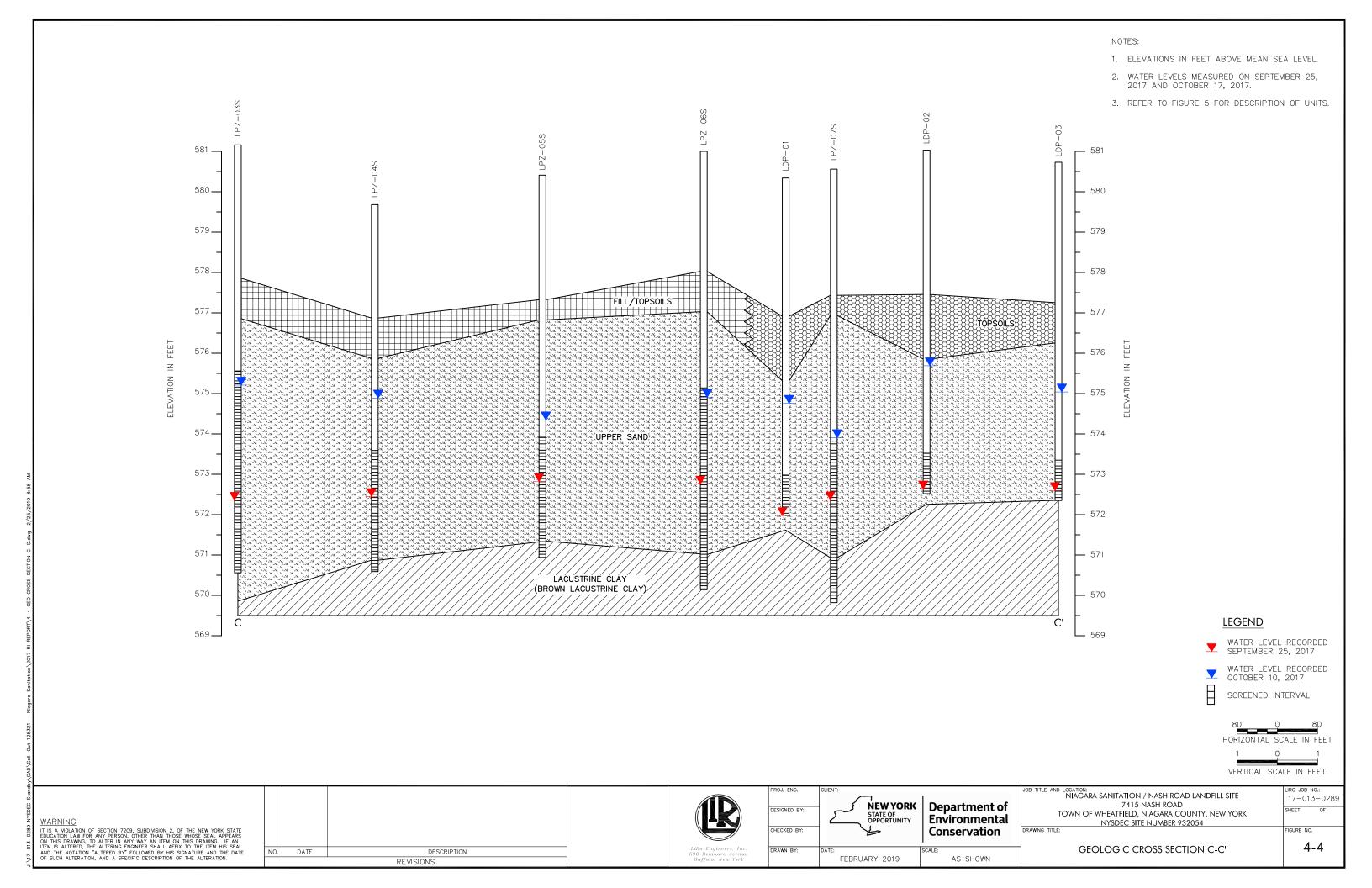


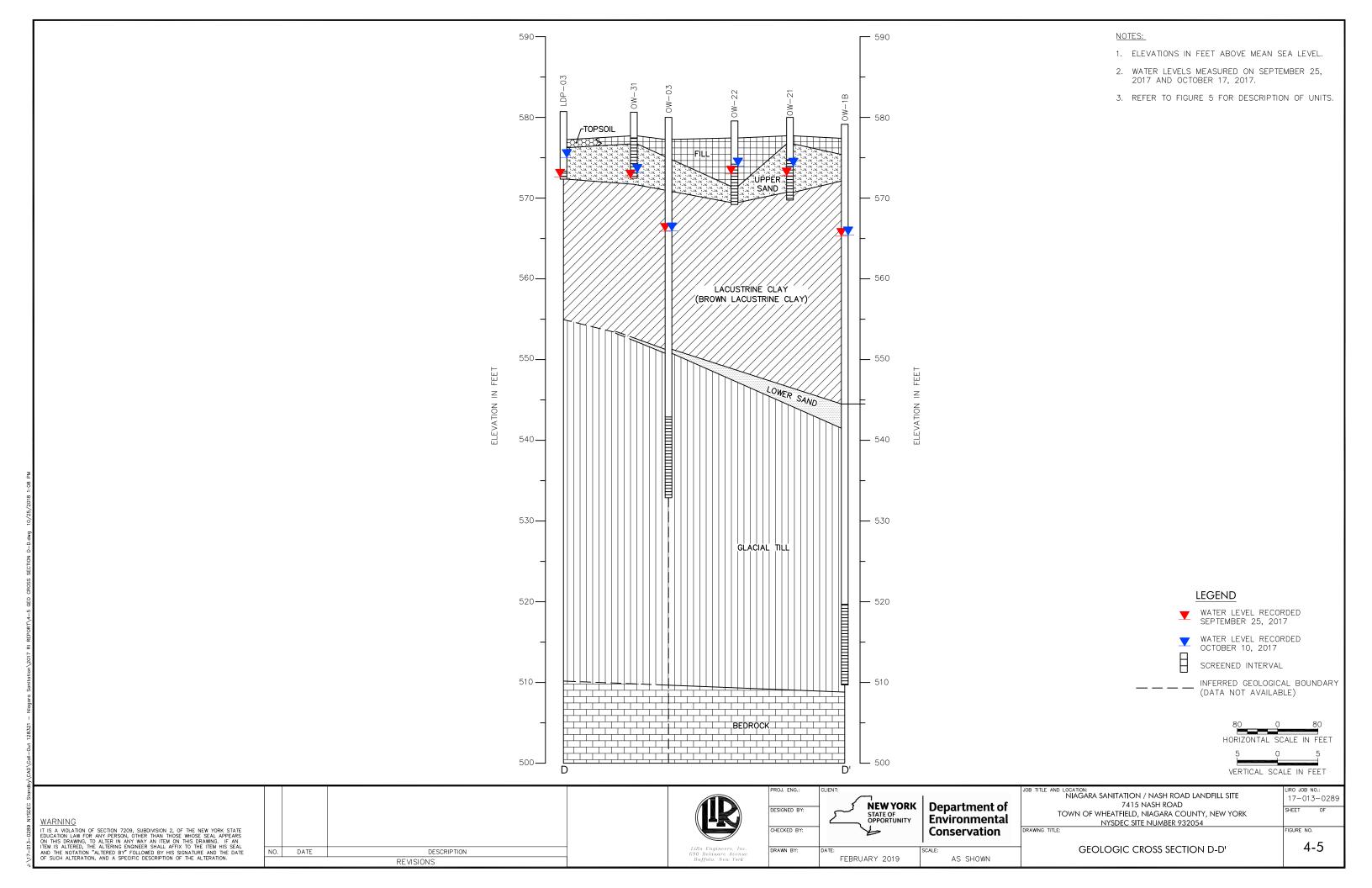


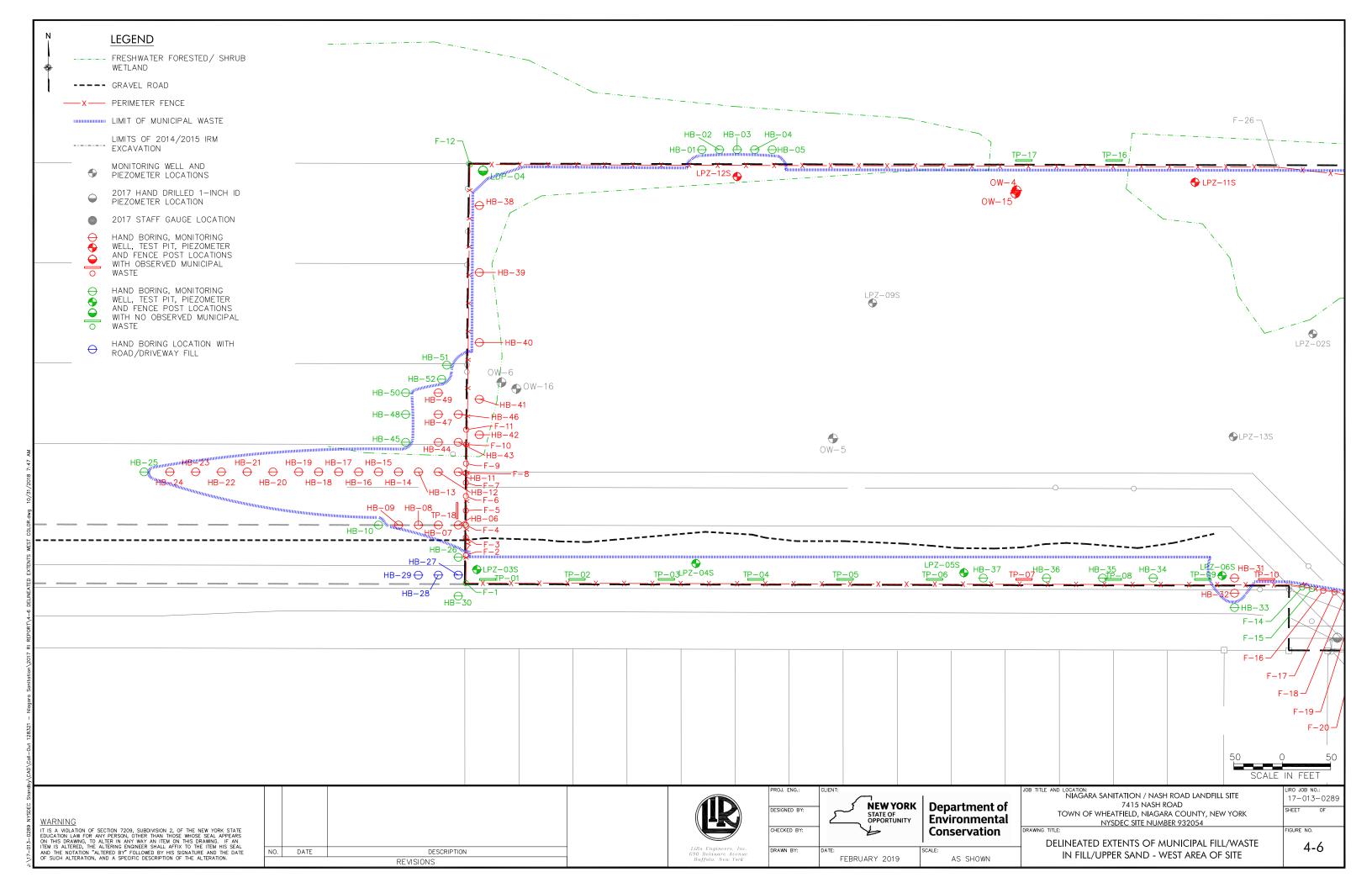


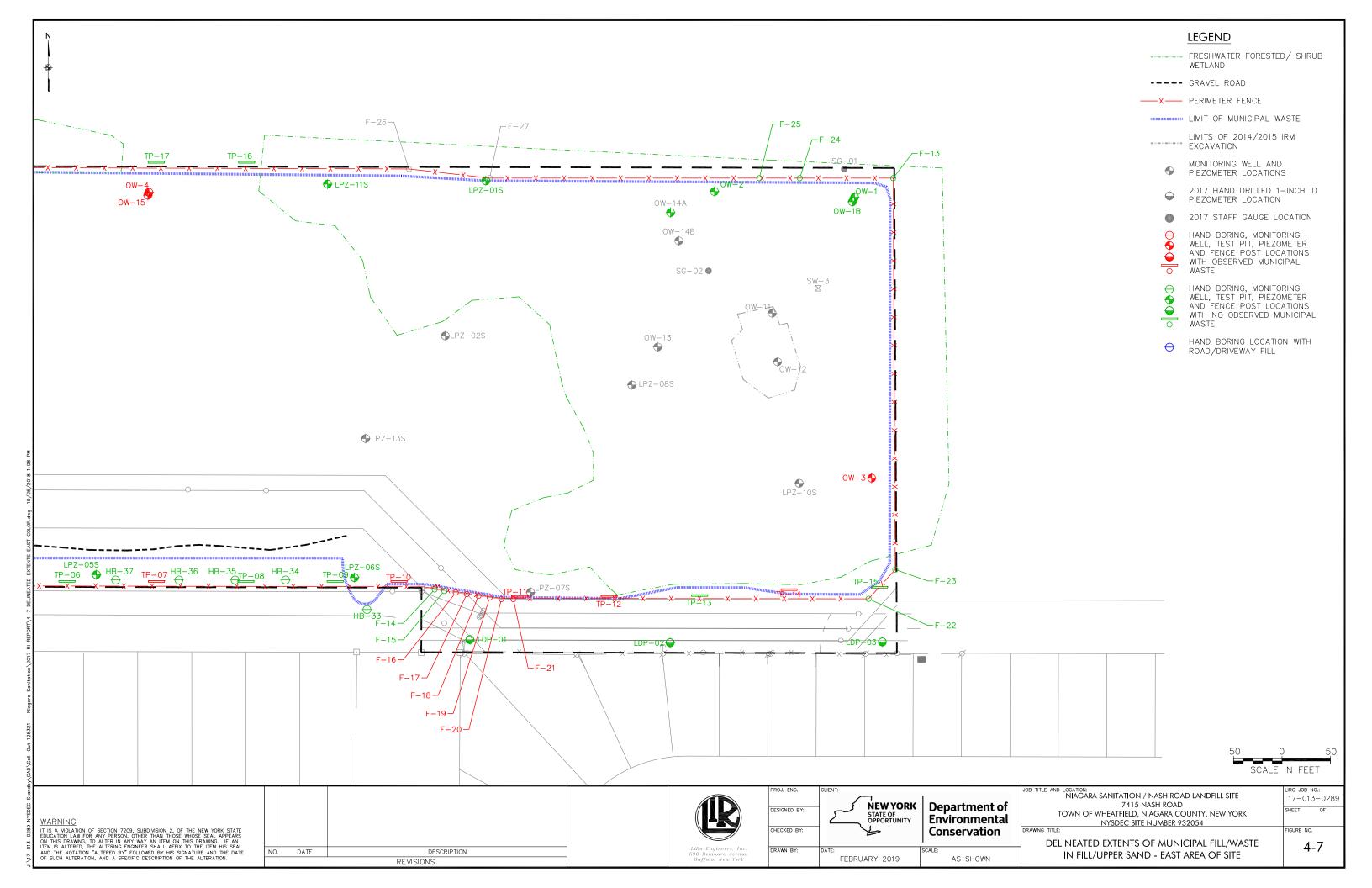


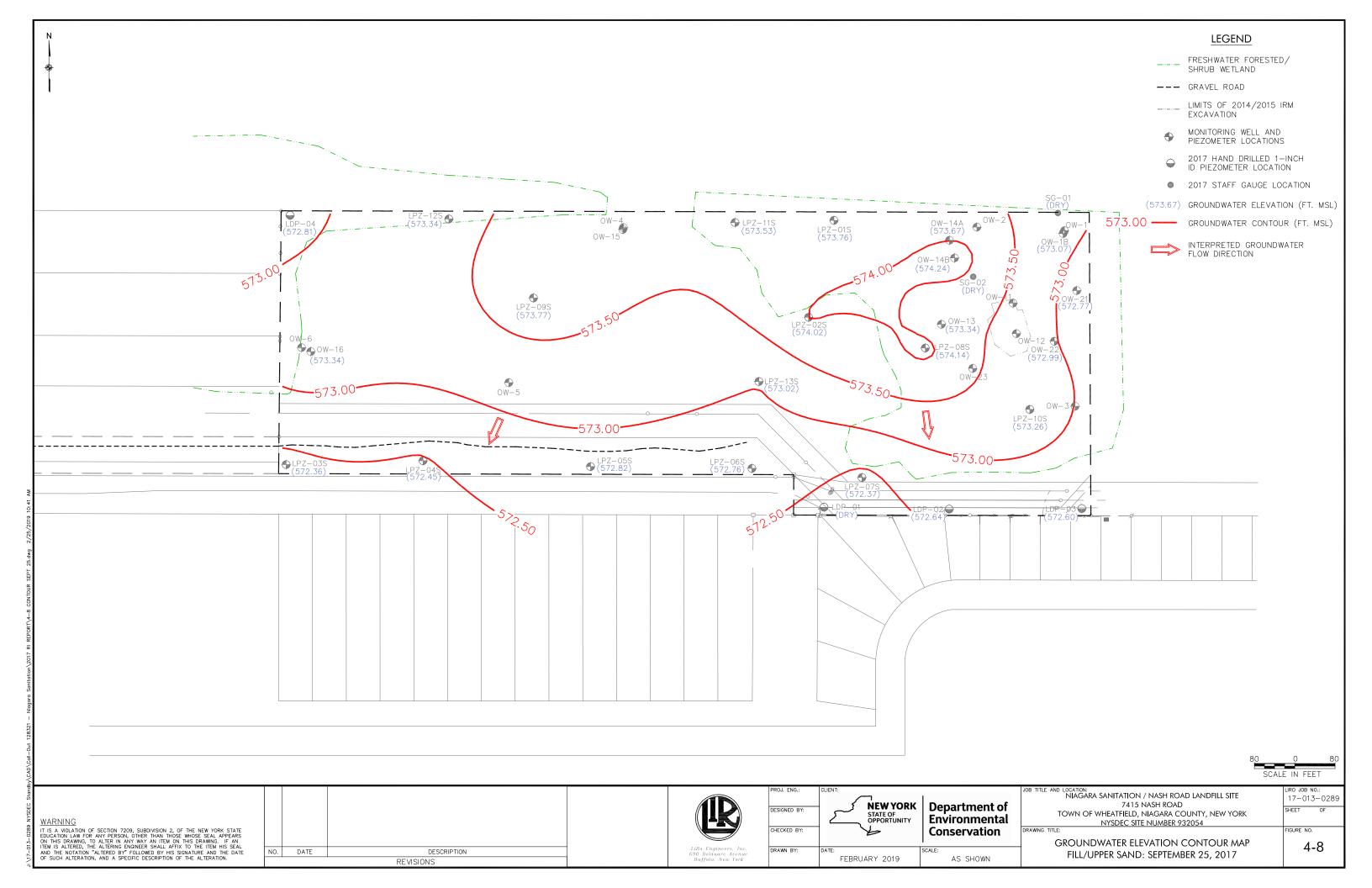


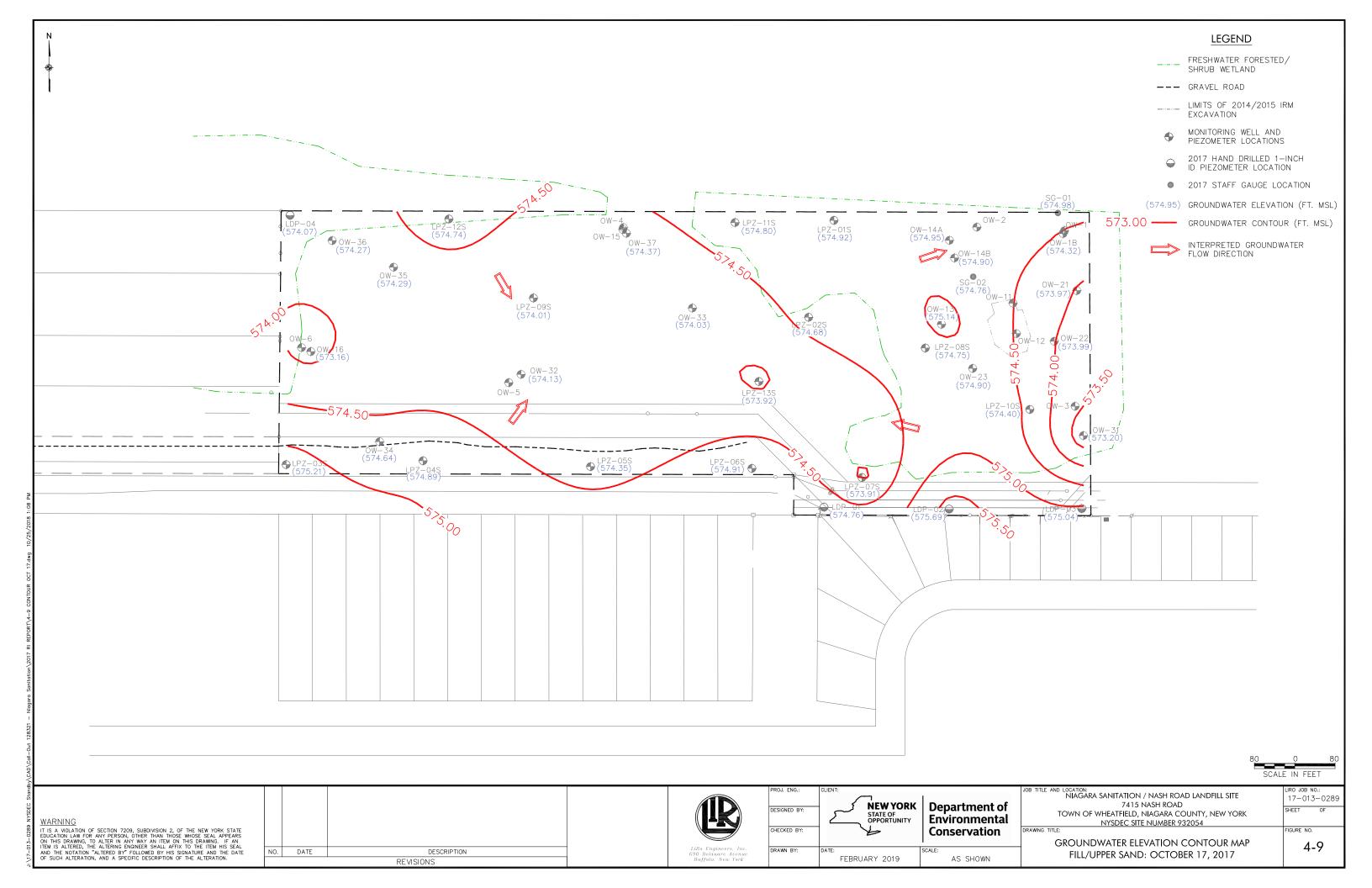


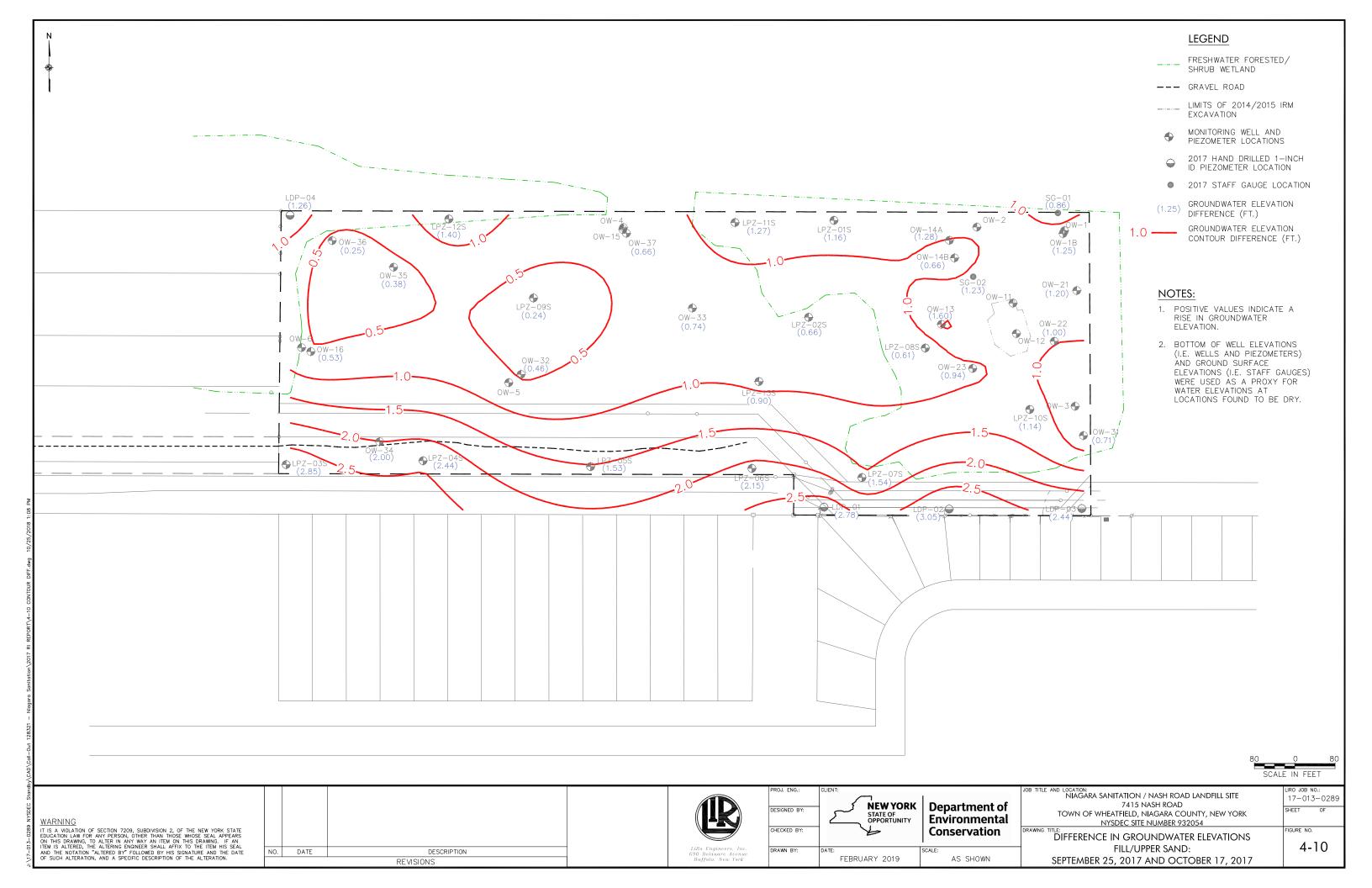


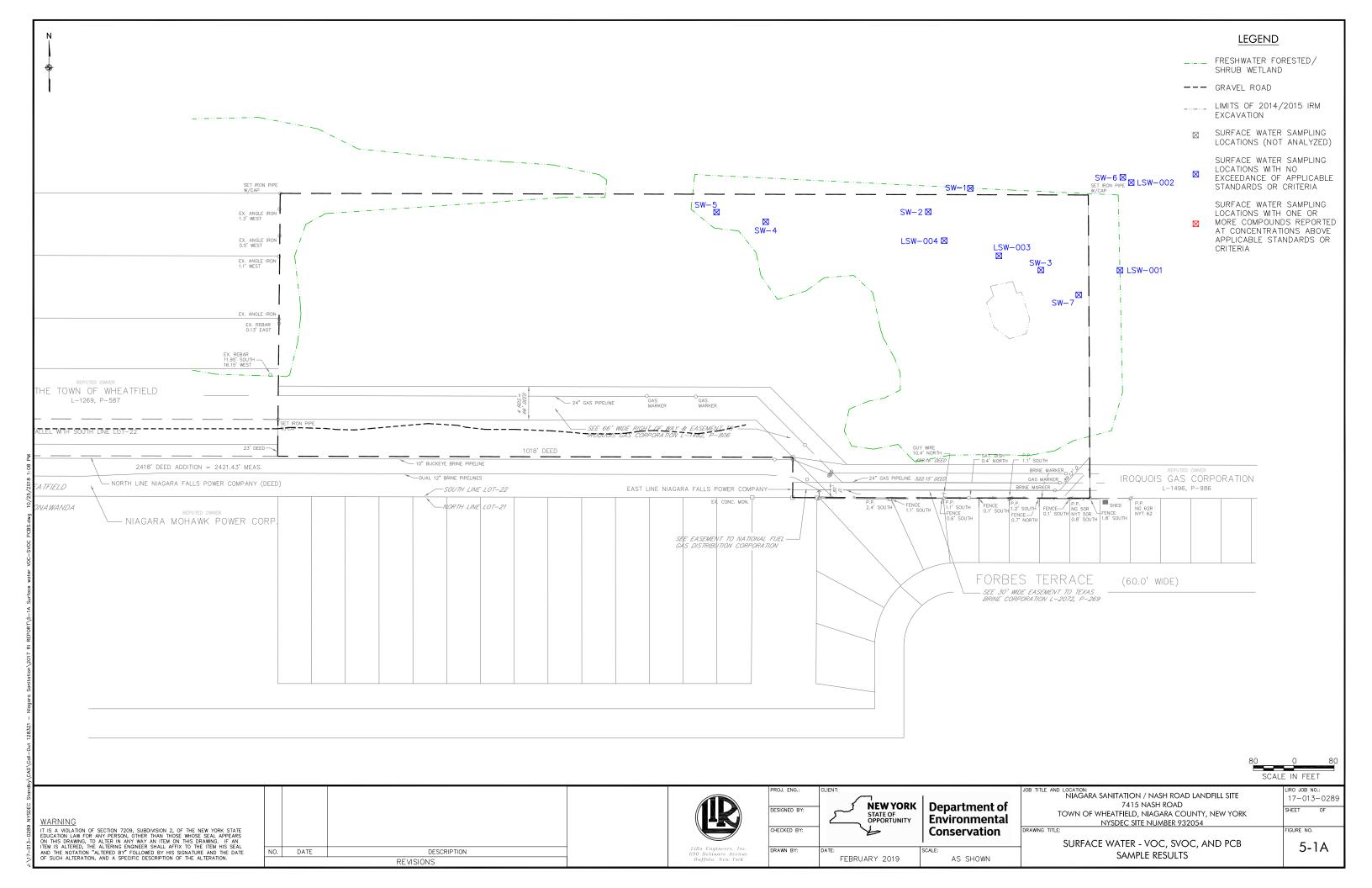


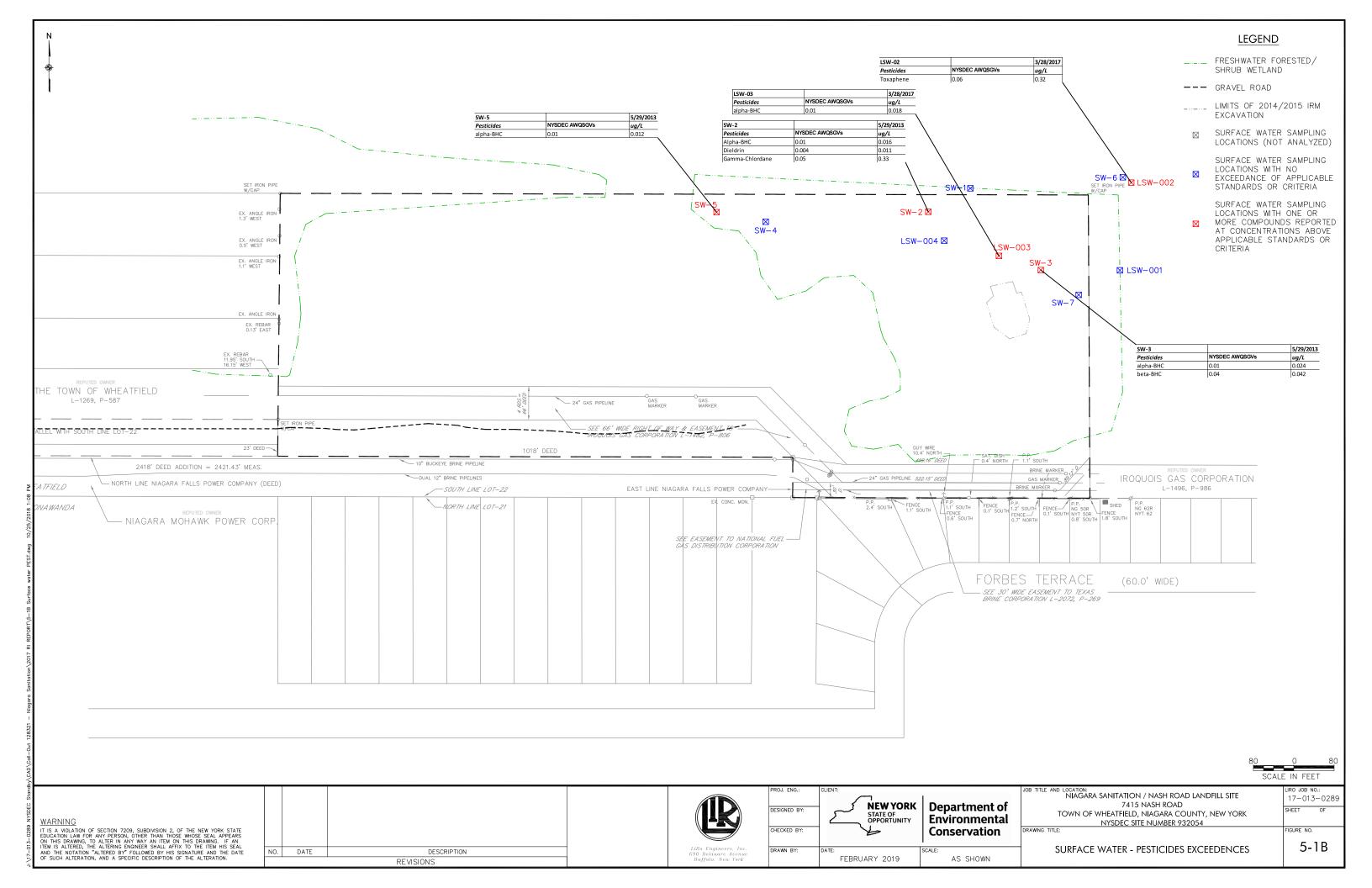


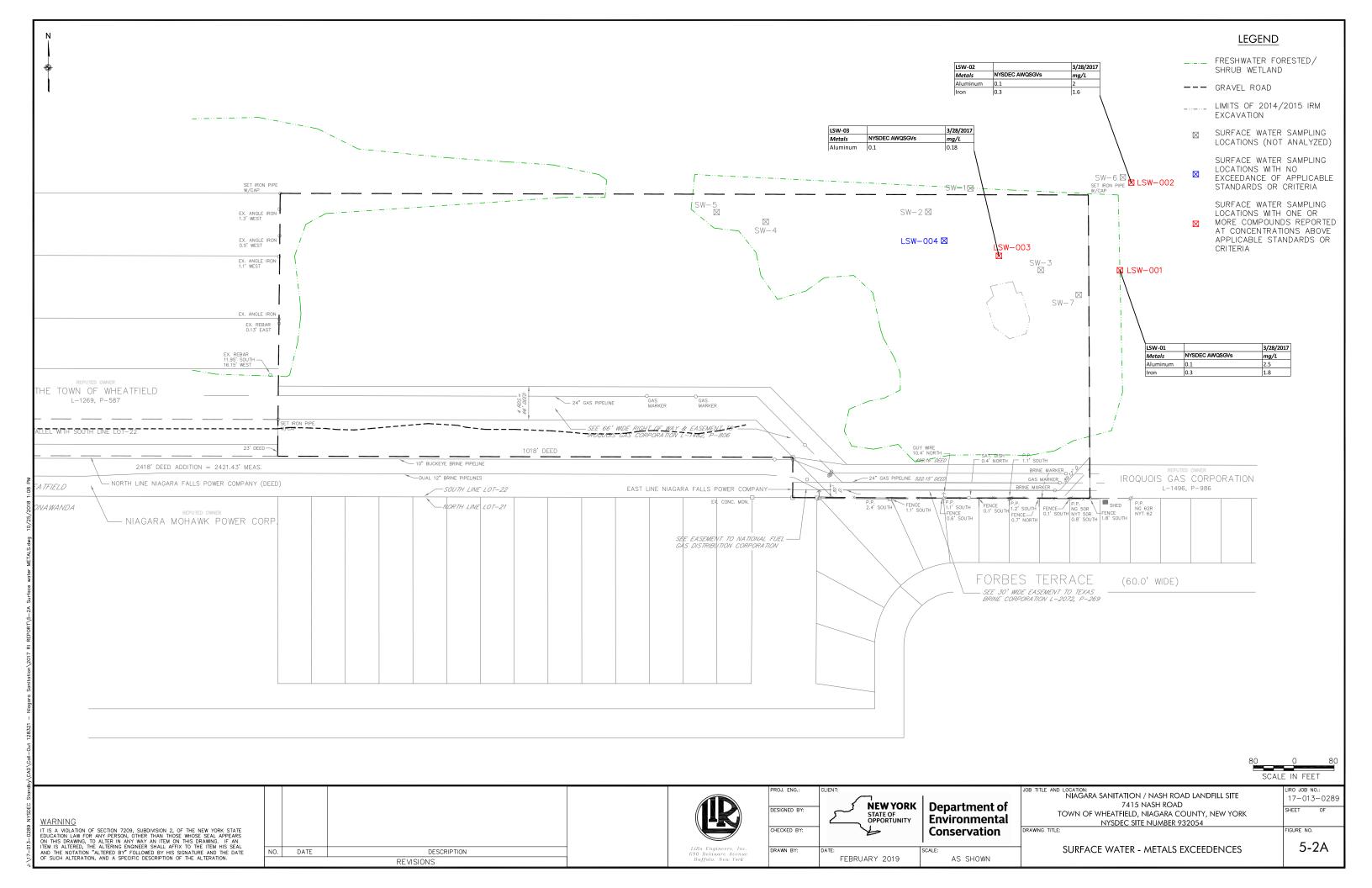


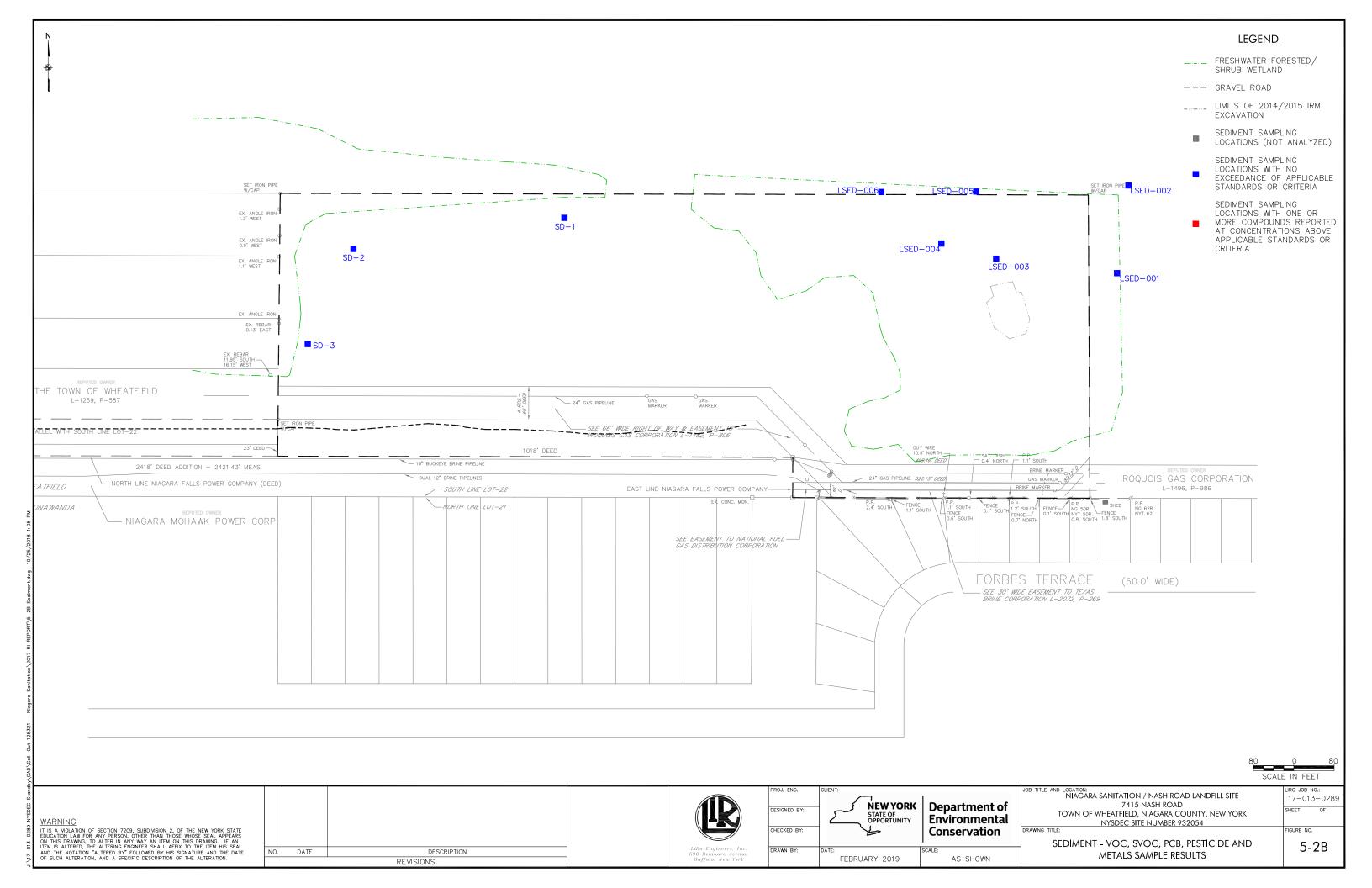


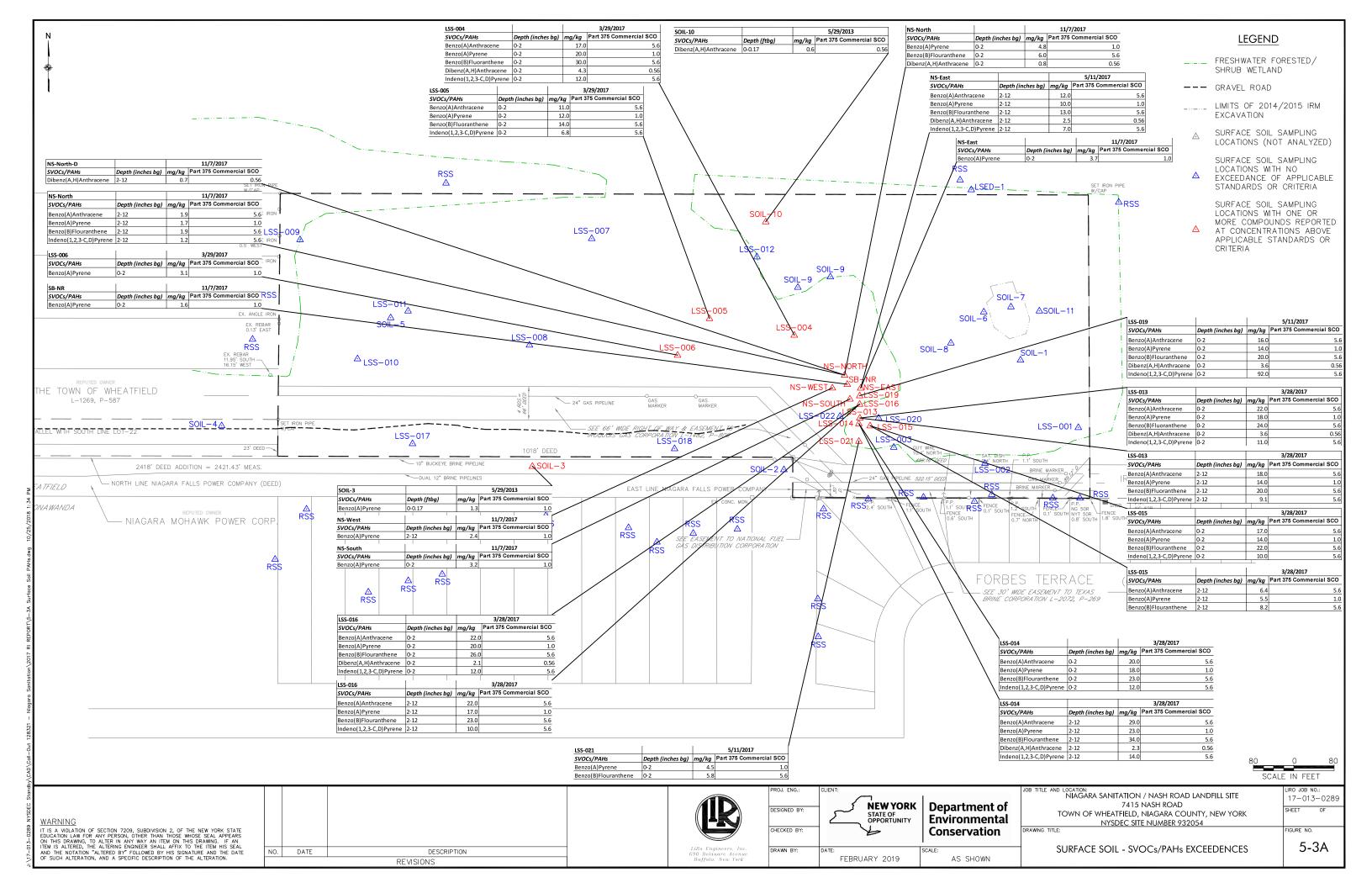


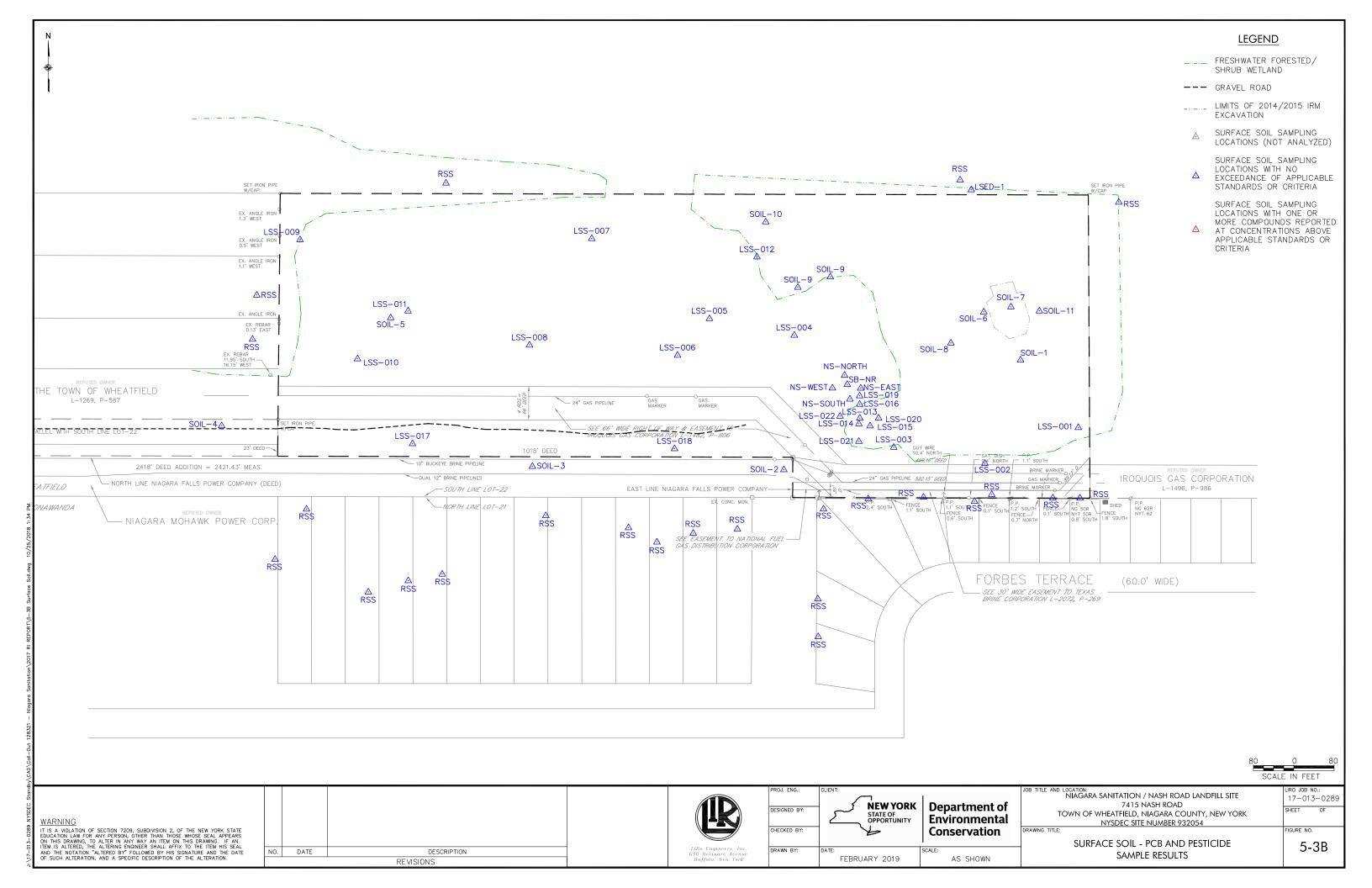


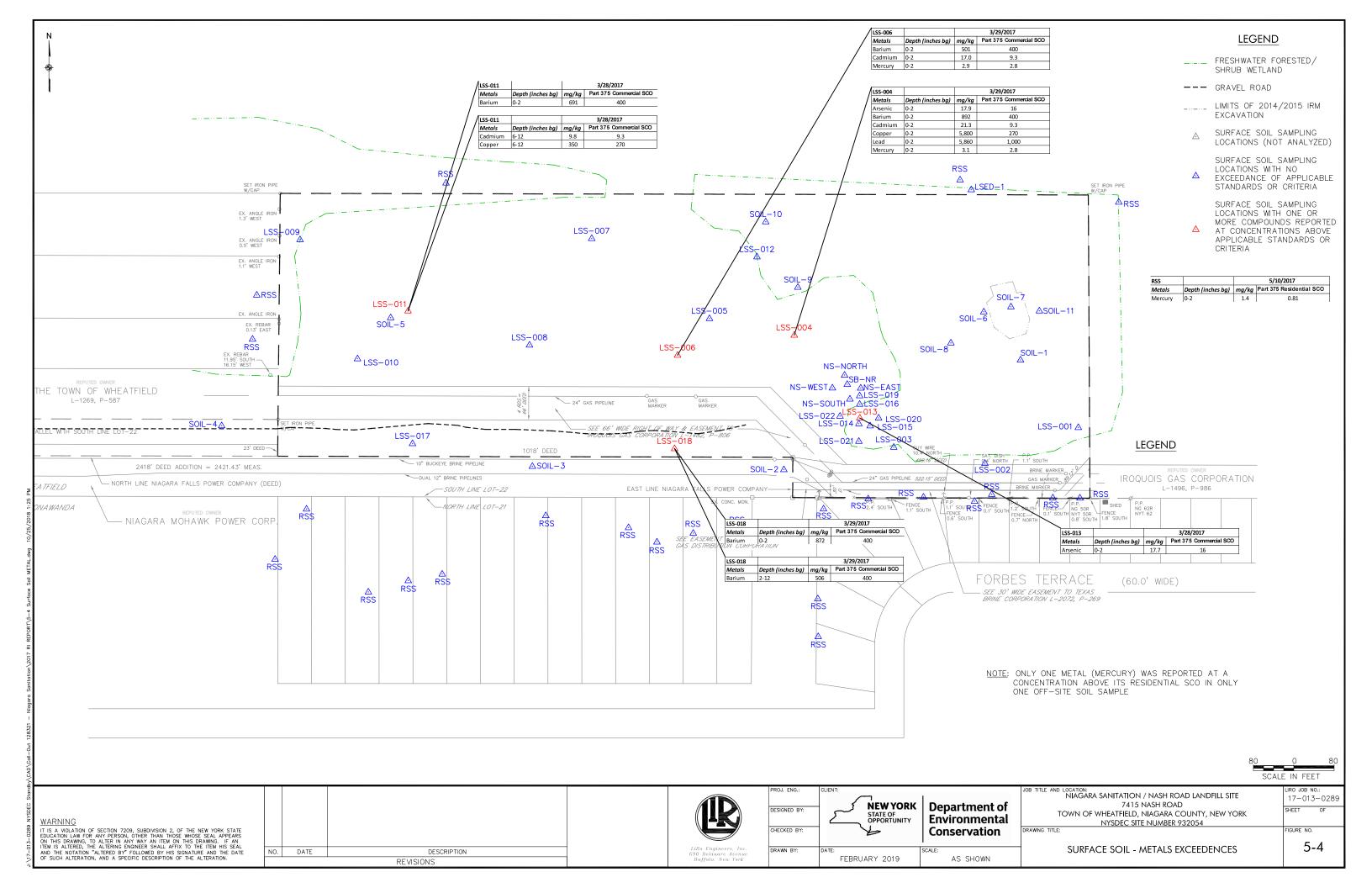


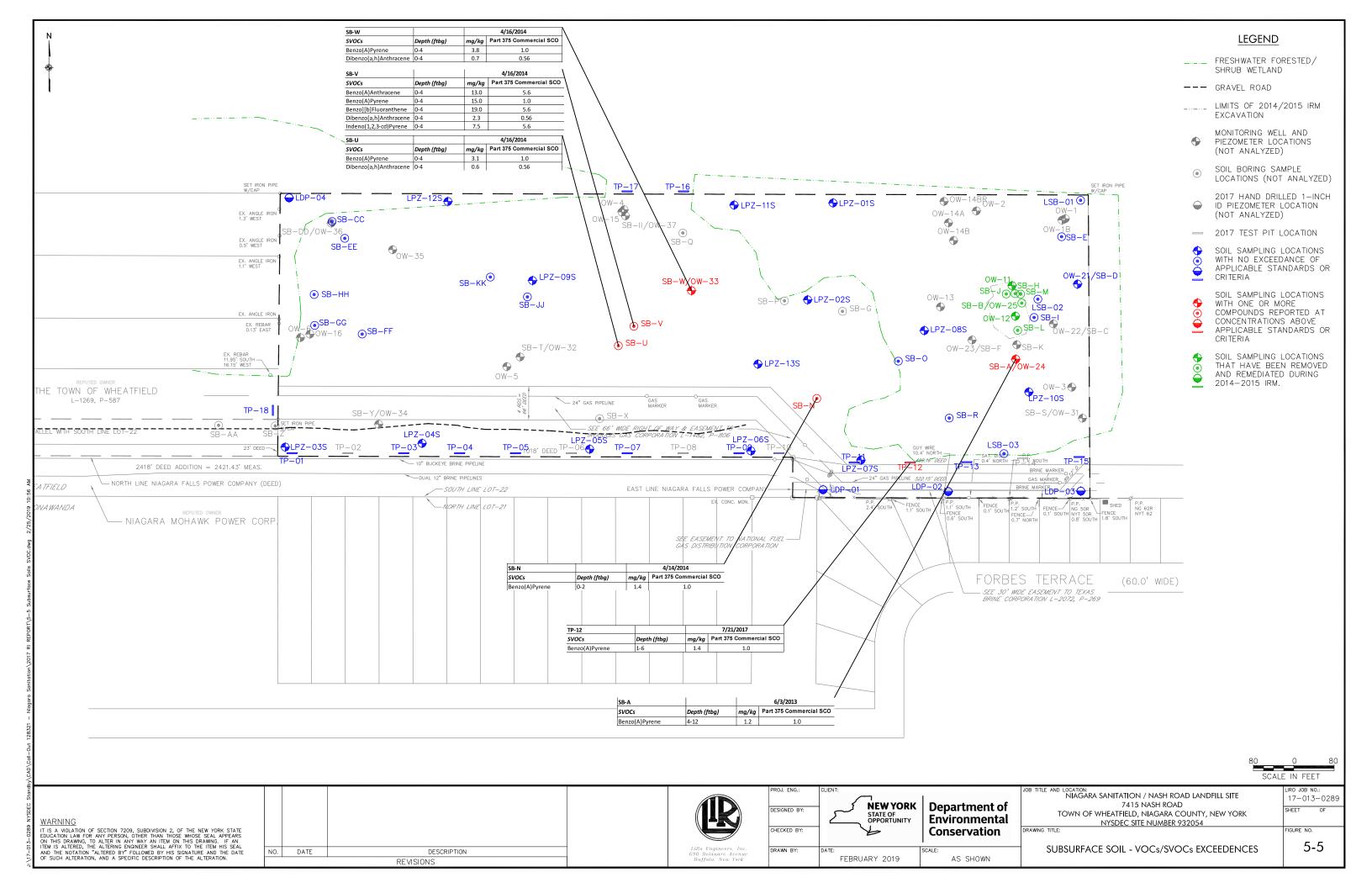


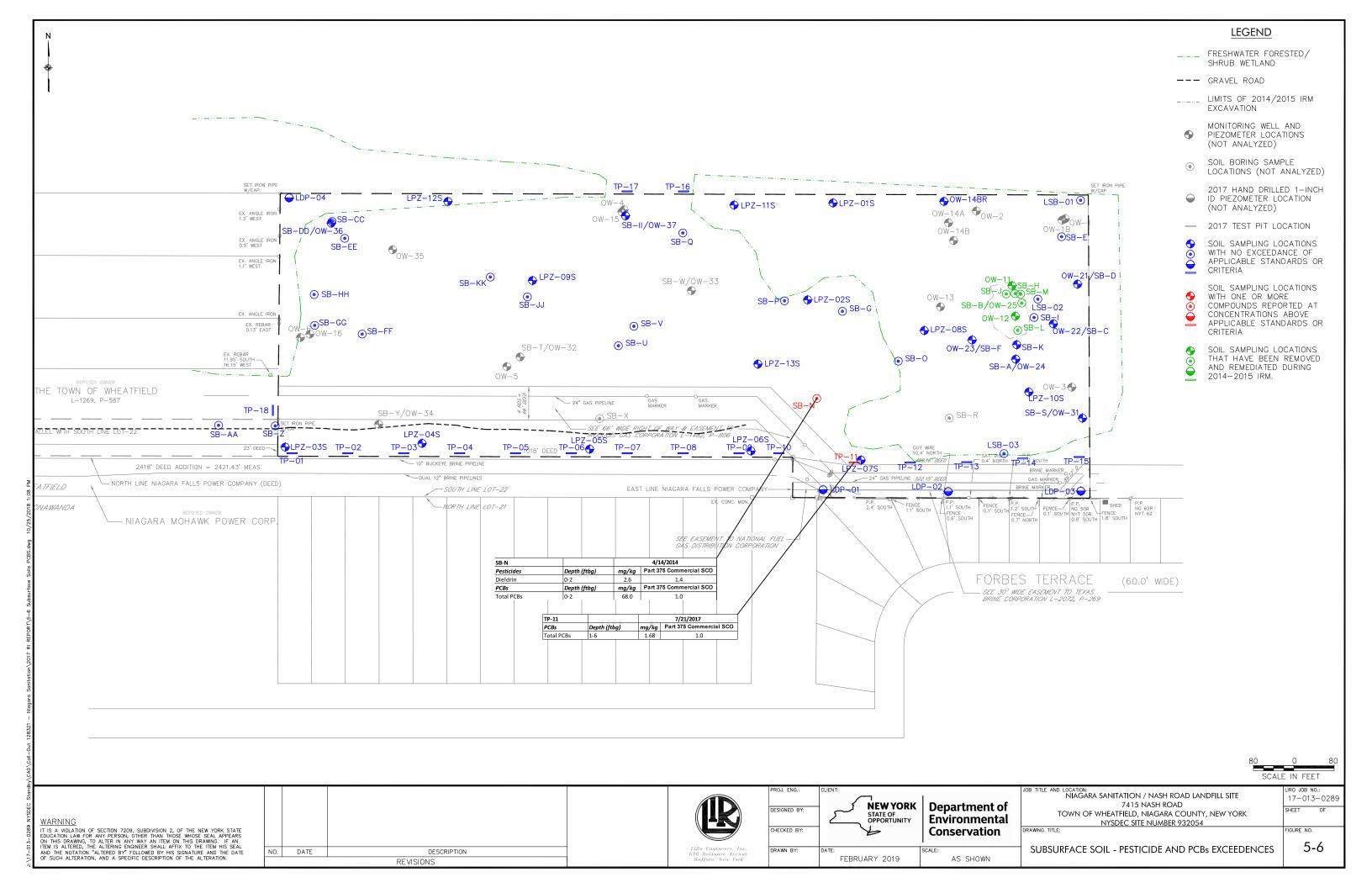


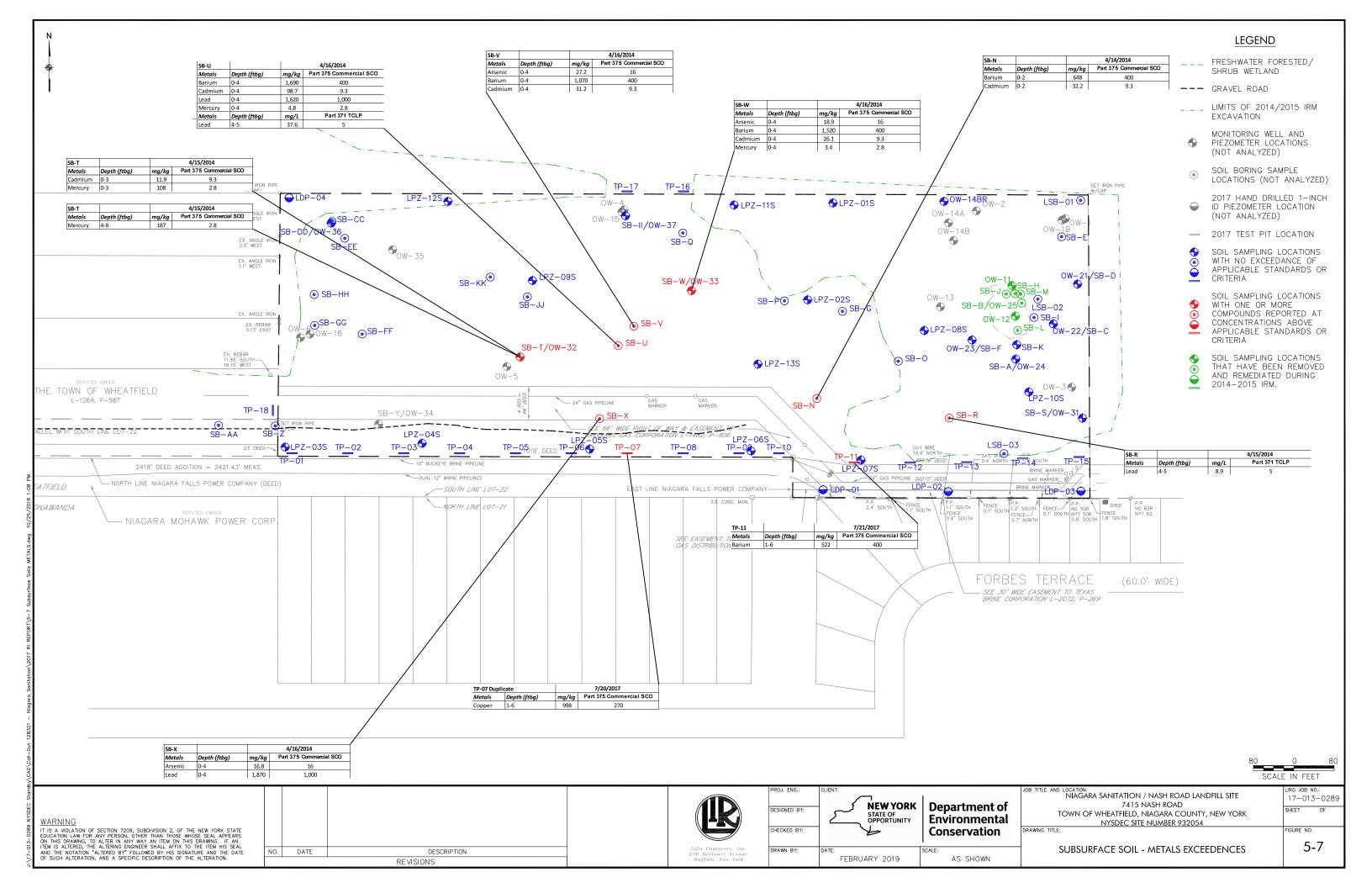


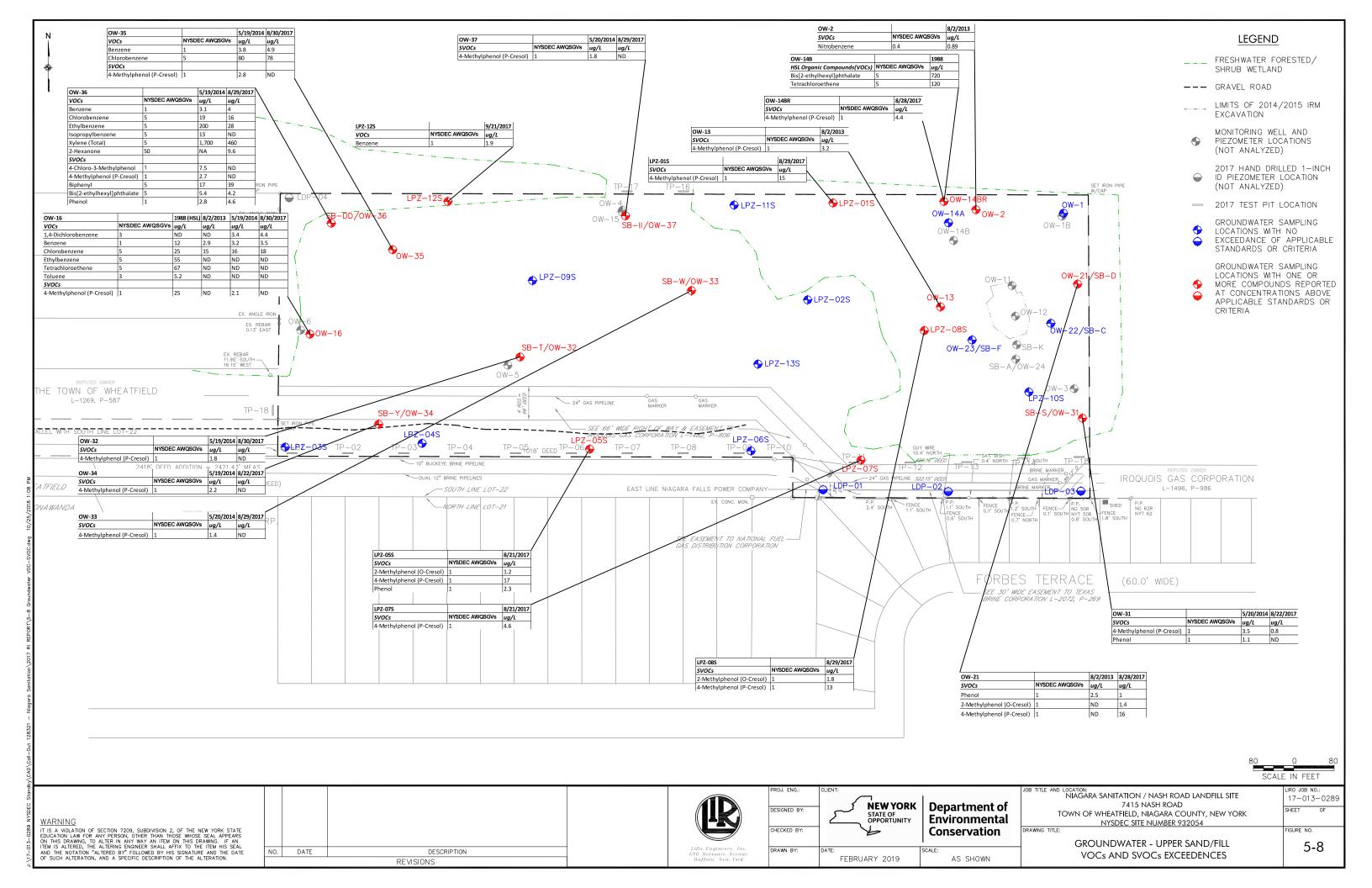


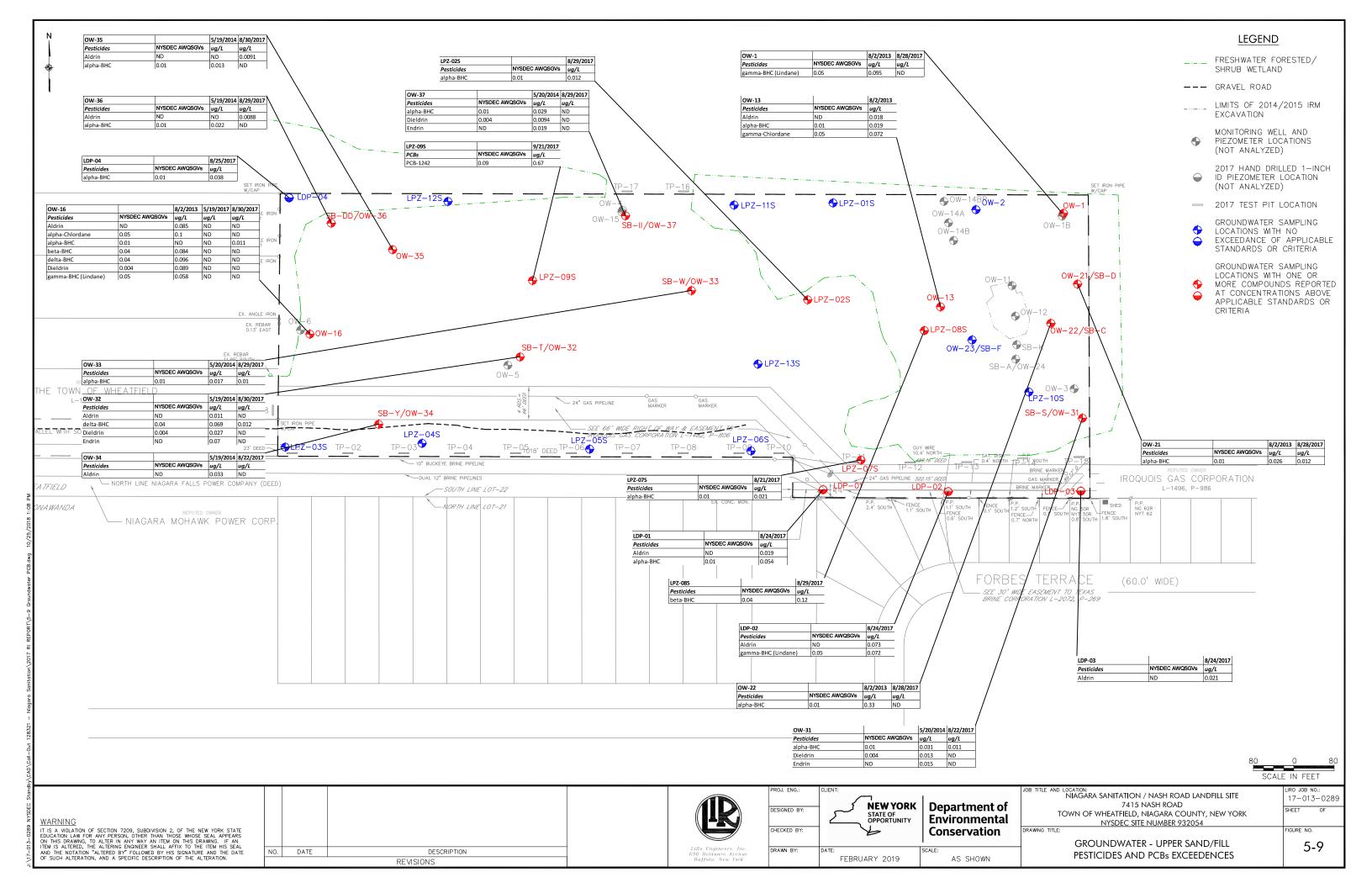


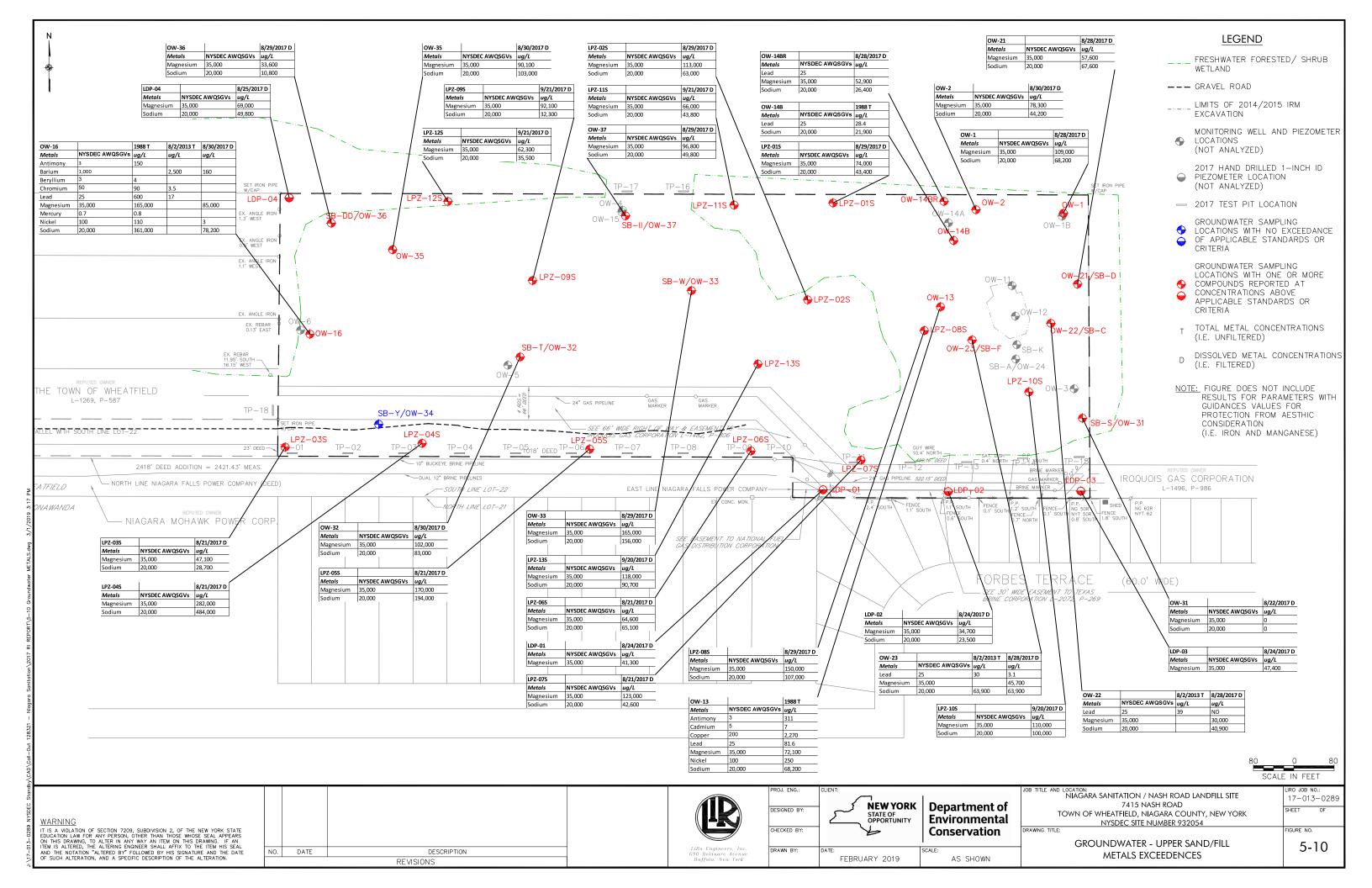


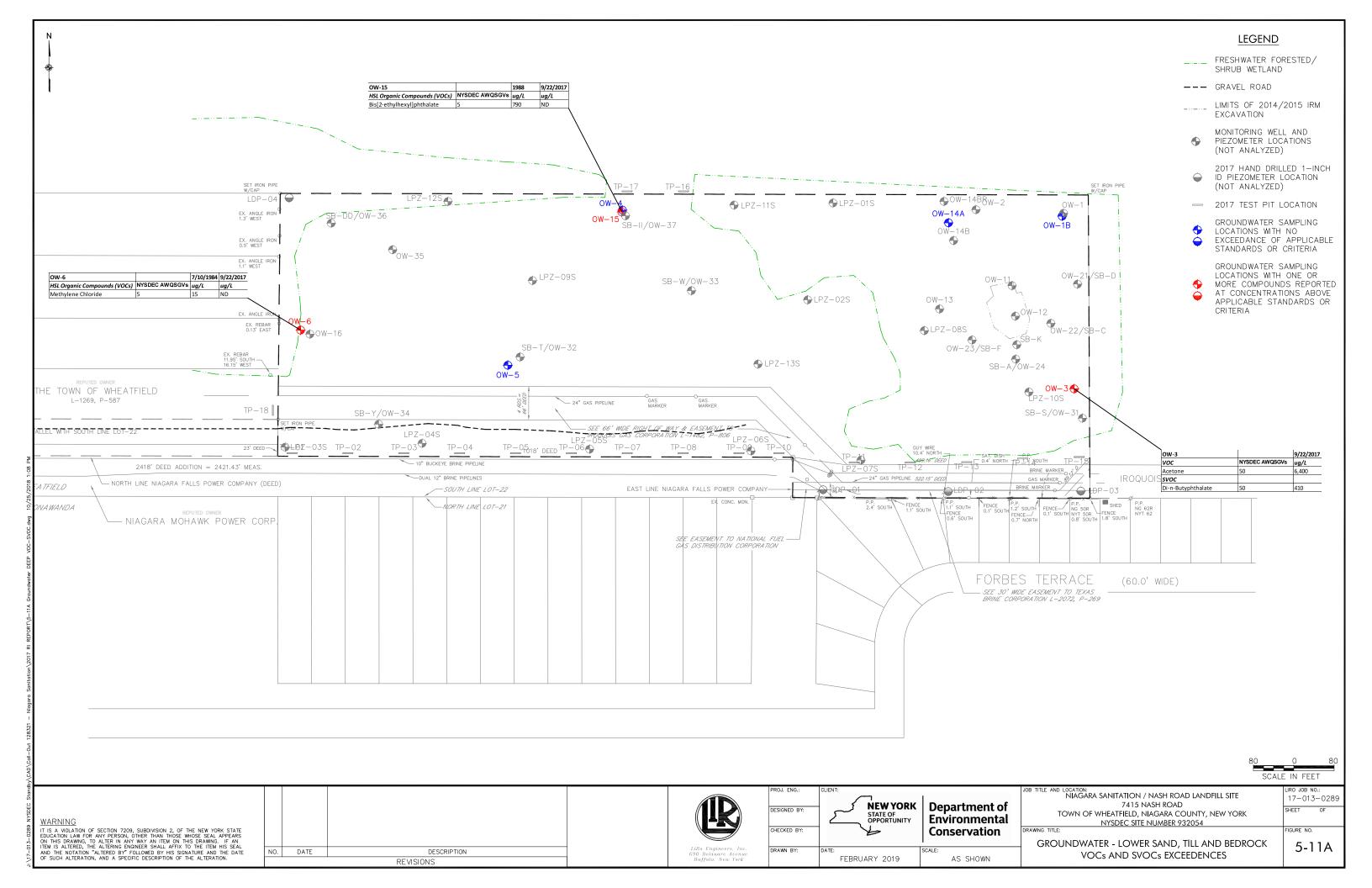


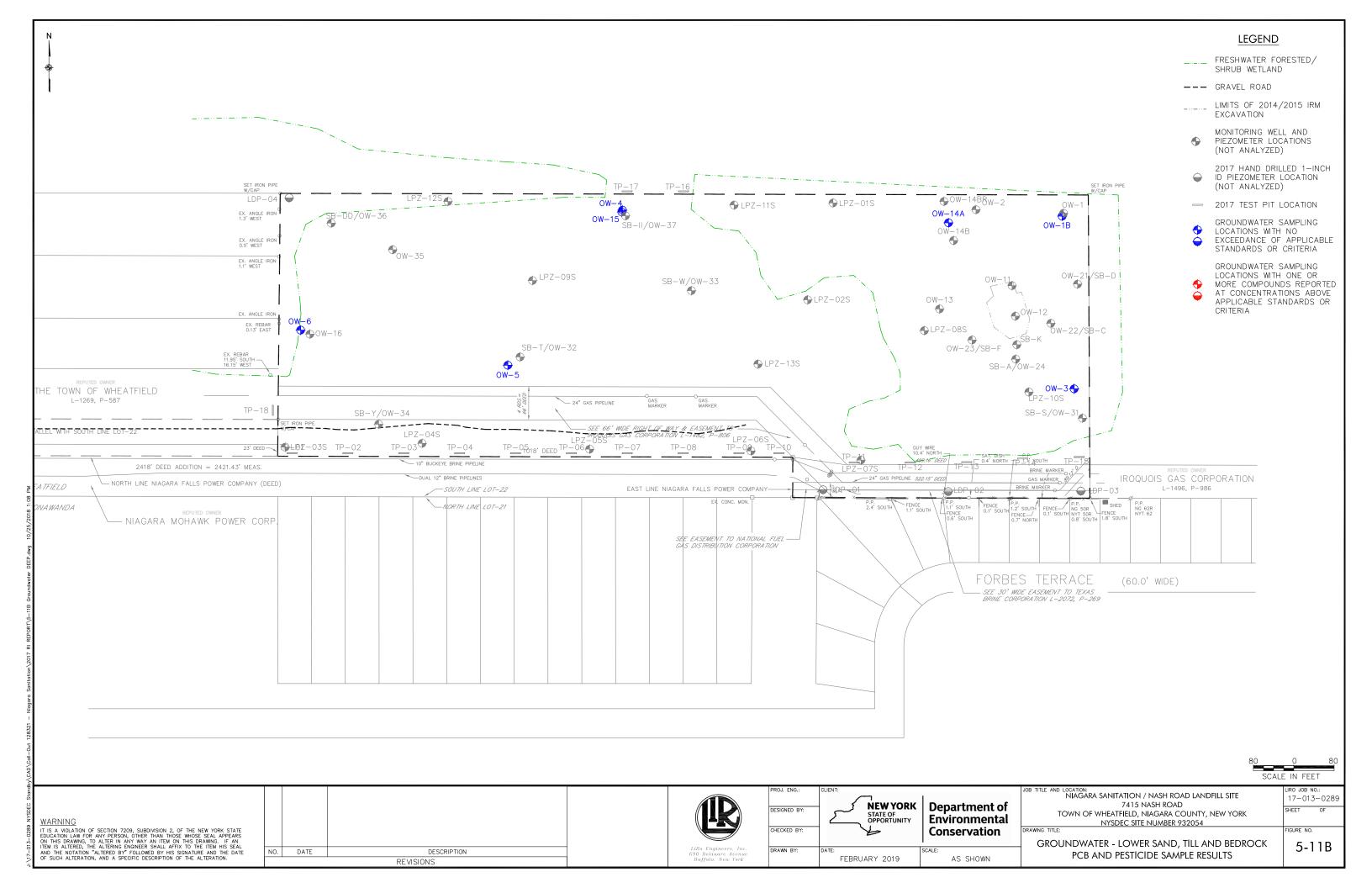


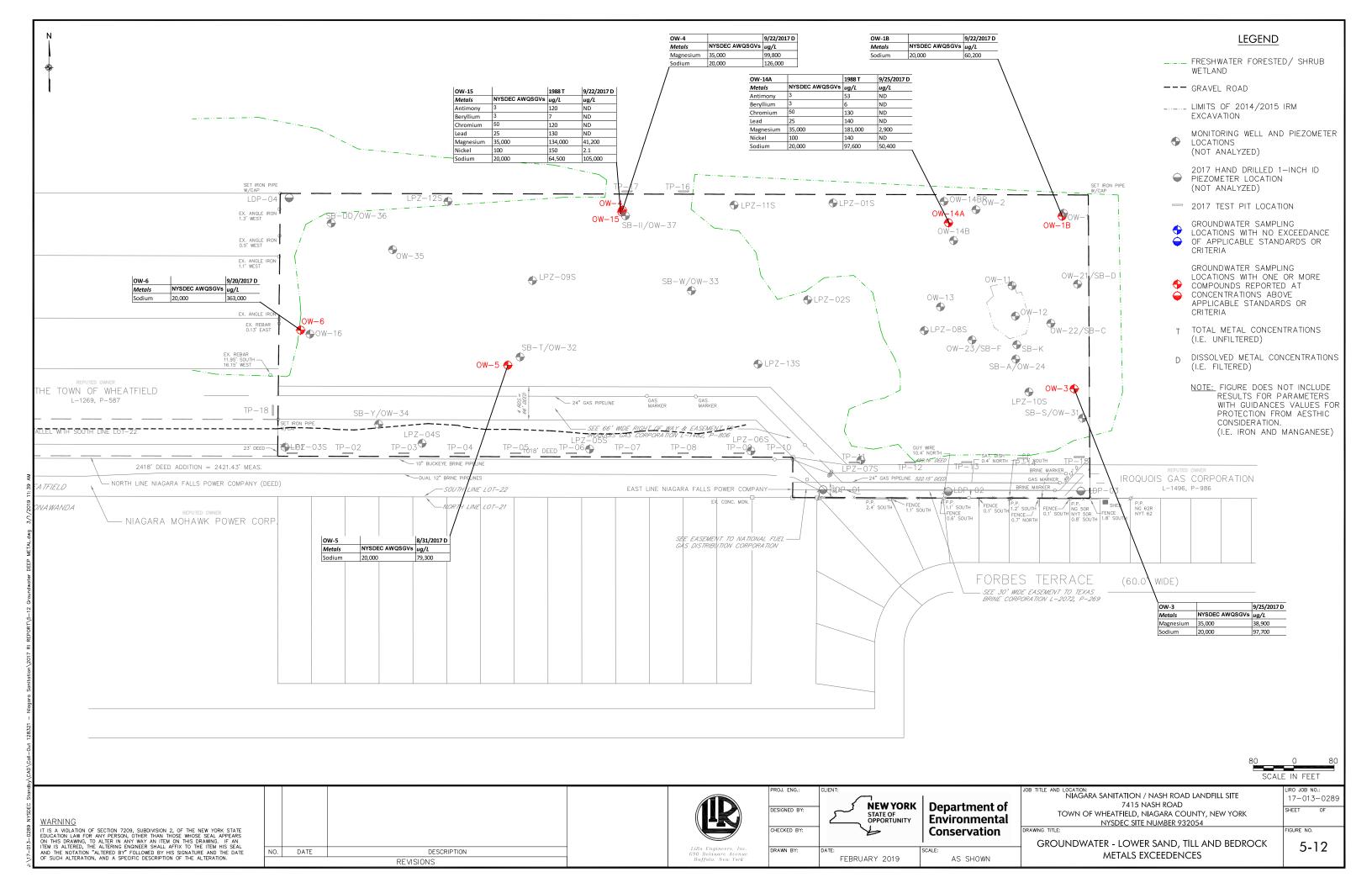














ATTACHMENT 1
Soil Boring Logs

	R		j	LiF	Ro	Engi	neers,	Inc.		TEST BORI		
										BORING ID:	LPZ-0	IS
PROJECT		Niagara								SHEET:	1 of	1
CLIENT:							al Conservat	ion (NYSDEC)		JOB NO.:	17-013-0)289
BORING C	ONTRACT	ror:	SJB/E	mpire	e Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~6.9'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.25	
DATE	TIME	LEV	/EL	TY	/PE	TYPE		HSA		DATE STARTED:	August	15, 2017
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	August	15, 2017
						WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Andrew	Koons
										REVIEWED BY:	Dan She	ldon
			SAN	IPLE					DESCRI	PTION		
DEPTH		"S"	"N"	BLC	ows	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				2	3		dark brown	soft		SAND with trace organics (0-0.8'); SILTY	SC	0 ppm
				2	4	75%			SAND with	n some clay (0.8-1.0')		0 ppm
					1	 	4		SII TY SAI	ND, fine with some clay (1.0-5.9'). Wet		
				5	8	90%	light brown -		around 5.9		014	0 ppm
	6 9 yellowish medium										SM	0 ppm
5	5											0 ppm
				18	9	0070						0 ppm
				-	-	-	brown	SILTY CL	AY (5.9-7.0')	CL	0 ppm	
										End of boring at 7.0'		
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COMMENT	S:	Well co	nstruct	ed. Se	ee wel	I construction	n log.			PROJECT NO.:		17-013-0289
										BORING NO.:		LPZ-01S

	R		j	LiF	Ro	Engi	neers,	Inc.		TEST BORII				
										BORING ID:	LPZ-02			
PROJECT I		Niagara								SHEET:	1 of			
							I Conservat	ion (NYSDEC)		JOB NO.:	17-013-0			
BORING CO		ΓOR:	SJB/E	mpire	∍ Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation		
GROUNDW	/ATER:	~4'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.66			
DATE	TIME	LEV	'EL	TY	/PE	TYPE		HSA		DATE STARTED:	July 27,	2017		
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	July 27,	2017		
						WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.		
