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
270 MICHIGAN AVENUE
BUFFALO, NEW YORK 14203

PREPARED BY:

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List of Acronyms

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	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

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 Project Summary Report*, Glenn Springs Holdings, Inc., January 2016; and,

7) *Phase 2 - Remedial Investigation Work Plan*, LiRo Engineers, Inc., June 2017.

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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 GeoXT™ 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 ¼" 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 ¼" 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 re-development 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 no Herbicides 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

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

Contaminant	Contaminant Class	NYSDEC TOGS 1.1.1 AWQSGV	Units	Max. Detected Concentration (µg/L)	Sample 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: µg/L = 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

Contaminant	Class	NYSDEC CSCO	Units	Max. Detected 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

Contaminant	Class	NYSDEC CSCO	Units	Max. Detected 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
* = Residential soil cleanup objective from Commissioner's Policy CP-51 entitled "Soil Cleanup Guidance", NYSDEC, 2010.

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:

Summary of Maximum Concentrations of COPCs Reported Above AWQSGVs Since 2013

Contaminant	Contaminant Class	NYSDEC TOGS 1.1.1 AWQSGV	Units	Max. Detected Concentration	Sample 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: µg/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.

<u>Current/Future Land Use</u>
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.

<u>Exposure Pathways</u>
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
On-Site	Surface Water (Within Perimeter Fence)	Dermal Contact Incidental Ingestion Incidental Inhalation	Maintenance Worker Utility Worker Trespasser
	Surface soils	Dermal Contact Incidental Ingestion	Maintenance Worker Utility Worker Trespasser
	Subsurface soils	Dermal Contact Incidental Ingestion	Utility Worker
Off-Site	Surface Water (In Northern Swale/Ditch Beyond Perimeter Fence)	Dermal Contact Incidental Ingestion Incidental Inhalation	Maintenance Worker Utility Worker Resident Adult Resident Child
	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
Engineering Science & Dames and Moore June 1983 Phase I Report	Well 9	Groundwater	Upper Sand	7/16/1981	(phenols) & TOH	NS	(Pb, Ni)	NS	NS
	Well 10	Groundwater	Upper Sand	7/16/1981	(phenols) & TOH	NS	(Pb, Ni)	NS	NS
	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
	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
Engineering Science & Dames & Moore July 1985 Phase II Investigation	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
	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)
	SD-2	Sediment	0-2"	7/1984	(acid/base organics), OPP & Cyanide	NS	(Cd, Cr, Cu, Fe, Hg, Pb, Ni), Alkalynity & Anions	(Pest/Herb)	(PCB)
	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)
	OW-2	Groundwater	Upper Sand	7/3/1984	(volatile/base organics) & TOH	NS	NS	(Pest/Herb)	(PCB)
	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	(Pest/Herb)	(PCB)
Engineering Science September 1989 Supplemental Phase II Investigation	OW-11	Groundwater	Upper Sand	2/18/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
	OW-12	Groundwater	Lower Sand	2/17/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
	OW-13	Groundwater	Upper Sand	2/17/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
	OW-14A	Groundwater	Lower Sand	2/17/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
	OW-14B	Groundwater	Upper Sand	2/17/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
	OW-15	Groundwater	Lower Sand	2/18/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
	OW-16	Groundwater	Fill	2/18/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)
	OW-11	Groundwater	Upper Sand	11/11/1988	(HSL & TOH)	(HSL)	(HSL)	NS	(dioxin)

Notes
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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
Groundwater and Environmental Services November 2013 Supplemental Site Characterization Report	SOIL-1	Soil	0-2"	5/29/2013	NS	(TCL)	(RCRA 8)	NS	NS
	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
	SB-A	Soil	4-12'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-B	Soil	0-4'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-B	Soil	10-11'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-D	Soil	4-8'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-E	Soil	4-8'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-F	Soil	4-8'	6/3/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	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
	OW-2	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-11	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	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
	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
	OW-22	Groundwater	Fill	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-23	Groundwater	Upper Sand	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	OW-24	Groundwater	Fill	8/2/2013	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	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
Groundwater and Environmental Services July 2014 Supplemental Site Characterization Report	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
	SB-Y	Soil	4-8'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-Z	Soil	0-4'	4/18/2014	(TCL)	(TCL)	(RCRA 8 & TCLP: Cd)	(Pest/Herb)	NS
	SB-AA	Soil	4-8'	4/18/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-BB	Soil	0-4'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-BB	Soil	4-8'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-CC	Soil	4-8'	4/17/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	SB-FF	Soil	6-8'	4/18/2014	(TCL)	(TCL)	(RCRA 8)	(Pest/Herb)	NS
	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
Glenn Springs Holdings, Inc. January 2016 Interim Remedial Measure Project Summary Report	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
	SO-85121-030215-SM-008	Soil	13'	3/2/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-031215-SM-008B	Soil	17-18'	3/12/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-050115-SM-009	Soil	8-9'	5/1/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-050115-SM-010	Soil	8-9'	5/1/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-051315-SM-011	Soil	9-10'	5/13/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	SO-85121-051315-SM-012	Soil	20-21'	5/13/2015	(TCL)	NS	NS	(Pest/Herb)	NS
	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
	SO-85121-060415-SM-019	Soil	26-27'	6/4/2015	(TCL)	NS	NS	(Pest/Herb)	NS

Notes

1) TOH=Total Organic Halogens
2) TAL=Target Analyte List
3) RCRA=Resource Conservation and Recovery Act
4) OPP=Organic Priority Pollutants
5) TCLP=Toxicity characteristic leaching procedure
6) TCL=Target Compound List
7) NS=Not Sampled
8) HSL=Hazardous Substance List

TABLE 2-2
SUMMARY OF 2017 REMEDIAL INVESTIGATION 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
LiRo Engineers March 2017-November 2017 Remedial Investigation	LSS-001	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-002	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-002	Soil	2-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-003	Soil	0-2"	3/29/2017	NS	(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)
	LSS-011	Soil	2-6"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-011	Soil	6-12"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-012	Soil	0-2"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LSS-012	Soil	2-6"	3/28/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	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)

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

TABLE 2-2
SUMMARY OF 2017 REMEDIAL INVESTIGATION 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
LiRo Engineers March 2017-November 2017 Remedial Investigation	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)
	RSS-005	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-006	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-007	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	RSS-008	Soil	0-2"	5/10/2017	NS	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	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)

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

TABLE 2-2
SUMMARY OF 2017 REMEDIAL INVESTIGATION 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
LiRo Engineers March 2017-November 2017 Remedial Investigation	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'	7/21/2017	(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)
	OW-1B	Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-1B DUP	Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-2	Groundwater	Upper Sand	8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-3	Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-4	Groundwater	Till	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-5	Groundwater	Till	8/31/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-5 DUP	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	Groundwater	Lower Sand	9/25/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-15	Groundwater	Lower Sand	9/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	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-21	Groundwater	Upper Sand	8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-22	Groundwater	Upper Sand	8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-23	Groundwater	Upper Sand	8/28/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-31	Groundwater	Upper Sand	8/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-32	Groundwater	Upper Sand	8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-33	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-34	Groundwater	Upper Sand	8/22/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-35	Groundwater	Upper Sand	8/30/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-36	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	OW-37	Groundwater	Upper Sand	8/29/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)

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

TABLE 2-2
SUMMARY OF 2017 REMEDIAL INVESTIGATION 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
LiRo Engineers March 2017-November 2017 Remedial Investigation	LDP-01	Groundwater	Upper Sand	8/24/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LDP-02	Groundwater	Upper Sand	8/24/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	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)
	LPZ-09S DUP	Groundwater	Upper Sand	9/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-10S	Groundwater	Upper Sand	9/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-09S DUP	Groundwater	Upper Sand	9/20/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	LPZ-11S	Groundwater	Upper Sand	9/21/2017	(TCL)	(TCL)	(TAL)	(TCL Pest/Herb)	(TCL PCB)
	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)

Notes
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 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.

All data based off field measurements and well construction logs.

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:

* = 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.

All data based off field measurements and well construction logs.

TABLE 4-2 (a)
SUMMARY OF WATER LEVEL MEASUREMENTS
FEBRUARY 8, 1988 TO SEPTEMBER 12, 2017
NIAGARA SANITATION / NASH ROAD LANDFILL
7415 NASH ROAD, WHEATFIELD, NEW YORK

Location ID	Measuring Point Elevation[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	
OW-15	579.56	2/8/1988	10.80	568.76	
OW-02	577.26	2/18/1988	3.20	574.06	
OW-11	NA	2/18/1988	8.50	NA	Destroyed prior to October 2017 Survey.
OW-12	NA	2/18/1988	16.90	NA	Destroyed prior to October 2017 Survey.
OW-13	579.33	2/18/1988	2.80	576.53	
OW-14A	580.05	2/18/1988	15.50	564.55	
OW-14B	579.92	2/18/1988	3.20	576.72	
OW-15	579.56	2/18/1988	10.80	568.76	
OW-16	581.88	2/18/1988	4.80	577.08	
OW-01	578.30	6/2/1988	5.30	573.00	
OW-02	577.26	6/2/1988	3.90	573.36	
OW-03	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	
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:
1) Elevations are referenced to North American Vertical Datum of 1988 (NAVD 88)
2) AMSL = Above Mean Sea Level

TABLE 4-2 (a)
SUMMARY OF WATER LEVEL MEASUREMENTS
FEBRUARY 8, 1988 TO SEPTEMBER 12, 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)	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	579.75	8/3/2017	14.33	565.42	
OW-21	580.00	8/3/2017	5.92	574.08	
OW-31	580.64	8/3/2017	6.99	573.65	
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-33	582.43	8/4/2017	6.64	575.79	
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	

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

TABLE 4-2 (a)
SUMMARY OF WATER LEVEL MEASUREMENTS
FEBRUARY 8, 1988 TO SEPTEMBER 12, 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)	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	579.14	8/22/2017	14.19	564.95	
OW-02	577.26	8/22/2017	2.11	575.15	
OW-03	579.56	8/22/2017	13.81	565.75	
OW-04	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	
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	580.95	8/22/2017	5.93	575.02	
OW-37	580.15	8/22/2017	5.06	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	
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	
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.

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

TABLE 4-2 (a)
SUMMARY OF WATER LEVEL MEASUREMENTS
FEBRUARY 8, 1988 TO SEPTEMBER 12, 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)	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	581.88	8/30/2017	7.25	574.63	
OW-21	580.00	8/30/2017	6.11	573.89	
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	580.73	9/12/2017	6.97	573.76	
LDP-04	581.42	9/12/2017	7.79	573.63	
LPZ-01S	580.31	9/12/2017	5.90	574.41	
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	579.45	9/12/2017	13.96	565.49	
OW-05	579.75	9/12/2017	14.35	565.40	
OW-06	582.36	9/12/2017	17.05	565.31	Casing tab for lock corroded.
OW-13	579.33	9/12/2017	4.64	574.69	Casing tab for lock corroded & outer casing heaved.
OW-14A	580.05	9/12/2017	17.40	562.65	
OW-14B	579.92	9/12/2017	5.20	574.72	Outer casing has heaved.
OW-14BR	580.03	9/12/2017	5.74	574.29	
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	581.10	9/12/2017	7.40	573.70	
OW-35	581.57	9/12/2017	7.24	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	

Notes:
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

Location ID	Measuring Point Elevevation[1] (Feet AMSL[2])	Measurement Date	Depth to Water (Feet)	Water Elevation[1] (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.

Notes:
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

Location ID	Measuring Point Elevevation[1] (Feet AMSL[2])	Measurement Date	Depth to Water (Feet)	Water Elevation[1] (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	

Notes:
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

Location ID	Measuring Point Elevevation[1] (Feet AMSL[2])	Measurement Date	Depth to Water (Feet)	Water Elevation[1] (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	

Notes:
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)	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	
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	
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	

Notes:
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

Location ID	Measuring Point Elevevation[1] (Feet AMSL[2])	Measurement Date	Depth to Water (Feet)	Water Elevation[1] (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	

Notes:
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 Sample Date	NYSDEC Surface Water Standard●	SW-2 05/29/13	SW-3 05/29/13	SW-5 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 Sample Date	NYSDEC Surface Water Standard●	LSW-01 03/28/17	LSW-02 03/28/17	LSW-03 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)																						
Aluminum	NS	NS	NS	NS	13,500		15,400		9,660		9,500	JH	11,500		9,490		11,300		9,560		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	JH	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	JH	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	J	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	JH	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	JH	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	JH	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 A and Class C, additional information is needed to determine the potential risk to aquatic life.

Class C = - If the concentration of a contaminant is above the SGV that defines this class, there 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.
µg/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.
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"		2.0-12.0"		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.
µg/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).

TABLE 5-7
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-South		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		11/7/2017		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.
Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives (SCOs).

TABLE 5-8
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		SOIL		SOIL		SOIL		SOIL		SOIL		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.
* = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.
mg/kg = milligrams per kilogram or parts per million.
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).

TABLE 5-9
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.
* = 6 NYCRR Part 375: Environmental Remediation Programs, Commercial Soil Cleanup Objectives, NYSDEC, 2006.
µg/kg = micrograms per kilogram or parts per billion.
Blanks = Contaminant analyzed for but not detected at or above the laboratory detection limit.

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.
µg/kg = micrograms per kilogram or parts per billion.
Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives.

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 Sample Type Sample Depth (ft) Sample Date	Commercial Soil Cleanup Objectives *	TP-12 ● Soil 1' - 6' 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.
Yellow shaded values exceed the 6 NYCRR Part 375 Commercial Soil Cleanup Objectives.

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

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

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).

TABLE 5-16
SUMMARY OF SITE SUBSURFACE SOIL SAMPLING
TAL METALS
JULY 2017
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Sample Point Sample Type Sample Depth (ft) Sample Date	Commercial Soil Cleanup Objectives *	TP-01 Soil 1' - 6' 07/19/17	TP-03 Soil 1' - 6' 07/19/17	TP-04 Soil 1' - 6' 07/19/17	TP-05 Soil 1' - 6' 07/19/17	TP-05 Duplicate 1' - 6' 07/19/17	TP-07 Soil 1' - 6' 07/20/17	TP-07 Duplicate 1' - 6' 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:
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 accptance 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.

TABLE 5-16
SUMMARY OF SITE SUBSURFACE SOIL SAMPLING
TAL METALS
JULY 2017
NYSDEC - NIAGARA SANITATION SITE, SITE #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:
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 accptance 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.

TABLE 5-16
SUMMARY OF SITE SUBSURFACE SOIL SAMPLING
TAL METALS
JULY 2017
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Sample Point Sample Type Sample Depth (ft) Sample Date	Commercial Soil Cleanup Objectives *	TP-17 Soil 1' - 6' 07/21/17	TP-18 Fill 1' - 6' 07/19/17	LDP-01 Soil 1' - 6' 08/24/17	LDP-02 Soil 1' - 6' 08/24/17	LDP-03 Soil 1' - 6' 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 accptance 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.

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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-18
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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-19
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 Sample Date Well Screen Interval (feet bgs) Screened Unit	NYSDEC Groundwater Standard ●	OW-16 05/19/14 5.0 - 10.0 Fill/SC	OW-31 05/20/14 1.0 - 6.0 Sand	OW-32 05/19/14 5.0 - 10.0 Sand	OW-33 05/20/14 4.0 - 9.0 Fill/Sand	OW-34 05/19/14 7.0 - 12.0 Sand	OW-35 05/19/14 4.0 - 9.0 Fill/Sand	OW-36 05/19/14 3.0 - 8.0 Fill/Sand	OW-37 05/20/14 1.0 - 6.0 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).

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.

TABLE 5-20
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:

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.

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.

TABLE 5-21
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:

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.

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.

TABLE 5-22
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:

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.

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.

TABLE 5-23
SUMMARY OF SITE GROUNDWATER
TARGET COMPOUND LIST PESTICIDES/HERBICIDES
AUGUST 2013
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Well Number Sample Date Well Screen Interval (feet bgs) Screened Unit	NYSDEC Groundwater Standard ●	OW-1 08/02/13 4.0 - 9.0 Silty Clay	OW-13 08/02/13 3.0 - 5.0 Sand	OW-16 08/02/13 5.0 - 10.0 Fill/SC	OW-21 08/02/13 3.0 - 8.0 Sand/SC	OW-22 08/02/13 3.0 - 8.0 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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-24
SUMMARY OF SITE GROUNDWATER
TARGET COMPOUND LIST PESTICIDES/HERBICIDES
MAY 2014
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Well Number Sample Date Well Screen Interval (feet bgs) Screened Unit	NYSDEC Groundwater Standard ●	OW-31 05/20/14 1.0 - 6.0 Sand	OW-32 05/19/14 5.0 - 10.0 Sand	OW-33 05/20/14 4.0 - 9.0 Fill/Sand	OW-34 05/19/14 7.0 - 12.0 Sand	OW-35 05/19/14 4.0 - 9.0 Fill/Sand	OW-36 05/19/14 3.0 - 8.0 Fill/Sand	OW-37 05/20/14 1.0 - 6.0 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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-25
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 Sample Date Well Screen Interval (feet bgs) Screened Unit	NYSDEC Groundwater Standard ●	OW-16 08/30/17 5.0 - 10.0 Fill/SC	OW-21 08/28/17 3.0 - 8.0 Sand/SC	OW-35 08/30/17 4.0 - 9.0 Fill/Sand	OW-36 08/29/17 3.0 - 8.0 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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-26
SUMMARY OF SITE GROUNDWATER
HSL METALs
FEBRUARY 1988
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Well Number Sample Date Well Screen Interval (feet bgs) Screened Unit	NYSDEC Groundwater Standard ●	OW-11 02/17/88 7.0-9.0 Sand	0W-13 02/17/88 3.0-5.0 Sand	OW-14B 02/17/88 3.0-7.0 Sand	OW-16 02/18/88 5.0-10.0 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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

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 Sample Date Well Screen Interval (feet bgs) Screened Unit	NYSDEC Groundwater Standard ●	OW-22 08/02/13 3.0 - 8.0 Fill/Sand	OW-23 08/02/13 3.0 - 8.0 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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-28
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.
● = 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.
Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-28
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:
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● = 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).
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NS = No standard or guidance value available.
SC = Silty clay.
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TABLE 5-28
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.
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.

TABLE 5-28
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.
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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.

TABLE 5-29
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 Sample Date Well Screen Interval (feet bgs) Screened Unit Total/Dissolved	NYSDEC Groundwater Standard ●	LDP-01 08/24/17 4.3 - 5.3 Sand Total	LDP-01 08/24/17 4.3 - 5.3 Sand Dissolved	LDP-02 08/24/17 4.3 - 5.3 Sand/SC Total	LDP-02 08/24/17 4.3 - 5.3 Sand/SC Dissolved	LDP-03 08/24/17 4.1 - 5.1 Sand/SC Total	LDP-03 08/24/17 4.1 - 5.1 Sand/SC Dissolved	LDP-04 08/25/17 4.3 - 5.3 Sand Total	LDP-04 08/25/17 4.3 - 5.3 Sand 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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SC = Silty clay.
ug/L = micrograms per liter or parts per billion.
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TABLE 5-29
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 Sample Date Well Screen Interval (feet bgs) Screened Unit Total/Dissolved	NYSDEC Groundwater Standard ●	LPZ-01S 08/29/17 5.0 - 7.0 Sand/SC Total	LPZ-01S 08/29/17 5.0 - 7.0 Sand/SC Dissolved	LPZ-02S 08/29/17 3.0 - 6.0 Sand/SC Total	LPZ-02S 08/29/17 3.0 - 6.0 Sand/SC Dissolved	LPZ-03S 08/21/17 3.0 - 8.0 Sand/SC Total	LPZ-03S 08/21/17 3.0 - 8.0 Sand/SC Dissolved	LPZ-04S 08/21/17 3.0 - 6.0 Sand/SC Total	LPZ-04S 08/21/17 3.0 - 6.0 Sand/SC 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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ug/L = micrograms per liter or parts per billion.
Blanks = concentration below laboratory detection limits.
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TABLE 5-29
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 Sample Date Well Screen Interval (feet bgs) Screened Unit Total/Dissolved	NYSDEC Groundwater Standard ●	LPZ-05S 08/21/17 3.0 - 6.0 Sand/SC Total	LPZ-05S 08/21/17 3.0 - 6.0 Sand/SC Dissolved	LPZ-06S 08/21/17 3.0 - 8.0 Sand/SC Total	LPZ-06S 08/21/17 3.0 - 8.0 Sand/SC Dissolved	LPZ-07S 08/21/17 3.0 - 7.0 Sand/SC Total	LPZ-07S 08/21/17 3.0 - 7.0 Sand/SC Dissolved	LPZ-08S 08/29/17 2.5 - 4.0 Sand Total	LPZ-08S 08/29/17 2.5 - 4.0 Sand Dissolved	LPZ-09S 09/21/17 4.0 - 8.0 Sand 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:
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● = NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998, with addenda through 2004.
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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).
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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 5-29
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 Sample Date Well Screen Interval (feet bgs) Screened Unit Total/Dissolved	NYSDEC Groundwater Standard ●	LPZ-09S 09/21/17 4.0 - 8.0 Sand Dissolved	LPZ-10S 09/20/17 4.0 - 6.0 Fill/Sand Total	LPZ-10S 09/20/17 4.0 - 6.0 Fill/Sand Dissolved	LPZ-11S 09/21/17 4.0 - 7.0 Sand Total	LPZ-11S 09/21/17 4.0 - 7.0 Sand Dissolved	LPZ-12S 09/21/17 4.0 - 7.0 Sand Total	LPZ-12S 09/21/17 4.0 - 7.0 Sand Dissolved	LPZ-13S 09/20/17 5.0 - 7.5 Sand Total	LPZ-13S 09/20/17 5.0 - 7.5 Sand 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.
Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-30
SUMMARY OF SITE GROUNDWATER
HSL ORGANICS - LOWER SAND (VOCs)
NOVEMBER 1988
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Well Number Screened Unit	NYSDEC Groundwater Standard ●	OW-12 Lower Sand	OW-15 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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

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 Sample Date Well Screen Interval (feet bgs) Screened Unit	NYSDEC Groundwater Standard ●	OW-3 09/22/17 45.0 - 55.0 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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-32
SUMMARY OF SITE GROUNDWATER
HSL METALS - LOWER SAND
NOVEMBER 1988
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Well Number Screened Unit	NYSDEC Groundwater Standard ●	OW-14A 11/01/88 Lower Sand	OW-12 11/01/88 Lower Sand	OW-15 11/01/88 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:

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.

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.

Yellow shaded values exceed NYSDEC groundwater standards or guidance values.

TABLE 5-33
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 Sample Date Well Screen Interval (feet bgs) Screened Unit Total/Dissolved	NYSDEC Groundwater Standard ●	OW-14A 09/25/17 33.5 - 36.5 Lower Sand Total	OW-14A 09/25/17 33.5 - 36.5 Lower Sand Dissolved	OW-15 09/22/17 40.0 - 45.0 Lower Sand Total	OW-15 09/22/17 40.0 - 45.0 Lower Sand Dissolved	OW-1B 09/22/17 58.6 - 68.6 Till Total	OW-1B 09/22/17 58.6 - 68.6 Till Dissolved	OW-3 09/22/17 45.0 - 55.0 Till Total	OW-3 09/22/17 45.0 - 55.0 Till 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:

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). 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

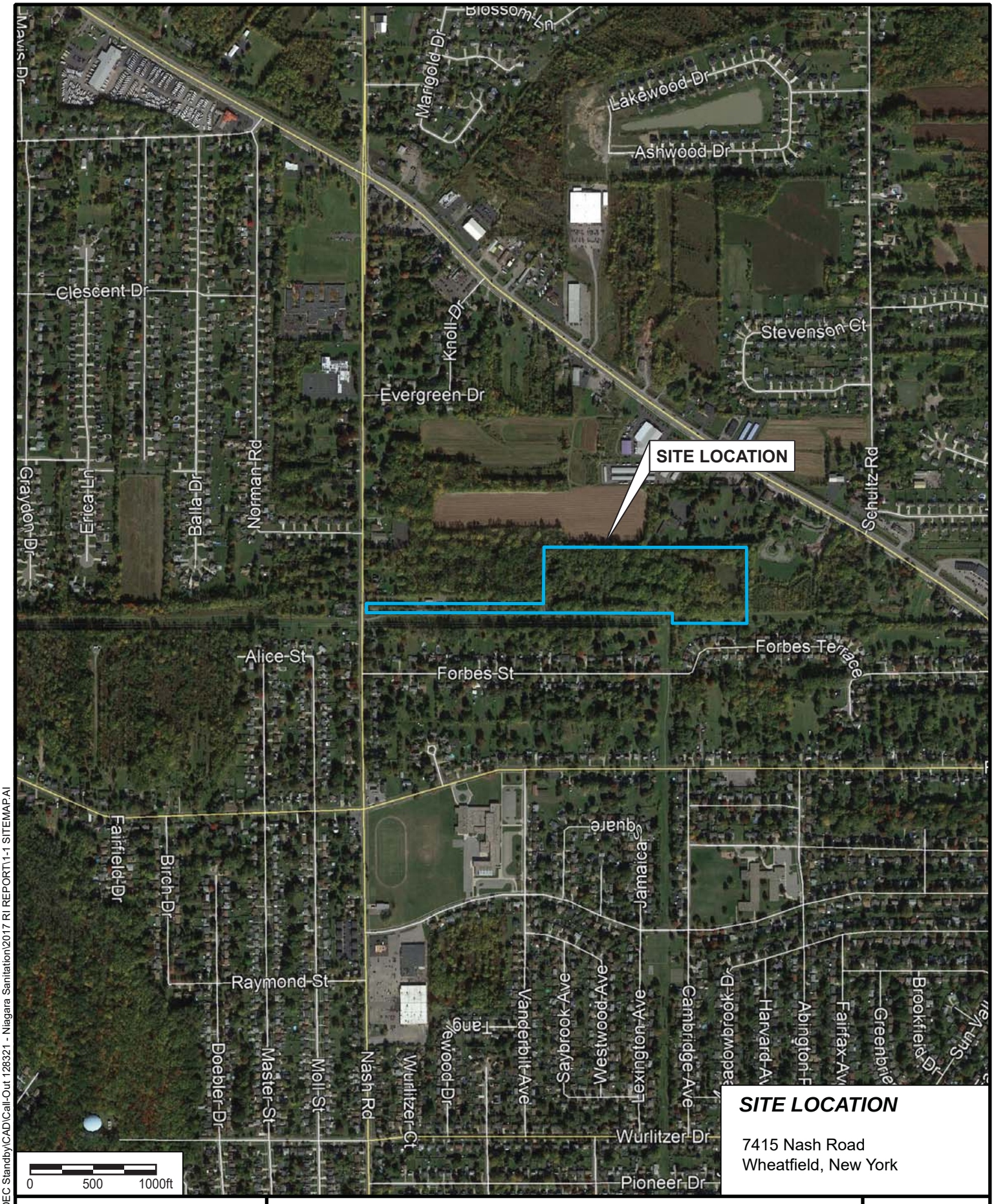
TABLE 5-33
SUMMARY OF SITE GROUNDWATER
TARGET ANALYTE LIST TOTAL/DISSOLVED METALS - LOWER SAND
AUGUST/SEPTEMBER 2017
NYSDEC - NIAGARA SANITATION SITE, SITE #932054
TOWN OF WHEATFIELD, NEW YORK

Well Number Sample Date Well Screen Interval (feet bgs) Screened Unit Total/Dissolved	NYSDEC Groundwater Standard ●	OW-4 09/22/17 59.0 - 69.0 Till Total	OW-4 09/22/17 59.0 - 69.0 Till Dissolved	OW-5 08/31/17 59.8 - 69.8 Till/Bedrock Total	OW-5 08/31/17 59.8 - 69.8 Till/Bedrock Dissolved	OW-6 09/20/17 56.0 - 66.0 Till/Bedrock Total	OW-6 09/20/17 56.0 - 66.0 Till/Bedrock 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:

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). 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



SITE LOCATION

7415 Nash Road
Wheatfield, New York

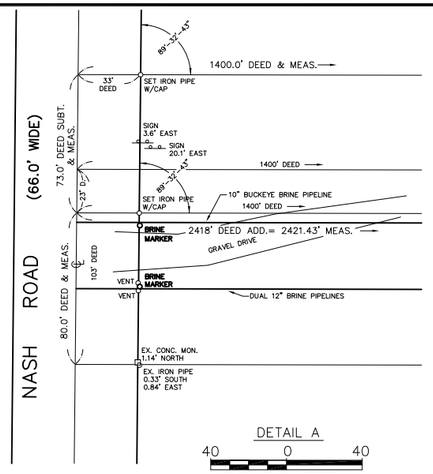
J:\17-013-0289 NYSDEC Standby\CAD\Call-Out 128321 - Niagara Sanitation\2017 RI REPORT\1-1 SITEMAP.AI

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

7415 NASH ROAD
SITE LOCATION MAP

FIGURE NO.

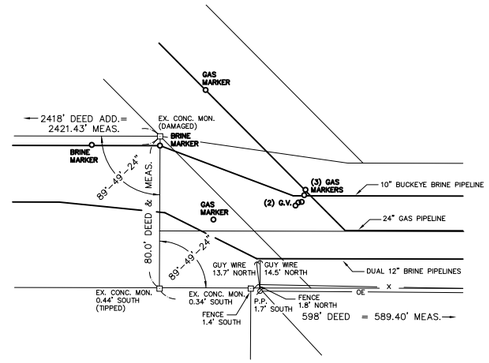
1-1



DETAIL A

40 0 40

SCALE IN FEET



DETAIL B

40 0 40

SCALE IN FEET

N

REPUTED OWNER
SOCIETY OF THE CATHOLIC APOSTOLATE
L-1263, P-201
L-1263, P-242

(66.0' WIDE)

EAST LINE LOT-29

WEST LINE LOT-22

EX. IRON PIPE 0.26' SOUTH

EX. IRON PIPE (TALL) 0.49' SOUTH 0.49' EAST

EX. IRON PIPE (TALL) 1.56' NORTH 1.45' WEST

SET IRON PIPE W/CAP

1602.0' DEED & MEAS.

PARALLEL WITH SOUTH LINE LOT-22

NORTH LINE WILLIAM VOLKSTADT L-668, P-85

N.E. COR. L-668, P-85

SET IRON PIPE W/CAP

EX. IRON PIPE 5.49' SOUTH 8.05' WEST

90°-25'-27"

REPUTED OWNER
JAMES LOVELAND
L-1434, P-829

EX. ANGLE IRON 1.3' WEST

90°-27'-17"

EX. ANGLE IRON 0.5' WEST

EX. ANGLE IRON 1.1' WEST

448.0' MEAS. 521' DEED

PARALLEL WITH ℄ NASH ROAD

REPUTED OWNER
ROBERT J. & ELAINE McCALL
L-1817, P-137

EX. ANGLE IRON

EX. REBAR 0.13' EAST

REPUTED OWNER
TOWN OF WHEATFIELD
L-1110, P-505
2ND DESCRIBED PARCEL

22.636±Ac.

EAST LINE L-668, P-85

601.0' DEED & MEAS.

PARALLEL WITH EAST LINE LOT-22 (DEED)

REPUTED OWNER
CAROL GUIDO
L-1438, P-914
L-3325, P-938

REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1469, P-559

REPUTED OWNER
JONATHON M. PETERSON
L-3305, P-765
1400' DEED

EX. REBAR W/CAP 0.85' NORTH

EX. REBAR 11.95' SOUTH 16.15' WEST

200' DEED

150' DEED

100' DEED

100' DEED

SEE DETAIL A

200' DEED

REPUTED OWNER
TOWN OF WHEATFIELD
L-1110, P-505
1ST DESCRIBED PARCEL

REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1482, P-771

REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587

FENCE 1.6' SOUTH

CHAIN LINK FENCE

FENCE 1.3' SOUTH

1400.0' DEED & MEAS.

1400' DEED

1400' DEED

23' DEED

SET IRON PIPE W/CAP

PARALLEL WITH SOUTH LINE LOT-22

150' D.

100' D.

4 RDS. 66'-2020

24" GAS PIPELINE

GAS MARKER

GAS MARKER

SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806

SEE DETAIL B

SEE RIGHT OF WAY TO BUCKEYE PIPE LINE COMPANY (INC.) L-1507, P-939, PARCEL NO. 1

89°-34'-33"

1018' DEED

120.00' D.

GUY WIRE 10.4' NORTH 498.16' DEED

SAT. DISH 0.4' NORTH

P.P. 1.1' SOUTH

10" BUCKEYE BRINE PIPELINE

24" GAS PIPELINE 522.15' DEED

598.00' DEED = 589.40' MEAS.

DUAL 12" BRINE PIPELINES

BRINE MARKER

GAS MARKER

BRINE MARKER

80.0' D. & M.

SET IRON PIPE W/CAP

IROQUOI

GATE POST

GATE POST

GRAVEL DR.

60.0' D. & M.

EX. CONC. MON. 1.14' NORTH

EX. IRON PIPE 0.33' SOUTH 0.84' EAST

2418' DEED ADDITION = 2421.43' MEAS.

NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)

10" BUCKEYE BRINE PIPELINE

DUAL 12" BRINE PIPELINES

TOWN OF WHEATFIELD

CITY OF NORTH TONAWANDA

SOUTH LINE LOT-22

NORTH LINE LOT-21

EAST LINE NIAGARA FALLS POWER COMPANY

EX. CONC. MON.

REPUTED OWNER
NIAGARA MOHAWK POWER CORP.

SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION L-2383, P-49

P.P. 2.4' SOUTH

FENCE 1.1' SOUTH

P.P. 1.1' SOUTH

FENCE 0.6' SOUTH

FENCE 0.1' SOUTH

P.P. 1.2' SOUTH

FENCE 0.7' NORTH

FENCE 0.1' SOUTH

P.P. NG 508 NYT 509 0.8' SOUTH

OE

SHED

FENCE 1.8' SOUTH

FORBES TERRACE (60.0'

SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

SEE NON-EXCLUSIVE RIGHT OF WAY & EASEMENT TO BUCKEYE PIPE LINE COMPANY (INC.) L-1507, P-176 (GRANTED OVER EASEMENT IN L-1482, P-806)

FORBES STREET

LEGEND

OE — OVERHEAD ELECTRIC

Ø P.P. — POWER POLE

O G.V. — GAS VALVE

SIGN

100 0 100

SCALE IN FEET

SURVEY PROVIDED BY:
McINTOSH & McINTOSH, P.C.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS
429 PINE STREET, LOCKPORT, NEW YORK 14094
PHONE 433-2535 PHONE 625-8360

WARNING

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NO.	DATE	DESCRIPTION
		REVISIONS

Liro Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY — Department of Environmental Conservation

DATE: FEBRUARY 2019

SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

DRAWING TITLE: SITE PLAN

LIRO JOB NO.: 17-013-0289

SHEET OF

FIGURE NO. 2-1

J:\17-013-0289 NYSDEC Standby\CAD\Call-Out 128321 - Niagara Sanitation\2017 RI REPORT\2-1 SITE PLAN.dwg 10/25/2018 1:08 PM

N

LEGEND

- US ARMY CORPS OF ENGINEERS FIELD DELINATED FRESHWATER FORESTED SHRUB WETLAND
- GRAVEL ROAD
- WELL ACCESS PATHWAY
- LANDFILL AREA OF INVESTIGATION

REPUTED OWNER
SOCIETY OF THE CATHOLIC APOSTOLATE
L–1263, P–201
L–1263, P–242

1602.0' DEED / 1602.0' MEAS.

SET IRON PIPE W/CAP

EX. ANGLE IRON 1.1' WEST

EX. ANGLE IRON 0.5' WEST

EX. ANGLE IRON 1.1' WEST

EX. REBAR 0.4' NORTH

EX. REBAR 1.1' SOUTH

EX. REBAR 1.95' SOUTH 16.15' WEST

REPUTED OWNER
THE TOWN OF WHEATFIELD
L–1269, P–587

SET IRON PIPE W/CAP

PARALLEL WITH SOUTH LINE LOT–22

23' DEED

2418' DEED ADDITION = 2421.43' MEAS.

NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)

WHEATFIELD

TONAWANDA

REPUTED OWNER
NIAGARA MOHAWK POWER CORP.

ROD = 66' DEED

24" GAS PIPELINE

GAS MARKER

GAS MARKER

SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L–1462, P–806

1018' DEED

10" BUCKEYE BRINE PIPELINE

DUAL 12" BRINE PIPELINES

SOUTH LINE LOT–22

NORTH LINE LOT–21

EAST LINE NIAGARA FALLS POWER COMPANY

EX. CONC. MON.

SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION

SET IRON PIPE W/CAP

BUY LINE

1602.0' DEED

0.4' NORTH

1.1' SOUTH

681.46' DEED

BRINE MARKER

GAS MARKER

BRINE MARKER

24" GAS PIPELINE 622.15' DEED

REPUTED OWNER
IROQUOIS GAS CORPORATION
L–1496, P–986

P.P. 2.4' SOUTH

FENCE 1.1' SOUTH

P.P. 1.1' SOUTH

FENCE 0.6' SOUTH

FENCE 0.1' SOUTH

P.P. 1.2' SOUTH

FENCE 0.7' NORTH

FENCE 0.1' SOUTH

P.P. NG 50R NYT 50R 0.8' SOUTH

SHED

FENCE 1.8' SOUTH

P.P. NG 62R NYT 62

FORBES TERRACE (60.0' WIDE)

SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L–2072, P–269

80 0 80
SCALE IN FEET

J:\17–013–0289 NYSDEC Standby\CAD\Coll–Out 128321 – Niagara Sanitation\2017 RI REPORT\2–2 AREA OF INVESTIGATION.dwg 10/25/2018 1:08 PM

WARNING

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NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019

SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289

SHEET OF

DRAWING TITLE: LANDFILL AREA OF INVESTIGATION

FIGURE NO. 2-2

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- AREA OF INVESTIGATION
- 576.0 — GROUND SURFACE CONTOUR NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) FEET ABOVE MEAN SEA LEVEL (AMSL)
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION
- NORTH SWALE/DITCH
- DIRECTION OF DRAIN PIPE FLOW

ELEVATION DATA FROM SITE SURVEY COMPLETED ON OCTOBER 18, 2017.

REPUTED OWNER
SOCIETY OF THE CATHOLIC APOSTOLATE
L–1263, P–201
L–1263, P–242

APPROXIMATE LOCATION OF 8" I.D. DRAIN PIPE

APPROXIMATE LOCATION OF NORTHEAST SWALE/DITCH

APPROXIMATE LOCATION OF SITE POND

SET IRON PIPE W/CAP

EX. ANGLE IRON 1.3' WEST

EX. ANGLE IRON 0.5' WEST

EX. ANGLE IRON 1.1' WEST

EX. ANGLE IRON

EX. REBAR 0.13' EAST

EX. REBAR 11.95' SOUTH 16.15' WEST

1602.0' DEED & MEAS.

REPUTED OWNER
THE TOWN OF WHEATFIELD
L–1269, P–587

SET IRON PIPE W/CAP

PARALLEL WITH SOUTH LINE LOT–22

23' DEED

2418' DEED ADDITION = 2421.43' MEAS.

NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)

REPUTED OWNER
NIAGARA MOHAWK POWER CORP.

2" GAS PIPELINE

GAS MARKER

GAS MARKER

SEE 100' WIDE RIGHT-OF-WAY & EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION L–1496, P–806

10" BUCKEYE BRINE PIPELINE

DUAL 12" BRINE PIPELINES

SOUTH LINE LOT–22

NORTH LINE LOT–21

EAST LINE NIAGARA FALLS POWER COMPANY

EX. CONC. MON.

SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION

GUY WIRE 10.4' NORTH

24" GAS PIPELINE 522.15' DEED

681.46' DEED

BRINE MARKER

GAS MARKER

BRINE MARKER

REPUTED OWNER
IROQUOIS GAS CORPORATION
L–1496, P–986

P.P. 2.4' SOUTH

FENCE 1.1' SOUTH

P.P. 1.1' SOUTH
FENCE 0.6' SOUTH

FENCE 0.1' SOUTH

P.P. 1.2' SOUTH
FENCE 0.7' NORTH

FENCE 0.1' SOUTH

P.P. NG 50R NYT 50R 0.8' SOUTH

SHED
FENCE 1.8' SOUTH

P.P. NG 62R NYT 62

FORBES TERRACE (60.0' WIDE)

SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L–2072, P–269

80 0 80
SCALE IN FEET

WARNING

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NO.	DATE	DESCRIPTION
		REVISIONS

Liro Engineers, Inc.
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PROJ. ENG.:	
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019

SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289

SHEET OF

DRAWING TITLE: GROUND SURFACE TOPOGRAPHY

FIGURE NO. 2-3

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- AREA OF INVESTIGATION
- 1985 PHASE II SEDIMENT SAMPLING LOCATIONS
- 1985 PHASE II SURFACE WATER SAMPLING LOCATIONS
- 1985 PHASE II SAMPLING WELL LOCATIONS
- 1989 SUPPLEMENTAL PHASE II GROUNDWATER SAMPLING LOCATIONS

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
1602.0' DEED & MEAS.
SET IRON PIPE W/CAP
SD-1
SD-2
SD-3
OW-4
OW-15
OW-6
OW-16
OW-5
SW-5
SW-4
SW-1
SW-2
OW-14A
OW-14B
OW-2
OW-1
OW-1B
SW-3
OW-11
OW-13
OW-12
OW-3
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
4 RODS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SET IRON PIPE W/CAP
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
PARALLEL WITH SOUTH LINE LOT-22
23' DEED
1018' DEED
2418' DEED ADDITION = 2421.43' MEAS.
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
GUY WIRE 10.4' NORTH
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
681.46' DEED
499.16' DEED
24" GAS PIPELINE 522.15' DEED
BRINE MARKER
GAS MARKER
BRINE MARKER
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
EATFIELD
ONAWANDA

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:	
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	
CLIENT:	NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation
DATE:	FEBRUARY 2019
SCALE:	AS SHOWN
JOB TITLE AND LOCATION:	NIAGARA SANITATION / NASH ROAD LANDFILL SITE 7415 NASH ROAD TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK NYSDEC SITE NUMBER 932054
LIRO JOB NO.:	17-013-0289
SHEET	OF
DRAWING TITLE:	1985 PHASE II AND 1989 SUPPLEMENTAL PHASE II SAMPLING LOCATIONS
FIGURE NO.	2-4

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- AREA OF INVESTIGATION
- SEDIMENT SAMPLING LOCATIONS
- SURFACE WATER SAMPLING LOCATIONS
- MONITORING WELL LOCATIONS
- 2013 SURFACE SOIL SAMPLE LOCATION
- 2013 SOIL BORING SAMPLE LOCATION
- 2013 SURFACE WATER SAMPLING LOCATIONS
- 2013 MONITORING WELL SAMPLE LOCATION
- 2013 SEDIMENT SAMPLE LOCATION

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
1602.0' DEED & MEAS.
SET IRON PIPE W/CAP
SW-6
SW-1
SED-1
SW-2
OW-14A
OW-14B
OW-2
OW-1
OW-1B
SB-E
SW-3
OW-21/SB-D
OW-11
SB-J
SB-H
SB-M
SW-7
OW-13
SOIL-7
SB-B/OW-25
SOIL-6
SOIL-11
OW-12
SB-I
SB-L
OW-22/SB-C
OW-23/SB-F
SOIL-8
SB-K
SOIL-1
SB-A/OW-24
OW-3
OW-4
OW-15
SD-1
SW-5
SOIL-10
SW-4
SOIL-9
SB-G
SD-2
SOIL-5
OW-6
OW-16
SD-3
OW-5
SOIL-4
SET IRON PIPE W/CAP
PARALLEL WITH SOUTH LINE LOT-22
23' DEED
4 RODS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
1018' DEED
SOIL-3
SOIL-2
2418' DEED ADDITION = 2421.43' MEAS.
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GUY WIRE 10.4' NORTH
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P.P. 1.1' SOUTH
681.46' DEED
BRINE MARKER
GAS MARKER
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IROQUOIS GAS CORPORATION
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P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

80 0 80
SCALE IN FEET

WARNING

IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION
		REVISIONS

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

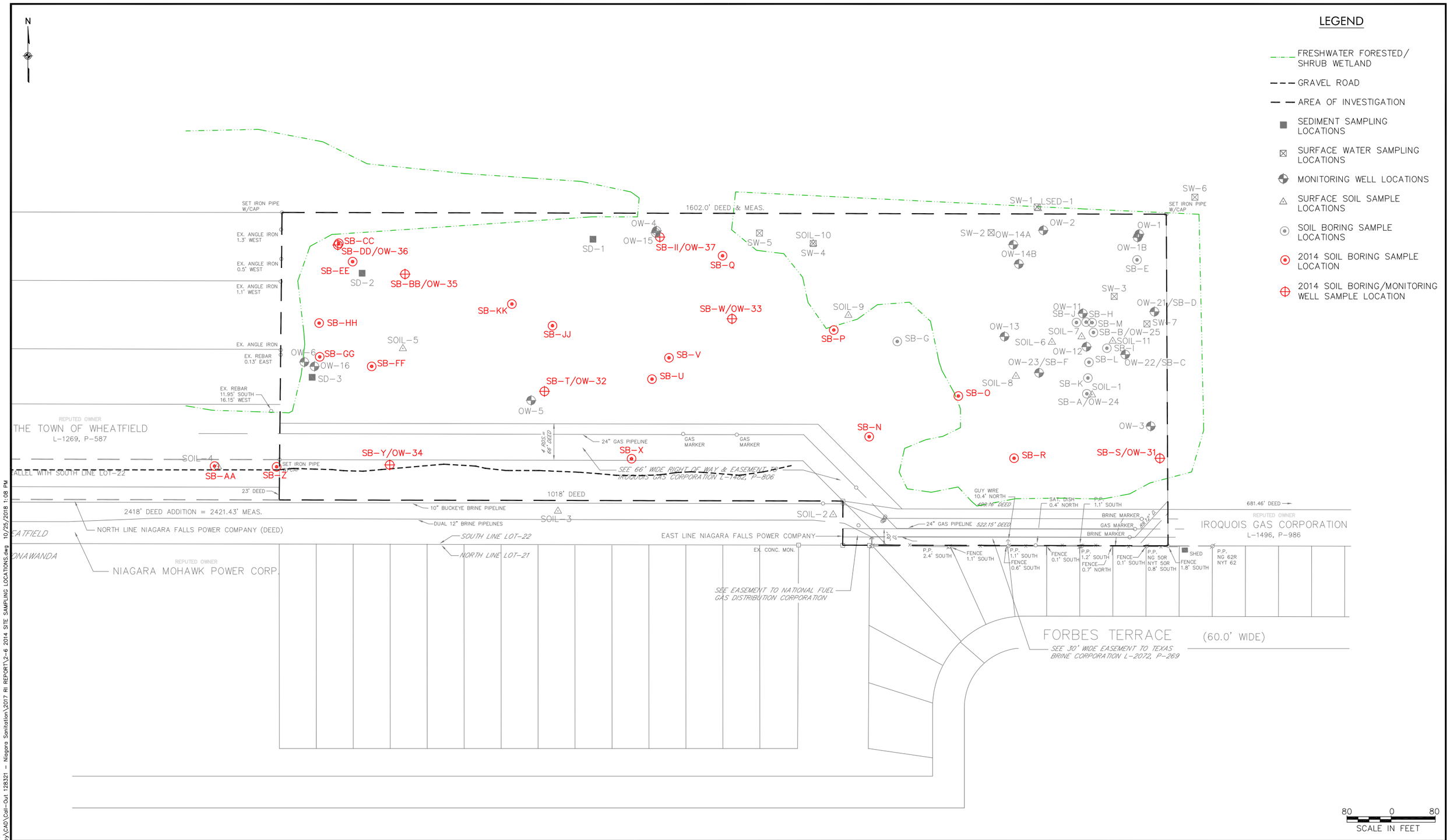
JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
2013 SITE CHARACTERIZATION SAMPLING LOCATIONS

FIGURE NO. 2-5

J:\17-013-0289 NYSDEC StandbyX\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\2-5 2013 SITE SAMPLING LOCATIONS.dwg 10/25/2018 1:08 PM



10/25/2018 1:08 PM
J:\17-013-0289 NYSDEC Standby\CAD\Cell-Out 128321 - Niagara Sanitation\2017 RI REPORT\2-6 2014 SITE SAMPLING LOCATIONS.dwg

WARNING

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

LIRO JOB NO.: 17-013-0289

SHEET OF

DRAWING TITLE:
2014 SUPPLEMENTAL SITE CHARACTERIZATION SAMPLING LOCATIONS

FIGURE NO. 2-6

N

OW-14B

SB-E

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- LIMITS OF 2014/2015 IRM EXCAVATION
- BASE OF EXCAVATION SAMPLE
- WALL OF EXCAVATION SAMPLE
- MONITORING WELL LOCATION

SW-3

OW-21/SB-D

SW-7

PERIMETER OF TEMPORARY STRUCTURE (BUILDING WALL)