						FALL				GEOLOGIST:	Kris Cha	arney		
										REVIEWED BY:	Dan She	eldon		
			SAN	/IPLE					DESCRI	PTION				
DEPTH		"S"	"N"	BLC	ows	REC%		CONSISTENCY		MATERIAL				
FEET	STRATA	NO.	NO.	PEI	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS		
				woh	3		dark brown	soft			SC	0 ppm		
				2	3	35%	SILT v			some clay (0.5-1.5')		0 ppm		
					ł		light brown -		SII TY SAI	ND, fine with trace clay (1.5-5.75'). Wet at		0 ppm		
				6	8	25%	yellowish	medium dense	lium dense 4'. SM 0 ppm					
				5	5		brown							
5				6	9	50%						0 ppm		
	[1'1'1'1'1'1'			18	9	30 70	light grey	firm	SILTY CLA	AY (5.75-6.0')	CL	0 ppm		
										End of boring at 6.0'				
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COMMENT	<u>ə:</u>	vveli co	iistiuci	.eu. S	ee we	II construction	лт юў.			PROJECT NO.:		17-013-0289		
										BORING NO.:		LPZ-02S		

	R		j	LiRo	Engi	neers,		TEST BORING LOG			
					O	ĺ			BORING ID:	LPZ-0	3S
PROJECT	NAME:	Niagara	a Sani	tation					SHEET:	1 of	1
CLIENT:	New York	k State	Depar	tment of E	nvironment	al Conservat	ion (NYSDEC)		JOB NO.:	17-013-0	0289
BORING C	ONTRACT	OR:	SJB/E	mpire Ged	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~4'				CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.86	
DATE	TIME	LEV	'EL	TYPE	TYPE		HSA		DATE STARTED:	July 25,	2017
					DIA.		4 1/4"	2" sampler	DATE FINISHED:	July 27,	2017
					WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
					FALL				GEOLOGIST:	Kris Ch	arney
						T			REVIEWED BY:	Dan She	eldon
		1		//PLE			T	DESCRI			
DEPTH		"S"	"N"	BLOWS	REC%	_	CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PER 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				woh 2	10%	dark brown	soft		SAND (0-1')	SC	0 ppm
				2 3				SILTY SA	ND , fine (1.0-7.0). Wet at 6.0'		0 ppm
				3 4	75%						0 ppm
				5 7	15%	light brown -	and the same			CNA	0 ppm
5				6 8	/	yellowish brown	medium dense			SM	0 ppm
				12 10	30%						0 ppm
				8 10		†					0 ppm
				12 10	95%	light grey	medium dense	S	AND, fine with some clay (7.0-8.0').	SC	0 ppm
				5 5		g g. e,			AY, dry to moist with some mottling (8.0-	- 55	0 ppm
- 10	1/////			9 10	85%			18.0').			0 ppm
10	///////////////////////////////////////			\vdash		-					
	//////			1 3	95%						0 ppm
	'//////			6 10		light grey					0 ppm
	//////			10 11	100%		very soft to stiff			CL	0 ppm
	[]]]]]			10 9		_	,				0 ppm
15	///////			woh woh	100%						0 ppm
	//////			woh 2	10070						0 ppm
	'//////			woh woh	100%	light grey and reddish					0 ppm
	//////			woh woh		brown					0 ppm
									End of boring at 18.0'		
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				\vdash							
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COMMENT	S:	Well co	nstruc	ted. See w	ell constructi	on log.		1	PROJECT NO.:		17-013-0289
						-			BORING NO.:		LPZ-03S
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	R		j	LiF	Ro	Engi	neers,	Inc.			ORING LO	
										BORING ID:	LPZ-04	
PROJECT I		Niagara								SHEET:	1 of	
CLIENT:	New York	k State	Depar	tment	t of En	vironmenta	al Conservat	ion (NYSDEC)		JOB NO.:	17-013-0	289
BORING CO	ONTRACT	ror:	SJB/E	mpire	e Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~4'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	576.87	
DATE	TIME	LEV	/EL	TY	/PE	TYPE		HSA		DATE STARTED:	July 25,	2017
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	July 27,	2017
						WT.				DRILLER:	SJB/Em _l	pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Kris Cha	arney
										REVIEWED BY:	Dan She	ldon
			SAN	/IPLE					DESCRI	PTION		
DEPTH		"S"	"N"	BLC	ows	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	uscs	REMARKS
	<u> </u>			woh	_		dark brown	very soft	SILT and S	SAND (0-1.0')	SC	0 ppm
				2	3	50%		,	SAND and	I SILT with coarse to fine SAND		
				-	+		light brown -	loose to medium		'-6.0'). Wet at 6.0'		0 ppm
				2	3	60%	yellowish brown	dense				0 ppm
	5 7										SM-SC	0 ppm
5	5 yellowish brown to medium dense											0 ppm
				9	6	75%	light grey	medium dense				0 ppm
										End of boring 6.0'		
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COMMENT	S:	Well co	nstruct	ted. N	lo soil	samples col	lected.			PROJECT NO.:		17-013-0289
										BORING NO.:		LPZ-04S
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	R		j	LiF	<i>Ro</i>	Engi		TEST BORING LOG				
						O	ĺ			BORING ID:	LPZ-0	5S
PROJECT I	NAME:	Niagara	a Sani	tation						SHEET:	1 of	1
CLIENT:	New York	State	Depar	tment	of Er	vironmenta	al Conservat	tion (NYSDEC)		JOB NO.:	17-013-0)289
BORING C	ONTRACT	OR:	SJB/E	mpire	Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~2-4'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.33	
DATE	TIME	LEV	ΈL	TY	PE	TYPE		HSA		DATE STARTED:	July 25,	2017
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	July 27,	2017
						WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Kris Ch	arney
										REVIEWED BY:	Dan She	eldon
			SAN	/IPLE					DESCRI	PTION		
DEPTH		"S"	"N"	BLC	ows	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				woh	3		dark brown	very soft	SILT and	SAND (0-0.5').	SC	0 ppm
				2	5	60%			SILTY SAI	ND, fine (0.5-5.75'). Wet at 3.0'. Grades to		0 ppm
				2	3		light brown -		SILTY CLA	AY		0 ppm
					-	50%	yellowish	loose to medium			SM-CL	
				4	4		brown to	dense			SIVI-CL	0 ppm
5				3	5	80%	light grey					0 ppm
				10	9				OII TY C	AV (0.0.0.0)		0 ppm
				7	8	100%	light grey	very stiff	SILTY CLA	AY, some sand (6.0-8.0)	CL	0 ppm
				10	10							0 ppm
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COMMENT	S:	Well co	nstruct	ted. S	ee we	II construction	on log.			PROJECT NO.:		17-013-0289
										BORING NO.:		LPZ-05S