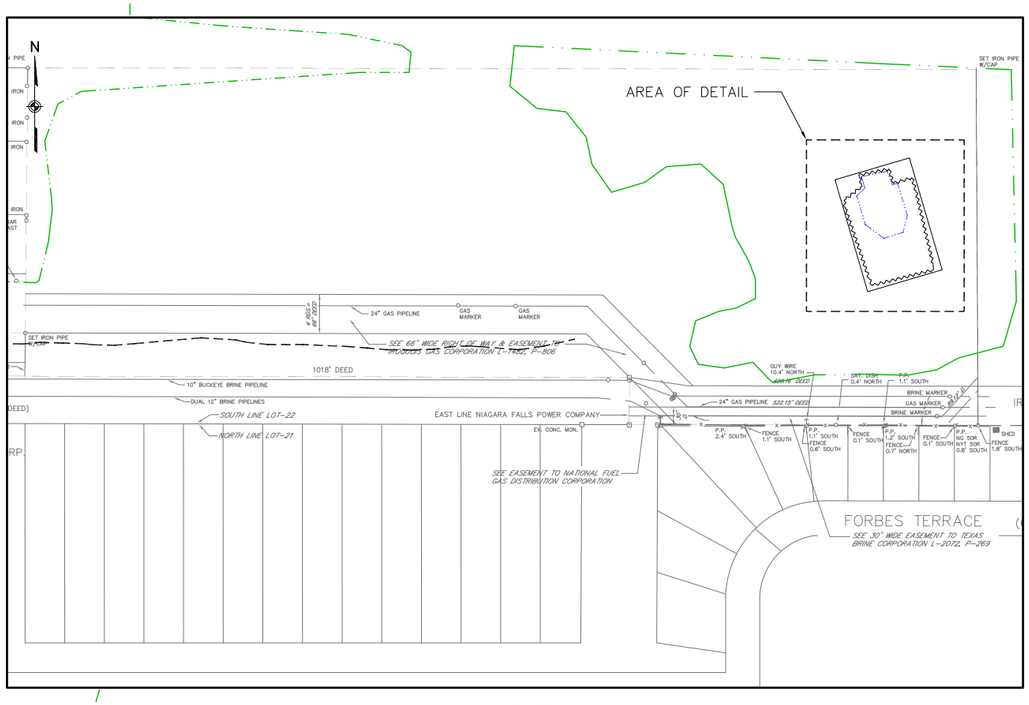
PERIMETER OF SHEETPILE

LIMITS OF EXCAVATION

OW-13

SM-002
SM-003
OW-11
SB-J
SM-001
SB-M
SM-004
SM-007
SB-H
SM-006
SM-008
SM-008B
SB-B/OW-25
SM-005
SOIL-7
SOIL-11
SOIL-6
SM-011
SM-009
SM-010
SM-013
SM-012
OW-12
SB-I
SM-014
SM-014B
SM-019
SM-017
SM-018
SM-015
SM-016
SB-L
OW-22/SB-C
OW-23/SB-F
SOIL-8
SB-K
SOIL-1
SB-A/OW-24
OW-3
SB-R
SB-S/OW-31

20 0 20
SCALE IN FEET



KEY PLAN
NOT TO SCALE

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

DRAWING TITLE:
2014 AND 2015 IRM AREA OF EXCAVATION AND CONFIRMATORY SOIL SAMPLING LOCATIONS

LIRO JOB NO.: 17-013-0289

SHEET OF

FIGURE NO.: 2-7

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\2-7 2014 Love Canal Waste IRM LOCATIONS.dwg 11/2/2018 2:25 PM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SEDIMENT SAMPLING LOCATIONS
- SURFACE WATER SAMPLING LOCATIONS
- MONITORING WELL LOCATIONS
- SURFACE SOIL SAMPLE LOCATIONS
- SOIL BORING LOCATIONS
- 2017 SURFACE WATER SAMPLING LOCATION
- 2017 SEDIMENT SAMPLING LOCATION

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
SOIL-4
SET IRON PIPE W/CAP
SB-AA
SB-Z
SB-Y/OW-34
SB-X
4' ROS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
1602.0' DEED & MEAS.
LSED-006
SW-1
LSED-1
LSED-005
SW-6
SET IRON PIPE W/CAP
LSW-002
LSED-002
SB-CC
SB-DD/OW-36
SB-EE
SD-2
SB-BB/OW-35
SD-1
OW-4
OW-15
SB-II/OW-37
SB-Q
SW-5
SOIL-10
SW-4
SW-2
OW-14A
OW-14B
LSW-004
LSED-004
OW-2
OW-1
OW-1B
SB-E
LSW-003
LSED-003
SW-3
LSW-001
LSED-001
OW-21/SB-D
SB-HH
SB-KK
SB-JJ
SB-W/OW-33
SOIL-9
SB-P
SB-G
OW-11
SB-J
SB-H
SB-M
SW-7
OW-13
SOIL-7
SB-B/OW-25
SOIL-11
SOIL-6
SB-I
OW-12
SB-L
OW-22/SB-C
OW-23/SB-F
SOIL-8
SB-K
SOIL-1
SB-A/OW-24
SOIL-5
OW-6
SB-GG
OW-16
SB-FF
SD-3
SB-V
SB-U
SB-T/OW-32
OW-5
SB-O
SB-N
OW-3
SB-R
SB-S/OW-31
GUY WIRE 10.4' NORTH
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
GAS MARKER
BRINE MARKER
681.46' DEED
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
SOIL-2
SOIL-3
1018' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
24" GAS PIPELINE 522.15' DEED
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
PARALLEL WITH SOUTH LINE LOT-22
TOWN OF WHEATFIELD
TOWN OF TONAWANDA

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
2017 SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS

FIGURE NO.: 3-1

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SEDIMENT SAMPLING LOCATIONS
- SURFACE WATER SAMPLING LOCATIONS
- MONITORING WELL LOCATIONS
- SURFACE SOIL SAMPLE LOCATIONS
- SOIL BORING LOCATIONS
- 2017 ON-SITE SURFACE SOIL SAMPLE LOCATION

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
SET IRON PIPE W/CAP
SB-AA SOIL-4
SB-Z
SB-Y/OW-34
SB-X
4.925± 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
23' DEED
1018' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
1602.0' DEED & MEAS.
LSED-006
SW-1 LSED-1 LSEB-005
SW-6
SET IRON PIPE W/CAP
LSW-002 LSED-002
SB-CC
SB-DD/OW-36
SB-EE
SD-2
SB-BB/OW-35
SB-HH
SB-GG
OW-16
SD-3
SOIL-5
SB-FF
SB-KK
SB-JJ
SB-W/OW-33
SB-V
SB-U
SB-T/OW-32
OW-5
SD-1
OW-4
OW-15
SB-II/OW-37
SB-Q
SW-5
SOIL-10
SW-4
SOIL-9
SB-P
SB-G
SB-O
SW-2
OW-14A
OW-14B
LSW-004 LSED-004
OW-2
OW-1
OW-1B
SB-E
LSW-003 LSED-003
SW-3
OW-11
SB-J
SB-H
SB-M
SW-7
OW-21/SB-D
LSW-001 LSED-001
OW-13
SOIL-7
SB-B/OW-25
SOIL-6
SOIL-11
OW-12
SB-I
SB-L
OW-22/SB-C
OW-23/SB-F
SOIL-8
SB-K
SOIL-1
SB-A/OW-24
OW-3
SB-S/OW-31
SB-R
SB-N
NS-NORTH
SB-NR
NS-WEST
NS-EAST
LSS-019
NS-SOUTH
LSS-016
LSS-013
LSS-022
LSS-014
LSS-020
LSS-015
LSS-021
LSS-003
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FORBES TERRACE (60.0' WIDE)
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LSS-009
LSS-007
LSS-012
LSS-011
LSS-005
LSS-008
LSS-004
LSS-006
LSS-010
LSS-017
LSS-018
LSS-002
LSS-001

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
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JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
2017 ON-SITE SURFACE SOIL SAMPLING LOCATIONS

FIGURE NO.
3-2

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SEDIMENT SAMPLING LOCATIONS
- SURFACE WATER SAMPLING LOCATIONS
- MONITORING WELL LOCATIONS
- SURFACE SOIL SAMPLE LOCATIONS
- SOIL BORING LOCATIONS
- 2017 OFF-SITE SURFACE SOIL SAMPLE LOCATION

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
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EATFIELD
ONAWANDA
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
4 RODS = 66' DEED
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GAS MARKER
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10" BUCKEYE BRINE PIPELINE
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24" GAS PIPELINE 522.15' DEED
GUY WIRE 10.4' NORTH
499.16' DEED
SAT. DISH 0.4' NORTH
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P.P. NG 50R NYT 50R 0.8' SOUTH
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80 0 80
SCALE IN FEET

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LiRo Engineers, Inc.
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TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
2017 OFF-SITE SURFACE SOIL SAMPLING LOCATIONS

FIGURE NO.
3-3

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SEDIMENT SAMPLING LOCATIONS
- SURFACE WATER SAMPLING LOCATIONS
- MONITORING WELL LOCATIONS
- SURFACE SOIL SAMPLE LOCATIONS
- SOIL BORING SAMPLE LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 2–INCH ID PIEZOMETER LOCATION
- 2017 SOIL BORING LOCATION

REPUTED OWNER
THE TOWN OF WHEATFIELD
L–1269, P–587

REPUTED OWNER
NIAGARA MOHAWK POWER CORP.

REPUTED OWNER
IROQUOIS GAS CORPORATION
L–1496, P–986

FORBES TERRACE (60.0' WIDE)

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
1602.0' DEED & MEAS.
4 RODS = 66' DEED
24" GAS PIPELINE
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L–1482, P–806
23' DEED
1018' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT–22
NORTH LINE LOT–21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
GUY WIRE 10.4' NORTH
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
681.46' DEED
522.15' DEED
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L–2072, P–269
FENCE 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
FENCE 0.7' NORTH
FENCE 1.8' SOUTH
SHED
P.P. NG 50R NYT 50R 0.8' SOUTH
P.P. NG 62R NYT 62
P.P. 2.4' SOUTH
P.P. 1.2' SOUTH

LDP–04, LDP–01, LDP–02, LDP–03
LPZ–12S, LPZ–11S, LPZ–01S, LPZ–09S, LPZ–02S, LPZ–08S, LPZ–13S, LPZ–10S, LPZ–03S, LPZ–04S, LPZ–05S, LPZ–06S, LPZ–07S
LSB–01, LSB–02, LSB–03
LSS–009, LSS–007, LSS–012, LSS–011, LSS–005, LSS–004, LSS–008, LSS–006, LSS–010, LSS–017, LSS–018, LSS–022, LSS–014, LSS–021, LSS–013, LSS–020, LSS–015, LSS–016, LSS–019, LSS–003, LSS–002, LSS–001
LSED–006, LSED–005, LSED–004, LSED–003, LSED–002, LSED–001
LSW–004, LSW–003, LSW–002, LSW–001
SW–1, SW–2, SW–3, SW–4, SW–5, SW–6, SW–7
SD–1, SD–2, SD–3
OW–4, OW–15, OW–14A, OW–14B, OW–14BR, OW–2, OW–1, OW–1B, OW–6, OW–16, OW–5, OW–13, OW–11, OW–12, OW–23/SB–F, OW–21/SB–D, OW–22/SB–C, OW–3, OW–31
SB–II/OW–37, SB–Q, SB–CC, SB–DD/OW–36, SB–EE, SB–BB/OW–35, SB–KK, SB–W/OW–33, SB–JJ, SB–HH, SB–GG, SB–FF, SB–V, SB–U, SB–T/OW–32, SB–P, SB–G, SB–O, SB–NR, SB–N, SB–R, SB–E, SB–H, SB–M, SB–J, SB–B/OW–25, SB–I, SB–L, SB–K, SB–A/OW–24, SB–S/OW–31, SB–Y/OW–34, SB–AA, SB–X, SB–2
SOIL–10, SOIL–9, SOIL–7, SOIL–6, SOIL–11, SOIL–8, SOIL–1, SOIL–5, SOIL–4, SOIL–3, SOIL–2
NS–NORTH, NS–WEST, NS–EAST, NS–SOUTH
RSS

PARALLEL WITH SOUTH LINE LOT–22

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
2017 SOIL BORING AND PIEZOMETER LOCATIONS

FIGURE NO.
3-4

J:\17–013–0289 NYSDEC Standby\CAD\Coll–Out 128321 – Niagara Sanitation\2017 RI REPORT\3–4 SB Piezometer LOCATIONS.dwg 10/31/2018 7:48 AM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SEDIMENT SAMPLING LOCATIONS
- SURFACE WATER SAMPLING LOCATIONS
- MONITORING WELL AND PIEZOMETER LOCATIONS
- SURFACE SOIL SAMPLE LOCATIONS
- SOIL BORING SAMPLE LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION

RSS-24
SET IRON PIPE W/CAP
LDP-04
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
SB-CC
SB-DD/OW-36
SB-EE
SB-BB/OW-35
LSS-009
SD-2
SB-HH
RSS-21
OW-6
SB-GG
OW-16
SD-3
RSS-20
SOIL-5
SB-FF
LSS-010
LSS-011
SB-KK
SB-JJ
SB-W/OW-33
SB-V
SB-U
LSS-008
SB-T/OW-32
OW-5
LSS-005
LSS-006
SB-P
SOIL-9
LSS-004
SB-G
SB-O
NS-NORTH
SB-NR
NS-WEST
NS-EAST
SB-N
LSS-019
NS-SOUTH
LSS-016
LSS-013
LSS-022
LSS-014
LSS-020
LSS-015
LSS-021
LSS-003
SB-R
GUY WIRE 10.4' NORTH
499.16' DEED
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
GAS MARKER
LSS-002
24" GAS PIPELINE 522.15' DEED
LDP-01
LDP-02
LDP-03
RSS-23
SW-1
LSED-1
LSED-005
SG-01
SW-6
LSW-002
LSED-002
RSS-22
SW-2
OW-14A
OW-14B
LSW-004
LSED-004
SG-02
OW-2
OW-1
OW-1B
SB-E
LSW-003
LSED-003
SW-3
OW-11
SB-J
SB-H
SB-M
SW-7
OW-21/SB-D
LSW-001
LSED-001
OW-13
SOIL-7
SB-B/OW-25
SOIL-6
SOIL-11
SB-I
OW-12
SB-L
OW-22/SB-C
OW-23/SB-F
SOIL-8
SB-K
SOIL-1
SB-A/OW-24
OW-3
SB-S/OW-31
LSS-001
1602.0' DEED & MEAS.
4.925' = 66' DEED
24" GAS PIPELINE
SB-X
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
SB-Y/OW-34
SB-AA
SOIL-4
SET IRON PIPE W/CAP
PARALLEL WITH SOUTH LINE LOT-22
SB-Z
LSS-017
LSS-018
23' DEED
1018' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
SOIL-3
SOIL-2
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
24" GAS PIPELINE 522.15' DEED
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
RSS

80 0 80
SCALE IN FEET

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REVISIONS		

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690 Delaware Avenue
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PROJ. ENG.:	
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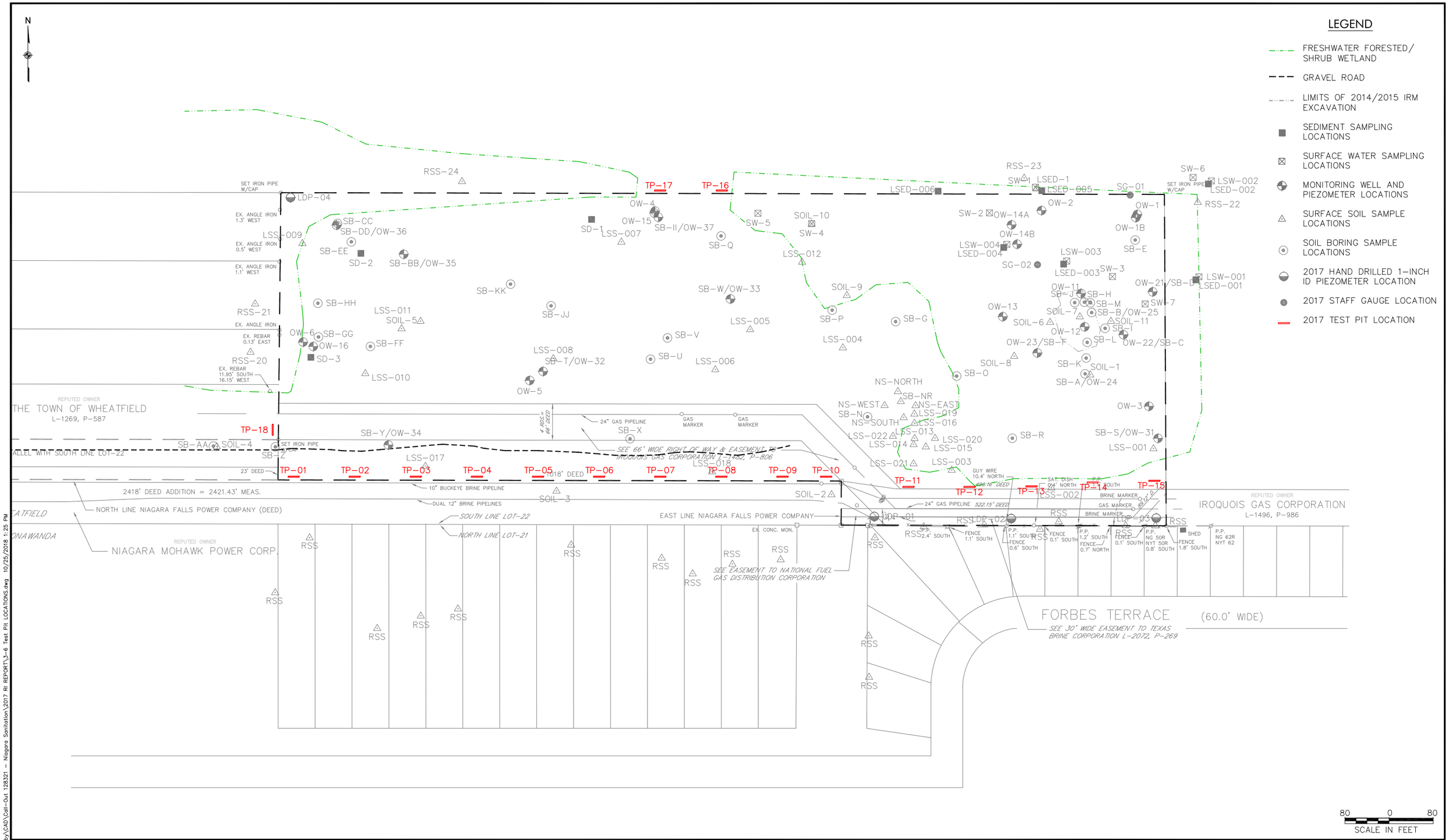
CLIENT:	NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation
DATE:	FEBRUARY 2019
SCALE:	AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
2017 STAFF GAUGE LOCATIONS

FIGURE NO.
3-5



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CLIENT:	NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation
DATE:	FEBRUARY 2019
SCALE:	AS SHOWN
JOB TITLE AND LOCATION:	NIAGARA SANITATION / NASH ROAD LANDFILL SITE 7415 NASH ROAD TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK NYSDEC SITE NUMBER 932054
LIRO JOB NO.:	17-013-0289
SHEET	OF
DRAWING TITLE:	2017 TEST PIT LOCATIONS
FIGURE NO.	3-6

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\3-6 Test Pit LOCATIONS.dwg 10/25/2018 1:25 PM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- PERIMETER FENCE
- FENCE POST
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1-INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION

F-1, F-2, F-3, F-4, F-5, F-6, F-7, F-8, F-9, F-10, F-11, F-12, F-13, F-14, F-15, F-16, F-17, F-18, F-19, F-20, F-21, F-22, F-23, F-24, F-25, F-26, F-27

LDP-04, LDP-01, LDP-02, LDP-03

LPZ-01S, LPZ-02S, LPZ-03S, LPZ-04S, LPZ-05S, LPZ-06S, LPZ-07S, LPZ-08S, LPZ-09S, LPZ-10S, LPZ-11S, LPZ-12S, LPZ-13S

OW-1, OW-1B, OW-2, OW-3, OW-4, OW-5, OW-6, OW-11, OW-12, OW-13, OW-14A, OW-14B, OW-15, OW-16, OW-21, OW-22, OW-23

SG-01, SG-02

SW-3

80 0 80
SCALE IN FEET

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\3-7 FENCE POST LOG.dwg 10/25/2018 1:08 PM

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JOB TITLE AND LOCATION:
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7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289

SHEET OF

DRAWING TITLE:
2017 FENCE POST SOIL LOG LOCATIONS

FIGURE NO.
3-7

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- PERIMETER FENCE
- HAND BORING LOCATION
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION

HB–01 HB–02 HB–03 HB–04 HB–05
HB–06 HB–07 HB–08 HB–09 HB–10
HB–11 HB–12 HB–13 HB–14 HB–15 HB–16 HB–17 HB–18 HB–19 HB–20 HB–21 HB–22 HB–23 HB–24 HB–25
HB–26 HB–27 HB–28 HB–29 HB–30
HB–31 HB–32 HB–33 HB–34 HB–35 HB–36 HB–37 HB–38 HB–39 HB–40
HB–41 HB–42 HB–43 HB–44 HB–45 HB–46 HB–47 HB–48 HB–49 HB–50 HB–51 HB–52

LDP–04
LPZ–12S
OW–4
OW–15
LPZ–11S
LPZ–09S
LPZ–02S
OW–6
OW–16
OW–5
LPZ–13S
LPZ–03S
LPZ–04S
LPZ–05S
LPZ–06S

50 0 50
SCALE IN FEET

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

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
2018 HAND BORING LOCATIONS

FIGURE NO.
3-8

J:\17–013–0289 NYSDEC Standby\CAD\Coll–Out 128321 – Niagara Sanitation\2017 RI REPORT\3–8 HAND BORING LOC.dwg 10/31/2018 7:47 AM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- CROSS SECTION LOCATIONS
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION

A LDP–04 LPZ–12S OW–4 OW–15 OW–37 LPZ–11S LPZ–01S OW–14BR OW–14A OW–14B OW–2 SG–01 OW–1 OW–18 A^1 D^1 OW–36 OW–35 LPZ–09S OW–33 LPZ–02S SG–02 OW–21 OW–13 OW–22 LPZ–08S OW–23 B OW–6 OW–16 OW–32 OW–5 LPZ–13S B^1 OW–30 LPZ–10S OW–31 OW–34 C LPZ–03S LPZ–04S LPZ–05S LPZ–06S LPZ–07S LDP–01 LDP–02 LDP–03 C^1 D

80 0 80
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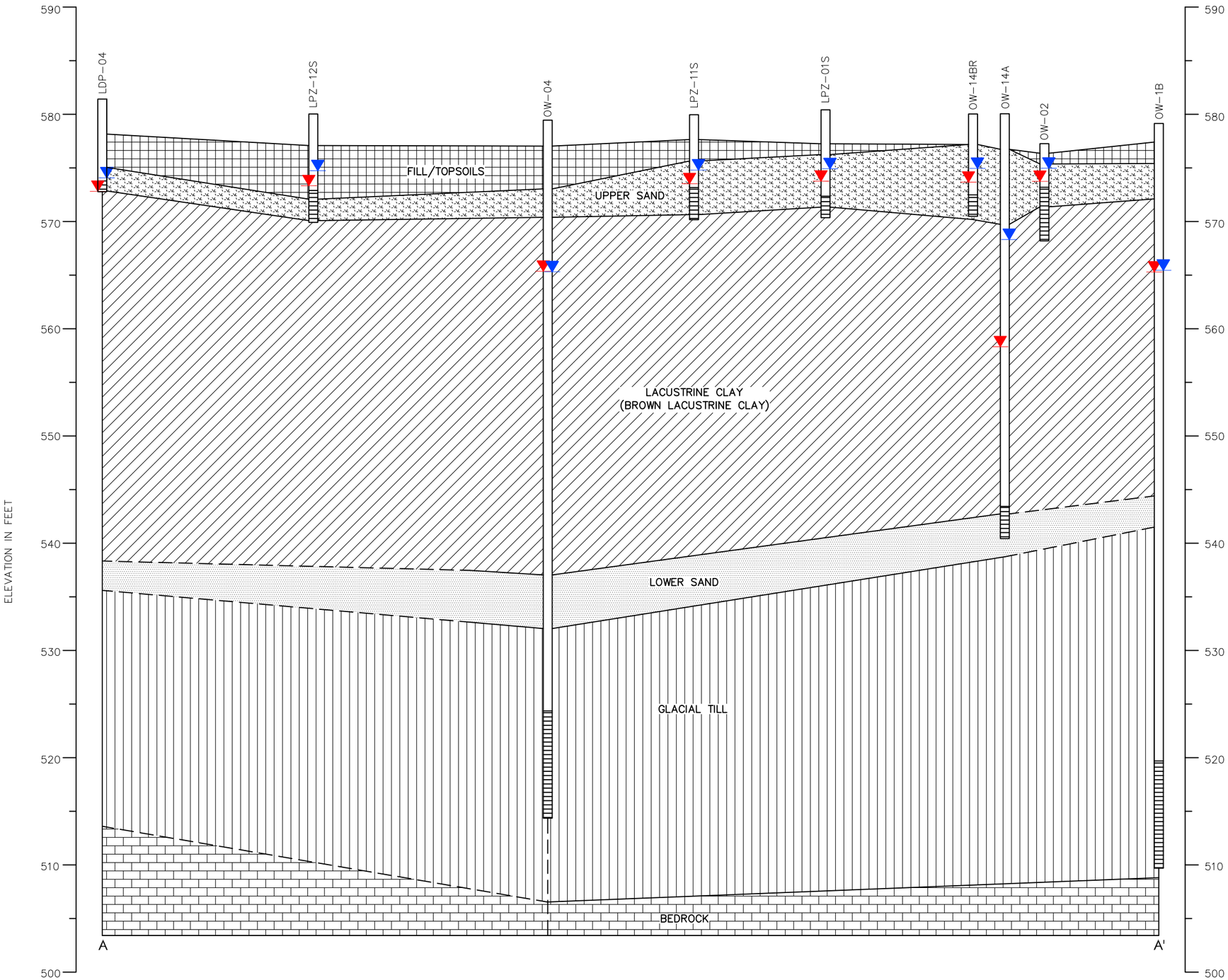
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE: CROSS SECTION LOCATIONS

FIGURE NO. 4-1

J:\17–013–0289 NYSDEC Standby\CAD\Coll–Out 128321 – Niagara Sanitation\2017 RI REPORT\4–1 2017 C–SECTION LOCATIONS.dwg 10/25/2018 1:08 PM



NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.
2. WATER LEVELS MEASURED ON SEPTEMBER 25, 2017 AND OCTOBER 17, 2017.
3. REFER TO FIGURE 5 FOR DESCRIPTION OF UNITS.

LEGEND

- WATER LEVEL RECORDED SEPTEMBER 25, 2017
- WATER LEVEL RECORDED OCTOBER 10, 2017
- SCREENED INTERVAL
- INFERRED GEOLOGICAL BOUNDARY (DATA NOT AVAILABLE)

80 0 80
HORIZONTAL SCALE IN FEET

5 0 5
VERTICAL SCALE IN FEET

J:\17-013-0289 NYSDEC Standby\CAD\Cali-Out 128321 - Niagara Sanitation\2017 RI REPORT\4-2 GEO CROSS SECTION A-A.dwg 10/25/2018 1:08 PM

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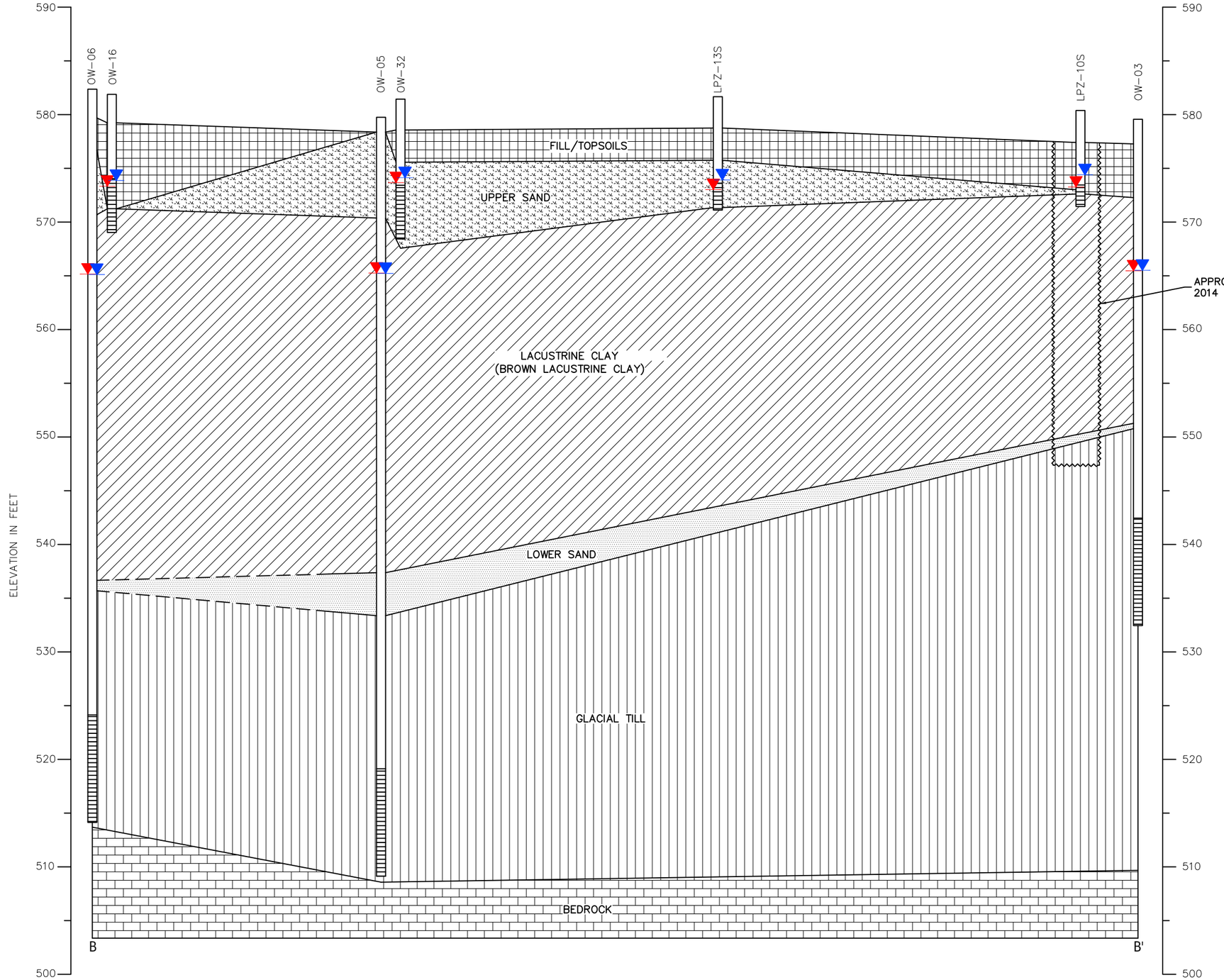
DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE: GEOLOGIC CROSS SECTION A-A'

FIGURE NO. 4-2



NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.
2. WATER LEVELS MEASURED ON SEPTEMBER 25, 2017 AND OCTOBER 17, 2017.
3. REFER TO FIGURE 5 FOR DESCRIPTION OF UNITS.
4. DISTANCE BETWEEN WELLS OW-06 AND OW-16 OF 9.18 FEET IS SHOWN EXAGGERATED FOR CLARITY.

LEGEND

- WATER LEVEL RECORDED SEPTEMBER 25, 2017
- WATER LEVEL RECORDED OCTOBER 10, 2017
- SCREENED INTERVAL
- INFERRED GEOLOGICAL BOUNDARY (DATA NOT AVAILABLE)

80 0 80
HORIZONTAL SCALE IN FEET

5 0 5
VERTICAL SCALE IN FEET

NO.	DATE	DESCRIPTION
		REVISIONS

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Buffalo, New York

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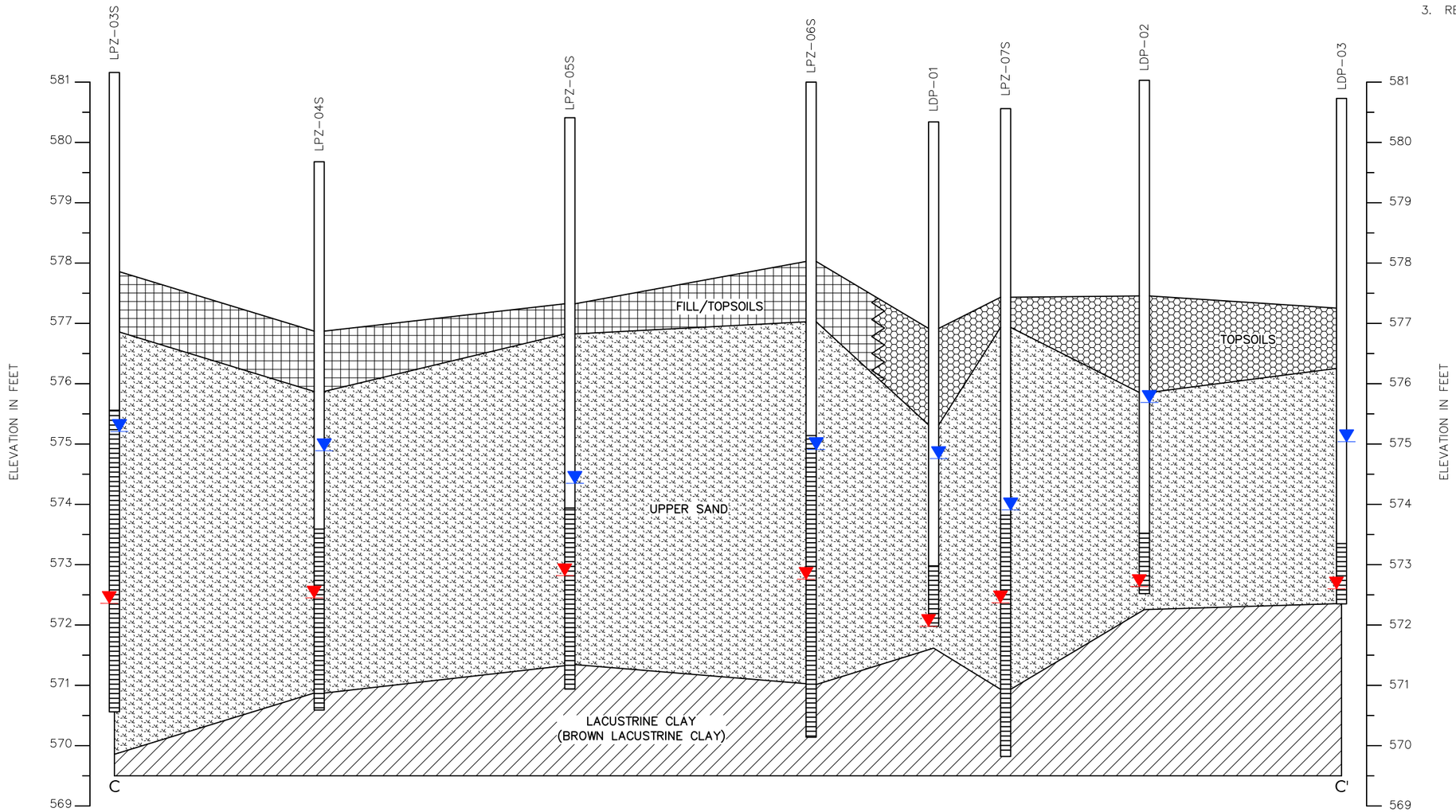
DATE:	FEBRUARY 2019
SCALE:	AS SHOWN
JOB TITLE AND LOCATION:	NIAGARA SANITATION / NASH ROAD LANDFILL SITE 7415 NASH ROAD TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK NYSDEC SITE NUMBER 932054
LIRO JOB NO.:	17-013-0289
SHEET	OF
DRAWING TITLE:	GEOLOGIC CROSS SECTION B-B'
FIGURE NO.	4-3

NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.
2. WATER LEVELS MEASURED ON SEPTEMBER 25, 2017 AND OCTOBER 17, 2017.
3. REFER TO FIGURE 5 FOR DESCRIPTION OF UNITS.



LEGEND

- WATER LEVEL RECORDED SEPTEMBER 25, 2017
- WATER LEVEL RECORDED OCTOBER 10, 2017
- SCREENED INTERVAL

80 0 80
HORIZONTAL SCALE IN FEET

1 0 1
VERTICAL SCALE IN FEET

NO.	DATE	DESCRIPTION
		REVISIONS

Liro Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

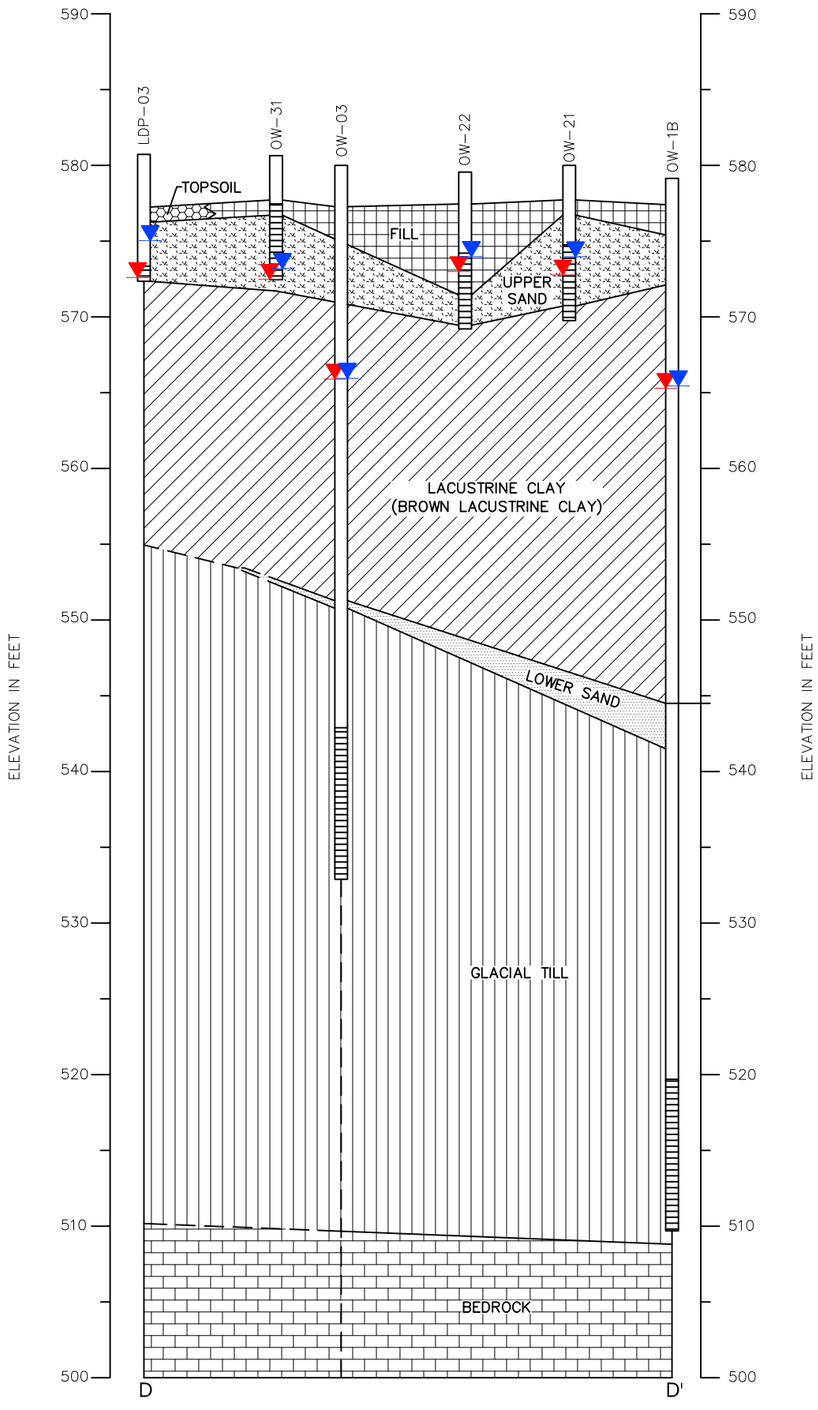
CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

DRAWING TITLE:
GEOLOGIC CROSS SECTION C-C'

LIRO JOB NO.: 17-013-0289
SHEET OF
FIGURE NO. 4-4



NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.
2. WATER LEVELS MEASURED ON SEPTEMBER 25, 2017 AND OCTOBER 17, 2017.
3. REFER TO FIGURE 5 FOR DESCRIPTION OF UNITS.

LEGEND

- WATER LEVEL RECORDED SEPTEMBER 25, 2017
- WATER LEVEL RECORDED OCTOBER 10, 2017
- SCREENED INTERVAL
- INFERRED GEOLOGICAL BOUNDARY (DATA NOT AVAILABLE)

80 0 80
HORIZONTAL SCALE IN FEET

5 0 5
VERTICAL SCALE IN FEET

NO.	DATE	DESCRIPTION

REVISIONS

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690 Delaware Avenue
Buffalo, New York

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DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
GEOLOGIC CROSS SECTION D-D'

FIGURE NO. 4-5

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\4-5 GEO CROSS SECTION D-D.dwg 10/25/2018 1:08 PM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- PERIMETER FENCE
- LIMIT OF MUNICIPAL WASTE
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1-INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION
- HAND BORING, MONITORING WELL, TEST PIT, PIEZOMETER AND FENCE POST LOCATIONS WITH OBSERVED MUNICIPAL WASTE
- HAND BORING, MONITORING WELL, TEST PIT, PIEZOMETER AND FENCE POST LOCATIONS WITH NO OBSERVED MUNICIPAL WASTE
- HAND BORING LOCATION WITH ROAD/DRIVEWAY FILL

F-12, LDP-04, HB-01, HB-02, HB-03, HB-04, HB-05, LPZ-12S, TP-17, TP-16, F-26, LPZ-11S, OW-4, OW-15, HB-38, HB-39, LPZ-09S, LPZ-02S, HB-40, HB-51, HB-52, HB-50, HB-49, HB-48, HB-47, HB-45, HB-44, OW-6, OW-16, HB-41, HB-46, F-11, HB-42, F-10, HB-43, F-9, F-8, HB-11, F-7, HB-12, F-6, F-5, HB-06, F-4, F-3, F-2, F-1, HB-13, HB-14, HB-16, HB-18, HB-20, HB-22, HB-24, HB-25, HB-23, HB-21, HB-19, HB-17, HB-15, HB-09, HB-08, TP-18, HB-10, HB-07, HB-26, HB-27, HB-29, HB-28, HB-30, LPZ-03S, TP-01, TP-02, TP-03, LPZ-04S, TP-04, TP-05, LPZ-05S, TP-06, HB-37, TP-07, HB-36, HB-35, TP-08, HB-34, LPZ-06S, TP-09, HB-31, TP-10, HB-32, HB-33, F-14, F-15, F-16, F-17, F-18, F-19, F-20, OW-5, LPZ-13S

50 0 50
SCALE IN FEET

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NO.	DATE	DESCRIPTION
		REVISIONS

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY — Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
DELINEATED EXTENTS OF MUNICIPAL FILL/WASTE IN FILL/UPPER SAND - WEST AREA OF SITE

FIGURE NO. 4-6

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\4-6 DELINEATED EXTENTS WEST COLOR.dwg 10/31/2018 7:47 AM

N

F-26
F-27
F-25
F-24
F-13
SG-01
TP-17
TP-16
OW-4
OW-15
LPZ-11S
LPZ-01S
OW-2
OW-1
OW-1B
OW-14A
OW-14B
SG-02
SW-3
OW-11
LPZ-02S
OW-13
OW-12
LPZ-08S
LPZ-13S
LPZ-10S
OW-3
LPZ-05S
TP-06
HB-37
TP-07
HB-36
HB-35
TP-08
HB-34
TP-09
LPZ-06S
TP-10
TP-11
LPZ-07S
TP-12
TP-13
TP-14
TP-15
F-23
F-22
HB-33
F-14
F-15
F-16
F-17
F-18
F-19
F-20
F-21
LDP-01
LDP-02
LDP-03

50 0 50
SCALE IN FEET

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- PERIMETER FENCE
- LIMIT OF MUNICIPAL WASTE
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1-INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION
- HAND BORING, MONITORING WELL, TEST PIT, PIEZOMETER AND FENCE POST LOCATIONS WITH OBSERVED MUNICIPAL WASTE
- HAND BORING, MONITORING WELL, TEST PIT, PIEZOMETER AND FENCE POST LOCATIONS WITH NO OBSERVED MUNICIPAL WASTE
- HAND BORING LOCATION WITH ROAD/DRIVEWAY FILL

NO.	DATE	DESCRIPTION

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NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289

SHEET OF

DRAWING TITLE:
DELINEATED EXTENTS OF MUNICIPAL FILL/WASTE IN FILL/UPPER SAND - EAST AREA OF SITE

FIGURE NO. 4-7

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\4-7 DELINEATED EXTENTS EAST COLOR.dwg 10/25/2018 1:08 PM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION
- (573.67) GROUNDWATER ELEVATION (FT. MSL)
- 573.00 GROUNDWATER CONTOUR (FT. MSL)
- INTERPRETED GROUNDWATER FLOW DIRECTION

LDP–04 (572.81)
LPZ–12S (573.34)
OW–4
OW–15
LPZ–11S (573.53)
LPZ–01S (573.76)
OW–14A (573.67)
OW–2
SG–01 (DRY)
OW–1
OW–1B (573.07)
OW–14B (574.24)
SG–02 (DRY)
OW–11
OW–21 (572.77)
LPZ–09S (573.77)
LPZ–02S (574.02)
OW–13 (573.34)
OW–12
OW–22 (572.99)
LPZ–08S (574.14)
OW–23
OW–6
OW–16 (573.34)
OW–5
LPZ–13S (573.02)
OW–3
LPZ–10S (573.26)
LPZ–03S (572.36)
LPZ–04S (572.45)
LPZ–05S (572.82)
LPZ–06S (572.76)
LPZ–07S (572.37)
LDP–01 (DRY)
LDP–02 (572.64)
LDP–03 (572.60)

573.00
573.50
574.00
572.50

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
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7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
GROUNDWATER ELEVATION CONTOUR MAP
FILL/UPPER SAND: SEPTEMBER 25, 2017

FIGURE NO. 4-8

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\4-8 CONTOUR SEPT 25.dwg 2/25/2019 10:41 AM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION
- (574.95) GROUNDWATER ELEVATION (FT. MSL)
- 573.00 GROUNDWATER CONTOUR (FT. MSL)
- INTERPRETED GROUNDWATER FLOW DIRECTION

LDP–04 (574.07)
OW–36 (574.27)
LPZ–12S (574.74)
574.50
OW–4
OW–15
OW–37 (574.37)
LPZ–11S (574.80)
LPZ–01S (574.92)
SG–01 (574.98)
OW–2
OW–14A (574.95)
OW–1
OW–1B (574.32)
OW–14B (574.90)
OW–35 (574.29)
SG–02 (574.76)
OW–21 (573.97)
OW–11
LPZ–09S (574.01)
OW–33 (574.03)
LPZ–02S (574.68)
OW–13 (575.14)
574.00
OW–6
OW–16 (573.16)
LPZ–08S (574.75)
OW–12
OW–22 (573.99)
OW–32 (574.13)
OW–23 (574.90)
574.50
574.00
573.50
OW–5
LPZ–13S (573.92)
LPZ–10S (574.40)
OW–3
OW–31 (573.20)
574.50
OW–34 (574.64)
LPZ–03S (575.21)
LPZ–04S (574.89)
LPZ–05S (574.35)
LPZ–06S (574.91)
574.50
575.00
LPZ–07S (573.91)
LDP–01 (574.76)
LDP–02 (575.69)
LDP–03 (575.04)
575.00
575.50

80 0 80
SCALE IN FEET

J:\17–013–0289 NYSDEC Standby\CAD\Coll–Out 128321 – Niagara Sanitation\2017 RI REPORT\4–9 CONTOUR OCT 17.dwg 10/25/2018 1:08 PM

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PROJ. ENG.:	
DESIGNED BY:	
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DRAWN BY:	
CLIENT:	NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation
DATE:	FEBRUARY 2019
SCALE:	AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
GROUNDWATER ELEVATION CONTOUR MAP
FILL/UPPER SAND: OCTOBER 17, 2017

FIGURE NO.
4-9

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1-INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION
- (1.25) GROUNDWATER ELEVATION DIFFERENCE (FT.)
- 1.0 GROUNDWATER ELEVATION CONTOUR DIFFERENCE (FT.)

NOTES:

1. POSITIVE VALUES INDICATE A RISE IN GROUNDWATER ELEVATION.
2. BOTTOM OF WELL ELEVATIONS (I.E. WELLS AND PIEZOMETERS) AND GROUND SURFACE ELEVATIONS (I.E. STAFF GAUGES) WERE USED AS A PROXY FOR WATER ELEVATIONS AT LOCATIONS FOUND TO BE DRY.