	R		j	LiRo	Engi		TEST BORING LOG				
					· ·				BORING ID:	LPZ-0	6S
PROJECT	NAME:	Niagara	a Sani	tation					SHEET:	1 of	1
CLIENT:	New York	k State	Depar	tment of E	nvironment	al Conservat	tion (NYSDEC)		JOB NO.:	17-013-0	0289
BORING C	ONTRACT	OR:	SJB/E	mpire Ge	o Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~6'				CAS.	SAMPLER	TUBE	GROUND ELEVATION:	578.03	
DATE	TIME	LEV	'EL	TYPE	TYPE		HSA		DATE STARTED:	July 26,	2017
					DIA.		4 1/4"	2" sampler	DATE FINISHED:	July 27,	2017
					WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
					FALL				GEOLOGIST:	Kris Ch	arney
									REVIEWED BY:	Dan She	eldon
				/PLE				DESCRI			
DEPTH		"S"	"N"	BLOWS	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PER 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				2 3	85%	dark brown	soft		I SILT (0-1.0')	SC	0 ppm
				5 7	0070			SILTY SA Wet at 6.0	ND, fine. Grades to SILTY CLAY (1.0-7.0').		0 ppm
				2 3	050/			vvei ai 0.0	· ·		0 ppm
				5 6	95%	light brown -					0 ppm
5				4 8		yellowish	stiff			SM	0 ppm
				11 9	70%	brown					0 ppm
				13 11		-					0 ppm
				11 6	80%						0 ppm
	777777			4 4				SILTY CL	AY, some mottling. Dry to wet (8.0-18.0')		0 ppm
	//////			 	90%				,		
10	///////			8 14		-					0 ppm
	//////			3 4	80%						0 ppm
	///////			6 10		li alat anan ta					0 ppm
	///////			9 6	100%		very soft to stiff			CL	0 ppm
	//////			6 3		brown	,				0 ppm
15	///////			woh wol	100%						0 ppm
	//////			woh wol							0 ppm
	///////			woh wol	100%						0 ppm
	//////			woh 2	100 /0						0 ppm
									End of boring at 18.0'		
20											
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					7						
35					1						
COMMENT	S:	Well co	nstruct	ted. No so	il samples co	llected.			PROJECT NO.:		17-013-0289
									BORING NO.:		LPZ-06S
					· <u> </u>	· <u></u>					

CLIENT: New York State Department of Environmental Conservation (NYSDEC) BORING CONTRACTOR: SJB/Empire Geo Serv. Inc. LOCATION:	1 of	7S
CLIENT: New York State Department of Environmental Conservation (NYSDEC) BORING CONTRACTOR: SJB/Empire Geo Serv. Inc. GROUNDWATER: ~6' CAS. SAMPLER TUBE GROUND ELEVATION: BATE TIME LEVEL TYPE TYPE HSA DATE STARTED: DIA. 4 1/4" 2" sampler DRILLER: GEOLOGIST: REVIEWED BY: DESCRIPTION		
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc. LOCATION:	47.042	1
GROUNDWATER: ~6' CAS. SAMPLER TUBE GROUND ELEVATION: DATE TIME LEVEL TYPE HSA DATE STARTED: DIA. 4 1/4" 2" sampler DATE FINISHED: DRILLER: GEOLOGIST: REVIEWED BY: REVIEWED BY:	17-013-	0289
DATE TIME LEVEL TYPE HSA DATE STARTED: DIA. 4 1/4" 2" sampler DATE FINISHED: DRILLER: DRILLER: GEOLOGIST: REVIEWED BY: SAMPLE DESCRIPTION	Niagara	Sanitation
DIA. 4 1/4" 2" sampler DATE FINISHED:	577.43	
DIA. 4 1/4" 2" sampler DATE FINISHED:	July 26	2017
FALL GEOLOGIST: REVIEWED BY: DESCRIPTION	July 27	
REVIEWED BY: SAMPLE DESCRIPTION	SJB/Em	pire Geo Serv. Inc.
SAMPLE DESCRIPTION	Kris Ch	arney
	Dan Sh	eldon
DEPTH "S" "N" BLOWS REC% CONSISTENCY MATERIAL		
FEET STRATA NO. NO. PER 6" RQD% COLOR HARDNESS DESCRIPTION	uscs	REMARKS
dark brown medium sitff SAND and SILT (0-0.5')	SC	0 ppm
1% SILTY SAND, fine to coarse. Trace organics. Wet to		0 ppm
moist at 4.0-6.0' (0.5-6.5')		
light brown - vellowish loose to medium	614	0 ppm
brown to dense	SM	0 ppm
5 [1111111 4 8 50% light brown		0 ppm
		0 ppm
4 7 light brown somewhat loose to SILTY CLAY, wet (6.5'-8.0')	CL	0 ppm
8 10 to light grey firm	OL	0 ppm
End of boring at 8.0'		
10		
15		
20		
25		
30		
35		
COMMENTS: Well constructed. See well construction log. PROJECT NO.:		17-013-0289
BORING NO.:		LPZ-07S

	R		Ì	LiF	Ro	Engi	neers,	Inc.		TEST BORI		
										BORING ID:	LPZ-08	
PROJECT		Niagara								SHEET:	1 of	
CLIENT:							al Conservat	ion (NYSDEC)		JOB NO.:	17-013-0	
BORING C		TOR:	SJB/E	impire	e Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~3.5'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	575.95	
DATE	TIME	LEV	'EL	TY	/PE	TYPE		HSA		DATE STARTED:	August	15, 2017
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	August	15, 2017
						WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Andrew	Koons
										REVIEWED BY:	Dan She	eldon
			SAN	/IPLE					DESCRI	PTION		
DEPTH		"S"	"N"	BLC	ows	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				2	3				FILL: sand	d and silt with wood fragments (0-3.0')		0 ppm
				2	2	30%	dark brown	loose			FILL	0 ppm
				_	+		daik blown	10030	SII TY SAI	ND, fine. Grades to SILTY CLAY. Wet at	- ' ''	
	 			3	6	50%	yellowish		3.5' (3.0-4	· ·		0 ppm
				8	10		hrown	medium dense	·		SM	0 ppm
5				4	6	80%	brown	stiff	SILTY CLA	AY (4.0-6.0)	CL	0 ppm
				8	10	00%	DIOWII	Still			CL	0 ppm
										End of bring at 6.0'		
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COMMENT	S:	Well co	nstruct	ted. S	ee we	ell construcito	on log.			PROJECT NO.:		17-013-0289
										BORING NO.:		LPZ-08S
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	R		j	Lif	Ro	Engi	neers,		TEST BORII	NG LC)G	
										BORING ID:	LPZ-09	es
PROJECT		Niagar								SHEET:	1 of	1
CLIENT:							al Conservat	ion (NYSDEC)		JOB NO.:	17-013-0)289
BORING C	ONTRACT	OR:	SJB/E	mpire	e Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:						CAS.	SAMPLER	TUBE	GROUND ELEVATION:	578.12	
DATE	TIME	LEV	/EL	TY	/PE	TYPE		HSA		DATE STARTED:	Septem	ber 13, 2017
				L		DIA.		4 1/4"	2" sampler	DATE FINISHED:	•	ber 13, 2017
						WT.				DRILLER:		pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Andrew	
				<u> </u>			T			REVIEWED BY:	Dan She	eldon
	-			/IPLE					DESCRI			
DEPTH		"S"	"N"	I	ows	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	_	R 6"	RQD%	COLOR	HARDNESS	EUL	DESCRIPTION	USCS	REMARKS
				1	2	35%			trash (0-4.	d and silt with plastic, paper, graphite and 0').		0 ppm
				3	4		dark brown	loose	(,	FILL	0 ppm
				3	2	35%	dark brown	10036			I ILL	0 ppm
				3	3	35%						0 ppm
5				4	6					ND, some to trace clay. Grades to trace		0 ppm
				6	10	85%			clay. Wet	at 6.5' (4.0-8.0')		0 ppm
				11	15	 	brown	stiff to very stiff			SM	0 ppm
				-	1	90%						
				15	12	 						0 ppm
				5	7	90%	brown	stiff		SILTY CLAY (8.0-10.0)	CL	0 ppm
10				8	10							0 ppm
					Ь					End of boring at 10.0'		
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35]											
COMMENT	S:	Well co	nstruct	ted. S	ee we	ell construction	on log.			PROJECT NO.:		17-013-0289
										BORING NO.:		LPZ-09S

	R		Ì	LiF	Ro	Engi	neers,		TEST BOR	ING LO)G	
						O				BORING ID:	LPZ-10)S
PROJECT	NAME:	Niagar	a Sanit	tation	1					SHEET:	1 of	1
CLIENT:	New Yorl	k State	Depar	tment	of Er	nvironmenta	al Conserva	tion (NYSDEC)		JOB NO.:	17-013-0	289
BORING C	ONTRACT	OR:	SJB/E	mpire	e Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~4'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.41	
DATE	TIME	LEV	/EL	TY	/PE	TYPE		HSA		DATE STARTED:		ber 14, 2017
				<u> </u>		DIA.		4 1/4"	2" sampler	DATE FINISHED:		ber 14, 2017
				<u> </u>		WT.				DRILLER:		pire Geo Serv. Inc.
				<u> </u>		FALL				GEOLOGIST:	Andrew	
				<u> </u>			Ī			REVIEWED BY:	Dan She	eldon
DEDTU		"0"		IPLE		DE00/		CONSISTENSY	DESCRI		_	
DEPTH	CTDATA	"S"	"N"		OWS	REC%	00L0D	CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.		R 6"	RQD%	COLOR	HARDNESS	Ell I : con	DESCRIPTION	USCS	REMARKS
				1	2	85%			FILL: sand	d and silt, some clay and glass (0-4.4').		0 ppm
				3	4		brown	loose			FILL	0 ppm
				4	2	25%					7	0 ppm
				2	1	2570						0 ppm
5].!.!.!.!			4	8	000/	brown	stiff	SILTY SA	ND, some to trace clay (4.4-4.8)	SM	0 ppm
				9	11	90%				AY with a sandy lens from 7.1-7.2' (4.8-		0 ppm
				5	8		brown	very stiff	8.0').		CL	0 ppm
				12	12	65%						0 ppm
	//////									End of boring at 8.0'		- 1-1-
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35	<u> </u>	Woll on	netruct	- Pd) } } }	ell construction	n loc		<u> </u>	DDO IECT NO :		47.040.0000
COMMENT	<u>3:</u>	VV CII CO	ภาอแ uCl	.cu. S	ee we	ai coriotructio	ni iog.			PROJECT NO.: BORING NO.:		17-013-0289 LPZ-10S
										2014110 110		L1 L-100

	R		1	LiF	<i>Ro</i>	Engii	neers,		TEST BORI	NG LC)G	
						J				BORING ID:	LPZ-1	1S
PROJECT I	NAME:	Niagara	a Sanit	tation						SHEET:	1 of	1
CLIENT:	New York	k State	Depar	tment	of Er	nvironmenta	I Conservat	tion (NYSDEC)		JOB NO.:	17-013-0	0289
BORING CO	ONTRACT	OR:	SJB/E	mpire	Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~4'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.65	
DATE	TIME	LEV	ΈL	TY	PE	TYPE		HSA		DATE STARTED:	Septem	ber 13, 2017
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	Septem	ber 13, 2017
						WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Andrew	
										REVIEWED BY:	Dan She	eldon
		1	SAN					1	DESCRI			
DEPTH		"S"	"N"		ows	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PEI	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				3	4	85%	brown	stiff	FILL: silty	clay, some sand and organics (0-2.0').	FILL	0 ppm
				5	8							0 ppm
				3	5	85%			SANDY SI Wet at 4.0	LT, trace caly. Grades to a SILTY SAND.		0 ppm
				8	9	00/0			vvel at 4.0	(Δ.υ-1 U).		0 ppm
5				6	9	0501	brown	stiff to very stiff			SM	0 ppm
				11	13	85%			SILTY CLAY (7.0'-8.0').			0 ppm
				9	7							0 ppm
				8	16	95%	brown	stiff	SILTY CL	AY (7.0'-8.0').	CL	0 ppm
										End of boring at 8.0'		
10 15 20 25												
35 ••••••	·	Woll on	netruet	od C	200 222	ll constructio	an log			DDO IFOT NO		47.040.0000
COMMENT	s:	vveii co	ristruct	.eu. S	ee we	II constructio	iii iog.		PROJECT NO.: BORING NO.:		17-013-0289 LPZ-11S	

	R		1	LiF	Ro	Engi		TEST BORING LOG				
						O				BORING ID:	LPZ-12	2S
PROJECT I	NAME:	Niagara	a Sanit	tation						SHEET:	1 of	1
CLIENT:	New Yor	k State	Depar	tment	of Er	nvironmenta	I Conservat	ion (NYSDEC)		JOB NO.:	17-013-0	0289
BORING C	ONTRACT	ΓOR:	SJB/E	mpire	Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~6'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.06	
DATE	TIME	LEV	ΈL	TY	Έ	TYPE		HSA		DATE STARTED:	Septem	ber 13, 2017
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	Septem	ber 13, 2017
						WT.				DRILLER:		pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Andrew	Koons
									-	REVIEWED BY:	Dan She	eldon
			SAN	IPLE					DESCRI	PTION		
DEPTH	TH "S" "N" BLOWS REC% CONSIST									MATERIAL		
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				2	1				FILL: sand	and silt with wood and glass (0-5.0').		0 ppm
				1	3	35%						0 ppm
					-		dark brown	laasa			FILL	
				5	4	10%	dark brown	loose			FILL	0 ppm
				1	1	ļ						0 ppm
5				2	3	40%						0 ppm
				6	6	1570	gray-brown	stiff	SILTY SAI 7.0').	ND, some to trace clay. Wet at 6.0' (5.0-	SM	0 ppm
				5	6	500/	gray-brown	Suii	7.0).		SIVI	0 ppm
				8	13	50%	brown	stiff	SILTY CLA	AY (6.0-8.0').	CL	0 ppm
										End of boring at 8.0'		
15												
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35 COMMENT	· c .	Woll on	netruct	od C	96 1116	ll construcits	n loc			DDO IECT NO		47.040.0000
COMMENT	<u>ə:</u>	AA GII CO	i iou uCl	Gu. S	GE WE	ell construcito		PROJECT NO.: BORING NO.:		17-013-0289 LPZ-12S		

	R		Ì	LiF	Ro.	Engi		TEST BORING LOG				
										BORING ID:	LPZ-13	
PROJECT I		Niagara								SHEET:	1 of	1
							ıl Conservat	ion (NYSDEC)		JOB NO.:	17-013-0	
BORING CO	ONTRACT	ſOR:	SJB/E	mpire	e Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~5'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	578.75	
DATE	TIME	LEV	/EL	TY	PE	TYPE		HSA		DATE STARTED:	Septem	ber 14, 2017
		<u> </u>				DIA.		4 1/4"	2" sampler	DATE FINISHED:	Septem	ber 14, 2017
						WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Andrew	Koons
										REVIEWED BY:	Dan She	eldon
			SAN	/IPLE					DESCRI	PTION		
DEPTH		"S" "N" BLOWS			ows	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
				WH	1	222/				and silt with wood and trash. Ash from 2-		0 ppm
				2	5	60%	dark brown	loose	2.5' (0-3.0	').	FILL	0 ppm
				4	5	 	to black					0 ppm
					9	100%			SILTY SA	ND with some clay. Grades to trace clay at		
				11	-	 	 			at 5.0' (3.0-7.4').		0 ppm
5				3	4	100%	brown	stiff			SM	0 ppm
				8	10							0 ppm
				12	9	100%						0 ppm
				10	10	100 /0	brown	very stiff	SILTY CL	AY (7.4-8.0').	CL	0 ppm
10												
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COMMENT	.e.	Well co	nstruci	ted N	lo soil	samples coll	lected			PROJECT NO.:		17-013 0390
COMINENT	<u>ə:</u>	VV CII CO	113H UCL	.cu. IV	U SUII	samples coll	coleu.			BORING NO.:		17-013-0289 LPZ-13S

	R		1	LiF	Ro	Engi		TEST BORING LOG					
						O	Í			BORING ID:	OW-14	IBR	
PROJECT	NAME:	Niagar	a Sanit	tation	l					SHEET:	1 of	1	
CLIENT:	New York	k State	Depar	tment	of En	vironmenta	I Conservat	ion (NYSDEC)		JOB NO.:	17-013-	0289	
BORING C	ONTRACT	OR:	SJB/E	mpire	e Geo	Serv. Inc.				LOCATION:	Niagara Sanitation		
GROUNDW	/ATER:	~6.5`					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.18		
DATE	TIME	LEV	'EL	TY	/PE	TYPE		HSA		DATE STARTED:	August	15, 2017	
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	15, 2017		
						WT.				DRILLER:	SJB/Empire Geo Serv. Inc.		
						FALL				GEOLOGIST:	Andrew Koons		
							T:			REVIEWED BY:	Dan She	eldon	
			SAN			1			DESCRI				
DEPTH		"S"	"N"		ows	REC%				MATERIAL			
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS	0.1115	DESCRIPTION	USCS	REMARKS	
				2	3	75%	dark brown	soft		I SILT with trace organics (0-1.0').	SC	0 ppm	
				2	4					ND, fine, with some clay, trace gravel. race clay. Wet around 6.5' (1.0-7.0').		0 ppm	
				6	8	90%			Clade to t	ass stay. Wet around s.s (1.5 7.5).		0 ppm	
				9	12	30 /0	light brown -	medium dense			SM	0 ppm	
5				12	11	EE0/	yellowish brown	mediam dense			SIVI	0 ppm	
				15	10	55%						0 ppm	
				9	7							0 ppm	
				11	14	90%	brown	very stiff	SILTY CL	AY (7.0-8.0').	CL	0 ppm	
								-		End of boring at 8.0'			
10 15 20 25													
35 COMMENT	.c.	Well co	nstruct	ed S	ee we	Il construction	n log			PROJECT NO.:		17-013-0289	
COMINENT	<u>ə:</u>	VV CII CO	i iou uCl	.cu. 3	ce we	ii constituctio	BORING NO.:		17-013-0289 OW-14BR				

	R		j	LiF	Ro	Engi		TEST BORING LOG				
										BORING ID:	LSB-0	
PROJECT I		Niagar								SHEET:	1 of	
CLIENT:	New York	k State					al Conservat	ion (NYSDEC)		JOB NO.:	17-013-0	289
BORING CO	ONTRACT	ΓOR:	SJB/E	mpire	∍ Geo	Serv. Inc.				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~6.5`					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	NR	
DATE	TIME	LEV	/EL	TY	/PE	TYPE	HSA			DATE STARTED:	Septem	ber 14, 2017
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	Septem	ber 14, 2017
						WT.				DRILLER:	SJB/Em	pire Geo Serv. Inc.
						FALL				GEOLOGIST:	Andrew	Koons
										REVIEWED BY:	Dan She	eldon
			SAN	IPLE					DESCRI	PTION		
DEPTH		"S" "N" BLOWS			REC%		CONSISTENCY		MATERIAL			
FEET	STRATA			RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS		
				2	4				SAND and	SILT with some clay and trace organics		0 ppm
				3	5	50%	dark brown	soft	(0-1.5').		SC	0 ppm
									SII TV SAI	ND, fine, with some clay, trace gravel.		
				5	7	75%	light brown -			trace clay. Wet around 6.5' (1.5-5.3').		0 ppm
				7	9		yellowish brown	medium dense		,	SM	0 ppm
5				9	11	80%	DIOWII					0 ppm
				11	11	00%	brown	very stiff to stiff	SILTY CLA	AY (5.3-6.0')	CL	0 ppm
										End of boring at 6.0'		
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		No well	conetr	ucted	Щ_	<u>I</u>	I		1	DRO IECT NO :		47 042 0200
COMMENT	<u>3:</u>	INO WEII	COHSU	ucieu.						PROJECT NO.: BORING NO.:		17-013-0289 LSB-01
,										DOMING NO		LOD-Uİ

	R		Ì	LiF	Ro.	Engi	neers,		TEST BORING LOG				
										BORING ID:	LSB-0		
PROJECT I		Niagara					10	· . (AD(ODEO)		SHEET:	1 of		
							ii Conservat	ion (NYSDEC)		JOB NO.:	17-013-0289		
BORING CO			SJB/E	.mpire	e Geo	Serv. Inc.	212	0.4451.55		LOCATION:	Niagara Sanitation		
GROUNDW		~7`					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	NR		
DATE	TIME	LEV	EL	IY	/PE	TYPE HSA			DATE STARTED:	September 14, 2017			
			\longrightarrow	 		DIA. WT.		4 1/4"	2" sampler	DATE FINISHED: DRILLER:		ber 14, 2017 pire Geo Serv. Inc.	
						FALL				GEOLOGIST:	Andrew	•	
						IALL	<u> </u>		Ţ	REVIEWED BY:	Dan She		
			SAN	/PLE					DESCRI			, idon	
DEPTH		"S"	"N"		ows	REC%		CONSISTENCY	1	MATERIAL			
FEET	STRATA	NO.	NO.		R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	uscs	REMARKS	
				2	8		dark brown	soft	FILL: sand a	and silt, some clay, trace organics (0-0.5').	0000	0 ppm	
					_	85%	dark brown	3011	FILL: silt w	vith some clay, trace gravel (0.5-9.5').			
				9	11					SILTY CLAY. Wet at 7.0'.		0 ppm	
				6	6	85%						0 ppm	
				7	7		.					0 ppm	
5				33	5	100%					FILL	0 ppm	
				5	4	10070	red-brown	soft-very stiff			1122	0 ppm	
				4	8	550/						0 ppm	
				9	8	55%						0 ppm	
				3	1		1					0 ppm	
10				2	3	30%						0 ppm	
10				2	4				SILTY CL	AY (9.5-12.0').		0 ppm	
				6	9	85%	gray	stiff		,	CL	0 ppm	
	//////			0	9					Find of horizon at 40 O		о ррпі	
					<u> </u>					End of boring at 12.0'			
				<u> </u>	↓								
15													
						1							
						1							
20													
						1							
						-							
					\vdash	ł							
				 	<u> </u>								
				-	├								
25				<u> </u>	<u> </u>								
				<u> </u>	<u> </u>	1							
30													
						1							
						1							
					 	1							
				\vdash	\vdash	1							
35				\vdash	\vdash	1							
	.e.	No well	constr	incted	No s	oil samples	Collected			PROJECT NO.:		17 042 0200	
COMMENT	<u>ə:</u>	Orginal					conecieu.			PROJECT NO.: BORING NO.:		17-013-0289 LSB-01	
		Orginal	y going	J IO DE	; Lr'Z-	IUL.				DOMING NO		L3D-U1	

	R		j	LiF	Ro.	Engi		TEST BORING LOG					
										BORING ID:	LSB-0	3	
PROJECT I		Niagar								SHEET:	1 of	1	
CLIENT:	New York	k State	Depar	tment	of En	vironmenta	I Conservat	tion (NYSDEC)		JOB NO.:	17-013-0289		
BORING CO	ONTRACT	ΓOR:	SJB/E	Empire	e Geo	Serv. Inc.				LOCATION:	Niagara Sanitation		
GROUNDW	/ATER:	~6'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	NR		
DATE	TIME	LEV	/EL	TY	YPE TYPE HSA				DATE STARTED:	July 27,	2017		
						DIA.		4 1/4"	2" sampler	DATE FINISHED:	July 27,	2017	
						WT.	DRILLER:				SJB/Em _l	pire Geo Serv. Inc.	
						FALL				GEOLOGIST:	Kris Cha	arney	
										REVIEWED BY:			
			SAN	/IPLE					DESCRI	PTION			
DEPTH		"S" "N" BLOWS			ows	REC%		CONSISTENCY		MATERIAL			
FEET	STRATA	NO.	NO.	PE	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	uscs	REMARKS	
				woh	woh				CLAYEY S	SILT, some coarse sand (0-4.0').		0 ppm	
				2	2	40%	light brown -					0 ppm	
				2	3		yellowish brown	somewhat loose			MH	0 ppm	
				-		80%	DIOWII						
				2	2		Lieller 1		OII TV CI	AV (4.0.F.O!)		0 ppm	
5				3	6	100%	yellowish brown to	somewhat loose;	SILTY CLA	AY (4.0-5.0').	CL	0 ppm	
				8	12		light grey	stiff			-	0 ppm	
										End of boring at 6.0'			
						1							
40					 	1							
10					<u> </u>								
					<u> </u>								
15						1							
10					 								
					\vdash	1							
					<u> </u>								
					<u> </u>								
20													
05					<u> </u>								
25					 								
30													
					\Box	1							
					\vdash	1							
				 	╁	ł							
				-	 	ŀ							
				<u> </u>	<u> </u>								
35													
COMMENT		No well								PROJECT NO.:		17-013-0289	
		Origina	lly goin	ig to b	e LPZ-	-08S	BORING NO.:		LSB-03				

	R			Lik	Ro	Engil		TEST BORING LOG					
										BORING ID:	LDP-0		
PROJECT I		Niagar								SHEET:	1 of		
						nvironmenta	I Conservat	tion (NYSDEC)		JOB NO.:	17-013-0		
BORING CO			LiRo I	Engine	eers					LOCATION:	Niagara	Sanitation	
GROUNDW	/ATER:	~4'					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	576.92		
DATE	TIME	LEV	ÆL.	TY	PΕ	TYPE		Hand Auger		DATE STARTED:	August	24, 2017	
						DIA.		4"		DATE FINISHED:	August	24, 2017	
						WT.				DRILLER:	Eric Mil	ler	
						FALL		GEOLOGIST: Andre					
										REVIEWED BY:	Craig Ta	aylor	
			SAN	/IPLE					DESCRI	PTION			
DEPTH		"S"	"N"	BLC	ows	REC%		CONSISTENCY		MATERIAL			
FEET	STRATA	NO.	NO.	PEF	R 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS	
									SILT and S	SAND, some clay, trace organics (0-1.6')		0 ppm	
						1	dark brown				SC	0 ppm	
						-			SILTY SAI	ND, with some to trace clay (1.6-5.3'). Wet		0 ppm	
				$\vdash\vdash\vdash$	\vdash	1			at 4'				
				\longmapsto	—		brown				SM	0 ppm	
5												0 ppm	
												0 ppm	
										End of boring at 5.3'			
						1							
						1							
						-							
10													
						1							
15													
15						1							
					├──	-							
					<u> </u>								
20													
						1							
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					<u> </u>								
25													
						1							
						1							
						-							
30					<u> </u>								
				igsqcup	<u> </u>]							
				7	1								
]							
						1							
35				$\vdash \vdash \vdash$	<u> </u>	1							
COMMENT	.e.	Well co	nstruct	ted S	ee we	ll construcito	n loa	l		PROJECT NO.:		17 012 0200	
COMINENT	<u>J.</u>	AA CII CO	อแ นปโ	.cu. 3	CC WE	corrou ucill	71 10g.			PROJECT NO.: BORING NO.:		17-013-0289 LDP-01	
										DOMING NO		LDF-VI	

	R		1	LiR	Ro.	Engi	TEST BORING LOG							
						O				BORING ID:	LDP-0	2		
PROJECT I	NAME:	Niagar	a Sanit	tation						SHEET:	1 of	1		
CLIENT:	New York	k State	Depar	tment	of En	vironmenta	I Conservat	tion (NYSDEC)		JOB NO.:	17-013-	0289		
BORING C	ONTRACT	OR:	LiRo I	Engine	eers					LOCATION:	Niagara Sanitation			
GROUNDW	/ATER:	~4					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.46			
DATE	TIME	LEV	ΈL	TY	PE	TYPE		Hand Auger		DATE STARTED:	24, 2017			
						DIA.		4"		DATE FINISHED:	24, 2017			
						WT.				DRILLER: Eric Miller				
						FALL			GEOLOGIST: Andrew Koons					
							•			REVIEWED BY:	Craig Ta	aylor		
			SAN	IPLE		•			DESCRI	PTION				
DEPTH		"S"	"N"	BLO	ws	REC%		CONSISTENCY		MATERIAL				
FEET	STRATA	NO.	NO.	PER		RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS		
						114211			SILT and S	SAND, some clay, trace organics (0-1.6')	0000	0 ppm		
							dark brown			, , , , , , , , , , , , , , , , , , , ,	SC			
									011 77 (0 4 1	W		0 ppm		
									SILTY SAI	ND, with trace clay (1.6-5.2'). Wet at 4'.		0 ppm		
							h				CM	0 ppm		
5							brown				SM	0 ppm		
						1						0 ppm		
	,,,,,,,,,,,									End of boring at 5.3'				
						ļ				End of boning at 0.0				
10														
						1								
15														
20														
20														
25						1								
						1								
30														
						1								
						1								
						ł								
						ļ								
35														
COMMENT	S:	Well co	nstruct	ed. Se	ee we	II construction	on log.			PROJECT NO.:		17-013-0289		
										BORING NO.:		LDP-02		

	R		1	LiR	20	Engi	TEST BORING LOG						
										BORING ID:	LDP-0	3	
PROJECT I	NAME:	Niagar	a Sanit	tation						SHEET:	1 of	1	
CLIENT:	New York	k State	Depar	tment	of En	nvironmenta	I Conservat	tion (NYSDEC)		JOB NO.:	17-013-0	0289	
BORING C	ONTRACT	OR:	LiRo I	Engine	ers					LOCATION:	Niagara Sanitation		
GROUNDW	/ATER:	~4					CAS.	SAMPLER	TUBE	GROUND ELEVATION:	577.25		
DATE	TIME	LEV	ΈL	TYF	PΕ	TYPE		HDA		DATE STARTED:	August	24, 2017	
						DIA.		4"		DATE FINISHED:	24, 2017		
						WT.				DRILLER:	Eric Mil		
						FALL				GEOLOGIST:	Andrew	Koons	
							-		-	REVIEWED BY:	Craig Ta	aylor	
			SAN	IPLE					DESCRI	PTION			
DEPTH	TH "S" "N" BLOWS							CONSISTENCY		MATERIAL			
FEET	STRATA	NO.	NO.	PER	6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS	
							dark brown		SILT and S	SAND, some clay, trace organics (0-1.0')		0 ppm	
									SILTY SAI	ND, with trace clay (1.0-4.9'). Wet at 4'.	SC	0 ppm	
						-				AY (4.9-5.1')			
							brown					0 ppm	
]					SM	0 ppm	
5												0 ppm	
									End of bor	ing at 5.1'			
						1							
						-							
10													
						1							
						1							
45						1							
15						-							
						-							
20													
						1							
						-							
25													
30						-							
						1							
35						1							
COMMENT	S:	Well co	nstruct	ed. Se	e we	ll construction	on log.		•	PROJECT NO.:		17-013-0289	
							<u> </u>			BORING NO.:		LDP-03	
										==:=:=::=::		22. 00	

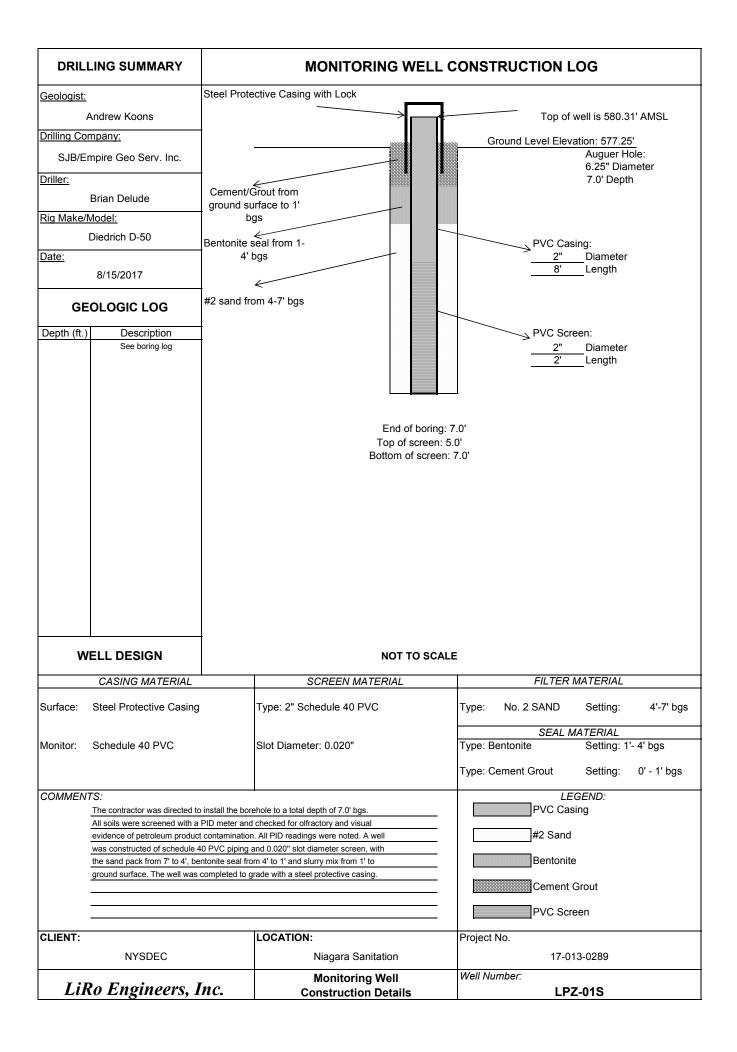
	R		1	LiRa	Engi		TEST BORING LOG				
									BORING ID:	LDP-0	
PROJECT I		Niagar							SHEET:	1 of	
						tal Conserva	tion (NYSDEC)		JOB NO.:	17-013-0	0289
BORING CO	ONTRAC	TOR:	LiRo E	Engineer	S				LOCATION:	Niagara	Sanitation
GROUNDW	/ATER:	~4				CAS.	SAMPLER	TUBE	GROUND ELEVATION:	578.15	
DATE	TIME	LEV	'EL	TYPE	TYPE		Hand Auger		DATE STARTED:	August	24, 2017
					DIA.		4"		DATE FINISHED:	August	24, 2017
					WT.				DRILLER:	Eric Mil	ler
					FALL				GEOLOGIST:	Andrew	Koons
									REVIEWED BY:	Craig Ta	aylor
			SAM	IPLE				DESCRI	PTION		
DEPTH		"S"	"N"	BLOWS	REC%		CONSISTENCY		MATERIAL		
FEET	STRATA	NO.	NO.	PER 6"	RQD%	COLOR	HARDNESS		DESCRIPTION	USCS	REMARKS
									orked sand and silt, some to trace clay,		0 ppm
						dark brown		trace orga	nics (0-2.3')	SC	0 ppm
				\vdash			1	SILTY CL	AY (2.3-3.1')		
		ļ		$\vdash \vdash$		brown				- CL	0 ppm
				$oxed{oxed}$		1	4	SIL I I SA	ND with trace clay (3.1-5.3')		0 ppm
5						brown				SM	0 ppm
						5.0				Olvi	0 ppm
									End of boring at 5.3'		
	1										
				\vdash							
10											
	1										
15											
15	ł			 							
				\vdash							
				$\vdash \vdash$							
20]										
	1										
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				\vdash							
				$\vdash \vdash$							
25											
0.0											
30				\vdash							
				$oxed{oxed}$							
]										
						1					
35	1										
COMMENT	S:	Well co	nstruct	ed. See	well construct	ion log.		1	PROJECT NO.:	_	17-013-0289
						BORING NO.:		LDP-04			

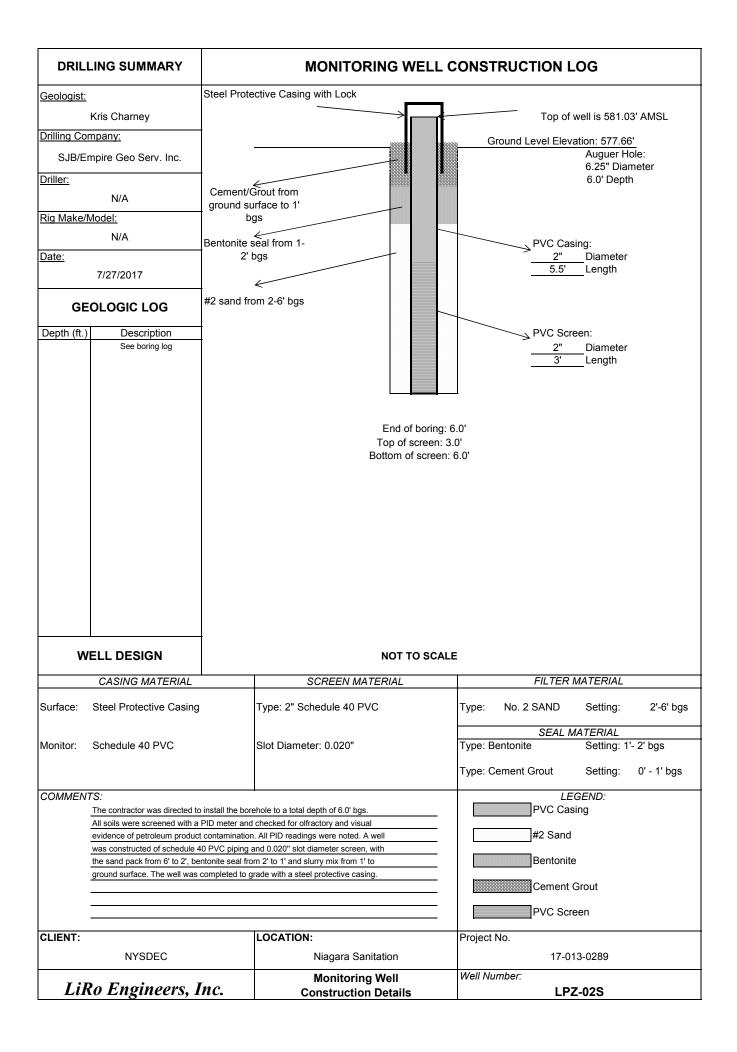


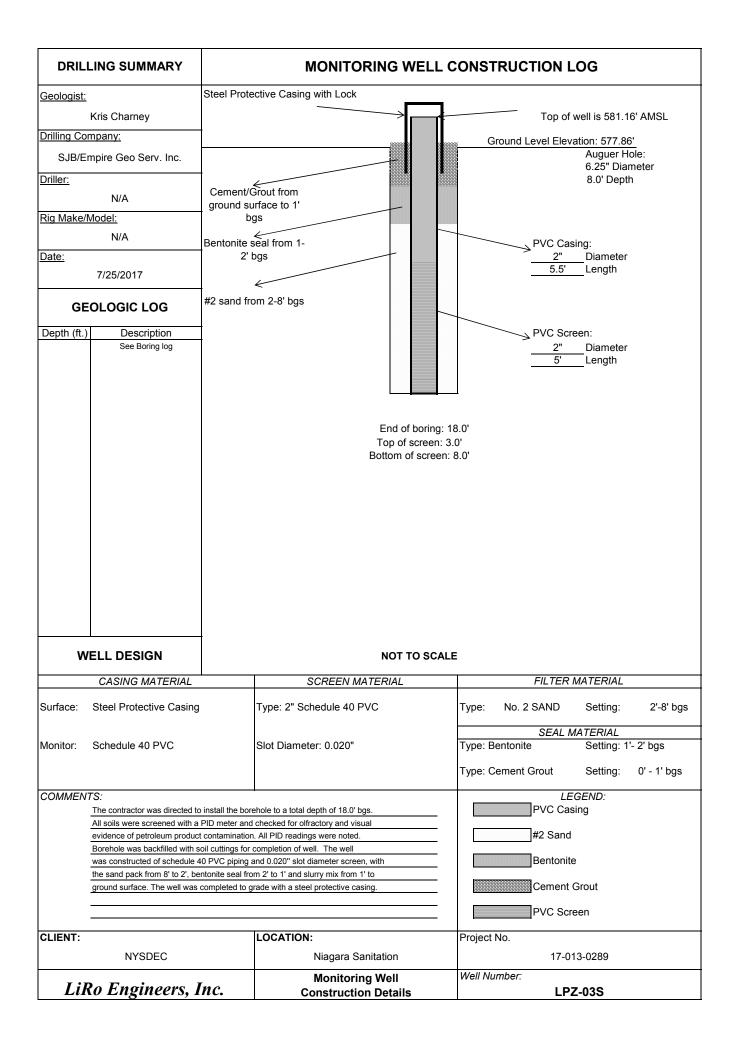
ATTACHMENT 2 Piezometer and Monitoring Well Construction Diagrams