LDP-04 (1.26)
OW-36 (0.25)
LPZ-12S (1.40)
OW-4
OW-15
OW-37 (0.66)
OW-35 (0.38)
LPZ-11S (1.27)
LPZ-01S (1.16)
OW-14A (1.28)
OW-2
SG-01 (0.86)
OW-1
OW-1B (1.25)
OW-14B (0.66)
SG-02 (1.23)
OW-21 (1.20)
OW-11
LPZ-09S (0.24)
OW-33 (0.74)
OW-13 (1.60)
LPZ-02S (0.66)
OW-22 (1.00)
OW-6
OW-16 (0.53)
OW-12
LPZ-08S (0.61)
OW-32 (0.46)
OW-23 (0.94)
OW-5
LPZ-13S (0.90)
OW-3
LPZ-10S (1.14)
OW-31 (0.71)
OW-34 (2.00)
LPZ-03S (2.85)
LPZ-04S (2.44)
LPZ-05S (1.53)
LPZ-06S (2.15)
LPZ-07S (1.54)
LDP-01 (2.78)
LDP-02 (3.05)
LDP-03 (2.44)

1.0 0.5 1.5 2.0 2.5

80 0 80
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CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

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

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
DIFFERENCE IN GROUNDWATER ELEVATIONS
FILL/UPPER SAND:
SEPTEMBER 25, 2017 AND OCTOBER 17, 2017

FIGURE NO. 4-10

J:\17-013-0289 NYSDEC Standby\CAD\Cali-Out 128321 - Niagara Sanitation\2017 RI REPORT\4-10 CONTOUR DIFF.dwg 10/25/2018 1:08 PM

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SURFACE WATER SAMPLING LOCATIONS (NOT ANALYZED)
- SURFACE WATER SAMPLING LOCATIONS WITH NO EXCEEDANCE OF APPLICABLE STANDARDS OR CRITERIA
- SURFACE WATER SAMPLING LOCATIONS WITH ONE OR MORE COMPOUNDS REPORTED AT CONCENTRATIONS ABOVE APPLICABLE STANDARDS OR CRITERIA

SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7
LSW-001 LSW-002 LSW-003 LSW-004

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST

REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587

ALLEL WITH SOUTH LINE LOT-22
SET IRON PIPE W/CAP
23' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
FATFIELD
ONAWANDA
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.

4 RDS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
1018' DEED
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION

GUY WIRE 10.4' NORTH
499.16' DEED
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
GAS MARKER
BRINE MARKER
24" GAS PIPELINE 522.15' DEED
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62

FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

80 0 80
SCALE IN FEET

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\5-1A Surface water VOC-SVOC PCBS.dwg 10/25/2018 1:08 PM

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

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
SURFACE WATER - VOC, SVOC, AND PCB SAMPLE RESULTS

FIGURE NO.
5-1A

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SURFACE WATER SAMPLING LOCATIONS (NOT ANALYZED)
- SURFACE WATER SAMPLING LOCATIONS WITH NO EXCEEDANCE OF APPLICABLE STANDARDS OR CRITERIA
- SURFACE WATER SAMPLING LOCATIONS WITH ONE OR MORE COMPOUNDS REPORTED AT CONCENTRATIONS ABOVE APPLICABLE STANDARDS OR CRITERIA

LSW-02		3/28/2017
Pesticides	**NYSDEC AWQSGVs**	***ug/L***
Toxaphene	0.06	0.32

LSW-03		3/28/2017
Pesticides	**NYSDEC AWQSGVs**	***ug/L***
alpha-BHC	0.01	0.018

SW-5		5/29/2013
Pesticides	**NYSDEC AWQSGVs**	***ug/L***
alpha-BHC	0.01	0.012

SW-2		5/29/2013
Pesticides	**NYSDEC AWQSGVs**	***ug/L***
Alpha-BHC	0.01	0.016
Dieldrin	0.004	0.011
Gamma-Chlordane	0.05	0.33

SW-3		5/29/2013
Pesticides	**NYSDEC AWQSGVs**	***ug/L***
alpha-BHC	0.01	0.024
beta-BHC	0.04	0.042

SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7
LSW-001 LSW-002 LSW-003 LSW-004

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST

REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587

ALLEL WITH SOUTH LINE LOT-22
SET IRON PIPE W/CAP
23' DEED
1018' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
FATFIELD
ONAWANDA
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.

4' ROS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION

GUY WIRE 10.4' NORTH
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
GAS MARKER
BRINE MARKER
24" GAS PIPELINE 522.15' DEED
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62

REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986

FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

80 0 80
SCALE IN FEET

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

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
SURFACE WATER - PESTICIDES EXCEEDENCES

FIGURE NO.
5-1B

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- ⊠ SURFACE WATER SAMPLING LOCATIONS (NOT ANALYZED)
- ⊠ SURFACE WATER SAMPLING LOCATIONS WITH NO EXCEEDANCE OF APPLICABLE STANDARDS OR CRITERIA
- ⊠ SURFACE WATER SAMPLING LOCATIONS WITH ONE OR MORE COMPOUNDS REPORTED AT CONCENTRATIONS ABOVE APPLICABLE STANDARDS OR CRITERIA

LSW-02		3/28/2017
Metals	NYSDEC AWQSGVs	*mg/L*
Aluminum	0.1	2
Iron	0.3	1.6

LSW-03		3/28/2017
Metals	NYSDEC AWQSGVs	*mg/L*
Aluminum	0.1	0.18

LSW-01		3/28/2017
Metals	NYSDEC AWQSGVs	*mg/L*
Aluminum	0.1	2.5
Iron	0.3	1.8

SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7

LSW-001 LSW-002 LSW-003 LSW-004

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
SET IRON PIPE W/CAP
ALLEL WITH SOUTH LINE LOT-22
23' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
FATFIELD
ONAWANDA
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
4 RDS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
1018' DEED
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
GUY WIRE 10.4' NORTH
499.16' DEED
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
GAS MARKER
BRINE MARKER
24" GAS PIPELINE 522.15' DEED
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

80 0 80
SCALE IN FEET

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\5-2A Surface water METALS.dwg 10/25/2018 1:08 PM

WARNING

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NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
SURFACE WATER - METALS EXCEEDENCES

FIGURE NO.
5-2A

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SEDIMENT SAMPLING LOCATIONS (NOT ANALYZED)
- SEDIMENT SAMPLING LOCATIONS WITH NO EXCEEDANCE OF APPLICABLE STANDARDS OR CRITERIA
- SEDIMENT SAMPLING LOCATIONS WITH ONE OR MORE COMPOUNDS REPORTED AT CONCENTRATIONS ABOVE APPLICABLE STANDARDS OR CRITERIA

SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
SET IRON PIPE W/CAP
SET IRON PIPE W/CAP

SD-1
SD-2
SD-3
LSED-006
LSED-005
LSED-004
LSED-003
LSED-002
LSED-001

REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587

4' RDS.= 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806

ALLEL WITH SOUTH LINE LOT-22
23' DEED
1018' DEED
2418' DEED ADDITION = 2421.43' MEAS.
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
ATFIELD
ONAWANDA
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION

GUY WIRE 10.4' NORTH
499.16' DEED
SAT. DISH 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
GAS MARKER
BRINE MARKER
24" GAS PIPELINE 522.15' DEED
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
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FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62

FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

80 0 80
SCALE IN FEET

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TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
SEDIMENT - VOC, SVOC, PCB, PESTICIDE AND METALS SAMPLE RESULTS

FIGURE NO.: 5-2B

N

LSS-004		3/29/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-2	17.0	5.6
Benzo(A)Pyrene	0-2	20.0	1.0
Benzo(B)Fluoranthene	0-2	30.0	5.6
Dibenz(A,H)Anthracene	0-2	4.3	0.56
Indeno(1,2,3-C,D)Pyrene	0-2	12.0	5.6

LSS-005		3/29/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-2	11.0	5.6
Benzo(A)Pyrene	0-2	12.0	1.0
Benzo(B)Fluoranthene	0-2	14.0	5.6
Indeno(1,2,3-C,D)Pyrene	0-2	6.8	5.6

SOIL-10		5/29/2013	
SVOCs/PAHs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Dibenz(A,H)Anthracene	0-0.17	0.6	0.56

NS-North		11/7/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-2	4.8	1.0
Benzo(B)Flouranthene	0-2	6.0	5.6
Dibenz(A,H)Anthracene	0-2	0.8	0.56

NS-East		5/11/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	2-12	12.0	5.6
Benzo(A)Pyrene	2-12	10.0	1.0
Benzo(B)Flouranthene	2-12	13.0	5.6
Dibenz(A,H)Anthracene	2-12	2.5	0.56
Indeno(1,2,3-C,D)Pyrene	2-12	7.0	5.6

NS-East		11/7/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-2	3.7	1.0

NS-North-D		11/7/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Dibenz(A,H)Anthracene	2-12	0.7	0.56

NS-North		11/7/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	2-12	1.9	5.6
Benzo(A)Pyrene	2-12	1.7	1.0
Benzo(B)Flouranthene	2-12	1.9	5.6
Indeno(1,2,3-C,D)Pyrene	2-12	1.2	5.6

LSS-006		3/29/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-2	3.1	1.0

SB-NR		11/7/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-2	1.6	1.0

SOIL-3		5/29/2013	
SVOCs/PAHs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-0.17	1.3	1.0

NS-West		11/7/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	2-12	2.4	1.0

NS-South		11/7/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-2	3.2	1.0

LSS-016		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-2	22.0	5.6
Benzo(A)Pyrene	0-2	20.0	1.0
Benzo(B)Flouranthene	0-2	26.0	5.6
Dibenz(A,H)Anthracene	0-2	2.1	0.56
Indeno(1,2,3-C,D)Pyrene	0-2	12.0	5.6

LSS-016		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	2-12	22.0	5.6
Benzo(A)Pyrene	2-12	17.0	1.0
Benzo(B)Flouranthene	2-12	23.0	5.6
Indeno(1,2,3-C,D)Pyrene	2-12	10.0	5.6

LSS-021		5/11/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-2	4.5	1.0
Benzo(B)Flouranthene	0-2	5.8	5.6

LSS-019		5/11/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-2	16.0	5.6
Benzo(A)Pyrene	0-2	14.0	1.0
Benzo(B)Flouranthene	0-2	20.0	5.6
Dibenz(A,H)Anthracene	0-2	3.6	0.56
Indeno(1,2,3-C,D)Pyrene	0-2	92.0	5.6

LSS-013		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-2	22.0	5.6
Benzo(A)Pyrene	0-2	18.0	1.0
Benzo(B)Fluoranthene	0-2	24.0	5.6
Dibenz(A,H)Anthracene	0-2	3.6	0.56
Indeno(1,2,3-C,D)Pyrene	0-2	11.0	5.6

LSS-013		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	2-12	18.0	5.6
Benzo(A)Pyrene	2-12	14.0	1.0
Benzo(B)Fluoranthene	2-12	20.0	5.6
Indeno(1,2,3-C,D)Pyrene	2-12	9.1	5.6

LSS-015		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-2	17.0	5.6
Benzo(A)Pyrene	0-2	14.0	1.0
Benzo(B)Flouranthene	0-2	22.0	5.6
Indeno(1,2,3-C,D)Pyrene	0-2	10.0	5.6

LSS-015		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	2-12	6.4	5.6
Benzo(A)Pyrene	2-12	5.5	1.0
Benzo(B)Flouranthene	2-12	8.2	5.6

LSS-014		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-2	20.0	5.6
Benzo(A)Pyrene	0-2	18.0	1.0
Benzo(B)Flouranthene	0-2	23.0	5.6
Indeno(1,2,3-C,D)Pyrene	0-2	12.0	5.6

LSS-014		3/28/2017	
SVOCs/PAHs	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	2-12	29.0	5.6
Benzo(A)Pyrene	2-12	23.0	1.0
Benzo(B)Flouranthene	2-12	34.0	5.6
Dibenz(A,H)Anthracene	2-12	2.3	0.56
Indeno(1,2,3-C,D)Pyrene	2-12	14.0	5.6

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SURFACE SOIL SAMPLING LOCATIONS (NOT ANALYZED)
- SURFACE SOIL SAMPLING LOCATIONS WITH NO EXCEEDANCE OF APPLICABLE STANDARDS OR CRITERIA
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RSS LSS-001 LSS-002 LSS-003 LSS-004 LSS-005 LSS-006 LSS-007 LSS-008 LSS-009 LSS-010 LSS-011 LSS-012 LSS-013 LSS-014 LSS-015 LSS-016 LSS-017 LSS-018 LSS-019 LSS-020 LSS-021 LSS-022 LSED-1 SOIL-1 SOIL-2 SOIL-3 SOIL-4 SOIL-5 SOIL-6 SOIL-7 SOIL-8 SOIL-9 SOIL-10 SOIL-11 NS-NORTH NS-EAST NS-SOUTH NS-WEST SB-NR

SET IRON PIPE W/CAP; EX. IRON; 0.5' WEST; EX. ANGLE IRON; EX. REBAR 0.13' EAST; EX. REBAR 11.95' SOUTH 16.15' WEST; SET IRON PIPE W/CAP; 4' ROS = 66' DEED; 24" GAS PIPELINE; GAS MARKER; GAS MARKER; SEE 66' WIDE RIGHT OF WAY & EASEMENT TO NIAGARA GAS CORPORATION L-1452, P-808; 1018' DEED; 23' DEED; 2418' DEED ADDITION = 2421.43' MEAS.; 10" BUCKEYE BRINE PIPELINE; DUAL 12" BRINE PIPELINES; NORTH LINE NIAGARA FALLS POWER COMPANY (DEED); EAST LINE NIAGARA FALLS POWER COMPANY; EX. CONC. MON.; SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION; 24" GAS PIPELINE 522.15' DEED; BUY WIRE 70.4' NORTH 426.78' DEED; SAT. DISH 2.4' NORTH; P.P. 1.1' SOUTH; P.P. 2.4' SOUTH; FENCE 1.1' SOUTH; P.P. 1.1' SOUTH; FENCE 0.6' SOUTH; FENCE 0.1' SOUTH; P.P. 1.2' SOUTH; FENCE 0.7' NORTH; FENCE 0.1' SOUTH; P.P. NG 50R NYT 50R 0.8' SOUTH; FENCE 1.8' SOUTH; BRINE MARKER; GAS MARKER; BRINE MARKER; SET IRON PIPE W/CAP; REPUTED OWNER THE TOWN OF WHEATFIELD L-1269, P-587; REPUTED OWNER NIAGARA MOHAWK POWER CORP.; FORBES TERRACE; SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
		REVISIONS

Liro Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

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CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

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

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
SURFACE SOIL - SVOCs/PAHs EXCEEDENCES

FIGURE NO.
5-3A

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LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- SURFACE SOIL SAMPLING LOCATIONS (NOT ANALYZED)
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SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
PARALLEL WITH SOUTH LINE LOT-22
23' DEED
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
WHEATFIELD
TONAWANDA
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
4' ROS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
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SHED
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REPUTED OWNER
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FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

RSS LSED-1 SOIL-10 SOIL-12 SOIL-9 SOIL-9 SOIL-7 SOIL-6 SOIL-11 SOIL-8 SOIL-1 SOIL-4 SOIL-3 SOIL-2 LSS-009 LSS-007 LSS-011 SOIL-5 LSS-005 LSS-004 LSS-008 LSS-006 LSS-010 NS-NORTH SB-NR NS-WEST NS-EAST LSS-019 NS-SOUTH LSS-016 LSS-022 LSS-013 LSS-020 LSS-014 LSS-015 LSS-001 LSS-021 LSS-003 LSS-002 LSS-017 LSS-018

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TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
SURFACE SOIL - PCB AND PESTICIDE SAMPLE RESULTS

FIGURE NO.
5-3B

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LSS-011		3/28/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Barium	0-2	691	400

LSS-011		3/28/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Cadmium	6-12	9.8	9.3
Copper	6-12	350	270

LSS-006		3/29/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Barium	0-2	501	400
Cadmium	0-2	17.0	9.3
Mercury	0-2	2.9	2.8

LSS-004		3/29/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Arsenic	0-2	17.9	16
Barium	0-2	892	400
Cadmium	0-2	21.3	9.3
Copper	0-2	5,800	270
Lead	0-2	5,860	1,000
Mercury	0-2	3.1	2.8

LSS-018		3/29/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Barium	0-2	872	400

LSS-018		3/29/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Barium	2-12	506	400

LSS-013		3/28/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Commercial SCO
Arsenic	0-2	17.7	16

RSS		5/10/2017	
Metals	*Depth (inches bg)*	*mg/kg*	Part 375 Residential SCO
Mercury	0-2	1.4	0.81

LEGEND

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NOTE: ONLY ONE METAL (MERCURY) WAS REPORTED AT A CONCENTRATION ABOVE ITS RESIDENTIAL SCO IN ONLY ONE OFF-SITE SOIL SAMPLE

80 0 80
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LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE: SURFACE SOIL - METALS EXCEEDENCES

FIGURE NO. 5-4

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\5-4 Surface Soil METAL.dwg 10/25/2018 1:25 PM

N

SB-W		4/16/2014	
SVOCs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-4	3.8	1.0
Dibenzo[a,h]Anthracene	0-4	0.7	0.56

SB-V		4/16/2014	
SVOCs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Anthracene	0-4	13.0	5.6
Benzo(A)Pyrene	0-4	15.0	1.0
Benzo[b]Fluoranthene	0-4	19.0	5.6
Dibenzo[a,h]Anthracene	0-4	2.3	0.56
Indeno(1,2,3-cd)Pyrene	0-4	7.5	5.6

SB-U		4/16/2014	
SVOCs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-4	3.1	1.0
Dibenzo[a,h]Anthracene	0-4	0.6	0.56

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
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SET IRON PIPE W/CAP
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
2418' DEED ADDITION = 2421.43' MEAS.
23' DEED
4 RODS = 66' DEED
18' DEED
24" GAS PIPELINE
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO NIAGARA GAS CORPORATION L-1462, P-806
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
GUY WIRE 10.4' NORTH
SAT. DISH 0.4' NORTH
BRINE MARKER
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62

LDP-04, LPZ-12S, TP-17, TP-16, LPZ-11S, LPZ-01S, OW-14BB, OW-2, LSB-01, OW-1, OW-14A, OW-14B, OW-1B, SB-E, SB-CC, SB-DD/OW-36, SB-EE, OW-35, OW-4, OW-15, SB-II/OW-37, SB-Q, SB-KK, LPZ-09S, SB-JJ, SB-W/OW-33, SB-HH, SB-GG, OW-6, OW-16, SB-FF, SB-V, SB-U, SB-T/OW-32, OW-5, SB-P, LPZ-02S, SB-G, OW-11, SB-H, SB-J, SB-M, OW-13, SB-B/OW-25, LSB-02, OW-12, SB-I, SB-L, OW-21/SB-D, OW-22/SB-C, LPZ-08S, OW-23/SB-F, SB-K, SB-O, SB-A/OW-24, LPZ-13S, SB-N, OW-3, LPZ-10S, SB-R, SB-S/OW-31, TP-18, SB-Y/OW-34, SB-X, SB-AA, SB-Z, LPZ-04S, LPZ-03S, TP-02, TP-03, TP-04, TP-05, TP-06, LPZ-05S, TP-07, TP-08, TP-09, TP-10, LPZ-06S, TP-01, TP-11, LPZ-07S, TP-12, TP-13, LSB-03, TP-14, TP-15, LDP-01, LDP-02, LDP-03

SB-N		4/14/2014	
SVOCs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	0-2	1.4	1.0

TP-12		7/21/2017	
SVOCs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	1-6	1.4	1.0

SB-A		6/3/2013	
SVOCs	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Benzo(A)Pyrene	4-12	1.2	1.0

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NO.	DATE	DESCRIPTION

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LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
SUBSURFACE SOIL - VOCs/SVOCs EXCEEDENCES

FIGURE NO.
5-5

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\5-5 Subsurface Soils SVOC.dwg 2/25/2019 10:56 AM

N

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L–1269, P–587
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P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
FORBES TERRACE (60.0' WIDE)

LDP–04, LPZ–12S, TP–17, TP–16, OW–4, OW–15, SB–II/OW–37, SB–CC, SB–DD/OW–36, SB–EE, OW–35, SB–Q, LPZ–11S, LPZ–01S, OW–14BR, OW–14A, OW–2, OW–14B, LSB–01, OW–1B, SB–E, SB–KK, LPZ–09S, SB–JJ, SB–W/OW–33, SB–HH, SB–P, LPZ–02S, SB–G, OW–11, SB–H, SB–J, SB–M, OW–13, SB–B/OW–25, LSB–02, OW–12, SB–I, SB–L, OW–21/SB–D, OW–22/SB–C, LPZ–08S, OW–23/SB–F, SB–K, SB–A/OW–24, SB–GG, OW–16, SB–FF, SB–V, SB–U, SB–T/OW–32, OW–5, SB–O, LPZ–13S, OW–3, LPZ–10S, SB–S/OW–31, SB–R, SB–N, TP–18, SB–Y/OW–34, SB–X, SB–AA, SB–Z, LPZ–04S, LPZ–03S, TP–02, TP–03, TP–04, TP–05, TP–06, LPZ–05S, TP–07, TP–08, TP–09, LPZ–06S, TP–10, TP–01, TP–11, LPZ–07S, TP–12, TP–13, LSB–03, TP–14, TP–15, LDP–01, LDP–02, LDP–03

SB-N

		4/14/2014	
Pesticides	***Depth (ftbg)***	***mg/kg***	**Part 375 Commercial SCO**
Dieldrin	0-2	2.6	1.4
PCBs	***Depth (ftbg)***	***mg/kg***	**Part 375 Commercial SCO**
Total PCBs	0-2	68.0	1.0

TP-11

		7/21/2017	
PCBs	***Depth (ftbg)***	***mg/kg***	**Part 375 Commercial SCO**
Total PCBs	1-6	1.68	1.0

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J:\17–013–0289 NYSDEC Standby\CAD\Coll–Out 128321 – Niagara Sanitation\2017 RI REPORT\5–6 Subsurface Soils PCBS.dwg 10/25/2018 1:08 PM

NO.	DATE	DESCRIPTION
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LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
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LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
SUBSURFACE SOIL - PESTICIDE AND PCBs EXCEEDENCES

FIGURE NO.
5-6

N

SB-U		4/16/2014	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Barium	0-4	1,690	400
Cadmium	0-4	98.7	9.3
Lead	0-4	1,620	1,000
Mercury	0-4	4.8	2.8
Metals	*Depth (ftbg)*	*mg/L*	Part 371 TCLP
Lead	4-5	37.6	5

SB-V		4/16/2014	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Arsenic	0-4	27.2	16
Barium	0-4	1,070	400
Cadmium	0-4	31.2	9.3

SB-W		4/16/2014	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Arsenic	0-4	18.9	16
Barium	0-4	1,520	400
Cadmium	0-4	26.1	9.3
Mercury	0-4	3.4	2.8

SB-N		4/14/2014	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Barium	0-2	648	400
Cadmium	0-2	32.2	9.3

SB-T		4/15/2014	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Cadmium	0-3	11.9	9.3
Mercury	0-3	108	2.8

SB-T		4/15/2014	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Mercury	4-8	187	2.8

TP-11		7/21/2017	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Barium	1-6	522	400

TP-07 Duplicate		7/20/2017	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Copper	1-6	998	270

SB-X		4/16/2014	
Metals	*Depth (ftbg)*	*mg/kg*	Part 375 Commercial SCO
Arsenic	0-4	16.8	16
Lead	0-4	1,870	1,000

SB-R		4/15/2014	
Metals	*Depth (ftbg)*	*mg/L*	Part 371 TCLP
Lead	4-5	8.9	5

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WARNING
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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690 Delaware Avenue
Buffalo, New York

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CHECKED BY:
DRAWN BY:
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TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
SUBSURFACE SOIL - METALS EXCEEDENCES

FIGURE NO.
5-7

N

OW-35		5/19/2014	8/30/2017
VOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Benzene	1	3.8	4.9
Chlorobenzene	5	80	78
SVOCs			
4-Methylphenol (P-Cresol)	1	2.8	ND

OW-37		5/20/2014	8/29/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
4-Methylphenol (P-Cresol)	1	1.8	ND

OW-2		8/2/2013
SVOCs	NYSDEC AWQSGVs	*ug/L*
Nitrobenzene	0.4	0.89

OW-14B		1988
HSL Organic Compounds(VOCs)	NYSDEC AWQSGVs	*ug/L*
Bis[2-ethylhexyl]phthalate	5	720
Tetrachloroethene	5	120

OW-14BR		8/28/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*
4-Methylphenol (P-Cresol)	1	4.4

OW-36		5/19/2014	8/29/2017
VOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Benzene	1	3.1	4
Chlorobenzene	5	19	16
Ethylbenzene	5	200	28
Isopropylbenzene	5	13	ND
Xylene (Total)	5	1,700	460
2-Hexanone	50	NA	9.6
SVOCs			
4-Chloro-3-Methylphenol	1	7.5	ND
4-Methylphenol (P-Cresol)	1	2.7	ND
Biphenyl	5	17	39
Bis[2-ethylhexyl]phthalate	5	5.4	4.2
Phenol	1	2.8	4.6

LPZ-12S		9/21/2017
VOCs	NYSDEC AWQSGVs	*ug/L*
Benzene	1	1.9

OW-13		8/2/2013
SVOCs	NYSDEC AWQSGVs	*ug/L*
4-Methylphenol (P-Cresol)	1	3.2

LPZ-01S		8/29/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*
4-Methylphenol (P-Cresol)	1	15

OW-16		1988 (HSL)	8/2/2013	5/19/2014	8/30/2017
VOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*	*ug/L*	*ug/L*
1,4-Dichlorobenzene	3	ND	ND	3.4	4.4
Benzene	1	12	2.9	3.2	3.5
Chlorobenzene	5	25	15	16	18
Ethylbenzene	5	55	ND	ND	ND
Tetrachloroethene	5	67	ND	ND	ND
Toluene	3	5.2	ND	ND	ND
SVOCs					
4-Methylphenol (P-Cresol)	1	25	ND	2.1	ND

OW-32		5/19/2014	8/30/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
4-Methylphenol (P-Cresol)	1	1.8	ND

OW-34		5/19/2014	8/22/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
4-Methylphenol (P-Cresol)	1	2.2	ND

OW-33		5/20/2014	8/29/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
4-Methylphenol (P-Cresol)	1	1.4	ND

LPZ-05S		8/21/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*
2-Methylphenol (O-Cresol)	1	1.2
4-Methylphenol (P-Cresol)	1	17
Phenol	1	2.3

LPZ-07S		8/21/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*
4-Methylphenol (P-Cresol)	1	4.6

LPZ-08S		8/29/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*
2-Methylphenol (O-Cresol)	1	1.8
4-Methylphenol (P-Cresol)	1	13

OW-31		5/20/2014	8/22/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
4-Methylphenol (P-Cresol)	1	3.5	0.8
Phenol	1	1.1	ND

OW-21		8/2/2013	8/28/2017
SVOCs	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Phenol	1	2.5	1
2-Methylphenol (O-Cresol)	1	ND	1.4
4-Methylphenol (P-Cresol)	1	ND	16

LDP-04 LPZ-12S SB-DD/OW-36 OW-35 TP-17 OW-4 OW-15 SB-II/OW-37 TP-16 LPZ-11S LPZ-01S OW-14BR OW-14A OW-2 OW-14B OW-1 OW-1B SET IRON PIPE W/CAP

LPZ-09S SB-W/OW-33 LPZ-02S OW-13 OW-11 OW-21/SB-D OW-12 OW-22/SB-C LPZ-08S OW-23/SB-F SB-K SB-A/OW-24 LPZ-13S OW-3 LPZ-10S SB-S/OW-31

EX. ANGLE IRON EX. REBAR 0.13' EAST OW-6 OW-16 EX. REBAR 11.95' SOUTH 16.15' WEST SB-T/OW-32 OW-5

REPUTED OWNER THE TOWN OF WHEATFIELD L-1269, P-587

TP-18 SET IRON PIPE W/CAP SB-Y/OW-34 4 RODS = 66' DEED 24" GAS PIPELINE GAS MARKER GAS MARKER SEE 66' WIDE RIGHT OF WAY & EASEMENT TO NIAGARA GAS CORPORATION L-1462, P-806

PARALLEL WITH SOUTH LINE LOT-22 LPZ-03S TP-02 LPZ-04S TP-03 TP-04 TP-05 1018' DEED TP-06 LPZ-05S TP-07 TP-08 TP-09 TP-10 LPZ-06S TP-11 LPZ-07S TP-12 TP-13 TP-14 TP-15

2418' DEED ADDITION = 2421.43' MEAS. 10" BUCKEYE BRINE PIPELINE DUAL 12" BRINE PIPELINES SOUTH LINE LOT-22 NORTH LINE LOT-21 EAST LINE NIAGARA FALLS POWER COMPANY EX. CONC. MON. SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION

GUY WIRE 10.4' NORTH 499.76' DEED SAT. DISH 0.4' NORTH 24" GAS PIPELINE 522.15' DEED BRINE MARKER GAS MARKER BRINE MARKER BRINE MARKER LDP-01 LDP-02 LDP-03 P.P. 2.4' SOUTH FENCE 1.1' SOUTH P.P. 1.1' SOUTH FENCE 0.6' SOUTH FENCE 0.1' SOUTH P.P. 1.2' SOUTH FENCE 0.7' NORTH FENCE 0.1' SOUTH P.P. NG 50R NYT 50R 0.8' SOUTH SHED FENCE 1.8' SOUTH P.P. NG 62R NYT 62

REPUTED OWNER IROQUOIS GAS CORPORATION L-1496, P-986

FORBES TERRACE (60.0' WIDE) SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

LEGEND

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NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
GROUNDWATER - UPPER SAND/FILL
VOCs AND SVOCs EXCEEDENCES

FIGURE NO. 5-8

J:\17-013-0289 NYSDEC Standby\CAD\Cad-Out 128321 - Niagara Sanitation\2017 RI REPORT\5-8 Groundwater VOC-SVOC.dwg 10/25/2018 1:08 PM

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OW-35		5/19/2014	8/30/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Aldrin	ND	ND	0.0091
alpha-BHC	0.01	0.013	ND

OW-36		5/19/2014	8/29/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Aldrin	ND	ND	0.0088
alpha-BHC	0.01	0.022	ND

LDP-04		8/25/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*
alpha-BHC	0.01	0.038

OW-16		8/2/2013	5/19/2017	8/30/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*	*ug/L*
Aldrin	ND	0.085	ND	ND
alpha-Chlordane	0.05	0.1	ND	ND
alpha-BHC	0.01	ND	ND	0.011
beta-BHC	0.04	0.084	ND	ND
delta-BHC	0.04	0.096	ND	ND
Dieldrin	0.004	0.089	ND	ND
gamma-BHC (Lindane)	0.05	0.058	ND	ND

OW-33		5/20/2014	8/29/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
alpha-BHC	0.01	0.017	0.01

OW-32		5/19/2014	8/30/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Aldrin	ND	0.011	ND
delta-BHC	0.04	0.069	0.012
Dieldrin	0.004	0.027	ND
Endrin	ND	0.07	ND

OW-34		5/19/2014	8/22/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Aldrin	ND	0.033	ND

LPZ-02S		8/29/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*
alpha-BHC	0.01	0.012

OW-37		5/20/2014	8/29/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
alpha-BHC	0.01	0.029	ND
Dieldrin	0.004	0.0094	ND
Endrin	ND	0.019	ND

LPZ-09S		9/21/2017
PCBs	NYSDEC AWQSGVs	*ug/L*
PCB-1242	0.09	0.67

OW-1		8/2/2013	8/28/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
gamma-BHC (Lindane)	0.05	0.095	ND

OW-13		8/2/2013
Pesticides	NYSDEC AWQSGVs	*ug/L*
Aldrin	ND	0.018
alpha-BHC	0.01	0.019
gamma-Chlordane	0.05	0.072

LPZ-07S		8/21/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*
alpha-BHC	0.01	0.021

LDP-01		8/24/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*
Aldrin	ND	0.019
alpha-BHC	0.01	0.054

LPZ-08S		8/29/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*
beta-BHC	0.04	0.12

LDP-02		8/24/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*
Aldrin	ND	0.073
gamma-BHC (Lindane)	0.05	0.072

OW-22		8/2/2013	8/28/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
alpha-BHC	0.01	0.33	ND

OW-31		5/20/2014	8/22/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
alpha-BHC	0.01	0.031	0.011
Dieldrin	0.004	0.013	ND
Endrin	ND	0.015	ND

OW-21		8/2/2013	8/28/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*	*ug/L*
alpha-BHC	0.01	0.026	0.012

LDP-03		8/24/2017
Pesticides	NYSDEC AWQSGVs	*ug/L*
Aldrin	ND	0.021

LEGEND

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LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
GROUNDWATER - UPPER SAND/FILL
PESTICIDES AND PCBs EXCEEDENCES

FIGURE NO.: 5-9

J:\17–013–0289 NYSDEC Standby\CAD\Coll–Out 128321 – Niagara Sanitation\2017 RI REPORT\5–9 Groundwater PCB.dwg 10/25/2018 1:08 PM

N

OW-36		8/29/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	33,600
Sodium	20,000	10,800

OW-35		8/30/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	90,100
Sodium	20,000	103,000

LPZ-02S		8/29/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	113,000
Sodium	20,000	63,000

OW-14BR		8/28/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Lead	25	
Magnesium	35,000	52,900
Sodium	20,000	26,400

OW-21		8/28/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	57,600
Sodium	20,000	67,600

LDP-04		8/25/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	69,000
Sodium	20,000	49,800

LPZ-09S		9/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	92,100
Sodium	20,000	32,300

LPZ-11S		9/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	66,000
Sodium	20,000	43,800

OW-14B		1988 T
Metals	NYSDEC AWQSGVs	*ug/L*
Lead	25	28.4
Sodium	20,000	21,900

OW-2		8/30/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	78,300
Sodium	20,000	44,200

OW-16		1988 T	8/2/2013 T	8/30/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*	*ug/L*	*ug/L*
Antimony	3	150		
Barium	1,000		2,500	160
Beryllium	3	4		
Chromium	50	90	3.5	
Lead	25	600	17	
Magnesium	35,000	165,000		85,000
Mercury	0.7	0.8		
Nickel	100	110		3
Sodium	20,000	361,000		78,200

LPZ-12S		9/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	62,300
Sodium	20,000	35,500

LPZ-01S		8/29/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	74,000
Sodium	20,000	43,400

OW-37		8/29/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	96,800
Sodium	20,000	49,800

OW-1		8/28/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	109,000
Sodium	20,000	68,200

SET IRON PIPE W/CAP
LDP-04
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
SB-DD/OW-36
LPZ-12S
OW-35
LPZ-09S
TP-17
OW-4
OW-15
SB-II/OW-37
TP-16
LPZ-11S
LPZ-01S
OW-14BR
OW-14A
OW-14B
OW-2
OW-1
OW-1B
SET IRON PIPE W/CAP
OW-21/SB-D
OW-6
OW-16
SB-W/OW-33
LPZ-02S
OW-11
OW-12
OW-13
LPZ-08S
OW-22/SB-C
OW-23/SB-F
SB-K
SB-A/OW-24
LPZ-10S
OW-3
SB-T/OW-32
OW-5
LPZ-13S
SB-S/OW-31
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
TP-18
SB-Y/OW-34
4 RODS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO NIAGARA GAS CORPORATION L-1462, P-306
LPZ-03S
LPZ-04S
LPZ-05S
LPZ-06S
LPZ-07S
TP-01
TP-02
TP-03
TP-04
TP-05
TP-06
TP-07
TP-08
TP-09
TP-10
TP-11
TP-12
TP-13
TP-14
TP-15
23' DEED
1018' DEED
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
EAST LINE NIAGARA FALLS POWER COMPANY
EX CONC. MON.
24" GAS PIPELINE 522.15' DEED
GUY WIRE 10.4' NORTH 498.76' DEED
SAT. POST 0.4' NORTH
P.P. 1.1' SOUTH
BRINE MARKER
GAS MARKER
BRINE MARKER
LDP-01
LDP-02
LDP-03
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
P.P. 1.1' SOUTH
FENCE 0.6' SOUTH
FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 1.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269
ONAWANDA
ATFIELD

LPZ-03S		8/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	47,100
Sodium	20,000	28,700

LPZ-04S		8/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	282,000
Sodium	20,000	484,000

OW-32		8/30/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	102,000
Sodium	20,000	83,000

LPZ-05S		8/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	170,000
Sodium	20,000	194,000

OW-33		8/29/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	165,000
Sodium	20,000	156,000

LPZ-13S		9/20/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	118,000
Sodium	20,000	90,700

LPZ-06S		8/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	64,600
Sodium	20,000	65,100

LDP-01		8/24/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	41,300

LPZ-07S		8/21/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	123,000
Sodium	20,000	42,600

LPZ-08S		8/29/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	150,000
Sodium	20,000	107,000

OW-13		1988 T
Metals	NYSDEC AWQSGVs	*ug/L*
Antimony	3	311
Cadmium	5	7
Copper	200	2,270
Lead	25	81.6
Magnesium	35,000	72,100
Nickel	100	250
Sodium	20,000	68,200

LDP-02		8/24/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	34,700
Sodium	20,000	23,500

OW-23		8/2/2013 T	8/28/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Lead	25	30	3.1
Magnesium	35,000		45,700
Sodium	20,000	63,900	63,900

LPZ-10S		9/20/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	110,000
Sodium	20,000	100,000

OW-22		8/2/2013 T	8/28/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Lead	25	39	ND
Magnesium	35,000		30,000
Sodium	20,000		40,900

OW-31		8/22/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	0
Sodium	20,000	0

LDP-03		8/24/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	47,400

LEGEND

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- T TOTAL METAL CONCENTRATIONS (I.E. UNFILTERED)
- D DISSOLVED METAL CONCENTRATIONS (I.E. FILTERED)

NOTE: FIGURE DOES NOT INCLUDE RESULTS FOR PARAMETERS WITH GUIDANCES VALUES FOR PROTECTION FROM AESTHIC CONSIDERATION (I.E. IRON AND MANGANESE)

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
		REVISIONS

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630 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
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CHECKED BY:
DRAWN BY:
CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation
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NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

DRAWING TITLE:
GROUNDWATER - UPPER SAND/FILL METALS EXCEEDENCES

LIRO JOB NO.: 17-013-0289
SHEET OF
FIGURE NO. 5-10

J:\17-013-0289 NYSDEC Standby\CAD\Coll-Out 128321 - Niagara Sanitation\2017 RI REPORT\5-10 Groundwater METALS.dwg 3/1/2019 3:17 PM

N

OW-15		1988	9/22/2017
HSL Organic Compounds (VOCs)	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Bis[2-ethylhexyl]phthalate	5	790	ND

OW-6		7/10/1984	9/22/2017
HSL Organic Compounds (VOCs)	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Methylene Chloride	5	15	ND

OW-3		9/22/2017
VOC	NYSDEC AWQSGVs	*ug/L*
Acetone	50	6,400
SVOC		
Di-n-Butyphthalate	50	410

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SET IRON PIPE W/CAP
LDP-04
EX. ANGLE IRON 1.3' WEST
EX. ANGLE IRON 0.5' WEST
EX. ANGLE IRON 1.1' WEST
EX. ANGLE IRON
EX. REBAR 0.13' EAST
EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
TP-18
SET IRON PIPE W/CAP
ALLEL WITH SOUTH LINE LOT-22
23' DEED
LDP-03S
TP-02
TP-03
TP-04
TP-05
1018' DEED
TP-06
TP-07
TP-08
TP-09
TP-10
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
ATFIELD
ONAWANDA
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
4 RODS = 66' DEED
24" GAS PIPELINE
GAS MARKER
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO NIAGARA GAS CORPORATION L-1462, P-806
LPZ-12S
LPZ-04S
LPZ-05S
LPZ-06S
LPZ-07S
LPZ-11S
LPZ-01S
LPZ-09S
LPZ-02S
LPZ-13S
LPZ-08S
LPZ-10S
TP-17
TP-16
TP-11
TP-12
TP-13
TP-14
TP-15
OW-4
OW-15
OW-6
OW-5
OW-3
SB-DD/OW-36
SB-II/OW-37
OW-35
SB-W/OW-33
OW-16
SB-T/OW-32
SB-Y/OW-34
OW-14BR
OW-2
OW-14A
OW-14B
OW-1
OW-1B
OW-11
OW-21/SB-D
OW-13
OW-12
OW-22/SB-C
SB-K
OW-23/SB-F
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SB-S/OW-31
GUY WIRE 10.4' NORTH
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BRINE MARKER
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SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

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LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
GROUNDWATER - LOWER SAND, TILL AND BEDROCK
VOCs AND SVOCs EXCEEDENCES

FIGURE NO. 5-11A

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
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EX. REBAR 11.95' SOUTH 16.15' WEST
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
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NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
ATFIELD
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REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
LPZ-12S
SB-DD/OW-36
OW-35
LPZ-09S
SB-W/OW-33
OW-6
OW-16
SB-T/OW-32
OW-5
SB-Y/OW-34
LPZ-04S
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TP-17
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OW-4
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SB-II/OW-37
LPZ-11S
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4 RODS = 66' DEED
24" GAS PIPELINE
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SEE 66' WIDE RIGHT OF WAY & EASEMENT TO NIAGARA GAS CORPORATION L-1462, P-806
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
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EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
OW-14BR
OW-2
OW-14A
OW-14B
OW-1
OW-1B
OW-11
OW-21/SB-D
OW-13
OW-12
LPZ-08S
OW-22/SB-C
SB-K
OW-23/SB-F
SB-A/OW-24
OW-3
LPZ-10S
SB-S/OW-31
GUY WIRE 10.4' NORTH
SAT. DISH 0.4' NORTH
P.P. 0.4' SOUTH
LPZ-07S
TP-12
TP-13
TP-14
TP-15
24" GAS PIPELINE 522.15' DEED
BRINE MARKER
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L-1496, P-986
P.P. 2.4' SOUTH
FENCE 1.1' SOUTH
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FENCE 0.1' SOUTH
P.P. 1.2' SOUTH
FENCE 0.7' NORTH
FENCE 0.1' SOUTH
P.P. NG 50R NYT 50R 0.8' SOUTH
SHED
FENCE 1.8' SOUTH
P.P. NG 62R NYT 62
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269

80 0 80
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SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE:
GROUNDWATER - LOWER SAND, TILL AND BEDROCK
PCB AND PESTICIDE SAMPLE RESULTS

FIGURE NO.
5-11B

J:\17-013-0289 NYSDEC Standby\CAD\Cell-Out 128321 - Niagara Sanitation\2017 RI REPORT\5-11B Groundwater DEEP.dwg 10/25/2018 1:08 PM

N

OW-15		1988 T	9/22/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Antimony	3	120	ND
Beryllium	3	7	ND
Chromium	50	120	ND
Lead	25	130	ND
Magnesium	35,000	134,000	41,200
Nickel	100	150	2.1
Sodium	20,000	64,500	105,000

OW-4		9/22/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	99,800
Sodium	20,000	126,000

OW-1B		9/22/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Sodium	20,000	60,200

OW-14A		1988 T	9/25/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*	*ug/L*
Antimony	3	53	ND
Beryllium	3	6	ND
Chromium	50	130	ND
Lead	25	140	ND
Magnesium	35,000	181,000	2,900
Nickel	100	140	ND
Sodium	20,000	97,600	50,400

OW-6		9/20/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Sodium	20,000	363,000

OW-5		8/31/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Sodium	20,000	79,300

OW-3		9/25/2017 D
Metals	NYSDEC AWQSGVs	*ug/L*
Magnesium	35,000	38,900
Sodium	20,000	97,700

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS (NOT ANALYZED)
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION (NOT ANALYZED)
- 2017 TEST PIT LOCATION
- GROUNDWATER SAMPLING LOCATIONS WITH NO EXCEEDANCE OF APPLICABLE STANDARDS OR CRITERIA
- GROUNDWATER SAMPLING LOCATIONS WITH ONE OR MORE COMPOUNDS REPORTED AT CONCENTRATIONS ABOVE APPLICABLE STANDARDS OR CRITERIA
- T TOTAL METAL CONCENTRATIONS (I.E. UNFILTERED)
- D DISSOLVED METAL CONCENTRATIONS (I.E. FILTERED)

NOTE: FIGURE DOES NOT INCLUDE RESULTS FOR PARAMETERS WITH GUIDANCES VALUES FOR PROTECTION FROM AESTHIC CONSIDERATION. (I.E. IRON AND MANGANESE)

80 0 80
SCALE IN FEET

WARNING
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:
CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation
DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17–013–0289
SHEET OF

DRAWING TITLE:
GROUNDWATER - LOWER SAND, TILL AND BEDROCK METALS EXCEEDENCES

FIGURE NO. 5-12

J:\17-013-0289 NYSDEC Standby\CAD\Cell-Out 128321 – Niagara Sanitation\2017 RI REPORT\5-12 Groundwater DEEP METAL.dwg 3/1/2019 11:39 AM

ATTACHMENT 1
Soil Boring Logs

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-01S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.25**
DATE STARTED:	**August 15, 2017**
DATE FINISHED:	**August 15, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~6.9'

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DATE	TIME	LEVEL	TYPE

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2	3	75%	dark brown	soft	SILT and SAND with trace organics (0-0.8'); SILTY SAND with some clay (0.8-1.0')	SC	0 ppm
				2	4		light brown - yellowish brown	medium dense		SM	0 ppm
				5	8	90%			SILTY SAND, fine with some clay (1.0-5.9'). Wet around 5.9'		0 ppm
				6	9						0 ppm
5				6	9	90%					0 ppm
				18	9						0 ppm
				-	-	-	brown	very stiff	SILTY CLAY (5.9-7.0')	CL	0 ppm
									End of boring at 7.0'		
10											
15											
20											
25											
30											
35											

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-01S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-02S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.66**
DATE STARTED:	**July 27, 2017**
DATE FINISHED:	**July 27, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Kris Charney**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.

GROUNDWATER: ~4'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				woh	3	35%	dark brown	soft	SILT and SAND with trace organics (0-0.5'); SANDY SILT with some clay (0.5-1.5')	SC	0 ppm
				2	3		light brown - yellowish brown	medium dense	SILTY SAND, fine with trace clay (1.5-5.75'). Wet at 4'.	SM	0 ppm
				6	8	25%					0 ppm
				5	5						0 ppm
5				6	9	50%					0 ppm
				18	9		light grey	firm	SILTY CLAY (5.75-6.0')	CL	0 ppm
									End of boring at 6.0'		
10											
15											
20											
25											
30											
35											

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289

BORING NO.: LPZ-02S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-03S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.86**
DATE STARTED:	**July 25, 2017**
DATE FINISHED:	**July 27, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Kris Charney**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.