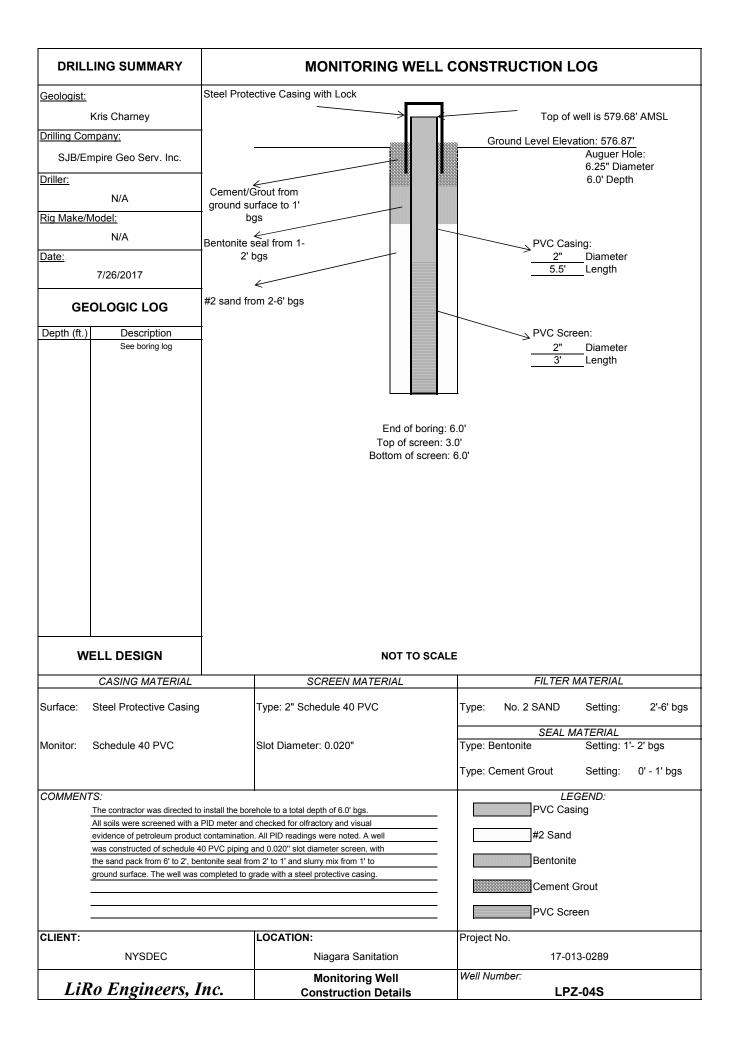


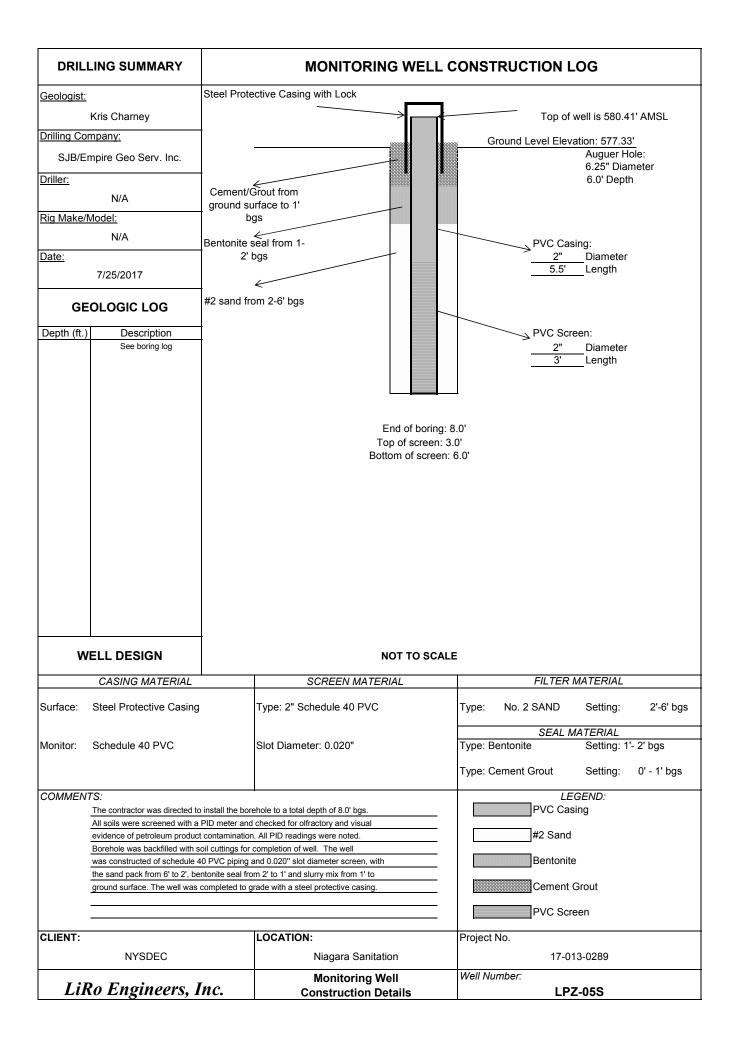
ATTACHMENT 3 Test Pit Soil Logs

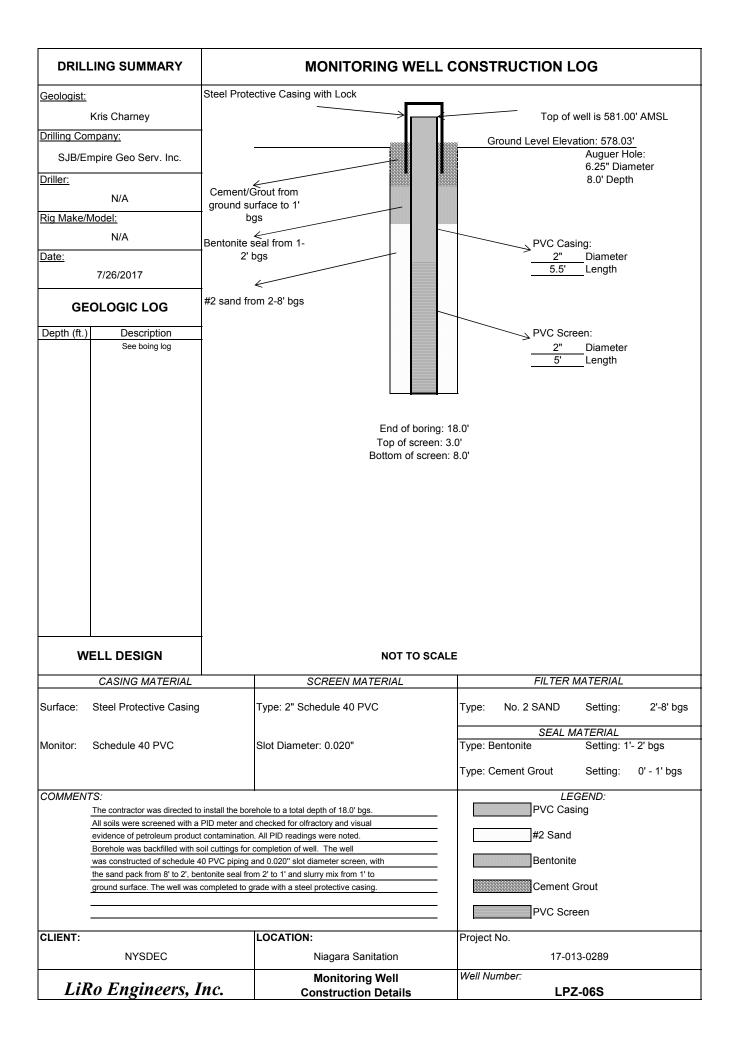


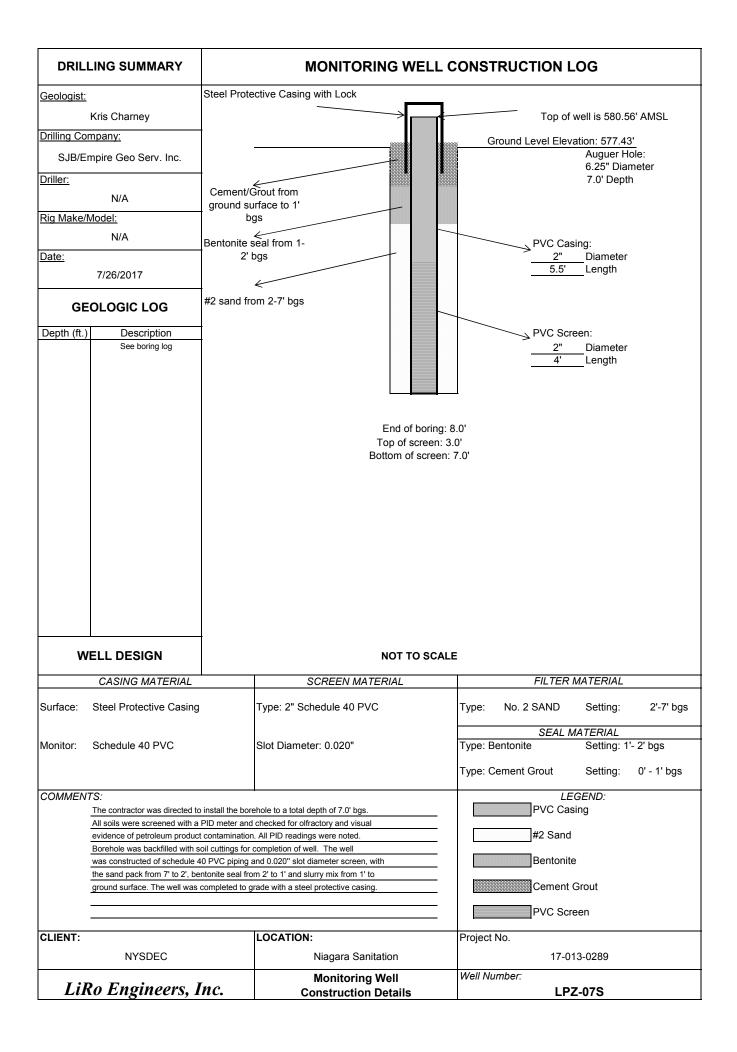


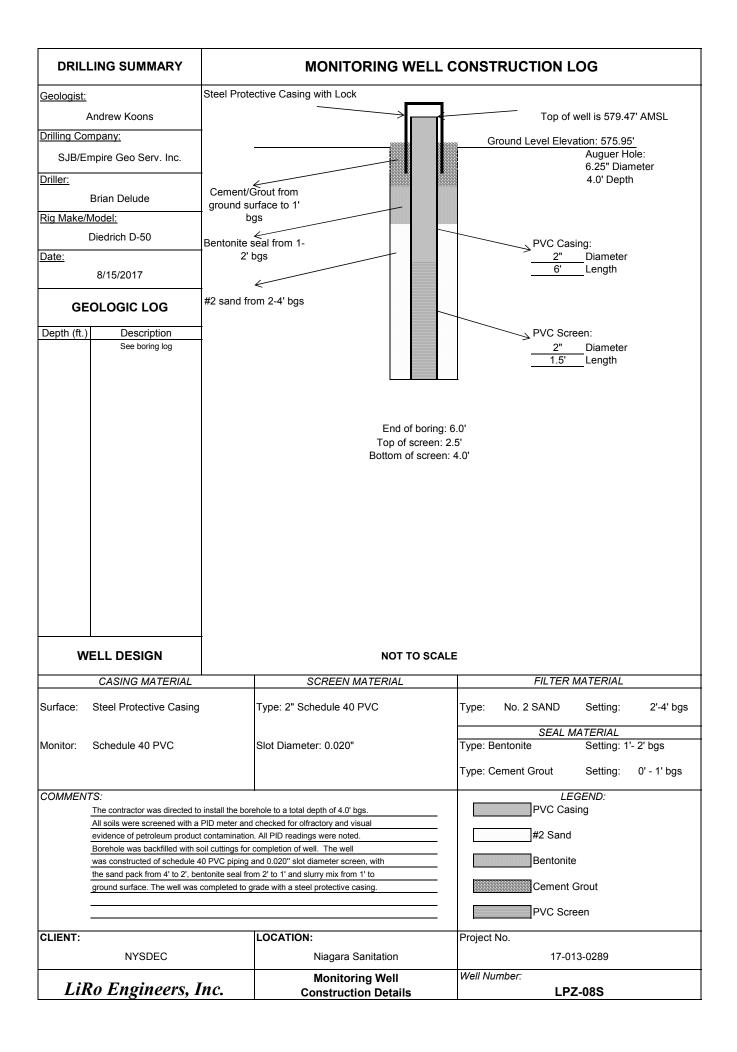


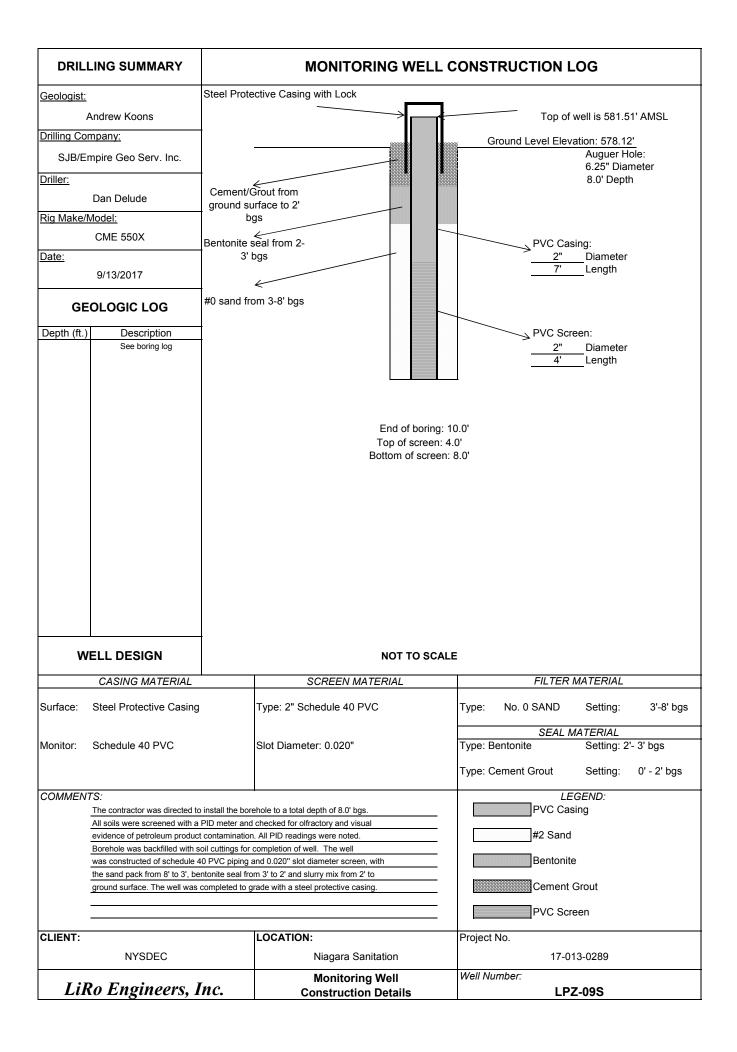


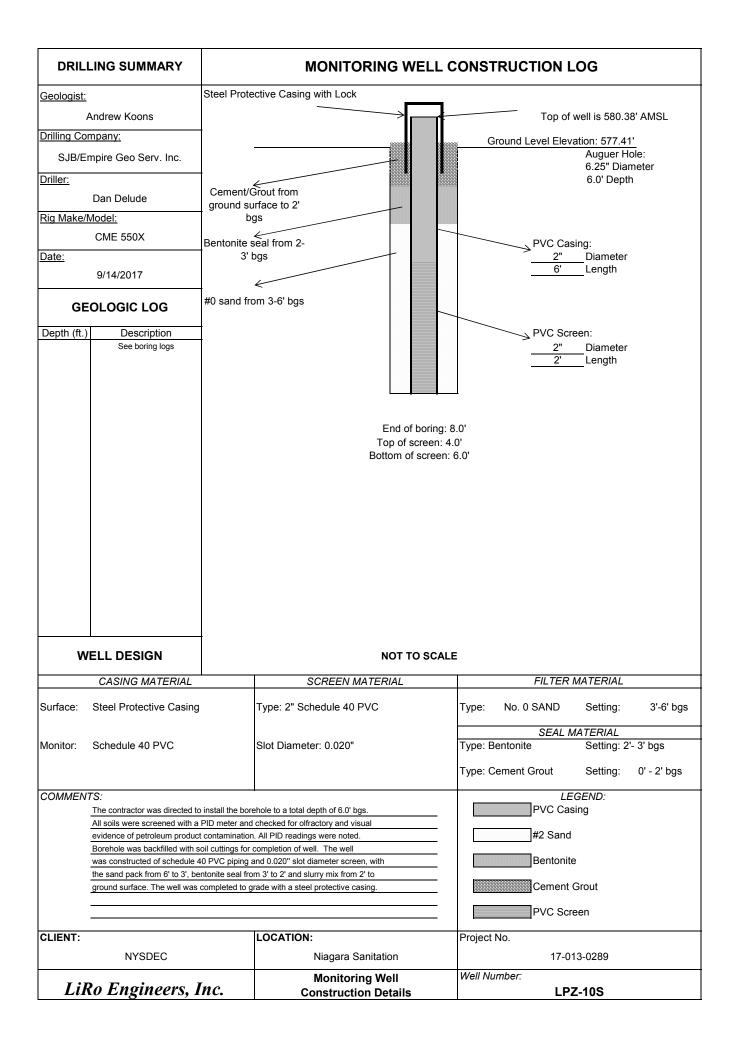


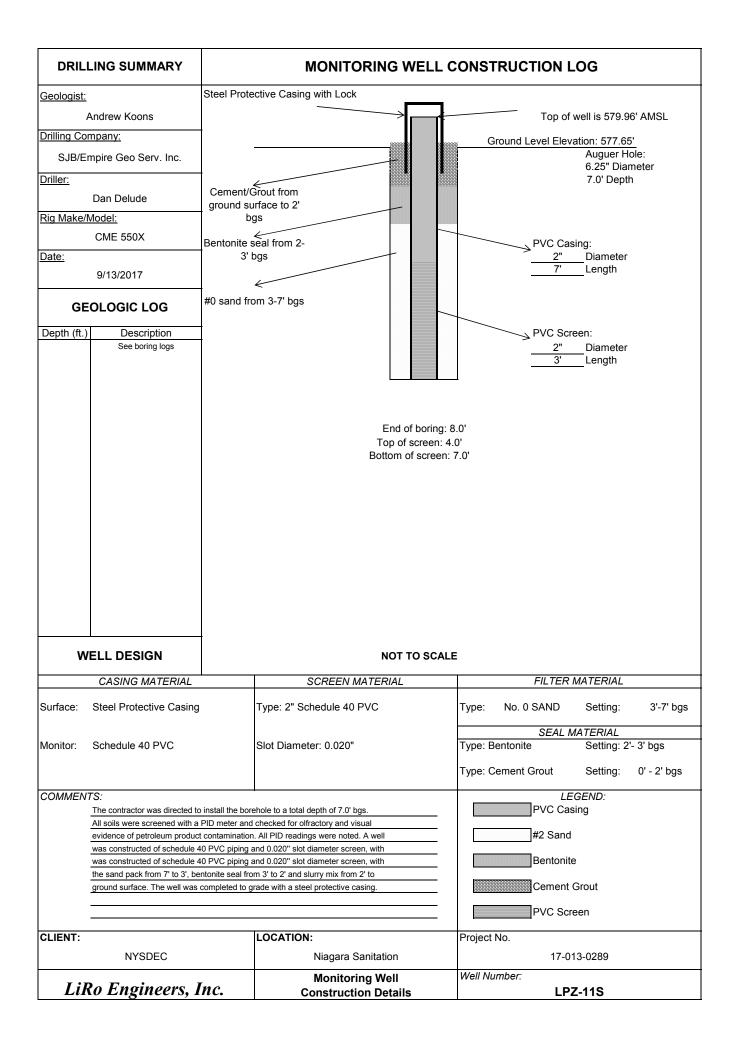


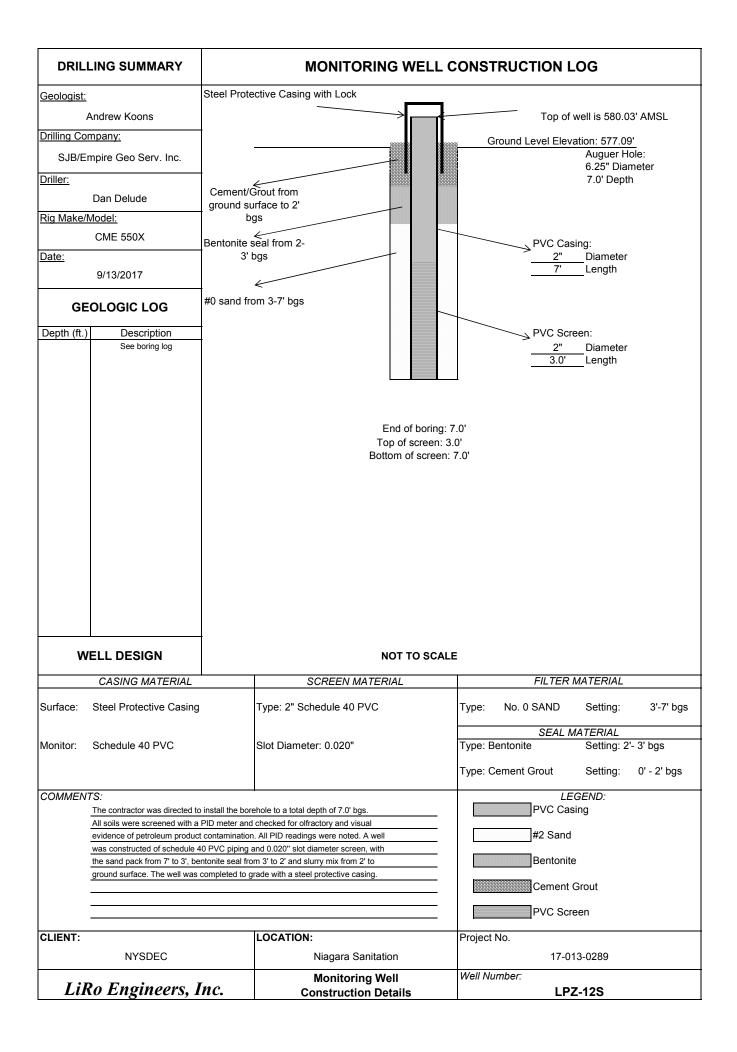


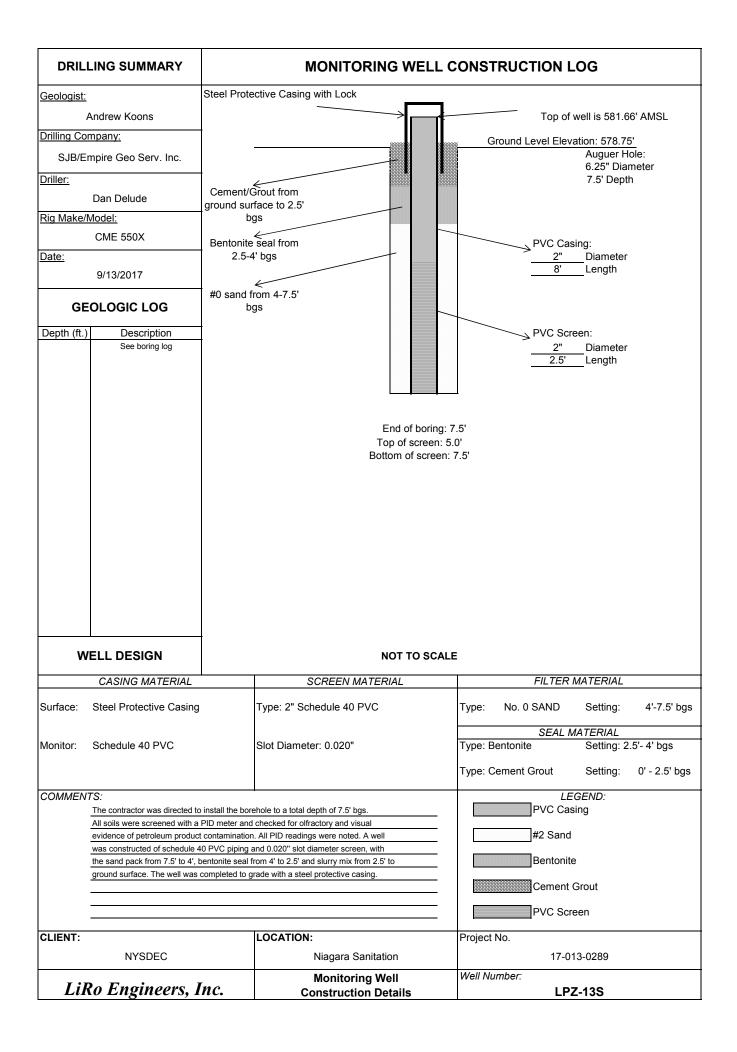


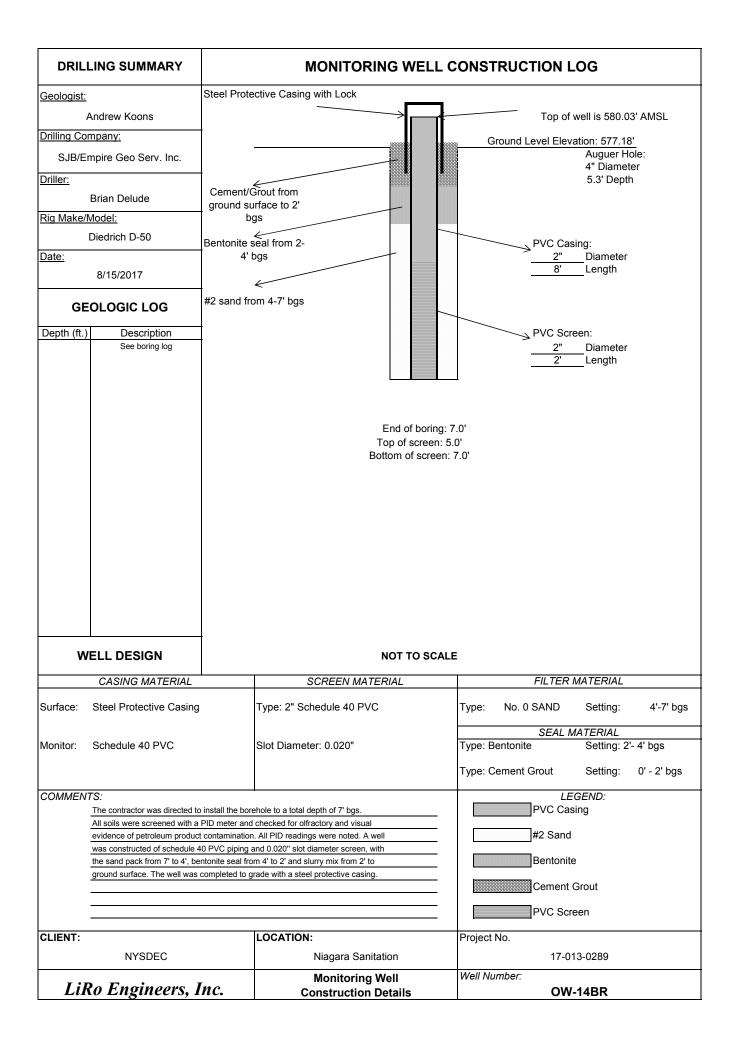


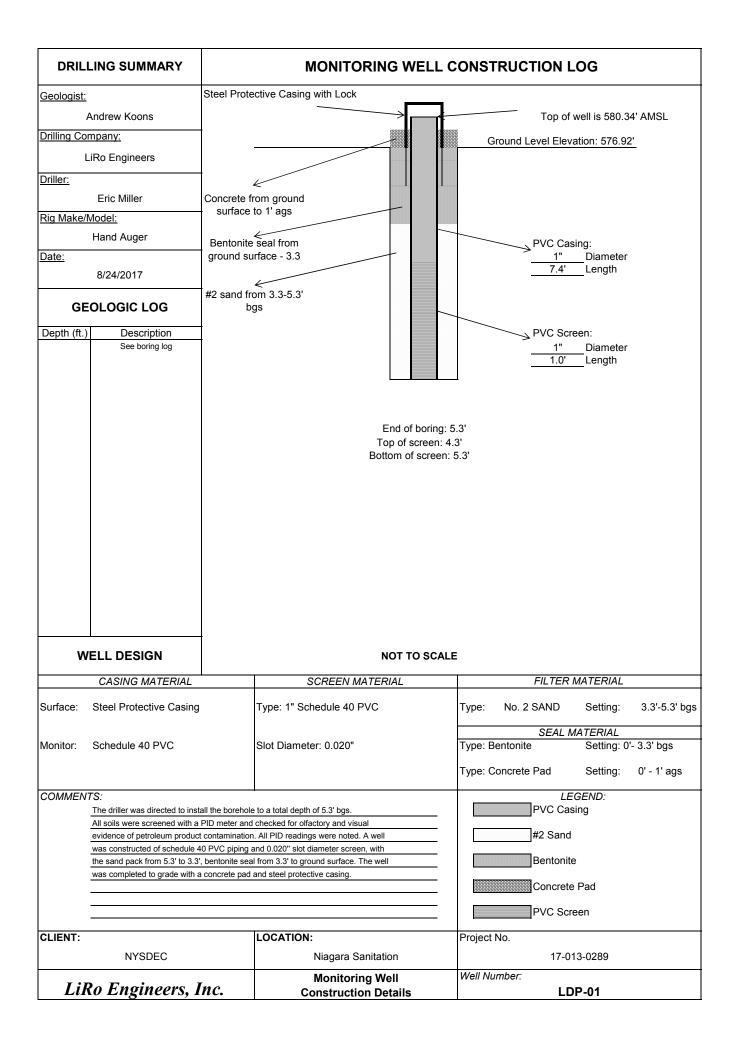


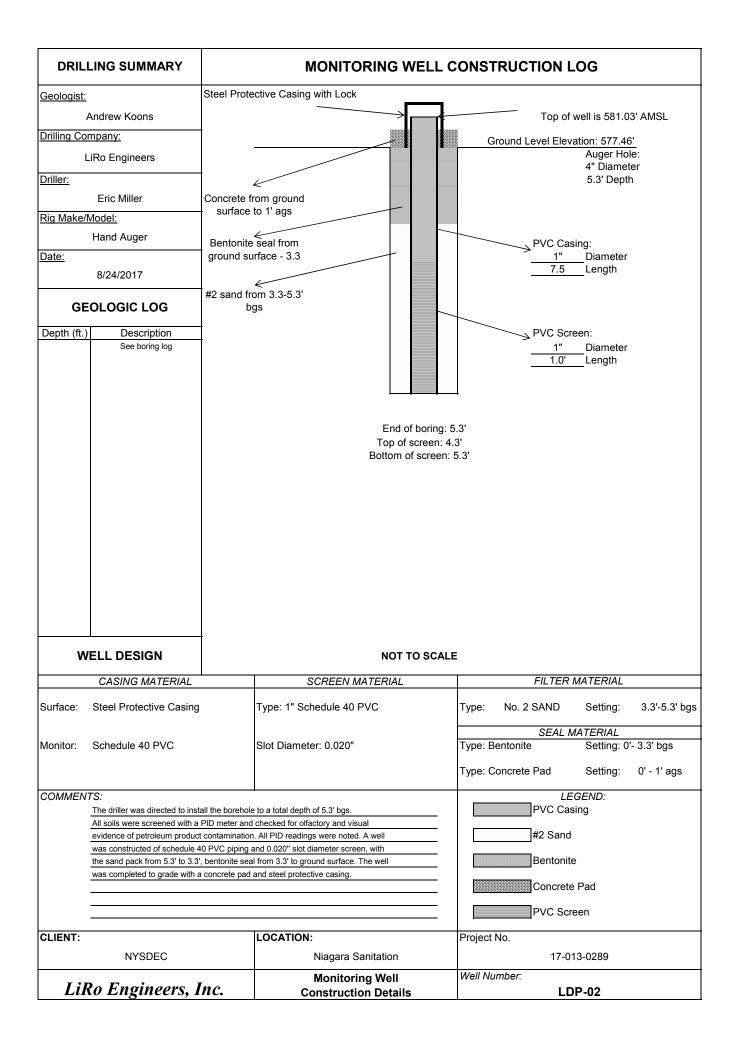


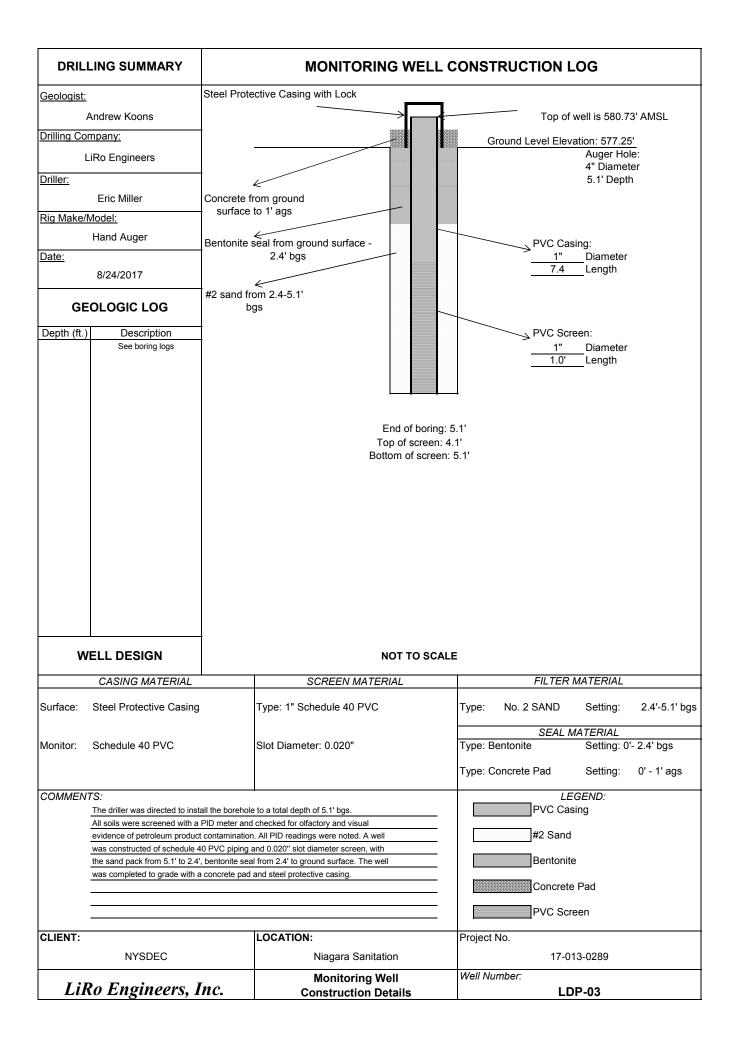


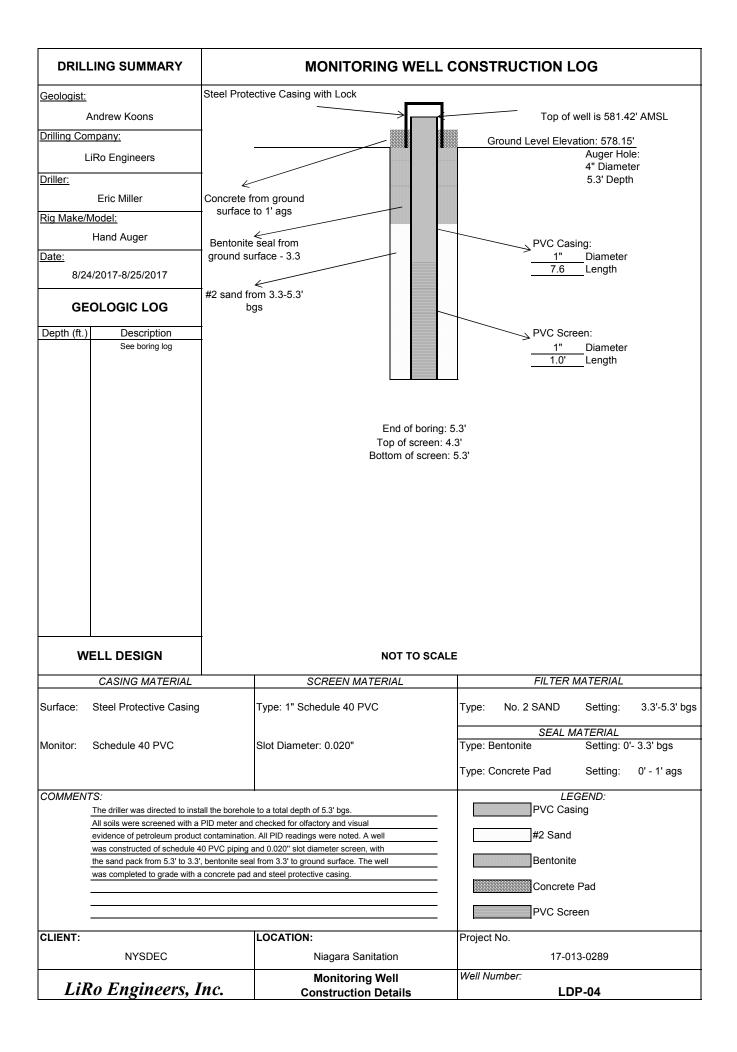














ATTACHMENT 3 Test Pit Soil Logs

		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/19/17		Elevation: 577.03 AMSL	
		Date Completed: 7/19/17		Pit max. depth: 2.5' (approx. 3'x6')	
Geologist: Kri	s Charney		Operator: N/A	A	
Pit Number: 7	ГР-01	Approx. water	table depth: ~2.5'		
DEPTH		D	ESCRIPTION		
-0-		0-1' dark br	own SAND and SILT ((0-1.0')	
- -2-		light brown to brownish y	ellow SANDY SILT, fi	ine, mottled (1.0-2.5')	
-					
-4-					
6					
-6-					
-8-					
-					
-10- -					
-12-					
- -14-					
-14-					
-16-					
General: 0.0 p	ppm				
Observed Wa	stes: Waste	materials not observed.			
Analytical San SVOCs, and 82			7471B Mercury, 8081B	3 TCL Pesticides, 8082A TCL PCBs, 8270D TCL	
Comments:					

		TEST PIT LOG			
		Project: Niagara Sanitation	P	roject #: 17-013-0289	
		Client: NYSDEC	C	ontractor: SJB	
		Date Started: 7/19/17	E	levation: 576.65 AMSL	
		Date Completed: 7/19/17	P	it max. depth: 3.5' (approx. 3'x5')	
Geologist: Kris	s Charney		Operator: N/A		
Pit Number: T	TP-02	Approx. wate	r table depth: ~3.5'		
DEPTH		D	ESCRIPTION		
-0-		dark bro	wn SAND and SILT (0-0.5	5')	
-					
-2-		light brown to brownish y	rellow SANDY SILT, fine	, mottled (0.5-3.5')	
-					
-4-					
-					
-6-					
_					
-8-					
-8-					
10					
_					
-10- - -12-					
-14-					
-					
-14-					
-					
-16-					
General: 0.0 p					
Observed Was	stes: Waste	materials not observed.			
Analytical San	nples: None	е.			
Comments:	ments:				

		TEST PIT LOG				
		Project: Niagara Sanitation	F	Project #: 17-013-0289		
		Client: NYSDEC	(Contractor: SJB		
		Date Started: 7/19/17	F	Elevation: 576.37 AMSL		
		Date Completed: 7/19/17	F	Pit max. depth: 3.5' (approx. 4'x4')		
Geologist: Kris	Charney		Operator: N/A			
Pit Number: T	P-03	Approx. wate	table depth: ~3.5'			
DEPTH		D	ESCRIPTION			
-0-		dark brov	vn SAND and SILT (0-0.	5')		
-		Estatoro de torro de la	-11 CANDA CH T. C			
-2-		light brown to brownish y	ellow SANDY SILT, line	e, motued (0.3-3.3)		
-4-						
-						
-6-						
-						
-8-						
10						
-10-						
-12-						
_						
-14-						
-						
-16-						
General: 0.0 pp	pm					
Observed Was	bserved Wastes: Waste materials not observed.					
Analytical San SVOCs, and 82		3 0-3.5' sampled at 1000 for 6010C TAL Metals, /OCs.	7471B Mercury, 8081B	TCL Pesticides, 8082A TCL PCBs, 8270D TCL		
Comments:						

		TEST PIT LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: SJB		
		Date Started: 7/19/17		Elevation: 576.47 AMSL		
		Date Completed: 7/19/17		Pit max. depth: 3.5' (approx 4'x4')		
Geologist: Kris	Charney		Operator: N/A	1		
Pit Number: TI	P-04	Approx. water	table depth: ~3.5'			
DEPTH		DE	SCRIPTION			
-0-		dark brown	n SAND and SILT (0-	0.5')		
-2-		light brown to brownish yel	low SANDY SILT, fi	ne, mottled (0.5-3.5')		
-4-						
-6-						
-						
-8-						
-10-						
-10- - -12-						
- -14-	-					
-14-						
-16-						
General: 0.0 pp						
Observed Wast	tes: Waste	materials not observed.				
Analytical Sam SVOCs, and 820		4 0-3.5' sampled at 1300 for 6010C TAL Metals, 7 OCs.	471B Mercury, 8081E	3 TCL Pesticides, 8082A TCL PCBs, 8270D TCL		
Comments: MS	nments: MS/MSD sample collected at this location.					

		TEST PIT LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: SJB		
		Date Started: 7/19/17		Elevation: 576.69 AMSL		
		Date Completed: 7/19/17		Pit max. depth: 3.5' (approx. 4'x4')		
Geologist: Kris	Charney		Operator: N/A			
Pit Number: TI	P-05	Approx. water	table depth: ~3.5'			
DEPTH		DI	ESCRIPTION			
-0-		dark brow	n SAND and SILT (0-0	1.75')		
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.75-3.5')					
-4-						
-6-						
-						
-8-						
-10-						
-10- - -12-						
- -14-						
-14-						
-16-						
General: 0.0 pp	om					
Observed Wast	tes: Waste	materials not observed.				
Analytical Sam SVOCs, and 820			7471B Mercury, 8081B	TCL Pesticides, 8082A TCL PCBs, 8270D TCL		
Comments: Du	nments: Duplicate sample collected at this location.					

		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/19/17		Elevation: 576.98 AMSL	
		Date Completed: 7/19/17		Pit max. depth: 3.5' (approx. 4'x4')	
Geologist: Kris	s Charney		Operator: N/A	Δ	
Pit Number: T	P-06	Approx. wat	er table depth: ~3.5'		
DEPTH		Γ	DESCRIPTION		
-0-		dark bro	own SAND and SILT (0-	0.5')	
-					
-2-		light brown to brownish	yellow SANDY SILT, fi	ne, mottled (0.5-3.5')	
-					
-4-					
-					
-6-					
_					
-8-					
_					
- -10- -					
_					
-12-					
-12- -					
-14-					
• •					
-16-					
General: 0.0 p	pm				
Observed Was	stes: Waste	materials not observed.			
Analytical San	nples: Non	2.			
Comments:					

		TEST PIT LOG			
		Project: Niagara Sanitation	Project #: 17-013-0289		
		Client: NYSDEC	Contractor: SJB		
		Date Started: 7/20/17	Elevation: 577.63 AMSL		
		Date Completed: 7/20/17	Pit max. depth: 5' (approx. 3'x7')		
Geologist: Kri	s Charney		Operator: N/A		
Pit Number: 7	TP-07	Approx. water	table depth: ~4.5'		
DEPTH	DESCRIPTION				
-0-	FILI	L: dark brown SAND and SILT, whole red brick, si	nall pocket of blue-white sandy rock observed in the upper 0.5' (0-1.5')		
-2-		light brown to brownish ve	low SANDY SILT, fine, mottled (1.5-5.0')		
-4-					
-6-					
-					
-8- -10- - -12-					
- -12-					
- -14-					
-14-					
-16-	;- -				
General: 0.0 p	pm				
Observed Was	stes: Very li	mited amounts of waste materials observed.			
SVOCs, and 82	260C TCL V	/OCs.	71B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL		
Comments: D	nments: Duplicate sample collected at this location.				

		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/20/17		Elevation: 577.35 AMSL	
		Date Completed: 7/20/17		Pit max. depth: 4.5' (approx. 3'x4')	
Geologist: Kri	s Charney		Operator: N/A		
Pit Number:	ГР-08	Approx. water	table depth: ~4.5'		
DEPTH	DESCRIPTION				
-0-		FILL: dark brown SAND and	SILT, 0.5-1' roofing sl	ningles/tar paper (0-1.0')	
-					
-2-		light brown to brownish ve	llow SANDV SILT fi	ne_mottled (1.0.4.5')	
-		light brown to brownish yellow SANDY SILT, fine, mottled (1.0-4.5')			
-4-					
-					
-6-					
-					
-8-					
-					
-10-					
-10- - -12- -					
-12-					
_					
-14-					
_					
-16-					
General: 0.0 p	opm				
Observed Wa	stes: Suspec	et ACM roofing materials observed in the shallow s	oils (0.5-1.0' bgs).		
Analytical Sa	mples: None	<u>.</u>			
Comments:					
Comments.	oniments.				

		TEST PIT LOG			
		Project: Niagara Sanitation	Project #: 17-013-0289		
		Client: NYSDEC	Contractor: SJB		
		Date Started: 7/20/17	Elevation: 577.33 AMSL		
		Date Completed: 7/20/17	Pit max. depth: 6.25' (approx. 3'x5')		
Geologist: Kr	is Charney		Operator: N/A		
Pit Number:	TP-09	Approx. water	er table depth: ~4.5'		
DEPTH	DESCRIPTION				
-0-		dark brown SANI	O and SILT, plastic at surface (0-0.75')		
-					
-2-					
-		light brown to brownish y	rellow SANDY SILT, fine, mottled (0.75-6.0')		
-4-					
-					
-6-		light gr	ey SILTY CLAY 6.0-6.25')		
-					
-8-					
-					
-10-					
_					
-12-					
-					
-14-					
_					
1.0					
-16-					
General: 0.0	General: 0.0 ppm				
Observed Wa	astes: Plastic	sheeting observed at the surface, no other waste	observed within the test pit.		
Analytical Sa SVOCs, and 8			7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL		
Comments:					

		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/20/17		Elevation: 577.14 AMSL	
		Date Completed: 7/20/17		Pit max. depth: 5.5' (approx. 4'x5')	
Geologist: Kris	Charney		Operator: N/A		
Pit Number: T	P-10		Approx. water table depth: ~5'		
DEPTH	DESCRIPTION				
-0-		FILL: dark brown SAND and	d SILT, pockets of reddish brown mediu	m sand, clay tile, glass, plastic (0-0.75')	
-2-		F 1.4	A CONTRACTOR OF THE CONTRACTOR	vi 1 (0 55 5 5)	
-4- -	■ light brown to brownish yellow SANDY SILT, fine, mottled (0.75-5.5')			e, mottled (0.75-5.5')	
-6-					
-					
-8- -10- - -12- -					
-12-					
- -14-					
-16-	.6-				
General: 0.0 pp	pm				
Observed Was	stes: Waste	observed within the upper SAN a	nd SILT (0-0.75') but not within the rest	of the test pit.	
Analytical San	nples: None	2.			
Comments:	ments:				

			TEST PIT LOG
		Project: Niagara Sanitation	Project #: 17-013-0289
		Client: NYSDEC	Contractor: SJB
		Date Started: 7/21/17	Elevation: 577.05 AMSL
		Date Completed: 7/21/17	Pit max. depth: 4.25' (approx. 3'x5')
Geologist: Kr	ris Charney	,	Operator: N/A
Pit Number:	TP-11	Approx. water	table depth: ~1.5'
DEPTH		DI	ESCRIPTION
-0-		FILL: dark b	rown SAND and SILT (0-1.0')
- -2- -		FILL: light brown to brownish yello	ow SANDY SILT, fine, mottled, with trash (1.0-4.0')
-4-		pink to light grey	CLAYEY SILT, hard (4.0-4.25')
-			
-6-			
_ Q_			
- 0-			
-10-			
- '			
-8- -10- - -12- -			
-14-			
-			
-16-			
General: 0.0	ppm		
Observed Wa	astes: Waste	observed within the test pit from 1.0-4.0' bgs.	
Analytical Sa SVOCs, and 8			71B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL
Comments: N	MS/MSD san	nple collected at this location.	

		TEST PIT LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: SJB		
		Date Started: 7/21/17		Elevation: 576.87 AMSL		
		Date Completed: 7/21/17		Pit max. depth: 4.25' (approx. 3'x6')		
Geologist: Kris (Charney		Operator: N/A	.		
Pit Number: TP	P-12	Approx. water	table depth: $\sim 1'$			
DEPTH		DI	ESCRIPTION			
-0-		dark brown	n SAND and SILT (0	075')		
-2-		FILL: TRASH with dark	c brown SAND and SII	LT, fine (0.75-4.0')		
-4-		pink to light grey	/ CLAYEY SILT, hard	(4.0-4.25')		
-6-						
-8-	-					
-10- - -12-						
-12-						
-14- -	- -					
-16-						
General: 0.0 ppi						
Observed Waste	Deserved Wastes: Waste observed within the test pit from 0.75'-4.0' bgs.					
Analytical Samp SVOCs, and 826		2 0-4' sampled at 1000 for 6010C TAL Metals, 74 OCs.	71B Mercury, 8081B T	TCL Pesticides, 8082A TCL PCBs, 8270D TCL		
Comments:	ments:					

		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/21/17		Elevation: 576.97 AMSL	
		Date Completed: 7/21/17		Pit max. depth: 4.5' (approx. 3'x4'	
Geologist: Kris	Charney		Operator: N/A		
Pit Number: T	P-13	A	approx. water table depth: ~3.5'		
DEPTH	DESCRIPTION				
-0-			dark brown SAND and SILT (0-0	.25')	
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.25-4.0')				
-4-		pi	nk to light grey CLAYEY SILT, hard	(4.0-4.5')	
-6-					
-6-					
-8-					
- -10-					
_					
-8- -10- - -12-					
- -14-					
-					
-16-	-16-				
General: 0.0 pp	pm				
Observed Was	tes: No wa	ste observed within the test pit.			
	Analytical Samples: TP-13 0-4.5' sampled at 0900 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL IVOCs, and 8260C TCL VOCs.				
Comments: Du	iplicate sam	ple collected at this location.			

IR I		TEST PIT LOG			
		Project: Niagara Sanitation	Pr	oject #: 17-013-0289	
		Client: NYSDEC	Co	ontractor: SJB	
		Date Started: 7/21/17	Ele	evation: 576.98 AMSL	
		Date Completed: 7/21/17	Pit	t max. depth: 4.5' (approx 4'x7')	
Geologist: Kris	Charney		Operator: N/A		
Pit Number: TP	P-14	Approx. water	table depth: ~2'		
DEPTH	TH DESCRIPTION				
-0- - -2-	FILL: brown SANDY SILT with some clay, trace glass (0-3.5')			e glass (0-3.5')	
		light brown to brownish y	ellow SANDY SILT, fine,	mottled (3.5-4.0')	
4		pink to light grey CLAYEY SILT, hard (4.0-4.5')			
				,	
6					
-6-					
0					
-8-					
-10-					
-10- - -12-					
-12-					
-					
-14-					
-					
-16-					
General: 0.0 ppr	m				
Observed Waste	es: Small a	amount of glass in the upper portion of the test pit	(0-3.5').		
Analytical Sam	analytical Samples: None.				
Comments:					

		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/20/17		Elevation: 577.96 AMSL	
		Date Completed: 7/20/17		Pit max. depth: 5' (approx 3'x8')	
Geologist: Kris	Charney		Operator: N/A		
Pit Number: T	P-15	A	Approx. water table depth: ~4.5'		
DEPTH	DESCRIPTION				
-0-			dark brown SAND and SILT (0-1	1.0')	
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (1.0-4.5')				
-4-		p	ink to light grey CLAYEY SILT, hard	(4.5-5.0')	
-					
-6-					
-0-					
-8- -10- - -12-					
-					
-12-					
- -14-					
-					
-16-					
General: 0.0 pp	pm				
Observed Was	tes: No wa	ste observed within the test pit.			
	Analytical Samples: TP-15 0-4.5' sampled at 1500 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL VOCs, and 8260C TCL VOCs.				
Comments: MS	S/MSD sam	ple collected at this location.			