GROUNDWATER: ~4'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				woh	2	10%	dark brown	soft	SILT and SAND (0-1')	SC	0 ppm
				2	3		light brown - yellowish brown	medium dense	SILTY SAND , fine (1.0-7.0). Wet at 6.0'	SM	0 ppm
				3	4	75%					0 ppm
				5	7						0 ppm
5				6	8	30%					0 ppm
				12	10						0 ppm
				8	10	95%					0 ppm
				12	10		light grey	medium dense	SAND, fine with some clay (7.0-8.0').	SC	0 ppm
				5	5	85%	light grey	very soft to stiff	SILTY CLAY, dry to moist with some mottling (8.0-18.0').	CL	0 ppm
10				9	10						0 ppm
				1	3	95%					0 ppm
				6	10						0 ppm
				10	11	100%					0 ppm
				10	9						0 ppm
15				woh	woh	100%					0 ppm
				woh	2						0 ppm
				woh	woh	100%	light grey and reddish brown				0 ppm
				woh	woh						0 ppm
									End of boring at 18.0'		
20											
25											
30											
35											

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289

BORING NO.: LPZ-03S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-04S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**576.87**
DATE STARTED:	**July 25, 2017**
DATE FINISHED:	**July 27, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Kris Charney**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~4'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				woh	woh	50%	dark brown	very soft	SILT and SAND (0-1.0')	SC	0 ppm
				2	3		light brown - yellowish brown	loose to medium dense	SAND and SILT with coarse to fine SAND seams(1.0'-6.0'). Wet at 6.0'		0 ppm
				2	3	60%					0 ppm
				5	7					SM-SC	0 ppm
5				4	8	75%	yellowish brown to light grey	medium dense			0 ppm
				9	6						0 ppm
									End of boring 6.0'		
10											
15											
20											
25											
30											
35											

COMMENTS: Well constructed. No soil samples collected.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-04S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-05S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.33**
DATE STARTED:	**July 25, 2017**
DATE FINISHED:	**July 27, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Kris Charney**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~2-4'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				woh 3	60%	dark brown	very soft	SILT and SAND (0-0.5').	SC	0 ppm
				2 5		light brown - yellowish brown to light grey	loose to medium dense	SILTY SAND, fine (0.5-5.75'). Wet at 3.0'. Grades to SILTY CLAY	SM-CL	0 ppm
				2 3	50%					0 ppm
				4 4						0 ppm
5				3 5	80%					0 ppm
				10 9						0 ppm
				7 8	100%	light grey	very stiff	SILTY CLAY, some sand (6.0-8.0)	CL	0 ppm
				10 10						0 ppm
								End of boring 8.0		
10										
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-05S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-06S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**578.03**
DATE STARTED:	**July 26, 2017**
DATE FINISHED:	**July 27, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Kris Charney**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~6'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2	3	85%	dark brown	soft	SAND and SILT (0-1.0')	SC	0 ppm
				5	7				SILTY SAND, fine. Grades to SILTY CLAY (1.0-7.0'). Wet at 6.0'.		0 ppm
				2	3	95%					0 ppm
				5	6						0 ppm
5				4	8	70%	light brown - yellowish brown	stiff		SM	0 ppm
				11	9						0 ppm
				13	11	80%					0 ppm
				11	6						0 ppm
				4	4	90%			SILTY CLAY, some mottling. Dry to wet (8.0-18.0')		0 ppm
10				8	14						0 ppm
				3	4	80%					0 ppm
				6	10						0 ppm
				9	6	100%	light grey to reddish brown	very soft to stiff		CL	0 ppm
				6	3						0 ppm
15				woh	woh	100%					0 ppm
				woh	woh						0 ppm
				woh	woh	100%					0 ppm
				woh	2						0 ppm
									End of boring at 18.0'		
20											
25											
30											
35											

COMMENTS: Well constructed. No soil samples collected.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-06S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-07S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.43**
DATE STARTED:	**July 26, 2017**
DATE FINISHED:	**July 27, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Kris Charney**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~6'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2	3	1%	dark brown	medium sitff	SAND and SILT (0-0.5')	SC	0 ppm
				2	3		light brown - yellowish brown to light brown	loose to medium dense	SILTY SAND, fine to coarse. Trace organics. Wet to moist at 4.0-6.0' (0.5-6.5')	SM	0 ppm
				2	1	0%					0 ppm
				2	3						0 ppm
5				4	8	50%					0 ppm
				11	8						0 ppm
				4	7	60%	light brown to light grey	somewhat loose to firm	SILTY CLAY, wet (6.5'-8.0')	CL	0 ppm
				8	10						0 ppm
									End of boring at 8.0'		
10											
15											
20											
25											
30											
35											

COMMENTS: Well constructed. See well construciton log.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-07S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-08S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**575.95**
DATE STARTED:	**August 15, 2017**
DATE FINISHED:	**August 15, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~3.5'

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DATE	TIME	LEVEL	TYPE

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2 3	30%	dark brown	loose	FILL: sand and silt with wood fragments (0-3.0')	FILL	0 ppm
				2 2						0 ppm
				3 6	50%			SILTY SAND, fine. Grades to SILTY CLAY. Wet at 3.5' (3.0-4.0')		0 ppm
				8 10		yellowish brown	medium dense		SM	0 ppm
5				4 6	80%	brown	stiff	SILTY CLAY (4.0-6.0)	CL	0 ppm
				8 10						0 ppm
								End of bring at 6.0'		
10										
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construciton log.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-08S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-09S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**578.12**
DATE STARTED:	**September 13, 2017**
DATE FINISHED:	**September 13, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~7.5'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				1 2	35%	dark brown	loose	FILL: sand and silt with plastic, paper, graphite and trash (0-4.0').	FILL	0 ppm
				3 4						0 ppm
				3 2	35%					0 ppm
				3 3						0 ppm
5				4 6	85%	brown	stiff to very stiff	SILTY SAND, some to trace clay. Grades to trace clay. Wet at 6.5' (4.0-8.0')	SM	0 ppm
				6 10						0 ppm
				11 15	90%					0 ppm
				15 12						0 ppm
				5 7	90%	brown	stiff	SILTY CLAY (8.0-10.0)	CL	0 ppm
10				8 10						0 ppm
								End of boring at 10.0'		
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-09S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-10S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.41**
DATE STARTED:	**September 14, 2017**
DATE FINISHED:	**September 14, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~4'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				1	2	85%	brown	loose	FILL: sand and silt, some clay and glass (0-4.4').	FILL	0 ppm
				3	4						0 ppm
				4	2	25%					0 ppm
				2	1						0 ppm
5				4	8	90%	brown	stiff	SILTY SAND, some to trace clay (4.4-4.8)	SM	0 ppm
				9	11		brown	very stiff	SILTY CLAY with a sandy lens from 7.1-7.2' (4.8-8.0').	CL	0 ppm
				5	8	65%					0 ppm
				12	12						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-10S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-11S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.65**
DATE STARTED:	**September 13, 2017**
DATE FINISHED:	**September 13, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.

GROUNDWATER: ~4'

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DATE	TIME	LEVEL	TYPE

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL 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 SILT, trace caly. Grades to a SILTY SAND. Wet at 4.0' (2.0-70').		0 ppm
				8	9						0 ppm
5				6	9	85%	brown	stiff to very stiff		SM	0 ppm
				11	13						0 ppm
				9	7	95%					0 ppm
				8	16		brown	stiff	SILTY CLAY (7.0'-8.0').	CL	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-11S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-12S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.06**
DATE STARTED:	**September 13, 2017**
DATE FINISHED:	**September 13, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~6'

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DATE	TIME	LEVEL	TYPE

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2 1	35%	dark brown	loose	FILL: sand and silt with wood and glass (0-5.0').	FILL	0 ppm
				1 3						0 ppm
				5 4	10%					0 ppm
				1 1						0 ppm
5				2 3	40%					0 ppm
				6 6		gray-brown	stiff	SILTY SAND, some to trace clay. Wet at 6.0' (5.0-7.0').	SM	0 ppm
				5 6	50%					0 ppm
				8 13		brown	stiff	SILTY CLAY (6.0-8.0').	CL	0 ppm
								End of boring at 8.0'		
10										
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construciton log.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-12S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LPZ-13S**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**578.75**
DATE STARTED:	**September 14, 2017**
DATE FINISHED:	**September 14, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~5'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				WH	1	60%	dark brown to black	loose	FILL: sand and silt with wood and trash. Ash from 2-2.5' (0-3.0').	FILL	0 ppm
				2	5						0 ppm
				4	5	100%					0 ppm
				11	9		brown	stiff	SILTY SAND with some clay. Grades to trace clay at 5.1'. Wet at 5.0' (3.0-7.4').	SM	0 ppm
5				3	4	100%					0 ppm
				8	10						0 ppm
				12	9	100%					0 ppm
				10	10		brown	very stiff	SILTY CLAY (7.4-8.0').	CL	0 ppm
									End of boring at 8.0'		
10											
15											
20											
25											
30											
35											

COMMENTS: Well constructed. No soil samples collected.

PROJECT NO.: 17-013-0289
BORING NO.: LPZ-13S

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**OW-14BR**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.18**
DATE STARTED:	**August 15, 2017**
DATE FINISHED:	**August 15, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.

GROUNDWATER: ~6.5`

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2	3	75%	dark brown	soft	SAND and SILT with trace organics (0-1.0').	SC	0 ppm
				2	4		light brown - yellowish brown	medium dense	SILTY SAND, fine, with some clay, trace gravel. Grade to trace clay. Wet around 6.5' (1.0-7.0').	SM	0 ppm
				6	8	90%					0 ppm
				9	12						0 ppm
5				12	11	55%					0 ppm
				15	10						0 ppm
				9	7	90%					0 ppm
				11	14		brown	very stiff	SILTY CLAY (7.0-8.0').	CL	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.: OW-14BR

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LSB-01**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**NR**
DATE STARTED:	**September 14, 2017**
DATE FINISHED:	**September 14, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~6.5`

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DATE	TIME	LEVEL	TYPE

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2 4	50%	dark brown	soft	SAND and SILT with some clay and trace organics (0-1.5').	SC	0 ppm
				3 5						0 ppm
				5 7	75%	light brown - yellowish brown	medium dense	SILTY SAND, fine, with some clay, trace gravel. Grades to trace clay. Wet around 6.5' (1.5-5.3').	SM	0 ppm
				7 9						0 ppm
5				9 11	80%					0 ppm
				11 11		brown	very stiff to stiff	SILTY CLAY (5.3-6.0')	CL	0 ppm
								End of boring at 6.0'		
10										
15										
20										
25										
30										
35										

COMMENTS: No well constructed.

PROJECT NO.: 17-013-0289
BORING NO.: LSB-01

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LSB-02**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**NR**
DATE STARTED:	**September 14, 2017**
DATE FINISHED:	**September 14, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Dan Sheldon**

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~7`

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				2	8	85%	dark brown	soft	FILL: sand and silt, some clay, trace organics (0-0.5').		0 ppm
				9	11				FILL: silt with some clay, trace gravel (0.5-9.5'). Grades to SILTY CLAY. Wet at 7.0'.		0 ppm
				6	6	85%					0 ppm
				7	7						0 ppm
5				33	5	100%					0 ppm
				5	4		red-brown	soft-very stiff		FILL	0 ppm
				4	8	55%					0 ppm
				9	8						0 ppm
				3	1	30%					0 ppm
10				2	3						0 ppm
				2	4	85%	gray	stiff	SILTY CLAY (9.5-12.0').	CL	0 ppm
				6	9						0 ppm
									End of boring at 12.0'		
15											
20											
25											
30											
35											

COMMENTS: No well constructed. No soil samples collected.
Orginally going to be LPZ-10L.

PROJECT NO.: 17-013-0289
BORING NO.: LSB-01

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LSB-03**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**NR**
DATE STARTED:	**July 27, 2017**
DATE FINISHED:	**July 27, 2017**
DRILLER:	**SJB/Empire Geo Serv. Inc.**
GEOLOGIST:	**Kris Charney**
REVIEWED BY:	

PROJECT NAME: Niagara Sanitation
CLIENT: New York State Department of Environmental Conservation (NYSDEC)
BORING CONTRACTOR: SJB/Empire Geo Serv. Inc.
GROUNDWATER: ~6'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HSA	
DIA.		4 1/4"	2" sampler
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
				woh	woh	40%	light brown - yellowish brown	somewhat loose	CLAYEY SILT, some coarse sand (0-4.0').	MH	0 ppm
				2	2						0 ppm
				2	3	80%					0 ppm
				2	2						0 ppm
5				3	6	100%	yellowish brown to light grey	somewhat loose; stiff	SILTY CLAY (4.0-5.0').	CL	0 ppm
				8	12						0 ppm
									End of boring at 6.0'		
10											
15											
20											
25											
30											
35											

COMMENTS: No well constructed.
Originally going to be LPZ-08S

PROJECT NO.: 17-013-0289
BORING NO.: LSB-03

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LDP-01**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**576.92**
DATE STARTED:	**August 24, 2017**
DATE FINISHED:	**August 24, 2017**
DRILLER:	**Eric Miller**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Craig Taylor**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: LiRo Engineers

GROUNDWATER: ~4'

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		Hand Auger	
DIA.		4"	
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
						dark brown		SILT and SAND, some clay, trace organics (0-1.6')	SC	0 ppm
										0 ppm
						brown		SILTY SAND, with some to trace clay (1.6-5.3'). Wet at 4'	SM	0 ppm
										0 ppm
5										0 ppm
										0 ppm
								End of boring at 5.3'		
10										
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construciton log.

PROJECT NO.: 17-013-0289

BORING NO.: LDP-01

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LDP-02**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.46**
DATE STARTED:	**August 24, 2017**
DATE FINISHED:	**August 24, 2017**
DRILLER:	**Eric Miller**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Craig Taylor**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: LiRo Engineers

GROUNDWATER: ~4

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		Hand Auger	
DIA.		4"	
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
						dark brown		SILT and SAND, some clay, trace organics (0-1.6')	SC	0 ppm
										0 ppm
						brown		SILTY SAND, with trace clay (1.6-5.2'). Wet at 4'.	SM	0 ppm
										0 ppm
5										0 ppm
										0 ppm
								End of boring at 5.3'		
10										
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289

BORING NO.: LDP-02

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LDP-03**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**577.25**
DATE STARTED:	**August 24, 2017**
DATE FINISHED:	**August 24, 2017**
DRILLER:	**Eric Miller**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Craig Taylor**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: LiRo Engineers

GROUNDWATER: ~4

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		HDA	
DIA.		4"	
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
						dark brown		SILT and SAND, some clay, trace organics (0-1.0')	SC	0 ppm
								SILTY SAND, with trace clay (1.0-4.9'). Wet at 4'.		0 ppm
						brown		SILTY CLAY (4.9-5.1')		0 ppm
									SM	0 ppm
5										0 ppm
								End of boring at 5.1'		
10										
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289

BORING NO.: LDP-03

LiRo Engineers, Inc.

TEST BORING LOG

BORING ID:	**LDP-04**
SHEET:	**1 of 1**
JOB NO.:	**17-013-0289**
LOCATION:	**Niagara Sanitation**
GROUND ELEVATION:	**578.15**
DATE STARTED:	**August 24, 2017**
DATE FINISHED:	**August 24, 2017**
DRILLER:	**Eric Miller**
GEOLOGIST:	**Andrew Koons**
REVIEWED BY:	**Craig Taylor**

PROJECT NAME: Niagara Sanitation

CLIENT: New York State Department of Environmental Conservation (NYSDEC)

BORING CONTRACTOR: LiRo Engineers

GROUNDWATER: ~4

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE		Hand Auger	
DIA.		4"	
WT.			
FALL			

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
						dark brown		FILL: reworked sand and silt, some to trace clay, trace organics (0-2.3')	SC	0 ppm
										0 ppm
						brown		SILTY CLAY (2.3-3.1')	CL	0 ppm
								SILTY SAND with trace clay (3.1-5.3')		0 ppm
5						brown			SM	0 ppm
										0 ppm
								End of boring at 5.3'		
10										
15										
20										
25										
30										
35										

COMMENTS: Well constructed. See well construction log.

PROJECT NO.: 17-013-0289

BORING NO.: LDP-04

ATTACHMENT 2
Piezometer and Monitoring Well Construction Diagrams

ATTACHMENT 3
Test Pit Soil Logs

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Brian Delude

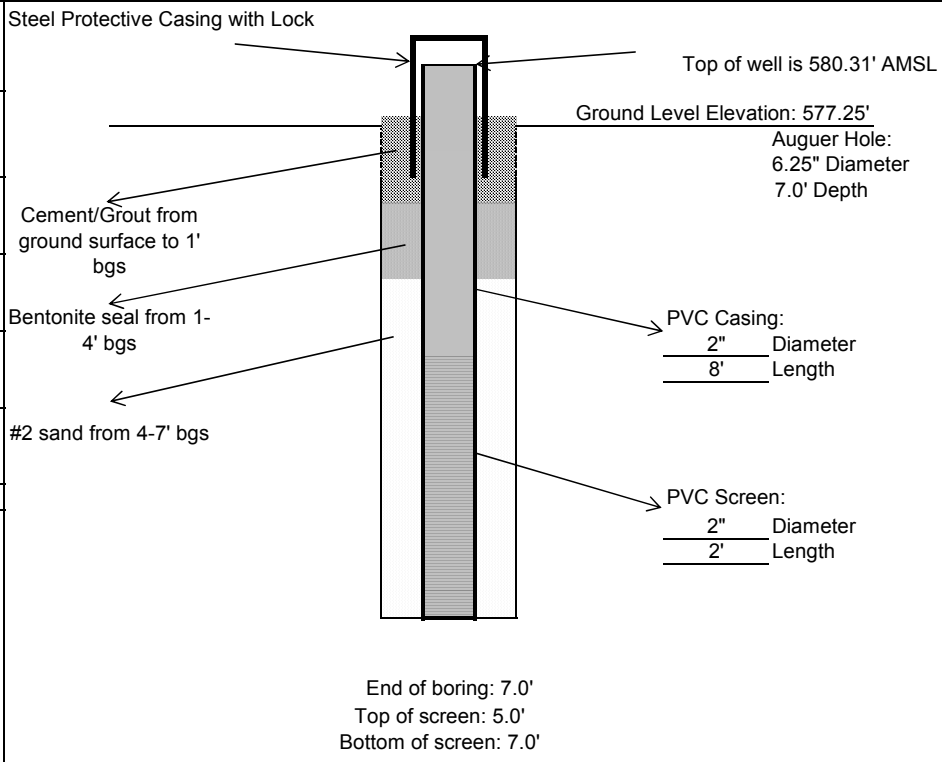
Rig Make/Model:
Diedrich D-50

Date:
8/15/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 4'-7' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 1'- 4' bgs Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 7.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 7' to 4', bentonite seal from 4' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:
- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-01S**

DRILLING SUMMARY

Geologist:
Kris Charney

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
N/A

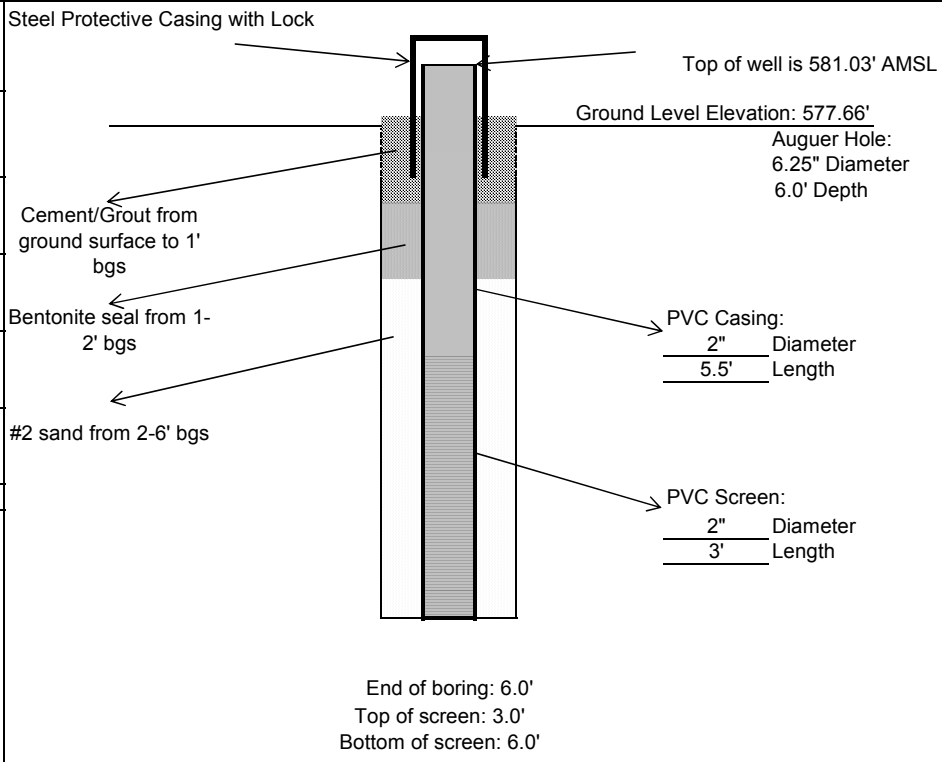
Rig Make/Model:
N/A

Date:
7/27/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 2'-6' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 1'- 2' bgs Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 6.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 6' to 2', bentonite seal from 2' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:
- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-02S**

DRILLING SUMMARY

Geologist:
Kris Charney

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
N/A

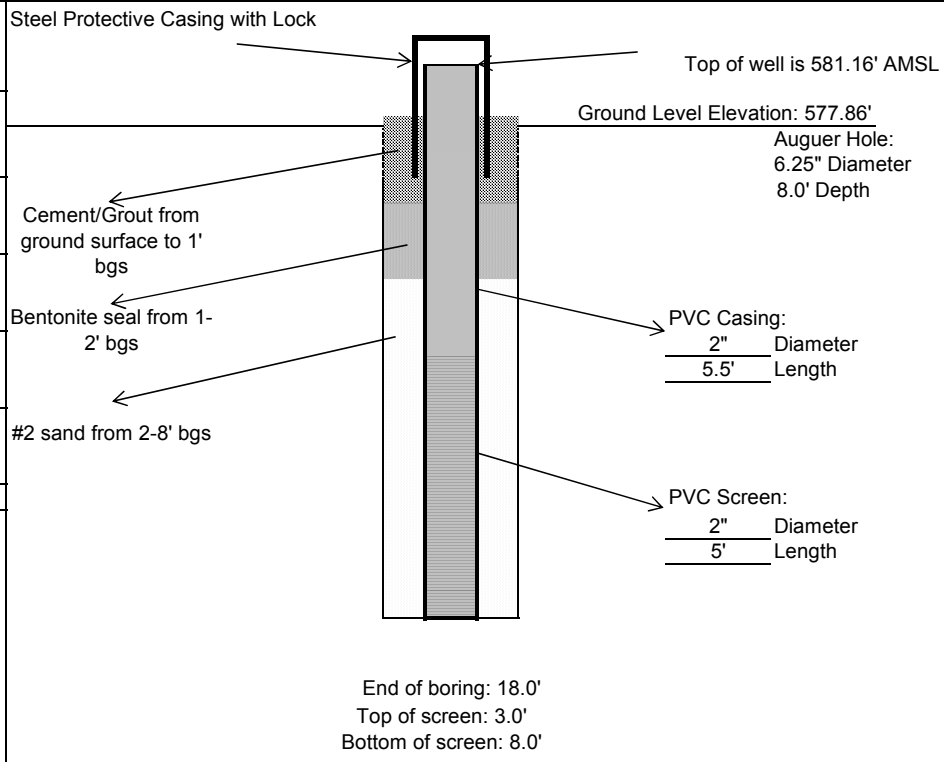
Rig Make/Model:
N/A

Date:
7/25/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See Boring log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 2'-8' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 1'- 2' bgs Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 18.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. Borehole was backfilled with soil cuttings for completion of well. The well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 8' to 2', bentonite seal from 2' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-03S**

DRILLING SUMMARY

Geologist:
Kris Charney

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
N/A

Rig Make/Model:
N/A

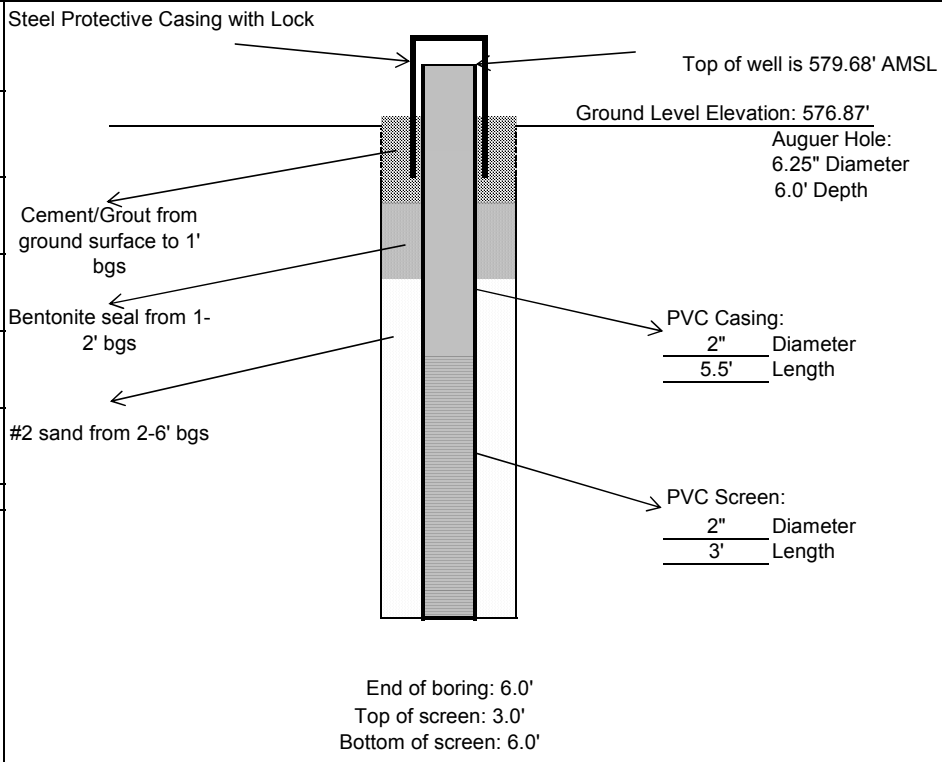
Date:
7/26/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 2'-6' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 1'- 2' bgs Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 6.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 6' to 2', bentonite seal from 2' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:
- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-04S**

DRILLING SUMMARY

Geologist:
Kris Charney

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
N/A

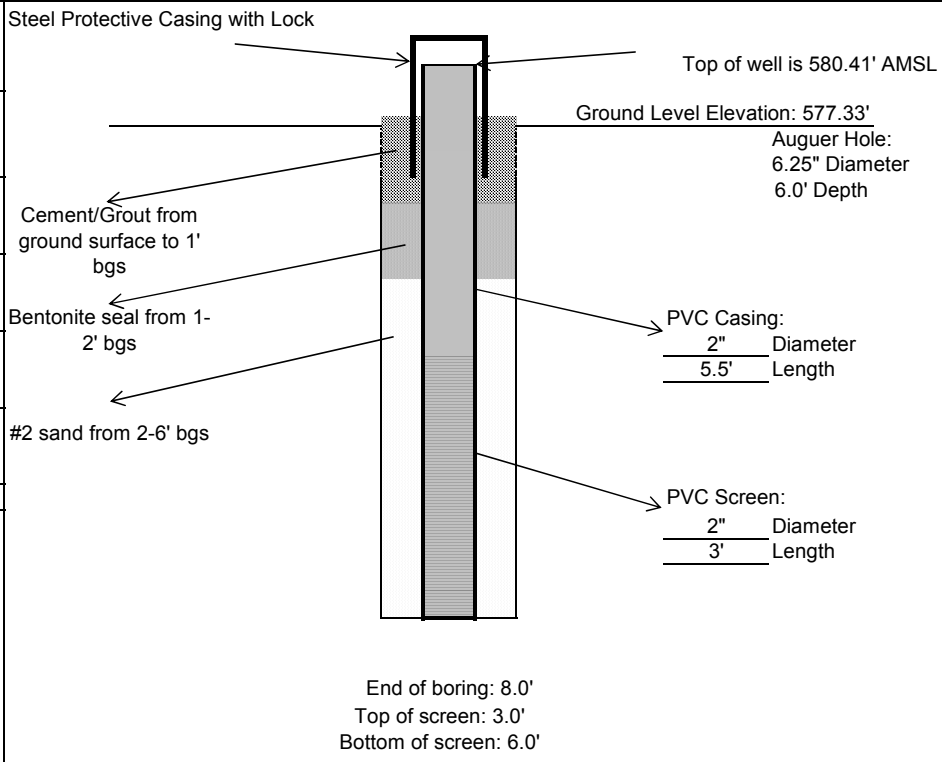
Rig Make/Model:
N/A

Date:
7/25/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 2'-6' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 1'- 2' bgs Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 8.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. Borehole was backfilled with soil cuttings for completion of well. The well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 6' to 2', bentonite seal from 2' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-05S**

DRILLING SUMMARY

Geologist:
Kris Charney

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
N/A

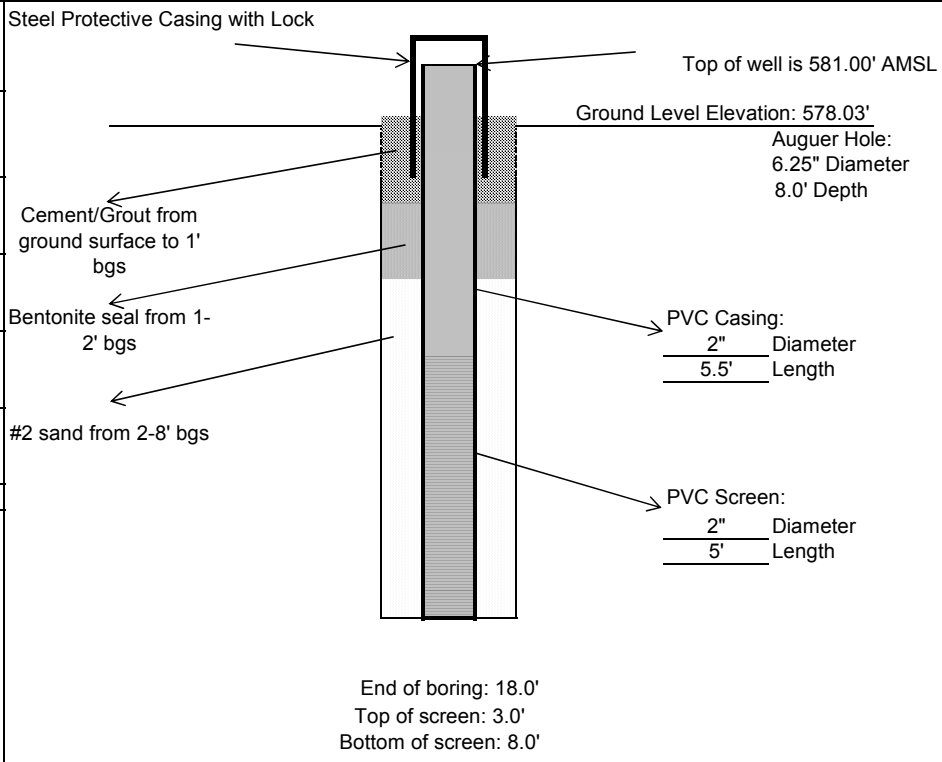
Rig Make/Model:
N/A

Date:
7/26/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boing log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 2'-8' bgs
		SEAL MATERIAL
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	Type: Bentonite Setting: 1'- 2' bgs
		Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 18.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. Borehole was backfilled with soil cuttings for completion of well. The well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 8' to 2', bentonite seal from 2' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-06S**

DRILLING SUMMARY

Geologist:
Kris Charney

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
N/A

Rig Make/Model:
N/A

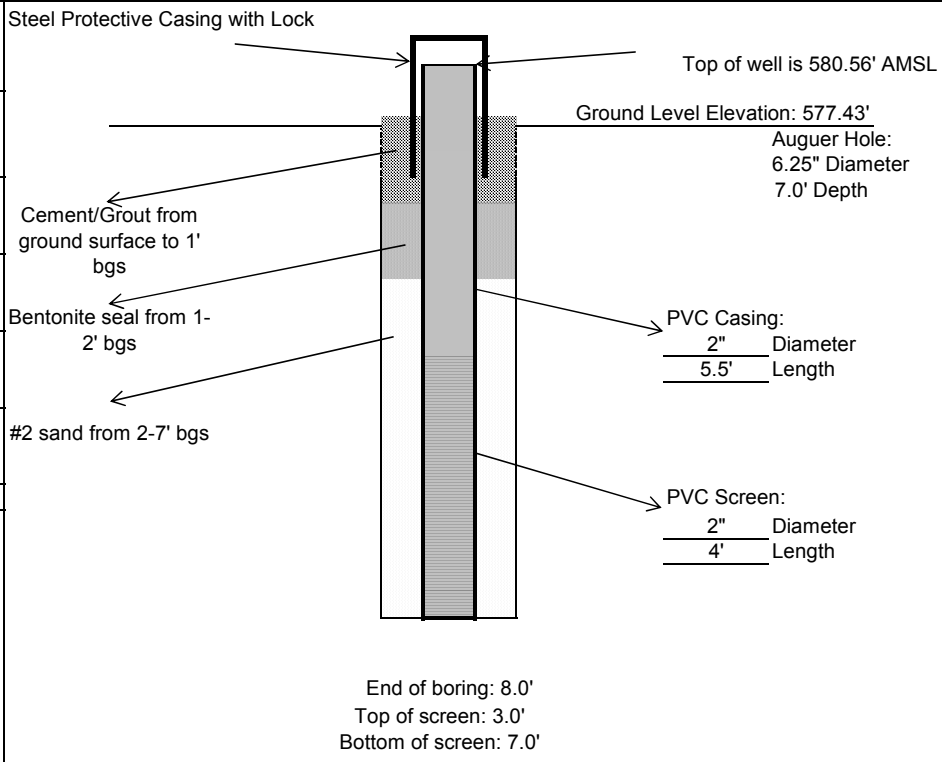
Date:
7/26/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 2'-7' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 1'- 2' bgs Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 7.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. Borehole was backfilled with soil cuttings for completion of well. The well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 7' to 2', bentonite seal from 2' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-07S**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Brian Delude

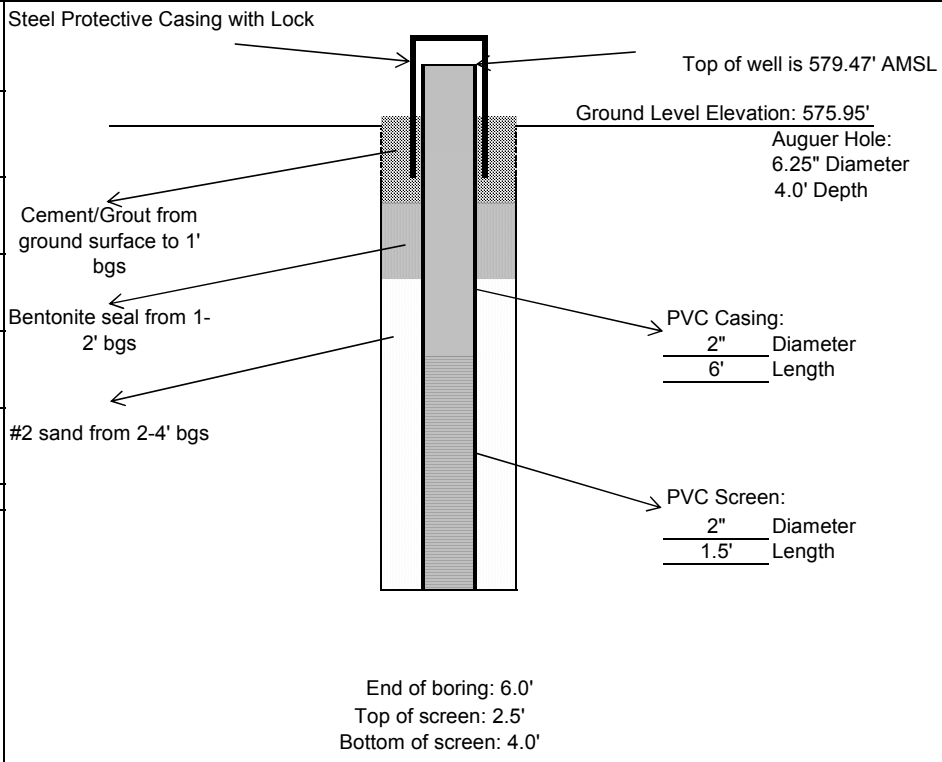
Rig Make/Model:
Diedrich D-50

Date:
8/15/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



End of boring: 6.0'
Top of screen: 2.5'
Bottom of screen: 4.0'

NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 2 SAND Setting: 2'-4' bgs
		SEAL MATERIAL
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	Type: Bentonite Setting: 1'- 2' bgs
		Type: Cement Grout Setting: 0' - 1' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 4.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. Borehole was backfilled with soil cuttings for completion of well. The well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 4' to 2', bentonite seal from 2' to 1' and slurry mix from 1' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-08S**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Dan Delude

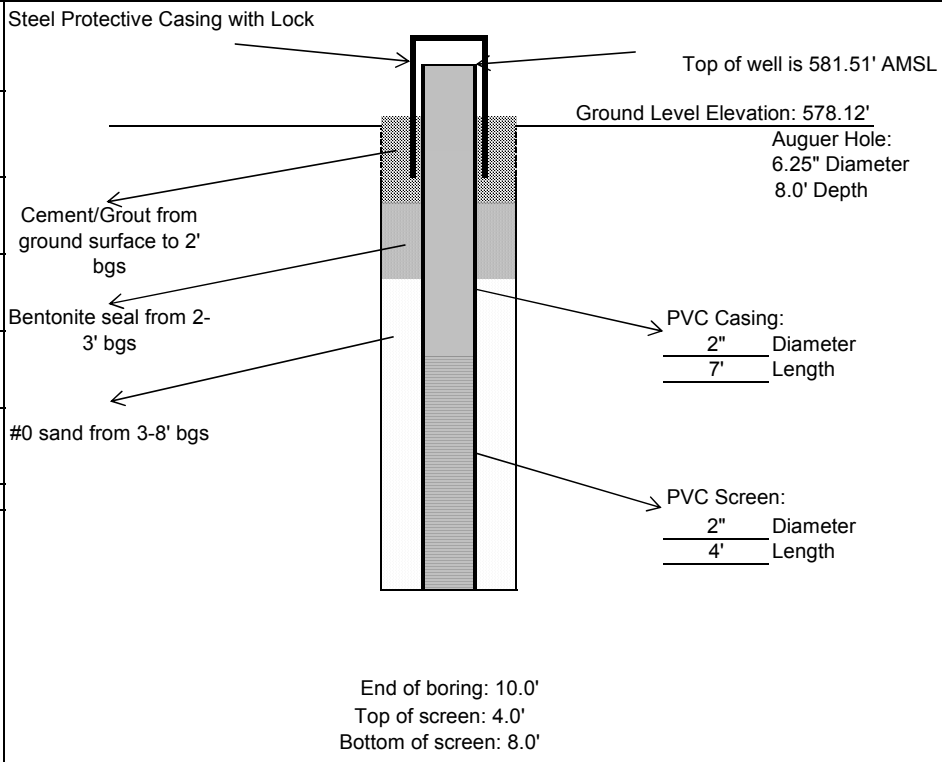
Rig Make/Model:
CME 550X

Date:
9/13/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



End of boring: 10.0'
Top of screen: 4.0'
Bottom of screen: 8.0'

NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 0 SAND Setting: 3'-8' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 2'- 3' bgs Type: Cement Grout Setting: 0' - 2' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 8.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. Borehole was backfilled with soil cuttings for completion of well. The well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 8' to 3', bentonite seal from 3' to 2' and slurry mix from 2' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-09S**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Dan Delude

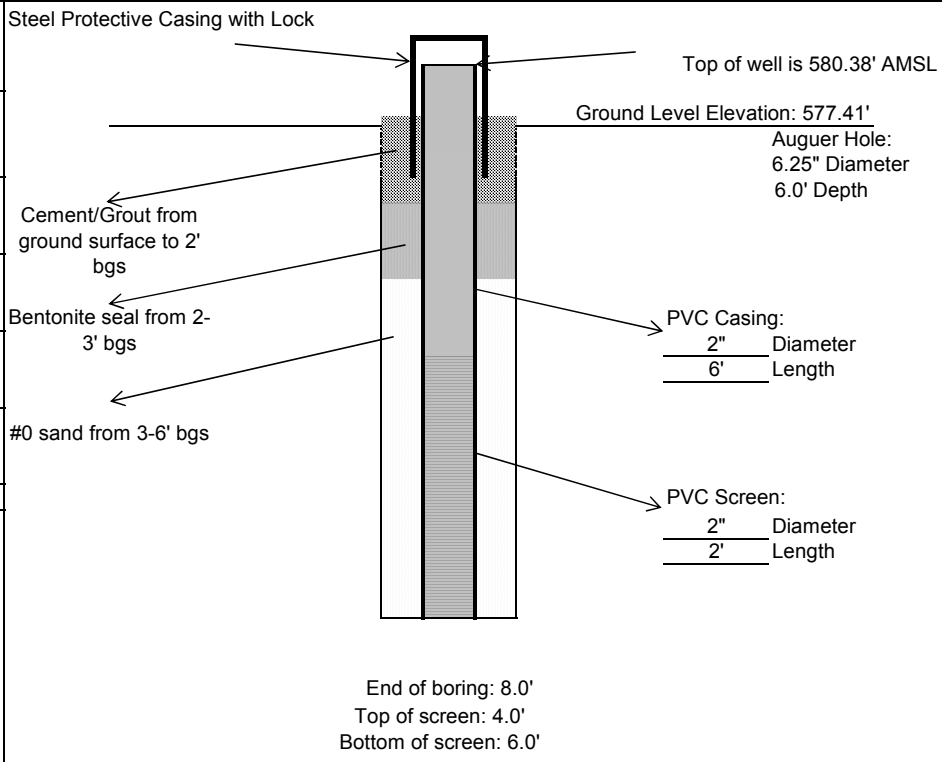
Rig Make/Model:
CME 550X

Date:
9/14/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring logs

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 0 SAND Setting: 3'-6' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 2'- 3' bgs Type: Cement Grout Setting: 0' - 2' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 6.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. Borehole was backfilled with soil cuttings for completion of well. The well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 6' to 3', bentonite seal from 3' to 2' and slurry mix from 2' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-10S**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Dan Delude

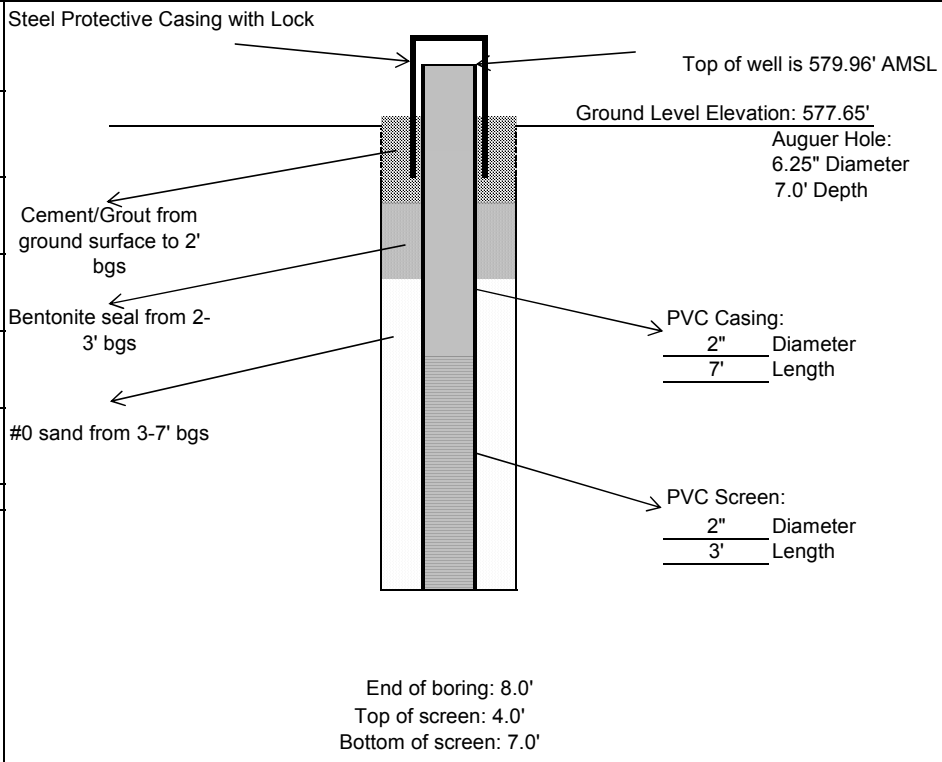
Rig Make/Model:
CME 550X

Date:
9/13/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring logs

MONITORING WELL CONSTRUCTION LOG



End of boring: 8.0'
Top of screen: 4.0'
Bottom of screen: 7.0'

NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 0 SAND Setting: 3'-7' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 2'- 3' bgs Type: Cement Grout Setting: 0' - 2' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 7.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 7' to 3', bentonite seal from 3' to 2' and slurry mix from 2' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:
- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-11S**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Dan Delude

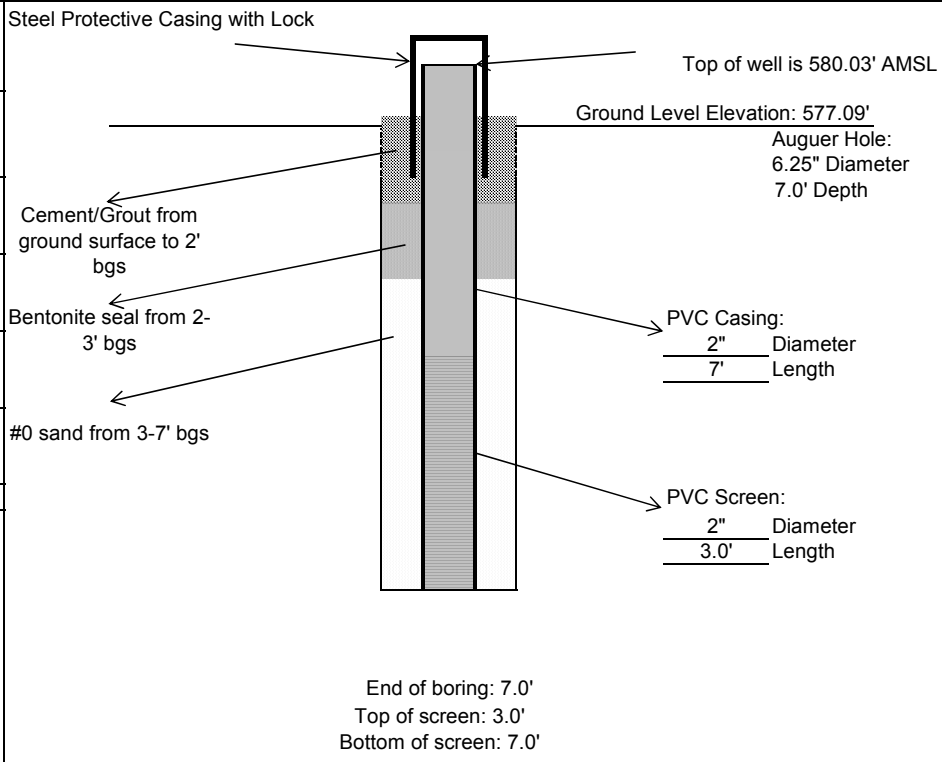
Rig Make/Model:
CME 550X

Date:
9/13/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 0 SAND Setting: 3'-7' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 2'- 3' bgs Type: Cement Grout Setting: 0' - 2' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 7.0' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 7' to 3', bentonite seal from 3' to 2' and slurry mix from 2' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-12S**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Dan Delude

Rig Make/Model:
CME 550X

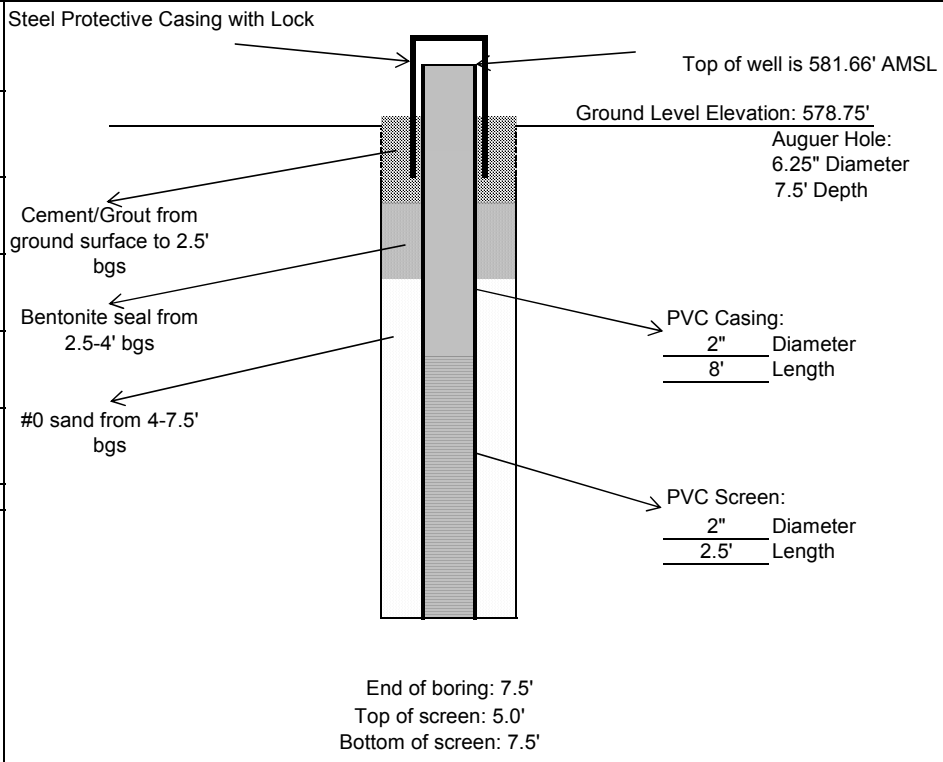
Date:
9/13/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 0 SAND Setting: 4'-7.5' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 2.5'- 4' bgs Type: Cement Grout Setting: 0' - 2.5' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 7.5' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 7.5' to 4', bentonite seal from 4' to 2.5' and slurry mix from 2.5' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LPZ-13S**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
SJB/Empire Geo Serv. Inc.

Driller:
Brian Delude

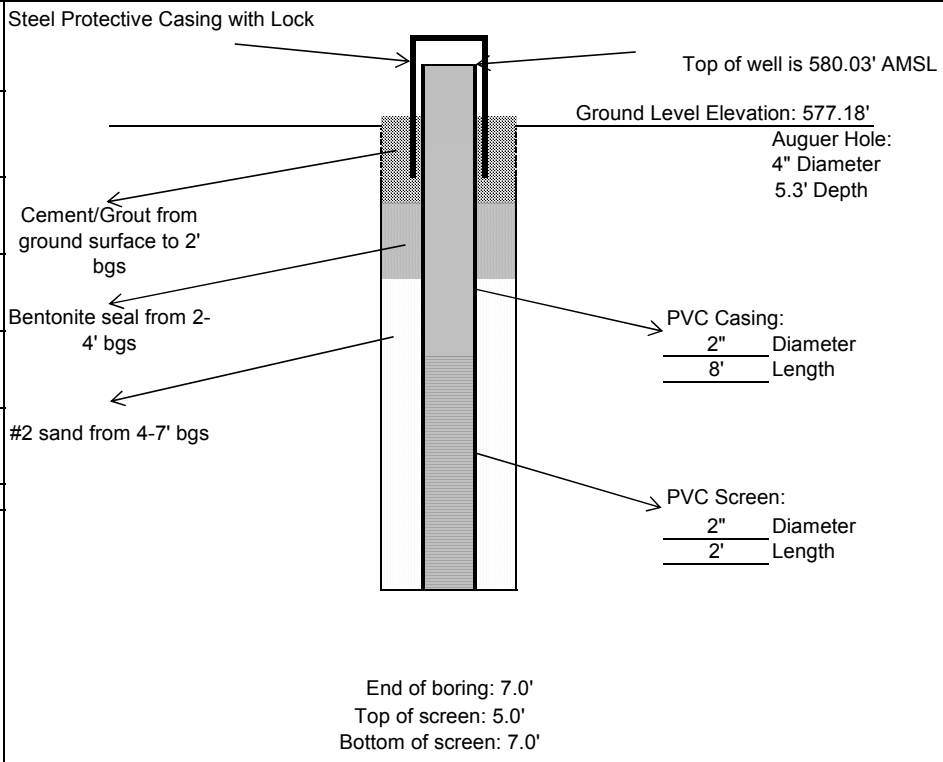
Rig Make/Model:
Diedrich D-50

Date:
8/15/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 2" Schedule 40 PVC	Type: No. 0 SAND Setting: 4'-7' bgs
		SEAL MATERIAL
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	Type: Bentonite Setting: 2'- 4' bgs
		Type: Cement Grout Setting: 0' - 2' bgs

COMMENTS:

The contractor was directed to install the borehole to a total depth of 7' bgs. All soils were screened with a PID meter and checked for olfractory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 7' to 4', bentonite seal from 4' to 2' and slurry mix from 2' to ground surface. The well was completed to grade with a steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Cement Grout
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **OW-14BR**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
LiRo Engineers

Driller:
Eric Miller

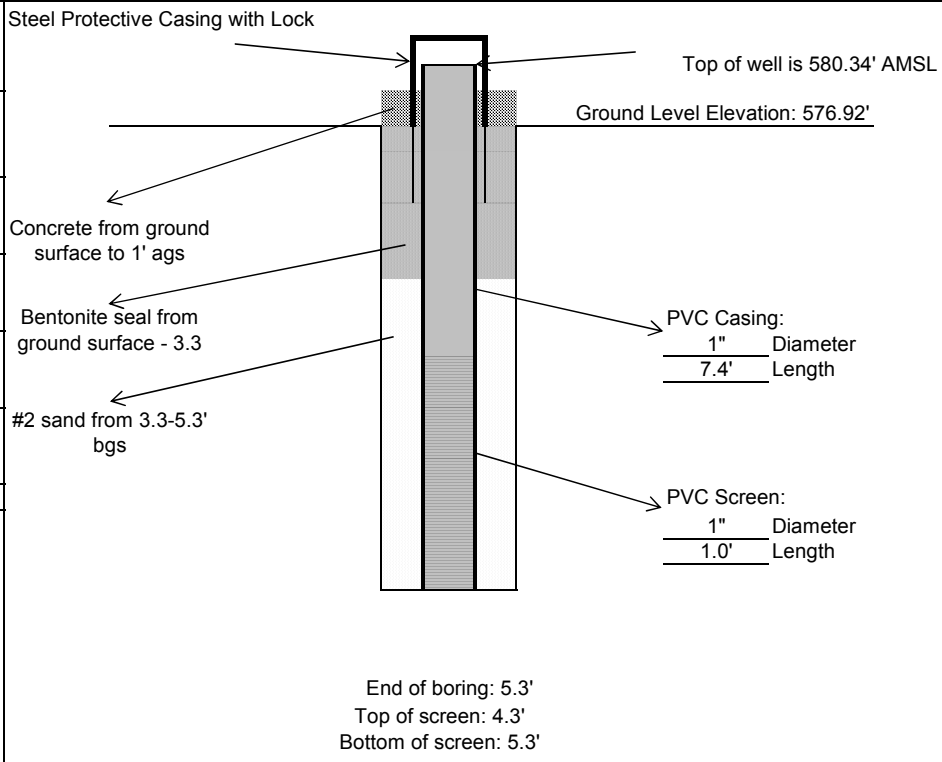
Rig Make/Model:
Hand Auger

Date:
8/24/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



End of boring: 5.3'
Top of screen: 4.3'
Bottom of screen: 5.3'

NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 1" Schedule 40 PVC	Type: No. 2 SAND Setting: 3.3'-5.3' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 0'- 3.3' bgs Type: Concrete Pad Setting: 0' - 1' ags

COMMENTS:

The driller was directed to install the borehole to a total depth of 5.3' bgs. All soils were screened with a PID meter and checked for olfactory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 5.3' to 3.3', bentonite seal from 3.3' to ground surface. The well was completed to grade with a concrete pad and steel protective casing.

LEGEND:
- PVC Casing
- #2 Sand
- Bentonite
- Concrete Pad
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LDP-01**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
LiRo Engineers

Driller:
Eric Miller

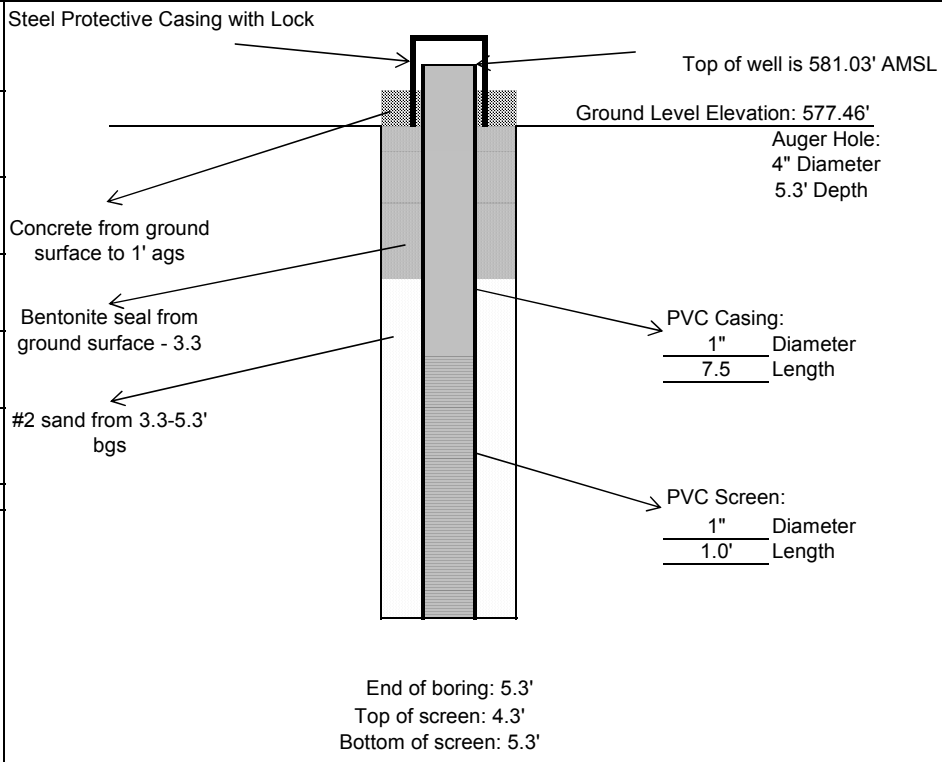
Rig Make/Model:
Hand Auger

Date:
8/24/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 1" Schedule 40 PVC	Type: No. 2 SAND Setting: 3.3'-5.3' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 0'- 3.3' bgs Type: Concrete Pad Setting: 0' - 1' ags

COMMENTS:

The driller was directed to install the borehole to a total depth of 5.3' bgs. All soils were screened with a PID meter and checked for olfactory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 5.3' to 3.3', bentonite seal from 3.3' to ground surface. The well was completed to grade with a concrete pad and steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Concrete Pad
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LDP-02**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
LiRo Engineers

Driller:
Eric Miller

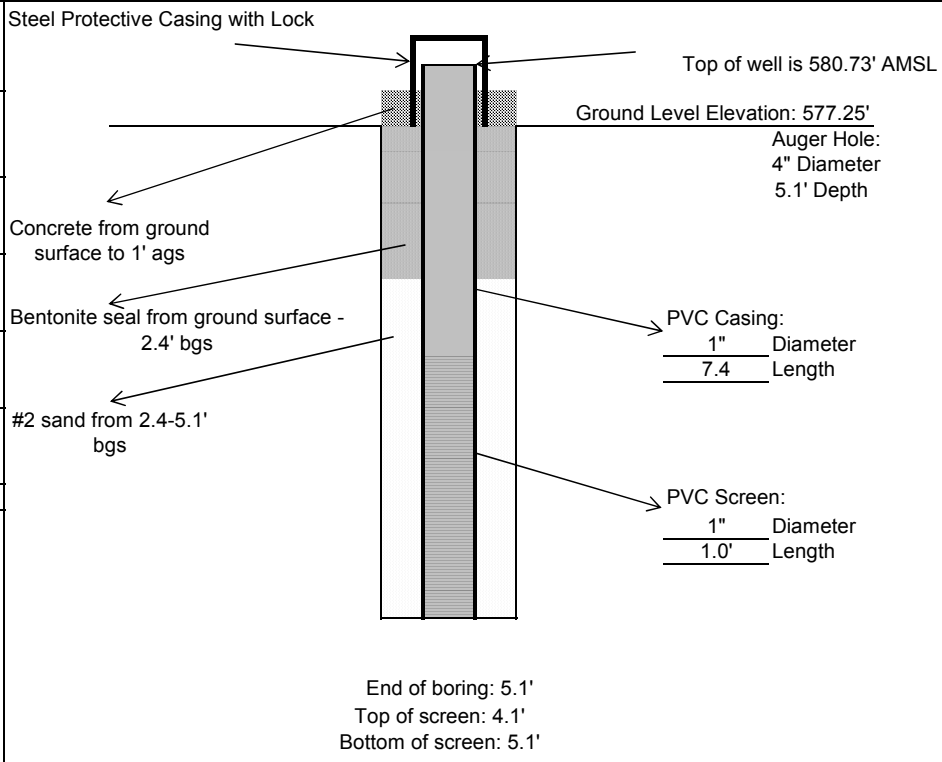
Rig Make/Model:
Hand Auger

Date:
8/24/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring logs

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 1" Schedule 40 PVC	Type: No. 2 SAND Setting: 2.4'-5.1' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 0'- 2.4' bgs Type: Concrete Pad Setting: 0' - 1' ags

COMMENTS:

The driller was directed to install the borehole to a total depth of 5.1' bgs. All soils were screened with a PID meter and checked for olfactory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 5.1' to 2.4', bentonite seal from 2.4' to ground surface. The well was completed to grade with a concrete pad and steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Concrete Pad
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LDP-03**

DRILLING SUMMARY

Geologist:
Andrew Koons

Drilling Company:
LiRo Engineers

Driller:
Eric Miller

Rig Make/Model:
Hand Auger

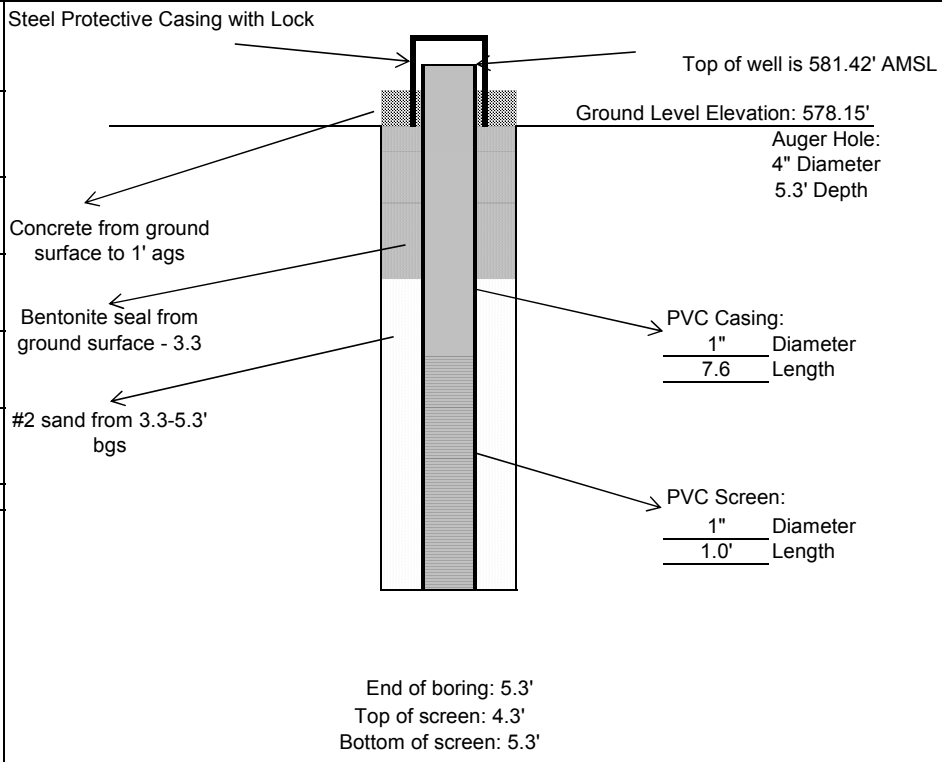
Date:
8/24/2017-8/25/2017

GEOLOGIC LOG

Depth (ft.)	Description
	See boring log

WELL DESIGN

MONITORING WELL CONSTRUCTION LOG



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel Protective Casing	Type: 1" Schedule 40 PVC	Type: No. 2 SAND Setting: 3.3'-5.3' bgs
Monitor: Schedule 40 PVC	Slot Diameter: 0.020"	*SEAL MATERIAL* Type: Bentonite Setting: 0'- 3.3' bgs Type: Concrete Pad Setting: 0' - 1' ags

COMMENTS:

The driller was directed to install the borehole to a total depth of 5.3' bgs. All soils were screened with a PID meter and checked for olfactory and visual evidence of petroleum product contamination. All PID readings were noted. A well was constructed of schedule 40 PVC piping and 0.020" slot diameter screen, with the sand pack from 5.3' to 3.3', bentonite seal from 3.3' to ground surface. The well was completed to grade with a concrete pad and steel protective casing.

LEGEND:

- PVC Casing
- #2 Sand
- Bentonite
- Concrete Pad
- PVC Screen

CLIENT:	**LOCATION:**	Project No.
NYSDEC	Niagara Sanitation	17-013-0289
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **LDP-04**

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: Kris Charney	**Operator:** N/A
Pit Number: TP-01	**Approx. water table depth:** ~2.5'

DEPTH	DESCRIPTION
-0-	0-1' dark brown SAND and SILT (0-1.0')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (1.0-2.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: TP-01 0-2.5' sampled at 0900 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

Comments:

TEST PIT LOG

Project: Niagara Sanitation	**Project #:** 17-013-0289
Client: NYSDEC	**Contractor:** SJB
Date Started: 7/19/17	**Elevation:** 576.65 AMSL
Date Completed: 7/19/17	**Pit max. depth:** 3.5' (approx. 3'x5')
Geologist: Kris Charney	**Operator:** N/A
Pit Number: TP-02	**Approx. water table depth:** ~3.5'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-0.5')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.5-3.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None.

Comments:

TEST PIT LOG

Project: Niagara Sanitation	**Project #:** 17-013-0289
Client: NYSDEC	**Contractor:** SJB
Date Started: 7/19/17	**Elevation:** 576.37 AMSL
Date Completed: 7/19/17	**Pit max. depth:** 3.5' (approx. 4'x4')
Geologist: Kris Charney	**Operator:** N/A
Pit Number: TP-03	**Approx. water table depth:** ~3.5'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-0.5')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.5-3.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: TP-03 0-3.5' sampled at 1000 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

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
Pit Number: TP-04	**Approx. water table depth:** ~3.5'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-0.5')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.5-3.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: TP-04 0-3.5' sampled at 1300 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

Comments: 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: TP-05	**Approx. water table depth:** ~3.5'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-0.75')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.75-3.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: TP-05 0-3.5' sampled at 1400 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

Comments: 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 Charney	**Operator:** N/A
Pit Number: TP-06	**Approx. water table depth:** ~3.5'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-0.5')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.5-3.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None.

Comments:

TEST PIT LOG

Project: Niagara Sanitation	**Project #:** 17-013-0289
Client: NYSDEC	**Contractor:** SJB
Date Started: 7/20/17	**Elevation:** 577.63 AMSL
Date Completed: 7/20/17	**Pit max. depth:** 5' (approx. 3'x7')
Geologist: Kris Charney	**Operator:** N/A
Pit Number: TP-07	**Approx. water table depth:** ~4.5'

DEPTH	DESCRIPTION
-0-	FILL: dark brown SAND and SILT, whole red brick, small pocket of blue-white sandy rock observed in the upper 0.5' (0-1.5')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (1.5-5.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Very limited amounts of waste materials observed.

Analytical Samples: TP-07 0-5' sampled at 0900 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

Comments: 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: Kris Charney	**Operator:** N/A
Pit Number: TP-08	**Approx. water table depth:** ~4.5'

DEPTH	DESCRIPTION
-0-	FILL: dark brown SAND and SILT, 0.5-1' roofing shingles/tar paper (0-1.0')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (1.0-4.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Suspect ACM roofing materials observed in the shallow soils (0.5-1.0' bgs).

Analytical Samples: None.

Comments:

TEST PIT LOG

Project: Niagara Sanitation	**Project #:** 17-013-0289
Client: NYSDEC	**Contractor:** SJB
Date Started: 7/20/17	**Elevation:** 577.33 AMSL
Date Completed: 7/20/17	**Pit max. depth:** 6.25' (approx. 3'x5')
Geologist: Kris Charney	**Operator:** N/A
Pit Number: TP-09	**Approx. water table depth:** ~4.5'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT, plastic at surface (0-0.75')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.75-6.0')
-4-	
-6-	light grey SILTY CLAY 6.0-6.25')
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Plastic sheeting observed at the surface, no other waste observed within the test pit.

Analytical Samples: TP-09 0-6' sampled at 0900 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

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: TP-10	**Approx. water table depth:** ~5'

DEPTH	DESCRIPTION
-0-	FILL: dark brown SAND and SILT, pockets of reddish brown medium sand, clay tile, glass, plastic (0-0.75')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.75-5.5')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste observed within the upper SAN and SILT (0-0.75') but not within the rest of the test pit.

Analytical Samples: None.

Comments:

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: Kris Charney	**Operator:** N/A
Pit Number: TP-11	**Approx. water table depth:** ~1.5'

DEPTH	DESCRIPTION
-0-	FILL: dark brown SAND and SILT (0-1.0')
-2-	FILL: light brown to brownish yellow SANDY SILT, fine, mottled, with trash (1.0-4.0')
-4-	pink to light grey CLAYEY SILT, hard (4.0-4.25')
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste observed within the test pit from 1.0-4.0' bgs.

Analytical Samples: TP-11 0-4' sampled at 1100 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

Comments: MS/MSD sample 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-12	**Approx. water table depth:** ~1'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-.075')
-2-	FILL: TRASH with dark brown SAND and SILT, fine (0.75-4.0')
-4-	pink to light grey CLAYEY SILT, hard (4.0-4.25')
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste observed within the test pit from 0.75'-4.0' bgs.

Analytical Samples: TP-12 0-4' sampled at 1000 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, 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:** 576.97 AMSL
Date Completed: 7/21/17	**Pit max. depth:** 4.5' (approx. 3'x4'
Geologist: Kris Charney	**Operator:** N/A
Pit Number: TP-13	**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-	pink to light grey CLAYEY SILT, hard (4.0-4.5')
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: No waste 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 SVOCs, and 8260C TCL VOCs.

Comments: Duplicate sample collected at this location.

TEST PIT LOG

Project: Niagara Sanitation	**Project #:** 17-013-0289
Client: NYSDEC	**Contractor:** SJB
Date Started: 7/21/17	**Elevation:** 576.98 AMSL
Date Completed: 7/21/17	**Pit max. depth:** 4.5' (approx 4'x7')
Geologist: Kris Charney	**Operator:** N/A
Pit Number: TP-14	**Approx. water table depth:** ~2'

DEPTH	DESCRIPTION
-0- - -2-	FILL: brown SANDY SILT with some clay, trace glass (0-3.5')
- -4-	light brown to brownish yellow SANDY SILT, fine, mottled (3.5-4.0')
- -6- - -8- - -10- - -12- - -14- - -16-	pink to light grey CLAYEY SILT, hard (4.0-4.5')

General: 0.0 ppm

Observed Wastes: Small amount of glass in the upper portion of the test pit (0-3.5').

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: TP-15	**Approx. water table depth:** ~4.5'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-1.0')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (1.0-4.5')
-4-	pink to light grey CLAYEY SILT, hard (4.5-5.0')
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: No waste 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 SVOCs, and 8260C TCL VOCs.

Comments: MS/MSD sample 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
Pit Number: TP-16	**Approx. water table depth:** ~3'

DEPTH	DESCRIPTION
-0-	dark brown 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'). Grades to pink to light grey CLAYEY SILT, hard (4.5-5.0')
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: No waste observed within the test pit.

Analytical Samples: TP-16 0-4.5' sampled at 1400 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, 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: TP-17	**Approx. water table depth:** ~3'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-0.5')
-2-	light brown to brownish yellow SANDY SILT, fine, mottled (0.5-4.0')
-4-	light grey SAND, fine (4.0-5.0')
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: No waste observed within the test pit.

Analytical Samples: TP-17 0-5' sampled at 1300 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

Comments:

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: Kris Charney	**Operator:** N/A
Pit Number: TP-18	**Approx. water table depth:** ~2'

DEPTH	DESCRIPTION
-0-	dark brown SAND and SILT (0-0.5')
-	FILL: light brown to brownish yellow SANDY SILT, fine, mottled (0.5-1.5')
-2-	FILL: light brown to brownish yellow mottled fine SANDY SILT, fine, mottled with glass, metal, plastic and trash (1.5-3.0')
-	
-4-	
-	
-6-	
-	
-8-	
-	
-10-	
-	
-12-	
-	
-14-	
-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed at approximately 1.5' bgs.

Analytical Samples: TP-18 0-3' sampled at 1100 for 6010C TAL Metals, 7471B Mercury, 8081B TCL Pesticides, 8082A TCL PCBs, 8270D TCL SVOCs, and 8260C TCL VOCs.

Comments: Slight petroleum odor

ATTACHMENT 4
Fence Post Logs and Hand Drilled Soil Boring Logs

FENCE POST LOG

Project: Niagara Sanitation	**Project #:** 17-013-0289
Client: NYSDEC	**Contractor:** New York State Fence
Date Started: 10/26/17	**Elevation:** N/A
Date Completed: 10/26/2017	**Hole max. depth:** ~3.0'
Geologist: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-1	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (0-0.75')
-2-	SANDY SILT, light brown to brownish yellow, fine, some clay (0.75-3.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-2	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0-	FILL: gray crushed stone (0-1.0')
-2-	FILL: SILTY SAND, light brown, with graphite (1.0-3.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-3	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0-	FILL: gray 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: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-4	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SAND and SILT, brown, with brick, plastic and metal (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-5	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SAND and SILT, brown, with trash, plastic and metal (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-6	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SAND and SILT, brown, with trash, plastic, and metal (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-7	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SAND and SILT, brown, with trash, plastic, metal and glass (0-3.0')

General: 0.0 ppm

Observed Wastes: Waste materials were 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-8	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SAND and SILT, brown, with trash, plastic and metal (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-9	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2-	FILL: SANDY SILT, brown, some clay, graphite (0-3.0')
- -4- - -6- - -8- - -10- - -12- - -14- - -16-	

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-10	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SAND and SILT, brown, with trash, plastic, metal and glass (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-11	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SAND and SILT, brown, with trash, plastic and metal (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-12	**Approx. water table depth:** N/A

DEPTH	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-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-13	**Approx. water table 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-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-14	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	SILTY SAND, brown, with trace clay (0-3.0')

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-15	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	SILTY SAND, brown, with trace clay (0-3.0')

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-16	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2-	FILL: SILTY SAND, brown, with plastic and trash (0-3.0')
- -4- - -6- - -8- - -10- - -12- - -14- - -16-	

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-17	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SILTY SAND, brown, with plastic and trash (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-18	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SILTY SAND, brown, with plastic and trash (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-19	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2-	FILL: SILTY SAND, brown, with plastic, trash and glass (0-3.0')
- -4- - -6- - -8- - -10- - -12- - -14- - -16-	

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-20	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2- - -4- - -6- - -8- - -10- - -12- - -14- - -16-	FILL: SILTY SAND, brown, with plastic and trash (0-3.0')

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-21	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0- - -2-	FILL: SILTY SAND, brown, with trash and ceramics (0-3.0')
- -4- - -6- - -8- - -10- - -12- - -14- - -16-	

General: 0.0 ppm

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-22	**Approx. water table depth:** N/A

DEPTH	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-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: F-23	**Approx. water table depth:** N/A

DEPTH	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-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

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: 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 Number: F-24	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with some clay and organics (0-0.5')
-2-	SANDY SILT, brown, fine, with some clay, trace organics (0.5-3.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: Fence post hole dug with fence post digger. 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 Koons	**Operator:** N/A
Fence Post Hole Number: F-25	**Approx. water table depth:** N/A

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with some clay and organics (0-0.5')
-2-	SANDY SILT, brown, fine, with some clay, trace organics (0.5-3.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-1	**Approx. water 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-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-2	**Approx. water 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 SILTY SAND
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-3	**Approx. water 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-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-4 | **Approx. water table depth:** 4.0

DEPTH	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-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-5	**Approx. water table depth:** 4.0

DEPTH	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-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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 Number: HB-6	**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 glass (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-7	**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 glass (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-8 | **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 glass (1.0-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-9	**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 glass (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-10 | **Approx. water 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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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 Number: HB-11	**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 glass (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-12	**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 glass (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-13	**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 and plastic(0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-14	**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 and plastic(0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-15	**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 and plastic(0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-16 | **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-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 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-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 Number: HB-18	**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-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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 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 graphite (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-20 | **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-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-21	**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-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-22	**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 and plastic (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-23	**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-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole 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-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-25	**Approx. water 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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-26 | **Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (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-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-27	**Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (0-0.5')
-	FILL: sand and gravel with some silt, trace slag and asphalt (0.5-4.0')
-2-	
-	
-4-	
-	
-6-	
-	
-8-	
-	
-10-	
-	
-12-	
-	
-14-	
-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed. Fill materials possibly from old access road.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-28	**Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (0-0.5')
-	FILL: sand and gravel with some silt, trace slag and asphalt (0.5-4.0')
-2-	
-	
-4-	
-	
-6-	
-	
-8-	
-	
-10-	
-	
-12-	
-	
-14-	
-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed. Fill materials possibly from old access road.

Analytical Samples: None

Comments: 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:** ~2.0'
Geologist: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-29	**Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (0-0.5')
-	FILL: sand and gravel with some silt, trace slag and asphalt (0.5-4.0')
-2-	
-	
-4-	
-	
-6-	
-	
-8-	
-	
-10-	
-	
-12-	
-	
-14-	
-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed. Fill materials possibly from old access road.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-30	**Approx. water 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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-31	**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-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-32	**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 and plastic (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-33 | **Approx. water 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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-34 | **Approx. water 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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-35 | **Approx. water 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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-36 | **Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-37	**Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (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-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-38	**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 and plastic (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-39	**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-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-40 | **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-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-41	**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 metal (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-42	**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 wiring (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-43	**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 and plastic (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-44	**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 and plastic (0.5-4.0')
-4-	
-6-	
-8-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-45	**Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (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-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole 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-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-47	**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-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons | **Operator:** N/A

Fence Post Hole Number: HB-48 | **Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (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-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-49	**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-	
-10-	
-12-	
-14-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-50	**Approx. water table depth:** 4.0

DEPTH	DESCRIPTION
-0-	SAND and SILT, dark brown, with organics (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-	
-16-	

General: 0.0 ppm

Observed Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-51	**Approx. water 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 Wastes: Waste materials not observed.

Analytical Samples: None

Comments: 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: Andrew Koons	**Operator:** N/A
Fence Post Hole Number: HB-52	**Approx. water 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-	

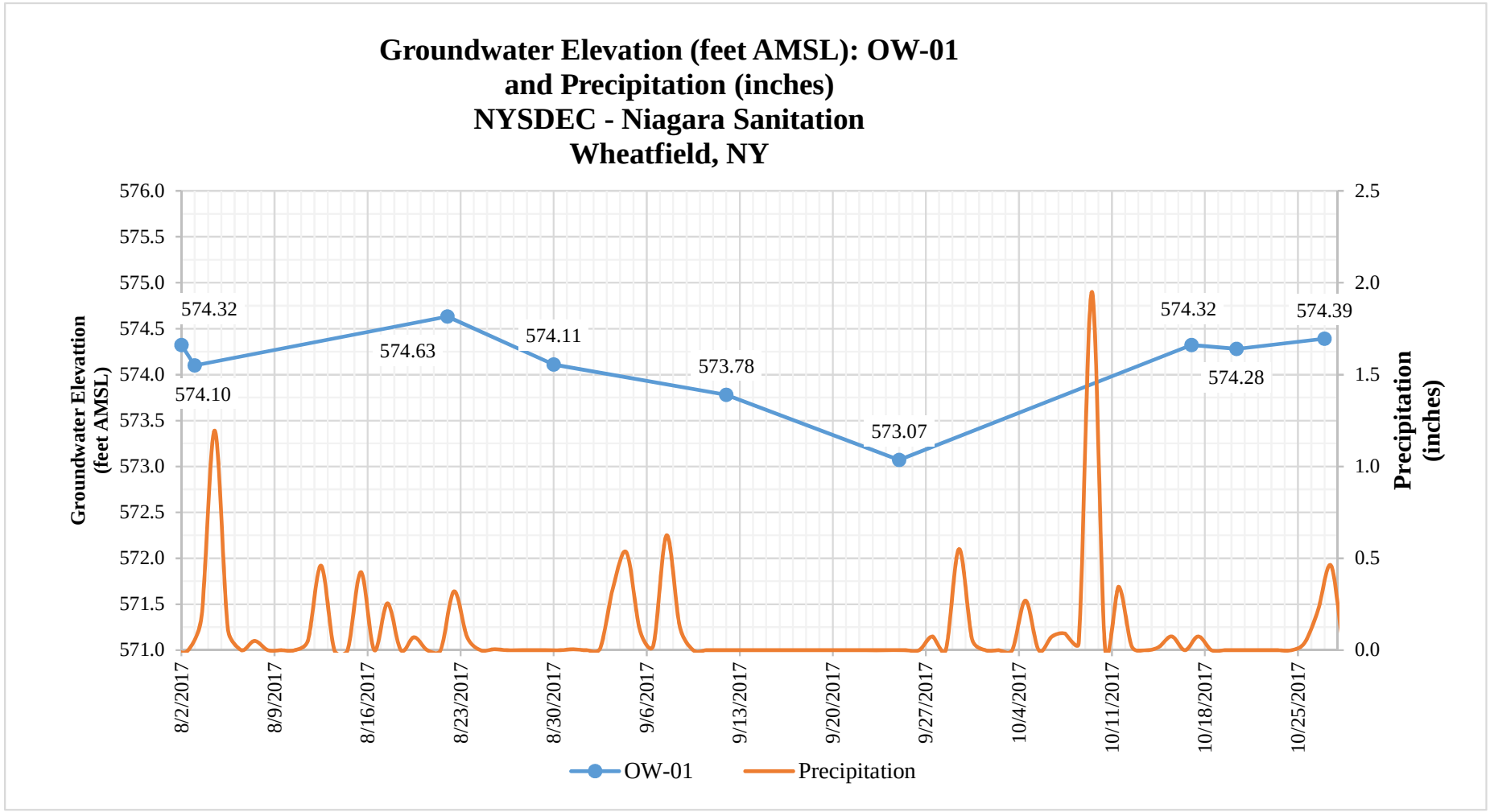
General: 0.0 ppm

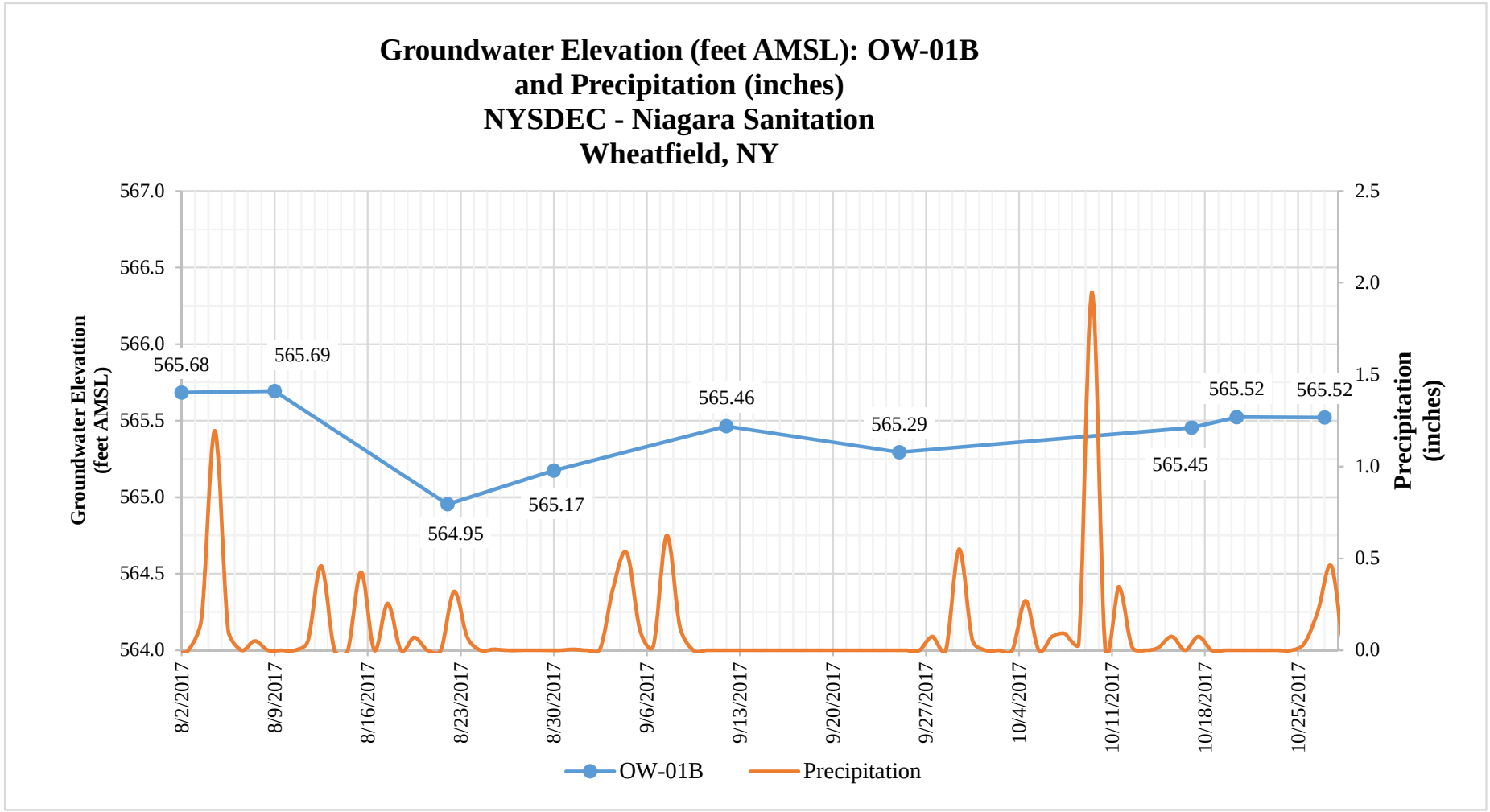
Observed Wastes: Waste materials not observed.

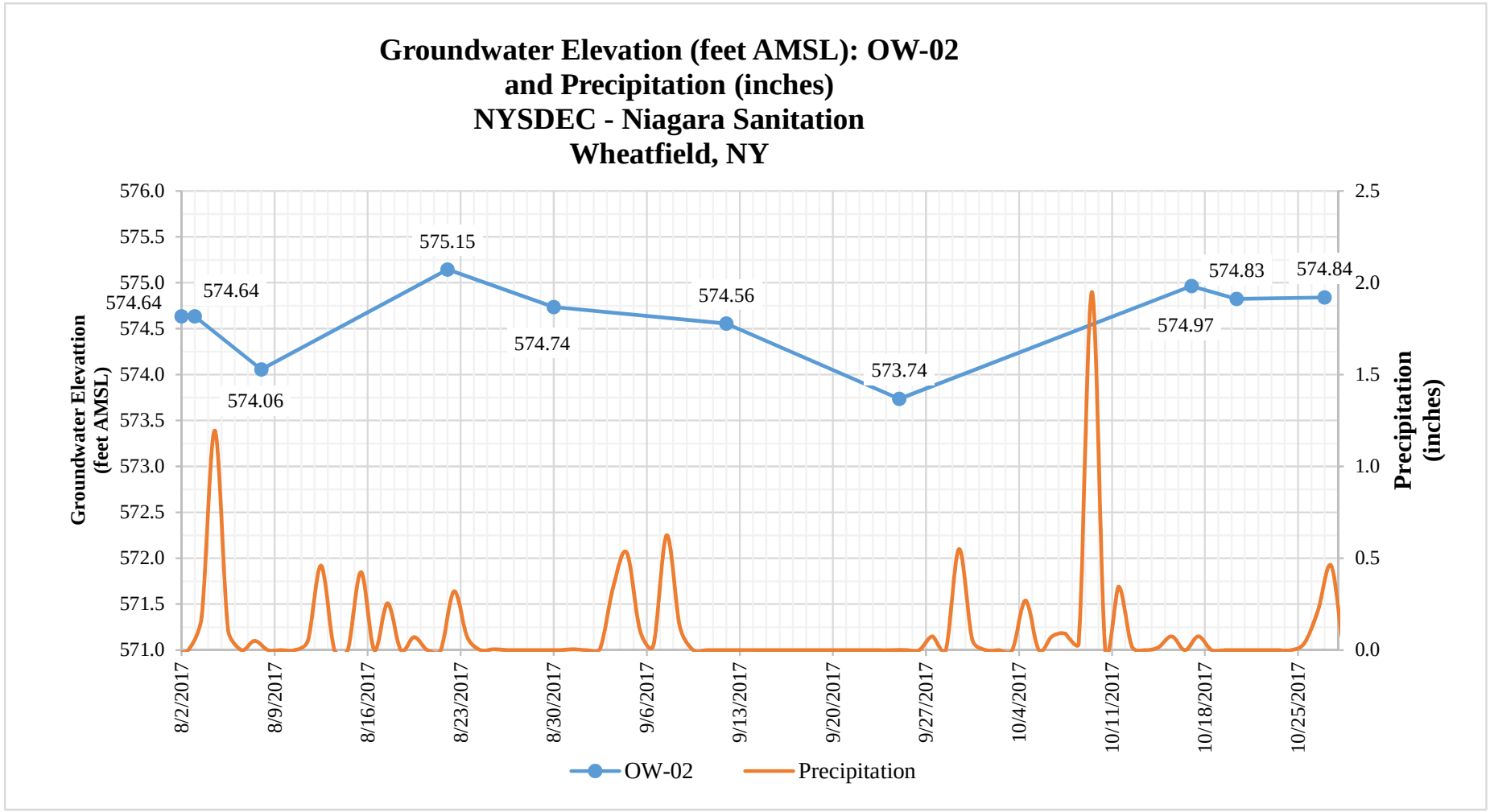
Analytical Samples: None

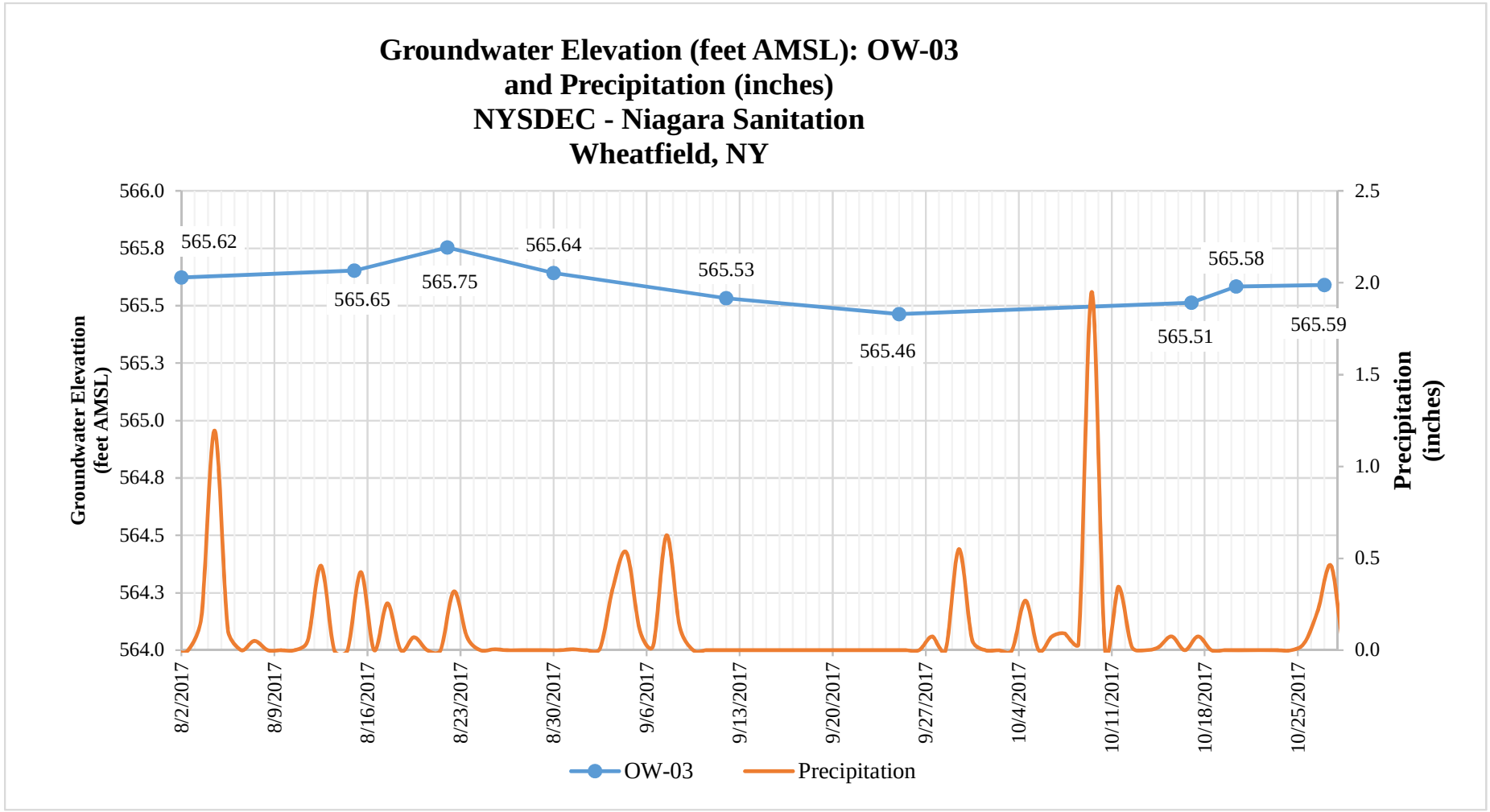
Comments: All depths are approximate.