		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
《▲▲ 』		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/21/17		Elevation: 576.68 AMSL	
		Date Completed: 7/21/17		Pit max. depth: 5' (approx. 3'x7')	
Geologist: Kris	Charney		Operator: N/A	A	
Pit Number: T	Tumber: TP-16 Approx. water table depth: ~3'				
DEPTH	DESCRIPTION				
-0-		dark brow	n SAND and SILT (0-	1.0')	
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (1.0-4.25')				
-4-		light grey SAND, fine (4.25'-4.5'). Gra	des to pink to light gre	y CLAYEY SILT, hard (4.5-5.0')	
-6-					
-8-	-				
-10- - -12-					
_					
-14- -					
-16-					
General: 0.0 pp	pm				
Observed Was	tes: No was	ste observed within the test pit.			
	alytical Samples: TP-16 0-4.5' sampled at 1400 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL OCs, and 8260C TCL VOCs.				
Comments:					

			TEST PIT LOG		
		Project: Niagara Sanitation	Project #: 17-013-0289		
		Client: NYSDEC	Contractor: SJB		
		Date Started: 7/21/17	Elevation: NR		
		Date Completed: 7/21/17	Pit max. depth: 5' (approx. 3'x8')		
Geologist: Kris	Charney		Operator: N/A		
Pit Number: Tl	P-17	Approx. water	table depth: $\sim 3'$		
DEPTH	DESCRIPTION				
-0-		dark brow	n SAND and SILT (0-0.5')		
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.5-4.0')				
-4-		light gr	ey SAND, fine (4.0-5.0')		
-					
-6-					
-					
-8-					
-10-					
-					
-12-					
-14-					
-					
-16-					
General: 0.0 pp	om				
Observed Was	tes: No wa	ste observed within the test pit.			
	alytical Samples: TP-17 0-5' sampled at 1300 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL OCs, and 8260C TCL VOCs.				
Comments:					

IR		TEST PIT LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: SJB	
		Date Started: 7/19/17		Elevation: 577.81 AMSL	
		Date Completed: 7/19/17		Pit max. depth: 3' (approx. 3'x6')	
Geologist: Kri	is Charney		Operator: N/A	A.	
Pit Number:	TP-18	Approx. water	table depth: ~2'		
DEPTH	DESCRIPTION				
-0-		dark brown	n SAND and SILT (0-	0.5')	
-		FILL: light brown to brownish yellow SANDY SILT, fine, mottled (0.5-1.5')			
-2-	FIL	L: light brown to brownish yellow mottled fine SAI	NDY SILT, fine, mott	led with glass, metal, plastic and trash (1.5-3.0')	
- -4-					
-6-					
- ջ					
-8-					
-10-					
- -12-					
-14-					
-14-					
-					
-16-					
General: 0.0 p	ppm				
Observed Wa	stes: Waste	materials observed at approximately 1.5' bgs.			
Analytical Sa SVOCs, and 8		8 0-3' sampled at 1100 for 6010C TAL Metals, 74' VOCs.	71B Mercury, 8081B	TCL Pesticides, 8082A TCL PCBs, 8270D TCL	
Comments: S	light petrole	um odor			



ATTACHMENT 4 Fence Post Logs and Hand Drilled Soil Boring Logs

		FENCE POST LOG			
		Project: Niagara Sanitation	Proj	ect #: 17-013-0289	
		Client: NYSDEC	Con	tractor: New York State Fence	
		Date Started: 10/26/17	Elev	ation: N/A	
		Date Completed: 10/26/2017	Hole	e max. depth: ~3.0'	
Geologist: Andre	ew Koons		Operator: N/A		
Fence Post Hole	Number:	F-1 Approx. water	able depth: N/A		
DEPTH	TH DESCRIPTION				
-0-		SAND and SILT, o	ark brown, with organics (()-0.75')	
-2-		SANDY SILT, light brown to	brownish yellow, fine, son	ne clay (0.75-3.0')	
- 4-					
-6-					
-8-					
-10-					
-12-					
-14-					
-16-	- 16-				
General: 0.0 ppm					
Observed Waste	es: Waste	materials not observed.			
	nalytical Samples: None				
Comments: Fend	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

		FENCE POST LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: New York State Fence	
		Date Started: 10/26/2017		Elevation: N/A	
		Date Completed: 10/26/2017		Hole max. depth: ~3.0'	
Geologist: Andre	ew Koons		Operator: N/A	A	
Fence Post Hole	Number	F-2 Approx. wat	er table depth: N/A		
DEPTH		I	DESCRIPTION		
-0-		FILL:	gray crushed stone (0-1.	.0')	
-2-		FILL: SILTY SAN	ND, light brown, with gra	aphite (1.0-3.0')	
- -4-					
_					
-6-					
-					
-8-					
-					
-10-					
-					
-12-					
-					
-14-					
-					
-16-					
General: 0.0 ppr	n				
Observed Waste	es: Waste	materials observed in cuttings.			
Analytical Samp	oles: None	,			
Comments: Fen	ce post ho	le was filled in with concrete. Cuttings observed	l and classified. All deptl	hs are approximate.	

	I	FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: New York State Fence			
	Date Started: 10/26/2017	Elevation: N/A			
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'			
Geologist: Andrew I	Koons	Operator: N/A			
Fence Post Hole Nu	mber: F-3 Approx. water	able depth: N/A			
DEPTH	DESCRIPTION				
-0-	FILL: gra	ay crushed stone (0-1.0')			
-2-	FILL: SAND and SILT,	brown, ceramic tiles, organics (1.0-3.0')			
- -4-					
-6-					
-					
-8-					
-					
-10-					
-12-					
-					
-14-					
-					
-16-					
General: 0.0 ppm					
Observed Wastes: \	Waste materials observed in cuttings.				
Analytical Samples:	nalytical Samples: None				
Comments: Fence p	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

		FENCE POST LOG				
	Project: Niagara Sanitation	Project #: 17-013-0289				
	Client: NYSDEC	Contractor: New York State Fence				
	Date Started: 10/26/2017	Elevation: N/A				
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'				
Geologist: Andrew K	Koons	Operator: N/A				
Fence Post Hole Nu	mber: F-4	Approx. water table depth: N/A				
DEPTH	PTH DESCRIPTION					
-0-						
-2-	FILL: SAND and SILT, brown, with brick, plastic and metal (0-3.0')					
⁻						
-4-						
-						
-6-						
-						
-8-						
-						
-10-						
-						
-12-						
-						
-14-						
-						
-16-						
General: 0.0 ppm						
Observed Wastes: V	Observed Wastes: Waste materials observed in cuttings.					
Analytical Samples:	None					
Comments: Fence p	ost hole was filled in with concrete. Cut	tings observed and classified. All depths are approximate.				
	and approximate.					

		FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: New York State Fence			
	Date Started: 10/26/2017	Elevation: N/A			
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'			
Geologist: Andrew I	Koons	Operator: N/A			
Fence Post Hole Nu	mber: F-5	oprox. water table depth: N/A			
DEPTH	PTH DESCRIPTION				
-0-					
-	FILL: SANI	O and SILT, brown, with trash, plastic and metal (0-3.0')			
-2-					
-					
-4-					
-					
-6-					
-					
-8-					
-					
-10-					
-					
-12-					
-					
-14-					
-					
-16-					
General: 0.0 ppm					
Observed Wastes: V	Waste materials observed in cuttings.				
Analytical Samples:	: None				
Comments: Fence p	oost hole was filled in with concrete. Cutting	gs observed and classified. All depths are approximate.			

		FENCE POST LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: New York State Fence	
		Date Started: 10/26/2017		Elevation: N/A	
		Date Completed: 10/26/2017		Hole max. depth: ~3.0'	
Geologist: Andrew	v Koons		Operator: N/A	A	
Fence Post Hole Number: F-6 Approx. water table depth: N/A					
DEPTH			DESCRIPTION		
-0-	FILL: SAND and SILT, brown, with trash, plastic, and metal (0-3.0')			ic, and metal (0-3.0')	
-2-			-		
-4-					
-					
-6-					
-					
-8-					
-					
-10-					
-					
-12-					
-					
-14-					
_					
-16-					
General: 0.0 ppm					
Observed Wastes	: Waste	materials observed in cuttings.			
Analytical Sample					
Comments: Fence	e post ho	le was filled in with concrete. Cu	ttings observed and classified. All depth	hs are approximate.	

		FENCE POST LOG				
	Project: Niagara Sanitation	on	Project #: 17-013-0289			
	Client: NYSDEC		Contractor: New York State Fence			
	Date Started: 10/26/2017	1	Elevation: N/A			
	Date Completed: 10/26/2	2017	Hole max. depth: ~3.0'			
Geologist: Andrew l	Koons	Operato	r: N/A			
Fence Post Hole Nu	mber: F-7	Approx. water table depth: N/	A			
DEPTH	DESCRIPTION					
-0-	FILL: SAND and SILT, brown, with trash, plastic, metal and glass (0-3.0')					
-2- -4-						
-6-						
-8-						
-10-						
-12-						
- -14-						
-						
-16-						
General: 0.0 ppm						
Observed Wastes: V	Observed Wastes: Waste materials were observed in cuttings.					
Analytical Samples						
Comments: Fence p	omments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.					

		FENCE POST LOG			
	Project: Niagara Sanitation	P	Project #: 17-013-0289		
	Client: NYSDEC	C	Contractor: New York State Fence		
	Date Started: 10/26/2017	E	Clevation: N/A		
	Date Completed: 10/26/2017	H	Hole max. depth: ~3.0'		
Geologist: Andrew I	Koons	Operator: N/A			
Fence Post Hole Nu	mber: F-8	Approx. water table depth: N/A			
DEPTH	H DESCRIPTION				
-0-	FILL: SAND and SILT, brown, with trash, plastic and metal (0-3.0')				
-2-	TIEE. S	and SiL1, blown, with dash, plastic	and metal (0-5.0)		
- -4-					
-					
-6-					
-					
-8-					
-					
-10-					
-					
-12-					
-10- - -12- - -14-					
-14-					
-					
-16-					
General: 0.0 ppm					
Observed Wastes: V	Observed Wastes: Waste materials observed in cuttings.				
Analytical Samples:	: None				
Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.					

		FENCE POST LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: New York State Fence	
		Date Started: 10/26/2017		Elevation: N/A	
		Date Completed: 10/26/2017		Hole max. depth: ~3.0'	
Geologist: Andr	ew Koons		Operator: N/A		
Fence Post Hole	e Number:	: F-9	Approx. water table depth: N/A		
DEPTH	тн		DESCRIPTION		
-0-					
_		FIL	L: SANDY SILT, brown, some clay, gr	aphite (0-3.0')	
-2-					
-					
-4-					
-					
-6-					
_					
-8-					
-10- - -12-					
_					
-12-					
_					
-14-					
_					
_					
-16-					
General: 0.0 pp	General: 0.0 ppm				
Observed Wast	Observed Wastes: Waste materials observed in cuttings.				
Analytical Sam	ples: None	,			
Comments: Fer	omments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

IR		FENCE POST LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: New York State Fence	
		Date Started: 10/26/2017		Elevation: N/A	
		Date Completed: 10/26/2017		Hole max. depth: ~3.0'	
Geologist: Andrew	Koons		Operator: N/A		
Fence Post Hole Nu	umber	: F-10	Approx. water table depth: N/A		
DEPTH	TH DESCRIPTION				
-0-	FILL: SAND and SILT, brown, with trash, plastic, metal and glass (0-3.0')			metal and glass (0-3.0')	
-2-					
-4-					
- 6 -					
_					
-8-					
10					
-10-					
-					
-12-					
-10- - -12- - -14-					
-					
-16-					
General: 0.0 ppm					
Observed Wastes: \	Observed Wastes: Waste materials observed in cuttings.				
Analytical Samples	s: None	,			
Comments: Fence	omments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

		FENCE POST LOG				
	Project: Niagara Sanitation	Project #: 17-013-0289				
	Client: NYSDEC	Contractor: New York State Fence				
	Date Started: 10/26/2017	Elevation: N/A				
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'				
Geologist: Andrew K	Coons	Operator: N/A				
Fence Post Hole Nui	mber: F-11	Approx. water table depth: N/A				
DEPTH	DESCRIPTION					
-0-						
-2-	FILL: SAND and SILT, brown, with trash, plastic and metal (0-3.0')					
⁻						
-4-						
-						
-6-						
-						
-8-						
-						
-10-						
-						
-12-						
-						
-14-						
-						
-16-						
General: 0.0 ppm						
Observed Wastes: W	Observed Wastes: Waste materials observed in cuttings.					
Analytical Samples:	None					
Comments: Fence p	ost hole was filled in with concrete. Cutt	ings observed and classified. All depths are approximate.				

		FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: New York State Fence			
	Date Started: 10/26/2017	Elevation: N/A			
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'			
Geologist: Andrew Ko	oons	Operator: N/A			
Fence Post Hole Num	aber: F-12 Approx. water	table depth: N/A			
DEPTH	PTH DESCRIPTION				
-0-	SAND and SILT, dark brown, with some clay and organics (0-0.5')				
-2-	SANDY SILT, brown,	with some to trace clay, fine (0.5-3.0')			
- -4-					
-6-					
-					
-8-					
_					
-10-					
_					
-12-					
-10- - -12- - -14-					
_					
_					
-16-					
General: 0.0 ppm					
Observed Wastes: W	Observed Wastes: Waste materials not observed.				
Analytical Samples: 1	None				
Comments: Fence po	omments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

	F	FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: New York State Fence			
	Date Started: 10/26/2017	Elevation: N/A			
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'			
Geologist: Andrew I	Koons	Operator: N/A			
Fence Post Hole Nu	mber: F-13 Approx. water t	able depth: N/A			
DEPTH	DESCRIPTION				
-0-	SAND and SILT, dark brown, with some clay and organics (0-1.0')				
-2-	SANDY SILT, brown,	with some to trace clay, fine (1.0-3.0')			
- -4-					
-6-					
-8-					
- -10-					
-10- - -12-					
- -14-					
- -16-					
General: 0.0 ppm					
Observed Wastes: Waste materials not observed.					
Analytical Samples:	None				
Comments: Fence p	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

		FENCE POST LOG			
	F	Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: New York State Fence	
		Date Started: 10/26/2017		Elevation: N/A	
	I	Date Completed: 10/26/2017		Hole max. depth: ~3.0'	
Geologist: Andrew	Koons		Operator: N/A		
Fence Post Hole Nu	umber: I	F-14	Approx. water table depth: N/A		
DEPTH	тн		DESCRIPTION		
-0-			SILTY SAND, brown, with trace clay	SILTY SAND, brown, with trace clay (0-3.0')	
-2-					
-4-					
-6-					
-8-					
-					
-10-					
-12-					
-14-					
-16-	- 6-				
General: 0.0 ppm	General: 0.0 ppm				
Observed Wastes:	Observed Wastes: Waste materials not observed.				
Analytical Samples					
Comments: Fence	mments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

		FENCE POST LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: New York State Fence	
		Date Started: 10/26/2017		Elevation: N/A	
		Date Completed: 10/26/2017		Hole max. depth: ~3.0'	
Geologist: Andrew	Koons		Operator: N/A		
Fence Post Hole N	umber:	F-15	Approx. water table depth: N/A		
DEPTH	РТН		DESCRIPTION		
-0-					
_			SILTY SAND, brown, with trace clay	y (0-3.0')	
-2-					
-					
-4-					
-					
-6-					
-					
-8-					
-					
-10- - -12-					
-					
-12-					
-					
-14-					
-					
4.5					
-16-					
General: 0.0 ppm	General: 0.0 ppm				
Observed Wastes:	bserved Wastes: Waste materials not observed.				
Analytical Samples	alytical Samples: None				
Comments: Fence	post ho	le was filled in with concrete. Cut	tings observed and classified. All depth	s are approximate.	

		FENCE POST LOG		
	Project: Niagara Sanitation	Project #: 17-013-0289		
	Client: NYSDEC	Contractor: New York State Fence		
	Date Started: 10/26/2017	Elevation: N/A		
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'		
Geologist: Andrew K	Koons	Operator: N/A		
Fence Post Hole Nu	mber: F-16	Approx. water table depth: N/A		
DEPTH	DESCRIPTION			
-0-				
_	FILL	:: SILTY SAND, brown, with plastic and trash (0-3.0')		
-2-				
-				
-4-				
-				
-6-				
-				
-8-				
-				
-10-				
-				
-12-				
-				
-14-				
-				
-16-				
General: 0.0 ppm				
Observed Wastes: V	Vaste materials observed in cuttings.			
Analytical Samples:	None			
Comments: Fence p	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.			

		FENCE POST LOG		
	Project: Niagara Sanitation	Project #: 17-013-0289		
	Client: NYSDEC	Contractor: New York State Fence		
	Date Started: 10/26/2017	Elevation: N/A		
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'		
Geologist: Andrew K	Koons	Operator: N/A		
Fence Post Hole Nu	mber: F-17	Approx. water table depth: N/A		
DEPTH	DESCRIPTION			
-0-				
_	FILL:	SILTY SAND, brown, with plastic and trash (0-3.0')		
-2-				
-				
-4-				
-				
-6-				
•				
-8-				
10				
-10-				
- -12-				
-12-				
-				
-14-				
-				
-16-				
General: 0.0 ppm				
Observed Wastes: V	Vaste materials observed in cuttings.			
Analytical Samples:	None			
Comments: Fence p	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.			

		FENCE POST LOG		
	Project: Niagara Sanitation	Project #: 17-013-0289		
	Client: NYSDEC	Contractor: New York State Fence		
	Date Started: 10/26/2017	Elevation: N/A		
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'		
Geologist: Andrew K	Coons	Operator: N/A		
Fence Post Hole Nur	mber: F-18 Approx.	water table depth: N/A		
DEPTH	DESCRIPTION			
-0-				
_	FILL: SILTY S	SAND, brown, with plastic and trash (0-3.0')		
-2-				
-				
-4-				
-				
-6-				
-				
-8-				
-				
-10-				
-				
-12-				
-				
-14-				
-				
-16-				
General: 0.0 ppm				
Observed Wastes: W	Observed Wastes: Waste materials observed in cuttings.			
Analytical Committee	None			
	nalytical Samples: None			
Comments: Fence po	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.			

		FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: New York State Fence			
	Date Started: 10/26/2017	Elevation: N/A			
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'			
Geologist: Andrew K	Coons	Operator: N/A			
Fence Post Hole Nui	mber: F-19 Approx. w	ater table depth: N/A			
DEPTH	DESCRIPTION				
-0-					
-	FILL: SILTY SAN	D, brown, with plastic, trash and glass (0-3.0')			
-2-					
-					
-4-					
-					
-6-					
-					
-8-					
-					
-10-					
-					
-12-					
-					
-14-					
-					
-16-					
General: 0.0 ppm	General: 0.0 ppm				
Observed Wastes: W	Observed Wastes: Waste materials observed in cuttings.				
Analytical Samples:	None				
Comments: Fance n	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				
Comments. Tence p	comments. Tence post note was timed in with concrete. Cuttings observed and classified. All deputs are approximate.				

		FENCE POST LOG		
		Project: Niagara Sanitation		Project #: 17-013-0289
		Client: NYSDEC		Contractor: New York State Fence
		Date Started: 10/26/2017		Elevation: N/A
		Date Completed: 10/26/2017		Hole max. depth: ~3.0'
Geologist: And	rew Koons		Operator: N/A	
Fence Post Hol	ence Post Hole Number: F-20 Approx. water table depth: N/A			
DEPTH	DESCRIPTION			
-0-				
_		FILL	:: SILTY SAND, brown, with plastic an	d trash (0-3.0')
-2-				
-				
-4-				
-				
-6-				
-				
-8-				
-10- - -12- - -14-				
_				
-12-				
_				
1.4				
-				
-16-				
General: 0.0 pp	General: 0.0 ppm			
Observed Wast	Observed Wastes: Waste materials observed in cuttings.			
Analytical Sam	lytical Samples: None			
Comments: Fe	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.			

		FENCE POST LOG		
		Project: Niagara Sanitation		Project #: 17-013-0289
		Client: NYSDEC		Contractor: New York State Fence
		Date Started: 10/26/2017		Elevation: N/A
		Date Completed: 10/26/2017		Hole max. depth: ~3.0'
Geologist: Andre	ew Koons		Operator: N/A	Λ
Fence Post Hole	Number	F-21	Approx. water table depth: N/A	
DEPTH	DESCRIPTION			
-0-	FILL: SILTY SAND, brown, with trash and ceramics (0-3.0')			
-2-				. ,
-4-				
-6-				
-8-				
-10-				
-12-				
-14-				
-16-	-			
	General: 0.0 ppm			
	Observed Wastes: Waste materials observed in cuttings.			
	alytical Samples: None			
Comments: Fend	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.			

		F	ENCE POST LOG		
		Project: Niagara Sanitation	Project #: 17-013-0289		
	111	Client: NYSDEC	Contractor: New York State Fence		
		Date Started: 10/26/2017	Elevation: N/A		
	1	Date Completed: 10/26/2017	Hole max. depth: ~3.0'		
Geologist: Andrew	v Koons		Operator: N/A		
Fence Post Hole N	Number: 1	F-22 Approx. water t	able depth: N/A		
DEPTH	DESCRIPTION				
-0-		SAND and SILT, dark bro	wn, with some clay and organics (0-0.5')		
-2-		SANDY SILT, brown,	with some to trace clay, fine (0.5-3.0')		
- -4-					
_					
-6-					
-8-					
_					
-10-					
-10-					
12					
-12-					
-14-					
-					
-16-					
General: 0.0 ppm					
Observed Wastes:	Observed Wastes: Waste materials not observed.				
Analytical Sample	alytical Samples: None				
Comments: Fence	Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

	FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289		
	Client: NYSDEC	Contractor: New York State Fence		
	Date Started: 10/26/2017	Elevation: N/A		
	Date Completed: 10/26/2017	Hole max. depth: ~3.0'		
Geologist: Andrew K	coons	Operator: N/A		
Fence Post Hole Nur	mber: F-23 Approx. water	table depth: N/A		
DEPTH	DESCRIPTION			
-0-	SAND and SILT, dark bro	own, with some clay and organics (0-0.5')		
-2-	SANDY SILT, brown,	with some to trace clay, fine (0.5-3.0')		
- -4-				
-6-				
-8-				
- -10- -				
-12-				
- -14-				
- -16-				
-10-				
General: 0.0 ppm				
Observed Wastes: W	Vaste materials not observed.			
Analytical Samples:	nalytical Samples: None			
Comments: Fence post hole was filled in with concrete. Cuttings observed and classified. All depths are approximate.				

]	FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: New York State Fence			
	Date Started: 11/2/2017	Elevation: N/A			
	Date Completed: 11/2/2017	Hole max. depth: ~3.0			
Geologist: Andrew K	eologist: Andrew Koons Operator: N/A				
Fence Post Hole Nur	e Post Hole Number: F-24 Approx. water table depth: N/A				
DEPTH	DESCRIPTION				
-0-	SAND and SILT, dark br	own, with some clay and organics (0-0.5')			
-2-	SANDY SILT, brown, fin	e, with some clay, trace organics (0.5-3.0')			
- -4-					
-					
-6-					
-8-					
-10-					
-					
-10- - -12-					
-14-					
-					
-16-					
General: 0.0 ppm	General: 0.0 ppm				
Observed Wastes: W	aste materials not observed.				
Analytical Samples:	alytical Samples: None				
Comments: Fence post hole dug with fence post digger. All depths are approximate.					

	1	FENCE POST LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: New York State Fence			
	Date Started: 11/2/2017	Elevation: N/A			
	Date Completed: 11/2/2017	Hole max. depth: ~3.0			
Geologist: Andrew	Koons	Operator: N/A			
Fence Post Hole Nu	imber: F-25 Approx. water	table depth: N/A			
DEPTH	DESCRIPTION				
-0-	SAND and SILT, dark broads	own, with some clay and organics (0-0.5')			
-2-	SANDY SILT, brown, fin	e, with some clay, trace organics (0.5-3.0')			
- -4-					
- -6-					
-8-					
-					
-10- - -12-					
-					
-14-					
-16-					
General: 0.0 ppm					
Observed Wastes: \	Observed Wastes: Waste materials not observed.				
	alytical Samples: None				
Comments: Fence post hole dug with fence post digger. All depths are approximate.					

		HAND BORING LOG			
		Project: Niagara Sanitation	Project #: 17-013-0289		
		Client: NYSDEC	Contractor: N/A		
		Date Started: 2/6/2018	Elevation: N/A		
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'		
Geologist: An	ologist: Andrew Koons Operator: N/A				
Fence Post H	ole Number	: HB-1 Approx. wa	ter table depth: 4.0		
DEPTH	DESCRIPTION				
-0-	SAND and SILT, dark brown, with organics (0-0.5')				
-2-	SILTY SAND, light brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SAND				
-4-					
-6-					
-8-					
-					
-10- - -12-					
-12-					
- -14-					
-					
-16-	j -				
General: 0.0					
Observed Wa	astes: Waste	materials not observed.			
Analytical Sa	lytical Samples: None				
Comments: A	All depths ar	e approximate.			

		HAND BORING LOG			
		Project: Niagara Sanitation	Project #: 17-013-0289		
		Client: NYSDEC	Contractor: N/A		
		Date Started: 2/7/2018	Elevation: N/A		
		Date Completed: 2/7/2018	Hole max. depth: ~4.0'		
Geologist: A	ologist: Andrew Koons Operator: N/A				
Fence Post H	lole Number	:: HB-2 Approx. wa	ter table depth: 4.0		
DEPTH	DESCRIPTION				
-0-		SAND and SI	LT, dark brown, with organics (0-0.5')		
- -2- -	SILTY SAND, light brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SILTY SAND				
-4-					
-6-					
-					
-8-					
-					
-10-					
- -12-					
-					
- -14-					
-					
-16-					
General: 0.0	ppm				
Observed W	actoc: Wasta	materials not observed.			
Observed W	asies. Waste	materials not observed.			
Analytical Sa	amples: Non	е			
Comments:	mments: All depths are approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/7/2018	Elevation: N/A			
		Date Completed: 2/7/2018	Hole max. depth: ~4.0'			
Geologist: An	drew Koons		Operator: N/A			
Fence Post Ho	ole Number	: HB-3 Approx. w	vater table depth: 4.0			
DEPTH	DESCRIPTION					
-0-	SAND and SILT, dark brown, with organics (0-0.5')					
- -2-		0V TV 0.1.VD V 1.1				
-2-		SIL1 Y SAND, light br	rown to brownish yellow, fine, some clay (0.5-4.0') Grades into SAND			
-4-						
-6-						
-						
-8-						
•						
-10-						
- -12-						
-						
- -14-						
-						
-16-						
General: 0.0 p	ppm					
Observed Wa	bserved Wastes: Waste materials not observed.					
Analytical Sa	mples: Non	e				
Comments: A	All depths at	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/7/2018	Elevation: N/A			
		Date Completed: 2/7/2018	Hole max. depth: ~4.0'			
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-4 Approx. wat	er table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-	SAND and SILT, dark brown, with organics (0-1.0')					
-2-	SILTY SAND, light brown to brownish yellow, fine, some clay (1.0-4.0') Grades into SAND					
-4-						
-6-						
- -8-						
- -10-						
- -12-						
-						
-14- -	-14-					
-16-						
General: 0.0						
Observed Wa	bserved Wastes: Waste materials not observed.					
Analytical Sa	alytical Samples: None					
Comments:	nents: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/7/2018	Elevation: N/A			
		Date Completed: 2/7/2018	Hole max. depth: ~4.0'			
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-5 Approx. wat	er table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-	SAND and SILT, dark brown, with organics (0-1.0')					
-2-	SILTY SAND, light brown to brownish yellow, fine, some clay (1.0-4.0') Grades into SAND					
-4-						
-6-						
-8-						
- -10-						
-12-						
-12-						
-14-						
-16-						
General: 0.0	General: 0.0 ppm					
Observed Wa	bserved Wastes: Waste materials not observed.					
Analytical Sa	alytical Samples: None					
Comments:	nents: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: An	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-6 Approx. water	er table depth: 4.0			
DEPTH	DESCRIPTION DESCRIPTION					
-0-	SAND and SILT, dark brown, with organics (0-0.5')					
-2-	FILL: sand and silt with trash, plastic and glass (0.5-4.0')					
-4-						
-6-						
-8-						
- -10-						
- -12-						
-12- -						
-14- -						
-16-						
General: 0.0 j						
Observed Wa	astes: Waste	materials observed.				
Analytical Sa	nalytical Samples: None					
Comments: A	ments: All depths are approximate.					

]	HAND BORING LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: N/A			
	Date Started: 2/6/2018	Elevation: N/A			
	Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Andrew I	Koons	Operator: N/A			
Fence Post Hole Nu	mber: HB-7 Approx. wate	r table depth: 4.0			
DEPTH	PTH DESCRIPTION				
-0-	SAND and SILT	C, dark brown, with organics (0-0.5')			
-2-	FILL: sand and silt with trash, plastic and glass (0.5-4.0')				
-4-					
-6-					
_					
-8-					
-10-					
-10- - -12-					
_					
-14-					
-					
-16-					
General: 0.0 ppm					
Observed Wastes: Waste materials observed.					
Analytical Samples	Analytical Samples: None				
Comments: All dep	ments: All depths are approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Andr	rew Koons		Operator: N/A			
Fence Post Hole	e Number	HB-8 Approx. wat	ter table depth: 4.0			
DEPTH		I	DESCRIPTION			
-0-		SAND and SIL	T, dark brown, with organics (0-1.0')			
-						
-2-		FILL: sand and si	ilt with trash, plastic and glass (1.0-4.0')			
-						
_						
-6-						
-						
-8-						
_						
-10- - -12- -						
-						
-12-						
-						
-14-						
-						
-16-						
General: 0.0 ppr	m					
Observed Wast	Observed Wastes: Waste materials observed.					
Analytical Sam	ples: None					
Comments: All	ments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: An	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-9 Approx. water	er table depth: 4.0			
DEPTH	PTH DESCRIPTION					
-0-	SAND and SILT, dark brown, with organics (0-0.5')					
-2-	FILL: sand and silt with trash, plastic and glass (0.5-4.0')					
-4-						
-6-						
-8-						
- -10-						
- -12-						
-						
-14- -						
-16-						
General: 0.0	ppm					
Observed Wa	Observed Wastes: Waste materials observed.					
Analytical Sa	nalytical Samples: None					
Comments: A	ments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-10 Approx. wa	ater table depth: 4.0			
DEPTH	DESCRIPTION					
-0-		SAND and SI	ILT, dark brown, with organics (0-0.5')			
- -2- -	SANDY SILT, light brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SILTY SAND					
-4-						
-6-						
-						
-8-						
-10-						
- -12-						
- -14-						
-14-						
-						
-16-						
General: 0.0	ppm					
Observed Wa	astes: Waste	materials not observed.				
Analytical Sa	alytical Samples: None					
Comments:	ments: All depths are approximate.					

		HAND BORING LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: N/A			
	Date Started: 2/6/2018	Elevation: N/A			
	Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Andrew	w Koons	Operator: N/A			
Fence Post Hole N	Number: HB-11 Approx. wa	ster table depth: 4.0			
DEPTH		DESCRIPTION			
-0-	SAND and SI	LT, dark brown, with organics (0-0.5')			
-2-	FILL: sand and	silt with trash, plastic and glass (0.5-4.0')			
-4-					
-6-					
-8-					
-10-					
-10- - -12-					
- -14-					
- -16-					
-10-					
General: 0.0 ppm					
Observed Wastes	s: Waste materials observed.				
Analytical Sample	les: None				
Comments: All d	nments: All depths are approximate.				

		HAND BORING LOG				
	Project: Niagara Sanitation	Project #: 17-013-0289				
	Client: NYSDEC	Contractor: N/A				
	Date Started: 2/6/2018	Elevation: N/A				
	Date Completed: 2/6/2018	Hole max. depth: ~4.0'				
Geologist: Andrew	Koons	Operator: N/A				
Fence Post Hole N	umber: HB-12 Approx. water	r table depth: 4.0				
DEPTH	D	ESCRIPTION				
-0-	SAND and SILT	T, dark brown, with organics (0-0.5')				
-2-	FILL: sand and sil	FILL: sand and silt with trash, plastic and glass (0.5-4.0')				
-4-						
-6-						
-8-						
-10-						
-10- - -12-						
- -14-						
-						
-16-						
General: 0.0 ppm						
Observed Wastes:	Waste materials observed.					
Analytical Samples	s: None					
Comments: All de	ments: All depths are approximate.					