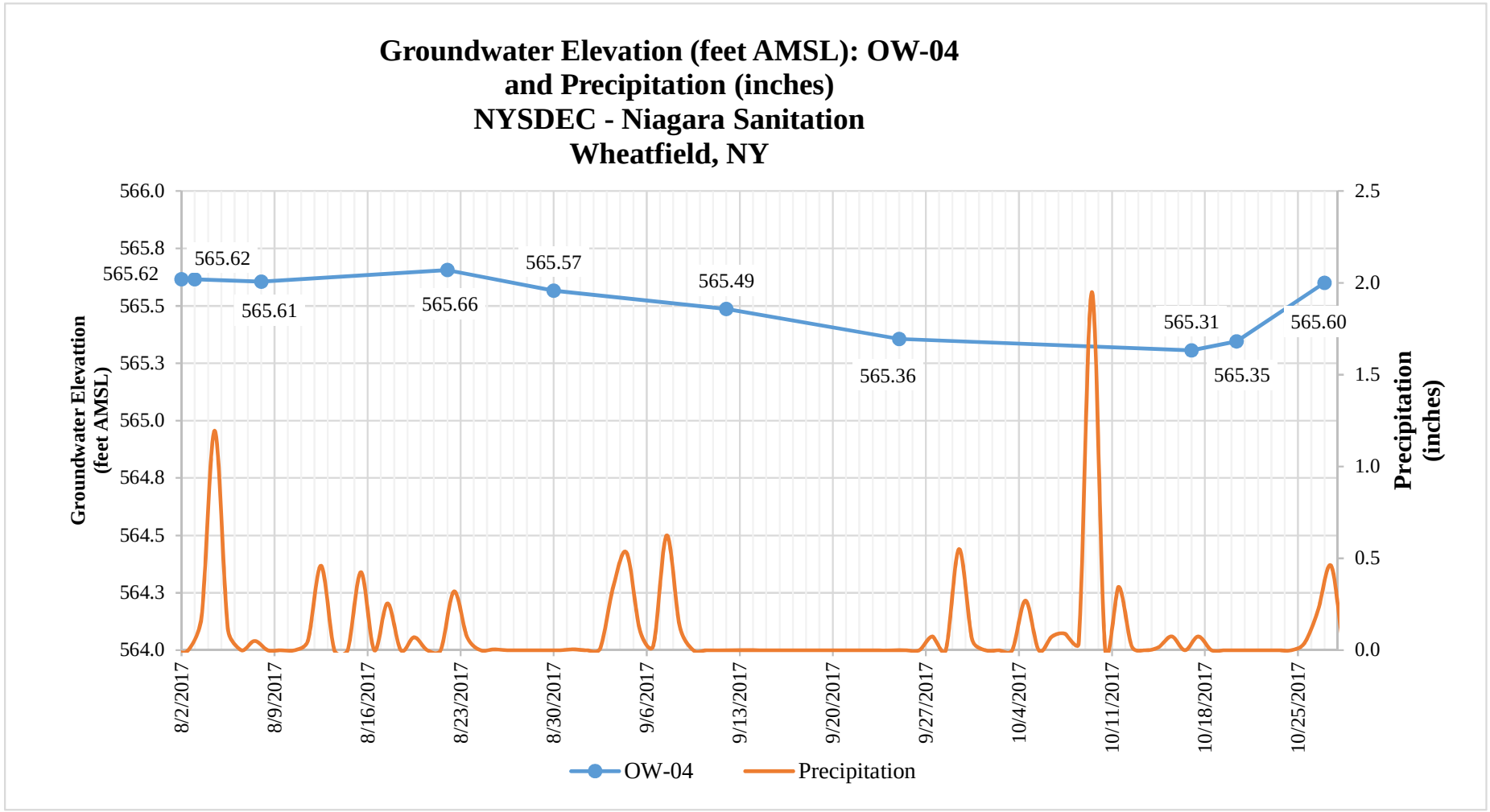
ATTACHMENT 5
Surface Water and Groundwater Elevation Charts with Precipitation Data

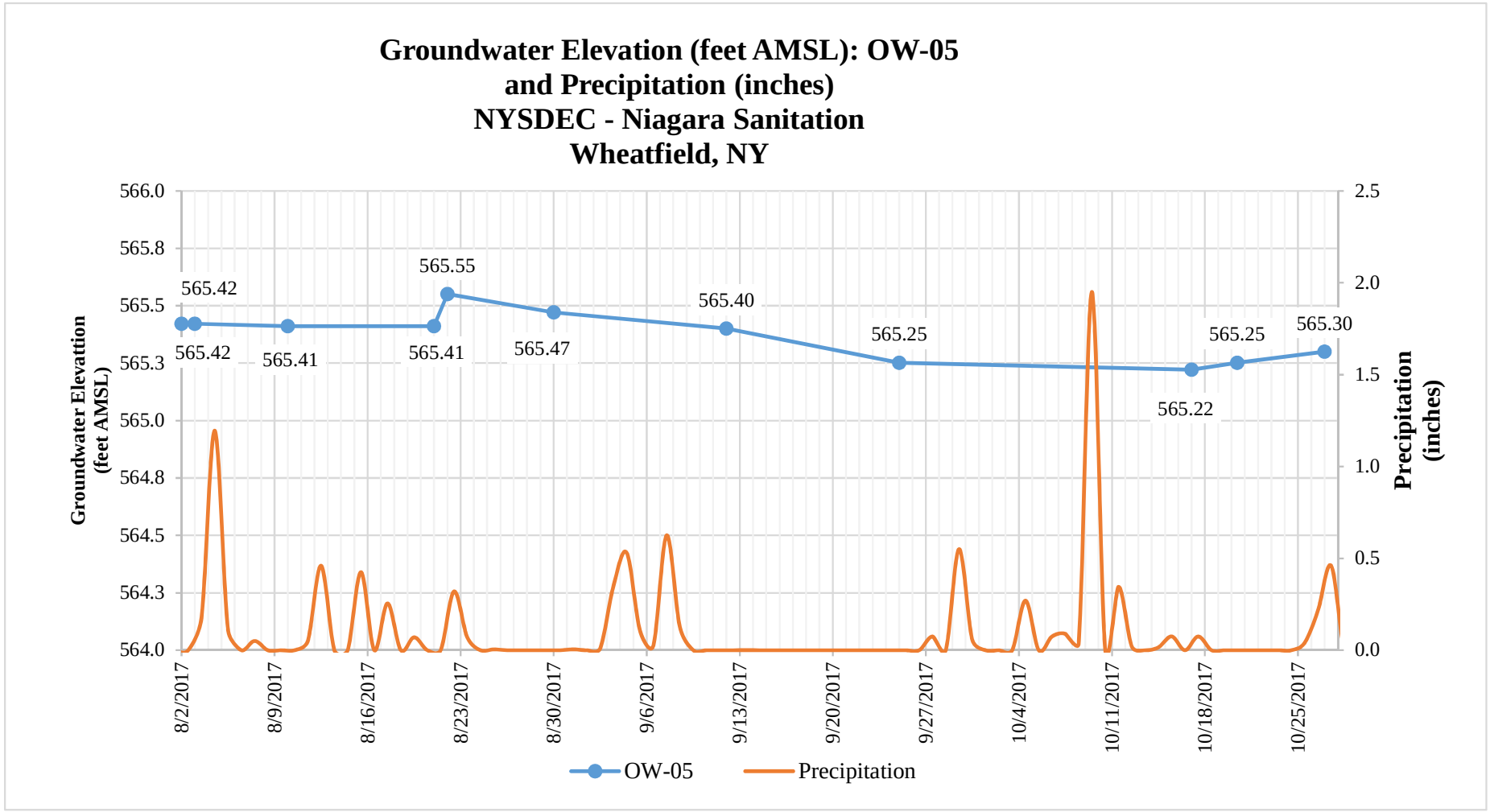

Groundwater Elevation (feet AMSL): OW-01
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.32
574.10
574.63
574.11
573.78
573.07
574.32
574.28
574.39
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-01
Precipitation

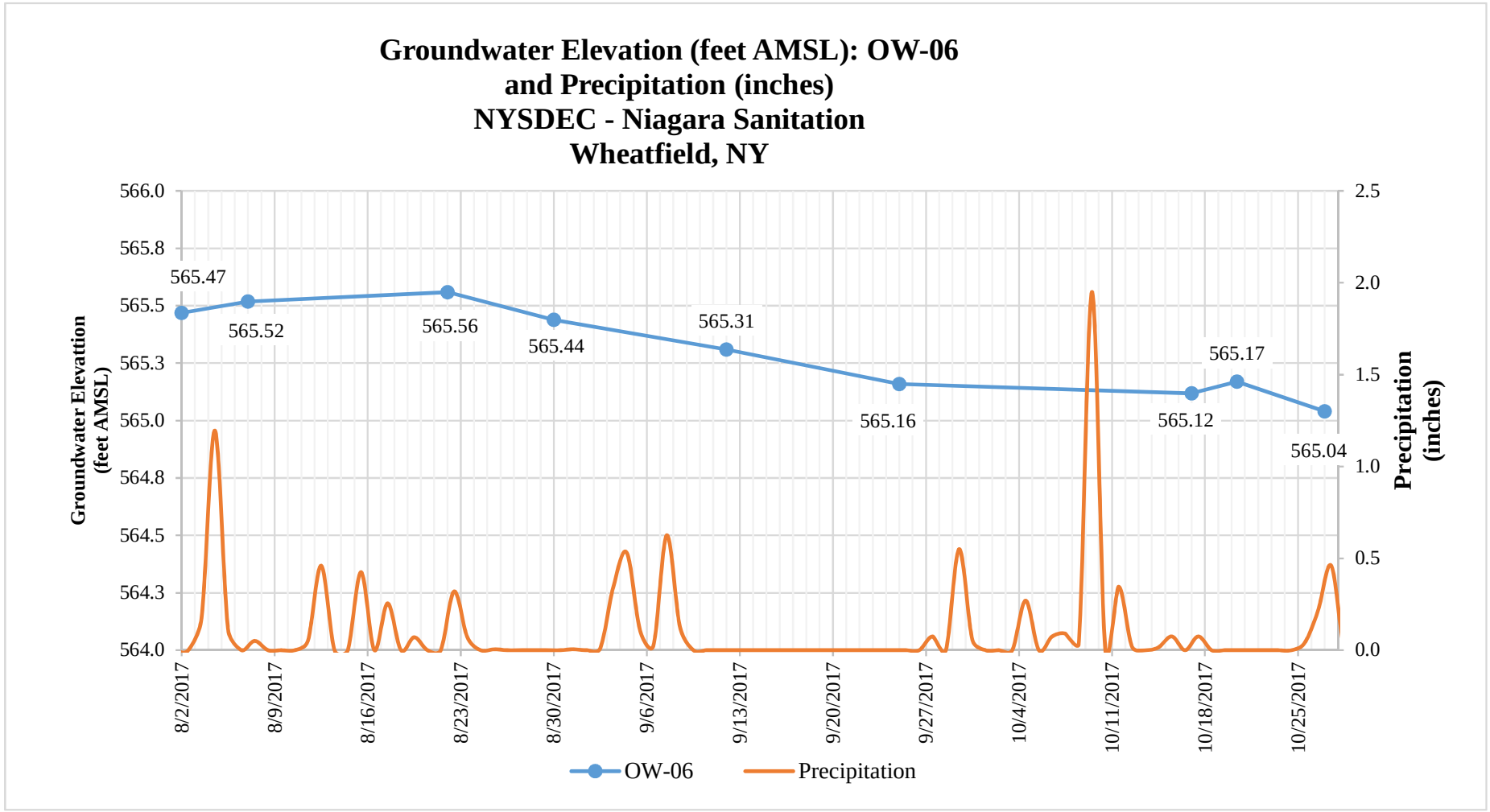

Groundwater Elevation (feet AMSL): OW-01B
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
567.0
566.5
566.0
565.5
565.0
564.5
564.0
2.5
2.0
1.5
1.0
0.5
0.0
565.68
565.69
564.95
565.17
565.46
565.29
565.45
565.52
565.52
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-01B
Precipitation

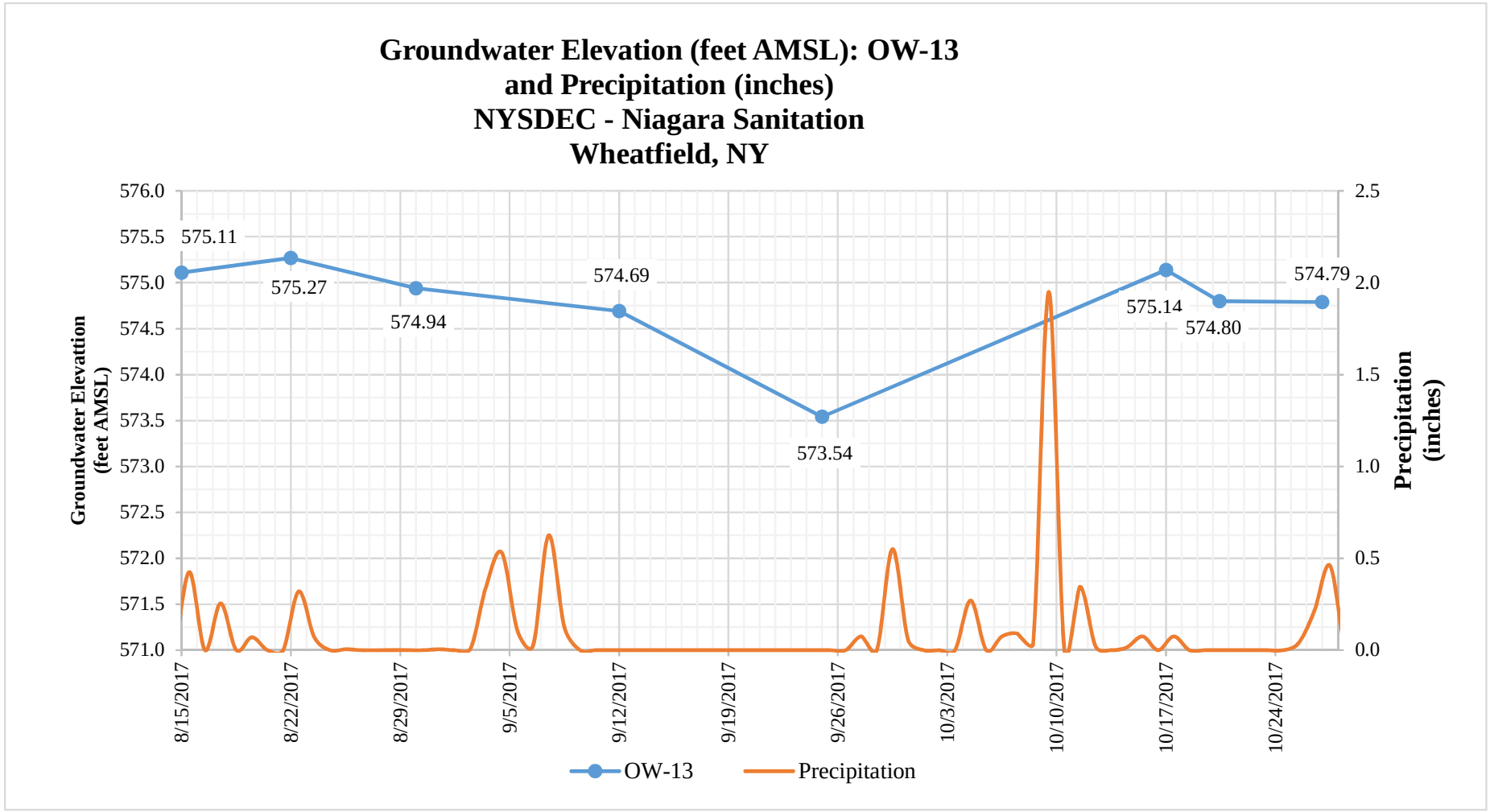

Groundwater Elevation (feet AMSL): OW-02
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.64
574.64
574.06
575.15
574.74
574.56
573.74
574.97
574.83
574.84
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-02
Precipitation

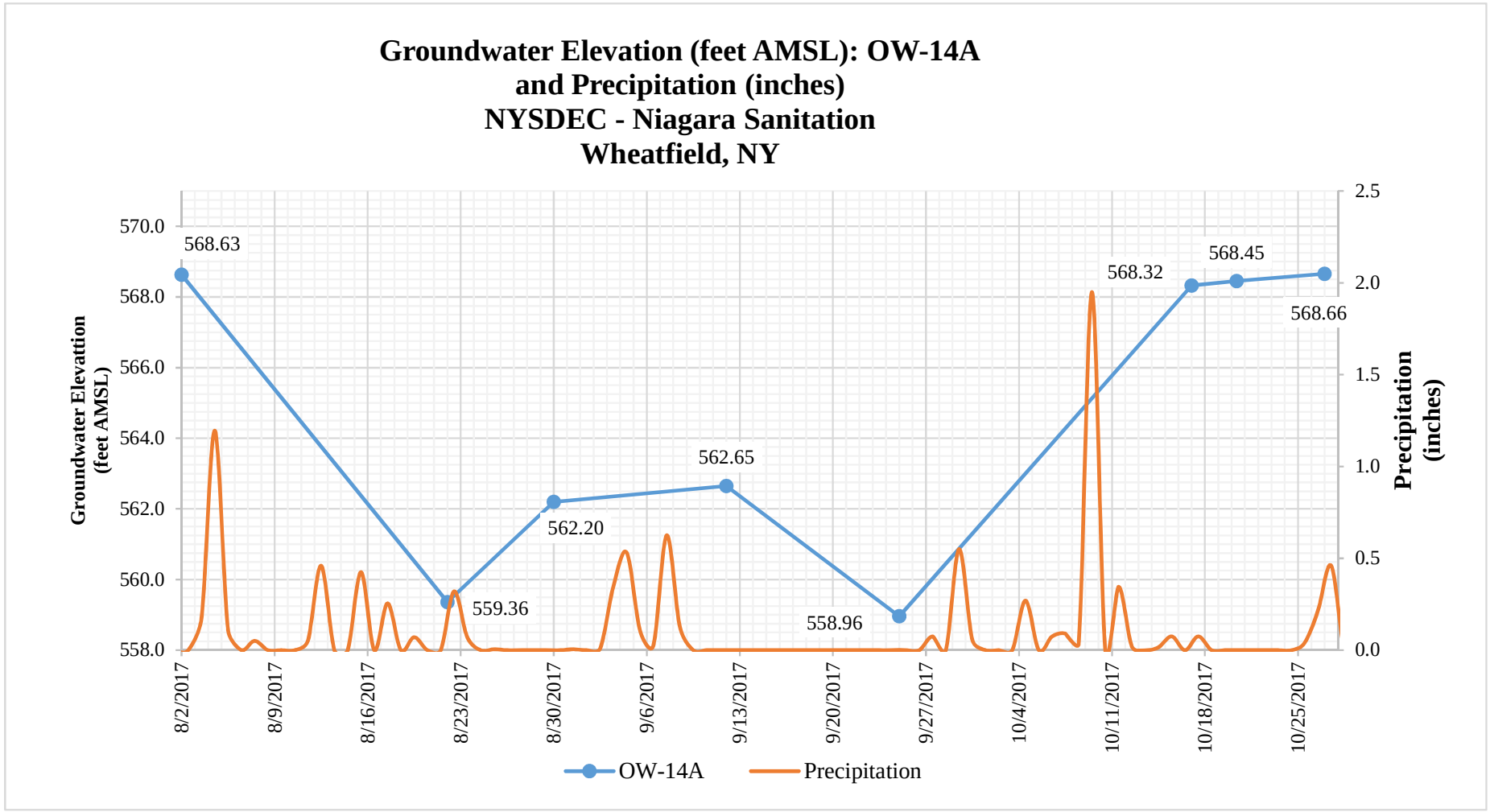

Groundwater Elevation (feet AMSL): OW-03
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
566.0
565.8
565.5
565.3
565.0
564.8
564.5
564.3
564.0
2.5
2.0
1.5
1.0
0.5
0.0
565.62
565.65
565.75
565.64
565.53
565.46
565.51
565.58
565.59
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-03
Precipitation

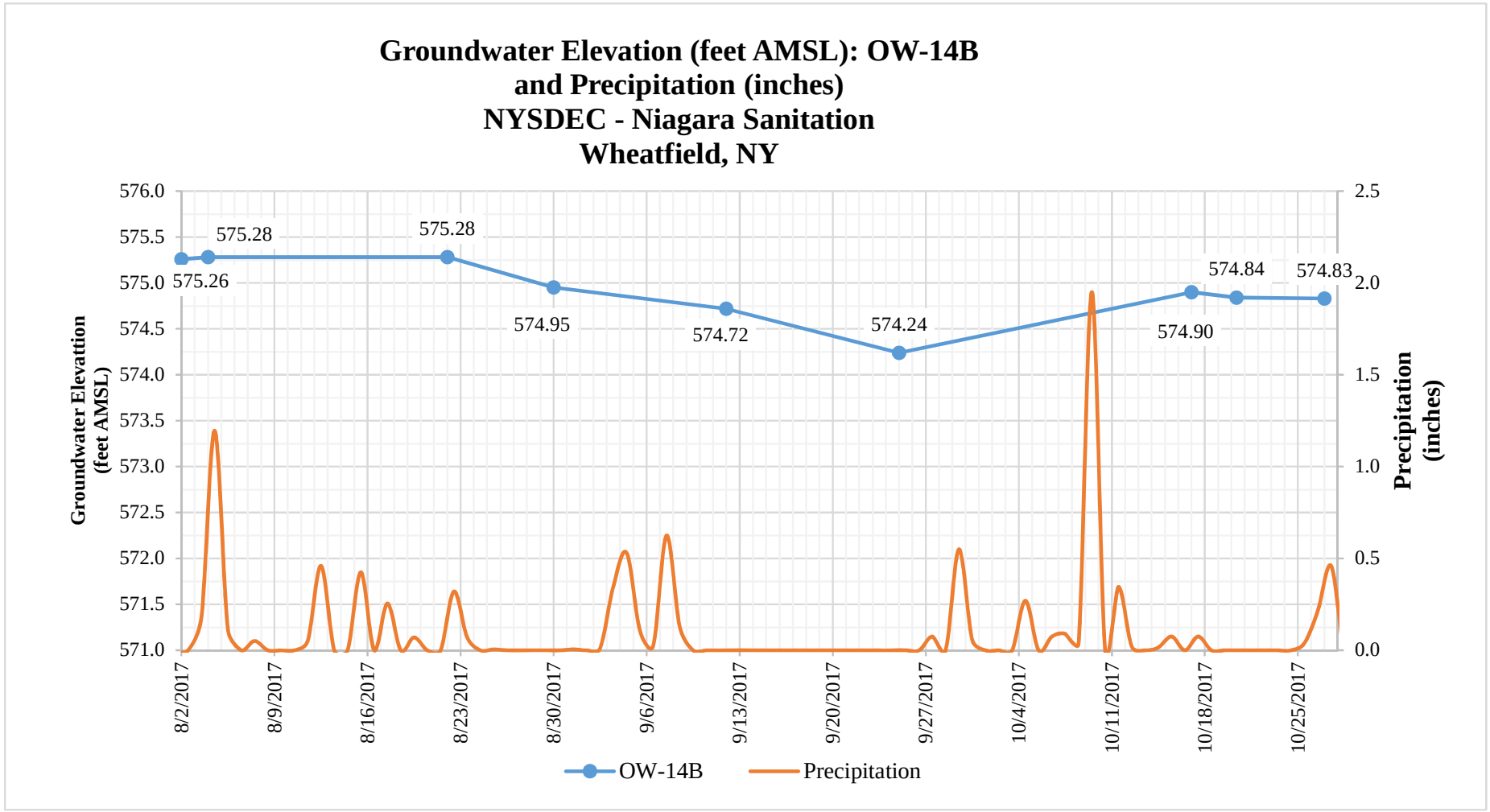

Groundwater Elevation (feet AMSL): OW-04
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
566.0
565.8
565.5
565.3
565.0
564.8
564.5
564.3
564.0
2.5
2.0
1.5
1.0
0.5
0.0
565.62
565.62
565.61
565.66
565.57
565.49
565.36
565.31
565.35
565.60
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-04
Precipitation

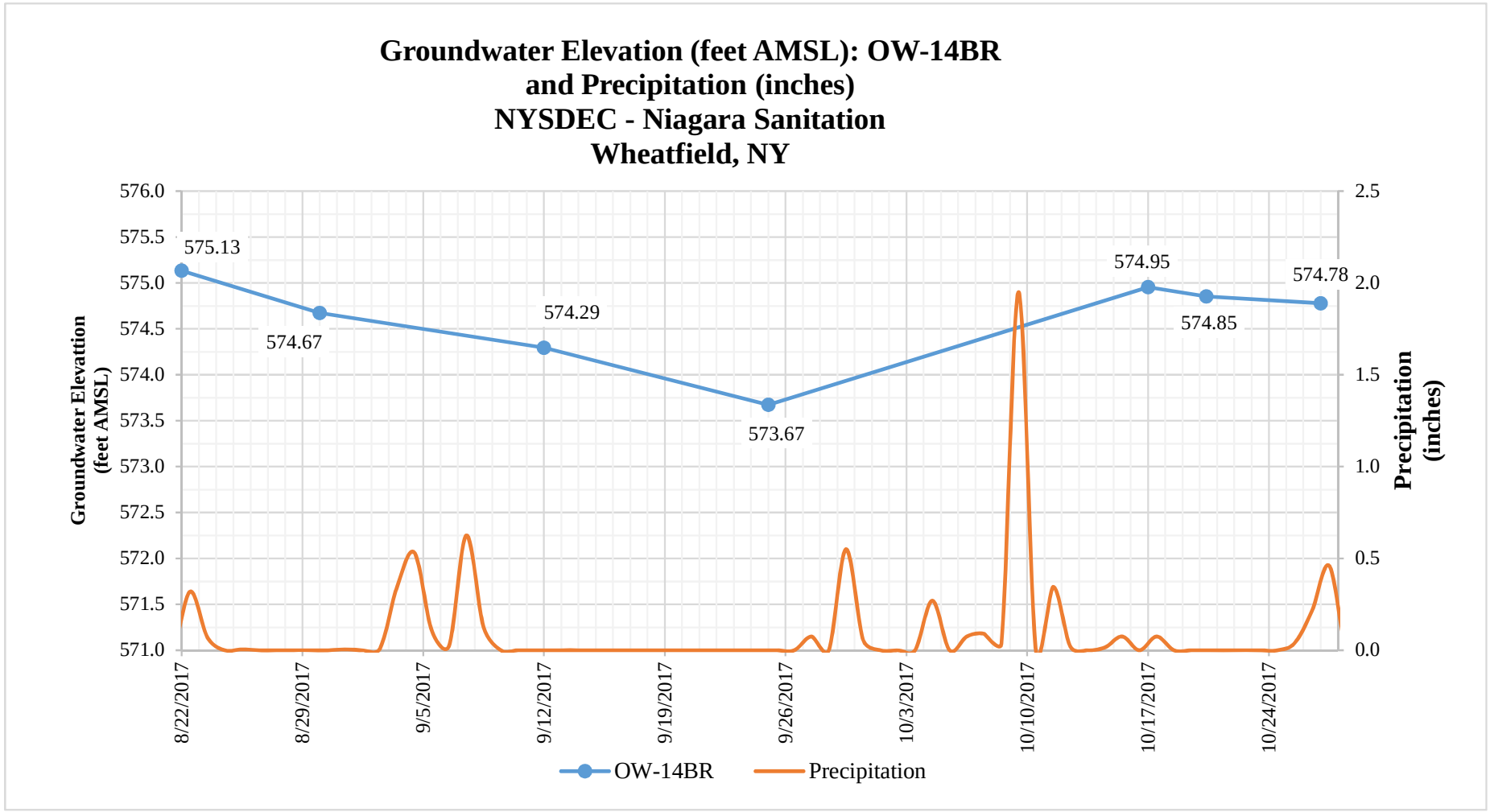

Groundwater Elevation (feet AMSL): OW-05
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
566.0
565.8
565.5
565.3
565.0
564.8
564.5
564.3
564.0
2.5
2.0
1.5
1.0
0.5
0.0
565.42
565.42
565.41
565.41
565.55
565.47
565.40
565.25
565.22
565.25
565.30
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-05
Precipitation

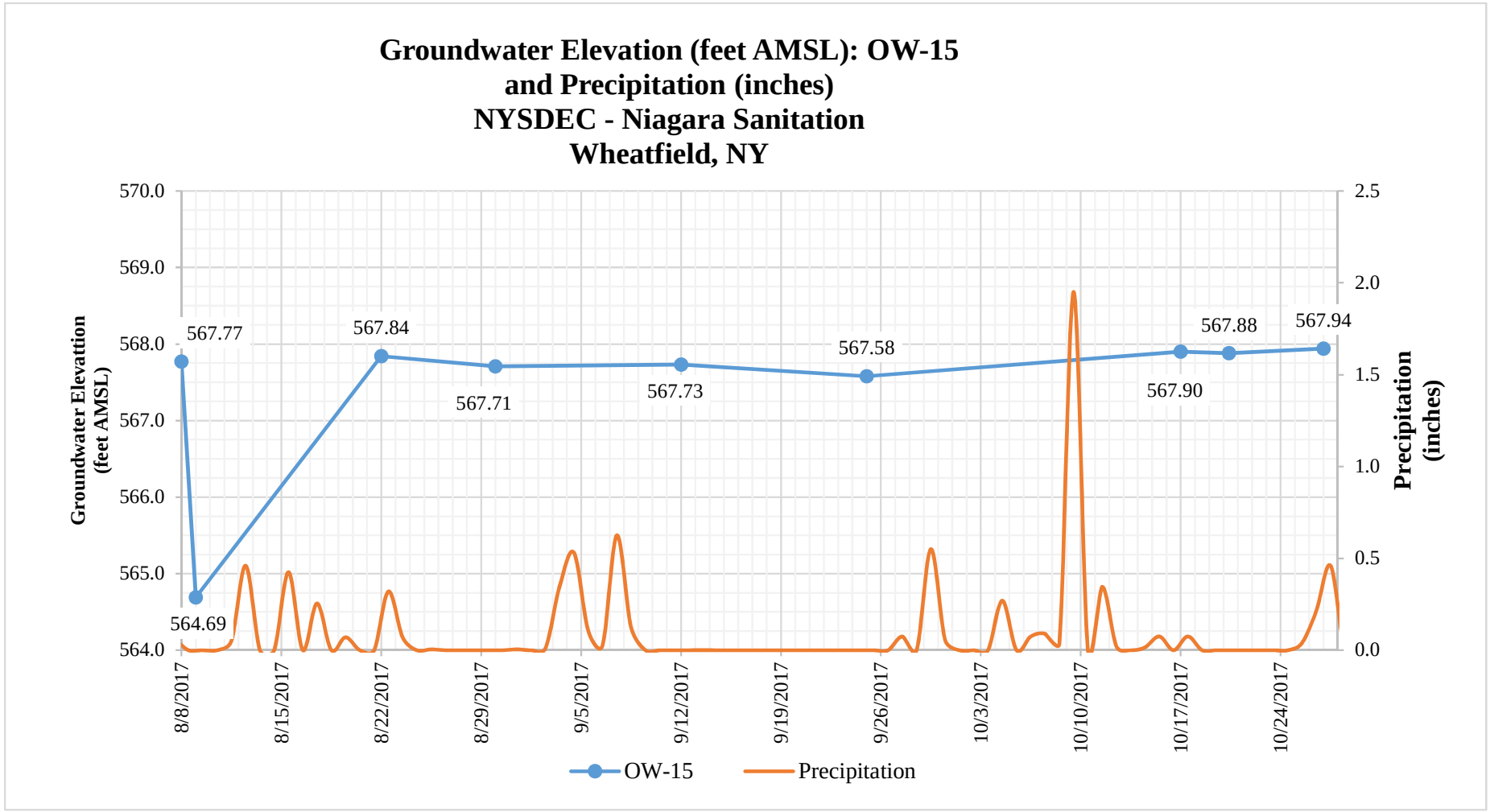

Groundwater Elevation (feet AMSL): OW-06
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
566.0
565.8
565.5
565.3
565.0
564.8
564.5
564.3
564.0
2.5
2.0
1.5
1.0
0.5
0.0
565.47
565.52
565.56
565.44
565.31
565.16
565.12
565.17
565.04
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-06
Precipitation

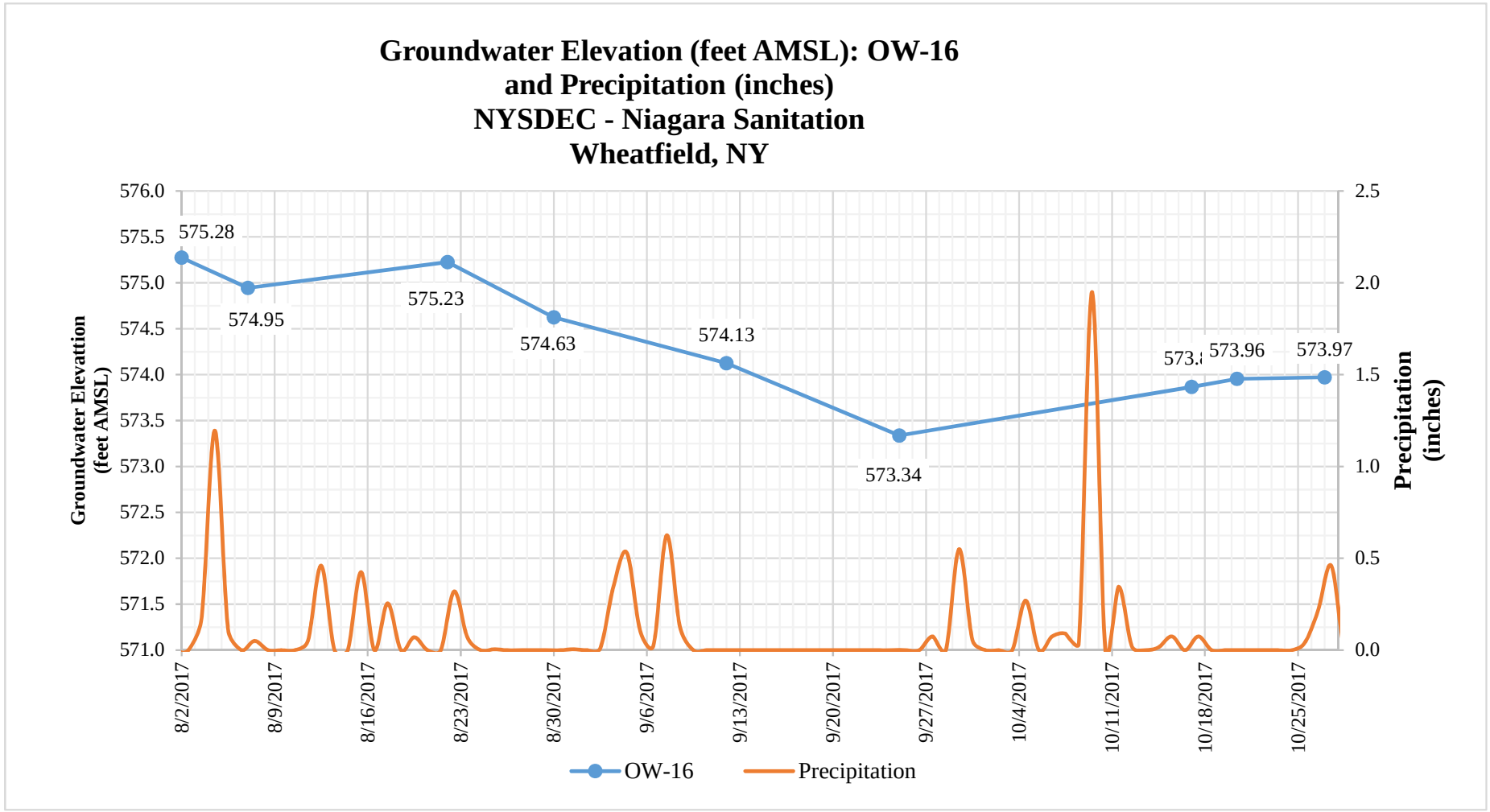

Groundwater Elevation (feet AMSL): OW-13
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.11
575.27
574.94
574.69
573.54
575.14
574.80
574.79
8/15/2017
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
OW-13
Precipitation

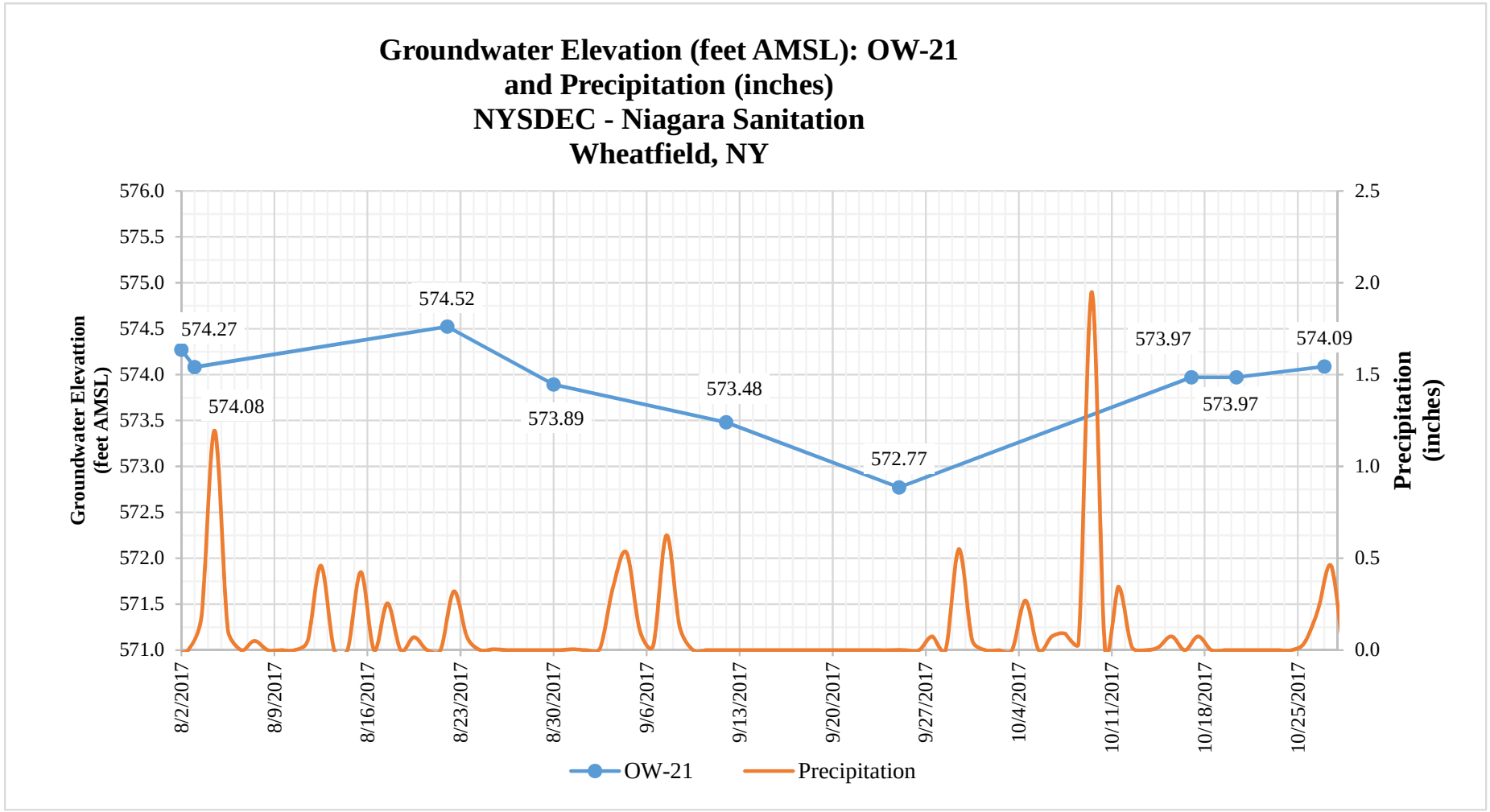

Groundwater Elevation (feet AMSL): OW-14A
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
570.0
568.0
566.0
564.0
562.0
560.0
558.0
2.5
2.0
1.5
1.0
0.5
0.0
568.63
559.36
562.20
562.65
558.96
568.32
568.45
568.66
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-14A
Precipitation

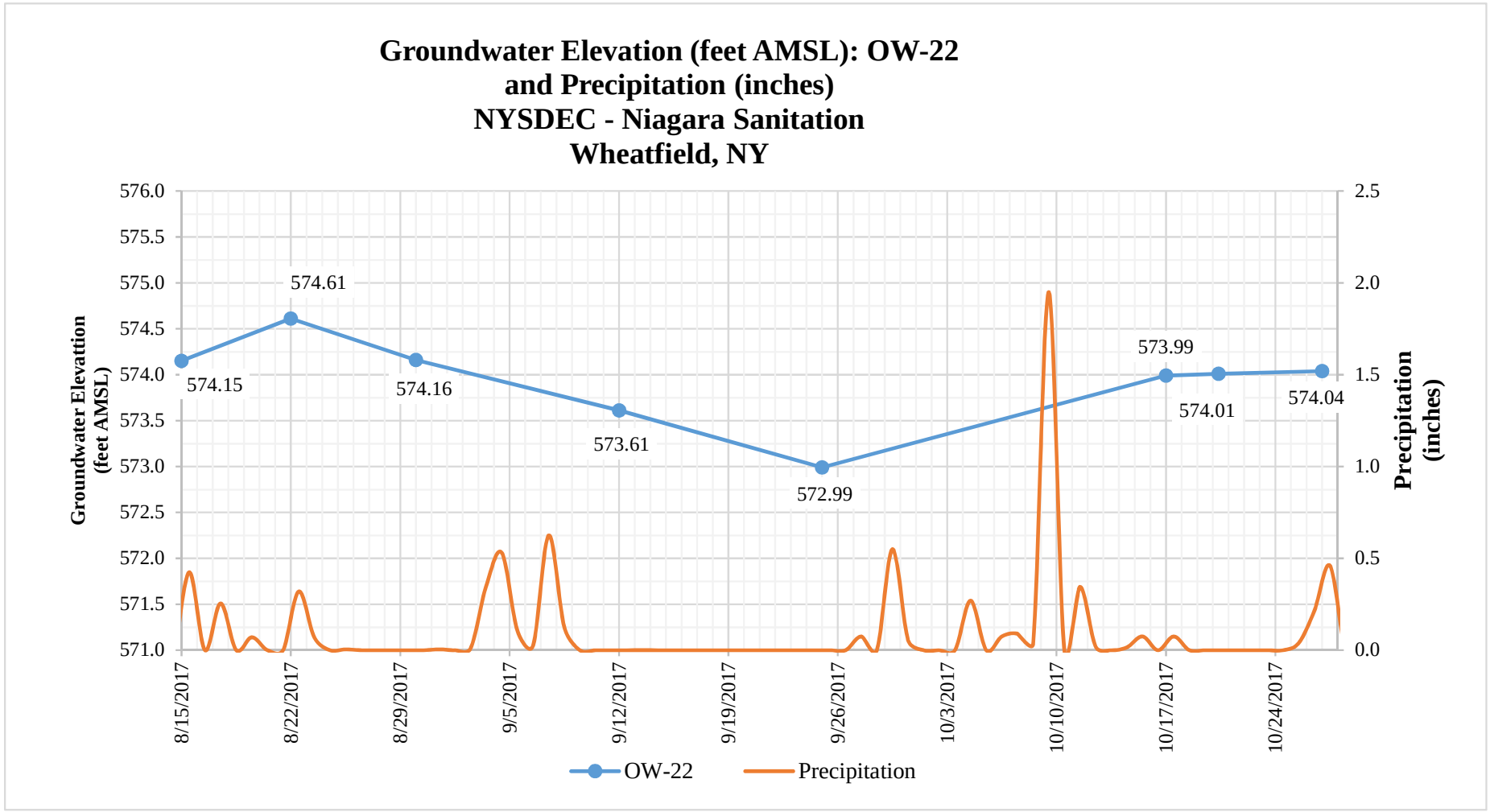

Groundwater Elevation (feet AMSL): OW-14B
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.26
575.28
575.28
574.95
574.72
574.24
574.90
574.84
574.83
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-14B
Precipitation

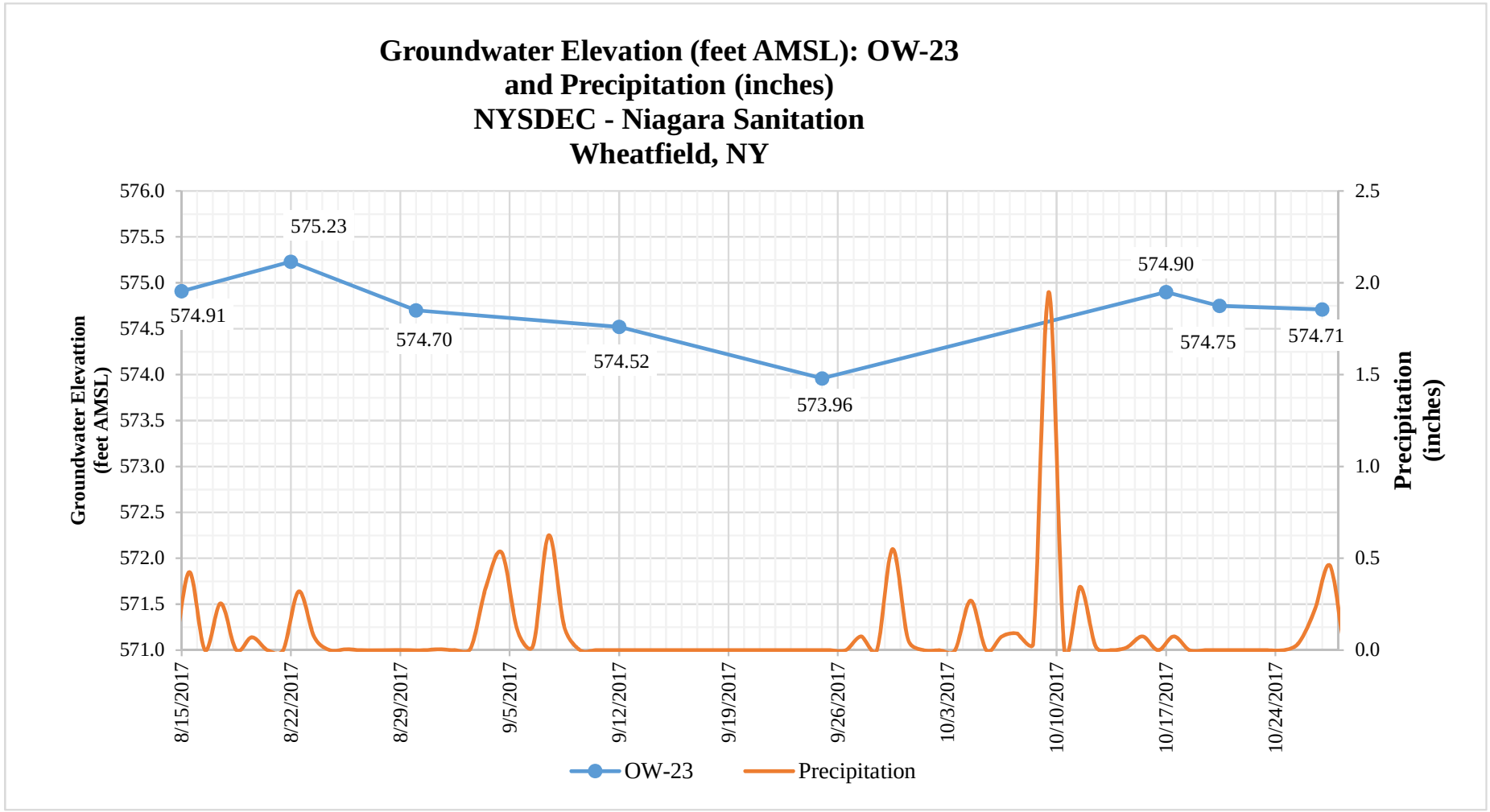

Groundwater Elevation (feet AMSL): OW-14BR
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.13
574.67
574.29
573.67
574.95
574.85
574.78
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
OW-14BR
Precipitation

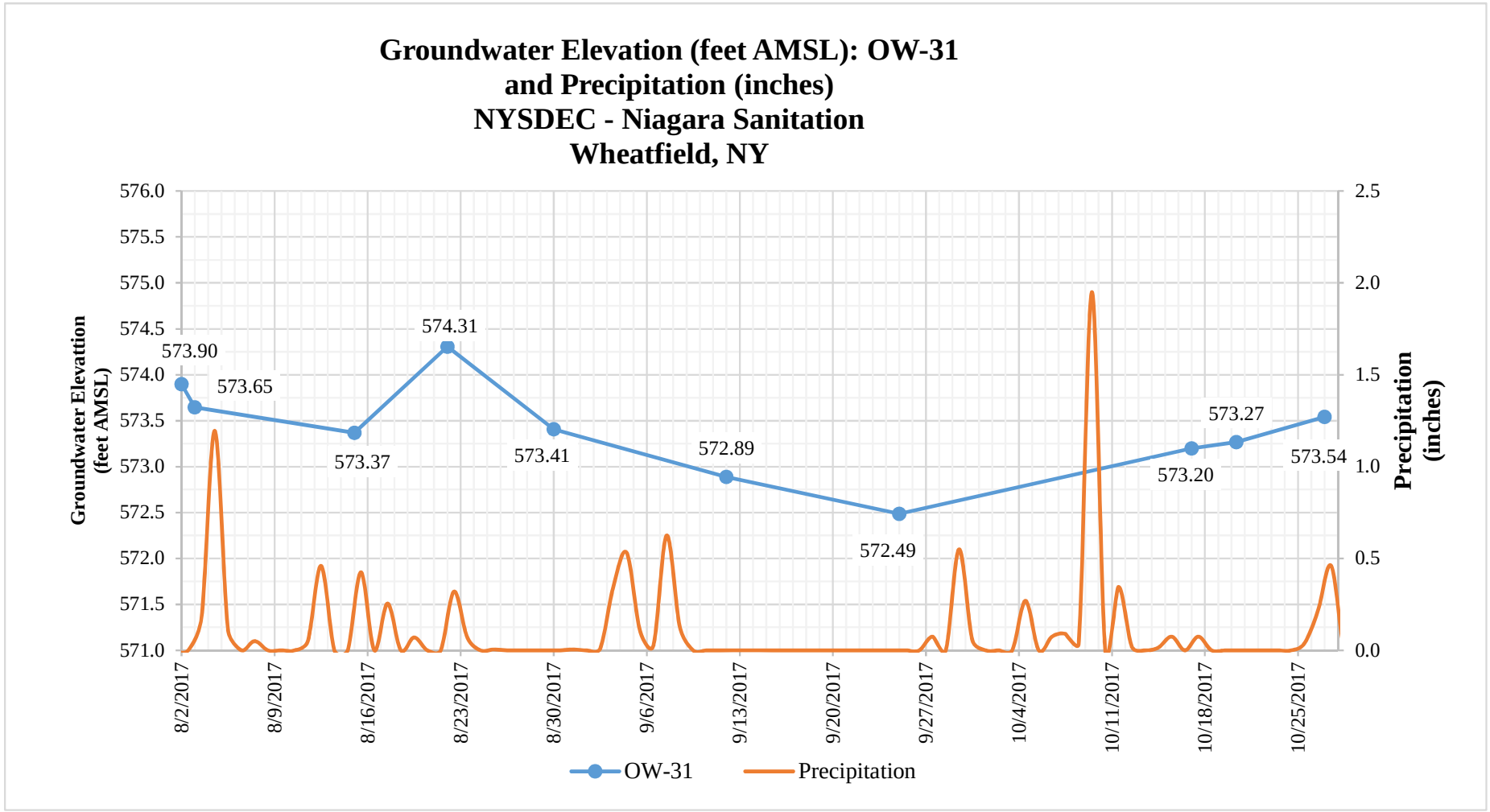

Groundwater Elevation (feet AMSL): OW-15
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
570.0
569.0
568.0
567.0
566.0
565.0
564.0
2.5
2.0
1.5
1.0
0.5
0.0
567.77
564.69
567.84
567.71
567.73
567.58
567.90
567.88
567.94
8/8/2017
8/15/2017
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
OW-15
Precipitation

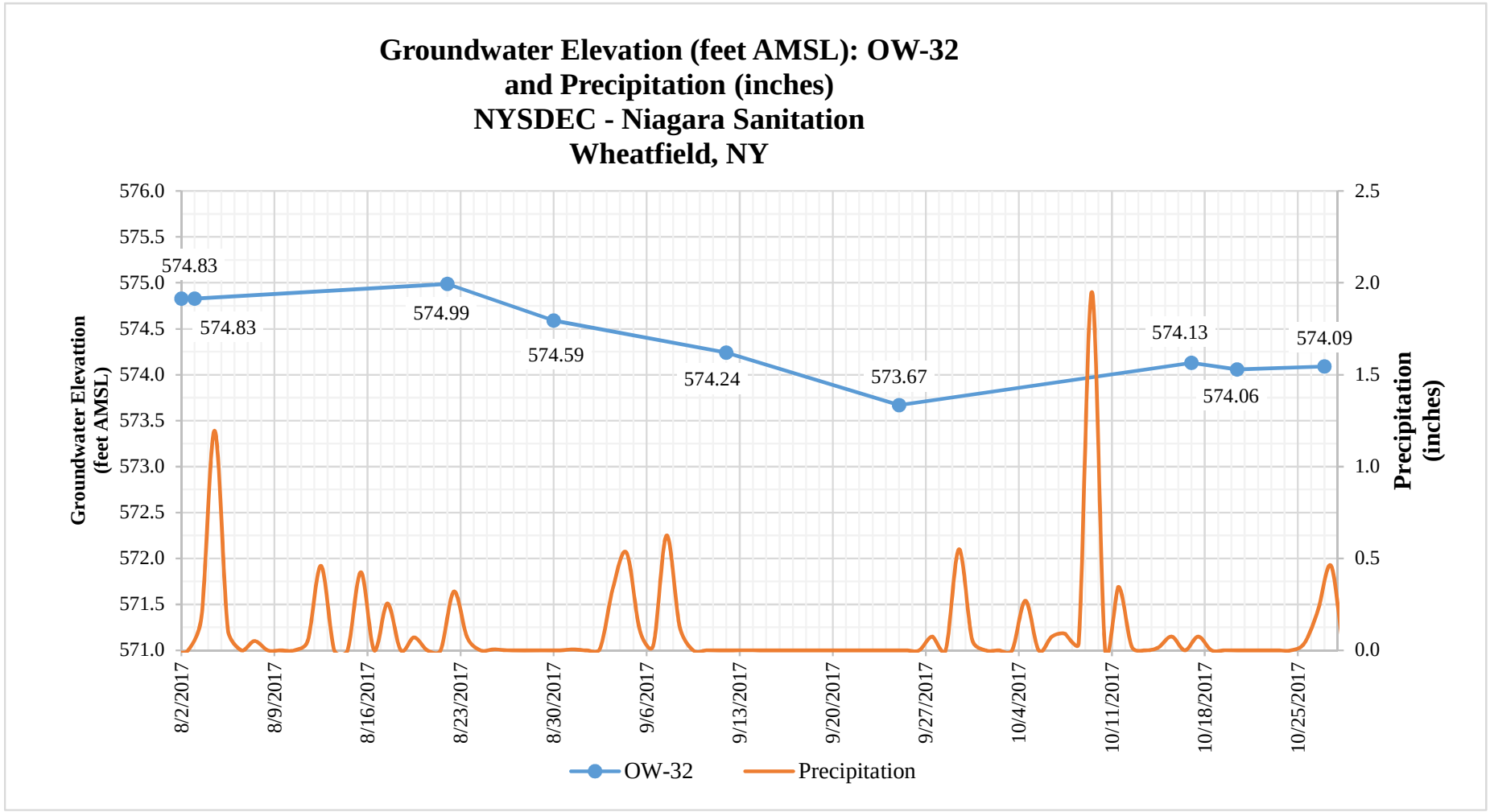

Groundwater Elevation (feet AMSL): OW-16
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.28
574.95
575.23
574.63
574.13
573.34
573.96
573.97
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-16
Precipitation

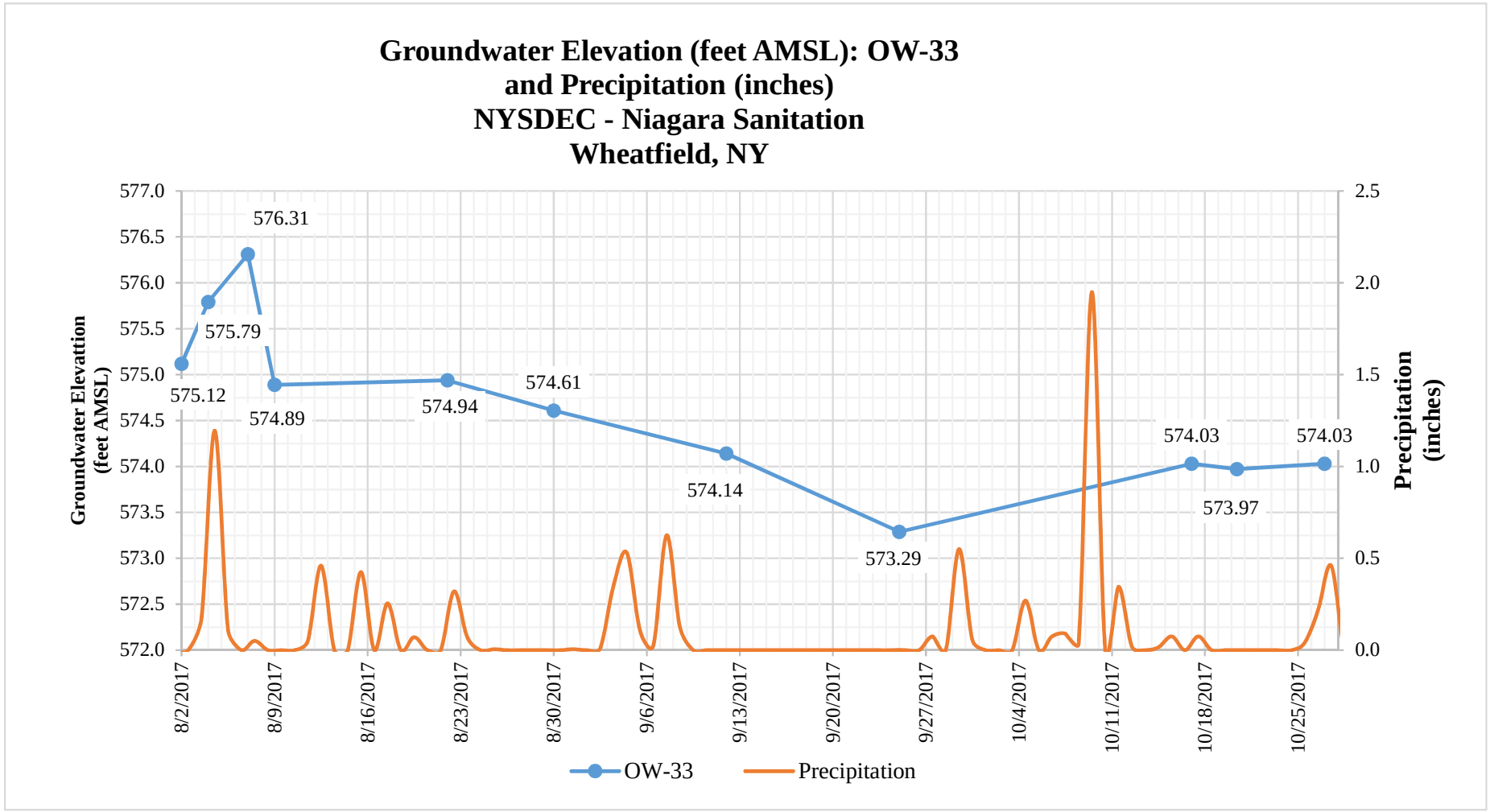

Groundwater Elevation (feet AMSL): OW-21
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.27
574.08
574.52
573.89
573.48
572.77
573.97
573.97
574.09
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-21
Precipitation

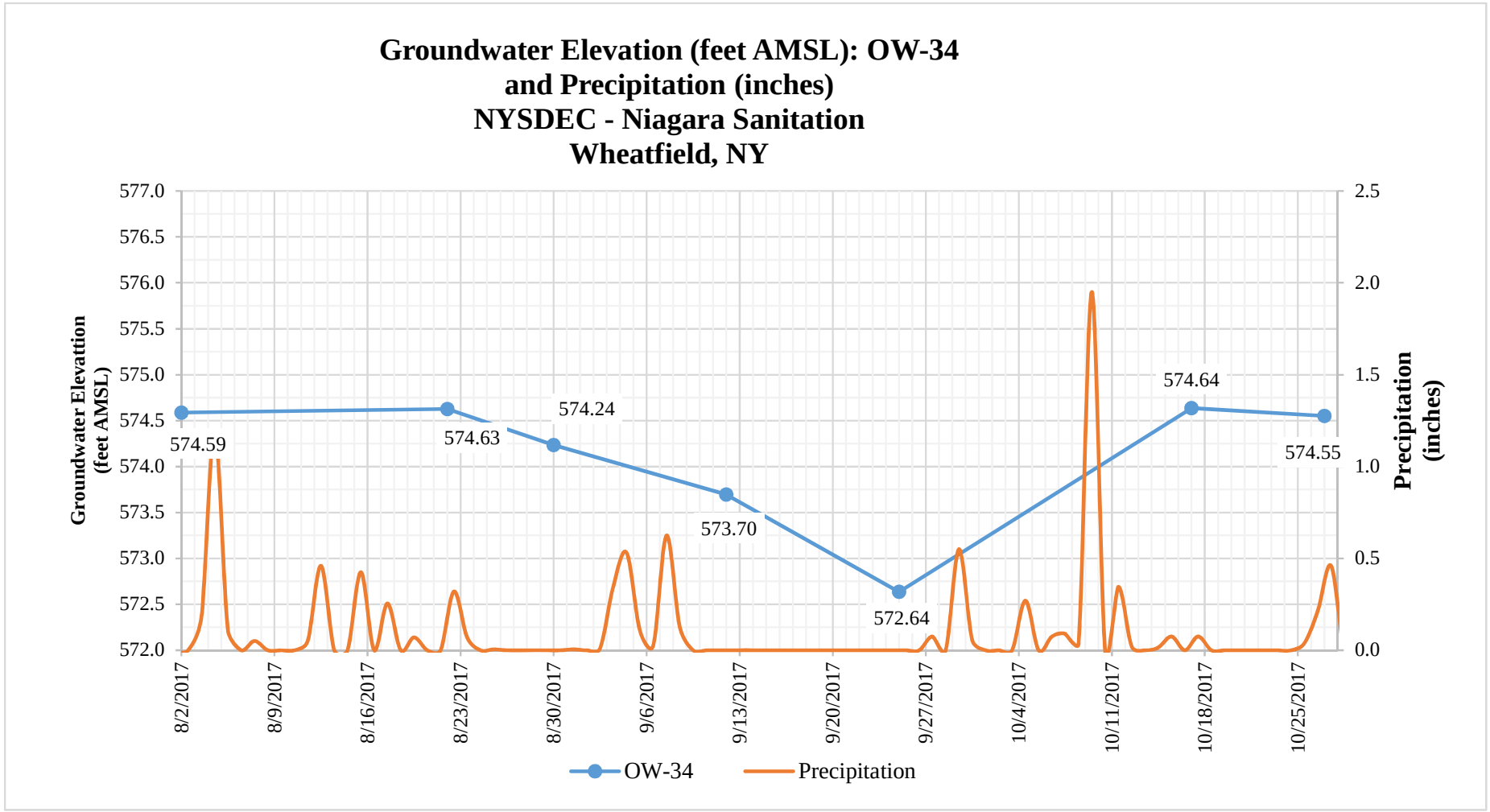

Groundwater Elevation (feet AMSL): OW-22
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.15
574.61
574.16
573.61
572.99
573.99
574.01
574.04
8/15/2017
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
OW-22
Precipitation

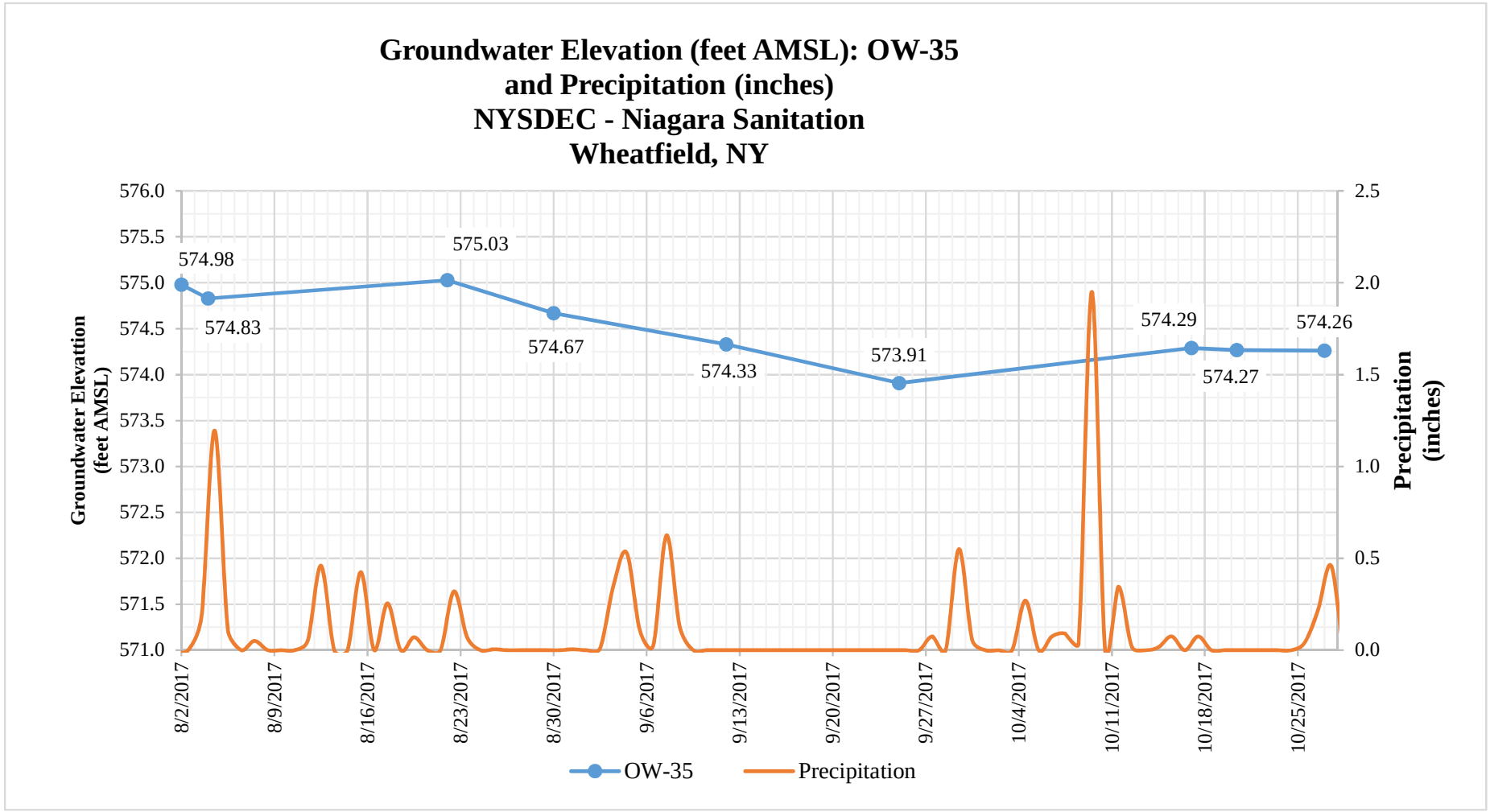

Groundwater Elevation (feet AMSL): OW-23
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.91
575.23
574.70
574.52
573.96
574.90
574.75
574.71
8/15/2017
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
OW-23
Precipitation

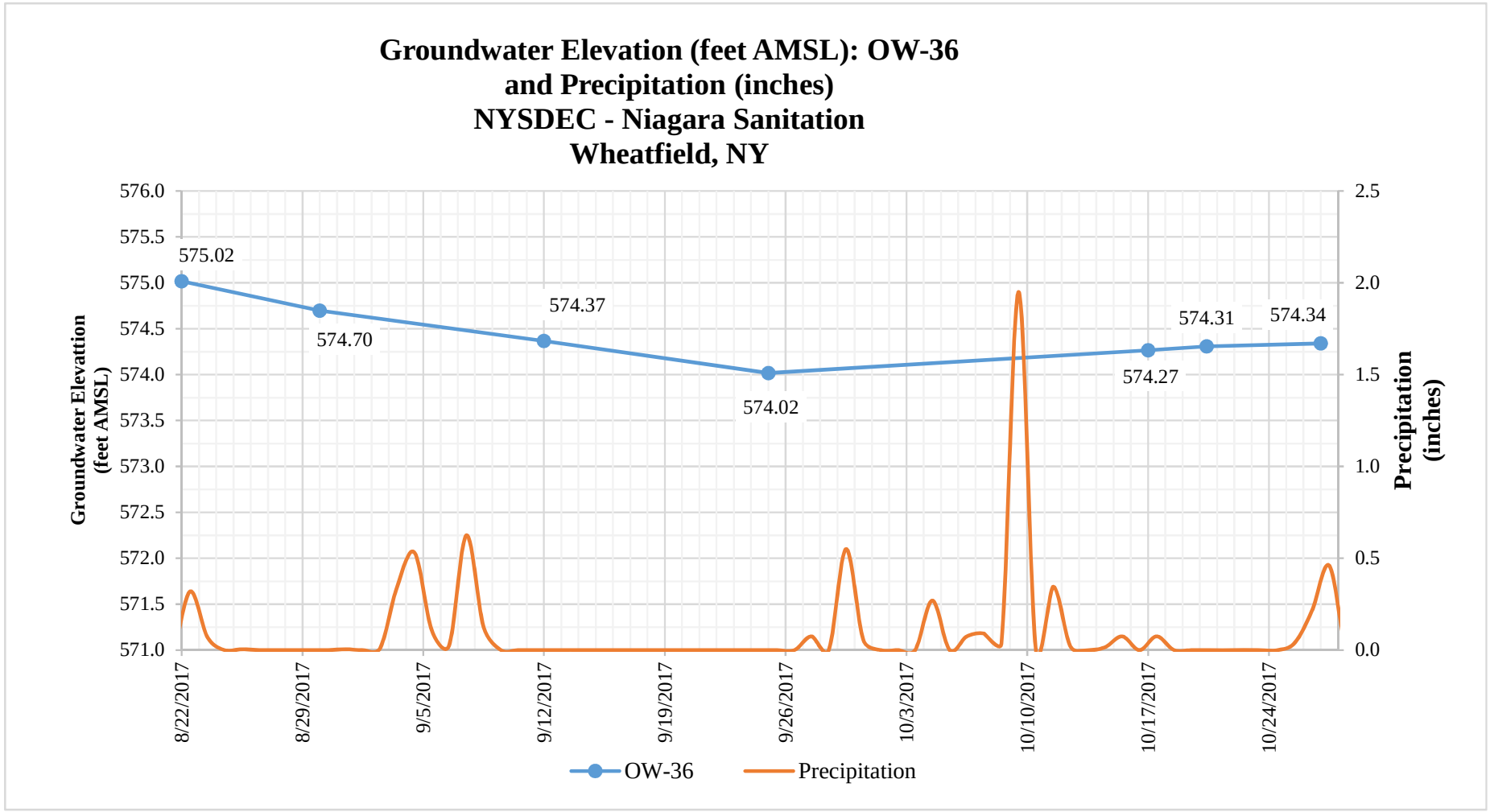

Groundwater Elevation (feet AMSL): OW-31
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
573.90
573.65
573.37
574.31
573.41
572.89
572.49
573.20
573.27
573.54
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-31
Precipitation

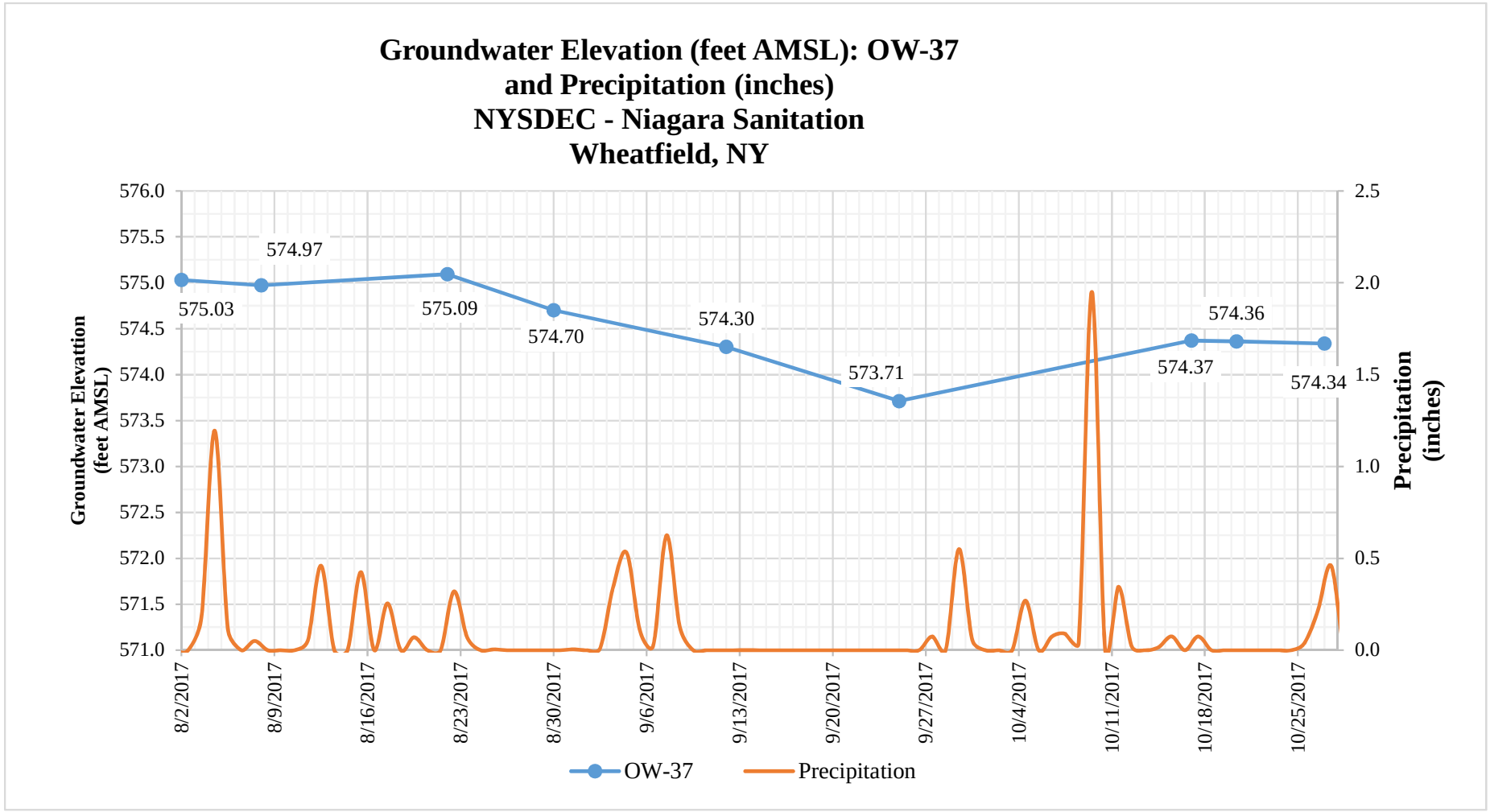

Groundwater Elevation (feet AMSL): OW-32
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.83
574.83
574.99
574.59
574.24
573.67
574.13
574.06
574.09
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-32
Precipitation

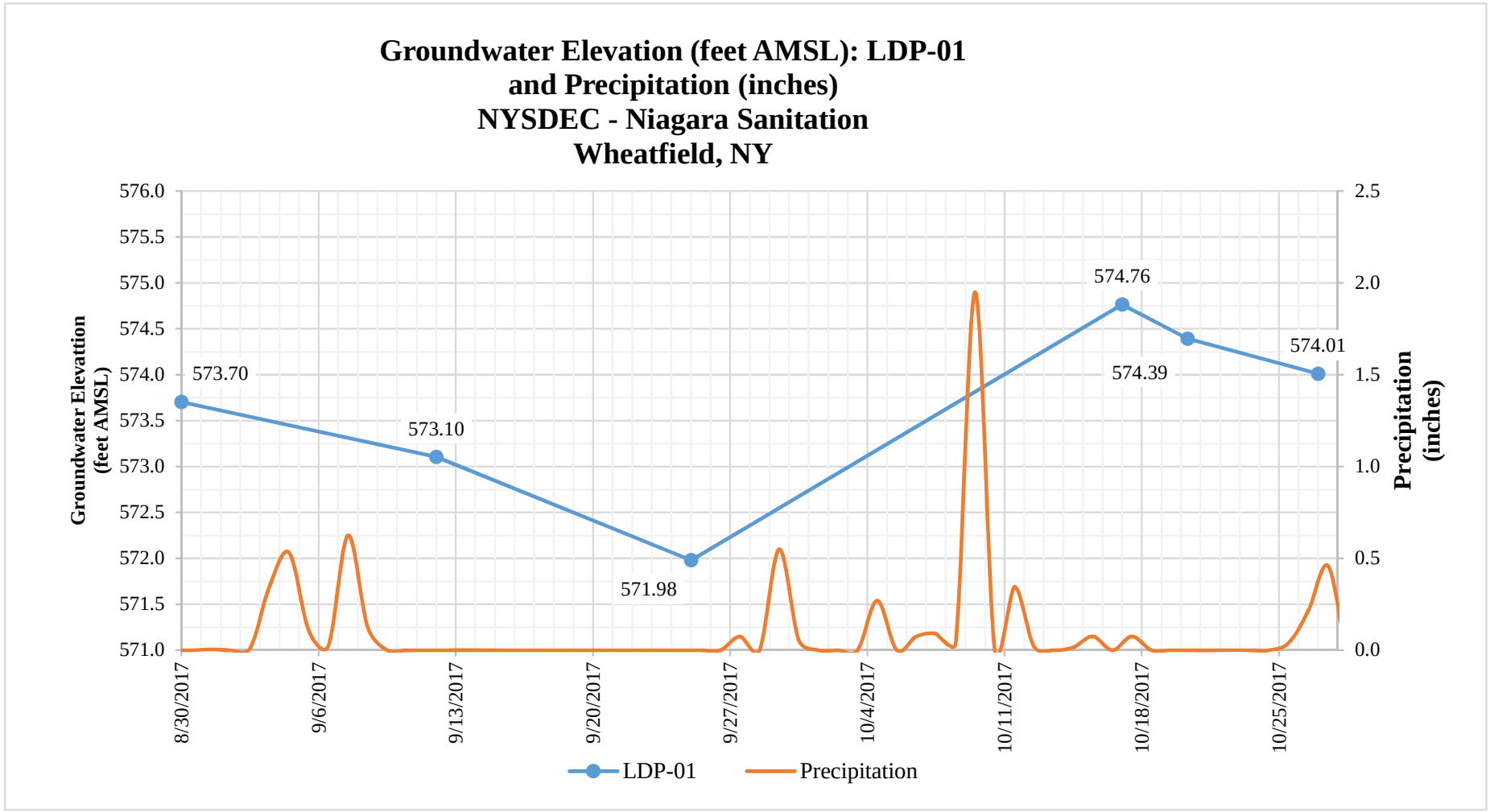

Groundwater Elevation (feet AMSL): OW-33
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
577.0
576.5
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
2.5
2.0
1.5
1.0
0.5
0.0
576.31
575.79
575.12
574.89
574.94
574.61
574.14
573.29
573.97
574.03
574.03
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-33
Precipitation

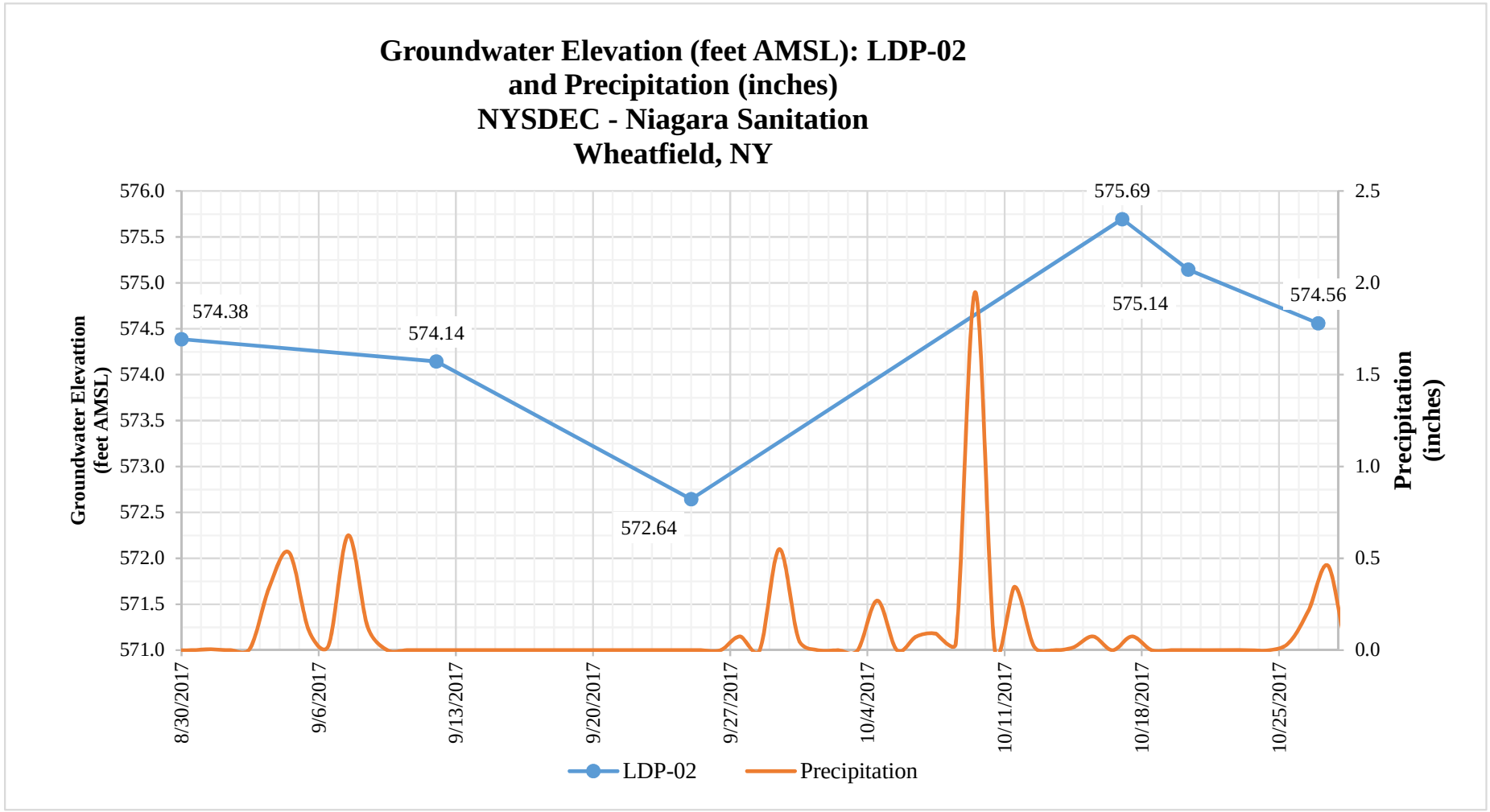

Groundwater Elevation (feet AMSL): OW-34
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
577.0
576.5
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
2.5
2.0
1.5
1.0
0.5
0.0
574.59
574.63
574.24
573.70
572.64
574.64
574.55
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-34
Precipitation

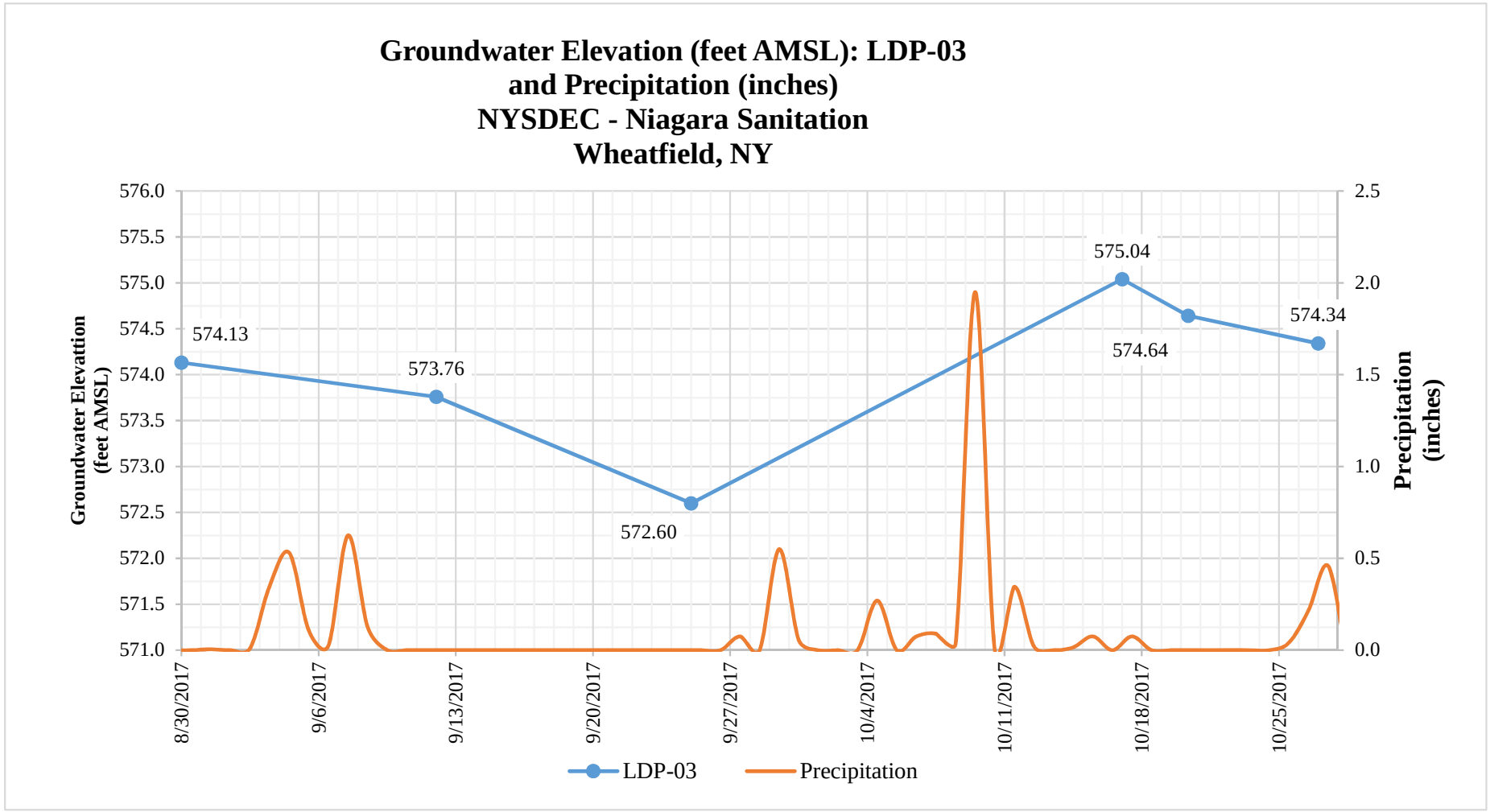

Groundwater Elevation (feet AMSL): OW-35
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.98
574.83
575.03
574.67
574.33
573.91
574.29
574.27
574.26
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-35
Precipitation

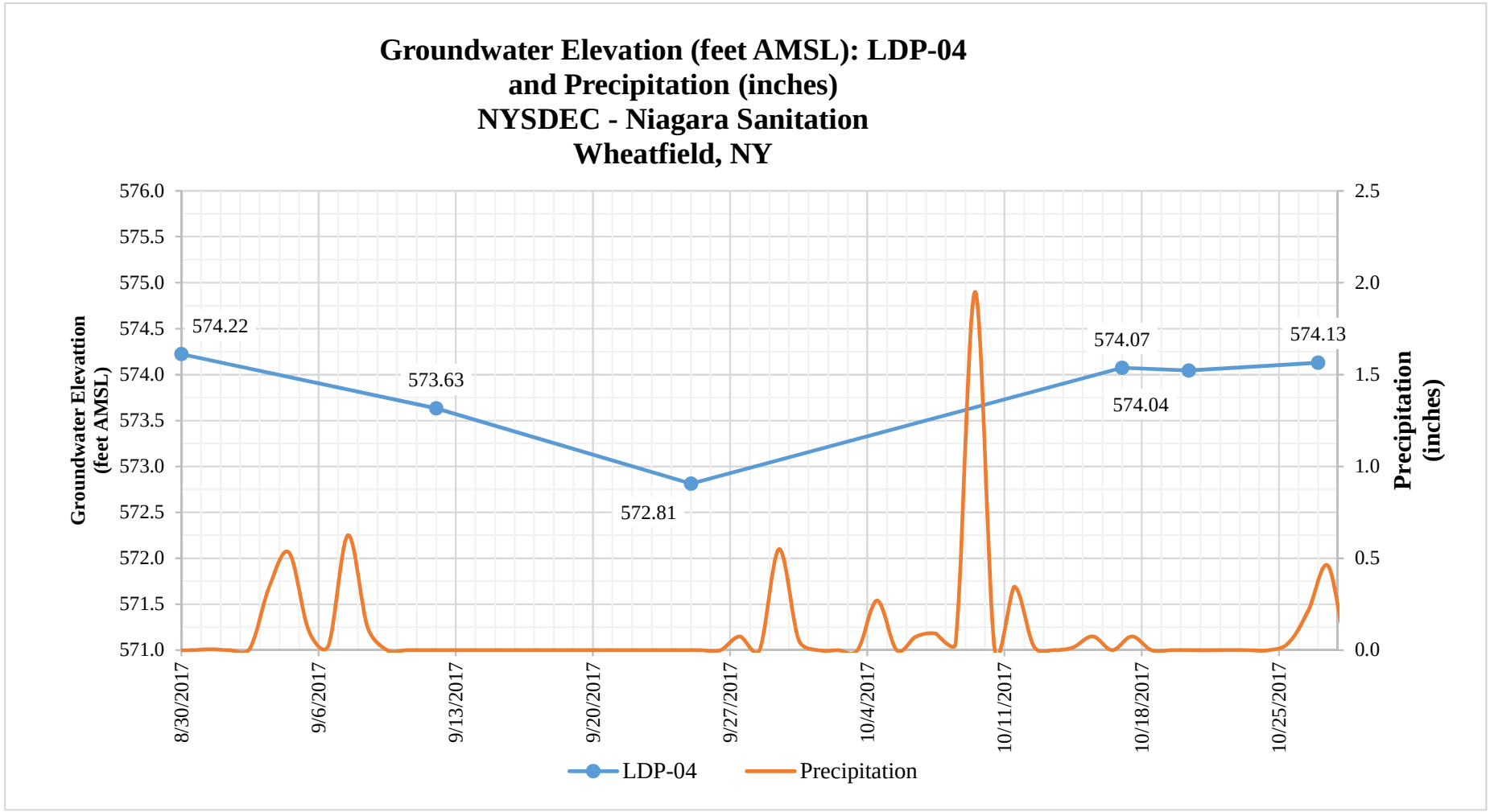

Groundwater Elevation (feet AMSL): OW-36
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.02
574.70
574.37
574.02
574.27
574.31
574.34
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
OW-36
Precipitation

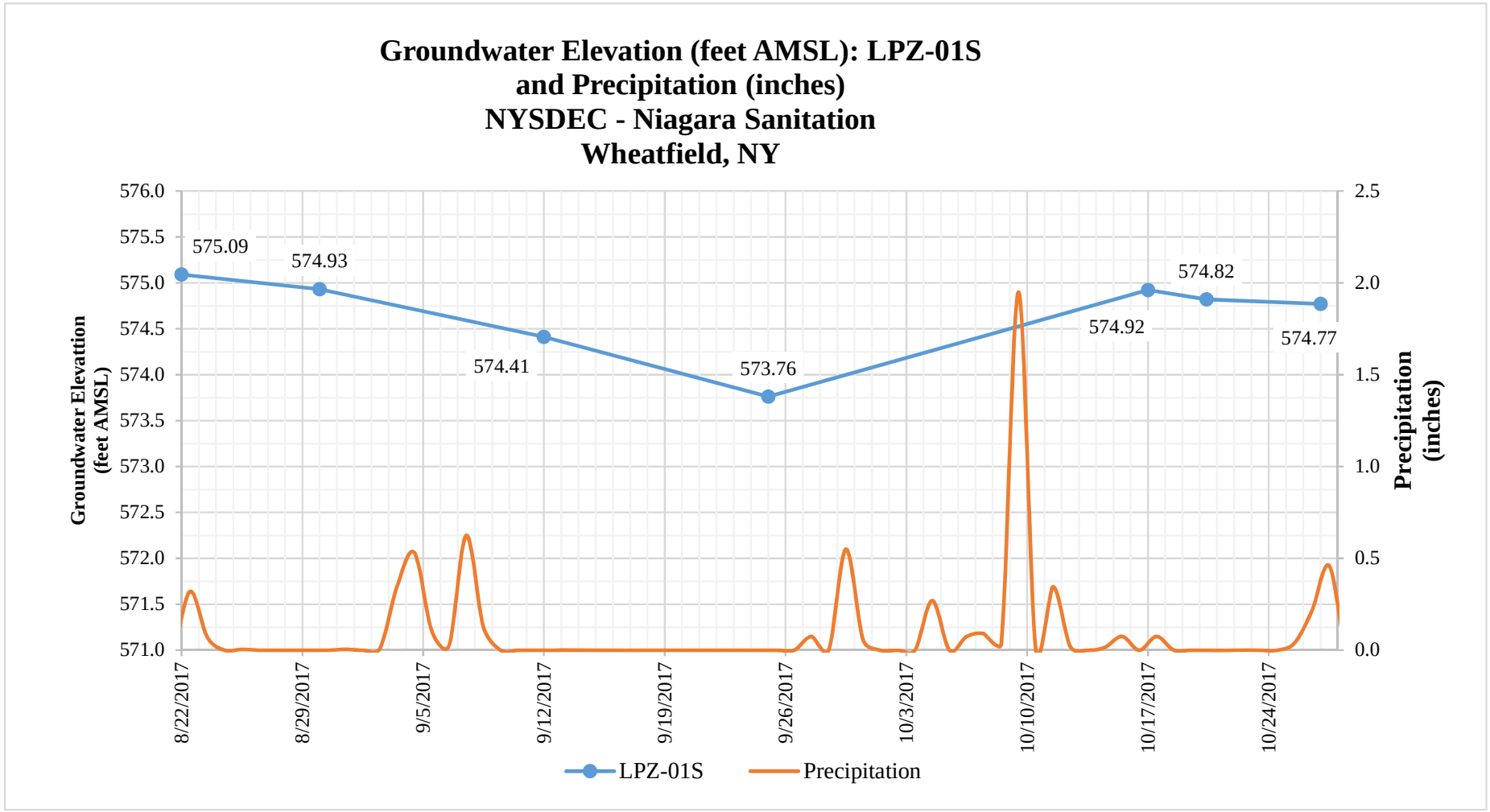

Groundwater Elevation (feet AMSL): OW-37
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.03
574.97
575.09
574.70
574.30
573.71
574.37
574.36
574.34
8/2/2017
8/9/2017
8/16/2017
8/23/2017
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
OW-37
Precipitation

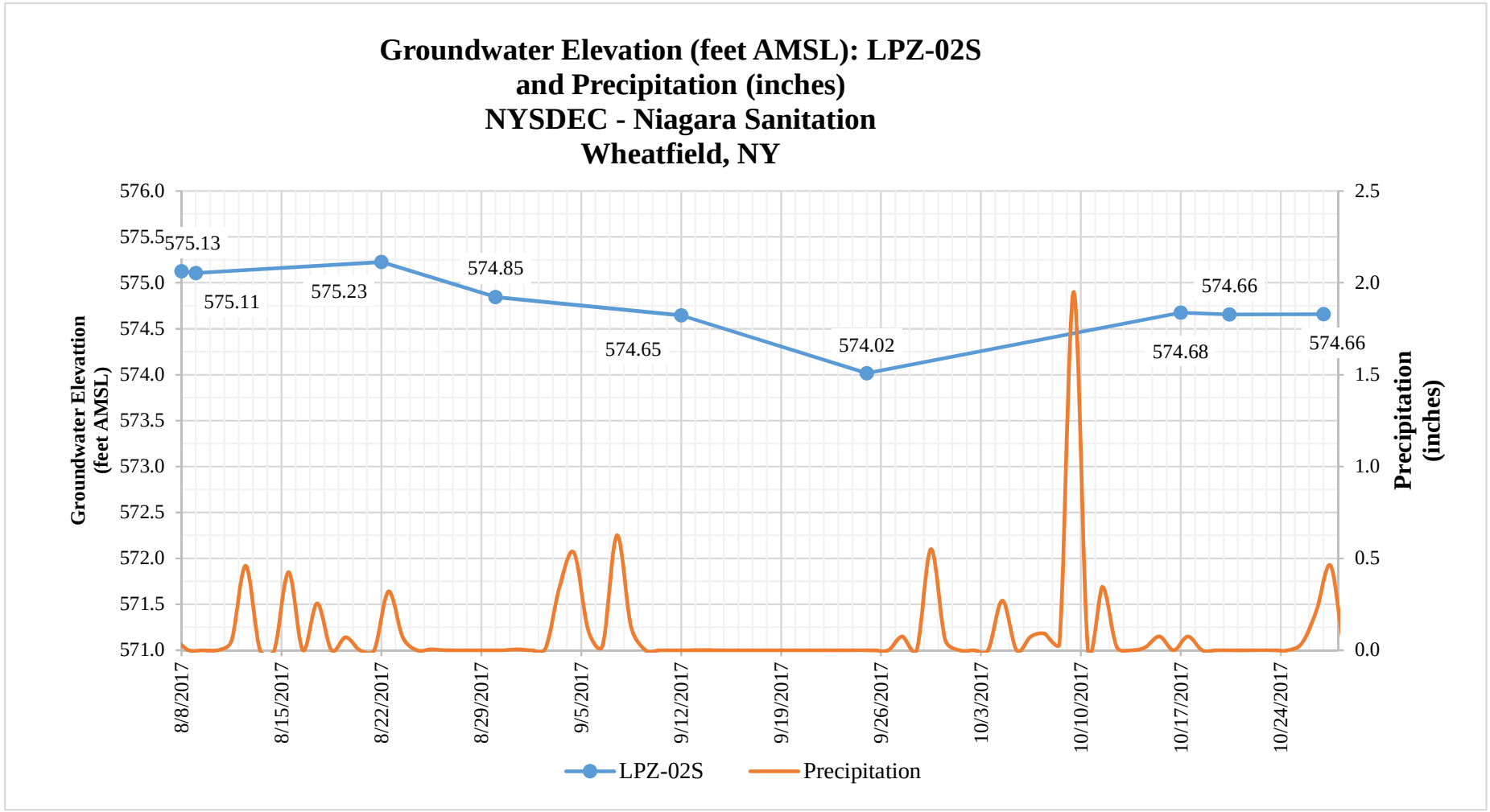

Groundwater Elevation (feet AMSL): LDP-01
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
573.70
573.10
571.98
574.39
574.76
574.01
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
LDP-01
Precipitation

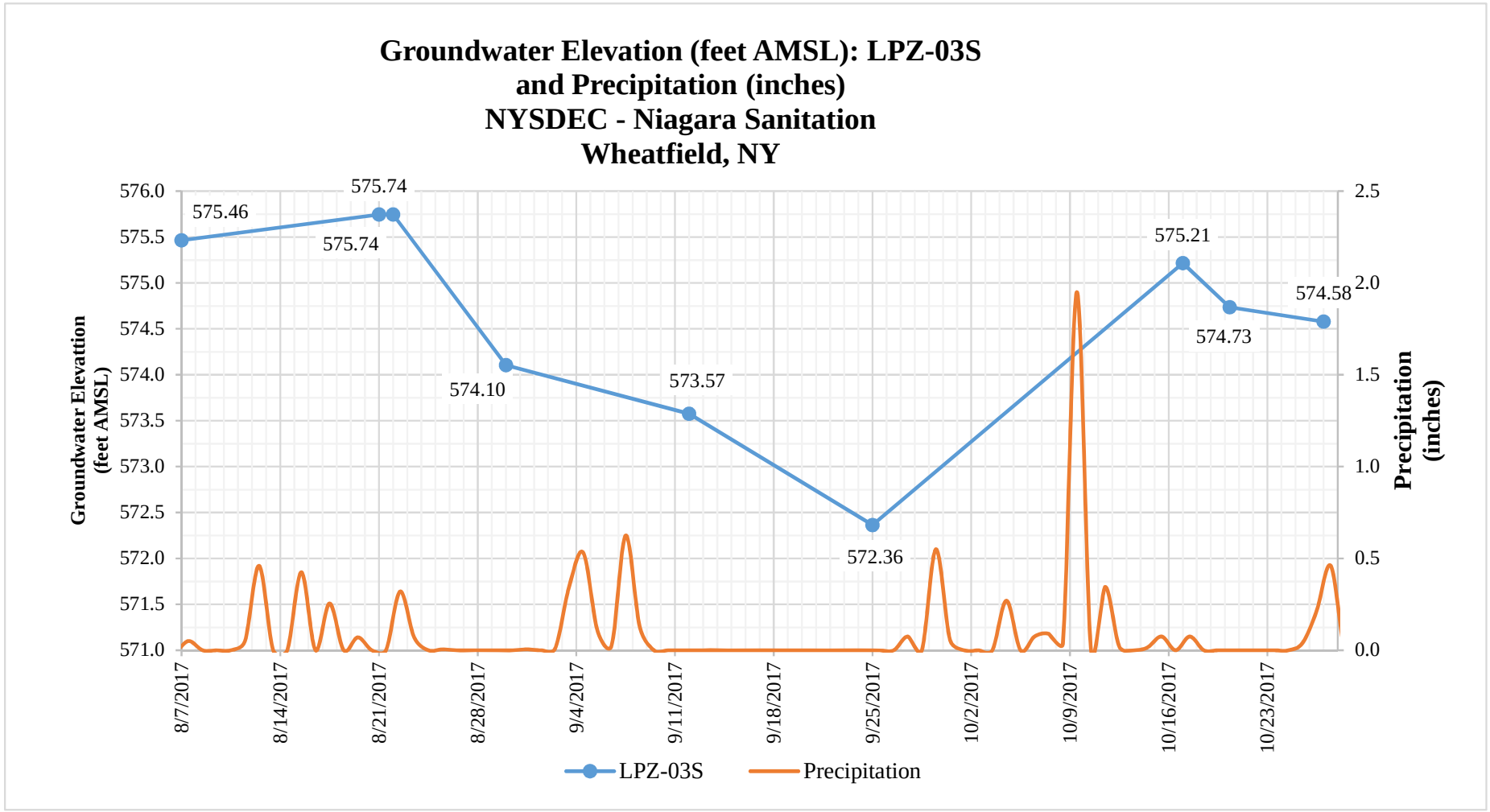

Groundwater Elevation (feet AMSL): LDP-02
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.38
574.14
572.64
575.14
575.69
574.56
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
LDP-02
Precipitation