		HAND BORING LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: N/A			
	Date Started: 2/6/2018	Elevation: N/A			
	Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Andrew Ko	oons	Operator: N/A			
Fence Post Hole Nun	nber: HB-13 Approx. wate	r table depth: 4.0			
DEPTH	D	ESCRIPTION			
-0-	SAND and SILT	C, dark brown, with organics (0-0.5')			
-2-	FILL: sand and	silt with trash and plastic(0.5-4.0')			
-4-					
-6-					
-8-					
-10-					
-					
-10- - -12-					
-14-					
-					
-16-					
General: 0.0 ppm					
Observed Wastes: W	aste materials observed.				
Analytical Samples:	None				
Comments: All depth	uments: All depths are approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: An	drew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-14 Approx. v	vater table depth: 4.0			
DEPTH	DESCRIPTION DESCRIPTION					
-0-		SAND and S	SILT, dark brown, with organics (0-0.5')			
-2-		FILL: sand	FILL: sand and silt with trash and plastic(0.5-4.0')			
-4-						
-6-						
- -8-						
_						
-10-						
- -12-						
-						
-14-						
-16-						
General: 0.0 j	General: 0.0 ppm					
Observed Wa	Observed Wastes: Waste materials observed.					
Analytical Sa	alytical Samples: None					
Comments: A	ments: All depths are approximate.					

	Н	HAND BORING LOG				
	Project: Niagara Sanitation	Project #: 17-013-0289				
	Client: NYSDEC	Contractor: N/A				
	Date Started: 2/6/2018	Elevation: N/A				
	Date Completed: 2/6/2018	Hole max. depth: ~4.0'				
Geologist: Andrew	Koons	Operator: N/A				
Fence Post Hole Nu	umber: HB-15 Approx. water	table depth: 4.0				
DEPTH	DE	SCRIPTION				
-0-	SAND and SILT,	dark brown, with organics (0-0.5')				
-2-	FILL: sand and s	ilt with trash and plastic(0.5-4.0')				
-4-						
- -6-						
-						
-8-						
-						
-10- - -12- -						
-						
-12-						
-						
-14-						
-						
-16-	-16-					
General: 0.0 ppm	General: 0.0 ppm					
Observed Wastes:	Observed Wastes: Waste materials observed.					
Analytical Samples	s: None					
Comments: All dep	omments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
(1		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Andr	ew Koons		Operator: N/A			
Fence Post Hole	e Number	: HB-16 Approx.	vater table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and	SILT, dark brown, with organics (0-0.5')			
-2-		FILL: sand and	silt with trash, plastic and graphite (0.5-4.0')			
-4-						
-6-						
-8-						
_						
-10-						
-10- - -12- -						
-12-						
_						
-14-						
^						
-16-						
General: 0.0 ppi	m					
Observed Waste	es: Waste	materials observed.				
Analytical Sam	lytical Samples: None					
Comments: All	ments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-17 Approx.	water table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and	SILT, dark brown, with organics (0-1.0')			
-2-		FILL: sand and	silt with trash, plastic and graphite (1.0-4.0')			
-4-						
-6-						
-						
-8-						
-						
-10- - -12- -						
-						
-12-						
-						
-14-						
-						
-16-	16-					
General: 0.0	ppm					
Observed We	astes: Waste	materials observed.				
Analytical Sa	lytical Samples: None					
Comments: A	aments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/6/2018	Elevation: N/A			
		Date Completed: 2/6/2018	Hole max. depth: ~4.0'			
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	:: HB-18 Approx. v	vater table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and S	SILT, dark brown, with organics (0-1.0')			
-2-		FILL: sand and	silt with trash, plastic and graphite (1.0-4.0')			
-4-						
-6-						
- -8-						
10						
-10-						
12						
-10- - -12- -						
- -14-						
-14-						
-						
-16-	6-					
General: 0.0	ppm					
Observed Wa	astes: Waste	materials observed.				
J J						
Analytical Sa	lytical Samples: None					
Comments:	All depths ar	re approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Pro	nject #: 17-013-0289		
		Client: NYSDEC	Con	ntractor: N/A		
		Date Started: 2/6/2018	Ele	vation: N/A		
		Date Completed: 2/6/2018	Ho	le max. depth: ~4.0'		
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-19 Approx.	water table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and	SILT, dark brown, with organics	(0-0.5')		
-2-		FILL: sand and	silt with trash, plastic and graphi	te (0.5-4.0')		
-4-						
-6-						
-						
-8-						
-						
-10- - -12- -						
12						
-14-						
-14-						
-14-						
-16-						
General: 0.0	ppm					
Observed Wa	astes: Waste	materials observed.				
Analytical Sa	lytical Samples: None					
Comments: A	ments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/8/2018	Elevation: N/A			
		Date Completed: 2/8/2018	Hole max. depth: ~4.0'			
Geologist: A	ndrew Koons		Operator: N/A			
Fence Post H	lole Number	: HB-20 Approx. wa	ater table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and SI	ILT, dark brown, with organics (0-0.5')			
- -2-						
-		FILL: sand and si	ilt with trash, plastic and graphite (0.5-4.0')			
-4- -						
-6-						
-8-						
-						
-10-						
- -12-						
-						
- -14-						
-						
-16-						
General: 0.0						
Observed W	astes: Waste	materials observed.				
Analytical Sa	lytical Samples: None					
Comments:	All depths ar	e approximate.				

		HAND BORING LOG					
		Project: Niagara Sanitation	Project #: 17-013-0289				
		Client: NYSDEC	Contractor: N/A				
		Date Started: 2/8/2018	Elevation: N/A				
		Date Completed: 2/8/2018	Hole max. depth: ~4.0'				
Geologist: An	ndrew Koons		Operator: N/A				
Fence Post H	ole Number	: HB-21 Approx. w	ater table depth: 4.0				
DEPTH			DESCRIPTION				
-0-		SAND and S	ILT, dark brown, with organics (0-0.5')				
-2-		FILL: sand and s	ilt with trash, plastic and graphite (0.5-4.0')				
-4-							
-6-							
-8-							
- -10-							
-12-							
-14-							
-							
-16-							
General: 0.0 j	ppm						
Observed Wa	astes: Waste	materials observed.					
Analytical Sa	alytical Samples: None						
Comments: A	All depths ar	e approximate.					

	HAND BORING LOG				
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: N/A			
	Date Started: 2/8/2018	Elevation: N/A			
	Date Completed: 2/8/2018	Hole max. depth: ~4.0'			
Geologist: Andrew Ko	oons	Operator: N/A			
Fence Post Hole Num	aber: HB-22 Approx. water	table depth: 4.0			
DEPTH	D	ESCRIPTION			
-0-	SAND and SILT	, dark brown, with organics (0-0.5')			
-2-	FILL: sand and	silt with trash and plastic (0.5-4.0')			
-4-					
-6-					
-8-					
-					
-10-					
-10- - -12-					
-14-					
•					
-16-					
General: 0.0 ppm					
Observed Wastes: W	aste materials observed.				
Analytical Samples: I	None				
Comments: All depth	is are approximate.				

		HAND BORING LOG					
		Project: Niagara Sanitation	Pr	oject #: 17-013-0289			
		Client: NYSDEC	Co	ontractor: N/A			
		Date Started: 2/8/2018	El	evation: N/A			
		Date Completed: 2/8/2018	Не	ole max. depth: ~4.0'			
Geologist: An	ndrew Koons		Operator: N/A				
Fence Post H	ole Number	: HB-23 Approx. v	vater table depth: 4.0				
DEPTH			DESCRIPTION				
-0-		SAND and S	SILT, dark brown, with organic	s (0-0.5')			
-2-		FILL: sand and	silt with trash, plastic and graph	nite (0.5-4.0')			
-4-							
-6-							
-8-							
- -10-							
- -12-							
- -14-							
-							
-16-	6-						
General: 0.0 j	ppm						
Observed Wa	astes: Waste	materials observed.					
Analytical Sa	alytical Samples: None						
Comments: A	All depths ar	e approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
(4		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/8/2018	Elevation: N/A			
		Date Completed: 2/8/2018	Hole max. depth: ~4.0'			
Geologist: An	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-24 Approx.	water table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and	SILT, dark brown, with organics (0-0.5')			
-2-		FILL: sand and	silt with trash, plastic and graphite (0.5-4.0')			
-4-						
-6-						
-						
-8-						
-						
-10-						
-10- - -12- -						
-						
-14-						
-						
-16-	6-					
General: 0.0	ppm					
Observed Wa	astes: Waste	materials observed.				
Analytical Sa	lytical Samples: None					
Comments: A	ments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: N/A		
		Date Started: 2/8/2018		Elevation: N/A		
		Date Completed: 2/8/2018		Hole max. depth: ~4.0'		
Geologist: An	ndrew Koons		Operator: N/A	A		
Fence Post Ho	ole Number	: HB-25 Approx. w	vater table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-		SAND and S	SILT, dark brown, with orga	nics (0-0.5')		
-2-	SANDY SILT, light brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SILTY SAND					
-4-						
-6-						
-8-						
-						
-10-						
-12-						
-						
-14- -	4- -					
-16-	6-					
General: 0.0 I	ppm					
Observed Wa	stes: Waste	materials not observed.				
Analytical Sa	mples: None	2				
Comments: A	All depths ar	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: N/A		
		Date Started: 2/7/2018		Elevation: N/A		
		Date Completed: 2/7/2018		Hole max. depth: ~4.0'		
Geologist: Andre	ew Koons		Operator: N/A	A		
Fence Post Hole	e Number	: HB-26	Approx. water table depth: 4.0			
DEPTH						
-0-			SAND and SILT, dark brown, with orga	anics (0-1.0')		
-2-		SANDY S	SILT, light brown to brownish yellow, fi Grades into SILTY SAND			
-4-						
-6-						
-8-						
_						
-10-						
- -12-						
-12-						
-						
-14-						
-						
-16-	6-					
General: 0.0 ppi	m					
Observed Waste	es: Waste	materials not observed.				
Analytical Sam	ples: None					
Comments: All	l depths ar	e approximate.				

		HAND BORING LOG			
	Project: Niagara Sanitation	Project #: 17-013-0289			
	Client: NYSDEC	Contractor: N/A			
	Date Started: 2/7/2018	Elevation: N/A			
	Date Completed: 2/7/2018	Hole max. depth: ~2.0'			
Geologist: And	drew Koons	Operator: N/A			
Fence Post Ho	ole Number: HB-27 Approx	. water table depth: 4.0			
DEPTH	DESCRIPTION				
-0-	SAND an	d SILT, dark brown, with organics (0-0.5')			
-	FILL: sand and gr	avel with some silt, trace slag and asphalt (0.5-4.0')			
-2-					
-					
-4-					
-					
-6-					
-					
-8-					
_					
-10-					
- -12-					
**					
- -14-					
_					
-					
-16-					
General: 0.0 p	ppm				
Observed Was	stes: Waste materials observed. Fill materials possibly	from old access road.			
Analytical Sar	mples: None				
Comments: A	all depths are approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/7/2018	Elevation: N/A			
		Date Completed: 2/7/2018	Hole max. depth: ~2.0'			
Geologist: Andre	ew Koons		Operator: N/A			
Fence Post Hole	e Number	: HB-28 Approx. wat	er table depth: 4.0			
DEPTH	DESCRIPTION DESCRIPTION					
-0-		SAND and SIL	T, dark brown, with organics (0-0.5')			
-2-		FILL: sand and gravel v	with some silt, trace slag and asphalt (0.5-4.0')			
-4-						
-6-						
_						
-8-						
-						
-10-						
-12-						
-						
-14-						
-						
-16-						
General: 0.0 ppi						
Observed Waste	bserved Wastes: Waste materials observed. Fill materials possibly from old access road.					
Analytical Sam	ples: Non	e				
Comments: All	depths ar	e approximate.				

		HAND BORING LOG				
	Project: Niagara Sanitation	Project #: 17-013-0289				
	Client: NYSDEC	Contractor: N/A				
	Date Started: 2/8/2018	Elevation: N/A				
	Date Completed: 2/8/2018	Hole max. depth: ~2.0'				
Geologist: Andrew	Koons	Operator: N/A				
Fence Post Hole N	umber: HB-29 Approx. wat	er table depth: 4.0				
DEPTH	DESCRIPTION					
-0-	SAND and SIL	T, dark brown, with organics (0-0.5')				
-	FILL: sand and gravel w	with some silt, trace slag and asphalt (0.5-4.0')				
-2-						
-						
-4-						
-						
-6-						
_						
-8-						
•						
-10-						
-12-						
-12-						
- -14-						
-14-						
-						
-16-						
General: 0.0 ppm						
Observed Wastes:	Dbserved Wastes: Waste materials observed. Fill materials possibly from old access road.					
Analytical Sample	s: None					
Comments: All de	epths are approximate.					

IR		HAND BORING LOG					
		Project: Niagara Sanitation	I	Project #: 17-013-0289			
		Client: NYSDEC		Contractor: N/A			
		Date Started: 2/7/2018	Ī	Elevation: N/A			
		Date Completed: 2/7/2018]	Hole max. depth: ~4.0'			
Geologist: An	drew Koons		Operator: N/A				
Fence Post Ho	ole Number	: HB-30 Approx. wat	ter table depth: 4.0				
DEPTH	DESCRIPTION						
-0-		SAND and SII	LT, dark brown, with organ	ics (0-0.5')			
- -2- -	SANDY SILT, light brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SILTY SAND						
-4-							
-6-							
-8-							
- -10-							
- -12-							
-							
-14- -	4-						
-16-	16-						
General: 0.0 p							
Observed Wa	istes: Waste	materials not observed.					
Analytical Sa	alytical Samples: None						
Comments: A	All depths ar	e approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/7/2018	Elevation: N/A			
		Date Completed: 2/7/2018	Hole max. depth: ~4.0'			
Geologist: An	drew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-31 Approx. wa	ater table depth: 4.0			
DEPTH	PTH DESCRIPTION					
-0-		SAND and SI	LT, dark brown, with organics (0-0.5')			
-2-		FILL: sand and si	It with trash, plastic and graphite (0.5-4.0')			
-4-						
-6-						
-8-						
- -10-						
-12-						
-14-						
-						
-16-						
General: 0.0 j	ppm					
Observed Wa	Observed Wastes: Waste materials observed.					
Analytical Sa	mples: None	e				
Comments: A	nments: All depths are approximate.					

	I	HAND BORING LOG				
	Project: Niagara Sanitation	Project #: 17-013-0289				
	Client: NYSDEC	Contractor: N/A				
	Date Started: 2/7/2018	Elevation: N/A				
	Date Completed: 2/7/2018	Hole max. depth: ~4.0'				
Geologist: Andrew Ko	oons	Operator: N/A				
Fence Post Hole Num	hber: HB-32 Approx. water	r table depth: 4.0				
DEPTH	D	ESCRIPTION				
-0-	SAND and SILT	', dark brown, with organics (0-0.5')				
-2-	FILL: sand and	silt with trash and plastic (0.5-4.0')				
-4-						
-6-						
- -8-						
_						
-10-						
-10- - -12-						
-14-						
-16-						
General: 0.0 ppm						
Observed Wastes: W	aste materials observed.					
Analytical Samples: 1	None					
Comments: All depth	nments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	1	Project #: 17-013-0289		
		Client: NYSDEC	•	Contractor: N/A		
		Date Started: 2/7/2018]	Elevation: N/A		
		Date Completed: 2/7/2018		Hole max. depth: ~4.0'		
Geologist: An	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-33 Approx. v	water table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-		SAND and	SILT, dark brown, with organ	ics (0-0.5')		
-2-		SANDY SILT, light b	rown to brownish yellow, fine Grades into SILTY SAND	, some clay (0.5-4.0')		
-4-						
-6-						
-8-						
-						
-10-						
- -12-						
-						
-14- -						
-16-						
General: 0.0						
Observed Wa	astes: Waste	materials not observed.				
Analytical Sa	imples: None	2				
Comments: A	nments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/7/2018	Elevation: N/A			
		Date Completed: 2/7/2018	Hole max. depth: ~4.0'			
Geologist: A	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-34 Appro	ox. water table depth: 4.0			
DEPTH	H DESCRIPTION					
-0-		SAND a	and SILT, dark brown, with organics (0-0.5')			
- -2-		GANDAY GH TE L'				
-2-		SANDI SILI, iig	ht brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SILTY SAND			
-4-						
-6-						
-						
-8-						
•						
-10-						
- -12-						
-12-						
- -14-						
-						
-16-	16-					
General: 0.0	ppm					
Observed Wa	served Wastes: Waste materials not observed.					
Analytical Sa	amples: Non	e				
Comments:	All depths an	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Pı	roject #: 17-013-0289		
		Client: NYSDEC	C	ontractor: N/A		
		Date Started: 2/7/2018	E	evation: N/A		
		Date Completed: 2/7/2018	H	ole max. depth: ~4.0'		
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-35 Approx. v	vater table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-		SAND and	SILT, dark brown, with organic	rs (0-0.5')		
-2-		SANDY SILT, light b	rown to brownish yellow, fine, Grades into SILTY SAND	some clay (0.5-4.0')		
-4-						
-6-						
- -8-						
- -10-						
- -12-						
-						
-14- -	4- -					
-16-						
General: 0.0	ppm					
Observed Wa	astes: Waste	materials not observed.				
Analytical Sa	mples: None	2				
Comments:	nments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	I	Project #: 17-013-0289		
		Client: NYSDEC	(Contractor: N/A		
		Date Started: 2/7/2018	I	Elevation: N/A		
		Date Completed: 2/7/2018	I	Hole max. depth: ~4.0'		
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	lole Number	: HB-36 Approx. w	vater table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-		SAND and S	ILT, dark brown, with organic	cs (0-0.75')		
-2-	SANDY SILT, light brown to brownish yellow, fine, some clay (0.75-4.0') Grades into SILTY SAND					
-4-						
-6-						
-						
-8-						
-						
-10-						
- -12-						
-						
-14- -						
-16-						
General: 0.0	ppm					
Observed Wa	Observed Wastes: Waste materials not observed.					
Analytical Sa	nalytical Samples: None					
Comments:	mments: All depths are approximate.					

IR		HAND BORING LOG					
		Project: Niagara Sanitation		Project #: 17-013-0289			
		Client: NYSDEC		Contractor: N/A			
		Date Started: 2/7/2018		Elevation: N/A			
		Date Completed: 2/7/2018		Hole max. depth: ~4.0'			
Geologist: An	drew Koons		Operator: N/A	A			
Fence Post Ho	ole Number	: HB-37 Approx. wa	ater table depth: 4.0				
DEPTH	H DESCRIPTION						
-0-		SAND and SI	LT, dark brown, with orga	nics (0-1.0')			
-2-	SANDY SILT, light brown to brownish yellow, fine, some clay (1.0-4.0') Grades into SILTY SAND						
- 4 - -							
-6-							
-8-							
-10-							
- -12-							
_							
-14- -	4- -						
-16-	-16-						
General: 0.0 p							
Observed Wa	stes: Waste	materials not observed.					
Analytical Sa	alytical Samples: None						
Comments: A	All depths ar	e approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/8/2018	Elevation: N/A			
		Date Completed: 2/8/2018	Hole max. depth: ~4.0'			
Geologist: An			Operator: N/A			
Fence Post Ho	ole Number	: HB-38 Approx.	water table depth: 4.0			
DEPTH	DESCRIPTION					
-0-		SAND and	SILT, dark brown, with organics (0-0.5')			
-2-		FILL: san	d and silt with trash and plastic (0.5-4.0')			
-4-						
-6-						
-8-						
-						
-10-						
-12-						
- -14-						
-						
-16-						
General: 0.0 p	ppm					
Observed Wa	bserved Wastes: Waste materials observed.					
Analytical Sa	mples: None	9				
Comments: A	nments: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
(4		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/8/2018	Elevation: N/A			
		Date Completed: 2/8/2018	Hole max. depth: ~4.0'			
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-39 Approx. wa	ater table depth: 4.0			
DEPTH	DESCRIPTION					
-0-		SAND and SI	LT, dark brown, with organics (0-1.0')			
-2- -		FILL: sand a	nd silt with trash and plastic (1.0-4.0')			
-4-						
-6-						
•						
-8-						
-10-						
- -12-						
- -14-						
-14-						
-						
-16-						
General: 0.0	ppm					
Observed Wa	astes: Waste	materials observed.				
Analytical Sa	amples: Non	9				
Comments:	All depths ar	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/8/2018	Elevation: N/A			
		Date Completed: 2/8/2018	Hole max. depth: ~4.0'			
Geologist: Andrew	w Koons		Operator: N/A			
Fence Post Hole N	Number	HB-40 Approx. wa	er table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and SI	T, dark brown, with organics (0-1.0')			
-						
-2-		FILL: sand a	d silt with trash and plastic (1.0-4.0')			
-			•			
-4-						
•						
-6-						
-						
-8-						
-						
-10-						
-						
- -12- -						
-						
-14-						
-						
-16-						
General: 0.0 ppm	1					
Observed Wastes	s: Waste	materials observed.				
Analytical Sampl	les: None					
Comments: All d	nments: All depths are approximate.					

		HAND BORING LOG			
		Project: Niagara Sanitation		Project #: 17-013-0289	
		Client: NYSDEC		Contractor: N/A	
		Date Started: 2/8/2018		Elevation: N/A	
		Date Completed: 2/8/2018		Hole max. depth: ~4.0'	
Geologist: Andre	ew Koons		Operator: N/A		
Fence Post Hole	Number:	HB-41 Approx. ws	ater table depth: 4.0		
DEPTH			DESCRIPTION		
-0-		SAND and S.	ILT, dark brown, with organ	nics (0-0.5')	
-2-		FILL: sand and	silt with trash, plastic and n	netal (0.5-4.0')	
-4-					
-6-					
-8-					
-10-					
-10- - -12-					
- -14-					
-					
-16-	6-				
General: 0.0 ppm	n				
Observed Waster	es: Waste n	naterials observed.			
Analytical Samp	oles: None				
Comments: All o	mments: All depths are approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/8/2018	Elevation: N/A			
		Date Completed: 2/8/2018	Hole max. depth: ~4.0'			
Geologist: An	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-42 Approx. wa	ater table depth: 4.0			
DEPTH	DESCRIPTION					
-0-		SAND and SI	LT, dark brown, with organics (0-0.5')			
-2-		FILL: sand and s	ilt with trash, plastic and wiring (0.5-4.0')			
-4-						
-6-						
-8-						
- -10-						
- -12-						
- -14-						
-						
-16-						
General: 0.0 j	ppm					
Observed Wa	astes: Waste	materials observed.				
Analytical Sa	mples: None	e				
Comments: A	ments: All depths are approximate.					

		HAND BORING LOG			
		Project: Niagara Sanitation	Project #: 17-013-0289		
(-		Client: NYSDEC	Contractor: N/A		
		Date Started: 2/15/2018	Elevation: N/A		
		Date Completed: 2/15/2018	Hole max. depth: ~4.0'		
Geologist: And			Operator: N/A		
Fence Post Ho	le Number	: HB-43 Approx	. water table depth: 4.0		
DEPTH		DESCRIPTION			
-0-		SAND an	d SILT, dark brown, with organics (0-0.5')		
-2-		FILL: sa	nd and silt with trash and plastic (0.5-4.0')		
-4-					
-6-					
-8-					
-					
-10-					
-12-					
- -14-					
-					
-16-					
General: 0.0 p	pm				
Observed Wa	stes: Waste	materials observed.			
Analytical Sar	nples: None				
Comments: A	nents: All depths are approximate.				

		HAND BORING LOG			
		Project: Niagara Sanitation	Project #: 17-013-0289		
░ ▋┻▋		Client: NYSDEC	Contractor: N/A		
		Date Started: 2/15/2018	Elevation: N/A		
		Date Completed: 2/15/2018	Hole max. depth: ~4.0'		
Geologist: And			Operator: N/A		
Fence Post Ho	le Number	: HB-44 Approx	. water table depth: 4.0		
DEPTH		DESCRIPTION			
-0-		SAND an	d SILT, dark brown, with organics (0-0.5')		
-2-		FILL: sa	FILL: sand and silt with trash and plastic (0.5-4.0')		
-4-					
-6-					
- -8-					
_					
-10-					
-12-					
-					
-14-					
-16-	- 16-				
General: 0.0 p	pm				
Observed Was	stes: Waste	materials observed.			
Analytical Sai	nples: None	,			
Comments: A	nents: All depths are approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: N/A		
		Date Started: 2/15/2018		Elevation: N/A		
		Date Completed: 2/15/2018		Hole max. depth: ~4.0'		
Geologist: A	ndrew Koons		Operator: N/A	A		
Fence Post H	lole Number	: HB-45	Approx. water table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SA	AND and SILT, dark brown, with orga	nnics (0-1.0')		
- -2-		CANDY CIL	T, light brown to brownish yellow, fir	no some day (1.0.4.0)		
-		SANDI SIL	Grades into SILTY SAND	ie, some cray (1.0-4.0)		
-4-						
-6-						
-						
-8-						
-						
-10-						
-						
-12-						
-						
-14-						
-						
-16-						
General: 0.0	ppm					
Observed Wa	astes: Waste	materials not observed.				
Analytical Sa	ytical Samples: None					
Comments:	All depths ar	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
(Client: NYSDEC	Contractor: N/A			
		Date Started: 2/15/2018	Elevation: N/A			
		Date Completed: 2/15/2018	Hole max. depth: ~4.0'			
Geologist: Ar	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-46 Approx.	water table depth: 4.0			
DEPTH			DESCRIPTION			
-0-		SAND and	SILT, dark brown, with organics (0-1.0')			
-2-		FILL: sand	and silt with trash and plastic (1.0-4.0')			
-4-						
-6-						
- -8-						
-0-						
-10-						
- -12-						
_						
- -14-						
-						
-16-						
General: 0.0	ppm					
Observed Wa	astes: Waste	materials observed.				
Analytical Sa	amples: Non	e				
Comments:	All depths ar	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation	Project #: 17-013-0289			
(4		Client: NYSDEC	Contractor: N/A			
		Date Started: 2/15/2018	Elevation: N/A			
		Date Completed: 2/15/2018	Hole max. depth: ~4.0'			
Geologist: A	ndrew Koons		Operator: N/A			
Fence Post H	ole Number	: HB-47 Approx. v	vater table depth: 4.0			
DEPTH		DESCRIPTION				
-0-		SAND and S	SILT, dark brown, with organics (0-1.0')			
- -2- -		FILL: sand	and silt with trash and plastic (1.0-4.0')			
-4-						
-6-						
- -8-						
-0-						
-10-						
- -12-						
-14-						
- -14-						
-						
-16-						
General: 0.0	ppm					
Observed Wa	astes: Waste	materials observed.				
Analytical Sa	amples: Non	e				
Comments:	All depths ar	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: N/A		
		Date Started: 2/15/2018		Elevation: N/A		
		Date Completed: 2/15/2018		Hole max. depth: ~4.0'		
Geologist: An	ndrew Koons		Operator: N/	A		
Fence Post H	ole Number	: HB-48	Approx. water table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-			SAND and SILT, dark brown, with organic	anics (0-1.0')		
- -2-		SANDY S	SILT, light brown to brownish yellow, fi	ne, some clay (1.0-4.0')		
-			Grades into SILTY SAND			
-4- -						
-6-						
-						
-8-						
-						
-10-						
- -12-						
-12-						
- -14-						
-14-						
-						
-16-						
General: 0.0 j	ppm					
Observed Wa	astes: Waste	materials not observed.				
Analytical Sa	mples: Non	е				
Comments: A	All depths a	e approximate.				

		HAND BORING LOG				
		Project: Niagara Sanitation]1	Project #: 17-013-0289		
(Client: NYSDEC		Contractor: N/A		
		Date Started: 2/15/2018]	Elevation: N/A		
		Date Completed: 2/15/2018]1	Hole max. depth: ~4.0'		
Geologist: An	drew Koons		Operator: N/A			
Fence Post Ho	ole Number	: HB-49 Appr	rox. water table depth: 4.0			
DEPTH	DESCRIPTION					
-0-		SAND	and SILT, dark brown, with organ	ics (0-1.0')		
-2-		FILL:	sand and silt with trash and plastic	(1.0-4.0')		
-4-						
-6-						
- -8-						
-						
-10-						
- -12-						
-						
-14-						
-16-	·16-					
General: 0.0 p	ppm					
Observed Wa	stes: Waste	materials observed.				
Analytical Sa	mples: None					
Comments: A	nents: All depths are approximate.					

		HAND BORING LOG				
		Project: Niagara Sanitation		Project #: 17-013-0289		
		Client: NYSDEC		Contractor: N/A		
		Date Started: 2/15/2018		Elevation: N/A		
		Date Completed: 2/15/2018		Hole max. depth: ~4.0'		
Geologist: A	ndrew Koons		Operator: N/A	A		
Fence Post H	lole Number	: HB-50	Approx. water table depth: 4.0			
DEPTH	TH DESCRIPTION					
-0-		S	AND and SILT, dark brown, with orga	nnics (0-1.0')		
- -2-		G AND V G		1 (10.40)		
-2-		SANDY SII	LT, light brown to brownish yellow, fir Grades into SILTY SAND	ne, some clay (1.0-4.0')		
-4-						
-6-						
_						
-8-						
_						
-10-						
- -12-						
-12-						
- -14-						
-						
-16-						
General: 0.0	ppm					
Observed W	astes: Waste	materials not observed.				
Analytical Sa	amples: Non	e				
Comments:	All depths ar	e approximate.				

		HAND BORING LOG						
		Project: Niagara Sanitation		Project #: 17-013-0289				
		Client: NYSDEC		Contractor: N/A				
		Date Started: 2/15/2018		Elevation: N/A				
		Date Completed: 2/15/2018		Hole max. depth: ~4.0'				
Geologist: And	rew Koons		Operator: N/	Operator: N/A				
Fence Post Hol	e Number	: HB-51	Approx. water table depth: 4.0					
DEPTH	TH DESCRIPTION							
-0-	SAND and SILT, dark brown, with organics (0-0.5')							
-2-				4 49 5 4 9				
	SANDY SILT, light brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SILTY SAND							
-4-								
-6-								
_								
-8-								
_								
-10-								
-12-								
-14-								
- -14-								
-14-								
-								
-16-								
General: 0.0 pp	om							
Observed Wast	tes: Waste	materials not observed.						
Analytical Sam	nples: Non	e						
Comments: Al	l depths ar	re approximate.						

IR		HAND BORING LOG						
		Project: Niagara Sanitation		Project #: 17-013-0289				
		Client: NYSDEC		Contractor: N/A				
		Date Started: 2/15/2018		Elevation: N/A				
		Date Completed: 2/15/2018		Hole max. depth: ~4.0'				
Geologist: A	ndrew Koons		Operator: N/A	A				
Fence Post H	ole Number	: HB-52 Approx. w	vater table depth: 4.0					
DEPTH	DESCRIPTION							
-0-		SAND and SILT, dark brown, with organics (0-0.5')						
-								
-2-	SANDY SILT, light brown to brownish yellow, fine, some clay (0.5-4.0') Grades into SILTY SAND							
-4-								
-								
-6-								
-								
-8-								
-								
-10-								
-								
-12-								
-								
-14-								
-								
-16-								
General: 0.0	ppm							
Observed Wa	astes: Waste	materials not observed.						
Analytical Samples: None								
Comments:	All depths ar	e approximate.						



ATTACHMENT 5 Surface Water and Groundwater Elevation Charts with Precipitation Data