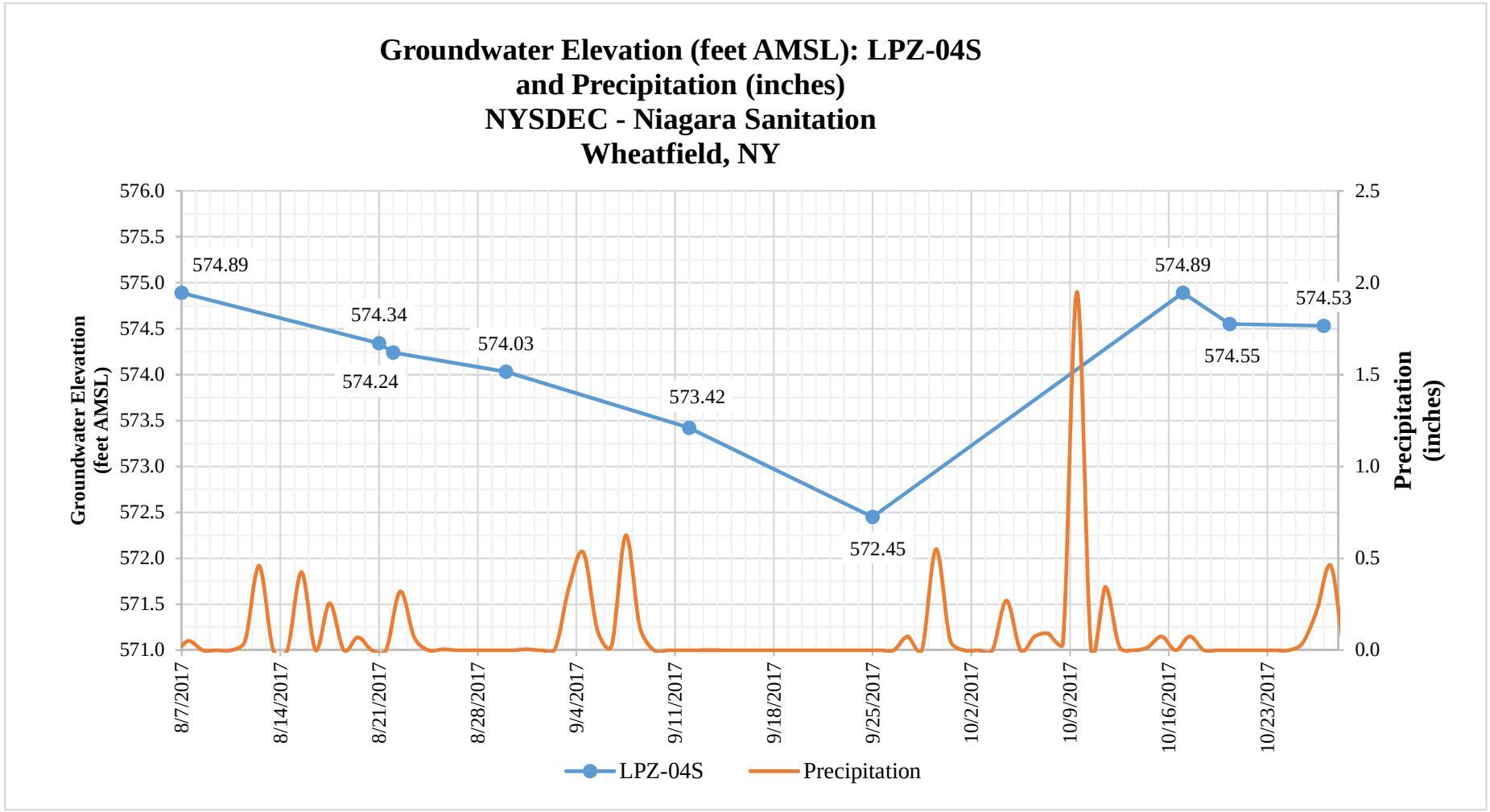

Groundwater Elevation (feet AMSL): LDP-03
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.13
573.76
572.60
574.64
575.04
574.34
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
LDP-03
Precipitation

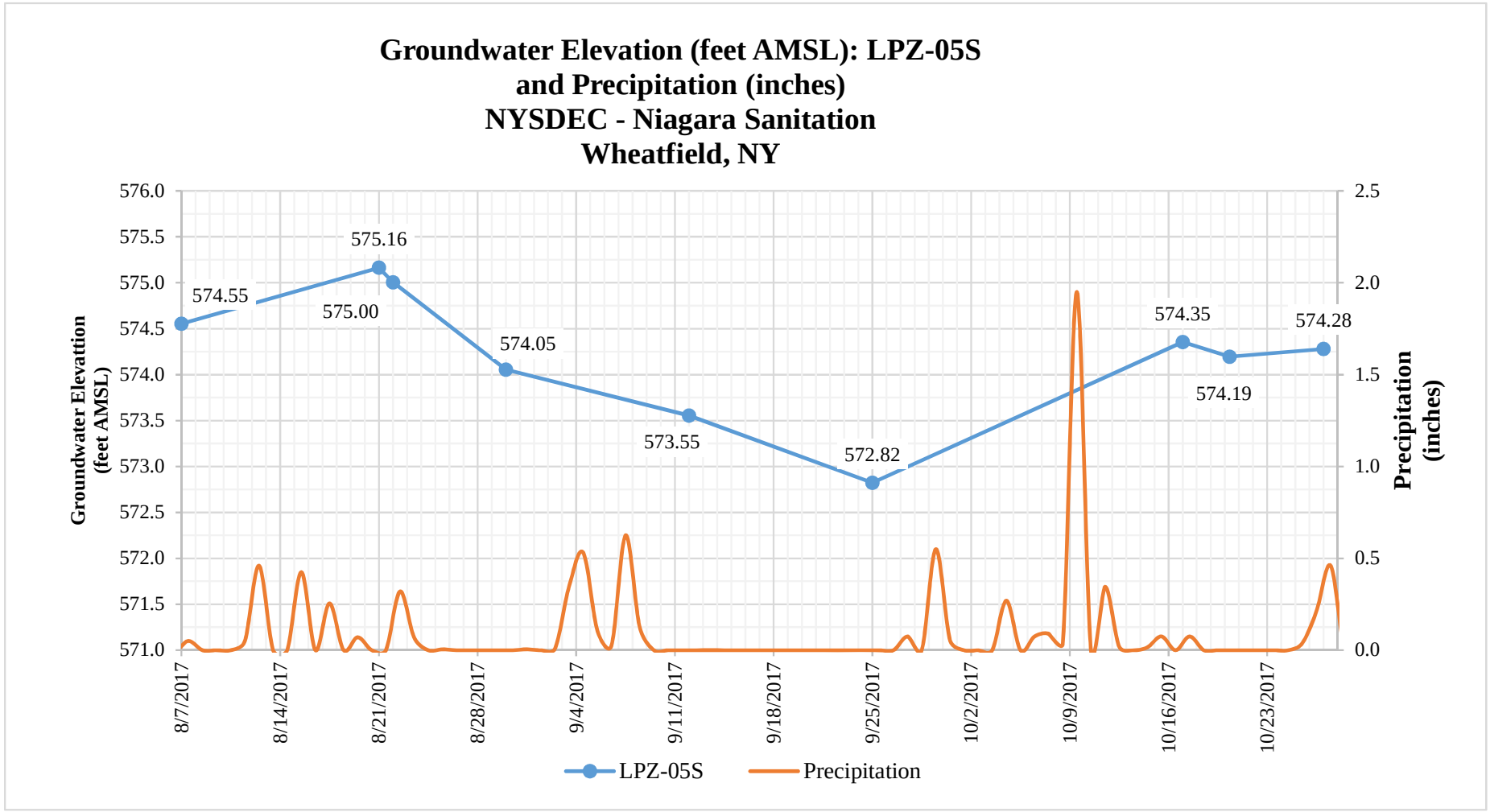

Groundwater Elevation (feet AMSL): LDP-04
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.22
573.63
572.81
574.04
574.07
574.13
8/30/2017
9/6/2017
9/13/2017
9/20/2017
9/27/2017
10/4/2017
10/11/2017
10/18/2017
10/25/2017
LDP-04
Precipitation

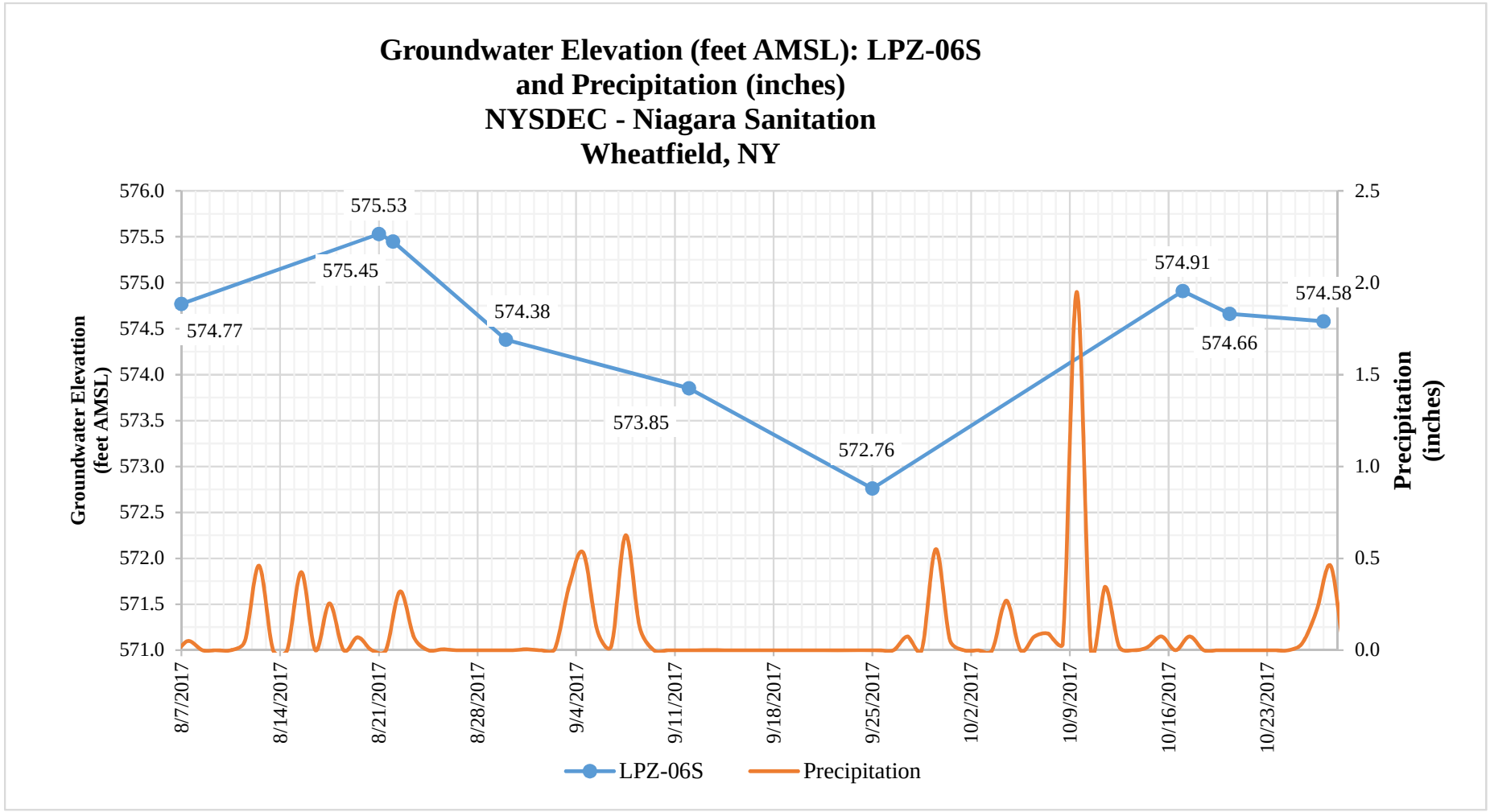

Groundwater Elevation (feet AMSL): LPZ-01S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.09
574.93
574.41
573.76
574.92
574.82
574.77
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
LPZ-01S
Precipitation

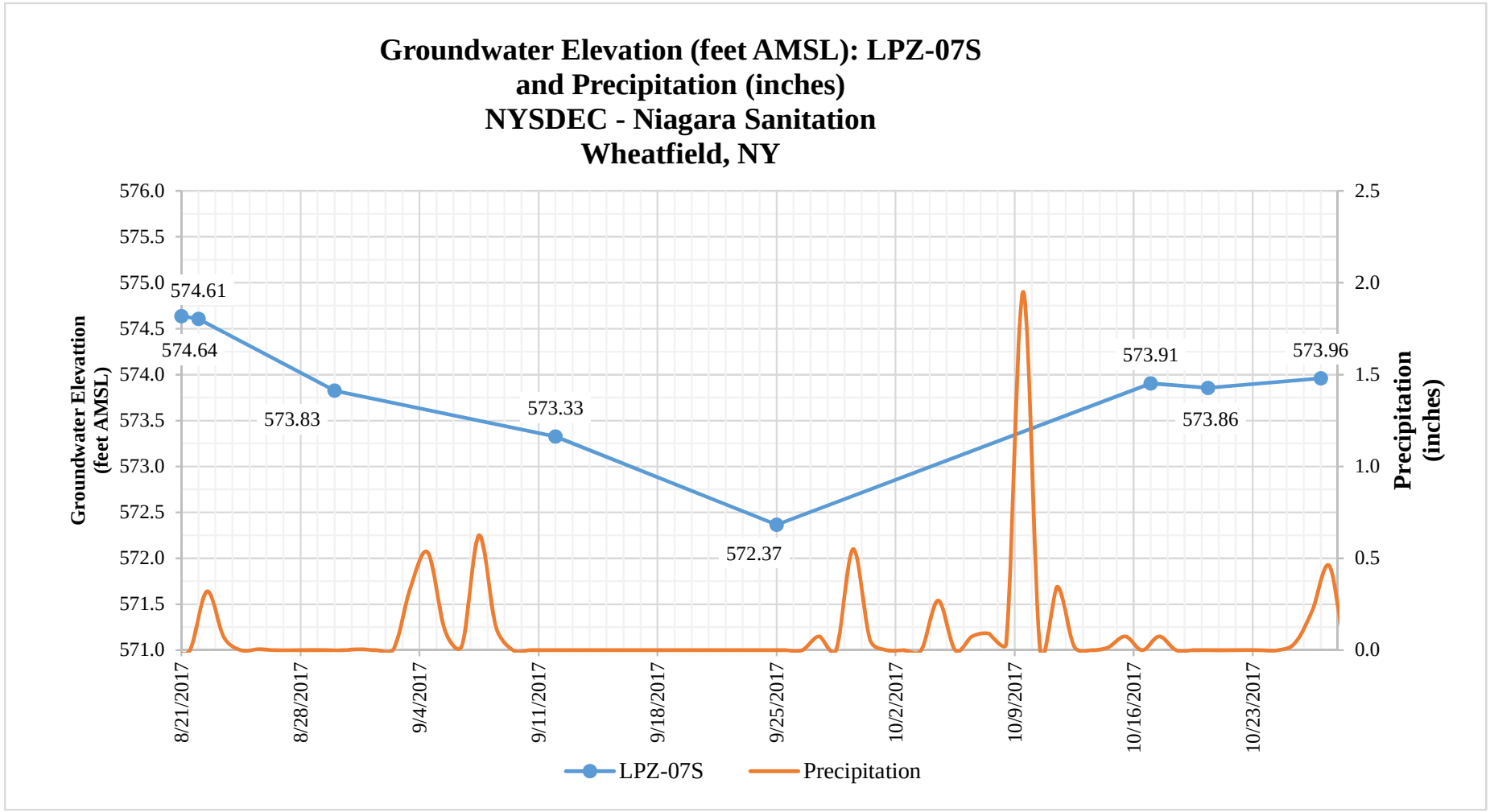

Groundwater Elevation (feet AMSL): LPZ-02S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.13
575.11
575.23
574.85
574.65
574.02
574.68
574.66
574.66
8/8/2017
8/15/2017
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
LPZ-02S
Precipitation

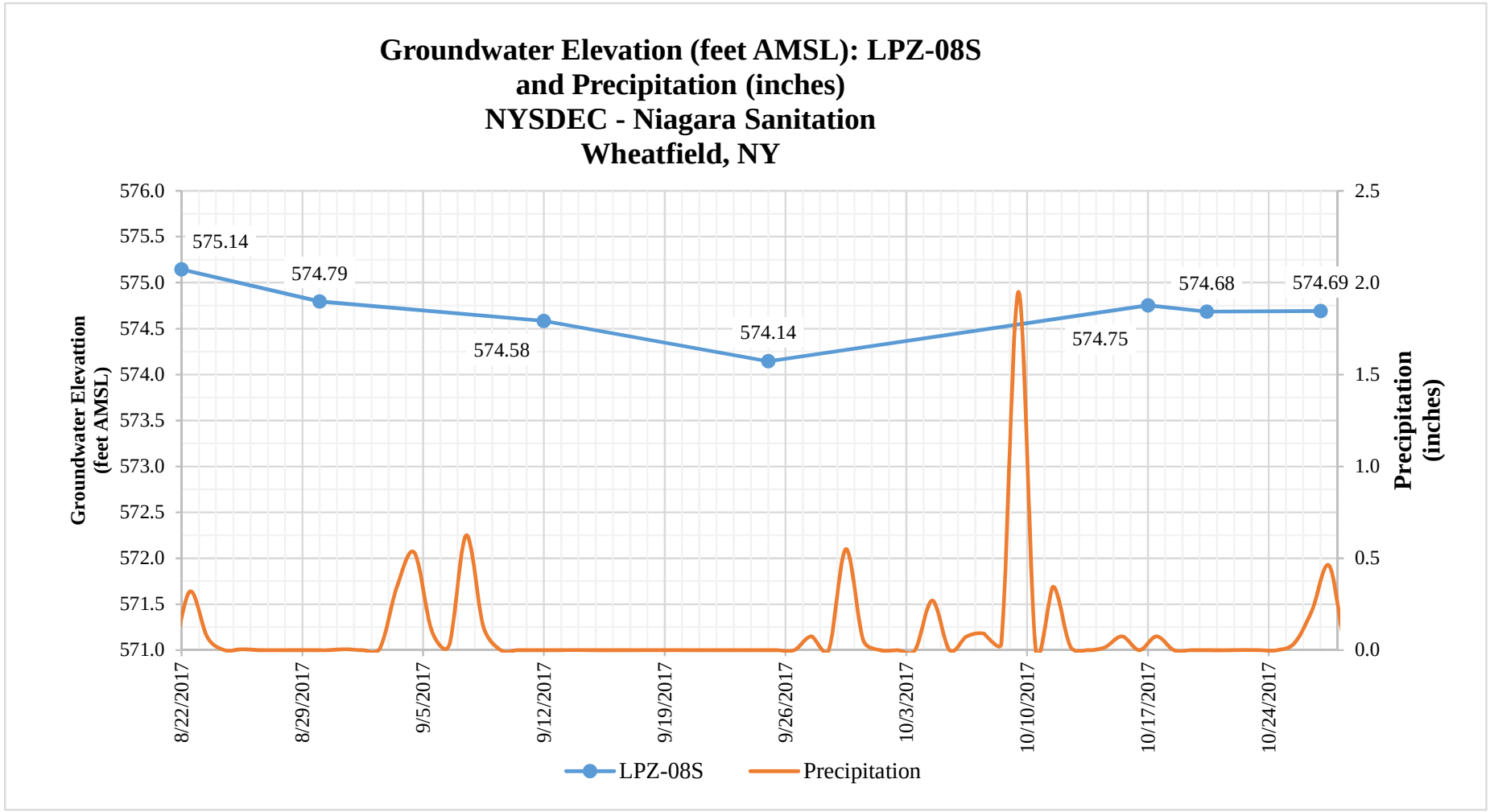

Groundwater Elevation (feet AMSL): LPZ-03S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.46
575.74
575.74
574.10
573.57
572.36
575.21
574.73
574.58
8/7/2017
8/14/2017
8/21/2017
8/28/2017
9/4/2017
9/11/2017
9/18/2017
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-03S
Precipitation

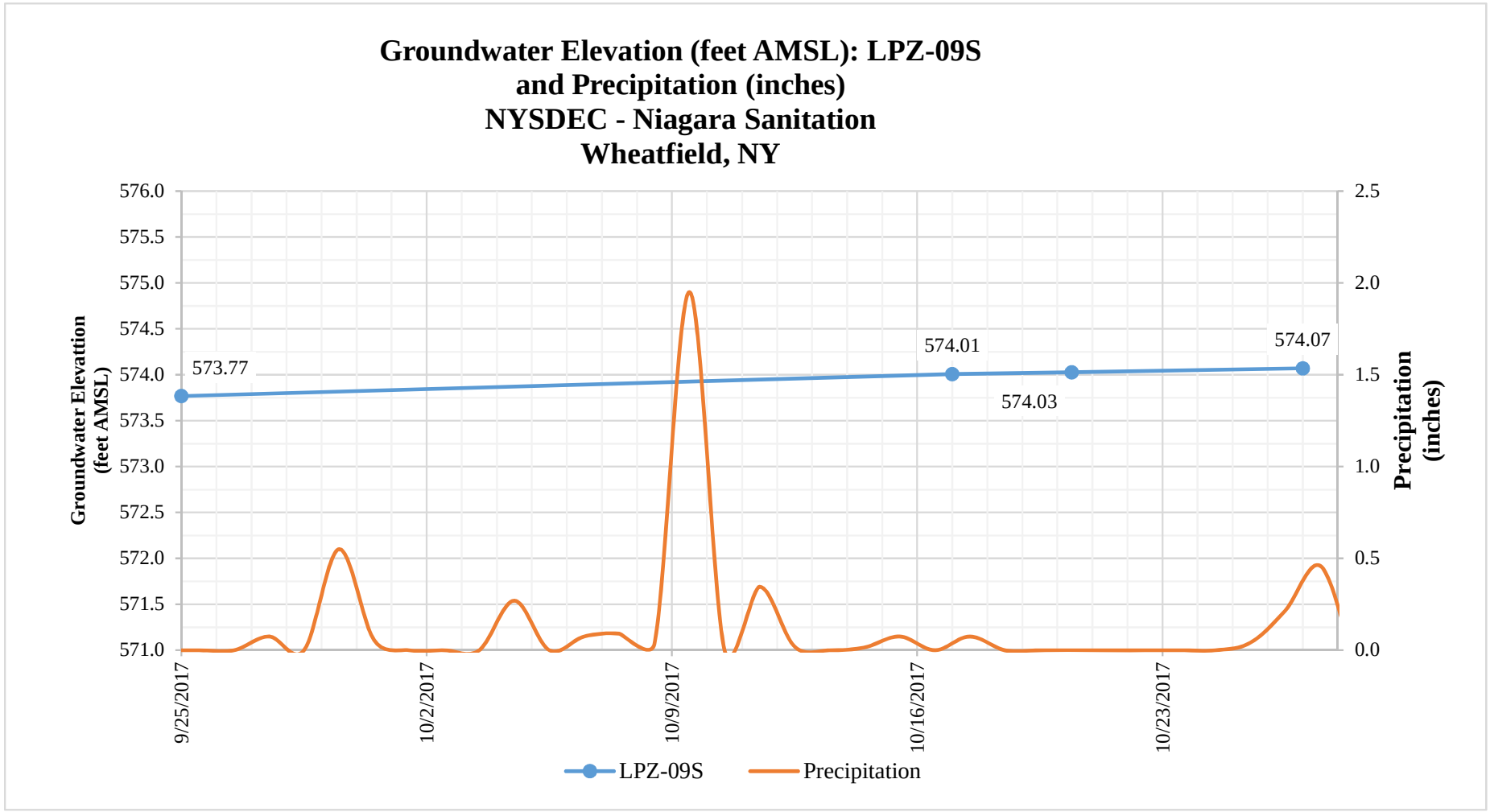

Groundwater Elevation (feet AMSL): LPZ-04S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.89
574.34
574.24
574.03
573.42
572.45
574.89
574.55
574.53
8/7/2017
8/14/2017
8/21/2017
8/28/2017
9/4/2017
9/11/2017
9/18/2017
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-04S
Precipitation

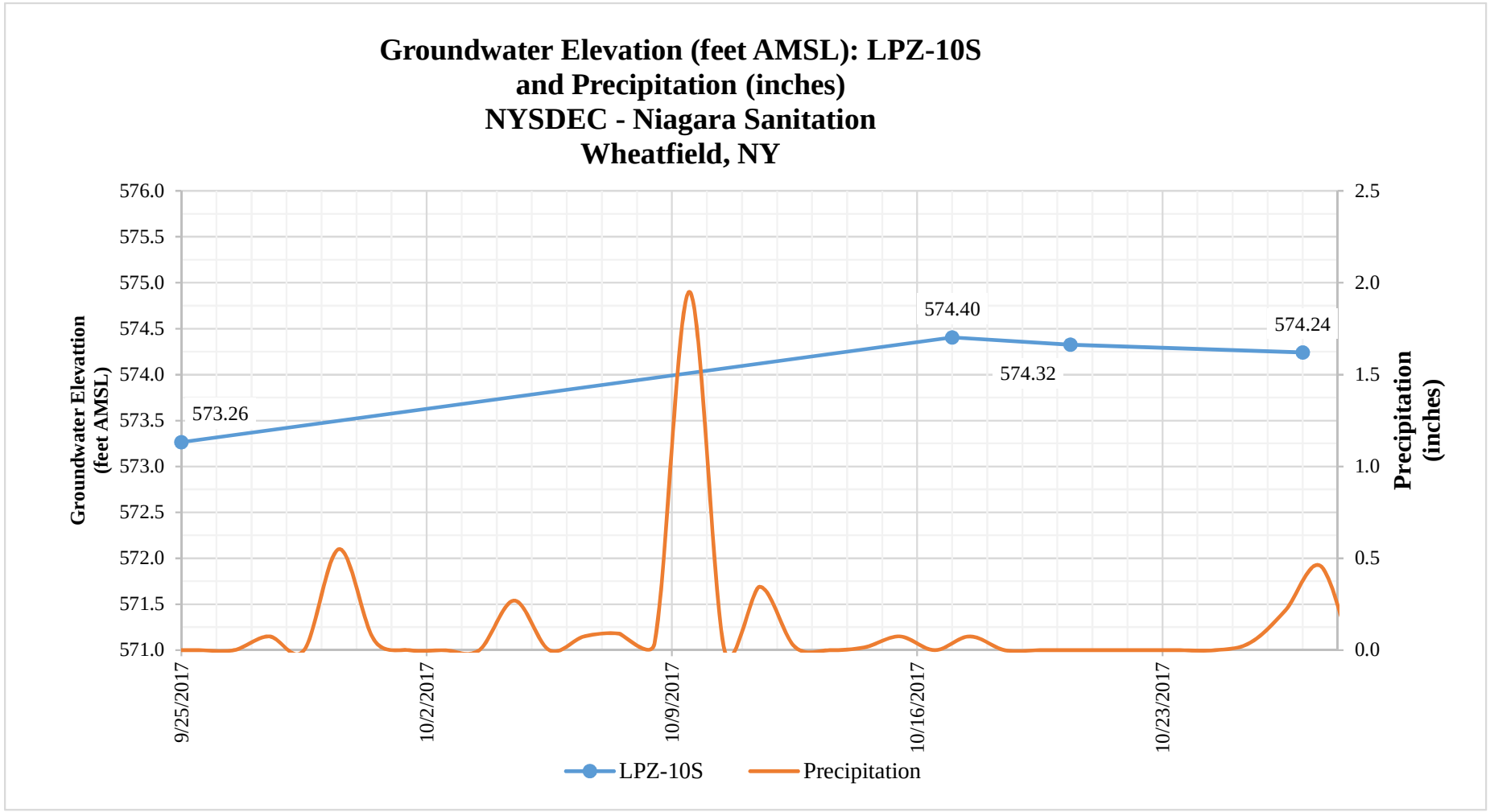

Groundwater Elevation (feet AMSL): LPZ-05S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.55
575.16
575.00
574.05
573.55
572.82
574.35
574.19
574.28
8/7/2017
8/14/2017
8/21/2017
8/28/2017
9/4/2017
9/11/2017
9/18/2017
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-05S
Precipitation

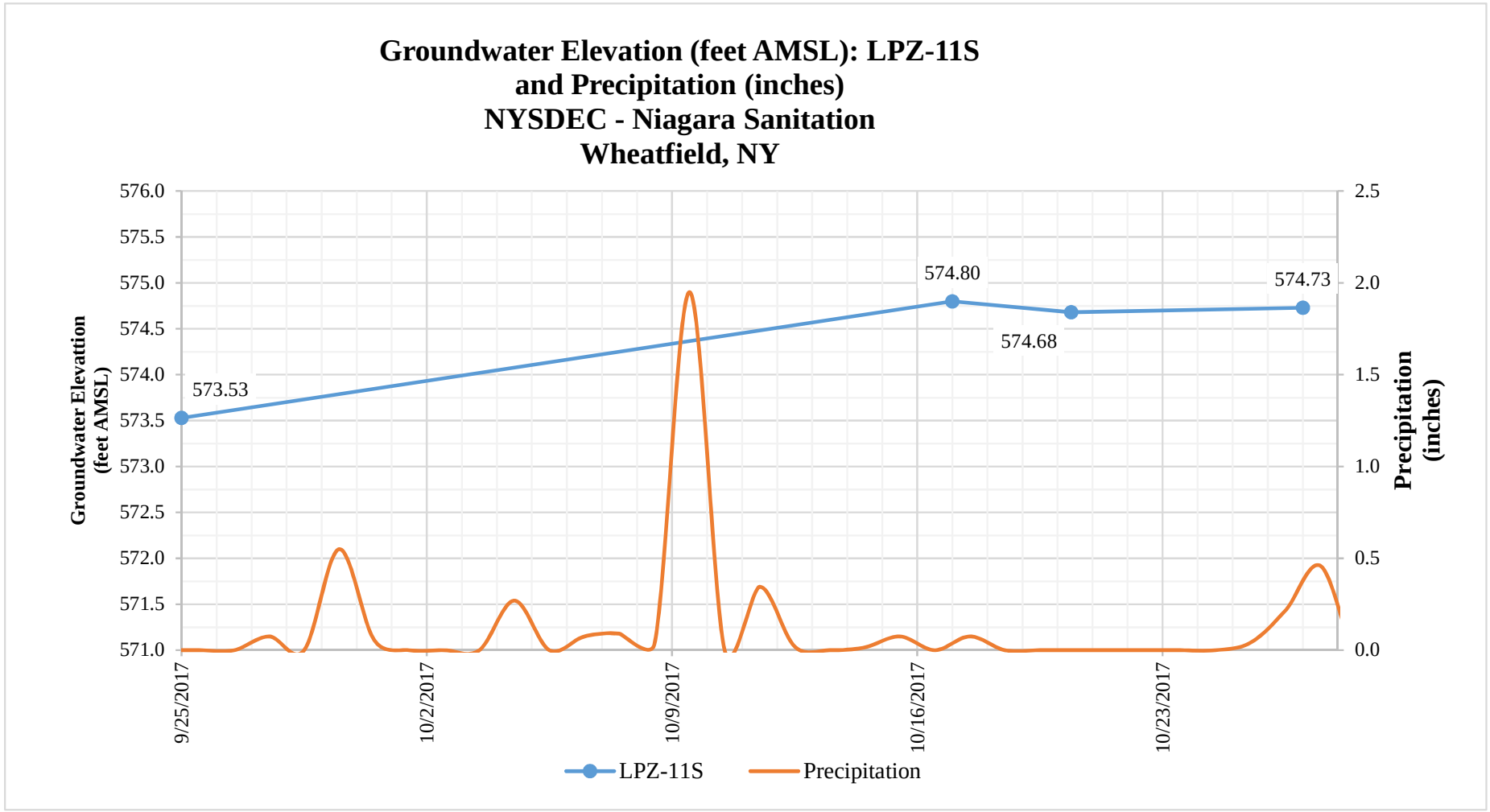

Groundwater Elevation (feet AMSL): LPZ-06S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.77
575.53
575.45
574.38
573.85
572.76
574.91
574.66
574.58
8/7/2017
8/14/2017
8/21/2017
8/28/2017
9/4/2017
9/11/2017
9/18/2017
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-06S
Precipitation

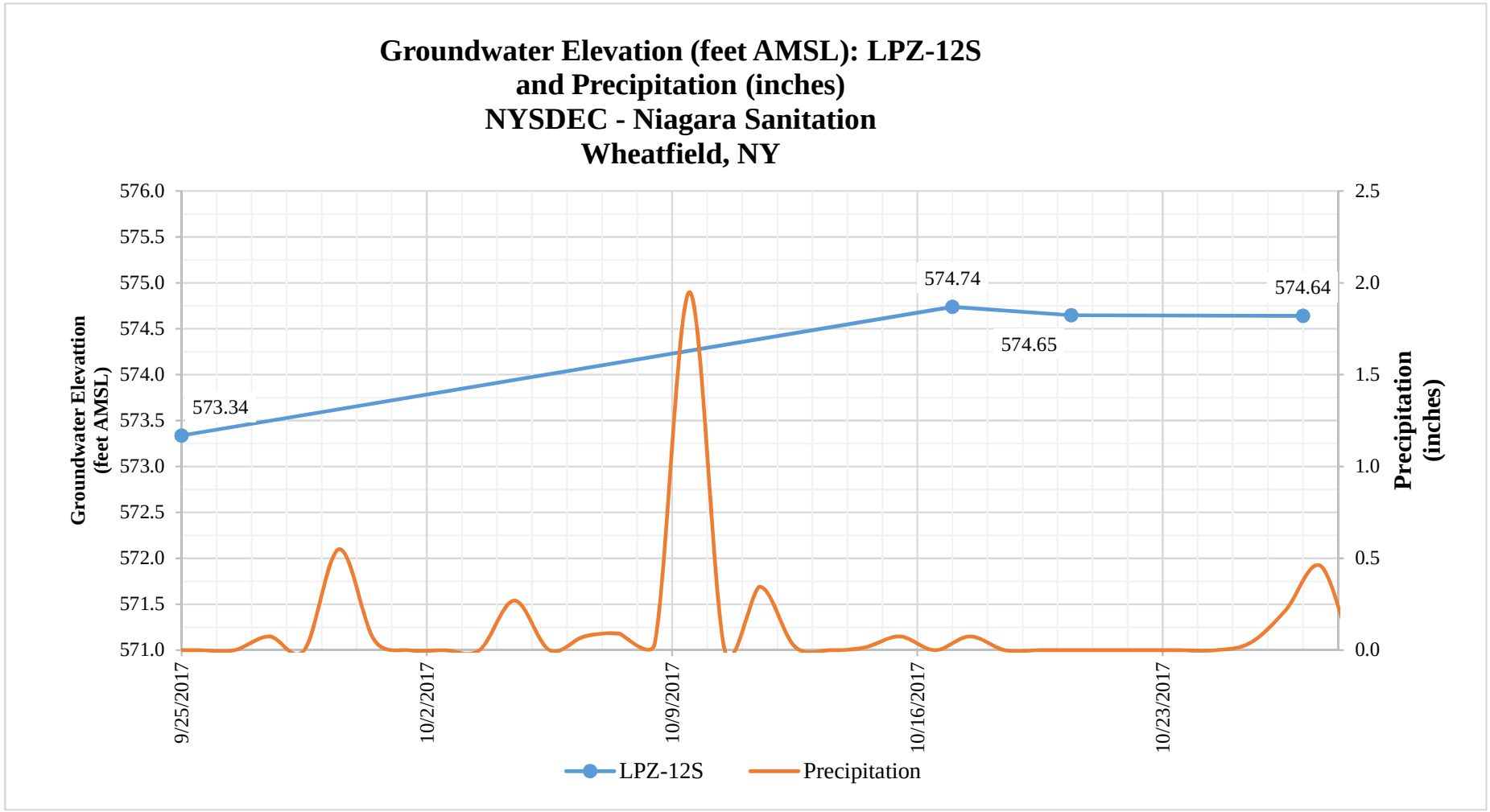

Groundwater Elevation (feet AMSL): LPZ-07S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
574.61
574.64
573.83
573.33
572.37
573.91
573.86
573.96
8/21/2017
8/28/2017
9/4/2017
9/11/2017
9/18/2017
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-07S
Precipitation

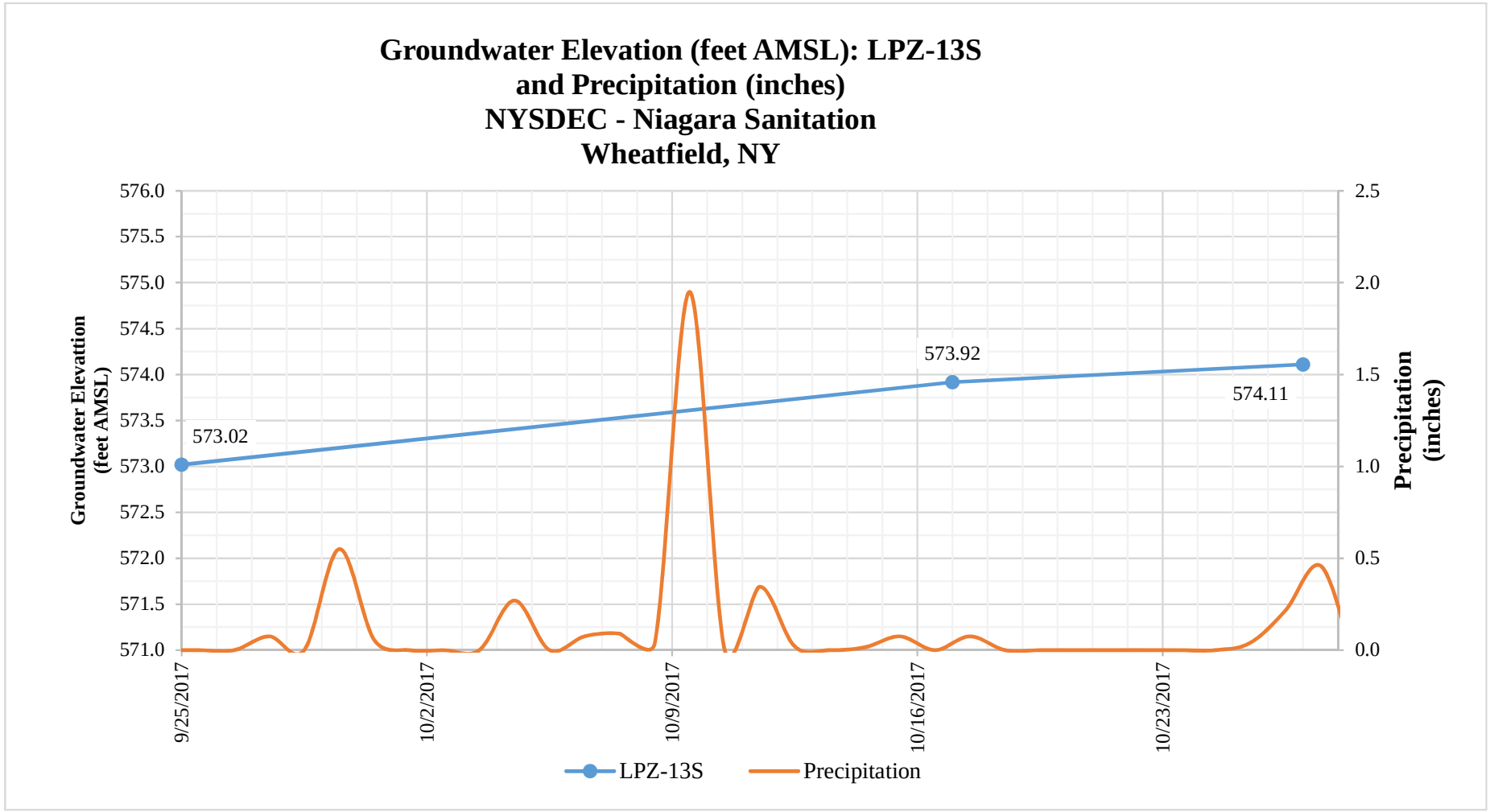

Groundwater Elevation (feet AMSL): LPZ-08S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.14
574.79
574.58
574.14
574.75
574.68
574.69
8/22/2017
8/29/2017
9/5/2017
9/12/2017
9/19/2017
9/26/2017
10/3/2017
10/10/2017
10/17/2017
10/24/2017
LPZ-08S
Precipitation

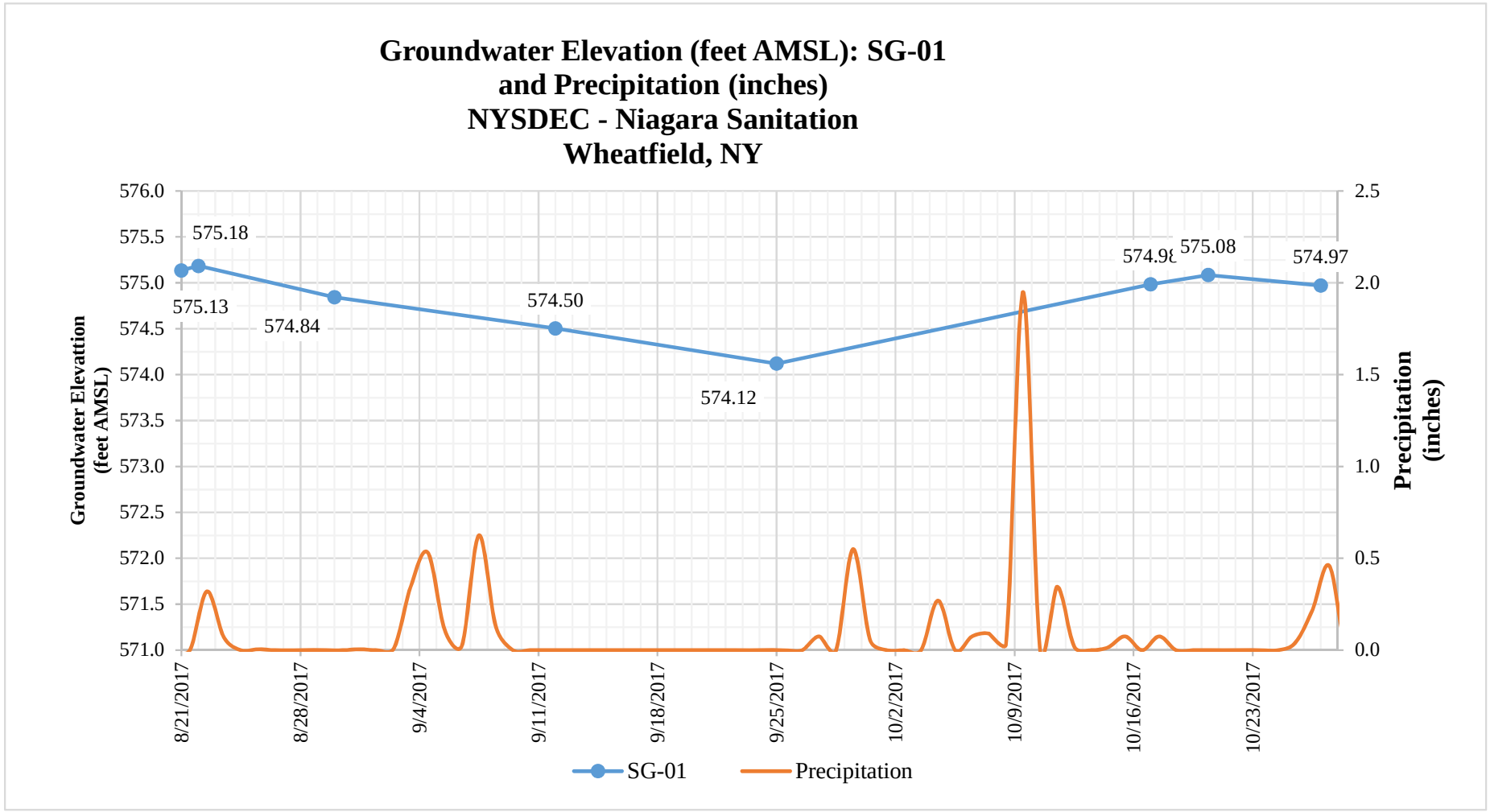

Groundwater Elevation (feet AMSL): LPZ-09S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
573.77
574.01
574.03
574.07
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-09S
Precipitation

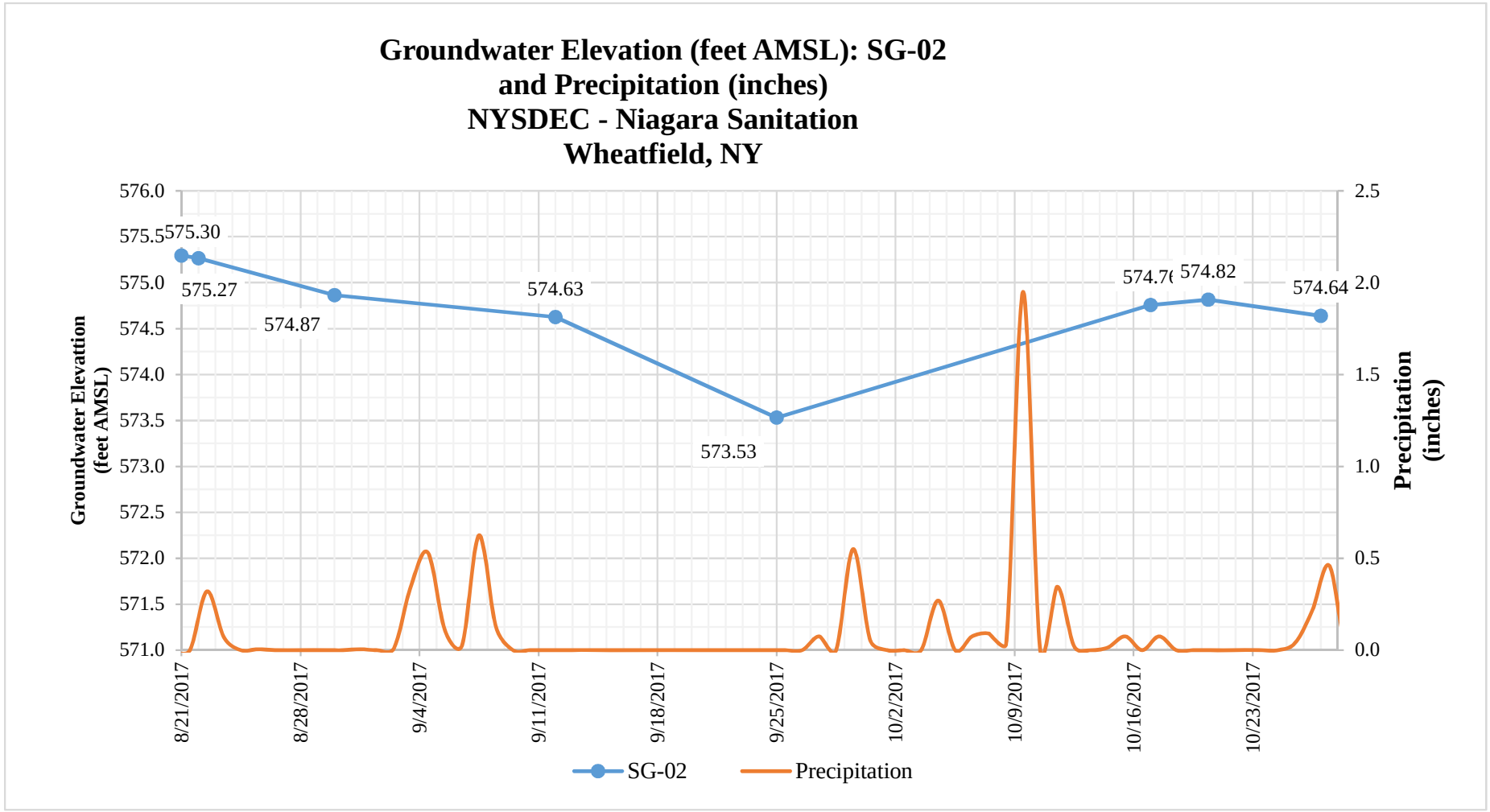

Groundwater Elevation (feet AMSL): LPZ-10S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
573.26
574.40
574.32
574.24
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-10S
Precipitation


Groundwater Elevation (feet AMSL): LPZ-11S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
573.53
574.80
574.68
574.73
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-11S
Precipitation


Groundwater Elevation (feet AMSL): LPZ-12S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
573.34
574.74
574.65
574.64
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-12S
Precipitation


Groundwater Elevation (feet AMSL): LPZ-13S
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
573.02
573.92
574.11
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
LPZ-13S
Precipitation


Groundwater Elevation (feet AMSL): SG-01
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.18
575.13
574.84
574.50
574.12
575.08
574.97
8/21/2017
8/28/2017
9/4/2017
9/11/2017
9/18/2017
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
SG-01
Precipitation


Groundwater Elevation (feet AMSL): SG-02
and Precipitation (inches)
NYSDEC - Niagara Sanitation
Wheatfield, NY
Groundwater Elevation (feet AMSL)
Precipitation (inches)
576.0
575.5
575.0
574.5
574.0
573.5
573.0
572.5
572.0
571.5
571.0
2.5
2.0
1.5
1.0
0.5
0.0
575.30
575.27
574.87
574.63
573.53
574.82
574.64
8/21/2017
8/28/2017
9/4/2017
9/11/2017
9/18/2017
9/25/2017
10/2/2017
10/9/2017
10/16/2017
10/23/2017
SG-02
Precipitation